

AIA News

Philadelphia Architects to Explore Integration of Materials and Process *Kieran Timberlake Associates Awarded Inaugural COF Latrobe Fellowship*

by Stephanie Stubbs, Assoc. AIA



Kieran Timberlake Associates, Philadelphia, is embarking on a journey to boldly go where no architecture firm has gone before. The firm's roadmap for this trip is a proposal for a two-year research project, "Masters(s) Building in 2010: Architecture, Construction, and Production." The proposal—for which the AIA College of Fellow's awarded its inaugural Latrobe Fellowship, named for Benjamin Latrobe, America's first professional architect, and awarded for research leading to significant advances in the profession—"seeks to provide direction toward a brave new world of conceptualizing and constructing architecture."

Integrating process and materials

"We are looking at the transfer process between building materials and building process; some interrelation, some symbiosis between those two pieces" says James Timberlake, FAIA, firm principal and co-chief investigator. "Our proposal really is formulated around the holistic integration of materials and process."

The architects' thesis builds on the notion that, in many ways, the world still builds buildings the way it did centuries ago—beginning with an idea and assembling the structure piece by labor-intensive piece. "To some degree, architects are always focused on materials," says Stephen Kieran, FAIA, Timberlake's partner and co-chief investigator on the research project. "Now we want to focus on



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process—the way we go about building buildings."

The group plans to incorporate some of the research conducted in their Masters Research Laboratory at the University of Pennsylvania, where as adjunct associate professors they have "tested applications of collective intelligence and modeled the holistic integration of materials, systems, technologies, and programs," Timberlake says.

A true integrated effort

We need to look at the "food chain" of the building process, Kieran explains. "There are a lot of products, and little integration of these products."

One of the key ingredients of Kieran Timberlake's strategy to achieve this type of integration is to involve not only architects, but also to get materials scientists, product engineers, and construction contractors involved. While contractors and architects normally communicate, they explain, and materials scientists and product engineers normally communicate, there is little cross-conversation among the four groups. Kieran Timberlake's thesis says that increasing the dialog among the four groups will increase the quality and scope of what the building industry can accomplish (see diagram next page).

"The Fellowship opens doors for us to the industry at large," Timberlake says, "particularly for those who are developing new materials systems and technologies to participate with us in research and development."

The architects are prepared

to consider—yet don't see as impediments—traditional stalwarts of the building industry status quo, such as codes and construction labor. In fact, they see a potential improvement in working conditions if, say, integrated building components were factory-made instead of assembled in the field. "Recessions have caused improved products to shake out," says Mark Sanderson, a Kieran Timberlake architect working on the project. "But they haven't affected the

industry as a whole because the industry is so fragmented. That's why we need to do our research with a multidisciplinary, integrated approach."

Kieran adds that looking ahead to more integrated building components may also be a boon to clients in the future, as labor shortages are likely to increase. There also could be reduced risk and liability due to the

reduced amount of time workers would need to spend on the site installing integrate products.

Transfer of materials and processes

One of the beauties of working multidisciplinary team from the get-go is that it segues nicely into embracing advances that have been accomplished in areas normally considered far afield form architecture. Some examples of processes and products the team may look at include:

- "Platform architecture," modeled after the way that Dell Computers sells and services it machines, on a highly customized basis
- Option strategies, such as the way Saturn sells and services cars; "we're defi-

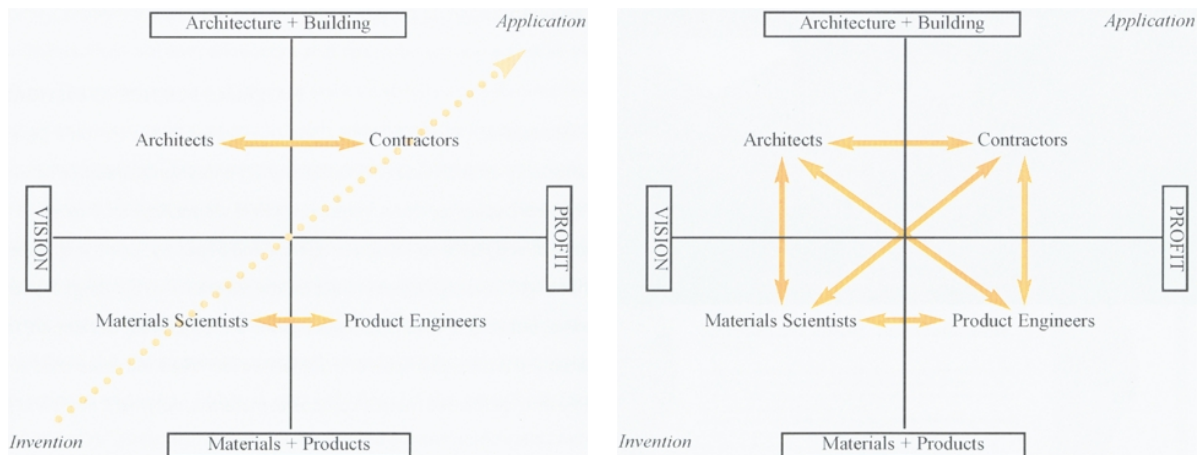
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As it exists today, the current process (left) sees little cross-fertilization. The architects propose that more dialog will increase quality and scope within the industry.

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ninitely not after mass production, Sanderson says

- “Aerogels,” which have 14 times the insulation value of a single ¼-inch pane of glass at comparable thickness and 97 percent the transparency of glass; “it’s a leap in building technology that will appear ordinary to most consumers,” Sanderson says
- Materials technology transfer, for example, from the National Aeronautics and Space Administration; possible materials candidates include silica gel bricks, carbon fibers (used in composite materials), polymers, and foamed metals (lightweight, high-strength nickel aluminide); the architects will model new architectural uses for the materials.

A Web site to share ideas

In short, Kieran Timberlake believes that the profession needs to redirect the energy of the traditional building industry to meet the challenges of the new century. This redirection will require “thinking outside the box,” and a revolutionary approach. “It questions everything,”

Kiernan says.

The Latrobe Fellowship project will take advantage of the times from the onset, launching a Web site, www.latrobefellowship.com, to serve as a collective research repository—of materials ranging from historical data to the latest materials experiments—where architects can exchange data and ideas. The group also proposes to share its information through:

- A multidisciplinary symposium (in the spring of 2002, most likely in conjunction with U. Penn’s Graduate School of Fine Arts)
- An exhibition (right now, they have their eyes on Los Angeles; Washington, D.C.; and New York City)
- Articles in the press.

Architects as researchers

Kieran Timberlake explains that the Latrobe Fellowship will give them an opportunity to demonstrate to architects and the building industry at large that there is a place in the architect’s office for research. Not only do they both teach at U. Penn’s materials research lab, they conduct research within their office and have both won the Rome Prize, served as

the Eero Saarinen Distinguished Professor at Yale University, and—as partners—received a Graham Foundation research grant in 1992. Their firm of 40 people, founded in 1984, has won numerous design and research awards.

The architects point out that while corporations return up to 40 percent of their profits to research and development, less than a tenth of 1 percent of architecture profits goes toward the same end. While the firm’s approach may at a glance seem “far out” for an architecture firm, in an ideal world, the members of Kieran Timberlake conclude, their firm would not be unique for conducting research on an ongoing basis. “Research isn’t something that should be circumstantial,” Timberlake says, “We—architects as innovators—need to carve out our resources to do it.”

Finally, the architects indicate that they are eager to share their research with their peers. They invite all to visit their Web site, www.latrobefellowship.com, which is scheduled to be up and running by mid-July. “We believe in collective intelligence,” they say, “and endeavor to make this your research as much as ours.” ■