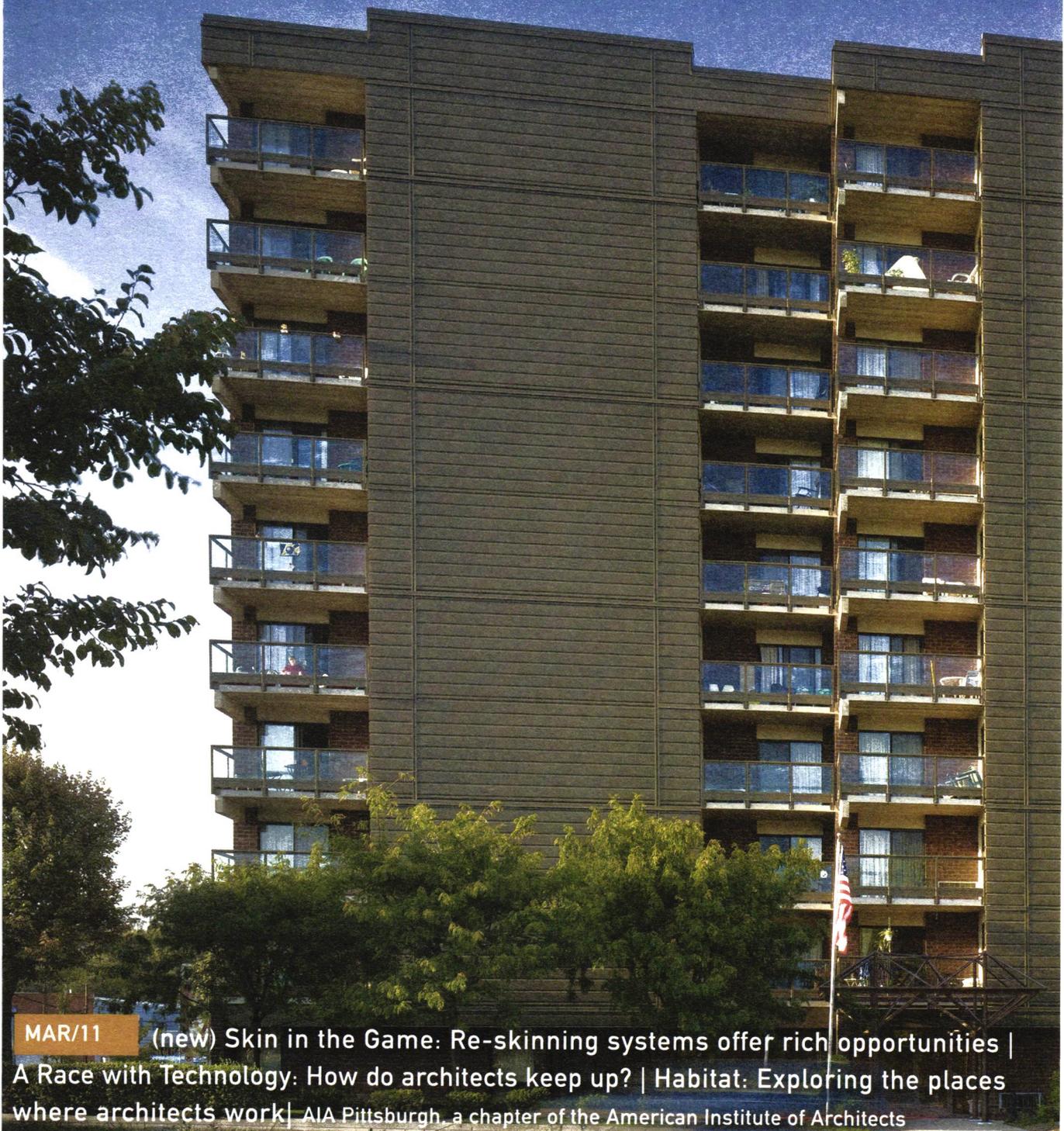


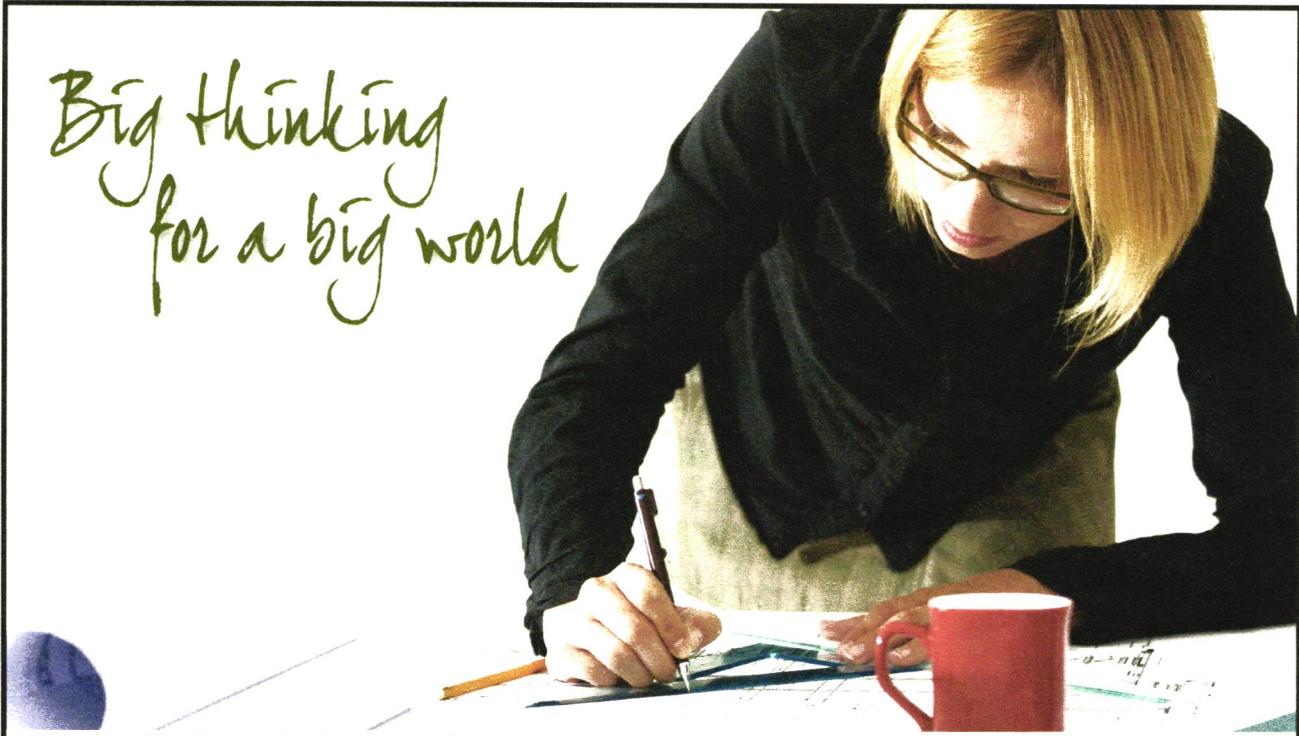
COLUMNS



MAR/11 (new) Skin in the Game: Re-skinning systems offer rich opportunities | A Race with Technology: How do architects keep up? | Habitat: Exploring the places where architects work | AIA Pittsburgh, a chapter of the American Institute of Architects

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HOMEFRONT

BY BECKY SPEVACK



By the time of this printing, this year's Oscars will already have been handed out, and we will know what movie will join the ranks of some of the greatest films to be considered "Best Picture". But at the time of this *writing*, I am anxiously awaiting the night of the Academy Awards to see who has been chosen for Best Actor, Actress, Director, and of course, Picture. While I admit that I don't get out to the movies nearly as often as I did, say, a mere two years ago, the marvels of modern technology – i.e. Netflix and RedBox – have granted me access to new releases fairly frequently. I haven't had a chance (yet) to see all, or even a majority, of the nominees, but there are a few that I have had the chance to watch that have stood out, not only as films, but for amazing landscapes, for feats of the imagination, for the way a mix of craftsmanship and technology have collaborated to fill a screen with worlds both wholly familiar and completely unrecognizable. Two that have stood out in my limited exposure are *Inception* and *Alice in Wonderland*. The built environment plays an instrumental role in both, with imaginary dream cityscapes filling the frames of the former and the latter featuring the legendary Wonderland reimagined in ways only Tim Burton could. Film has been giving audiences entry into unknown and impossible worlds for decades, peaks into future and distant dimensions, and the latest technologies have continually been applied in the industry to wow audiences over and over.

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Here in the real world, it's not quite as easy to adopt new technologies so quickly (nor, perhaps, should it be). The implications of how software translates to the physical environment is not always apparent. It is easy to be impressed by all of the possibilities you can see on a screen, without fully grasping the long term ramifications. This issue, writer Courtney Patterson tackles how the multiple generations making up the profession of architecture approach changes in technology and in working style. How have firms addressed the adoption of new software? How have the generations learned to work together to best utilize each individual's talent and knowledge?

Also within these pages is our cover story, "(new) Skin in the Game", which introduces a new type of building envelope – a Pressure Equalized Rainscreen – that is starting to gain popularity as a new, energy efficient way to reskin older buildings. This building makeover not only greatly improves energy performance, but also gives the building a second chance, a fresh start with a more modern and contextually appropriate appearance. Solutions such as this will (hopefully) help breathe new life into the existing infrastructure, saving in materials, money, and most importantly, resources.

Films have long shown us a future of flying cars and über-mod cities. But that future is now, and our cars are firmly grounded. The future that was envisioned 50 years ago is not what has become our present-day, but that doesn't mean that the advances we have made aren't stunning nonetheless. As quickly as new technologies are being developed, I think it's safe to say that the next 5 to 10 years hold a lot in store. I'm excited to see what the future may bring. **C**



OUR SURVIVAL, OUR SUCCESS

BY ERIC OSTH, AIA

Indeed, we are in challenging times for the field of architecture. The good news is that, historically, great industries have been both established and rejuvenated in challenging times. In the face of adversity, problem solving and critical thinking are often at their peak. As architects, we are all engaged in creative problem solving, and as we adapt to new methods and look forward to rejuvenated business, we have the opportunity to become even more valuable to our communities. As I attend more and more AIA events, talk to my fellow practitioners, and hear predictions of future needs, I find myself equally passionate about our survival and our success. I believe that the following three points are essential for our profession to remain vital and respected:



1) Architects need to collaborate more. At Build Pittsburgh 2009, I was impressed to hear about the collaborative process for the Carnegie Libraries by local architecture firms of EDGE studio, Loysen + Kreuthmeier Architects, Pfaffmann + Associates, and Lubetz Architects. Although each firm provided services to an individual library, they all shared their knowledge in a collaborative process with complementary disciplines. Each resulting library is very unique, but collectively, the network has been re-branded for an improved user experience. As a result, the entire system has been transformed in the eyes of the public. Collaboration can be transformative to clients, consultants, constituents, and communities.

2) Architects need to focus on cities. Above all else, architects fear marginalization and the standardization of our tools and solutions. By focusing our work on urban infill sites, where skillful and custom solutions are required, architects will continue to be an essential part of develop-

ment work. My neighborhood library, the Squirrel Hill branch of the Carnegie Library, is a great example. As part of the Carnegie Library initiative, Art Lubetz, AIA transformed an unassuming and unremarkable structure into a signature landmark in the heart of the neighborhood. It is now the community anchor of Squirrel Hill.

3) We need young architects. Statistical data from AIA National tells us that 70% of all practicing architects will retire in the next 10 years. When that is considered alongside the research of my fellow board member, Dick Rittlemann, FAIA,

which finds that, at even modest growth rates, the U.S. may double its square footage by the year 2030*, it is clear that there will not be enough architects to satisfy the demand for growth. This is not good news. If we do not have young, collaborative, creative, and energetic architects in the coming years, and enough architects to defend the State regulations under which we practice, the nation will build without our input.

This year, the Board and the fantastic AIA staff have solidified a strategy for three new bold initiatives to prepare our organization for the future. The first is the development of a new, comprehensive communications program that will allow our members to connect, exchange information, and stay informed even better than before. We plan to implement the program this year, and we look forward to your feedback. The second is a long-term strategy to further enhance our Continuing Education program, to provide members with access to new technology, information, and skills. And last, but certainly not least, we want to empower and energize the AIA with young interns and architects. Our future depends on it. 

*Columns, April 2006, documentation provided by Reed Construction Data

AIA Pittsburgh serves 12 Western Pennsylvania counties as the local component of the American Institute of Architects and AIA Pennsylvania. The objective of AIA Pittsburgh is to improve, for society, the quality of the built environment by further raising the standards of architectural education, training and practice; fostering design excellence; and promoting the value of architectural services to the public. AIA membership is open to all registered architects, architectural interns, and a limited number of professionals in supporting fields.

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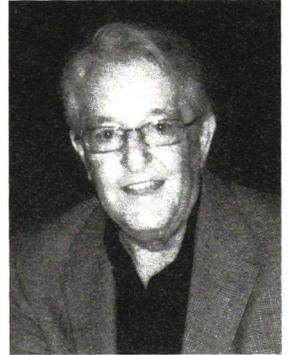
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Volume 25, No. 1

IN MEMORIAM: LEANDER MINNERLY

Leander H. Minnerly passed away December 26, 2010, in Vero Beach, FL. Lea was born in Jamaica, NY. He initially enrolled in Electrical Engineering at Cornell University, though he quickly changed to Architecture, which became his lifelong love. He graduated from Cornell in 1959, and 1961 with a Master's Degree of Architecture. In 1961, Lea came to Pittsburgh, joining the architectural firm of Deeter Ritchey Sippel, later becoming a Principal. In the 70's, he co-founded the Selck-Minnerly Group. Lea became a Principal of The Design Alliance Architects in 1981, remaining with TDA until retiring in 1993.



Lea was a talented and dedicated designer, participating in the execution of many regionally important projects. His efforts included working on the design of the original Three Rivers Stadium and the design of Harmarville Rehabilitation Center. While at TDA, Lea was Design Principal for the award-winning entry in the competition for the Pittsburgh Center for the Arts master plan and the award-winning Mine Safety Appliances Corporate Headquarters in Fox Chapel.

Upon his retirement, Lea and his wife, Rosalie, relocated to New Hampshire to run a small lodging community. Ten years later they retired to Florida.

While at Cornell, Lea was a founding member of the Sherwoods, a men's triple quartet a cappella group, which toured the world performing for servicemen and the public. From 1998 until his death, Lea was instrumental in promoting the Sherwoods performing in various cities several times a year.

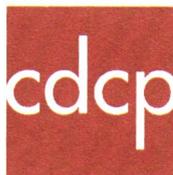
A memorial celebration will be held in Pittsburgh at Phipps Conservatory on May 20th at 5:30 p.m. 



DESIGN EXCELLENCE LECTURE SERIES: MARYSUE BARRETT

Connecting the Dots – Communities and Partners Creating Change

Great neighborhoods and cities do not happen by coincidence – a perfect mixture of active citizens, visionary leaders, and organizations often align to create change. Civic connector, intellectual, and political strategist, MarySue Barrett is the final lecturer in the Community Design Center of Pittsburgh's 2010/11 Design Excellence Lecture Series, speaking on Monday, April 4th at Point Park University. MarySue is the president of the Metropolitan Planning Council (MPC) in Chicago and connects the dots between regional needs and the individuals and organizations that can make change happen.



DESIGN
EXCELLENCE
LECTURE
SERIES

One of MPC's current projects, *Placemaking Chicago*, has educated and empowered citizens to begin thinking about their neighborhoods and offering simple ways to make them a better place to live. MarySue and MPC work at the neighborhood level by assisting groups in remaking and connecting their neighborhoods, work at the local government level by influencing policy, and work at the national level with by advocating for federal investment reform. Tickets for MarySue's lecture can be purchased through the Community Design Center of Pittsburgh's website. (www.cdcp.org)

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Where: David L. Lawrence Convention Center

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(new) skin in the game

Re-skinning systems offer rich opportunities to renew aging high rise buildings

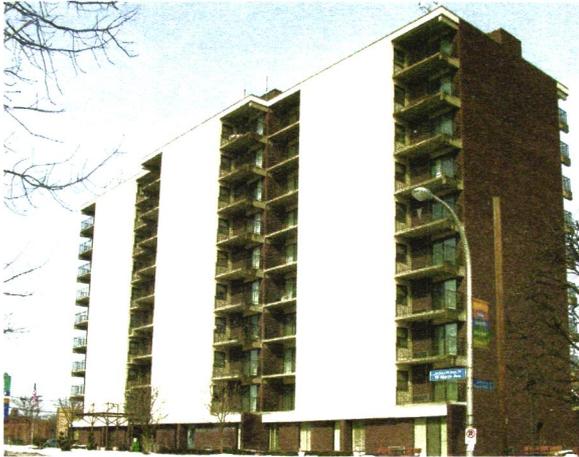
BY SHELDON GOETTEL, AIA AND SUSAN ENGLERT

Pittsburgh and other cities throughout the Northeast have large stocks of aging commercial, residential, and institutional buildings. Many are high rises that were commissioned after the Second World War to fill urgent needs for space.



These office and housing towers were designed when energy prices were cheap and stable, and when the science of building envelopes was rudimentary by today's standards. Their vertical envelopes, i.e. exterior walls or skins, are often simple 'barrier' designs that depend on the outermost surface of the wall to manage the forces of wind and rain. Today it is common to see these barrier systems failing, in terms of technical performance, sustainability and aesthetics. When maintenance or repair of an aging envelope won't suffice, re-skinning offers rich prospects for architects and owners: to improve their building's energy performance, to solve long term maintenance problems, and to make a new and better contribution to the urban setting.

INSET AND LEFT: Before and after re-skinning of West Park Court by Perfidio Weiskopf Wagstaff + Goettel. Design team: Sheldon Goettel, AIA; Jan Irvin, AIA; Marc Ford; Steven Albert, AIA; and Susan Englert



West Park Court before and during the re-skinning process



THE ENVELOPE, PLEASE...

As mentioned in the recent State of the Union, and reiterated during a visit to Penn State University, President Obama has announced tax breaks and financing sources for upgrades and retrofits to improve building energy efficiency. Re-skinning may offer such an opportunity, in synch with the new push for better building performance.

An effective vertical envelope is the most important factor to the energy performance of a building. MEP engineers testify that every upgrade and retrofit of heating, cooling, ventilating, and lighting systems is driven, in large measure, by how well the exterior walls perform. A truly good enclosure reduces heating and cooling challenges, offers features for natural ventilation, and introduces and helps manage natural light. This allows for smaller and more efficient equipment, lower fan speeds, less need for artificial light, and less expense when equipment is changed out in replacement cycles. And, of course, the envelope of a building defines its public presence. Drab remnants from the 1950s, '60s, and '70s make bad neighbors, while a bright new skin on a tall building can be an uplifting force for blocks around.

THE "SMART" TECHNOLOGY BEHIND ONE APPROACH

Re-skinning needn't – and often shouldn't – mean replacing a building's exterior walls with

a new version of the original. Re-skinning is an opportunity to explore "smart" technologies that increase energy efficiency, improve durability, and exploit the expressive possibilities of the new cladding systems. A case study: West Park Court is a high-rise apartment building for low-income seniors. Located opposite West Park in the heart of the North Side of Pittsburgh, the building's core was soundly built and well maintained, but it was faced with a fragile Exterior Finish Insulation System (EIFS) designed as a barrier wall. EIFS cladding systems consist of insulation board secured to a rigid surface like exterior gypsum sheathing, and base and top coats that are reinforced with fiber glass mesh. The EIFS at West Park Court was severely degraded and was replaced Perifido Weiskopf Wagstaff + Goettel with a very different kind of envelope, a Pressure Equalized Rainscreen, which has also come to be known by the initials "P.E.R."

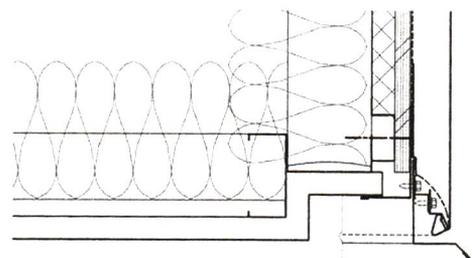
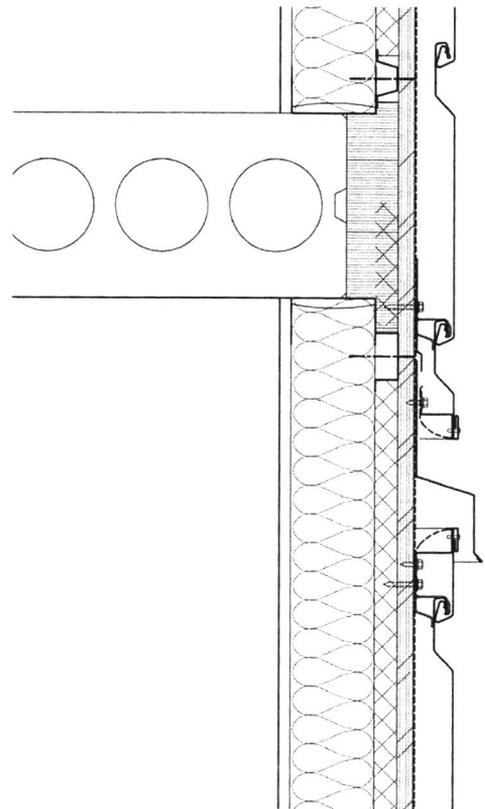
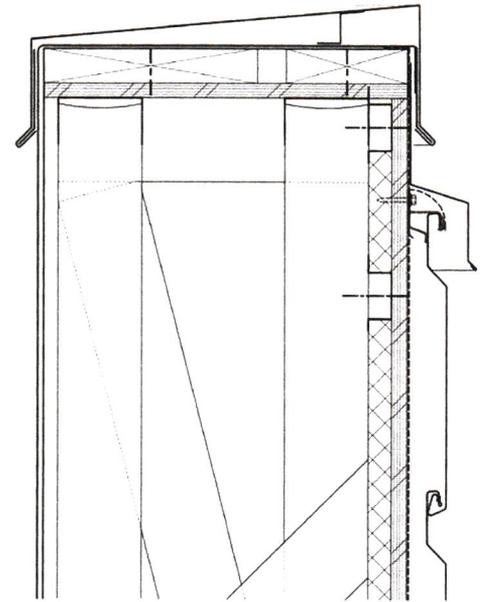
The owners had a list of basic priorities: reduce heating, cooling, long term maintenance, and replacement costs. They were especially interested in addressing cumulative water damage that threatened the residents by creating unhealthy living conditions. But another compelling goal was to renew the derelict exterior of this building. West Park Court is located on a very prominent site, across from a city park, and within view of the National Aviary.

West Park Court was re-skinning entirely

from the outside with durable pre-coated aluminum panels as key components of a custom designed P.E.R. This technology provides an envelope that is at once handsome, energy efficient, and highly effective in its management of wind and rain. And a P.E.R. is very durable and can be expected to last for a minimum of 50 years.

P.E.R. technology has been available for decades, but is still not well known in the construction industry, and application on major projects has been slow in coming. P.E.R. curtain walls harness natural forces to efficiently control the most significant cause of water penetration in curtain walls – air pressure differentials between exterior faces and the cavities in walls that literally pull water into walls at joints and openings.

In a P.E.R. the exterior envelope is divided into a series of independent chambers, each with a rigid exterior face and a backing substrate. The size of the chambers and the geometry of the vents at the tops and bottoms of each chamber support the active and independent management of air pressure in each cavity. The vents are sized to quickly equalize pressure, accommodating the variable conditions of wind on the building's outer surfaces, and the wide range of pressure differentials that can be expected on a tall structure. P.E.R. walls "breathe" through these vents equalizing air pressures in a process of continuous, and nearly instantaneous, adjustment. P.E.R.s are therefore virtually weather-tight with open joinery, removing the need for most sealants. When water does penetrate the outer skin, air movement inside the chambers quickly dries any wetted surface. In the summer the vents produce a "stack effect" that helps cool the building. In winter and summer the separation of the outer skin from the core of the wall provides an important thermal break. A P.E.R. is in effect a machine that actively manages variable conditions, and does so with no moving parts.



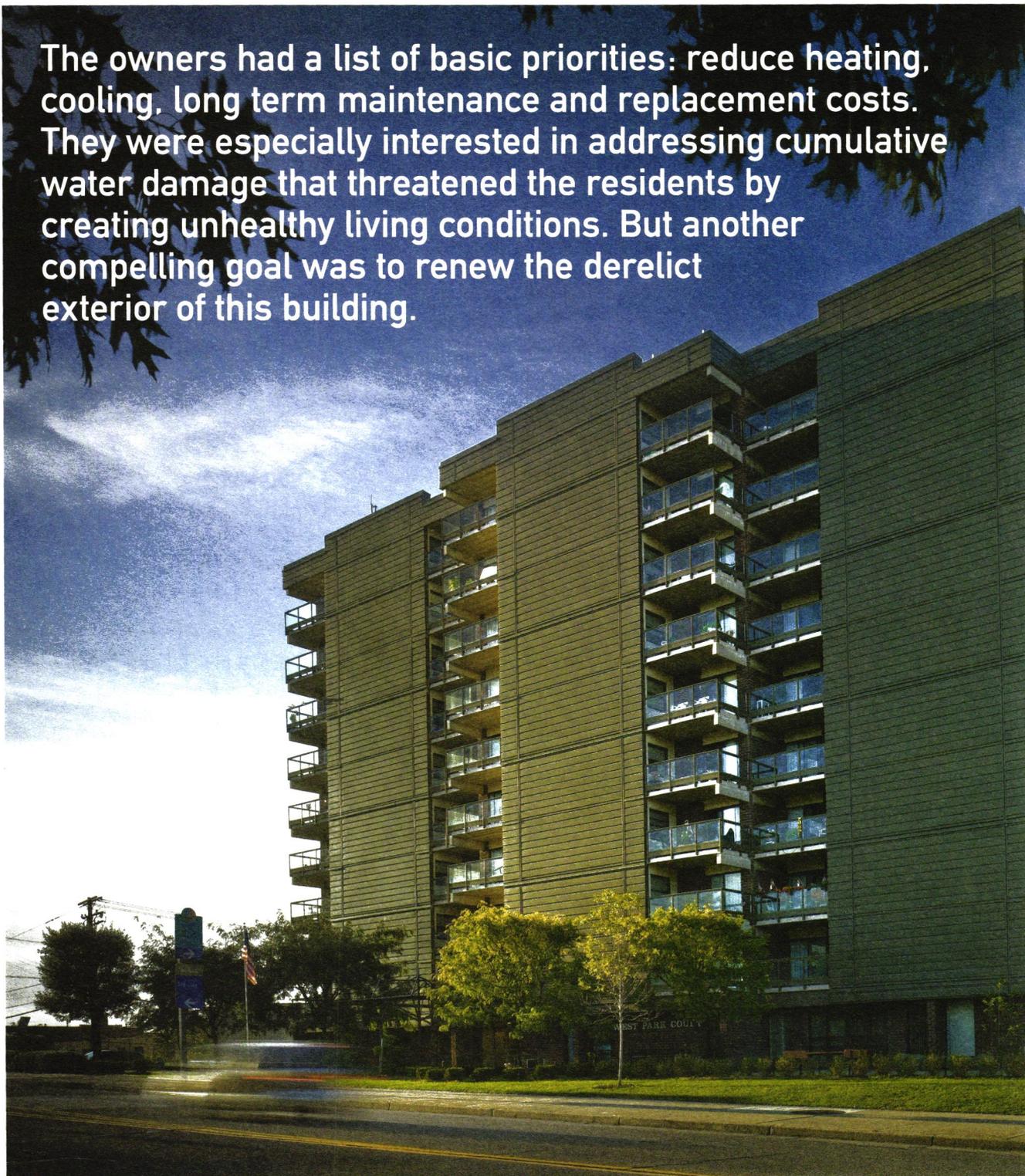
West Park Court details

CONSIDER EXPRESSIVE POSSIBILITIES

For the P.E.R. at West Park Court, the architects designed chambers for each of the tower's façades. Two-story modules are flanked by smaller chambers at bounding edges to handle the swirling action of winds that can be expected at these variations in building geometry. The

outer skin of each chamber stands off the inner body of the wall approximately 1 inch, since, generally, the less deep the cavity, the faster it can be fully pressurized. The outer skin is made of folded and pre-finished aluminum panels in silhouettes largely selected from a manufacturer's standard line. Aluminum proved most feasible for this project, but stainless steel, cop-

The owners had a list of basic priorities: reduce heating, cooling, long term maintenance and replacement costs. They were especially interested in addressing cumulative water damage that threatened the residents by creating unhealthy living conditions. But another compelling goal was to renew the derelict exterior of this building.



per, and zinc might also be considered.

The building's new aluminum P.E.R. achieves the owner's worthy sustainable design goals: it is at once more durable, more reliable, and far more energy efficient than the original EIFS barrier system. The new envelope was installed almost entirely from the outside, and the work had very little impact on

residents. Perhaps an equally satisfying aspect of the project is that the design requirements of the P.E.R. yield an architecturally refined solution that transforms the image of the building, restoring it as an elegant "tower on the park." It is an example of how the detailing of P.E.R. walls offer designers exciting possibilities to express scale and materiality in ways that can contribute to the richness of architectural expression. A win-win proposition in terms of smart performance and aesthetics. A final bonus is that skills involved in this work are readily mastered by carpenters, who find the details of P.E.R. construction to be consistent with things they have long understood about exterior walls.

The P.E.R. approach to re-skinning a building can be applied to hundreds of high-rise towers throughout the mid-Atlantic and Northeastern states, and in a variety of materials and configurations. The principles from West Park Court are being applied in a fresh iteration at another Pittsburgh high rise with an unsalvageable EIFS skin, at Perrysville Plaza, a nine story apartment building in the Perry Hill Top neighborhood.

LARGE SCALE BENEFITS FOR THE ENVIRONMENT(S)

As with many Pittsburgh high rises, West Park Court's original EIFS skin proved expensive to maintain and prone to cracks and leaks leading to the formation of mold. The energy efficiency of the building was only average. But the most significant environmental challenge of the original skin was its replacement cycle of 15 to 25 years.

Replacement of an EIFS skin is an extraordinarily expensive and labor intensive operation. It requires all the mobilization of scaffolding of new construction, but with the added challenge of selective demolition that must be done, quite literally, 'by hand.' EIFS is glued to sheathing that is in turn screwed to curtain wall studs.



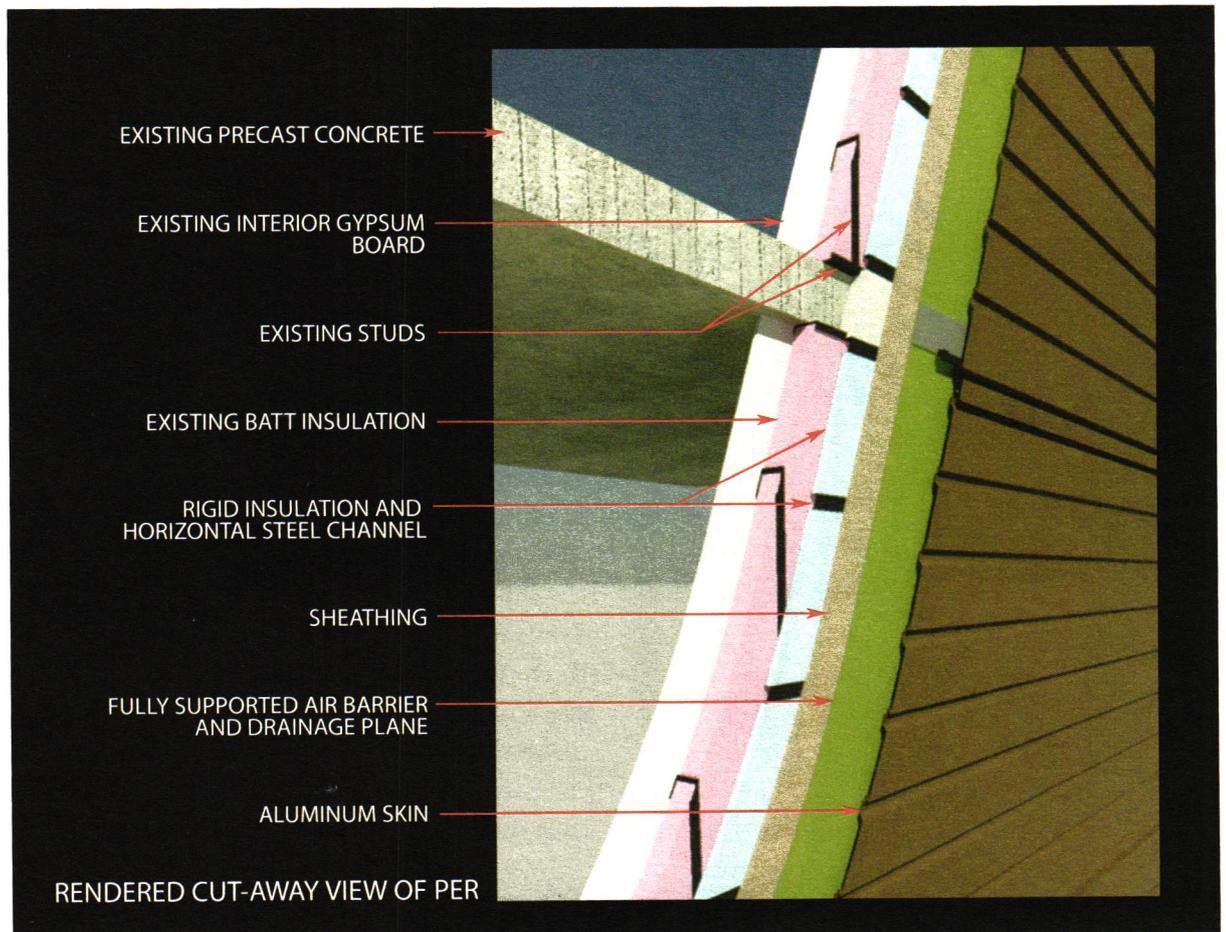


Perrysville Plaza is another apartment tower from the 1980s. The original EIFS skin is failing. A new P.E.R. for this building is currently in the process of being funded.

It must be removed in small pieces, backing out each screw individually, to avoid damaging the limber flanges of the curtain wall studs and cracking interior finishes. For this reason replacement involves substantially more labor than the original installation. It is more costly to the owner on a \$/Face Square Foot (FSF) basis. It is more costly to the environment in terms of energy expended. It is more costly in terms of waste. An EIFS demolition produces dumpster loads of unsalvageable waste that is

laminated, nearly impossible to separate, and often tainted by mold.

The key to improving the environmental footprint of West Park Court and similar high rise buildings is to use systems that break the cycles of continual deep maintenance, and frequent need for full replacement. The new P.E.R. on West Park Court can be expected to last through at *minimum* two normal replacement cycles for an EIFS barrier application. Throughout its lifespan it will be more energy



efficient and easier to maintain. At the end of its life the materials of the P.E.R. can easily be recycled.

For re-skinning projects, architects and owners should consider an expanded spectrum of criteria for measuring success. Triple Bottom Line Analysis offers a practical framework to take into account the ecological and social performance of a design's intervention. For West Park Court, that evaluation might include:

PEOPLE - The quality of life for residents is improved by the enhanced performance of the building, with reduced need for heating and cooling, and a bright new image.

PLANET - The long lifespan of the new P.E.R., the use of aluminum as the principle material with its high percentage of recycled content, the greatly reduced need for maintenance, and the significant energy savings that are delivered by the performance of the system, all serve to reduce the carbon footprint of West Park Court.

PROFIT - The payback for West Park Court was calculated relative to performance results of a previous P.E.R. re-skinning project at another high rise apartment building, St. Theresa Plaza, also in Western Pennsylvania, and in the same wind/rain climate. At St. Theresa, data was collected on energy costs for 3 years, and an annual savings averaging 14% was recorded, attributable solely to P.E.R. replacement of an EIFS barrier wall. At West Park Court, where the project scope included P.E.R. re-skinning, and upgrades in HVAC and lighting equipment and controls, projected annual savings of \$5400 are expected from the P.E.R. alone.

But, in the spirit of Triple Bottom Line, a broader, more compelling scope of savings must be considered, factoring in maintenance or replacement cycle costs, and handling of waste materials. An initial premium is paid for a P.E.R. over a plain rainscreen wall, but analysis using published DOE values demon-



P.E.R. module

strates that this re-skinning will deliver impressive long term savings. At West Park Court, the premium was approximately \$230,000 for initial construction but the life cycle costs of the P.E.R. (at 50 years) will provide economies that are conservatively valued at more than \$3,000,000.

Savings of this magnitude make the economic case for re-skinning, with a P.E.R. or other technology. Energy savings documented at St. Theresa Plaza made a compelling precedent for the owner at West Park Court. Results from that project, in terms of energy savings and aesthetics, made the case for the owner of Perrysville Plaza for applying P.E.R. for replacement of that building's skin. The core of the re-skinning of West Park Court is the P.E.R., a self-adjusting, low maintenance, long lived system that greatly improves the energy performance of the building. As one example of a re-skinning approach, P.E.R.s provide an excellent model of how to design for sustainability, and, at the same time, how to improve architectural value. **C**



habitat



Exploring the places where architects work > evolve environment::architecture

Housed in the heart of Friendship, evolveEA has made a name for itself as a firm that considers sustainable design as more than a catch-phrase – to them it’s “a dynamic process of understanding and of redefinition and, at its core, is a cultural phenomenon.” Even their work space echoes that belief, as owner Christine Mondor, AIA explains...



Who designed the office/space?

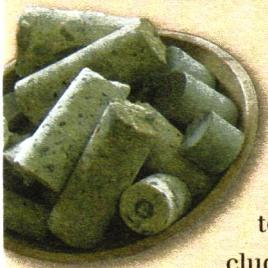
The space is a pretty simple box with windows at one end and a kitchen at the other. The design was really in the workstation. At the time all three partners and our intern agreed that 4 U-shaped workstations would be perfect for our drawing boards and computers. How things have changed – now we have 9 people in the same space, using the components of the original design!

Would you say the philosophy of the firm is expressed through the design? How?

Our work often focuses on bringing diverse expertise together to solve problems and we have different disciplines in-house and as outside collaborators. The openness and compactness of the space works well to break down territorial boundaries, both physical and psychological.

What is the office coffee policy?

Coffee, for us, is more of an experience than a drink. While we make great coffee, we also got to design a space to drink it in – Vولو Coffee is across the street and it has provided creative energy in all senses of the word. Needless to say, we have an account there.



How long have you been in this space?

We moved in 2004, in part charmed by the building’s history of creative enterprises including the Dance Alloy, a fine arts book binder, and other artists. The previous tenant in our space had been a fashion designer and we loved the patina of creativity.





Why was this location/neighborhood chosen as home base for the firm?

It was home base for Marc and I, and the community group was doing great work. Plus, we loved having dancers and other artists streaming through the building, and Penn Avenue's events like Unblurred.

What amenities are unique to the office?

We are across the street from a beer distributor so we have beer trucks that drive 4' from our back door. I guess we could almost have a "drive-by" beer service if we wanted...

Did you do anything special to meet sustainable and accessibility standards?

We have done a carbon inventory for our space and our operations and found that we have lower CO₂ emissions per person than other service industry businesses but we still had things we could improve. We made a few no cost/low cost changes to the space – like unlamping half of the fixtures that were provided by the building.

With our 2011 carbon offset purchase we will be officially carbon neutral at the close of the year!



What/where is the client base? What are client reactions to the space?

We most often go to our client's space. When we need to host larger groups, we have shared meeting spaces with other tenants in the building or find offsite spaces that provoke our thinking.

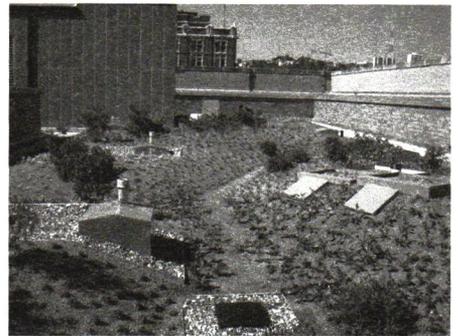
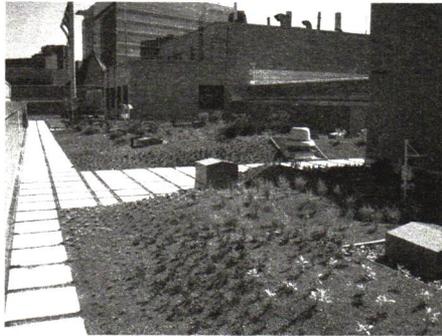
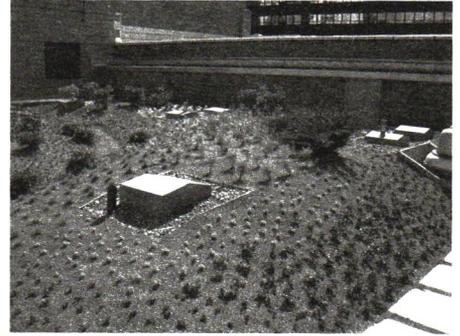
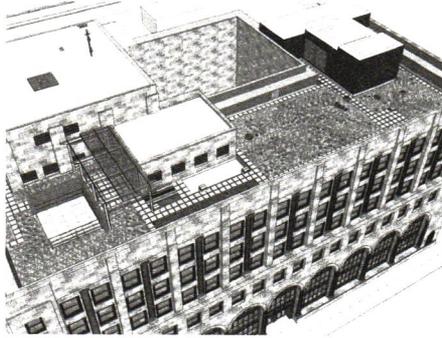
How has the work environment influenced the way you work?

We just finished a project where three of us were working independently on different parts of the same project. You would think that being 5 feet or 15 feet apart would be close enough, but we all moved our computers to a single communal table to work 2 feet apart. There is something powerful about co-location and mobile technology makes it possible to keep evolving the concept of workspace. 

BREAKING

FROM THE FIRMS

IDC Architects collaborated with Eisler Landscapes and Cuddy Roofing to renovate the Allegheny County Office Building roof, located at 542 Forbes Avenue in Downtown Pittsburgh. The new sustainable green roof system will help to manage storm water runoff, cut energy costs, reduce heat gain, and has a longer life than a typical roof system. The green roof has an integrated monitoring system by Civil and Environmental Consultants to record and display the benefits of the four different types of green roof technology used on this building (mat, tray, intensive, and semi-intensive systems). The 8,400 sf green roof is an educational and research tool that can set an example and encourage other green roof projects in the area. The firm also completed an update of the Allegheny County Airport Authority's Development Master Plan for the 3,800 acres of land adjacent to Pittsburgh International Airport (PIT). Significant investment and development has occurred in the area over the past five years, such as the Dick's Sporting Goods World Headquarters and Campus, as well as multiple industrial and warehouse facilities at Clinton Commerce Park. This updated Development Master Plan will leverage the continued development interest in the area by creating a flexible land use framework for on-going growth at this important regional transportation center.

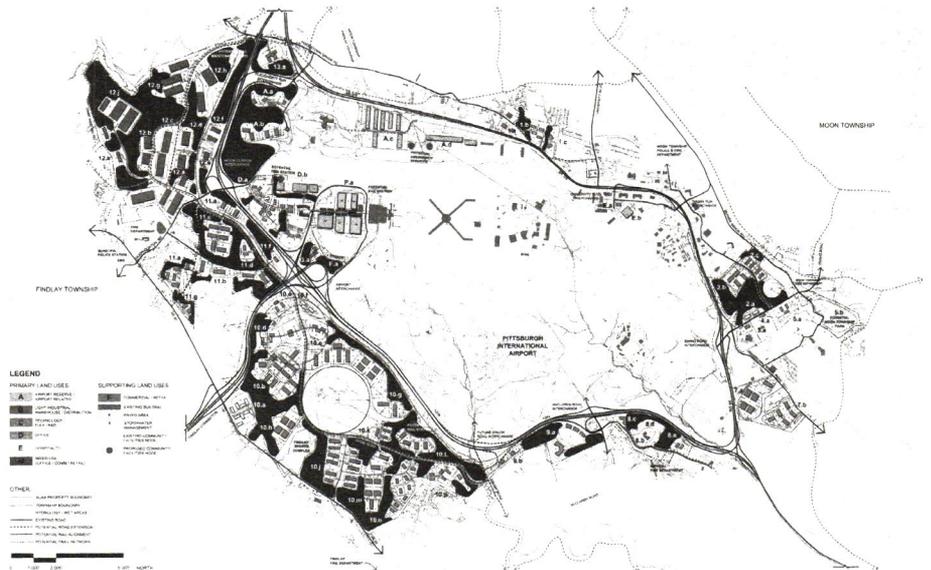


Allegheny County Office Building roof

Rothschild Doyno Collaborative has been working to develop a vision plan for the 178 acre former LTV site. The architects have been working with the RIDC and the ALMONO Partnership to craft a vision that responds to the economic, social, and physical opportunities of this brownfield with a 1.5 mile

riverfront. The plan envisions residential, green industry, office, and institutional uses that leverage the historic site assets. The design connects the surrounding neighborhood to the Monongahela River with a variety of parklets and trails. The firm has also been selected by the Virgin Islands

Housing Authority to lead vision planning for three new neighborhoods located on St. Thomas and St. Croix. The architects will be working closely with residents and government officials to redevelop the neighborhoods to take advantage of their commanding views and adjacency to the Caribbean.



Allegheny County Airport Authority's Development Master Plan

BUSINESS BRIEFS

In response to projected growth in the construction sector of the Middle East, **Astorino** has opened an office in Abu Dhabi, United Arab Emirates (UAE).



Schiller

The Green Building Alliance has hired a new executive director, Mike Schiller. Schiller is a successful entrepreneur who established Venture Outdoors, a non-profit dedicated to promoting outdoor recreation in Western Pennsylvania, and Confluence Technologies, Inc. Schiller will be just the third executive director in the organization's 18 year existence.

Stephen Marinko has joined Harchuck Construction, Inc., located in Apollo, as a project superintendent. Marinko has over 20 years experience in commercial construction.



Hoglund

The Executive Committee of international design and architecture firm **Perkins Eastman** has announced that principal **J. David Hoglund, FAIA** has been appointed

to the role of President. Hoglund, a resident of Mt. Lebanon, PA, started the Pittsburgh office in 1984, growing it into a successful practice with international clientele. Currently, Hoglund provides leadership for the firm's international senior living practice. Hoglund was previously the firm's COO for US operations.

Rothschild Doyno

Collaborative has added two members to the firm. Michelle Nermon, a recent graduate of the University of California at Berkeley, has been hired as a staff architect. Joann Mosley has been hired as a financial manager, and brings over 15 years of experience in accounting and software development to the firm.

KUDOS

Allen & Shariff Corporation was recently ranked 22nd on the Building Design and Construction Giants 300 Top Engineering Firms list. Allen & Shariff Corporation is a mechanical, electrical, and plumbing engineering/construction and project management services company, with its headquarters in Columbia, MD, with offices in Pittsburgh, PA, Salisbury MD, and Abu Dhabi, UAE.

Astorino has been honored by the Design Build Institute of America (DBIA) with the Overall Winner-2010 award for excellence in designing and building the Laurel Mountain Christian Camp in Rector, PA. The facility, which is owned and operated by the Thomas and Sandra Usher Camp, a Pennsylvania non-profit corporation,



MBA and CAP present scholarship to Jeremiah Beiter

provides a safe, comfortable outdoor experience for Pittsburgh's under-privileged youth. The firm provided architecture, engineering, site design, and construction services for the project. Additionally, Bakery Square at Eastside, designed by Astorino, has been awarded LEED Platinum designation, under the LEED for Core & Shell Rating System. Also Astorino-designed Three PNC Plaza has been named "Project of the Year" by the Engineers' Society of Western Pennsylvania.

Harry Gordon, FAIA of Burt Hill/Stantec, was appointed to the Green Building Certification Institute Board of Directors. Established in 2008, GBCI is an independent, third-party organization committed to ensuring precision in the design, development, and implementation of the processes used to increase and measure green building performance (certification) and green building practice (credentialing). Throughout his career, Gordon has focused on developing energy-efficient, environmentally-responsive solutions for a full range of

clients, and has been active in promoting sustainable, high performance design within the building industry.

The Master Builders' Association (MBA) and the Construction Advancement Program (CAP) awarded a \$7,500 scholarship to Jeremiah Beiter, a student at the University of Pittsburgh School of Engineering. This year's recipient was honored at the 2011 MBA Annual Membership Dinner, held on Friday, January 21st, at the Duquesne Club.

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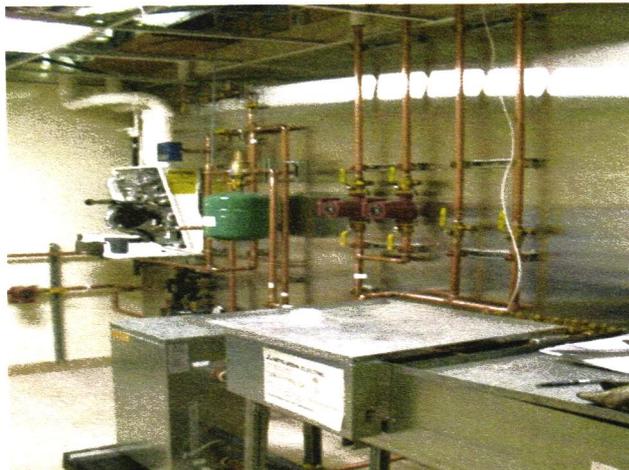
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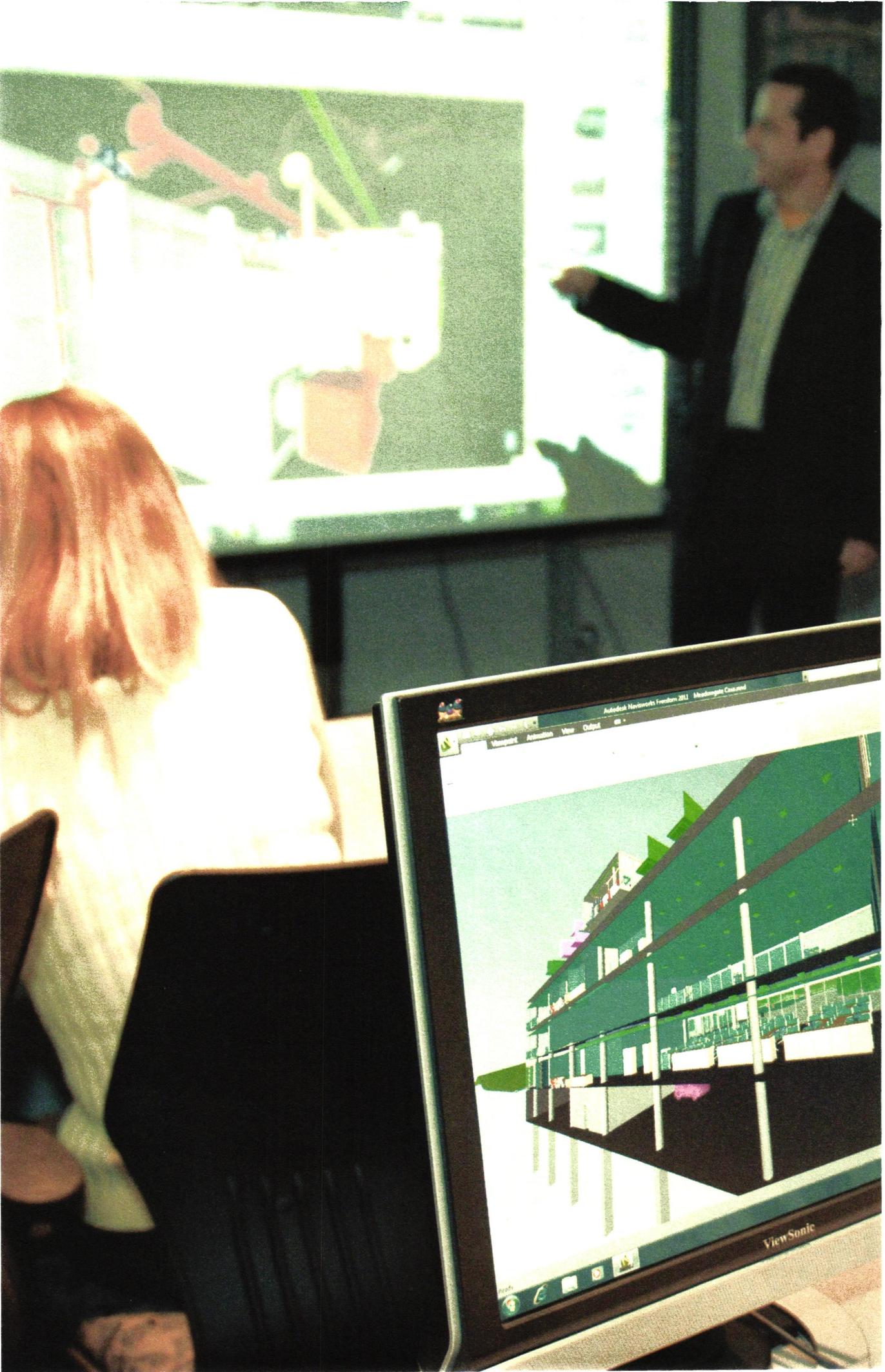
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a race with technology

How do architects keep up?

BY COURTNEY PATTERSON

When Lynn Halling graduates from Carnegie Mellon University's School of Architecture in a couple years, she will have used approximately three different versions of Adobe® Photoshop® and five versions of AutoCAD®, and that's only in five years of college, before she enters a firm where she may be required to learn a new set of software.



Over the course of her 30-year career, she will be confronted with more technological changes than any of us can imagine. Consider how architecture has evolved in the last thirty years – computers have replaced the drafting board, and Building Information Modeling (BIM) is fundamentally transforming the role of architects from solo draftsman to key collaborators in the entire design and construction process.

The problem is not unique to the architecture community. Technology is always changing and forcing us to change with it. In any organization, there are people who resist change because it's uncomfortable, because learning a new method is inconvenient, and it disrupts

INSET AND LEFT: Interactive whiteboard technology is demonstrated at Case Technologies, allowing whole teams to interact with BIM models. Photos by Anna Lee-Fields.

their routine. The question of a generation gap often creeps into discussions about the ease of adapting to new technologies: does age dictate the learning curve? While Generation X and Y have grown up with computers and cell phones, their comfort with technology does not assume a mastery of more complex software like Revit. In fact, you'll find that many of the people driving BIM adoption in local firms have been members of senior management teams.

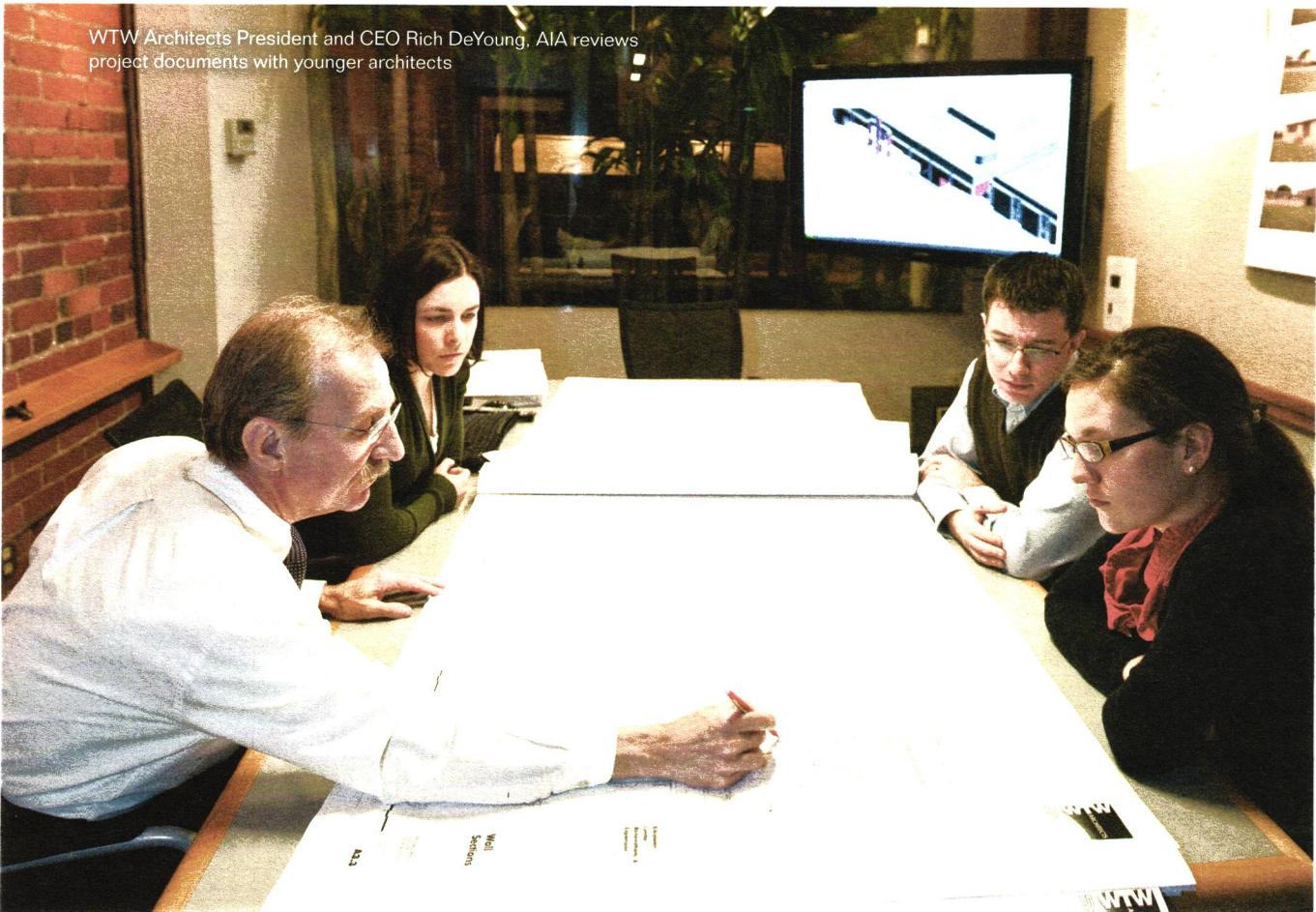
Still, innovative software and processes like BIM or Integrated Project Delivery (IPD) have widened the knowledge gaps in many firms. To produce three-dimensional models in Revit, an architect must have a sophisticated understanding of how a building is assembled – an understanding that often comes with years of field experience and collaborating on project teams. However, drafting and modeling tasks have traditionally been assigned to the junior staff to help them learn the ropes. It is always the case that staff members, regardless of age, contribute different skills and knowledge based

on their experience and education; but as the industry transitions to BIM, it's increasingly important to consider how firms can integrate their talent. How do you take advantage of what both the senior level practitioner and the tech savvy intern have to offer?

“The most successful implementations we've seen are ones where the generations come together,” says Mark Dietrick, AIA, LEED AP and Director of Services at Case Technologies, who consults with architects, engineers, contractors, and owners to help them understand how technology fits into their practice. “There has to be a much higher level of communication and coordination between the senior level practitioners and the junior level people who are actually using the technology. BIM provides an ideal platform to enhance the mentoring process.”

As technology continues to shape the profession, it offers opportunities to improve the ways we share knowledge within firms and enables learning at all stages of one's career.

WTW Architects President and CEO Rich DeYoung, AIA reviews project documents with younger architects





Digital Fabrication Lab at CMU

LEARNING FROM THE MASTER

Before architectural drawings are sent out the door at WTW Architects, President and CEO Rich DeYoung, AIA, sits in the conference room to review them with the younger architects who worked on the project. It's his way of sharing what his thirty-plus years of practicing architecture have taught him about how a building goes together. Having driven the adoption of technology at the firm since the early 1980s, he also knows the nuts and bolts of the design software the interns use.

"It's important that some of the seasoned professionals are conversant enough in the software that they can get beyond the screen that separates the younger, inexperienced architect and the experienced architect and help them learn with the tool that's available," says DeYoung. When DeYoung encounters pushback from an intern about the capabilities of the software, he can offer an alternative: "Let's try this feature of the software. Let's look at it another way."

DeYoung's dialogue with interns is reminiscent of the apprenticeship model on which the architecture profession was built, where the younger person is taught at the hand of the master, working alongside, observing, and asking questions. Nick Liadis, intern architect at Desmone and Associates, believes that mentoring is intrinsically tied to the profession, given its collaborative nature. When it comes to interpreting code, coordinating with engineers and contractors, and designing technical details, he must

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rely on his senior colleagues when his limited experience does not afford the answers. "With the ever-increasing amount of diverse information architects are exposed to in academia, often times, specific real world knowledge can't be taught," he says. "It's through mentoring that I gain that knowledge."

In a formal way, NCARB's Intern Development Program facilitates the mentoring process. Licensed architects serve as mentors for architectural interns, making sure they're exposed to the breadth of experiences that enable them to hone the skills required to practice as independent architects.

Yet, at many firms today, where principals wear multiple hats and must worry about all the facets of running a business, one-on-one training may seem impractical. Michael Warren, AIA, claims that those mentoring opportunities are invaluable and especially pertinent as more and more firms use BIM software. "If interns could get in the field to see the projects they have worked on and have someone explain why they dimensioned a section this way, made that line thicker or added notes here, they would have a better understanding of the relationship between the rendering and the physical building," he says.

TEACHING THE TOOLS OF THE TRADE

Considering the vast amount of knowledge that comes with simply doing a job, universities must constantly reevaluate whether they are effectively preparing students for careers in archi-



ecture when instruction is weighted so heavily in theory. Because the number of digital design tools has skyrocketed and the software learning curve has grown significantly, institutions now have a greater responsibility to ensure that students have at least a basic understanding of the tools before they enter practice.

The role of the university, suggests Jeremy Ficca, AIA, Associate Professor and Director of the Digital Fabrication Lab in Carnegie Mellon University's School of Architecture, is not simply to train technicians, but to provide students with a framework so that they understand why and when they would use digital design tools. "The expectation is that students come to understand the implications and opportunities inherent with BIM tools in the context of contemporary practice, why they're relevant, why they're significant, and why they're not just another representational CAD or modeling application." When Ficca joined Carnegie Mellon University's faculty in 2007, he set up the Digital Fabrication Lab [dFAB] to provide students with hands-on opportunities to translate their digital design work into physical output. This sets up a feedback loop in which physical production and materiality inform the design process and in return affect one's material sensibility. Here, the student's immersive experience prepares them to communicate with the people who will be constructing their designs.

Besides giving students the chance to learn firsthand the strengths and limitations of design tools, the lab also helps them cultivate a capac-

ity for self-discovery, a life skill that will come to their aid continually as they move out of the classroom and into a firm. Some firms, especially smaller ones with limited resources, leave the onus on staff to teach themselves new technology. Even at software-saturated CMU, Lynn Halling claims that she has learned a majority of software through her peers. Having unlimited access to an extensive collection of modeling and drawing software is allowing her and her fellow students to discover "the method that works best for us as designers, using the software as a tool for representation rather than as a design strategy."

KEEPING PACE WITH TECHNOLOGY

Keeping abreast of technological changes throughout one's career can be daunting, but professionals need to commit themselves to continued learning if they hope to get the most value from their software. When helping companies implement BIM into their practice, Case Technologies designs a curriculum customized to each client, using one of the client's projects as the training material. Because BIM is so expansive, learners can easily become overwhelmed if too much information is dealt at once. To make the learning digestible, trainers deliver the modules, which are geared toward specific processes, in smaller doses, allowing clients to absorb and apply the information before they take on the next modules.

The key to a successful BIM implementation, explains Dietrick, is to engage a wide range of

project participants in the process – not simply the people doing the production work but the project managers and principals, as well. Project managers need to know enough about the software to be able to monitor the model, manage schedules, and oversee the electronic review process. Principals need to understand the significant impact the technology may have on the organization and project delivery process.

Perfido Weiskopf Wagstaff + Goettel took this approach in bringing their staff up to speed with Revit. The firm was driven by a desire to change when their clients began requesting BIM. Principal Kevin Wagstaff, AIA says the firm encouraged as many people as possible to develop an ability to work with the software, so that it was not seen as a mystery that only certain designers could decipher. Rather than invite outside trainers into their office, the firm has relied on knowledgeable employees to teach others in the office and has given staff the time to teach themselves with tutorials.

Dietrick says, “A problem we see is when BIM starts more as a grassroots effort from the younger generation. If that happens, you’re only going to implement BIM to a certain level. There’s going to be a disconnect between the project architects who are using the technology and the project managers and the principals who are understanding how projects really happen and how the technology can change the way these projects are delivered. There needs to be a champion in the organization from the management level.”

At WTW Architects, Rich DeYoung was that champion. Four years ago, he decided that the firm would transition to using Revit exclusively on all projects over the course of one year. Initially, he sent groups of six to eight employees to a 1-week training session at a local vendor. Those employees became the first to complete Revit projects in the company. Throughout the project, they received support from outside trainers, who helped them resolve problems. As the first Revit projects came to a close, DeYoung divided the teams and seeded the new projects

with a mix of experienced and inexperienced staff. An in-house trainer taught the less experienced personnel how to use the software and continues to conduct regular training sessions and lunchtime seminars to keep employees sharp. During the first year, DeYoung encountered repeated pushback from project managers who resisted the shift to BIM, but each time “I would patiently listen and explain why we’re going to do it anyway.”

Because not every firm has the resources to retool and train a whole staff, AIA Pittsburgh expects to be a knowledge source for new trends and training solutions. The chapter is trying to identify the greatest education needs of the local architecture community, and intends to help architects adapt to new collaborative processes with an increased number of workshops in the future. For this year’s Build Pittsburgh, Anne Swager, Hon. AIA, Executive Director, says that she has received at least five proposals for BIM or collaborative practice classes.

Carnegie Mellon University is also trying to respond to the demand for technology training with continuing education courses targeting a wide range of practitioners from interns to experienced architects. The classes, which could be offered as early as this summer, would aim to demonstrate how architects can leverage the software to deliver better design and make them more effective practitioners. Modeled around best practices, the classes will be taught by individuals who have made successful changes in their practice. Ficca sees the courses as an opportunity for greater knowledge sharing between academics and practitioners.

When BIM is implemented successfully into a practice, it has the potential to bring everybody together in a more collaborative and integrated process – architects and contractors, interns and project managers, the expert and the novice, the university and the firm. Each stakeholder has something to gain in the race to keep up with technology, and it all begins with the commitment to learn. 



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