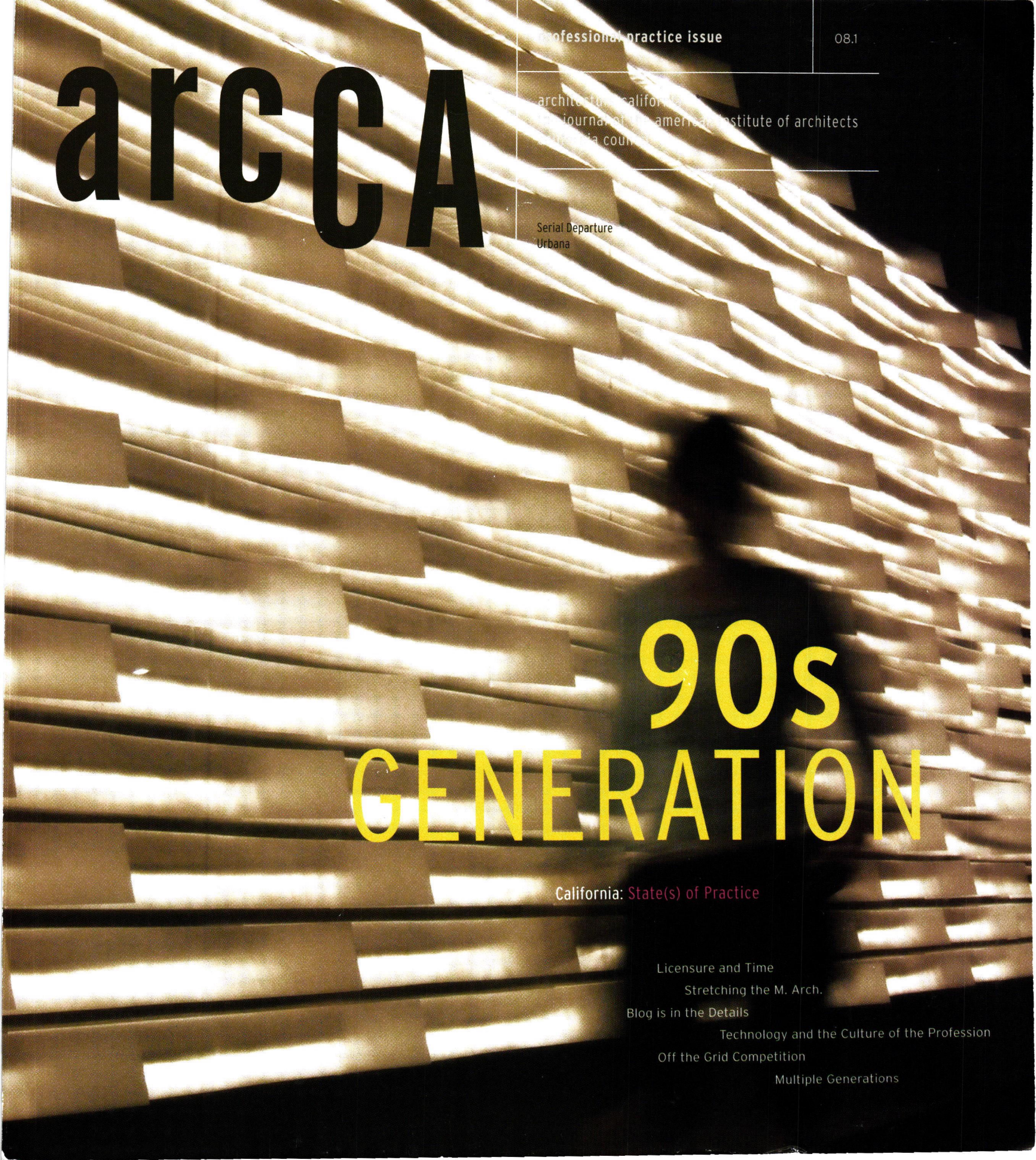

arcCA

professional practice issue

08.1

architecture california
the journal of the american institute of architects
california council

90s GENERATION

California: State(s) of Practice

Licensure and Time

Stretching the M. Arch.

Blog is in the Details

Technology and the Culture of the Profession

Off the Grid Competition

Multiple Generations

Content

Cover photo: Mina Javid and Stella Lee

arcCA, the journal of the American Institute of Architects California Council, is dedicated to exploring ideas, issues, and projects relevant to the practice of architecture in California. **arcCA** focuses quarterly editions on professional practice, the architect in the community, the AIACC Design Awards, and works/sectors.

arcCA 08.1

Editor	Tim Culvahouse, FAIA
Managing Editor	Laura Schatzkin Culvahouse Consulting Group, Inc.
Editorial Board	Paul Halajian, AIA, Chair John Leighton Chase, AIA Peter Dodge, FAIA Annie Chu, AIA Wendy Kohn Eric Naslund, FAIA Stephen Slaughter, AIA Kelly Walker Nicholas D. Docous, AIA
Design	Bob Aufuldish Aufuldish & Warinner Ragina Johnson
Production Manager	Jeffrey Kruger
Production	Lorraine Sacca
Publisher	Kathy Varney California Regional Publisher McGraw-Hill Construction
AIACC	Lori Reed Director of Marketing and Communications

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Advertising: 877.887.7175.

Inquiries and submissions: Tim Culvahouse, Editor: tim@culvahouse.net; c/o AIACC, 1303 J Street, Suite 200, Sacramento, CA 95814; 916.448.9082; fax 916.442.5346. Bob Aufuldish, Aufuldish & Warinner: bob@aufwar.com.

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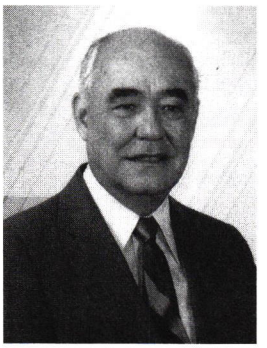
Comment

Celebrating Whit Cox



Those of you who knew Whitson W. Cox, FAIA, may have noticed that, in the soft-cover edition of *Celebrating a Century of California Architecture*, mailed with the third quarter 2007 issue of **arcCA**, the photo accompanying his biography as California's thirteenth State Architect was not of Cox, but of an earlier State Architect, William D. Coates, Jr.

If I (as editor) and the others involved in putting together this history of the *Division of the State Architect* had planned the most awkward error we could possibly make, this would probably have been it. For, as many of you also know, Cox passed away during the preparation of the book. I would like to take this opportunity both to apologize for the mistake and to say a little more about Whit Cox, a beloved figure whose career as an architect in private practice was interwoven with the State Architect's office. It is an interesting history.

In 1954, at age thirty-three, Cox was invited to become the partner of George C. Sellon, who had served, from 1907 until 1909, as California's first State Architect. Sellon, who was then seventy-three years old, died the following year. Shortly thereafter, Cox partnered with James R. Liske to form Cox & Liske, noted for their design of the second *Sacramento Bee* Building. In 1967, George Lionakis and Klyne G. Beaumont joined the firm as partners. Among the noteworthy projects from that period are the Sacramento County Administration Building, Sacramento's Pacific Gas and Electric Company Building, the Safety Center of California, and the CSU Chico Student Health Center. The firm continues today as Lionakis Beaumont Design Group, currently celebrating the hundredth anniversary of its founding by Sellon.

Cox left the firm in 1979 to form an independent practice. He served as State Architect from 1983 to 1986, notably establishing the practice of including public art in the proposal and planning phase of public building review. An accomplished abstract watercolorist, his paintings are included in many distinguished collections, including Sacramento's Crocker Art Museum.

Paul Welch, Hon. AIA, Executive Director of the AIA California Council, recalls that,

> *Whit was a close friend and colleague of mine for more than thirty years. Known for his tireless advocacy on behalf of the value of design, elevating communities, and the human spirit, Whit's devotion to family, his love of the profession, and his commitment to his community are legendary. Whit's life epitomizes the highest standards of the profession and is an extraordinary example of how one individual can make a difference. We deeply miss his infectious smile and his enthusiasm for life.*

A Note on Overabundance

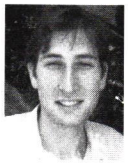
For this rather unusual issue of **arcCA**, focusing not on a topic in the usual sense, but on a generation—those architects who graduated during the 1990s—we have gathered a rich excess of material. Three of the articles included here are, consequently, excerpts from longer narratives. The full-length versions of these articles—"California: State(s) of Practice," "Five Schools, Eight Voices, Two Surveys," and David Erdman's conversation with Thom Mayne, FAIA—can be found in **arcCA** online at www.aiacc.org/arcCA.

Tim Culvahouse, FAIA, editor
tim@culvahouse.net

Contributors

Annie Chu, AIA, is a principal of Chu+Gooding Architects in Los Angeles, focusing on projects for arts-related and higher education clients. Clients include Museum of Contemporary Art, The Hammer Museum, Kentucky Museum of Art+Craft, UC Riverside, LA Philharmonic Association, Getty Center, and Southern California Public Radio, among others. She is a member of the **arcCA** editorial board and the AIA Interior Architecture Advisory Group and may be reached at annie@cg-arch.com.

David Erdman was the principal of *servo's* Los Angeles office before establishing *david clovers* in 2007 with partner Clover Lee. His work has been exhibited at the Centre Pompidou, MoMA, San Francisco MOMA, Artists Space, and Biennales in Venice, Korea, and Beijing. He teaches at UCLA and is currently the Cullinan Visiting Critic at the Rice University School of Architecture. He may be reached at office@davidclovers.com.



Sean Fine, LEED AP, is a designer at Page & Turnbull and a member of the ULI Young Leader's Group. With a joint M. Arch. and MBA, he is well suited to lead Management of Design discussions. Sean may be reached at fine@page-turnbull.com.

David Meckel, FAIA, is Director of Research & Planning for the California College of the Arts (CCA) in San Francisco. He may be reached at dmeckel@cca.edu.

Edward Mojica, AIA, is on the adjunct faculty in architecture at Cosumnes River College, Sacramento, and is principal of mas|mojica architecture studio in Roseville. He may be reached at ed.mojica@designmas.com.

Patricia A. Morton is Chair and Associate Professor of architectural history at UC Riverside. Her book on the 1931 Colonial Exposition in Paris, *Hybrid Modernities,* was published in 2000 by MIT Press. Her current research focuses on "bad taste" in 1960s architecture and its relation to postmodern architecture. She has published widely on architectural history and issues of race, gender and marginality. She may be reached at patricia.morton@ucr.edu.

Casius Pealer is a Tulane architecture graduate and a co-founder of *Arch-Voices.* He served as AIAS National Vice President from 1996 to 1997 and is currently an affordable housing attorney at Reno & Cavanaugh in Washington, DC. He may be reached at casius.pealer@gmail.com.

David Roccosalva, Assoc. AIA, is a principal at Page & Turnbull responsible for marketing. His interest in developing the Management of Design program was to increase awareness among staff about issues affecting design firms. He may be reached at roccosalva@page-turnbull.com.

Michael Franklin Ross, FAIA, is a principal with HGA Architects and Engineers, Los Angeles. He was 2007 Chair of the AIA Committee on Design and 2006 Chair of the AIACC Design Awards Jury. The author of *Beyond Metabolism: The New Japanese Architecture,* he has contributed over eighty articles to the architectural press, including *Architectural Record, Progressive Architecture, A+U Architecture & Urbanism, LA Architect, Places,* and **arcCA**. He has been on the faculty of Tokyo University, UCLA, and SCI-Arc, where Shigeru Ban was a student of his in the early 1980s. He may be reached at MRoss@hga.com.

Christopher Sensenig lives in Berkeley with his wife, Kate Berry, and dog, Blitz. He is an Urban Designer for Van Meter Williams and Pollack in San Francisco. Whenever possible, he likes to ride turtles at Turtle Park in St. Louis. He may be reached at sensenig@vmwp.com.

Paulette Singley is Program Head of Architectural History and Theory in the School of Architecture at Woodbury University in Los Angeles. She co-edited *Eating Architecture* and *Architecture: In Fashion* and has been published in *Log, ANY, Assemblage* and several critical architectural anthologies. She may be reached at paulette.singley@woodbury.university.edu.

Stephen Slaughter, AIA, began his career in Thom Mayne's studio, Morphosis, and has since worked with respected architects throughout the world, including Gary Bates (Space Lab), Wes Jones (Jones, Partners: Architecture), and George Yu (Design Office/George Yu Architects). *PHAT,* his multi-disciplinary design collaborative co-founded with Nathaniel Belcher, has exhibited at the Studio Museum in Harlem, Archilab in Orleans, France, and the National Gallery of Victoria, Melbourne, Australia. A member of the **arcCA** editorial board, he may be reached at stephen.slaughter@RNLDesign.com.

Jimmy Stamp is a designer with Mark Horton / Architecture in San Francisco. He has been publishing his architecture blog, *Life Without Buildings* [lifewithoutbuildings.net], since 2004 and is a contributing editor at Curbed San Francisco [sf.curbed.com]. He may be reached at jimmy@lifewithoutbuildings.net.

Peter Zellner is the founding principal of ZELLNERPLUS, an emerging architectural design, planning, and research firm in Los Angeles. He is the author of *Hybrid Space—New Forms in Digital Architecture* and *Pacific Edge—Contemporary Architecture on the Pacific Rim.* He teaches in the Design and Cultural Studies programs at SCI-Arc and is a Visiting Assistant Professor at the USC School of Architecture. He may be reached at admin@zellnerplus.com.

Correspondence

I enjoyed your comment in 07.4 **arcCA**. It read, nearly word for word, my exact experience during the oral examination (although it was two days before my birthday) and I had car trouble that day and arrived about twenty minutes late. The experience for me, summed-up in a single word, was terrifying. Luckily, I passed that day, because I think that at some point at the beginning of the interrogation, I resigned myself to my belief that I would be back to do this again, even though I was very prepared.

That said, I think that you need to know the material and to be able to demonstrate it through real-time Q&A. The profession as a whole is an organized fire drill—there is reason that (one part) of the licensing exam should be testing your ability to function within it.

Michael J. Stephens, AIA
Yucaipa

I wanted to compliment you on your wonderful and humorous description of your experience at the California Supplemental examination. I hope it gives rise to examination of the relevance of the exam. It reminded me of the frustration my husband faced when asked to design a squirrel cage fan to pass design during his State Board Examination forty years ago. Aside from the fact that he was already a full-fledged architect in Denmark, he failed to see the connection between a squirrel cage fan and architectural design!

Ann Videriksen, Hon. AIA
Los Angeles

I am an architect with thirty years out of school. I respectfully disagree with your comments in **arcCA**. An architect is called on to solve many problems, but the architect must first listen to fully understand the problem. If an architect cannot understand the verbal problem submitted, how can he or she answer? The verbal test, containing three-part questions, tests the applicant without relying on crib notes. Book tests can't determine listening skills. They can't be fast-talking, suede-shoed Orange County developer types to b.s. their way through. They have to have the professionalism of a physician in listening and answering correctly.

Paul S. Wheeler, AIA
Claremont

What an excellent send-up of this retrograde practice! It had me in tears. Pithy & spot-on. Shocking that no one has yet taken this on with such wit and humor. Maybe we're all too scarred. So your effort is therapeutic at a minimum, or hopefully the next step toward abolition.

Owen Kennerly, AIA
San Francisco

Back in the early '90s, I volunteered to serve on the Oral Exam Board. As examiners, we were instructed to "read the pre-determined question EXACTLY as written," without inflection or interest. We were to score the candidate's answer as "competent" or "non-competent." For one segment, we were to present the candidate with a parking lot drawing that had three or four incorrect items regarding disabled access. We were instructed that the candidate must point out all of the discrepancies and give the "correction and/or dimension verbatim" to the current Title 24 code. One of our candidates looked at the drawing and pointed out an incorrect dimension. The candidate's comment was, "I am not sure of this dimension. It does not look right, but I do not have the correct dimension committed to memory. I would have to check the code to be sure." According to the proctors, we were supposed to score the answer as "non-competent." According to the three examiners, the score was "competent." It was also the last time I volunteered to sit on the Oral Examination Board.

James C. Dorr, AIA
Arcadia

What a breath of fresh air! Your comments about the oral exam were right on target. I stopped participating in them as an examiner in '05, and have been trying to get others to speak against this unfair and unneeded requirement since. After graduating from an accredited school of architecture, getting the practical experience under the IDP program, taking a four day written exam, AND having to take what I call "The Inquisition" is beyond the pale. Another reason I resigned from this process was my observation that many of the examiners couldn't pass the exam when it was given to them on the first day of the two-day exam session. And then we were told that, on a complex question, credit could only be given if the answer was given in a certain sequence of words! That's why you heard, "Let me repeat the question," again and again.

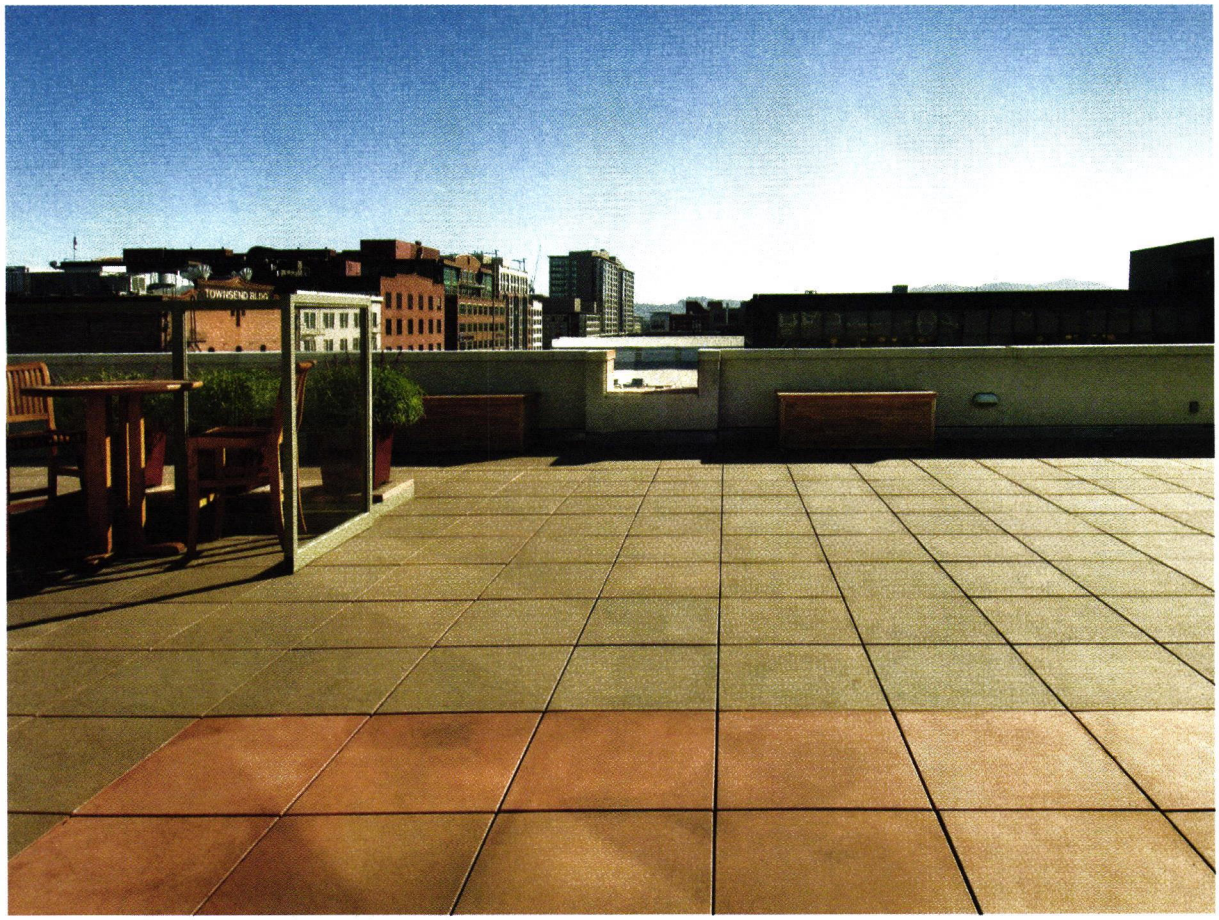
Kenneth Kruger, FAIA
Santa Barbara

arcCA 07.4 was a surprisingly extensive coverage of the old and new-again notion of prefab. As an architect and prefab practitioner, I appreciate you bringing this subject to the best audience for moving this concept to new heights and dimensions.

I would challenge your readers to move this concept forward in their own practices. To do this, though, they should first grasp the depth of the understatement made by Brian Linder, AIA, in his article's closing remarks: "it's just a method of construction."

Roll up your sleeves, dive in, experiment, and truly understand what the limits of the method are. Only then can you exploit it. As hands-on practitioners, Radziner, Kaufmann, and myself have all embraced the early California tradition of Schindler and Gill and invested not only in the concept but also in the means of production. Perhaps in the ultimate irony of what might seem an "off-the-shelf" approach, we have embraced the entire process, including building the shelf itself. Join us in the discovery of what prefab Architecture can become. Constraints sure. Limits, I don't think so.

James B. Guthrie, AIA
San Diego



In this issue of **arcCA**, we explore the trajectories of the generation of architects who earned their professional degrees in the 1990s. What distinctive experiences have shaped their careers? One, certainly, is the rise to dominance of digital tools in the production of buildings. If you graduated in 1992, you probably drew your thesis by hand; if you graduated in 1998, you drew it on the computer. That sea change was framed by a set of exemplars—Thom Mayne, Rem Koolhass, Zaha Hadid, Bernard Tschumi, and others—who were emerging from largely speculative practices into the design of major buildings. And young practitioners' paths were inflected, and in some cases deflected, by a significant recession.

Here, we hope to promote a greater understanding among the several generations represented in today's offices. At the same time, perhaps we can offer encouragement to young architects graduating into an environment of continued technological change, beneath a pantheon of exemplars (who include members of the '90s generation itself), and another recession of yet unknown depth.

Architect and **arcCA** editorial board member Annie Chu, AIA, sets the stage with a look at architecture schools in the '90s . . .

Cabinet for Sleeping

Standing Up

Annie Chu, AIA

Cultural Context

In 1988, the death knell for postmodernism in architecture was rung by the Museum of Modern Art's "Deconstructivist Architecture" show, curated by Philip Johnson (ironically) and Mark Wigley. Exhibitors included Peter Eisenman, Frank Gehry, Zaha Hadid, Rem Koolhaas, Daniel Liebeskind, Bernard Tschumi, and Coop Himmelb(l)au. Most of the old guard discounted these works as mere gallery products, while students consumed them with gusto, examining the application of structuralist and poststructuralist theory to architecture. Twenty years later, the roster represents some of the most prominent international architects of our time.

In 1989, architects Liz Diller and Ric Scofidio launched the multimedia installation "Para-Site," also at the Museum of Modern Art. Neither the art nor architecture world could come to terms with this museum-wall destroying episode. Art critic Roberta Smith, writing in the *New York Times*, blasted the work as "slick, over-done," and derivative. Diller Scofidio, better known then for temporary installations questioning cultural verities, would continue to struggle for acceptance. Even in 1993, *New York Times* architecture critic Herbert Muschamp would use the platform of the paper to urge the intellectual pair to "Take the plunge. Down the hatch...to focus on more enduring projects." Nearly two decades later, Muschamp's wish was realized with Diller Scofidio + Renfro's Institute of Contemporary Arts in Boston and other major commissions.

During the late '80s, artist and architect collaborations were very much in vogue, although most projects merely reflected introductory dialogue between the disciplines. Nonetheless, the curiosity and "cool" created by the union of the rock stars of both disciplines were too attractive to resist. In 1990, artist Barbara Kruger created the now iconic work, "I shop therefore I am." It put a magnifying glass on the commercialism and excess of the 1980s and, together with the maturing works of Jenny Holzer and Cindy Sherman, heralded a more politicized art world. The three women's work also resisted any need for architectural armature; the existing context pro-

S C I A R C
S T U D I O
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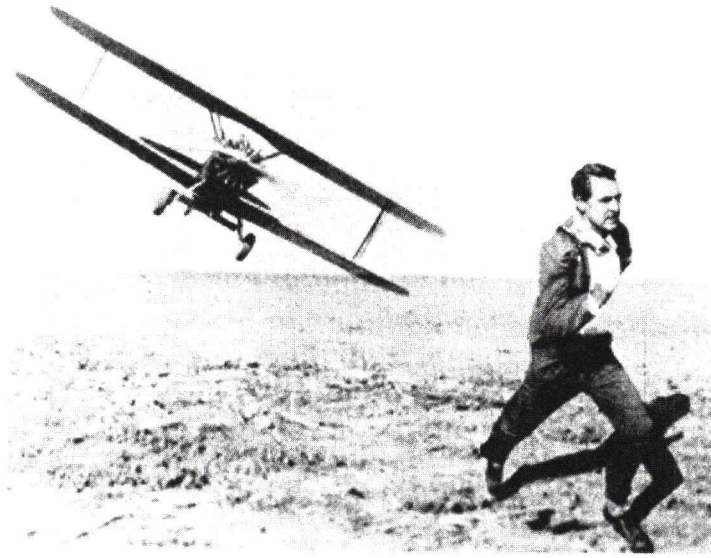
Robert Mangurian Mary-Ann Ray with Pellegrino D'Acierno

ARCHITECTURE and CINEMA

Architecture can quite simply be thought of as the accommodation of program within a composed structure on a site*, a site defined to be part of a larger context constructed by culture.

ARCHITECTURE and CINEMA will focus on ***program, structure, and context***. The studio, quite simply, is about the physical artifact designed in response to the defined program, the internal constructional demands, and a the multiple realities that form the physical and cultural context.

* Site is defined in a broader sense to include the immediate physical site, but also the site of time, the site of city, the site of the author's work, and the site of the discipline.



North by Northwest (1959) Hitchcock director, Cary Grant actor

vided the frames. The number of prominent collaborations dwindled as the country headed into a major recession and a period of introspection within the architecture community. No one shouted any battle cries, but in architecture schools across the nation, faculty and students were trying to sort out their paths after the rollercoaster ride from postmodernism to deconstructivism to a free-for-all.

The Academy

Bernard Tschumi took over as dean of Columbia Graduate School of Architecture, Planning and Preservation in the fall of 1988. Immediately, the halls were abuzz with the launch of the "Paperless Studio." Computers were set up with the latest software. Evan Douglis, current chair of undergraduate architecture at Pratt Institute, recalled the impetus at schools experimenting with the new language and technologies. "They were playing a Piranesian game of how you access it, not how you build it. The old guards were struggling to figure out a way to critique the discourse, but the traditional language was not nimble enough."

A popular Columbia anecdote of that time recalls a review in Hani Rashid's studio. Steven Holl was one of the critics. The student work consisted mostly of blueprint paper "drawings" created by forms exposed in the sun. As the first student began his presentation, Holl asked if the drawings were of any scale. When the student responded with a definitive no, Holl took a look at his watch and excused himself, remarking: "Sorry, I got to go."

Doris Sung, a 1990 Columbia graduate, relates another telling episode. A housing typology studio was traditionally offered in the second year of the M. Arch. program. 1989 marked a significant shift for the curriculum, as half of the studio rebelled against the faculty and rejected the imposition of typology in the studio. Their petition met with welcome from a supportive dean, who was seeking to push a series of changes at Columbia.

Upon graduation, Sung would return to a depressed job market in Los Angeles, where she found the shuttered doors of Morphosis, as Thom Mayne and Michael Rotondi sorted out their separate ways. If there were work at high profile offices such as Frank Gehry's, the pay would not sustain a young graduate burdened with student loans.

Having exercised her critical faculty with an undergraduate liberal arts education at Princeton, Sung was attracted to the articulate and intellectual tongue of Liz Diller, a frequent critic in Stan Allen's studio at Columbia. Diller Scofidio was a visible model of an "alternative" practice, setting one foot in architecture and the other in art. The sensual prosthetic devices featured in the pair's early works had a definite feminine and intimate appeal to the young graduate, who would continue in subsequent years to explore notions raised by Diller's works. Sung would also continue to utilize academic grants to support her critical, research-based practice and teaching activities, as had Diller.

Downtown at the same time, the Cooper Union did not embrace computational technologies. Under the leadership of John Hedjuk, it continued to ground the curriculum, as Douglis puts it, "in a literary, modernist, formalist agenda." Influenced by Aldo Rossi, Raimund Abraham, and Hedjuk, the Cooper Union applied a narrative approach to "carrying out ethical, cultural investigations." Studio programs with titles like "Available Light," models of tortoise shell-inspired constructs, and drawings in the manner of Walter Pichler offered a snapshot of the phenomenological studio investigations.

Across the country at SCI-Arc, "making and meaning" continued to be an important tenet pushing through from the late '80s. Tom Buresh taught an ethical approach to architecture steeped in material investigation. Perry Kulper investigated architecture as phenomenon, creating one landscape drawing each day. Across the hall, Robert Mangurian and Mary Ann Ray encouraged students to stretch their imaginations with studio programs that

The studio reaffirms a belief in ***program*** as an important determinant of architectural form. Program will be taken on as a central focus of the studio, and will be defined in broad yet quite specific terms. The studio accepts program as pluralistic, ranging from the functional program[1] of the building type[2] to the cultural program[3] as interpreted by the author; from the program of construction[4] to the (often) applied programs of metaphor and symbol[5]. The studio sets forward the opportunity for exploring new program definitions and resulting compositional and constructional expressions for each building type.

The special ***program*** being attended to is the program of FILM in general, and the CINEMA - a place for showing film -in particular, including all the issues raised when thinking about **ARCHITECTURE and CINEMA**. Cinema is an allied art to architecture; the two disciplines are complexly related. The settings for film are within the space posited by architecture (and edited/transformed by film).

1 A perceived set of needs and desires overlaid upon established patterns of use and accommodation.

2 An array of lived configurations of space and structure indexed to a culturally defined and negotiated use.

3 As interpreted by the author-architect and by building users.

4 A mobilization of resources undertaken by various constellations of social and political groups within a society.

5 Projected constructions superimposed upon perceived qualities - a thing (building), a situation (building), an action (building).

combined literature, fine arts, cinema, and photography with architecture. The intent was to help students develop generative tools and utilize the world around them as an infinite classroom. Synchronous teachings in Margaret Crawford's classes theorized "architecture of the every day," akin to the ethical cultural agenda of Cooper Union.

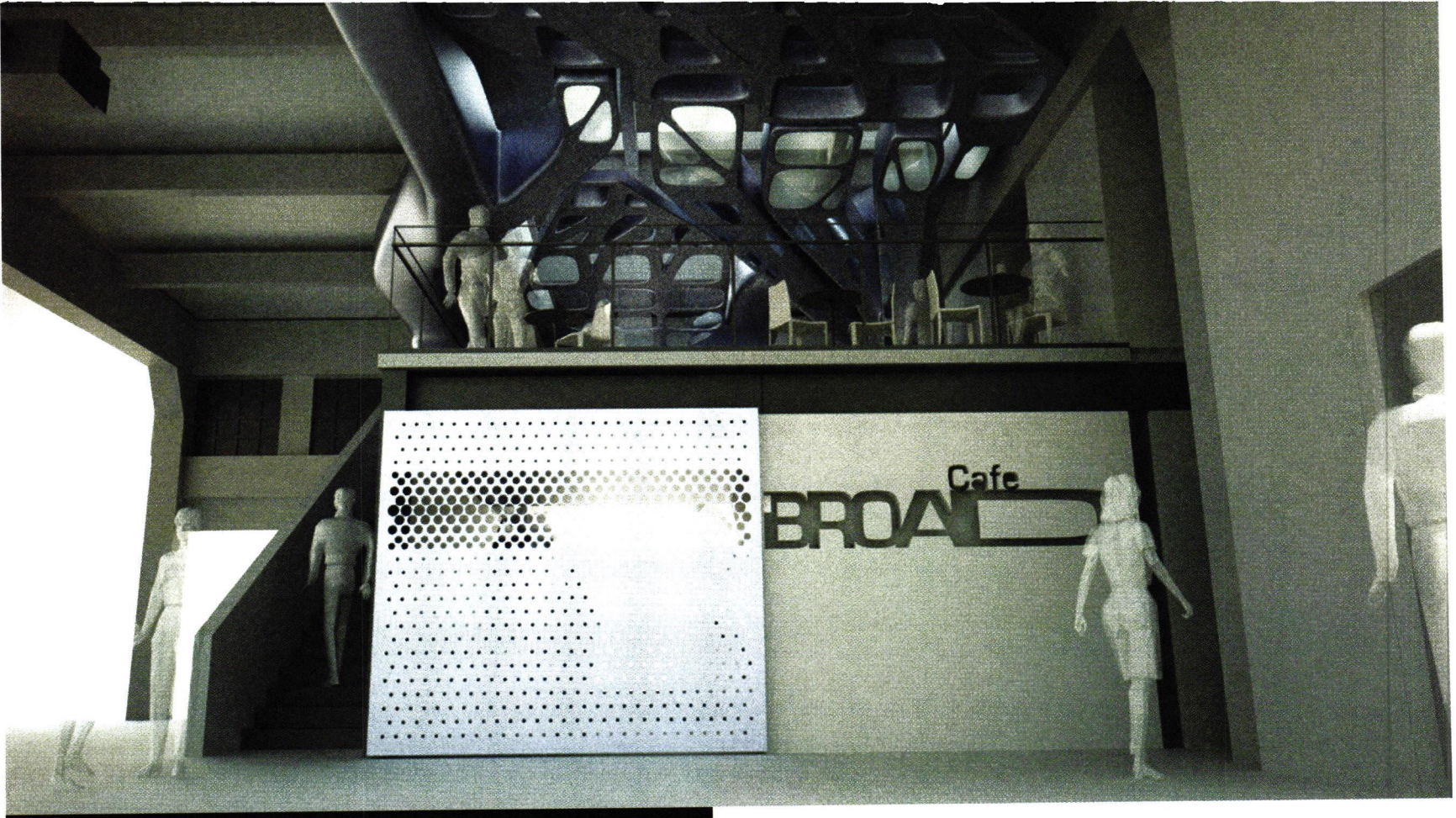
While computers were beginning to creep into SCI-Arc studios, drawings such as axonometric and perspectives were still popular and expedient tools of discovery and expression. Ray recalled two SCI-Arc fund raising auctions of drawings made by architects during the early '90s. Drawings by the likes of Tod Williams and Billie Tsien, Holl, Rossi, Gehry, Thom Mayne, Michael Rotondi, Tadao Ando and Michael Graves fetched significant sums for the school. Even a letter from Philip Johnson, stating he could not do a drawing for the auction, was sold. In New York City, Max Protech Gallery continued to sell architectural drawings as exalted artistic commodities at a brisk clip.

As the economic recession restricted the availability of work for early '90s graduates, many sought work in cities abroad. Paris and Berlin were popular destinations for those who could muster funds to travel to the doors of foreign architects. Other innovative individuals would see another way of establishing practice and surviving the depressed marketplace closer to home. The HEDGE Design Collaborative, a group begun in 1995 by several SCI-Arc graduates, included designers from Canada, Japan, and the United States. The diverse interests of the collaborative included architecture, interior design, landscape design, and urban projects, as well as graphic, website, clothing, and floral design. Their website expressed the sense of expanded potential in this communal arrangement: "Overlapping design priorities have emerged repeatedly in dialogue between members and in the execution of work. Direct engagement in construction and manufacturing, new material research and experimentation, and the re-adaptation of ready-made technologies all factor into many HEDGE projects, as do our interests in branding, identity, signage, and street dynamics." Other alternative and hybrid models of practice included Mimi Zeigler's (SCI-Arc) *Loud Paper* magazine and Garrett Finney's (Yale) work as an architect for NASA.

The '90s generation acquired facility with emergent spatial modeling and rendering software, both as generative and representational tools. The entertainment industries desired their skills; credits on films such as *The Matrix* include architecture graduates. Comfortable with the software, young graduates also began to question its limitations. As a young instructor, Douglis explored those limitations. He researched and tested generative design and manufacturing technologies, through the lens of architecture. This trajectory continues in his current practice and in the curriculum at Pratt, where programming classes challenge the limits of software.

CNC milling and 3D printing technologies became attractive tools for young graduates eager to realize in physical form the non-orthogonal work they designed in school. Economical reality pushed some to become providers of fabrication and construction services, as they continued to develop their own, often noncommissioned works.

A significant number of graduates have returned as studio instructors, modeling themselves at times after their mentors. Theoretical pursuits highlighted by instructors such as Eisenman left graduates yearning for engagement they could not find in traditional practice. In the academy, they can pursue expanded possibilities of practice, as well as stay engaged with critical discourse and research. This '90s generation will continue to shape education as they encounter society under the rubric of architecture. ◉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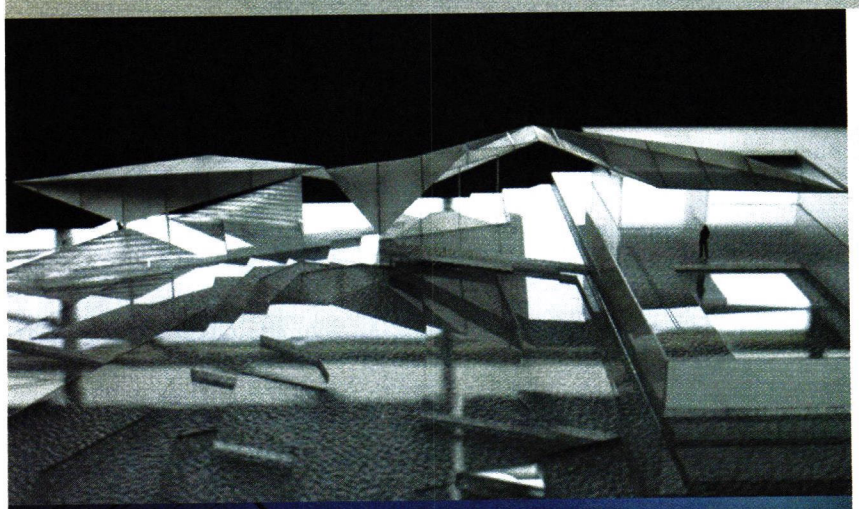
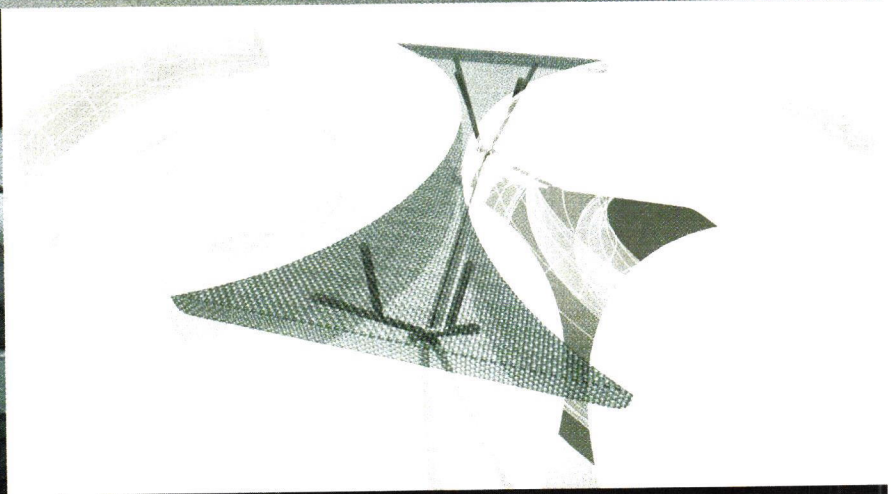
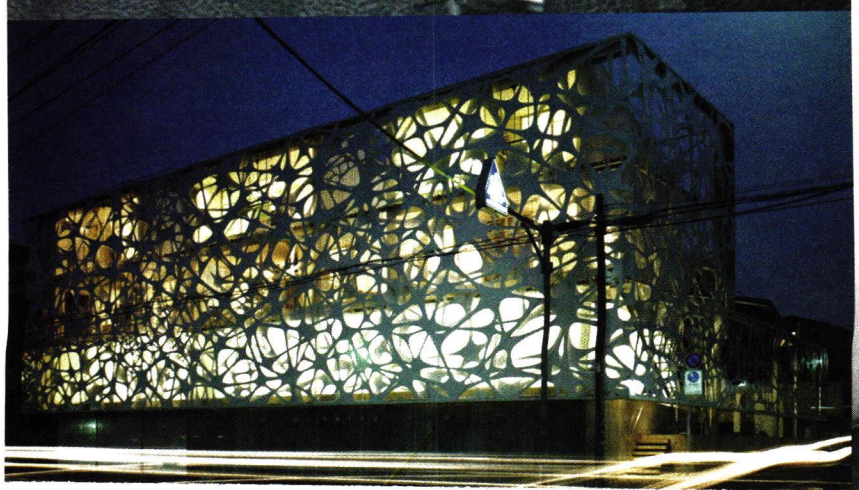






State(s) of Practice

Excerpts from a Conversation Convened and Moderated by Peter Zellner

Peter Zellner

Editor's note: the full transcript of the conversation is available on the arcCA *website at www.aiacc.org/arcCA.*

Given that architecture may be considered one of the few forms of cultural production that leaves a lasting imprint on the physical, social, and economic environment, what are some of the goals you have established for your practice relative to the notions of innovation, contribution, and legacy?

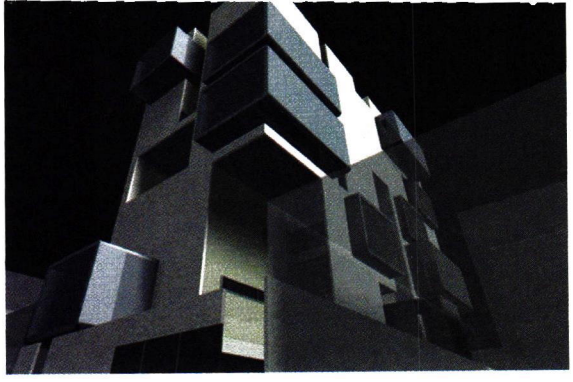
If there was one thing about architecture that your practice might change (even slightly) through its own evolution, what would that be?

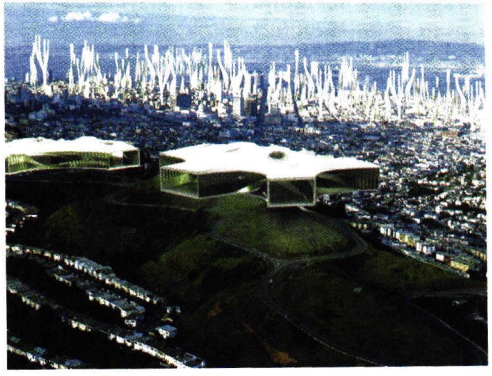
Lloyd Russell, AIA, San Diego: Meaningful architecture is the expression of the sum of forces that bring it into being. The goal of my practice is to express exactly the unique condition that arises from combining the roles of architect, developer, and contractor. A city built by enlightened developer-contractor-architects is my definition of utopia. I hope my practice and teaching get us a little closer.

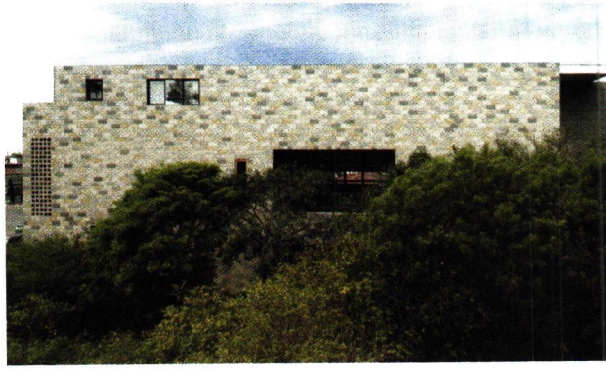
Tom Wiscombe, EMERGENT, Los Angeles: I am getting more interested in dealing with energy in terms of design. The trick is to avoid formal assumptions about "green building" and move on to more inventive territory. "Energy performance" is starting to breed a new functionalism, which would be a huge step backward.

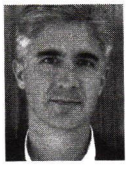
The next generation of digital production will involve more sophisticated tools, such as true physics simulators, which have the capacity for optimization feedback loops. This has begun to happen with the so-called BIM revolution, which is not a revolution at all but an inevitable expediency. At the end of the day, it is in the realm of design that architects are the most productive, and I am committed to that above all.

opposite: top, Marcelo Spina, Broad Cafe; middle, Joe Day, Sagewater Spa; Stephen Slaughter, Null; bottom, Thom Faulders, Airspace Tokyo, building design by Studio M, screen facade design by Faulders Architecture with Proces2, photo by Tatsuo Masubuchi; Peter Zellner, Toy Factory









Joe Day, Deegan Day Design, Los Angeles: Almost all of us oscillate between the pure and the provisional—between speculation and realization, but also between the ideal and *ad hoc*. I don't feel like a guerrilla, doing daring work against long bureaucratic/capitalist odds, nor like part of a movement pioneering a field of digital possibility. My goals are modestly Duchampian—as he put it, "mediumistic": to elucidate the mechanics of our discipline and its impact on cities, in the hope of sensitizing more people, more acutely, to their environment.

I feel as I imagine Duchamp must have, arriving in Paris after his two older brothers had already immersed themselves in Cubism. All the serious positions in advanced abstraction had been staked out, but no one was weighing the avant-gardes against one another or doing work that "stripped bare" their techniques enough to invite a public into dialogue.

Advanced architecture is at a similar moment of intense but deeply self-regarding innovation, and almost all of the nuances we fret over are lost on a broader audience. I'm not interested in refuting those advances, but in doing work that opens them to and challenges them in a wider arena.

Rene Peralta, generica arquitectura, Tijuana: There are so many possible futures, since my firm is engaging in writing, film, and architecture, all strategies to survive as a young practice. Theory plays an important role: Canclini's hybridity, Koolhaas's generic city, De Cauter's heterotopias, and other contemporary urban and cultural conditions. I have been adjusting to an alternative practice due to my "positioning" on the border. Our contribution differs drastically as we move between San Diego and Tijuana. To the north, we intend to stimulate a discourse, while in the south it's all about tactics (architectonic and urban) that deal with the volatile process of change.

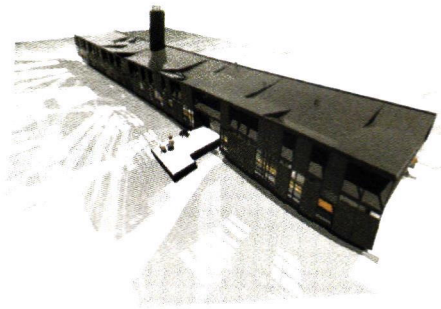
Teddy Cruz, Estudio Teddy Cruz, San Diego: I think of the political as a process by which we expose power: Who owns the resources? Whose jurisdiction is it? Who profits? Can a neighborhood be a developer?

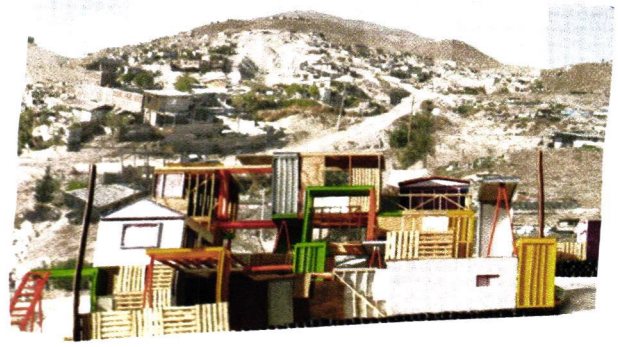
One example: in San Diego's most successful recent building boom, not one affordable housing project has been built in some of the depressed neighborhoods. Why? Because to be competitive in terms of tax credits, and hence profitable, projects would have to be at least fifty units in density, but zoning prohibits fifty units. Without encroaching into the conflict between the political (zoning) and the economics of lending, housing design goes nowhere.

Russell: Architecture is not going to move beyond the nuances that only architects can see until we branch out into other areas. Funny thing is, when you ask a community what they want, it's usually more parking and no more density. Architects agree that density is good for cities and that the suburbs are unsustainable, yet the public has no idea about this discussion. There are three parking spaces for every car in the U.S.: 720 square feet, counting half the aisle. How big is an affordable unit? 720 square feet. As a culture, we are building parking lots instead of affordable housing.

Thom Faulders, Thom Faulders Architecture, San Francisco: The city—contemporary and future—is a construct born of collective behaviors, complex economies, politics, power, flows and expenditures of energies, and so on. What happens when global sameness pervades this arena? One aspect of our work is to develop a language for producing spaces with provisional and idiosyncratic qualities. Our goal is toward the formless rather than the form, so we look to new paradigms generated by the co-opting of technologies coming out of Silicon Valley. What if architecture could be transformed as readily as one "transforms" content and navigation in personal electronics? Would this be a new form of collective empowerment of end users? Probably. Or a noisy mess? Probably. Who knows? But it gets us into the studio each day.

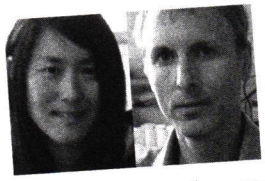
Cruz: I am not suggesting that each of us should turn into the Che Guevara of urbanism, nor that practice as a rigorous, self-referential, autonomous process is worth nothing in a world polarized by social and economic inequalities. We need "good" design. What turns me off is that a hyper project of beautification, whether New Urbanist or avant-garde, continues to hide the true problems of our cities. Practice should accommodate not only building buildings but





left to right: Rene Peralta, Mandelbrot; Iwamoto Scott, Twin Peaks; Lloyd Russell, R3 Triangle, photo by Dave Harrison; Tom Wiscombe, Novosibirsk Pavilion; Gail Borden, Low Country LIne House; Teddy Cruz, Hillside

also building a position. We are so obsessed with the conditions of design that we are not designing the conditions that can yield alternative architectures and, in turn, new cultural experiences.



Craig Scott, Iwamoto Scott Architecture, San Francisco: Most architects focusing on research are ultimately also aiming at the marketplace. If a political stance can break through the common socio-cultural barriers that challenge small experimental practices in the U.S.—the bottom-line mentality of much public and private work, the expectation of an established track record, and the strongly tradition-based construction industry—then more power to political action.

Gail Borden, AIA, Borden Partnership, Los Angeles: My interest in academia stems from the desire to have an impact on the broader profession, to teach towards our collective responsibility. The conversation in architecture needs to return to space. Technology of fabrication, of formal generation, of materials: all of these are interesting, but if they do not aggregate into architecture, which ultimately is about space, something is lost.

Russell: I began teaching in the Masters in Real Estate Development program at Woodbury. Before you take on these tools, you have to be grounded in ethics. An architect or architect-developer without a soul is a tool for someone else to use. Technology is not the answer, because it was never the problem.

Wiscombe: The market for extreme forms is small, yet such forms are as critical for transforming architectural thought as discovery is for catalyzing scientific revolutions. Moralizing political tendencies in design are too open-ended; architecture can too easily become the tool of factions on both sides. A degree of autonomy is necessary, and the control of space and form is extremely political.

Marcelo Spina, LA PATTERNS, INC., Los Angeles: Architecture engenders spatial conditions that induce new forms of experience and sensation. We aspire to an architecture that best incarnates these conditions, what Peter Eisenman called "presentness," an aura that persists over time, independent of use or meaning. We want to produce singular spaces that challenge the body and assumed notions of inhabitation. Our interest is not necessarily in producing newness, but rather in articulating moments of local innovation within existing models, like the paintings of Francis Bacon, inserting indeterminacy into matter, variability into figure.

Cruz: French art critic Nicolas Bourriad says form is a tool to anticipate social encounter. I agree, and would like to denounce autonomy, to transcend the property line and my solitude, so that things become messy and complex. That is the ultimate definition of density: to embrace the contradictory. It's precisely what we have erased from our systems of thought: complexity, not of forms but of social relations. It is amazing how our notions of democracy, as Michael Sorkin reminds us, are based on the right to be let alone. Democracy should be measured by our capacity and willingness to be together in a space: propinquity—like this precarious chat room. Can architecture frame democracy?

Day: My last thoughts have to do with a series of overlapping sensibilities: the minimal and post-minimal, the millennial and post-millennial. Minimalism was about presence, post-minimalism about diversified approaches to the same; the millennial about immersion, the post-millennial its ramifications and diversification. We are still at the cusp of the millennial / post-millennial, a moment that will be dated to 9/11 and the mess we've made since. Already, the most groundbreaking work of the last few years has the look and logic of amalgamation, collaboration, and informality, rather than the heroic and aesthetically doctrinaire essays of the '90s—Super Modernity, Bilbao/Getty, and FORM.

Peralta: Thanks to everybody for making this forum full of passion. I sometimes feel that students don't have passion; it's hard to get them to be critical of our profession. I hope this dialogue demonstrates that to be a young practice requires sacrifice, passion, and dedication. ◉

Two Generations: a Conversation

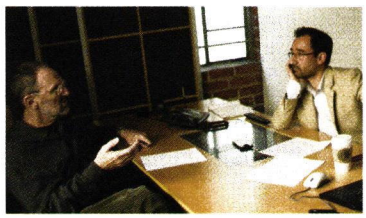
David Erdman and Thom Mayne, FAIA

Editor's note: the full transcript of the conversation is available on the arcCA *website at www.aiacc.org/arcCA.*

David Erdman: *In your and your peers' work, I see a clear intention to render different systems but not let any one become isolated. Often, each is assigned a different materiality and geometry—one for an urban scale, another for the scale of the body. Those different "orders" are never allowed to totally gel. I think about your Sixth Street House and how you were drawing in earlier projects, where the edges are blurry due to a layering of different scales. This layering seems to be a meditation on boundaries and space, on inducing fullness by making those orders less legible. I suspect our generations share this intention, but in different ways.*

Thom Mayne: But with Sixth Street, I was attacking the singularity of the thing, and it led immediately to an idea that the elevations were radically different and dealt with the contingency of a particular place. It was connected to an urban idea, a potential for radical difference of things.

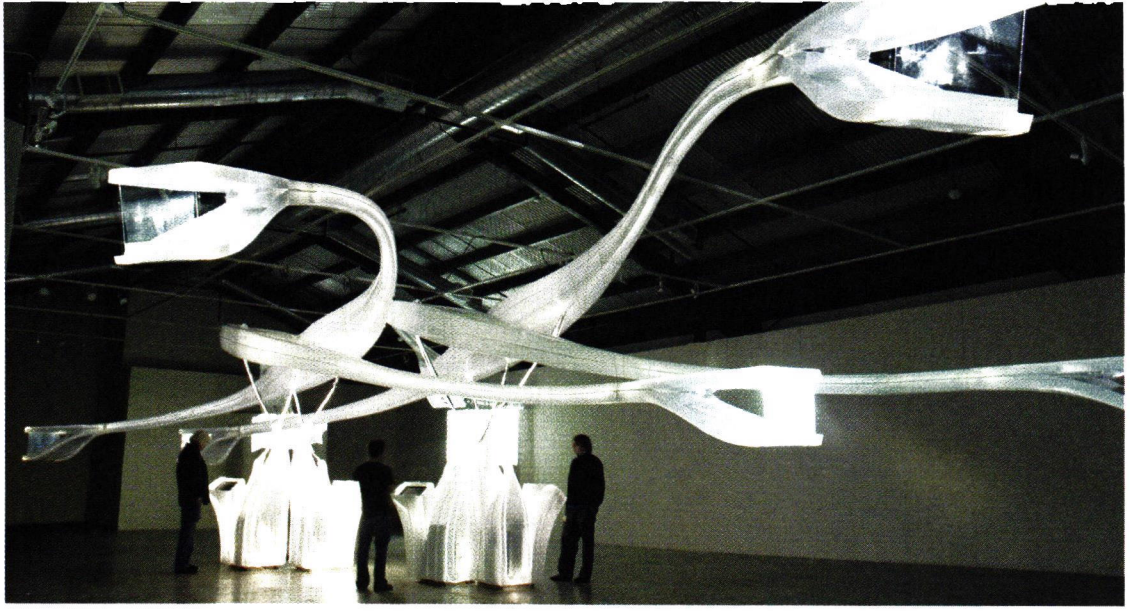
Erdman: *There seems to be an assumption that working with effects is an effort to reduce multiplicity and limit design to singularities. I can't say with certainty what the specific effect of a project will be, but I can make sure I'm working with a number of different orders and qualities. The similarity between us is that there's an intentional murkiness between these orders; the difference may be that they're more pushed together in our generation than they were in yours, perhaps because of ways of modeling and drawing.*



opposite: Morphosis, Diamond Ranch High School, photo by Timothy Hursley; above, Thom Mayne, FAIA, and David Erdman, photos courtesy of Morphosis.

Mayne: It seems, with your work, that the method itself is a connective tissue. Whether it's Maya or whatever tool you're using, it changes the equation. That has had a huge effect on your generation. There's the smoothing or the connectivity that comes out of the computational mathematics.

Erdman: *Initially, yes, but it's evolved. The more recent obsessions with effect, mood, and atmosphere require different materialities—not necessarily literal materials but often more abstract formations.*



left: David Erdman/servo, darkplaces, Santa Monica Museum of Art, 2006, in collaboration with Peter Cho and Elise Co, photo by Erdman Photography; opposite left, Unibail-Morphosis, Phare Tower; opposite right, Morphosis, 6th Street Residence

For example, I'm only interested in "interaction technologies" or "luminosity" because they provide other dimensional ecologies that work on the material stuff I'm organizing in the space. Immaterial and material play off one another, and because they can't be coordinated within the same software or the same dimensions—some operating in four or more—they are difficult to organize exclusively using Maya. You have to look at them in many ways, often prototyping at full scale.

When Greg [Lynn] and Sylvia [Lavin] and Neil [Denari] brought us out here to teach, many of us focused on these almost rote, "demonstration" projects—often installations. They offered a way to get our hands on technologies that a small practice mightn't otherwise acquire; and they provided a theoretical territory in which to explore the design implications of LA's technological assets. Did your early development among colleagues in LA have a similar progression?

Mayne: When we did that it was *very* small projects, but somehow they were immediately affected by material and tectonics and their role. But it was quite conventional, almost nineteenth-century. I was looking at Diderot. There was definitely a commonality at a mechanical, material, tectonic level among the people here. It was challenging the simplicity and the crudeness of the construction that takes place, and how to protect your artistic capital in this part of the world. And it also probably came from the tradition of Schindler and Gregory Ain and a group of people we all rejected but who were still there somewhere rattling around in our brains.

Your generation started in a much more conceptual territory, and it seems to have the opposite problem. I accepted a simple, generic palette, and I find my architecture spatially, organizationally, and other places. You guys: the materials haven't been invented yet to accommodate your formal language and your aspirations, the desires you have that come with the nature of that language.

A lot of you put larger demands on the conceptual part of your work. You aren't in any way burdened with those types of realities or even the potential of those realities. That's going to limit the type of work—installation versus small-scale versus large-scale project—but it probably should. Something important about being 30 to 40 years old: your job description is establishing your intellectual, conceptual, artistic priorities. That's your job.

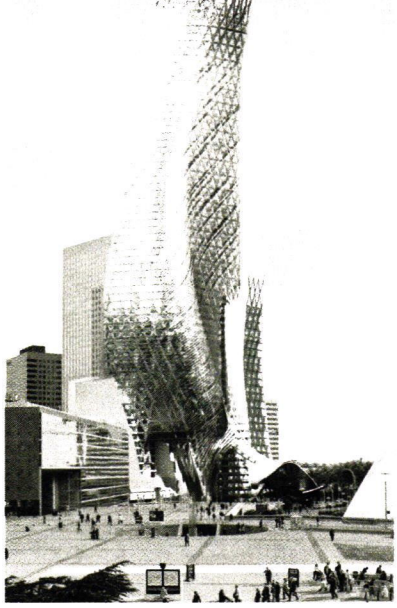
Erdman: *Did you feel that way yourself?*

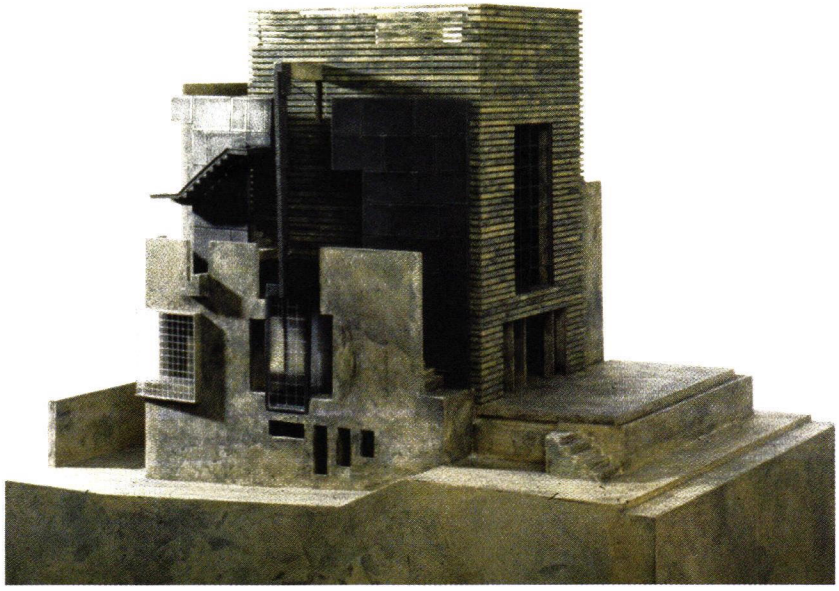
Mayne: Absolutely. In your 20s, you're a kid still and you're just—you're trying to establish what the project is. In your 30s, it's still very possible that your practice is not primary, which makes sense pragmatically, because nothing important is going to happen—in this country, especially—until you're 50 anyway, or 45, if you get lucky. But the commissions will be farther apart and they're going to be smaller scale, what people trust you with in terms of investment. And your job is to do your research.

In your 40s, you're in transition. You're emotionally more frustrated. You're probably exhausting those ideas that are operating only on paper. And you should be ready—in terms of your energy level, your accomplishments, where you are in your artistic, intellectual project, in your research—to start testing. Teaching's probably becoming quite different in terms of the questions you ask. It's probably not as much first-principle; it's now much more in sync with where you are in your work life and becoming a bit more pragmatic because of that—more synthesized, typological projects that are paralleling, possibly, your practice, but much less investigations into broad theories that don't even relate to building.

It seems impossible to get out of that when you're young, to win a major competition at 35—which can be, by the way, a horrible thing. As many times as it's made careers, it's ended careers, because you're not ready. The Koreans talk about making opportunity, and when you get an opportunity, you have to be prepared to utilize that opportunity. You had to have gone through these stages in some fashion to be able to utilize it.

Erdman: *In L.A., there's a legacy of people going fully through the evolution you outlined, whereas*





on the east coast it seems very few fully make it through that cycle.

Mayne: New York—I've been a transplant there my whole life, because of the architectural scene—living there now, I'm starting to realize it's a centralized city, power-wise, and commodity capital is so powerful that it's extremely difficult, especially for architects. Young architects get consumed by it. It's the city of Warhol, and it just swallows you up.

But L.A., for whatever reason, is still an institutionalized anarchism, it allows for a certain creativity and freedom and autonomy. Two powerful things in my generation were seeing architecture as an autonomous activity and that autonomy as connected to resistance. Not the resistance and autonomy of modernists in the manifesto. A much more calculated, much more personal, private, diminished objective. But still absolutely connected to resistance. It's still incredibly important, the political nature of architecture, part of my practice and my person. I would have said it's a little different in your generation.

Erdman: *It's a big difference. There's been a kind of apolitical posture . . .*

Mayne: And with that goes the resistance. There's nothing to resist. I think that's going to change. Every generation develops at its own rate, and part of that development isn't psychological or personal. It has to do with the general environment, and maybe in some simple way it has to do with what's going on right now with the current political scene, with Obama, that he seems to be bringing in large numbers of young people who go up to your age, the 20 and 30s who, if they haven't been disgusted by government, find it totally irrelevant. And he seems to be galvanizing a whole new group of people.

The thing that changed me the most—when I hit, say, 50, I was with Richard Weinstein and we were walking and talking and looking at this and that, and he turned around and said, "Thom, you've finally done it. You've connected the social act and the aesthetic act." For him, that's the definition of architecture. And it was for me, too. I felt it was like the first building I had ever done, the first time I'd actually affected society. I did something that could shape behavior, that in some small way . . . Forget the modernist—I'm not talking about it in those terms, that architecture's going to change the world. We've been there. But, in fact, in some way it can change somebody's life.

For architects, there's a huge amount of serendipity involved in your development, which you have no control over. It's been frustrating, because I'm a person who would like to have control over my own destiny. Something takes place that will completely change the responses you as an architect need to make to resolve the problem. At that point you're going to have to say, "No, I'm not ready. These aren't my interests, so to move from this project to that project is actually going to harm me, because the distance is too great, and I need some sort of a ramping up to maintain who I am."

At 45, I was so pissed off I could barely talk to anybody, because I was ready to do that work. And now I look back and say, "Actually, really, I wasn't quite ready to do what I thought I was ready to do." I was thinking about it in design terms, and maybe that was correct. But I wasn't thinking about the complexity it takes to accomplish a project on a certain scale, which takes an organization that you've built up so that it's not you anymore, it's your culture. It's you as a thought leader, with the authority and the strength and the talent to bring people together and multiply your ability to deal with complex problems.

I'm working on this project in Paris right now with a group of people who are taking big pieces of it, and I went over and did a charette. We had to make a huge amount of changes. And I came back and—I don't mean to be bragging—I was really proud of myself, because I got a lot done in five days, and I was able to solve a huge amount of stuff. I can get my arms around a vast project that has thousands of variables, and I was joking with my wife, "Damn, I actually learned some shit all this time." ◉

Selected Readings from
A Journal for Ideas and Criticism
in Architecture 1973–1984

Produced by The Institute for
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Peter Eisenman
Kurt W. Forster
Kenneth Frampton
Mario Gandelsonas
Anthony Vidler

Published by Princeton
Architectural Press

Edited and with an introduction by
K. Michael Hays

OPPOSITIONS READER

In this collection:

Diana Agrest
Stanford Anderson
George Baird
Denise Scott Brown
Giorgio Ciucci
Stuart Cohen
Alan Colquhoun
Francesco Dal Co
Peter Eisenman
William Ellis
Kurt W. Forster
Kenneth Frampton
Mario Gandelsonas
Giorgio Grassi
Fred Koetter
Rem Koolhaas
Leon Krier
Le Corbusier
Mary McLeod
Rafael Moneo
Joan Ockman
Martin Pawley
Quatremère de Quincy
Alois Riegl
Colin Rowe
Ignasi de Solà-Morales Rubió
Jorge Silvetti
Manfredo Tafuri
Karel Teige
Bernard Tschumi
Anthony Vidler
Hajime Yatsuka

The 1990s:

A Theoretical Post Mortem

Patricia Morton and Paulette Singley

If the 1990s began in 1988 with MoMA's "Deconstructivist Architecture" exhibition, they died with the closing of the critical journal of architecture Assemblage, *whose forty-one issues spanned from 1986 to 2000.*
—Paulette Singley

Patricia Morton: Theory's ascendancy within architecture culture can be traced in the rise of new, outcast institutions, such as the Institute for Architecture and Urban Studies (IAUS, 1967-1985) in New York and the Southern California Institute of Architecture (SCI-Arc, founded 1972) in Los Angeles. *Oppositions*, published by the IAUS, was the original for *Assemblage* and its successors; it was a livelier, more topical version of what has become a somewhat tired mix of history, theory, and criticism.

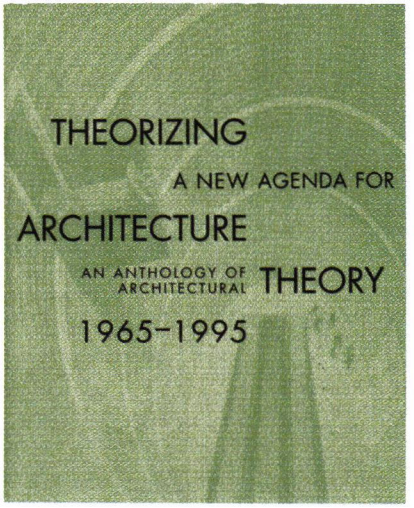
The members of the IAUS elite corps are now the gray-haired establishment of architecture (Peter Eisenman, Anthony Vidler, Mario Gandelsonas, Diana Agrest, Steven Peterson, Rem Koolhaas, et al.), but they were rebels who broke with International Modernism and brought politics, theory, and history to the fore. A similar thing has happened to the SCI-Arc establishment, but LA's geographical distance from the dominant East-Coast schools has kept SCI-Arc closer to the edge of both practice and theory.

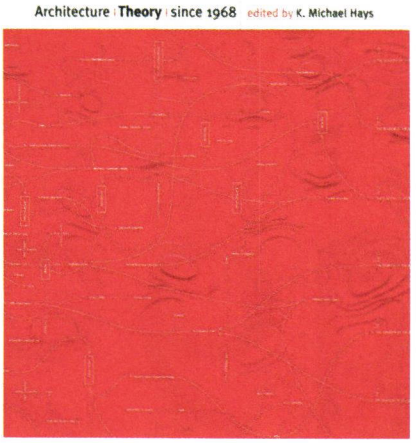
Paulette Singley: The publication of two anthologies—Kate Nesbitt's *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995* (New York: Princeton Architectural Press, 1996) and K. Michael Hays's *Architecture Theory Since 1968* (Cambridge, MA: MIT Press, 1998)—signaled both the rise and the demise of architectural theory. These publications translated what had been an exclusive, rarified bibliography and vocabulary into a semi-transparent and more accessible format and in so doing popularized an elitist body of knowledge.

They collected in one place most of the most important essays that influenced this moment

opposite: *Oppositions Reader*, design by Massimo Vignelli.

VIOLENCE SPACE





in time, bringing together writings by architects, architectural theorists, architectural historians, and philosophers. As the title of Vidler's *The Writing of the Walls: Architectural Theory in the Late Enlightenment* (Princeton: Princeton Architectural Press, 1987) suggests, this moment was concerned with writing, language, reading difficult texts, and seeking architecture's theoretical potential.

Morton: In the 1990s, the critique of Modernism was codified and institutionalized, the young rebels became middle-aged culture stars, and Ivy-League architecture schools dominated High Architecture discourse and practice. Hays's and Nesbitt's anthologies froze the discourse and its history into a canon, which could then be ignored as outdated, part of the previous generation of discourse. What they left out was as interesting as what they included: sociological investigations of built form, political activism, polemics outside (or against) the academy, guerilla building, community design.

Singley: With theory serving as the operative term in design education, a new position emerged in architecture schools, that of the architectural theorist. Theory was neither a homogenous nor a consistent discipline, but in its more aggressive moments it proposed a totalizing regime while simultaneously calling for the end of totalizing regimes. In disclaiming grand narrative, it in fact constructed one.

In many circles, it was not simply theory that held sway, but a particular brand of theory called postmodernism. But here is where it gets tricky. This was not the postmodern classicism of Robert Venturi and Michael Graves, which sought architecture's potential to communicate through the language of form, but rather a deep reliance on philosophy, on the legacy of Marxist thought, on Jacques Derrida's practice of deconstruction, post-structuralist analysis, and the death of the author—the notion that texts beget more texts, that nobody *authors* anything. Postmodernism, in this guise, entertained the work of both Eisenman and Venturi.

Morton: Could it all be a hangover from the Beaux-Arts revival? The figural, the decorative, and internally-generated form have been the dominant impulses in architectural thinking, although no longer clothed in historical language.

Singley: If for some, postmodernism never really existed, and for others it was politically irresponsible, then for yet others it was a site of liberation, intellectual freedom, and class empowerment. In its quasi-dialectical mode, the periphery was the center, surfaces were deep, and ornament was structure. All of the groups formerly excluded from power were given voices and tools with which to operate.

Moreover, writing about architecture opened up to include alternative modes—personal voice, fragments, letters—the simultaneous voicing of many positions. Out of this wildly diverse range of influences, subjects and styles of writing that had been excluded found space in publication—feminism, queer theory, postcolonial theory, etc.

Morton: The old slogan "the personal is political, the political is personal" could be the motto of the 1990s, but it sometimes devolved from a concern with the political aspects of private life into an excuse for the cult of the personality. Politics was drained of actuality; no social mission was left for architecture in the flurry of discourse and disciplines that absorbed the culture. Koolhaas is the poster child for this retreat from a critical architecture (or, some would say, abdication of responsibility).

There were exceptions, like Sam Mockbee, who did exquisite, revolutionary buildings in the service of poor people. His work was a revelation: you didn't have to design the equivalent of Birkenstocks to bring a social conscience to architecture.

At the same time, feminism provided a private/public politics and a way of creating a political practice that wasn't about bleeding-heart liberalism or urban planning, which seemed to be the only alternatives. And (speaking of anthologies), three important collections of feminist work appeared in 1996: *The Sex of Architecture*, Diana Agrest, Patricia Conway, and Leslie Kanes Weisman, eds.; *Architecture and Feminism*, Debra Coleman, Elizabeth Danze, and Carol Henderson, eds.; and *The*

left to right: *Assemblage* 20, April 1993; *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*, Kate Nesbitt, editor; *Architecture Theory since 1968*, edited by Michael Hays.

Architect: Reconstructing Her Practice, Francesca Hughes, ed. There was an explosion of interest in gender, sexuality, and identity and their expression in architecture.

Also in the 1990s, environmental activism and sustainability emerged as a persistent political arena that's now of actual importance, with global warming on everyone's mind. This is an area where architects have the power and knowledge to have a huge impact on the public realm, even given their limited role in the design of the built environment.

Singley: Where language, discourse, and representation represent one end of the intellectual spectrum, the other end might be the body, phenomenology, and practices of everyday life. Michel Foucault emerged as a dominant influence for critiquing the power of corporeal disciplines and their corresponding architectural institutions. In bodily and cognitive vision, architecture and theory found common ground—in frames, points of view, systems of surveillance, or absolutist planning techniques. Vision and visuality emerged as dominant obsessions of designers (at least to the extent that reflective surfaces could be fetishized).

Morton: Technology had an enormous impact on the obsession with sight and visuality, and not just from the theory side. You can "see" things differently with computers. CAD and other design software transformed architecture, and there's a real generational divide between those architects who learned to design on the computer and those who had to learn later (or hire people who know how). And there was a certain amount of sorting out, equivalent to downsizing in the manufacturing industries, because firms could produce drawings with many fewer staff.

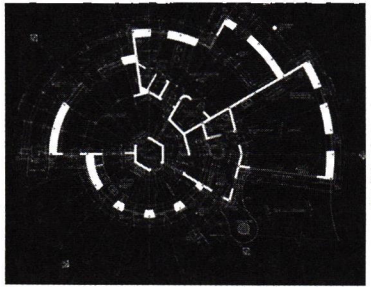
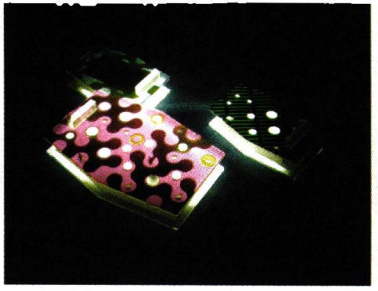
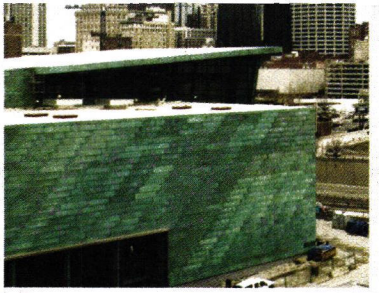
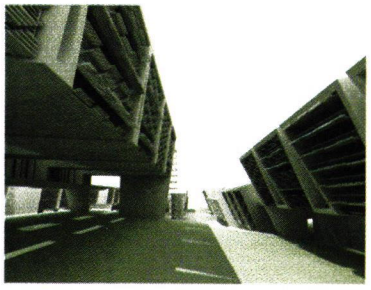
In the early 1990s, during the economic doldrums before the Clinton-era boom years, architecture students went into animation studios, which had lucrative work, while architecture firms were closing and cutting back. Simultaneously, architects learned how to use algorithms, tweak the programs, or simply use the clunky form-generating software to generate new aesthetics, new cool stuff.

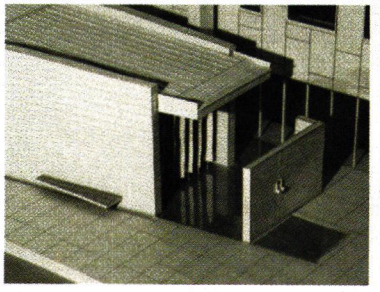
Forms that had been painstakingly plotted by hand or in model (early Gehry) or generated by "chance" operations (Eisenman at the Wexler), could be turned out in little time with the right software. Surface, pattern, spatial ambiguity, warped roofs, splintered walls, all the attributes of what was variously called Deconstructivism or blob architecture or other terms.

What's most surprising is the degree to which this "new" work looked a lot like handmade work (think of Zaha Hadid's Hong Kong competition entry), and pretty much everything looked the same. Maybe technology isn't determinant.

Singley: Marshalling such heady intellectual prowess also led to a kind of intellectual terrorism in which words were deployed as weapons and political incorrectness pounced upon. Is it any wonder that there was a backlash, and that this moment of intensity was not sustainable? At times the voices became shrill, the architecture increasingly irrelevant, and the ability to generate form nearly abandoned. Theory risked theorizing itself and architecture out of existence. The *jouissance* and sheer ecstasy of this time period produced an excess of words that eclipsed the necessity of design and eventually eclipsed itself. Today, the volumes of Derrida, Jacques Lacan, and even Walter Benjamin sit on bookshelves collecting dust.

Morton: Given the corporatism of Robert A.M. Stern, Michael Graves, and Rem Koolhaas, why not some *jouissance*, some joy, some decadence, even if it was "just" words? What happened to the delirious? Architects looked for alternatives. Sometimes they were frivolous, but sometimes they were productive and exciting. There were collaborations between artists and architects, strange amalgamated and hybrid practices (the HEDGE Collective in Los Angeles or the Storefront for Art and Architecture in New York, for example), and practices that seemed to have nothing to do with "architecture." These new practices have led to an opening out of architecture, and a new concern for melding theory with practice. ◉



left to right, top to bottom: Cole Butler, Braly Residence, Lake Tahoe; Dominic Leong, Mobile Art Park, Roosevelt Island, NY; Juan Moreno, with Ghafari Associates, Kansas City Star Building, photo by Jeff Millies with Hedrich Blessing; Eric Nulman, Housing; Justin Piercy, Single-family house proposal, San Diego; Craig Rizzo, with Zimmer Gunsul Frasca Architects, LLP, St. Anthony Hospital Chapel, Gig Harbor, Washington, model by Tomoko Briggs, photo by Mark Gesinger; Scott Uriu and Herwig Baumgartner, B + U, LLP, Leisure Activity Generator, Los Angeles; Michael Young, Apartment Building, Miami, FL

Five Schools, Eight Voices, Two Surveys

Cole Butler
Woodbury 1995
Laughing Gravy Studios, Truckee
Licensed CA, NV

My first job out of school was for a scenery company in Carson City, and I went on to do fire special effects. I've been a local planning commissioner, helped establish a 501c3 for the Sierra Green Building Association, and am helping to establish a co-housing community. I have a straw bale home under construction and am starting DD on a Tahoe City fire station. I've found the ideal schedule is Monday through Thursday, six weeks on, two weeks off. The time off comes without pay, projects go slower, but I do a better job when I am not so stressed out. I aspire to be involved with aesthetic projects that contribute to healing the planet.

Dominic Leong
SLO 2001, Columbia 2003
PARA, Brooklyn, NY

I had the chance to work in Bernard Tschumi's office during his transition from academia to full-time practitioner. I share Bernard's disdain for pure formalism, but I am not "anti-form." This discourse still provides a critical perspective, given the increasingly dexterous formalism we see today. I strongly agree with Bernard when he says, "Architecture is not a knowledge of form, but a form of knowledge." Architects will always design buildings; that is what the public expects, so that's where we start, what we hope to master and go beyond, to deploy the knowledge of "architectural" thinking to many more arenas.

Juan Moreno
Pomona 1992
Ghafari Associates, Chicago, IL
Licensed, CA

I have been helping El Valor, an organization started thirty years ago by a Latina woman with a disabled son. She found that there were no reintegration services in Chicago to help her son become a viable part of society. They have a vision for an International Inclusion Center, bringing together people of all disabilities and ethnic and socioeconomic backgrounds to learn to reintegrate through the culinary arts,

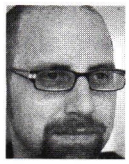
horticulture, and music. I've also begun assisting Causes for Change International with their vision for developing Exploration Institutes for Children and Youth with Disabilities throughout Latin America.

Eric Nulman
SLO 1999, Harvard 2004
Lecturer, Cal Poly SLO
Licensed NY

Among Morphosis, Grimshaw Architects, and Ateliers Jean Nouvel, I expected the obvious differences in models of practice and theoretical frameworks, but differences in mentorship were more challenging than I anticipated. At Morphosis, small project teams enabled a comprehensive understanding of the project, team hierarchy was relatively flat, and team members participated in consultant and client meetings. The mentor-protégé relationship Mayne developed—and to which project managers and architects were committed—led to consistent quality. Access to Sir Nicholas Grimshaw was limited; nevertheless, the strong office infrastructure focused on employee development. Three partners, each offering a specific expertise, were easily approachable. I participated in most internal meetings, but only external meetings that related to my deliverables package—and never client meetings. At Ateliers Jean Nouvel, in a joint venture with Foster and Partners, the team struggled constantly, due to lack of hierarchy between the offices and a difference in practice models, and there was no apparent effort towards mentorship.

Justin Piercy
Pomona 1996
Alonso Balaguer + Associates, Barcelona

My first job, at a giant Southern California engineering firm, did not provide much inspiration but did provide a solid foundation for organizing a project. A few of the more interesting things I did in San Francisco are: set design for a FOX-TV/NFL commercial; forming a collective of artists, graphic designers, animators, musicians, music producers, and architects in a downtown warehouse space, where we met to create and play; designing and installing a sensory art event to showcase work from a graphic design firm's five global offices; and a video-sculpture installation for a championship boxing event.



Craig Rizzo
Woodbury 1994, Art Center 1998
Zimmer Gunsul Frasca Architects LLP, Seattle, WA

I had the great fortune of a small school environment, more like a family, and it's amazing what everyone's doing: architecture, fashion design, set design, animation, construction, teaching (all ages), city planners, developers, I think even a baker. I had always wanted to pursue fine art and considered dropping out of architecture to do so, but I'm glad I didn't. I learned a lot in school and later received my MFA at Art Center in Pasadena. I've done rock concert stage sets for Korn, Limp Bizkit, and Ice Cube, and I had a gig on The Discovery Channel—it was crazy—as an illustrator on "Monster House."

Scott Uriu (left)
Pomona 1993
B+U, Los Angeles (with Herwig Baumgartner, University of Applied Arts, Vienna, 1996)
Licensed CA

The early '90s were a tumultuous period in L.A.: Rodney King riots, Northridge earthquake, recession. Offices used technology to dig out of the economic wreckage. We started designing with software developed for the aerospace or movie industry. The thing to own was the refrigerator size ONYX from SGI, one of the few computers that had a powerful enough graphics engine to run sophisticated 3D programs. We experienced an evolution like the music recording industry a decade earlier: from all analog recording to all digital, and then a mixture of the two. Today we write our own software.

Michael Young
SLO 1997, Princeton 2005
Assistant Professor Adjunct, Cooper Union, NY
Licensed NY

My wife just had a baby, and things have gotten really busy.

Consistent with **arcCA**'s practice of "casting a wide net, but poorly mended," we asked the two Bay Area architecture schools to survey their graduating classes of 1998 (one B. Arch., one M. Arch.), and we learned the following things:

From **CCA**, of 21 B. Arch. graduates of the Class of '98, five are principals of architecture firms, five are licensed, two went on to complete masters degrees, and three (or maybe four) are working in related fields: urban design, general contracting, lighting design (unconfirmed), and as Chief Architect for the Hong Kong government.

From **UC Berkeley**, of 18 respondents from the M. Arch. Class of '98, three received joint degrees at Cal, four are principals of architecture firms, six are licensed, two went on to complete PhDs, three are university faculty, one is a non-architectural business owner, and one is Housing Development Manager for the City of Oakland. Undergraduate fields of study represented, in addition to architecture, were art, English literature, history, industrial design, linguistics, organizational studies, religious studies, and urban studies.

Stretching the M. Arch.:

Dual Degree Students at Cal

Christopher Sensenig

Between 1997 and 2000, six students—Mara Baum, Jeff Carney, Kari Holmgren, Laura Mezoff, Amit Price Patel, and I—graduated from Washington University's School of Architecture and went on to pursue dual degrees in architecture and city planning at U.C. Berkeley. Three of these students, Amit, Laura, and Jeff, won the prestigious Branner Traveling Fellowship, a nine-month journey around the world studying a topic of relevance to their theses. Currently, Emily Cubbison, a 2003 graduate of Wash. U., is completing a dual degree in architecture and landscape architecture at Cal. During this time, no Wash. U. grad has come to Berkeley *without* pursuing dual degrees.

What is it about our experience that led us all to pursue dual degrees? Seven students may form a small sample, but it begins to suggest a common knowledge, worldview, and philosophy about architecture. Whether our experience is more broadly representative of our generation, I can't say. In this article, I will simply explore how the influence of the City of St. Louis, Washington University, and individual professors led us to pursue dual degrees.

St. Louis

The City of St. Louis has been in a constant state of despair since World War II, continually trying to reinvent itself and reclaim some of its previous glory. It is also a city with very visible color and income lines drawn into its fabric. Built for a million people, it has struggled to keep its population above three hundred thousand while the suburbs have exploded, pushing the metropolitan area's population well above two million. With two thirds of the city's population missing, only a third of its buildings are inhabited. The vacant city is omnipresent, a constant reminder to those who remain of what is missing and an insurmountable hurdle for new development.

While it has had its struggles, St. Louis is filled with vibrant, diverse neighborhoods and public parks. Exploring them taught us what it means to live in a city and how both people and

opposite: Jo Noero's Bohemian Hill Infill Housing, photo by Chris Sensenig

buildings create a place. During our time, the city was experiencing drastic changes: Forest Park, the second largest city park in the U.S., was going through its biggest redesign since the 1906 World's Fair, and a plan by John Hoal called for daylighting the River des Peres and restoring natural habitats. The old loft buildings of Washington Avenue were transforming into residences and offices, bringing new life to a quiet downtown. One summer, Mara and I watched the demolition of the Darst-Webbe Public Housing Project, the last of the towers that represented the failed ideals of modernist public housing, while we worked on a small infill housing project across the street for Jo Noero.

St. Louis, the laboratory of our architectural adolescence, played a large part in our understanding of architecture as something greater than an object. As we explored the city, struggled to understand its contradictions, and fell in love with its charm, we experimented with the altruistic potential of design and the role of the architect in creating place.

Washington University

Washington University's campus played a similarly large role. Built of Missouri red granite in a mostly academic Gothic style, it sits impressively on a hilltop at the city's edge, overlooking Forest Park. What I loved about the campus was not so much its buildings, but the spaces between them. The campus is a maze of interconnected spaces outlined by thin, double-loaded classroom buildings. One could wander the campus for hours and never get bored; every space had a unique character and charm.

The campus taught me the importance of the public realm and how buildings define it. It also taught me the importance of planning and what kinds of details matter in creating a plan. The student union and the old law school (much hated for its concrete modern aesthetic and since torn down) were contemporary pieces that exemplified the qualities of the original campus plan. The business school and new, faux-Gothic law school buildings, by contrast, are the antithesis of the plan, with fully enclosed courtyards, shut off from the public with more than a hint of elitism. These four buildings formed a recurring subject of the architecture curriculum and a favorite topic of discussion with our non-architecture friends.

A Liberal Arts Education

Washington University offers undergraduates a four-year Bachelor of Arts degree with a major in architecture. It is a liberal arts education, and the classes we took outside of the School of Architecture broadened our view of architecture and led us ultimately to pursue dual graduate degrees.

A postmodern comparative literature course, exploring the memory of place in relation to the construction of place, was defining for Jeff. In a largely abandoned city like St. Louis, it led to the question, "How do you create 'place,' when everyone is leaving or has already left?" For Mara, a minor in anthropology helped build her interest in the impacts of design on human health and well-being. "Design," she believes, "is not just about creating beautiful spaces; it's about the relationship between people and those spaces. Studying anthropology improved my ability to put myself in other peoples' shoes." Erin Cubbison minored in environmental studies, where science-based classes encouraged her to pursue landscape architecture concurrently with architecture at Cal.

A few memorable classes helped me expand my understanding of architecture and its role in society. *The New Woman in American Society 1890-1930* was an in-depth look at the birth of feminism; much of the discussion focused on the role of the city in the women's movement. *Human Behavior, Cultural Anthropology,* and *Introduction to Human Evolution* taught how people and societies interact with place. In particular, Professor Richard Smith's final lecture in *Human Evolution,* a call for activism to fight global warming, altered the way I thought about the world and architecture's connection to it. The lecture so moved me that I lobbied for it to be given to students in the School of Architecture, and it is now part of the sophomore design studio.

Givens Hall

Wash. U.'s School of Architecture is housed

left to right: Gaslight Square, a thriving entertainment district through the 1960s, sits empty in 1993. Photo by Paul Hohmann, AIA, vanishingstl.blogspot.com.

A year later, in 1994, this block of Gaslight Square was demolished, typical of the constant decay occurring throughout St. Louis. Photo by Paul Hohmann, AIA.

Typical infill housing project in poorer parts of town. Photo by Chris Sensenig.

in Givens Hall, an intimate 1936 Beaux Arts building, with a grand, central staircase where students gather. The scale of the program was intimate, as well. Undergrad and grad students took classes together, hung out together, and shared experiences. Third semester Option 3 Masters students took studios with first semester undergrads. The graduate students provided leadership and a broader worldview, while undergraduates brought energy, passion, and blind faith in design.

Washington University is steeped in the philosophy of the Bauhaus and Team 10. From the start, we were encouraged to look beyond the object to the social factors of design. In the first design studio, we were taught the "seven essentials": site context, climate, program, space and light, structure and materials, transitions, and the meaning of place.

The school also took great advantage of the larger university. Professors from a wide range of subjects lectured in Givens Hall on the relationships between their areas of study and the built environment. Jeff and Kari each took a graduate level course taught jointly by Architecture and Social Work, exploring the relationship between the built environment and the social problems of the city.

Professors of Architecture

While each professor at Washington University played a role, a few great mentors had a special influence on our understanding of architecture and the world. What Bob Hansman did outside of his drawing and painting courses taught us the importance of working with and for the neglected people of the city. Through drawing and painting classes, his organization, City Faces, teaches inner-city youth the importance of one's creative side. Laura recalls, "Teaching for City Faces and having Bob as a professor exposed me to a whole new part of urban existence and helped me to care about people and parts of the city that are rarely seen by the designer who sits in a glass office all day."

Gay Loberbaum taught that architecture is not just the design of an object but of a meaningful and delightful place for people, a collaboration among planners, designers, and users, working together toward a better end. His emphasis on site and climate became integral to our thinking.

South African architect Jo Noero, chair of the graduate program, lectured on the importance of place and architecture's role in society, both as a catalyst for and a reaction to culture. As Amit relates, "From Jo, I learned about the long-term importance of design in a larger cultural and historical context and the responsibility of a designer as a political and social being." Amit, Mara, and I worked for him in his small St. Louis practice on Red Location, a museum of apartheid in Port Elizabeth and a redevelopment plan for its South African township, and on Bohemian Hill, a small infill housing project in St. Louis.

Mark Dekay, an author of *Sun, Wind and Light*, brought sustainability to the forefront when it was largely ignored in the studio and the profession. Mara, who worked closely with him, pursued architecture and urban design at Cal with a focus on the environmental and health impacts of buildings and cities.

The studios of John Hoal, another South African who co-founded and directed the City of St. Louis's first urban design department, introduced us to the profession of urban design. Gia Daskalakis and her work in Detroit and Barcelona taught a very different perspective on urban-based architecture and the impact of larger forces. Zeuler Lima's "Archiculture" studio taught the importance of mapping how the built environment reflects larger cultural forces.

University of California, Berkeley and Beyond

Our experiences at Washington University led us all in search of a greater understanding of our built environment. We understood that an architecture or planning degree alone would not be enough to pursue either field in a way that suited our desires. The dual degree program at Cal, as Amit so eloquently points out, "allowed us to explore a wide range of topics that resulted in an invaluable general education—almost like a liberal arts graduate program." ◉

Technology and the Culture of the Profession

Ed Mojica, AIA

The multitude of technological changes of the last two decades have had a tremendous impact on the way architects do things. But it is equally important to recognize and understand the impact on the culture and structure of our profession.

When I first started in this profession as a pre-intern in 1989, CAD was just becoming commonplace in architecture firms, but was used mainly by a few, specially trained CAD draftspersons. Only a select few had a PC at their desks; the bulk of the technology was located in the CAD room. Most work was still produced in the traditional manner: a single designer passing on information via drawings and sketches to a drafting technician, who would complete a sheet of working drawings on a drafting table with pencil or pen on vellum. Other technologies in use at the time were the ammonia-based blueline machine for creating reproductions, the felt or metal tipped pen plotter, 5.25" and 3.25" floppy disks, the KROY lettering machine, and the abundant use of the Letraset® peel-and-stick films and lines. All of these available technologies helped us do things a little faster, but it was still a relatively slow way to produce work.

Today we have BIM—Building Information Modeling—3D modeling programs such as Sketchup and FormZ, email and instant messaging, smart phones and the Web. These technologies provide us with a better and faster way to communicate, to find information, and ultimately to be more productive in our work. Everything is faster, smaller, and contains more memory: think iPod nano. Technology has given us the ability to get information *now-now*. Podcasts, Tivo, and YouTube allow us to find information or entertainment on demand, rather than waiting for a specific showtime. Friends, family, and coworkers easily communicate using email, texting, or IM'ing (instant messaging), regardless of their geographic location. In project delivery, information can be uploaded and shared with a click of the mouse and instantly provide the most current and up-to-date information for our client, contractor, and others.

photos: Ragina Johnson

Our profession has been profoundly altered by the constant and quickly changing technolo-

In our profession, the expectation of immediacy has produced some very positive changes. Our generation finds technology to be easily digested, and we understand its continually evolving nature.

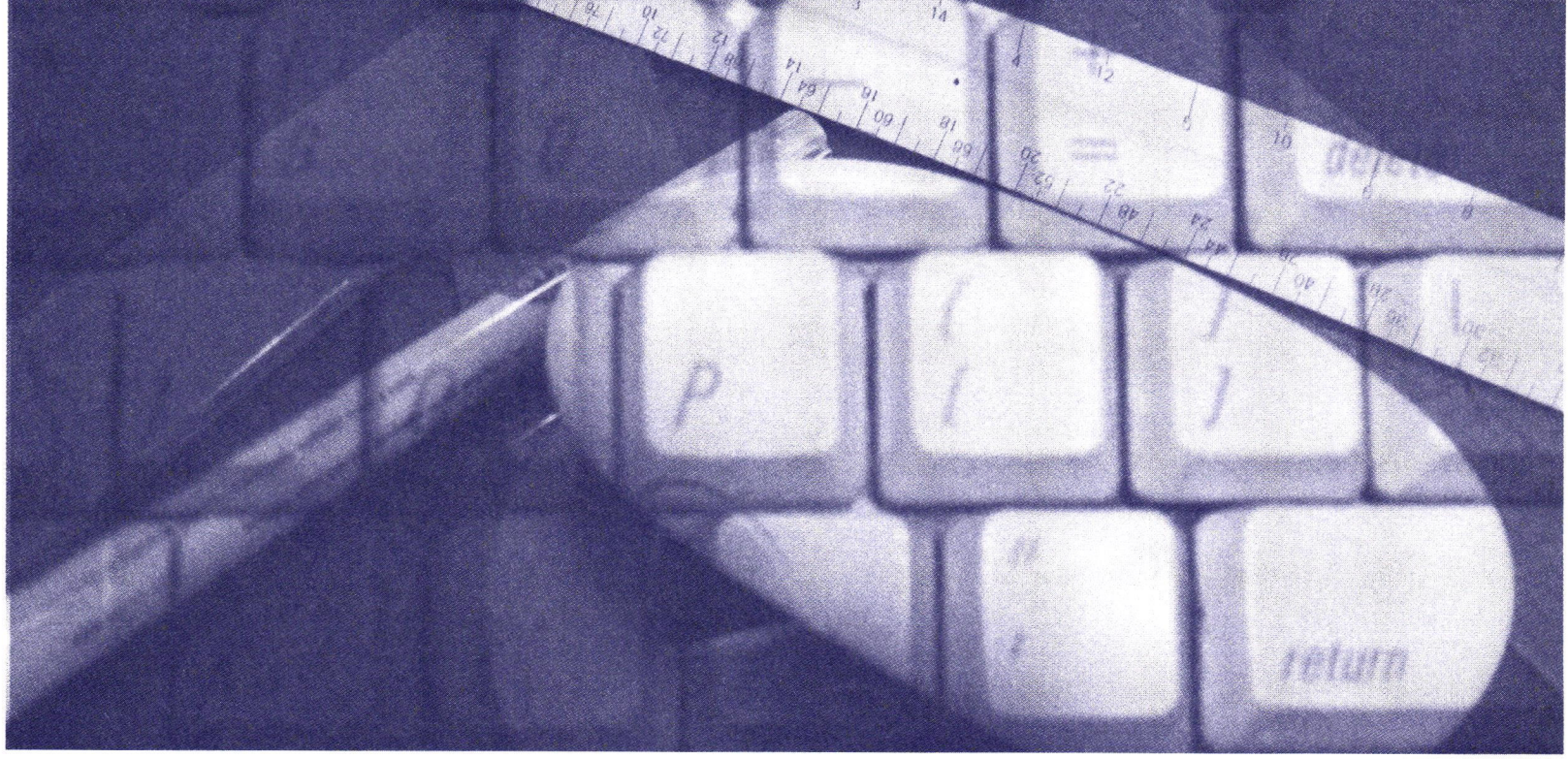
gies available to us. The obvious changes have to do with increased productivity in our project delivery methods, the ability to produce 3D representations for our clients quickly and efficiently, and the compressed schedules under which our projects are required to perform. More interesting, though, are the changes in the relationship the '90s generation has with this profession and others in it.

Our generation of architects has many characteristics that are in large part due to our relationship to this rapidly changing technological environment. One that has had the greatest effect on our profession is the expectation of immediacy—a desire for those things that we want to happen to happen now. This expectation stems from our experience with technology, which has conditioned and spoiled us. If we want something newer, or smaller, or faster, it is available to us even before we know we want it. Consider "speed dating." Rather than meeting people in a more traditional way—at church, at the store, in the local bar scene—the idea is to meet as many potential mates as possible as quickly as possible. If sparks don't happen in thirty seconds or less, then what is the chance I might like this person in the long term? We have become stimulus-driven and often require multiple streams of information in a short amount of time to keep us interested and focused.

In our profession, the expectation of immediacy has produced some very positive changes. Our generation finds technology to be easily digested, and we understand its continually evolving nature. We are comfortable with the speed of change. We thrive on the 'new', as we know that it will make our work easier, faster, and better. We anxiously await the next release of our BIM software, knowing it will provide that one tool that will help speed the process of creating construction documents. Email, instant messaging, smart phones, online social networking communities, and the web keep us globally connected with friends and colleagues and assist us in being more productive in our work. If capitalized upon, these tools benefit firms by helping to produce happier employees, better projects, reduced schedules, and increased profitability.

These are among the many positive outcomes that stem from the expectation of immediacy, but it has also caused tensions within the workplace. These tensions usually relate to our seeming impatience with the way things are. We have trouble waiting, because, when it comes to technology, we are used to getting things as quickly as we ask for them. Upon graduation from college, we expected immediate licensing (well, at least some of us did). We want to run our own projects, hold positions of leadership, and receive rapid increases in pay. We are impatient for the opportunity to show our capabilities and to earn our place, right now. Because we are so used to having to figure out technology for ourselves, we are self sufficient and willing to take risks—sometimes to the dismay of our elders.

The problem is compounded by the fact that the '90s left a huge void of qualified architects when the profession hit a major economic low. This void created a competitive market in



which, if an employee is unhappy in a current position, it is easy to seek other, more desirable opportunities. Employment is now seen as a mutually beneficial business relationship, which lasts only as long as both parties have an interest in it. This situation has given our generation the stigma of being disloyal to our firms—especially if the firm has invested quite a bit of time and money in the development of the employee.

But if AT&T provides the iPhone with their service only, and you can't get it with Verizon, you'll change service in a heartbeat to get the new service, right? Similarly, if a business relationship is not providing the opportunities necessary for development, those opportunities will be sought out elsewhere. This is not so different from a firm choosing to terminate employment when it judges that it is not getting what it is paying for. Most of the '90s Generation simply considers a good place to work as one with a stimulating and challenging environment, a clear path for growth, and opportunity for leadership in the firm.

The changes in technology in the '90s created many benefits and challenges for our profession. We can only expect that such changes will accelerate as technology moves in more interesting and varied directions. Understanding both the direct and indirect implications of these changes will be critical for the development of future generations of architects, for the culture of the profession, and for the thing we do best: creating the emotional and spiritual sense of place that we are charged to create. ◉

"The multi-part exam puzzles me. In some ways, I appreciate the flexibility in scheduling, but in other ways I feel that I underwent all the stress of a huge exam nine times instead of one."

"The multi-part exam puzzles me. In some ways, I appreciate the flexibility in scheduling, but in other ways I feel that I underwent all the stress of a huge exam nine times instead of one."

"In some ways, I feel that the low prestige of the intern cut of school did a number on my lasting sense of self-worth. I watched all my fellow university graduates become 'engineers', 'consultants', and 'project managers', while I remained an 'intern' for five years."

"The deeper you get into life, the harder it is to take the exam. A friend of mine finished the whole exam in five months, and I said I was going to do the same thing. But I have a child, and finding that much time to study on my own after work was just impossible."

"I think that architecture firms were more supportive of the time and other needs when 10 or 15 interns were taking the exam all together. Now it's one here, one there, and it's like the firm is doing you a favor."

"Are we really surprised that career and licensing ambitions are continually postponed while interns struggle to satisfy their employers?"

Licensure and Time

Casius Pealer

In the 1990s, the time it took for a professional degree graduate to complete licensure requirements more than doubled.

On June 20, 1996, the National Council of Architectural Registration Boards (NCARB) administered the last paper-and-pencil version of the Architect Registration Examination (ARE). Thus ended a mentally and physically grueling three-day rite of passage for U.S. architects that officially began in 1962, but had its origins in the nineteenth-century charrettes of the Ecole des Beaux Arts. What followed that last exam changed the licensure process to this day in multiple and unexpected ways.

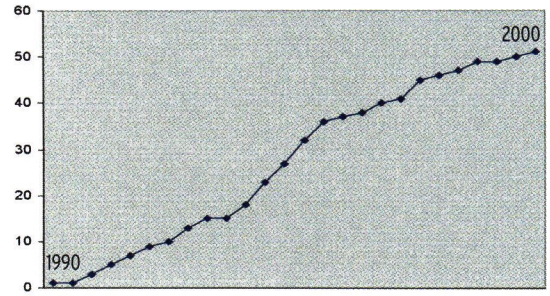
That same year, another event occurred that marked a significant change in the licensure process: completion of NCARB's Intern Development Program (IDP) became required for an NCARB Certificate, which facilitates interstate reciprocity and national architectural practice. Although IDP is required by individual state boards rather than by national mandate, states increasingly adopted this requirement throughout the 1990s in accordance with NCARB's Model Law. At the start of the decade, just fifteen states had made IDP mandatory for initial licensure; by the end of the decade, forty-four states and the District of Columbia required IDP. NCARB's change in 1996 marks the date when IDP could first be called a truly profession-wide program.

Selected remarks from interns discussing the effect of the computerized ARE with the author at AIA Houston on February 27, 2003, the sixth anniversary of the new ARE. Published in *ArchVoices* on February 28, 2003, and available in the archive at www.archvoices.org.

The Intern Development Program

IDP was initially developed in the late 1970s as a voluntary system for interns to document their breadth of professional experience in training areas that NCARB felt were important for architectural practice. In 1978, Mississippi became the first state to make this voluntary program mandatory, with the intent of ensuring a structured transition between education and practice. Yet IDP never was (and still is not) a structured internship program.

Graphs, left to right:
number of states requiring IDP, 1990-2005;
number of individuals registered for IDP, 1990-2000; and
total number of ARE divisions taken, 1990-2000.
Source: NCARB



States Requiring IDP

A 1999 study of the impact of IDP, funded by NCARB, recommended that the profession return IDP to a voluntary program rather than a mandatory requirement, as there were no significant differences between the experiences of interns who participated in the program and those who did not. The results of this study were published in a 2003 issue of the *Journal of Architectural Education* in an article titled, "A Sociological Analysis of the Intern Development Program," by Dr. Beth Quinn. Dr. Quinn's article highlighted the problem that "IDP simply assumes the goodwill of the employer, regulating only the intern, who is arguably the weaker party in the [employment] relationship."

Because IDP placed additional requirements on interns to get specific work experiences that they were mostly powerless to ensure, the time it took for interns to obtain these experiences and document the process was often extended from the three years that was the norm before. Although many graduates in the 1990s took longer to complete this new internship program, few leaders in the profession were aware of the extent of the impact this new program was having on the licensing process.

Architect Registration Examination

Meanwhile, although IDP had slowly but steadily gained momentum, the switch to the computerized ARE was a sudden shock. One initial shock was the dramatic increase in cost of the computerized ARE. NCARB's need to develop sophisticated testing software for the graphics portions of the exam made the tests extraordinarily expensive when compared to the paper and pencil version, as well as when compared to other professions. A 2001 comparison of the costs of professional licensing conducted by the American Institute of Certified Public Accountants revealed that the $981 fee for the ARE was higher than that for all professional exams other than medicine ($1,300), more than double accounting ($458) and law ($429), and more than six times engineering ($150).

This increase in price even surprised many state licensing boards and initially led the legislature in Texas to refuse to allow the ARE to be administered. At the 1998 AIA Convention, the AIA membership passed a formal resolution encouraging NCARB to find ways to reduce or mitigate the price of the new exams.

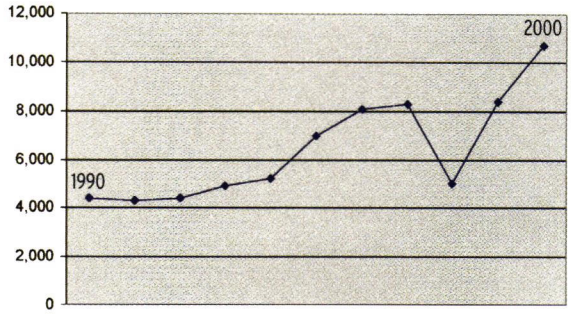
More importantly, however, the technology used to administer the new ARE was optimized for individual test-takers, rather than a group delivery method. It simply did not make sense to fill a convention hall with computers for three or four days once a year, and so NCARB turned to a single private testing company to administer the ARE year-round at sites across the country. This setting made it logical to split what was once one exam—the ARE—into nine separate exams that could be taken individually over time. This fragmenting of the ARE radically changed how candidates (and the firms that employ them) viewed the profession's licensing process.

The accessibility and flexibility of the new computerized ARE was in many ways an important improvement for interns. But the obvious benefits came at the non-obvious cost of making the exam a highly individualized experience rather than a collective rite of passage. An architect who graduated in the 1990s was far more likely to celebrate licensure as an individual rather than a shared achievement. Additionally, that celebration was almost certainly triggered by a letter stating that the individual passed the Mechanical & Electrical Systems division, for example. For architects who graduated in the 1990s, licensure was most often achieved not with a bang, but a whimper.

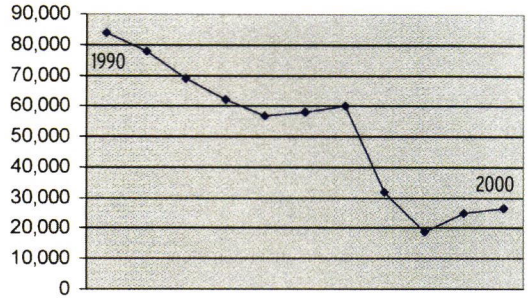
Time to complete

Together, in the mid-1990s, the internship process and the examination process were restructured in ways that artificially extended the time it took most graduates to achieve licensure. Although there were no statistics at the time, IDP is widely understood now to take an average of five years to complete. This meant that by the time they were eligible to start taking the ARE, many interns were further along in their professional careers with substantial work responsibilities, and more interns had significant community and family responsibilities. Interns had to balance these expanded responsibilities to others with their own need to study for and take each one of the nine exams required by the ARE. Perhaps as a result, interns also took longer to complete the ARE than had previously been expected. In 2005, the most recent survey of recently licensed architects on this topic indicated an average of 1.9 years to complete the ARE.

Overall, regulatory changes to the licensing process during the 1990s turned a mostly three-year licensing process into a seven-year process on average. Yet, because the profession had no public data showing the numbers of interns completing IDP or the numbers of



IDP Record Activity



ARE Divisions Taken

interns completing licensure, most architects were unaware of the demographic changes. Where individual interns expressed frustration with encountering an entirely different system than had been described to them in school and by mentors in practice, they were mostly seen as being lazy and not wanting to take responsibility for their own professional development.

The Point

The point of this article is not that the licensing requirements should not have changed during the 1990s. Clearly a paper-and-pencil examination would be an anachronism today, and IDP was intended to respond to genuine concerns about the efficacy of a generic three-year apprenticeship. Instead, the point is that both the internship and the examination process changed significantly during the 1990s, and that the impact of those changes was not anticipated by architecture graduates during that time, or by the profession as a whole.

As the AIAS National Vice President in 1996-1997, I was in a unique position to talk with leaders of the profession during many of these changes and to read all the reports and surveys that were done to support the changes and measure their impact. Mostly, I was shocked at how little information the profession compiled on students and interns, and consequently at how ill-informed many discussions and policy decisions were. The fact that there remains only one study done on the actual benefits of IDP during the program's thirty-year history, and that the study recommended eliminating the program as a requirement, is evidence that the architecture profession has yet to take research or "knowledge creation" seriously.

It is possible, however, that the same decisions would have been made even if all the relevant data had been available at the time. This is certainly what happened when the California Architects' Board adopted IDP as a mandatory requirement, despite being provided with evidence that the program had no demonstrable impact on the internship experience, and without identifying any evidence showing otherwise. (Although, by the time the CAB made this decision, IDP had already become a profession-wide program, and the facts of national reciprocity were perhaps more important than the facts of IDP itself.)

Statistics

In 2003, the AIA and *ArchVoices* produced the first Internship and Career Survey—what was at the time the most comprehensive survey of architecture graduates ever compiled. In 2005, NCARB joined in, and that same survey was repeated with a broader reach and consequently higher quality data. These two surveys quantified for the first time the overall impact of IDP and the ARE on the licensure process. These surveys were motivated by the lack of meaningful, public data on internship that could be used to guide public policy decisions about licensure requirements.

In 2005, these surveys served to transform an ongoing national debate about whether to allow architecture graduates to begin to take the ARE while in the midst of IDP. Because the ARE was no longer a single exam, it could be completed concurrently with IDP, shortening the overall licensing process without eliminating any substantive requirements. A small number of states, like California, already allowed this structure, and a number of profession-wide task forces had recommended the change, but there was no clear national direction. The 2005 Internship and Career Survey informed the debate and significantly helped state licensing boards to vote two years later to allow the ARE to be taken concurrently with IDP nationally.

The AIA again circulated a version of this survey late in 2007, and presumably a final report of the results will be available later in 2008. Hopefully, this biennial survey will continue to be used to inform policy decisions about licensure and internship. In addition, the AIA has initiated other significant data collection efforts aimed at diversity in the profession (2003) and licensure rates (2004). NCARB itself has started compiling data on national licensure rates and, just a year ago, released ARE passing rates by school for the first time. Other initiatives continue to expand our knowledge about professional preparation and training, such as the *Design Intelligence* annual rankings of schools and the InsideArch.org website, which allows architecture firm employees to comment on the work environment at specific firms.

These advancements could be said in large part to be products of the dramatic changes that occurred in the profession in the 1990s. In any case, when we review the changes to the profession in the first decade of the twenty-first century, we will have a lot more information to dissect and debate. ◉

Silent Generation
born 1925-1942
Baby Boomers
born 1943-1960
Generation X
born 1961-1981
Millennials born
1982-2005

Multiple Generations: an interview with Sean Fine

David Roccosalva, Assoc. AIA

Management of Design, an internal seminar series set up in 2005 by Page & Turnbull, a San Francisco-based historic preservation architecture firm, seeks to deepen understanding of current business practices and issues. This lunchtime mentoring program, keying off subjects addressed in Harvard Business Review (HBR), *has examined leadership, sales, self-evaluation, staffing, and motivation. The program was conceived by David Roccosalva, a young Boomer principal at Page & Turnbull. It is coordinated by Sean Fine, an intern architect, who identifies between Generation X and the Millennials.*

arcCA: *In its Management of Design series, Page & Turnbull recently addressed practice management across generations. What was the objective?*

Fine: Our most recent seminar raised awareness regarding the opportunities and challenges of multiple generations in the workplace and how we work together. Each of us works in teams with others who are not necessarily the same age. An *HBR* article describing the generations, their attributes, and how they work best, was read and discussed ("The Next 20 Years: How Customer and Workforce Attitudes Will Evolve," July-August 2007). Rarely was the ideal working condition of one generation the same as or even similar to another. Generation Xers, for example, are entrepreneurial individual workers and expect their teams to be just as entrepreneurial. On the other hand, the younger Millennials require direction and work best in teams.

arcCA: *Who attended?*

Fine: Principals, architects, historians, and conservators attended. The group was all you could hope for—a mix of Boomers, Generation X, and Millennials.

It was a bit of a shock to Gen-Xers that Millennials did not put work first. The younger crowd has multiple interests—one of which is work—but that is certainly not the priority.

arcCA: Did participants identify with their generations?

Fine: Not always. It was interesting to see how engaged everyone got when it came to feeling like part of a group or a generation. Or not. Those who clearly identified with their "own" generation really defended how they work and how accurately they were described. Those who fell between generations, myself included, were less likely to identify with the generation either above or below. We identified with an unnamed in-between generation but of course thought of ourselves as having the best attributes of the generation older and younger.

arcCA: *Management typically is from one generation and everybody else is from younger generations. What discussion did that generate?*

Fine: Our practice happens to be managed largely by Boomers and Generation X, and work is completed by younger Xers, Millennials, and those in between who don't fully identify with either generation. Many of the Xers commandeered the discussion and described what they expected from their teams, and how they like to work. They are also the largest group represented in the office. Millennials listened and then generally noted the need for more than just work. It was a bit of a shock to Gen-Xers that Millennials did not put work first. The younger crowd has multiple interests—one of which is work—but that is certainly not the priority. It's not easy for Xers, as hard-working entrepreneurs, to be completely comfortable with this.

arcCA: *An obvious differentiator might be adapting to technology. Is it?*

Fine: You would think that, the older the generation, the more resistant it is to technology. But remember that Generation X played a big part in the development of a lot of the technology that we use today. As a whole, it was understood and accepted that we need to adapt new technologies, no matter what generation we belong to. The difference lies in how quickly and blindly we will jump in. Millennials are willing to make wholesale changes, Gen X wanted to think it through, see how other people like the technology. Older generations adopt technology as it is handed to them, using it in a limited capacity and usually not exploring the full potential. An example is the change from AutoCAD to Revit. Millennials and the in-betweens are ready to jump in with only a few lessons. The Generation Xers want to try it out on a few small projects, see how it goes, then slowly work it into the system. Maybe the difference is that Gen X is financially responsible and doesn't want to make hasty decisions that would be costly to undo. But sometimes the entrepreneurial spirit shows through.

arcCA: *What other key differences were revealed?*

Fine: Although there were differences in rate of technology adoption, degree of caution, priority of work over personal life, and most obviously work habits, there was no difference between Gen X and Millennial with regard to firm loyalty. Everybody felt loyal, provided that they could express their own individuality. Generation X needs to have opportunities to assemble their own teams, work out problems as they arise, and be responsible and accountable for the results. Millennials have a desire to be in groups and work out problems collaboratively in a supportive environment while accepting constructive criticism and expecting rewards.

arcCA: *How can entrepreneurial and group-work practitioners be useful to each other?*

Fine: In a single word, cooperation. In our case, it happens to be Xer entrepreneurs needing others to help achieve their goals. If they create an environment that supports and sustains creative and collaborative group work, they will meet their goals, which include income and financial viability. Although group work, as an example, can be more expensive because it involves more people (hence, more billings), group-think might also be able to solve a problem more quickly and creatively than an individual can do. In other cases, a more singularly focused approach might actually be the right fit. If clients get good and timely service and internal morale stays high, why not work in multiple kinds of ways according to the pattern of outcomes you see?

arcCA: *When multiple generations work together, what is the impact on creativity?*

Fine: In the best of all circumstances, I think the impact can be extraordinary when the finest talents of each generation are allowed to be expressed, are encouraged to be expressed. Maybe that occurs in watercolor or in sketching or with computer modeling. We can't all do it all, but we can appreciate the range of talents we have around us. As a historic preservation firm, we always look for ways to influence the design intersection between the historic and the contemporary. Whatever skills get us to that goal, you can be sure that multiple generations were involved.

arcCA: *Do clients interact differently with different generations? Can you project something of the future experience with clients?*

Fine: Depends who your clients are, because they come from various generations too. We find that it's productive to have professionals from various generations in positions of authority. Clients will usually identify best with some over others. Interestingly, though, those comfort levels with the client aren't necessarily driven by age—whether you're laid back or fairly aggressive can be a plus or a negative given how a client reacts to that kind of personality.

arcCA: *What surprised you most about this session?*

Fine: My biggest surprise was that, in spite of real differences in how the generations want to work and do work, the differences among individuals within generations seem just as significant as those across the generations. Architecture is a deeply personal creative endeavor. Generational differences seem to be just one among many factors that lead us to different approaches to our profession.

arcCA: *On balance, are generation gaps a positive thing?*

Fine: Absolutely, provided that they can be managed. Each generation has its own habits, requirements, and attitudes. You will not change those, so a good work environment will recognize the different ways that people work and will provide for those habits. The hard part isn't identifying the differences. The hard part is identifying the differences that cause problems—inefficiencies, strife with clients and inside the office. Successfully tackling problematic differences, whether or not they're rooted in generational issues, will have us all on the way to better business practices. ◉

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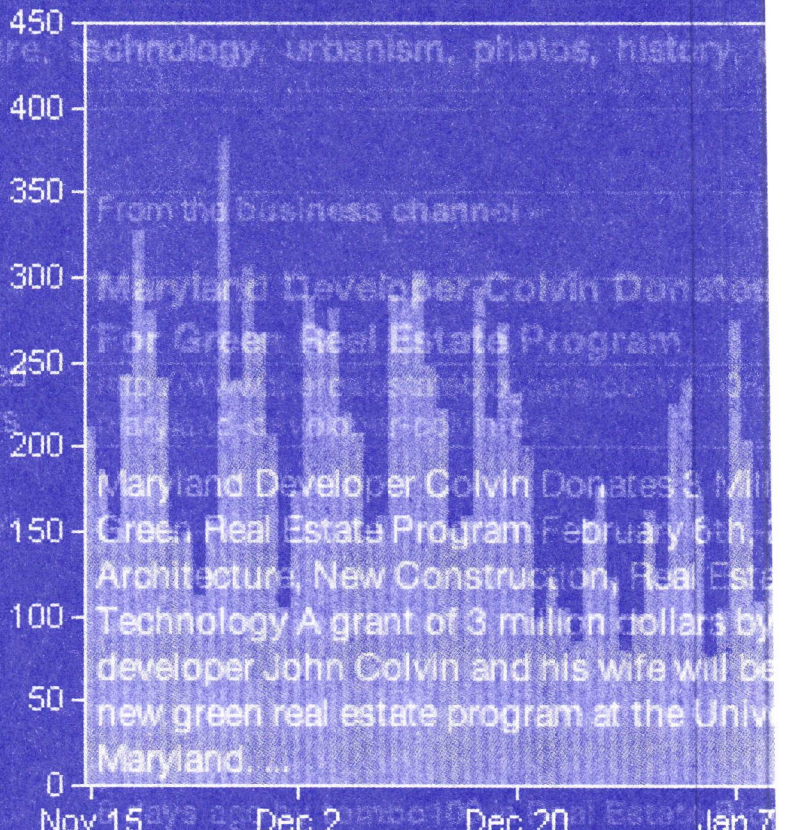

New Orleans (1 of ?)

http://www.maigh.com/ 2008/ 02/ 12/ new-orl

The alarm on my BlackBerry was set for an hour before dawn so I could slink out of the room and catch the sunrise. I laid it next to my head and passed out on the floor of the hotel room on a pile of pillows and under a swath of blankets.

10 minutes ago by maigh in maigh.com · 36

Welcome to the Future

http://www.ectomo.com/ index.php/ 2008/ 02/ welcome-to-the-future/

[futurecity.jpg] The transformation of mankind's idealized future over the last century is a fascinating thing. Our tendency to speculate wildly is our greatest trait, resulting in a rich history of lofty, unrealistic goals and incredible literature that only serves to drive us to speculate further;

12 minutes ago by brownlee in ectoplasmos · Authority: 458

Algae Networks of the Future

http://blogs.abc.net.au/bigpicture/ 2008/ 02/ algae-networks.html

Algae Networks of the Future Algae Tower housing clusters at downtown Algae Aquaculture

sorts of **architecture** and design blogs – but rightly so: I won first prize in the History

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Atlanta's Buckhead Library may be a parking lot next year

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Atlanta's Buckhead Library may be a parking lot next year

Edge Networks Introduces Cavium Networks' OCTEON Option for its 20Gbps Line

http://coudal.com/ archives/ 2008/ 02/ 12/ atlanta-buckhe.php

The Buckhead Branch Library, one of the few fine pieces of

Maryland Developer Colvin Donates $ Mil

For Green Real Estate Program

http://www.mrt.com/ articles/ article/ Maryland-Developer-Colvin-Donates-$-Mil-For-Green-Real-Estate-Program

Maryland Developer Colvin Donates $ Mil

Green Real Estate Program February 6th,

Architecture, New Construction, Real Este

Technology A grant of 3 million dollars by

developer John Colvin and his wife will be

new green real estate program at the Univ

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Blog this chart! Use this code to put an automatica

English posts that contain <a href="http://technorati.com/search/architectur per day for the last 90 days <a href="http://technorati.com/search/architectur

Back to Sea

Blog

Is in the Details: Spread the Good Word

Jimmy Stamp

In Orson Scott Card's *Ender's Game*, protagonist Ender Wiggins finds himself launched into deep space, charged with the task of defending humans from an intergalactic menace. Not content to stand by and do nothing while their brother saves the galaxy, Peter and Valentine Wiggins take it upon themselves to tackle a more terrestrial, yet no less difficult, challenge—preventing the next world war. Using the virtual communications network, "The Nets," to educate themselves on world history, international politics, and even transportation and infrastructure networks, the Wigginses familiarize themselves with contemporary world politics. Once properly informed, they begin to self-publish their thoughts and concerns onto net discussion groups and private forums. Peter and Valentine are able to attract like-minded thinkers who respond and contribute to their ideas, eventually developing a dialogue having massive global ramifications. In this subplot of *Ender's Game*, Orson Scott Card was essentially describing a vast and powerful network of political blogs and bloggers. It's worth noting at this point that *Ender's Game* was published in 1977.

To make sure we're all up to speed here, let's establish a basic definition for the term "weblog" or "blog." Paraphrased somewhat, Wikipedia defines a blog as "a website where entries are commonly displayed in reverse chronological order, combining text, images, and links to other blogs, web pages, and other media related to its topic. Many provide commentary or news on a particular subject while others function as more personal online diaries. The ability for readers to leave comments in an interactive format is an important part of many blogs." With that taken care of, the question now remains, "What does this have to do with architecture?"

For many people, the first serious exposure to architecture and architectural discourse doesn't come until college, where everything seems to become suddenly accessible at once. The inner sanctum of academia offers its acolytes a well-versed faculty, lively peer groups, studios, histories, crits, discussions, and specialized libraries filled with vast collections of books, magazines, and journals. Views and opinions can finally take shape, technique is developed, and per-

opposite: collage of screens from Technorati.com

They are a live, evolving network of individuals—an infinite classroom or endless studio full of not only architects, designers, artists, and critics, but also nurses, butchers, bartenders, and salesman. Each person has the opportunity to study industry-specific texts, to read first-hand accounts of incredible new works of architecture, and to add their voices to the chorus.

haps the first signs of style begin to appear. Unfortunately for many, the last serious exposure to architecture and architectural discourse occurs when we leave that *sanctum sanctorum*. Today, thanks to the Internet, neither situation is necessarily absolute. From the comfort of their own home, a twelve-year-old French boy and an eighty-year-old Japanese woman can both learn about the history of architecture in Dubai and the importance of sustainable design in the desert. Like the children in *Ender's Game,* they have access to a profusion of news, texts, films, photographs, and—most importantly—ideas.

Blogs are more than the rather static definition given above. They are a live, evolving network of individuals—an infinite classroom or endless studio full of not only architects, designers, artists, and critics, but also nurses, butchers, bartenders, and salesman. Each person has the opportunity to study industry-specific texts, to read first-hand accounts of incredible new works of architecture, and to add their voices to the chorus. With this kind of information no longer relegated to studio discussions and university theory seminars, architecture is becoming much more accessible to the public. Welcome to the blogosphere.

The Only Sure Things are Death and Taxonomy

According to blog search engine Technorati.com, there are 112.8 million unique blogs as of January 2008, 5,405 of which are listed as relevant to "architecture." That may seem like an inaccessible abundance of information, but blogs are nothing if not 1) specialized and 2) ephemeral. Readers quickly discover their preferred sites and visit them regularly, expecting new content. If it's not there, readership diminishes until the blog drops off the radar—sometimes this happens after years of daily updates and regular maintenance. Demand for content is high, and as blogs are labors of love, those who write them are typically offered little reward besides the fleeting thrill of new comments, continual discussion, and the occasional fifteen megabytes of fame.

In this group of loosely affiliated, dedicated compatriots, there are as many different types of architecture blogs as there are architecture bloggers, and more are signing on (5,406...5,407...5,408...) every day. Content ranges from the super local ("I'm thinking about renovating my apartment...") to the international; from adding new information multiple times a day to updating just once a month; from praising the work of emerging young architects to spreading the gospel of REM Koolhaas—sometimes in the same post. Generally speaking, most architecture blogs can be collected into just a few basic categories, but with so many individuals creating unique content, the taxonomy becomes limitlessly idiosyncratic, reminiscent of yet another famous work of fiction, Borges's *The Analytical Language of John Wilkins.* In this work, the author recalls some of the elaborate classification systems he has encountered; most notably, the "Celestial Empire of Benevolent Knowledge," a system dividing animals into categories such as (a) belonging to the emperor, (b) embalmed, (g) stray dogs, (m) having just broken the water pitcher. Luckily, like-minded bloggers tend to attract one another. By sharing

Jimmy's Top Seven Architecture Blogs

Archinect
www.archinect.com
Really an architecture community more than an architecture blog. Archinect is a must-read.

A Daily Dose of Architecture: "(Almost) daily musings from New York City."
www.archidose.blogspot.com
This is the first architecture blog I ever read and I still check it every day. Inspiring photographs and insightful commentary on some of the best contemporary architecture out there.

BLDG BLOG: "Architecture conjecture. Urban Speculation. Landscape Futures."
www.bldgblog.blogspot.com
Perhaps the most imaginative and poetic architecture blog out there. Topics range from underground civilizations to the soundscapes of urban environments.

Inhabitat: "Future forward design for the world you inhabit."
www.inhabitat.com
Inhabitat is my go-to source for green design and prefab architecture.

Strange Harvest
www.strangeharvest.com
Another site with a welcome, broad definition of architecture, written by Sam Jacobs, director of British architecture firm FAT

Where: "A blog about urban places, placemaking, and the concept of 'place.'"
thewhereblog.blogspot.com
The subtitle says it all, really. I only need to add that it's incredibly well written.

Super Colossal
www.supercolossal.ch
A great Australian blog that has been successfully integrated with the writer's newly-opened office, Super Colossal.

content, linking back and forth, and commenting on and creating responses to posts, informal networks of common interests are established. This drastically helps the reader distill those 5,405 architecture blogs, making it possible to find the desired type of content and avoid those blogs that in their eyes have "just broken the water pitcher."

Just Please Don't Call it "Blogitecture"

Take a photo, upload it, write a brief post or description, click "publish" and that's it. Congratulations. You're a published blogger. With publishing speeds like that, one needn't wait until next month's issue of (insert your favorite architecture magazine here) to get an update on that exciting new project halfway around the world—if there's even room for it in that issue, of course. Returning to young Peter Wiggins, the prescience of *Ender's Game* once again becomes clear. While speaking of his Net publication, Peter Wiggins describes—quoted here slightly out of context—what could be considered as one of blogging's greatest benefits. "We can say the words that everyone else will be saying two weeks later. We can do that. We don't have to wait."

With the astounding array of content and an immediacy of distribution previously unthinkable, it's now possible to follow almost any project from conception to construction. The instantaneity of publication means that an article doesn't just cover a design when it is unveiled or a building when construction is complete. It has the power to grow and evolve with the project, making it theoretically possible to document the life of a building—from gestation to ribbon cutting to demolition—and share it with millions of people as it's happening. Renderings and photos are published and republished, virtually dispersing around the world almost as soon as they're made public. To anyone with an Internet connection, the discourse is open long before the doors of the building, and readers are on the inside right from the beginning, critiquing it and arguing every step of the way.

Comparisons have been made describing blogs as the modern equivalent to the small, often self-published architecture magazines of the '60s and '70s. Both serve as engines to further new and often radical ideas, featuring passionate authors sharing their ideas and their vision of how architecture could potentially improve the cities we live in, or even alter our landscape and shape the world around us. Such polemical projects and ideological stances are by no means foreign to the architectural blogosphere, but many blogs currently act primarily as news outlets that inject wit and opinion into their hyper-linked stories. As architecture blogs evolve, more and more may move from reporting and critiquing into actually producing independent work to support their ideas. There are already those that dig for deeper meaning, trying to understand an architectural work on a more conceptual level, so it's not a stretch to envision a very near future where an affiliation of architecture bloggers—perhaps even an international online design collective—will become the next Archigram or Team 10. And who knows, maybe they'll even achieve interplanetary peace in the process. ◉

A Conversation with Shigeru Ban

Michael Franklin Ross, FAIA

The 2007 AIACC Monterey Design Conference convened in Pacific Grove last October. The conference was about sharing ideas and inspiring architects to think beyond their daily practice and be innovative. The theme was "the Lateral and the Vertical": vertical is about aspiring to new heights, while lateral is about a design logic that moves beyond the traditional.

The Keynote Speaker was Shigeru Ban, Hon. FAIA, a Japanese architect with a diverse and international practice. Ban spoke about his architecture, his humanitarian efforts worldwide, providing housing to victims of natural disasters, and his design philosophy. He epitomized the Design Conference theme by showing work that both aspires to new heights and provokes us to think beyond the traditional.

Ban first gained international prominence by making architecture out of non-traditional materials such as cardboard tubes and more recently out of shipping containers. By converting these banal and everyday materials into poetic, lyrical forms and spaces, Ban has inspired all of us to think differently, to imagine, and to dream.

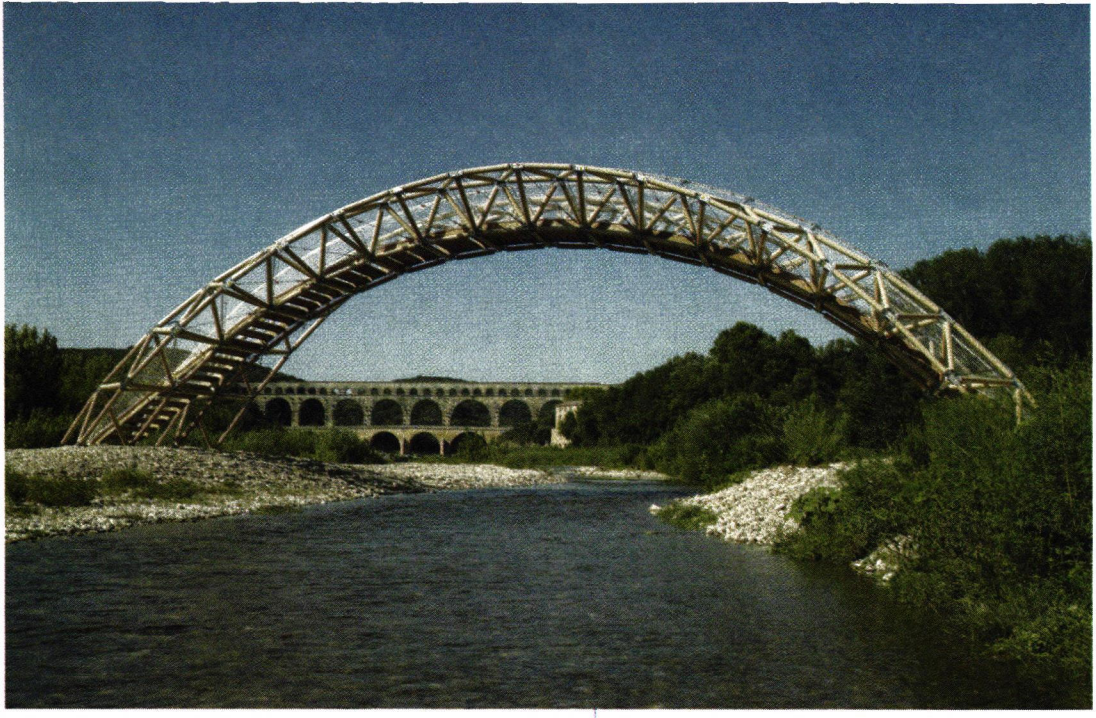
After his lecture, Michael Franklin Ross, FAIA, had an opportunity to sit down with Shigeru Ban to discuss his work.

arcCA: *You have designed housing for displaced refugees in Rwanda, a paper-tube church for earthquake victims in Kobe, and shelters for victims of natural disasters in India, Africa, and Asia. What moves you to do this?*

Ban: Even in disaster areas, I want to create beautiful buildings; this is what it means to build a monument for common people.

arcCA: *I noticed you designed a bridge made of cardboard tubes across the Gardon River in the south of France. It is adjacent to the Roman aqueduct Pont du Gard. What was your idea for this bridge?*

opposite, Nomadic Museum, photo by Michael Moran



Ban: I built this bridge with my students. I brought my Japanese students to work with local students. It's only up for the summer, for a festival. Afterwards, they dismantle it and rebuild it next year. It is a very interesting contrast, the Roman stone bridge and the paper bridge. Paper, too, can be strong and lasting.

arcCA: *It can be dismantled and rebuilt. This reminds me of Japanese Pagodas that were dismantled during the feudal wars and then rebuilt. All the pieces were numbered so they could be re-assembled without the use of nails or screws. Is this Japanese recycling?*

Ban: Yes it is, but I never studied Japanese architecture, so I don't connect my ideas with Japanese history. You know where I got the Japanese influence? From the Case Study Houses in California, from Craig Ellwood and others who created intermediate spaces.

arcCA: *You also create the flow of space from inside to outside, as in your now famous Curtain Wall House, where you used an actual curtain.*

Ban: Yes. It's not only about inside/outside, but also about the construction process. I am interested in the experiments done by those architects. For example, using interesting formwork with concrete or exploring the use of industrial materials. Also, trying different construction methods has had an influence on me. It's the same as the Farnsworth House idea, making an interesting building with minimal use of materials. At Farnsworth, Mies called the glass skin the curtain wall, but removing the wall is cheaper, and it allows the use of an industrial material that is an actual curtain. I am also interested in using materials for multi-purposes, like using storage units as structure, so the structure becomes more invisible.

arcCA: *I notice you are very interested in structure and work with some of the world's most innovative structural engineers.*

Ban: I studied in Japan with Gengo Matsui. Later, I've worked with Frei Otto on the Japan Pavilion in Hanover, Germany, with Buro Happold on the Nomadic Museums, and with Cecil Balmond of ARUP on the Pompidou Centre in Metz, France.

arcCA: *In 2000, you were able to realize two extraordinary paper-tube structures: the Paper Arch at the Museum of Modern Art, Abby Aldrich Rockefeller Sculpture Garden in New York and the Japan Pavilion, in consultation with Frei Otto, in Hanover. Do you still have an interest in paper-tube structures?*

Ban: Not only paper tubes. That's only part of it. I still have an interest, but not particularly in paper tubes. I want to create my own structural system. When we read the history books and see new structural materials, new architecture comes out of it. Otherwise, you are just following the fashion of the period. And I am not really interested in following the fashion.

arcCA: *You mentioned that you are interested in using industrial materials in unusual and creative ways, such as your use of shipping containers in the design of the Nomadic Museums. I'm sure you heard that Kisho Kurokawa died last week. He designed the Nakagin Capsule Building, using refined shipping containers as mini-apartments and hotel rooms in the Ginza district of Tokyo.*

Ban: Yes, I heard about Kisho Kurokawa. He was a very talented architect, but I use shipping containers in a different way. I had a terrible experience in Turkey, after an earthquake, when people were living inside of the containers. It was very hot and then it was very cold inside the containers. It is a horrible space.

left page, Paper Bridge, photo by Didier Boy de la Tour
this page, Nomadic Museum, photo by Michael Moran

Containers are made for things, not for people. I never thought of using the inside of the container, but I use the container as a structural element, to frame the space. So that's the difference.

arcCA: I understand very well. I visited your Nomadic Museum on a pier in New York City and the Nomadic Museum adjacent to the Santa Monica Pier in southern California. The linear space with the paper-tube colonnade was very powerful. Are there going to be more Nomadic Museums?

Ban: The last one is in Tokyo. We rent the containers locally, so there is no need to ship the structural elements. Each museum is made to fit into the local situation, and there is no waste. It is very sustainable.

arcCA: *I understand you are working with Cecil Balmond, Arup Fellow, on the roof canopy for the new Pompidou Centre in Metz, France. Balmond won the Gengo Matsui Prize in 2002 as the outstanding structural engineer in the world. What's unique about the roof?*

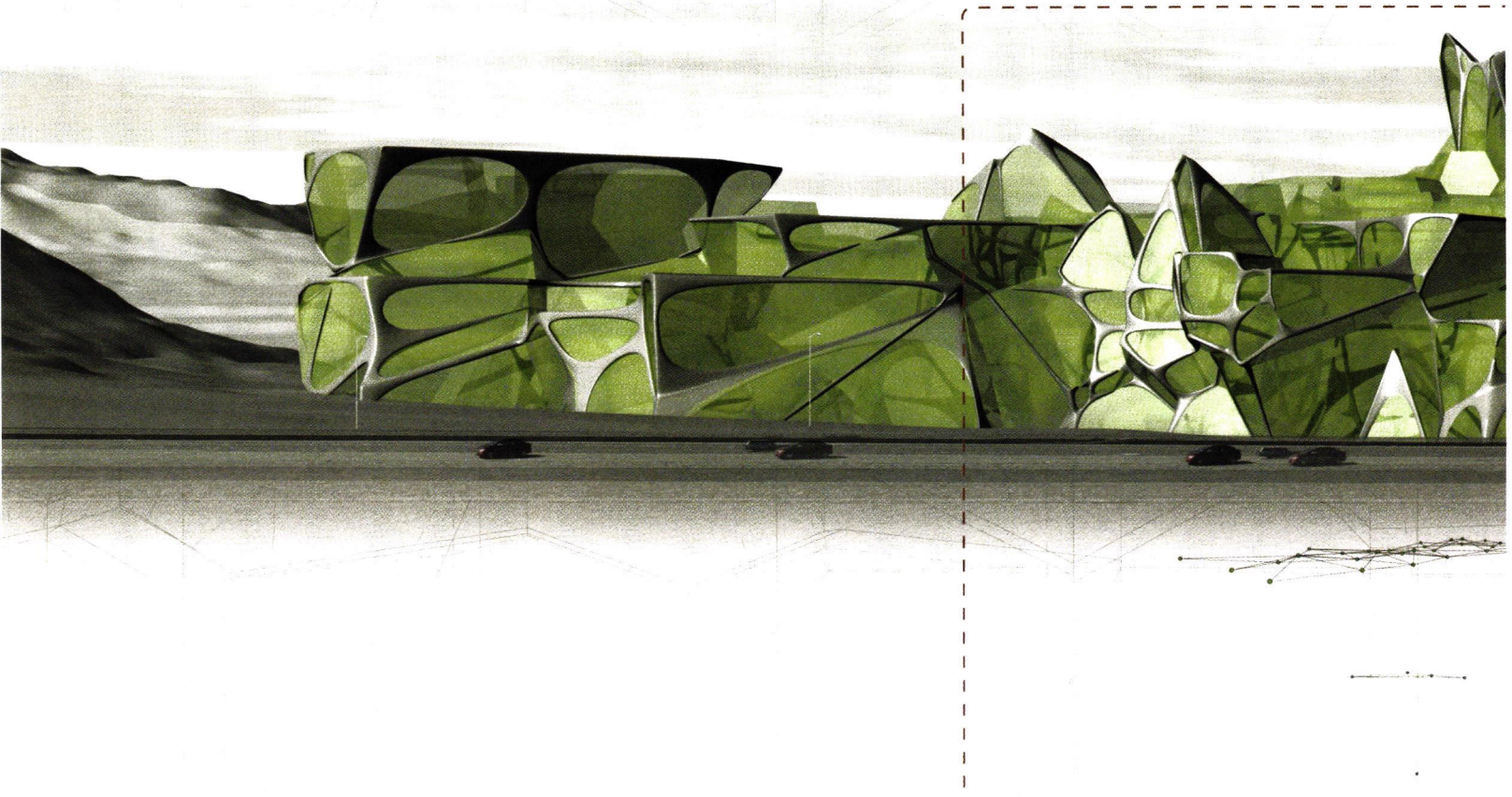
Ban: The roof was inspired by a Chinese straw hat, but it is more complex than that. It flows from outside to inside. You know France is shaped somewhat like a hexagon. It is an admired geometry in France. We used the interlocking hexagons as the structural system, which allows the roof to bend and slope while maintaining structural integrity. In the design concept, the landscaped garden came first, and the roof is like a "tent" over the garden. We won this project through an international competition.

arcCA: *I mentioned that Cecil Balmond won the Gengo Matsui Prize. Since you studied with Gengo Matsui, what was he like, and how did he influence your thinking?*

Ban: He passed away a number of years ago, but he was the leading structural engineer in Japan. I started working with him on the paper-tube structures. He was the only one at that time who was very innovative in Japan. He designed many timber structures and bamboo structures, so I asked him to work with paper. I said to him, after wood and bamboo, then why not paper? Because he was so famous, it was difficult to approach him with small things. Yet, since he lived alone and was single, he would ask me to come to his home instead of the office, because he knew I could not pay him. So he did it as a hobby and out of interest. He would always ask me to come over at 6 p.m. He would do all his calculations. He taught me to see the structural engineering process visually, almost intuitively. Then, exactly at 7 p.m., he would get bored, and he would ask his housekeeper to bring in food and whiskey. He would always tell interesting stories.

arcCA: *With work all over the world, what would you consider to be an exciting project for you in the next few years?*

Ban: Obviously, it doesn't depend on size. I enjoy an innovative challenge and a client who accepts new ideas. It is very enjoyable. I receive many invitations outside of Japan, but you know I have only five residential buildings in Japan right now. The recently completed Nicolas Hayek Center for Swatch Group in Tokyo was a commission not from Japanese but Swiss. I grew up in Japan, and it would be very good to do something experimental in Japan. We have excellent general contractors and craftsmen. ◉



Off Grid Ideas Competition

The William Turnbull, Jr. Environmental Prize

Sponsored by the California Architectural Foundation
In conjunction with the 2007 AIACC Monterey Design Conference

The twenty-four-hour life of the urban fabric of our communities is affecting not only the natural environment, but human health and well-being. As noted by the U.S. Green Building Council, buildings in the U.S. consume more than 30% of our total energy and 60% of our electricity. The U.S. consumes 5 billion gallons of potable water per day just to flush toilets. A typical North American commercial construction project generates up to 2.5 pounds of solid waste per square foot of floor area. Sustainable design practices can substantially reduce these negative environmental impacts and reverse the trend of unsustainable construction practices, but we must look beyond doing less harm to providing designs that heal the earth.

The California Architectural Foundation challenged architects, students, designers, planners, and all interested individuals to develop solutions to reduce the environmental impacts on our planet, slow urban sprawl, and discover innovative ways to effectively reuse existing resources. The aim of the competition was to examine strategies that not only minimize the footprint created by the construction and ongoing operation of a project but reach beyond to heal the damage inflicted by less sensitive development.

The Brief

The competition sought sustainable solutions for urban infill projects with a zero carbon footprint. The site is an approximately sixty-acre parcel located in Visitacion Valley on the San Francisco Peninsula. Just west

of Highway 101, it is bounded by Bayshore Boulevard on the west and Tunnel Avenue to the east. Landmarks in the neighborhood include Candlestick Park on the shores of the Bay to the northeast and the Cow Palace to the west. The area is surrounded by a broad variety of residential, commercial, and industrial uses. Only a short distance from both downtown San Francisco and the high-tech environment of Silicon Valley, there are an abundance of resources available for creative development.

A previous study of this site had yielded a planning overlay that outlines a series of mixed-use commercial and residential overlay zones. A current Planning Department study also outlines a conceptual open-space network, to be taken as a guideline and not a requirement—commitment to public access to open space is the underlying issue. Consideration should be given to the scale of the surrounding community and how the proposed development will enhance the area beyond the immediate boundaries of the site. At the same time, it is expected and desired that this development be seen as a new landmark for all who pass on the nearby 101 freeway. Adjustments to scale and density that are supported by analysis based on the ability to better go "off grid" will be assessed to determine the eco-advantage of the increases.

A typical residential density in San Francisco is approximately 25 dwelling units per gross acre or 50 dwelling units per net acre. To achieve eco-effectiveness at a neighborhood scale, it was anticipated that the site might tend more toward the 50 to 60 dwelling units per gross acre density. A typical project in this area might be required to park the site at a ratio of 1.5 to 2 cars per dwelling unit on site; the competition developer was permitted, as an environmentally friendly designer, to work with a reduced parking requirement of .75 spaces per dwelling unit on site. That requirement could be further reduced with justification and narrative regarding how transportation will be handled through alternative means.

Achieving a "zero carbon footprint" is difficult on an individual dwelling or business scale. It becomes increasingly achievable as the design approaches a neighborhood scale. There is, no doubt, a tipping point where the density of development goes beyond the eco-advantages and slides toward over-development. It was incumbent upon the submissions to find that optimal point and to describe the way in which it can be quantified.

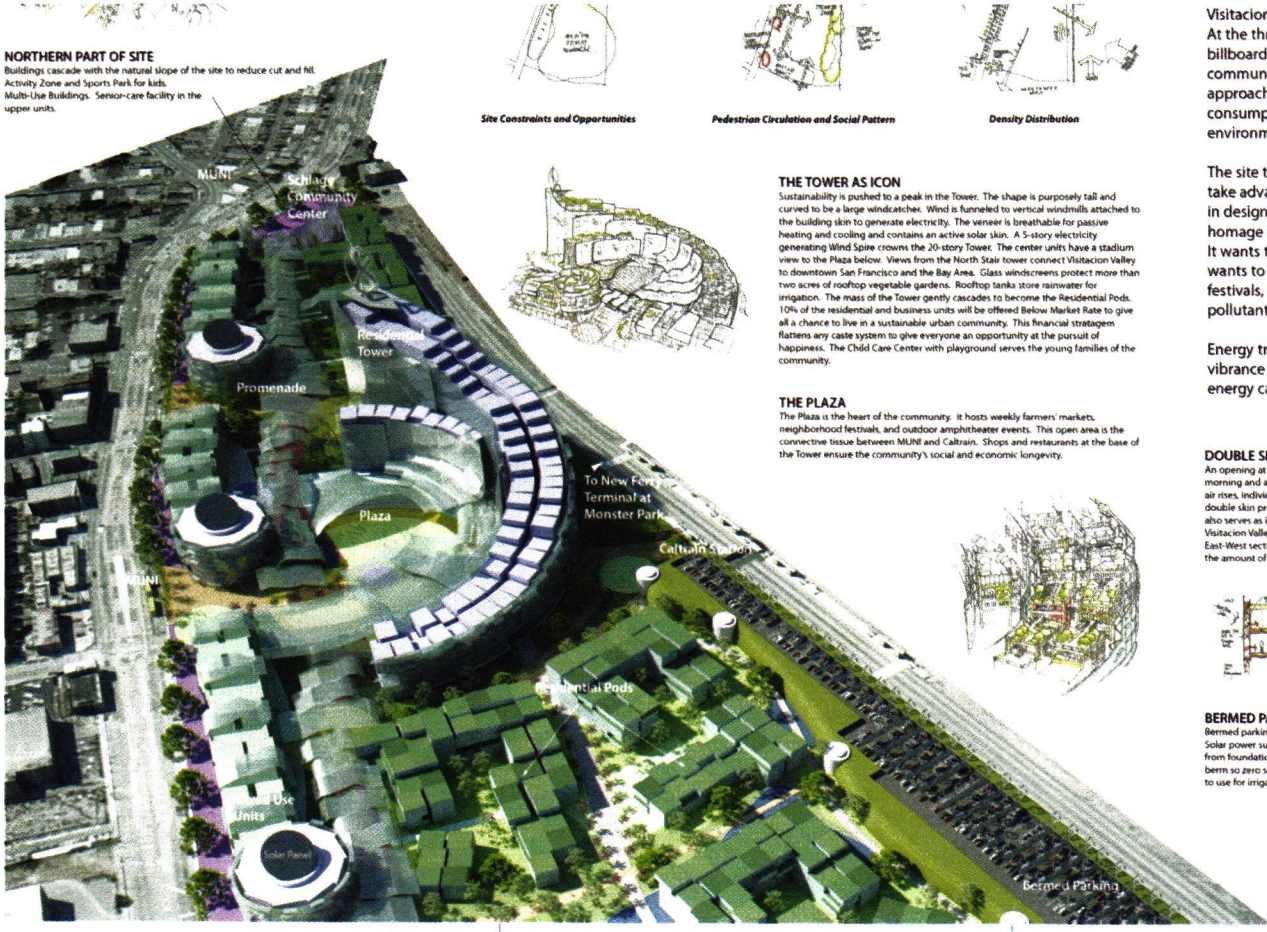
Criteria

Definitions of "sustainable design" vary and are subject to interpretation. To help clarify the most important principles, the AIA Committee on the Environment has developed its "Top Ten" measures for sustainable design, which entrants may use as a loose guideline: "Great design includes environmental, technical, and aesthetic excellence. Stewardship, performance, and inspiration are essential and inseparable." (See the AIA Top Ten Green Project Metrics at http://aiatopten.org.)

The jury reviewed each submission on the basis of the multi-dimensional impact the ideas offer for re-shaping the way in which we create our communities. While components and systems need not have been wholly drawn from existing technologies, it was expected that the concepts are realizable within the near term. Inclusion of concepts drawn from ongoing research and the application of previously theoretical elements was encouraged. The goal was to stretch the imagination of all who are exposed to the concepts that emerge, leading our profession toward a carbon neutral future.

Eligibility

The competition was open to any California resident (including students who attend school in California, but may not be official residents of California).



JURY

Lance Bird, FAIA
La Canada Design Group, Inc.
Costa Mesa

Mary Griffin, FAIA
Turnbull Griffin Haesloop
San Francisco

Harrison Fraker, FAIA
Dean, College of Environmental Design
UC Berkeley

WINNERS

1ST PRIZE:

Commendation Award

($2,500 plus $5,000 to the architecture school of the winner's choosing, the College of Architecture and Environmental Design, Cal Poly, San Luis Obispo)

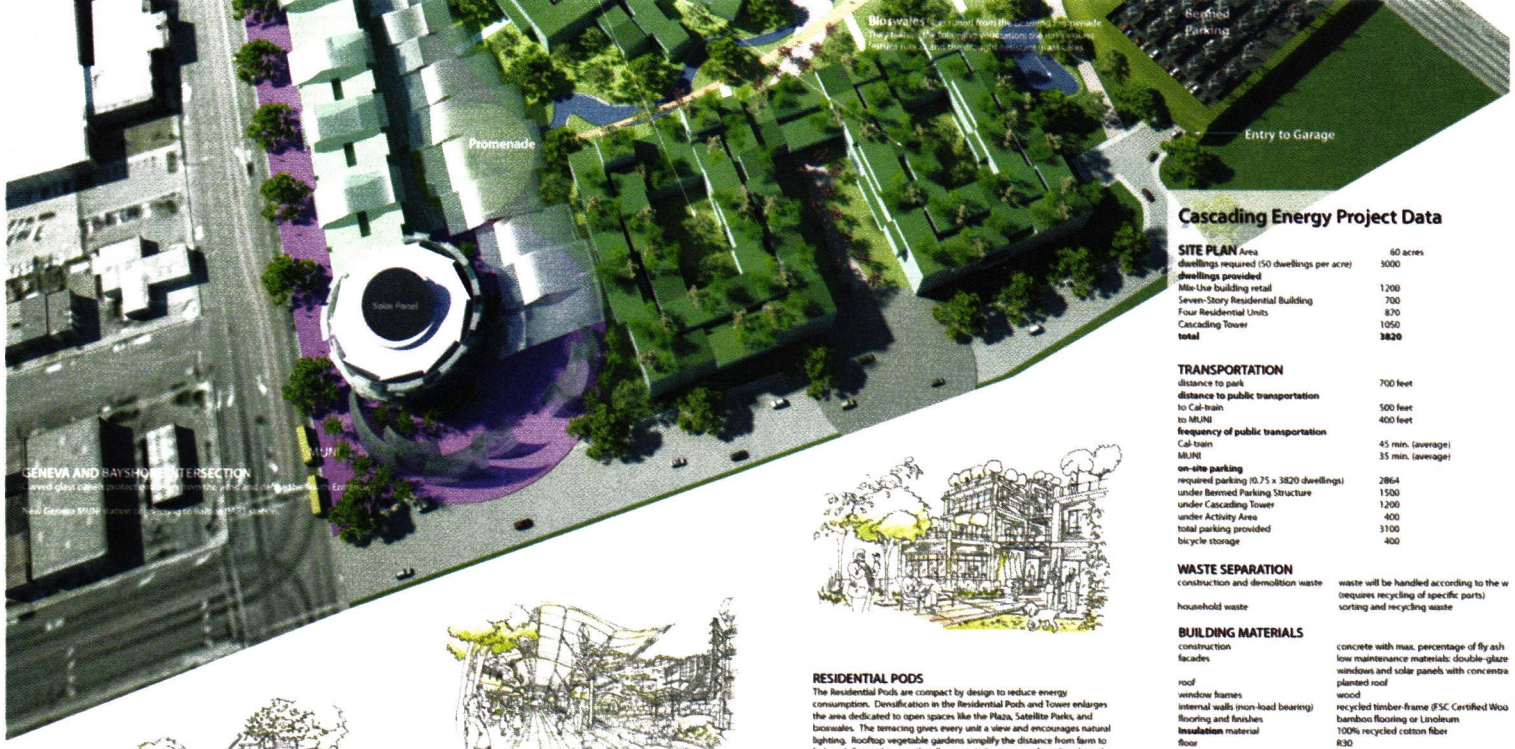
"Cascading Energy"

DES Architects + Engineers
Redwood City

Design Team:
Candice Lui
Tracy Wong
Howard Kwok
Chi-Wing Wong
Ginny Yi
Waibun Lee
Rico del Moral
Amy M. Strazzarino
Byron K. Wong
Enoc Lira

Cascading Energy is energy transferred. Wind becomes electricity. Electricity converts to a social vigor. Social vigor sustains an economic life. This new development is about creating, conserving, and sustaining energy in all its forms.

Visitacion Valley is the gateway to the City of San Francisco. At the threshold of this entry is a new architectural billboard declaring



THE LEARNING PROMENADE
The Learning Promenade is the main spine offering a direct object lesson for people to learn how to reduce their carbon footprint. Flanked by restaurants, shops, and markets, this path is the destination.

RESIDENTIAL PODS
The Residential Pods are compact by design to reduce energy consumption. Densification in the Residential Pods and Tower enlarges the area dedicated to open spaces like the Plaza, Satellite Parks, and bioswales. The terracing gives every unit a view and encourages natural lighting. Rooftop vegetable gardens simplify the distance from farm to fork, redefining the term "locally grown". Green waste from Residential Pods is composted for the Rooftop gardens. Lower levels are used for mixed commercial. Arterial walkways between residential units are paved with permeable surfaces.

SCHLAGE COMMUNITY CENTER
History is preserved. The Schlage Building is adapted to become the new Community Center. Outdoor play area is protected from the wind by an enclosed glass canopy.

TRANSPORTATION
Visitacion Valley is a mass transportation centerconnecting MUNI, BART.

Cascading Energy Project Data

SITE PLAN Area — 60 acres

dwellings required (50 dwellings per acre)	3000
dwellings provided	
Mix-Use building retail	1200
Seven-Story Residential Building	700
Four Residential Units	870
Cascading Tower	1050
total	**3820**

TRANSPORTATION

distance to park	700 feet
distance to public transportation	
to Cal-train	500 feet
to MUNI	400 feet
frequency of public transportation	
Cal-train	45 min. (average)
MUNI	35 min. (average)
on-site parking	
required parking (0.75 x 3820 dwellings)	2864
under Bermed Parking Structure	1500
under Cascading Tower	1200
under Activity Area	400
total parking provided	3100
bicycle storage	400

WASTE SEPARATION

construction and demolition waste	waste will be handled according to the w (requires recycling of specific parts)
household waste	sorting and recycling waste

BUILDING MATERIALS

construction	concrete with max. percentage of fly ash
facades	low maintenance materials; double-glaze windows and solar panels with concentra
roof	planted roof
window frames	wood
internal walls (non-load bearing)	recycled timber-frame (FSC Certified Woo
flooring and finishes	bamboo flooring or Linoleum
insulation material	100% recycled cotton fiber
floor	R30
roof	R30
external wall	R19

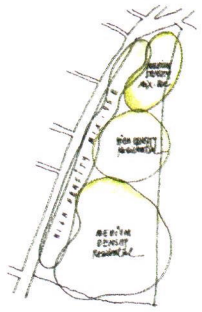
ENERGY DATA

average household (kWh/month)	888
on-site low-energy household (kWh/month)	167
on-site household saves (kWh/month)	721
190 wind turbines generate (kWh/month)	158,270
195,000 solar panels with concentrators generate (kWh/month)	131,625,000
approximate kWh/month sell back to utility company (household usage and other on-site usage)	100,000,000
heating and cooling	none
passive solar	double-glazed facade and air circulation

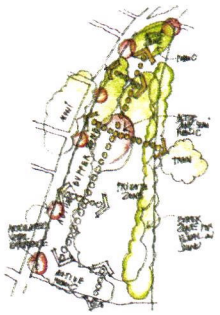
to the world that a sustainable urban community is possible and preferable. A dual-pronged approach is used to both generate energy and reduce consumption to neutralize the carbon emissions and environmental impact of the site.

The site tells us what it wants to be. It wants to be tall to take advantage of the high winds. It wants to be compact in design to reduce energy consumption. It wants to pay homage to its past as home of the former Schlage Factory. It wants to be connected to adjacent neighborhoods. It wants to use its open space to unite the community in festivals, to grow its own food, and to filter its own pollutants.

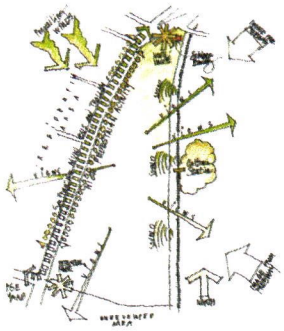
Energy transforms from a physical state to a communal vibrance to a cultural enterprise. The flow continues and energy cascades.



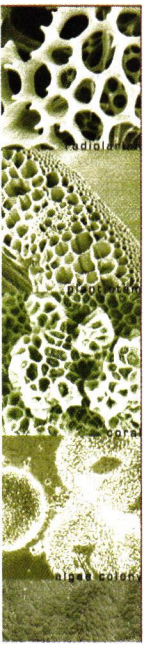
Site Constraints and Opportunities



Pedestrian Circulation and Social Pattern



Density Distribution

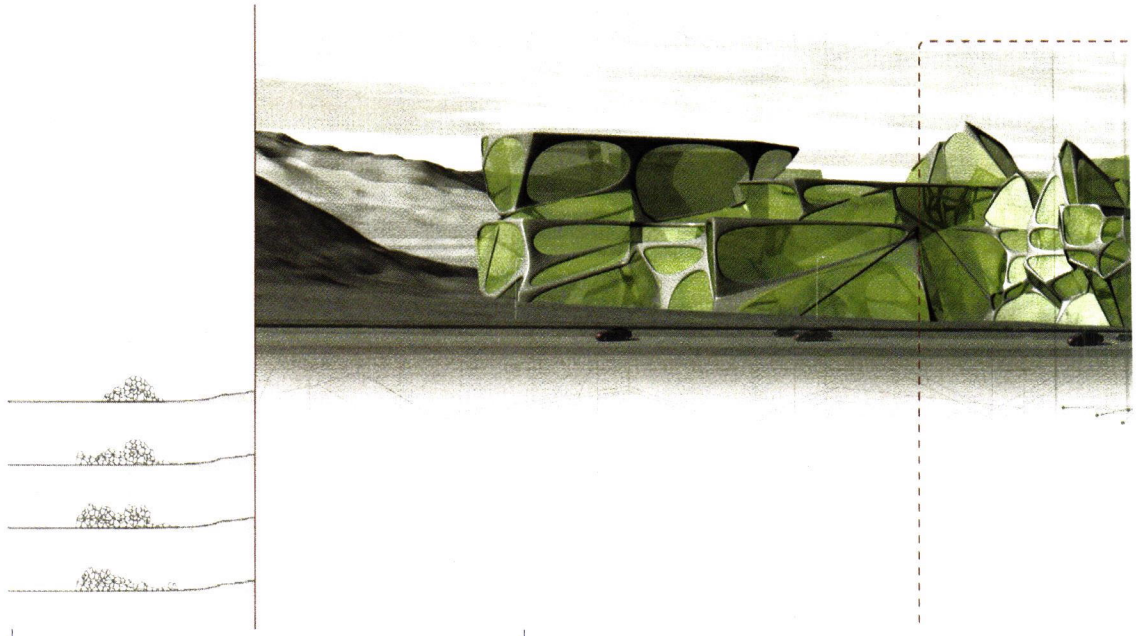


_DISSIPATIVE COLONY

Architecture is in the midst of a revolution. In order to continue to prosper as a practice, we must strive to meet the needs of a rapidly changing environment. Seeking a carbon neutral existence using solutions that employ established technology allows scientists to determine the future of habitation while leaving architects within the dated modernist envelope.

Architecture as a static object defies all notions of a sustainable system, and thus, the use of the empty box approach to versatility fails. A sustainable system must not only draw on material technology but must be systemically as well as spatially adaptable, relieving pressure from material sourcing, waste creation and decay.

Our current building system is artificial and inefficient; pitting man against nature. But for true solutions to these problems, we need only look to the natural world. Systems biology tells us that as cellular specialization increases within an organism, regenerative and adaptive capacity decreases proportionally. Therefore, the proper mimetic system for a fully adaptive architectural system is a colony of non-



2ND PRIZE:

Citation Award ($1,250)

"Dissipative Colony"

Gray Dougherty, Assoc. AIA
Dan Sullivan
Albany

Architecture is in the midst of a revolution. In order to continue to prosper as a practice, we must strive to meet the needs of a rapidly changing environment. Seeking a carbon neutral existence using solutions that employ established technology allows scientists to determine the future of habitation while leaving architects within the dated modernist envelope.

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In this investigation, each cell contains all necessary pieces for survival. The networks created by each system overlap and intersect to form a fully redundant, decentralized, complex organism. Natural systems inform the architecture in terms of efficiency of primary structure, the employment of redundancy, and the use of complex, non-static, adaptive or cybernetic structural systems.

We can no longer afford to imagine ourselves as the commanders of nature, and our current model cannot be changed to accommodate this new strategy. Only by engaging drastic changes, creating architecture as a living, organic insertion, participating in the natural cycle, will we be able to regain balance. ◉

The prevalence of Voronoi in nature ranges from the patterning of animal skin, to behavioral configurations

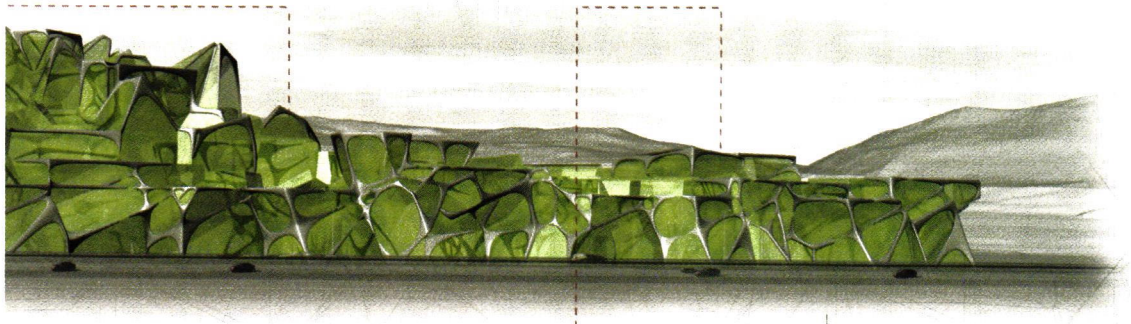
the program and integrated with sustainable principles of biologically mimetic precedents.

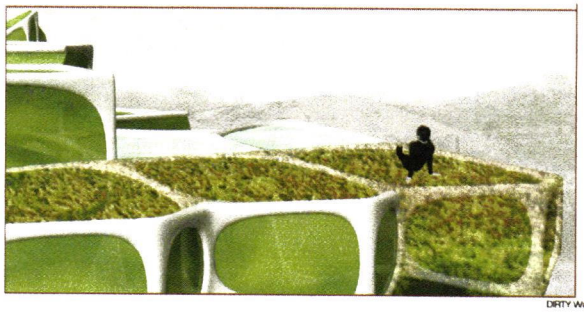
being substantiated through the properties of the adjacencies reflected in the program.

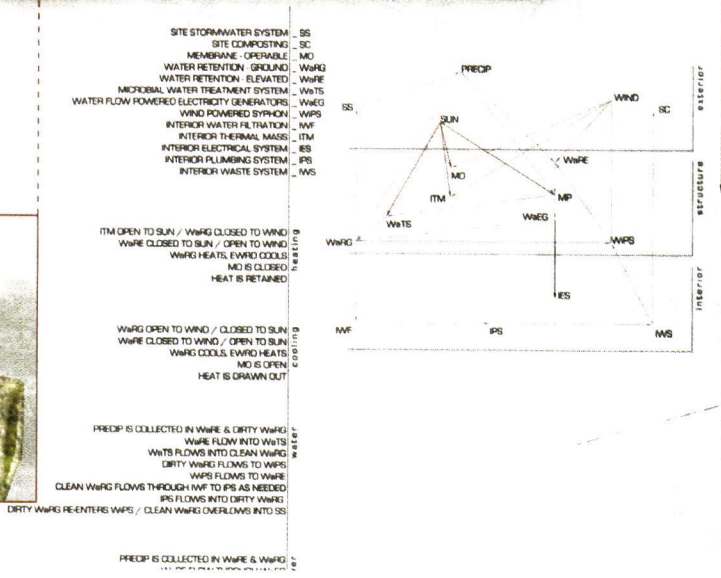
bon of programmatic requirements.

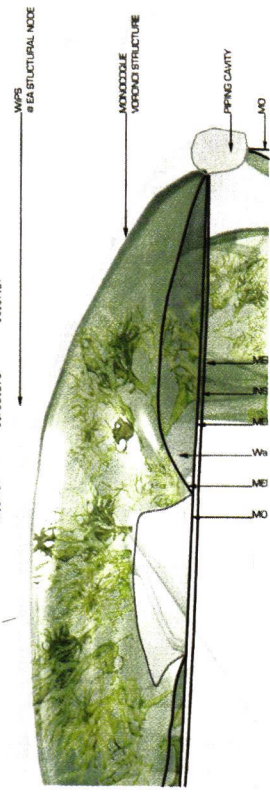
MATERIAL STRATEGY

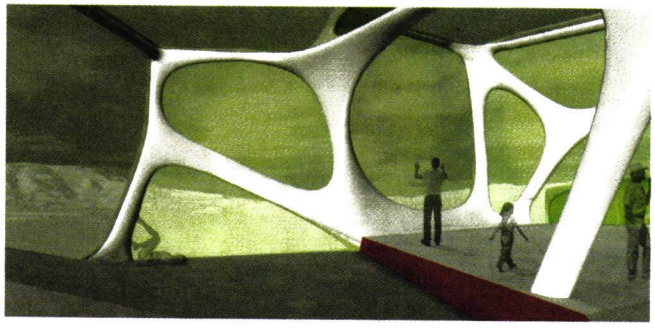
Reliance on existing material so production of non-sustainable ods. The structure and skin par very basic technical nutrients t built into new components wi quality or function.

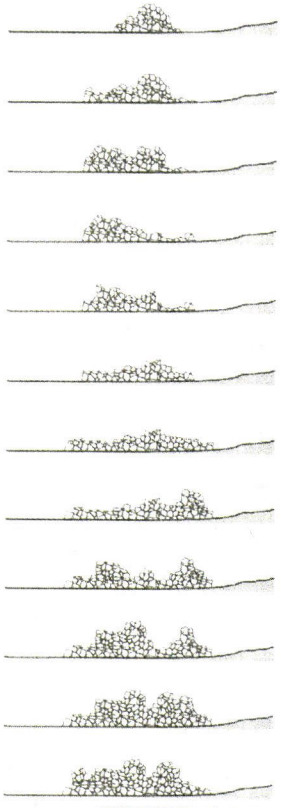












_DEVELOPING COLONIAL AGGREGATIONS

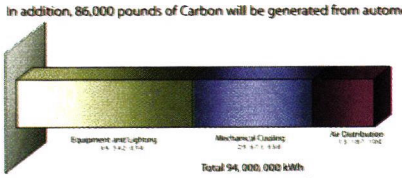
Off-Grid Community

The carbon footprint of the community will be identified, this represents the base case for our study. This number will be lowered through two methods, the production of onsite renewable energy and energy conservation measures to make renewable energy feasible.

Where we are now, in 2007

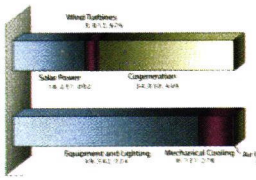
If our site were to be developed today, in 2007, it would generate **74 million pounds** of Carbon through usage and conditioning.

In addition, 86,000 pounds of Carbon will be generated from automobiles.



So we can produce our own on-site renewable energy:

- Solar Power
- Wind Power
- Cogeneration (Biomass)

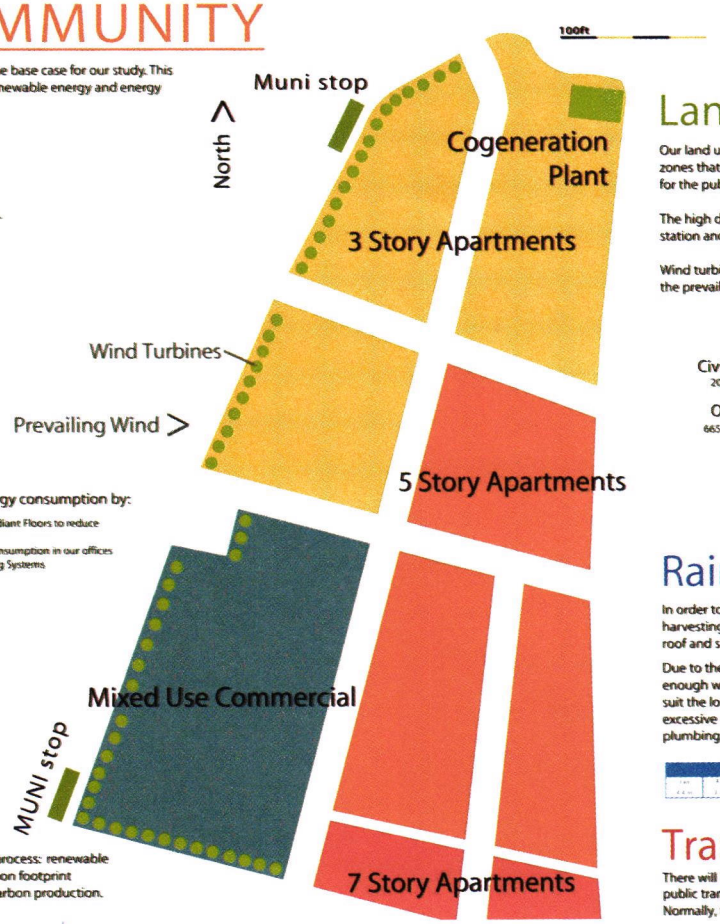


BUT we can reduce energy consumption by:

- Using Natural Ventilation and Radiant Floors to reduce consumption in our homes
- Using Active Beams to reduce consumption in our offices
- Employing Ultra-efficient Building Systems

Energy Conservation Measure	Energy Footprint (kWh)	Carbon Footprint (lbs CO_2)
Carbon Reduction by Production		
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
Carbon Reduction by Conservation		
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
Net Consumption	0 kwh	0 lbs

The carbon footprint of the community was reduced through a two stage process: renewable production and energy conservation. While both methods reduce our carbon footprint significantly, neither one alone is enough to completely offset the overall carbon production.

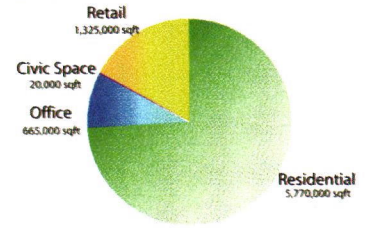


Land Utilization

Our land use was mostly devoted towards medium density residence zones that allow for an efficent use of the land while giving us critical for the public transportation system.

The high density offices were placed in the south, close to the railway station and the commercial zones.

Wind turbines were placed on the West side of the site, in the directior the prevailing wind.



Rain Water Collection

In order to reduce potable water usage from the mains a system for ra harvesting can be implemented. The harvested rainwater is collected roof and stored for future use as gray water usage; i.e. landscape irriga

Due to the high rainfall experienced in San Francisco, it is possible to r enough water for site landscaping. Flora for landscaping will be select suit the local environment, with special attention to plants that do not excessive watering during the summer months, when rainwater is scar plumbing.

Average Precipitation in San Francisco											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Transportation

There will be no cars on site. There is sufficient public transportation to commute comfortably. Normally, for this type of space there would be

2ND PRIZE:

Citation Award ($1,250)

"Off-Grid Community"

IBE Consulting Engineers

Sherman Oaks

Design Team:

Danielle Krauel
Howard Ho
Peter Simmonds
Michael Leung
Neil Alexander
Christie Lyons
Isaac Chambers
Paul Baker
Patrick Wilkinson
Hong Gip (Cannon Design)

Passive Energy Conservation Building Strategies

- South side overhangs.
- High narrow windows to admit more useful daylight.
- Minimizing energy intensive commercial zones.
- Operable windows.
- Openings oriented towards the prevailing summer breezes.
- Taller buildings on the south side provide shading during the summer months.
- Natural ventilation.

Rapidly Renewable and Innovative Building Materials

- Bamboo floors and other finishes.
- Recycled PET Carpet with low VOCs and lower impact dye process.
- Bonded Logic Ultra touch denim insulation, made of recycled jeans.
- Double-paned, Low-E, argon filled glazing.
- Use of recycled and locally sourced materials.
- Reuse existing site materials.

Green Construction Practices

- Modular construction to reduce the waste generated on site.
- Recycling all waste, including day-to-day worker lunch trash.
- Site soil erosion prevention plan.

Promotion of Energy Efficient Transportation

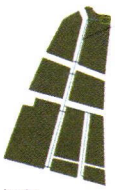
- No inefficient cars will have parking on-site; limited parking provided for hybrid vehicles.
- Lend-a-bike system.
- Easy access to local mass transit such as the MUNI and Cal Train.
- Create an education program to bring green transportation to the tenants.

Efficient Resource Management

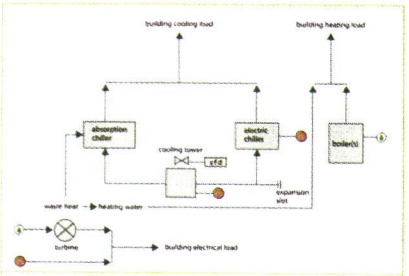
- Low-flow fixtures and waterless urinals.
- Rainwater harvesting.
- Drought-resistant flora.
- Gray water reclamation and reuse.
- On-site wastewater treatment before discharging to the sewage system.
- Recycling center.

4.1 MW Cogeneration Plant

Main Utility Tunnel



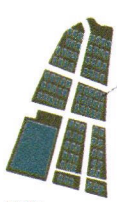
key plan



Cogeneration central plant

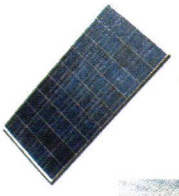
- Cogeneration will use a reclaimed methane (from sewage) fired engine with an electrical generator that produces electricity for the building. The combustion heat is reclaimed so that it can be used for heating the building or in an absorption chiller to cool the building. This technology is very efficient and consumes less carbon dioxide than if a separate boiler and purchased electricity.

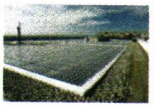
34.0 MWh cogeneration



Solar Panels on Roof

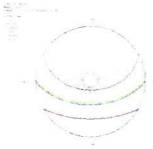
key plan





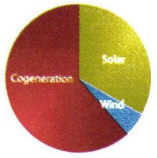
- Solar power generates electricity when the light from the sun strikes photovoltaic panels. When the sun beams hit the panels, the electrons in the silicon get excited and move back and forth rapidly creating direct current (DC) electricity. This electricity can then be consumed or sold back to the electrical grid. The main advantage is that since the electricity is entirely produced by collecting solar rays, there is no production of carbon, harmful gases or toxic waste.
- The solar panels will be placed flat on every roof. Our preliminary approximation was 1,400,000 sq.ft. of roof area for solar panels

18.2 MWh solar panels

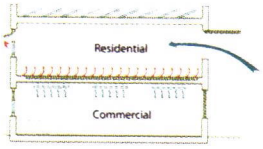


Sun Path diagram

optimized heating & cooling -7.9 MWh



Renewable Energy Sources

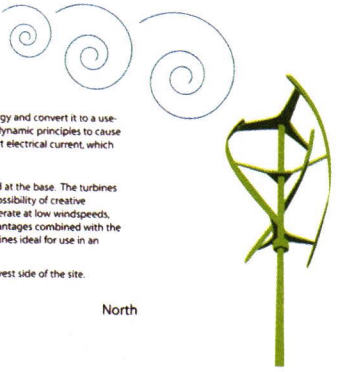


- Heating and Cooling in Residences and Other Spaces:
  The residential units will be naturally ventilated without an artificial cooling system. We will implement strategies to provide crosswind ventilation and stacking effect ventilation. Vertical operable windows, for as large an operable area, on the west side (the side with the summer breeze) and at low level are ideal. The exhaust air would come out of a window on the east side at high level. A radiant floor system will be used to provide heating for the space when temperatures drop.
- Heating and Cooling for Offices:
  Active beams represent the most efficient method of cooling available today. Cooling is provided by a combination of cool air and chilled water. Warm air near the beam is induced into the active beam and over a series of chilled water coils which cool the warm air. This cooled air is mixed with the supply air before being returned to the space. By supplying minimal air to the space, we reduce the size of ductwork and fan power required significantly.

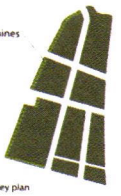
terials

ooo generates 35% more oxygen than similar sized and is harvested after only 3-5 years of growth. (Floors)

wind turbines 3.0 MWh



Wind Turbines

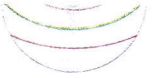


key plan

- The concept of wind power is to harness wind energy and convert it to a useable source of energy, i.e. electricity. By using aerodynamic principles to cause a mechanical rotation it is possible to create a direct electrical current, which can be distributed, stored, and/or sold.
- The turbines rotates about a vertical axis supported at the base. The turbines are easily located, aesthetically pleasing with the possibility of creative advertising, not harmful to wildlife, self-starting, operate at low windspeeds, and independent of the wind direction. These advantages combined with the sustainable concept of "free wind" make these turbines ideal for use in an urban environment.
- Approximately 600 turbines can be placed on the west side of the site.

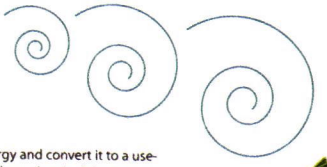
North

18.2 MWh solar panels



Sun Path diagram

wind turbines 3.0 MWh



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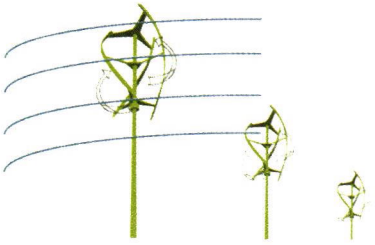
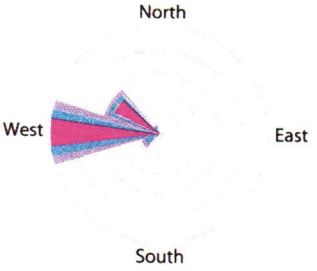
es

plan



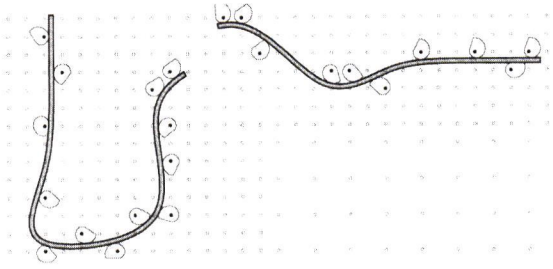


Under the Radar

Rob Ley's *Serial Departure* and Atwater Residence

Stephen Slaughter, AIA

Serial Departure, Los Angeles



"How do you get to Carnegie Hall...?"

"Under the Radar" typically features an unnoticed, under appreciated, and unheralded project, building, or construction. Given the unique subject of this issue, we thought it appropriate to feature, on this occasion, a practice instead of a thing. And the term "practice" can be taken quite literally when used to describe architect and designer Rob Ley's exhibition *Serial Departure* in L.A.'s Material and Applications Gallery and his installation for a private home in Atwater. Together, these projects represent the advancement of a technique, development of a method of investigation, and construction of a formal philosophy that will probably be the building blocks for Ley's practice for years to come.

Serial Departure is Ley's attempt to challenge how practitioners interested in Computer Aided Design and Computer Numerical Controlled fabrication conceive material, connection, detail, and effect. His desire was to depart from what were becoming canonized methods of material translation from digital modeling—CNC milling, 3D printing, laser cutting, and vacuum forming—and to look at how traditional means of construction could be mobilized to describe the same complex systems. He started with a standard building block: a 5" x 24" inch strip of bent acrylic, and a simple detail for connection—two stainless steel Philips head screws that fasten one end of the acrylic strip to a furred wall. With this material and method he constructed a 9' high by 52' long, running bond, bent acrylic screen.

Installed against an exterior wall in the gallery's forecourt, Ley's

piece stood as a low-tech translation of the high-tech processes of systems modeling and animation. As with his computer model, his installation offered, within an undifferentiated field, moments and eruptions of variation achieved by either varying the length and connection detail of his module, or by introducing an aggregation of new material and forms: steam-bent wood strips, which allowed his relatively contained piece to appropriate space and challenge the sanctity of the court.

For the Atwater Residence, Ley was essentially asked to reproduce the screen wall he had completed for the M&A. Fortunately, he was able to convince the client that a new context and program would require a reconsideration of the method of production and a unique and specific investigation into effect. Starting with a simple acrylic module, the problem of domestic space led to a variable system, allowing for differences of privacy or porosity required by the program adjacent to each section of the screen.

The method devised to solve the problem was a departure from *Departure*, since the system required a means of regulating density to control views; it could not be screwed down, as was the case in the gallery. As a result, the connection method for Atwater became a system of interlocking acrylic pieces with the capacity to slide into one another, allowing greater or lesser porosity depending on how tightly or loosely spaced the pieces are. With this simple detail, Ley was able to regulate on the fly the relationship of one space to another as the serpentine screen meandered through the home, organizing and accommodating domestic space specifically to its need.

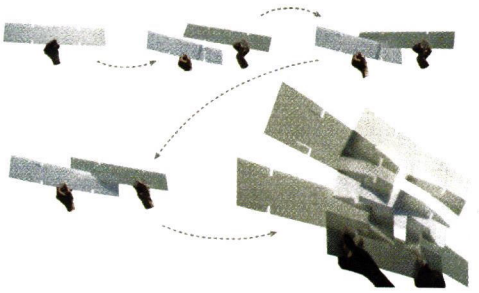
"Practice" is all too often used in our profession as a noun, interchangeable with "office," or "firm." Ley's work shows that the term is still an action verb and can still be used to describe the process of an architect's growth towards maturity. *Serial Departure* and the Atwater Residence are similar with respect to their overall form and material, yet each satisfies specific needs for specific site conditions and programmatic requirements. One practice, one project, two sites. ◉

Project Team:
Urbana: Rob Ley, Principal

Fabrication: Mina Javid, Matthew Gillis, Sara Daleiden, Joshua G. Stein, Erik Blanchard, Shane Acker, Jonathon Deiss, David Sartoris

Photography: Mina Javid and Stella Lee

Atwater Residence, Los Angeles



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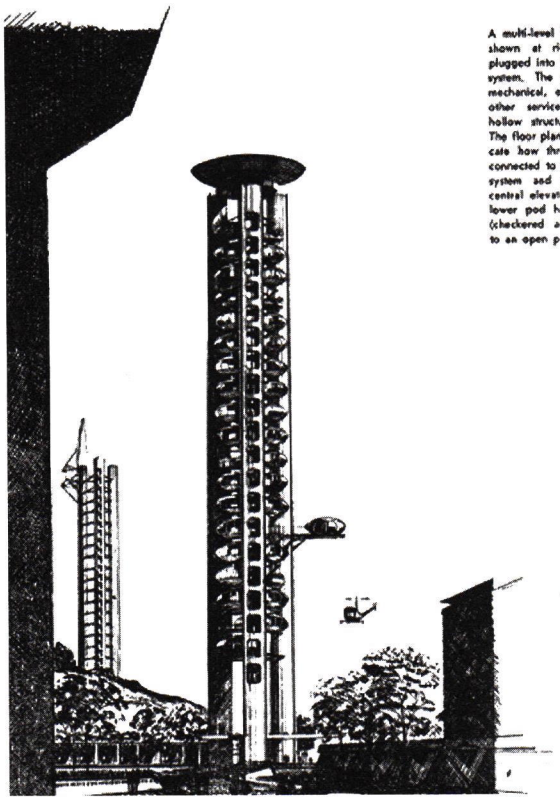
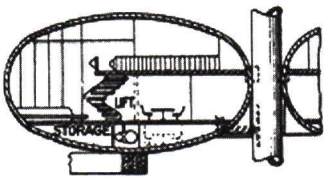
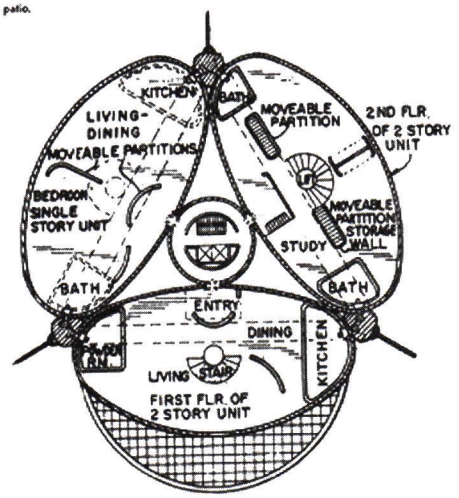


A multi-level living pod is shown at right, already plugged into the structural system. The unit receives mechanical, electrical and other services from the hollow structural columns. The floor plans below indicate how three pods are connected to the structural system and also to the central elevator core. The lower pod has a portion (checkered area) devoted to an open patio.





Chicago architect Harry Newman's rendering of his innovative plan for a high-rise apartment with a radically different structural system. Three tri-

Plug-In Tower, 1971, Harry Newman, AIA

Responding to the preceding issue of **arcCA**, *"Prefabiana," Harry Newman, AIA, of Thousand Oaks, sent us an article from the* Chicago Sun-Times, *written by architecture critic Rob Cuscaden and dated August 8, 1971. The article describes Newman's proposal for a prefabricated high-rise apartment building. We excerpt a portion of the article here.*

"High-rise buildings today are still essentially handicrafted products," says [young Chicago architect Harry] Newman. "They're produced piecemeal in the field and under adverse conditions. And as they become increasingly expensive, the amount of living space is reduced accordingly."

Newman's plan is to attack the problem head-on by radically altering the whole structural concept of the high-rise, which has basically remained unchanged during the past five decades, except for facing materials. It is still a massive, usually rectangular, structure supporting huge dead loads of materials, its bulk designed to combat the tremendous wind pressures that build up against the face of the structure.

Newman would do away with the "permanent building" concept and replace it with a structural frame consisting of three vertically extended hollow core members, which would include elevators, stairs, ducts and utilities.

This triangularly-figurated frame would receive and support individual, self-contained living units, or pods, which when mounted in place become a part of the building.

The three cores are made of prestressed concrete or structural steel sections and may be prefabricated and assembled at the site, or poured in place if concrete. The framework would include platforms that can extend outwards to receive the pods, which are delivered by helicopter and wenched [sic] into place. The pods are then secured and the services quickly plugged in . . . .

"And think of the travel and moving possibilities," enthuses Newman. "A vacation or job transfer would simply mean unhooking your pod, having it airlifted wherever it was needed, and attaching it into a similar structure . . . . You could move your complete home from Rogers Park to Hyde Park in a matter of hours—without lifting a single chair!" ◉

... and Counting

David Meckel, FAIA

Most heavily published architects in the '90s
Mario Botta and Tadao Ando, with over 50 titles each
www.stoutbooks.com

Architecture and design magazines that ceased publishing in the '90s
Progressive Architecture ('96)
Design Quarterly ('98)
www.library.cca.edu

Magazines that launched in the '90s
Harvard Design Magazine ('96)
www.library.cca.edu

California architecture programs launched in the '90s
California College of the Arts (San Francisco)
NAAB Accredited 1992
University of California (San Diego)
Opened 1992 / Closed 1993
Woodbury University (Los Angeles)
NAAB Accredited 1994
New School of Architecture (San Diego)
NAAB Accredited 1998
www.naab.org

Some early '90s AIA Gold Medal winners
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Charles Moore ('91)
Benjamin Thompson ('92)
Kevin Roche ('93)
www.aia.org

Some '90s Pritzker Prize winners
Aldo Rossi ('90)
Alvaro Siza ('92)
Christian de Portzamparc ('94)
Sverre Fehn ('97)
www.pritzkerprize.com

AIA California Council Firm Award 1990-99
Leason Pomeroy Associates, ELS Architecture, Moore Ruble Yudell Architects, Fisher-Friedman Associates, Gensler, Rob Wellington Quigley FAIA, A.C. Martin & Associates, Anshen + Allen, Ralph Allan & Partners, SMWM
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Pulitzer Prizes for Architectural Criticism in the '90s
Allen Temko, *San Francisco Chronicle* ('90)
Robert Campbell, *Boston Globe* ('96)
Blair Kamin, *Chicago Tribune* ('99)
www.pulitzer.org

Architectural Record | **Record Houses 1992**
House on a Ranch, Petaluma, CA
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Ortiz House, Mexico City
Taller de Enrique Norten y Asociados
Dennison/Peek House, Monkton, VT
Brooks & Carey Architects
Root Guest House, Ormond Beach, FL
Steven Harris & Associates Architects
House for a Film Producer, Los Angeles, CA
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www.yahoo.com

1995
Year that Amazon's site was created
www.amazon.com

1996
Year that Hotmail® was released
www.msn.com

1998
Year that Google's search engine was released
www.google.com


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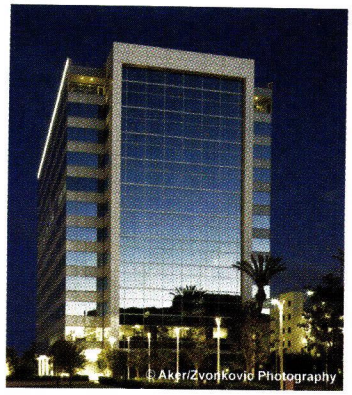
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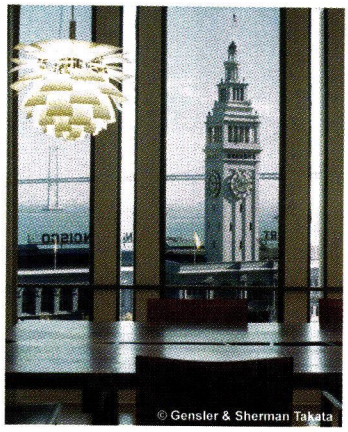
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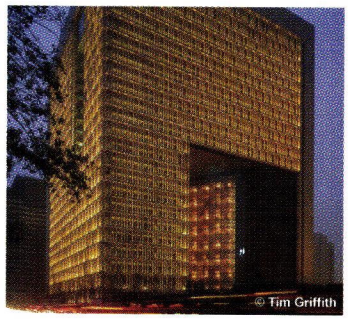
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Staff Scientist
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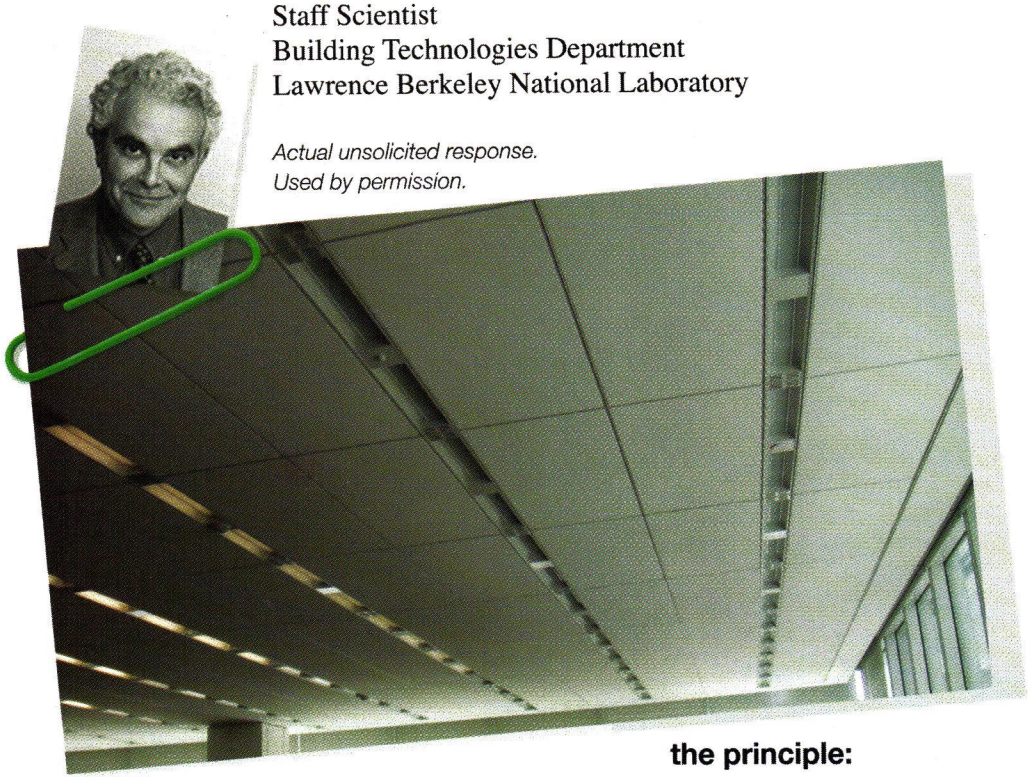

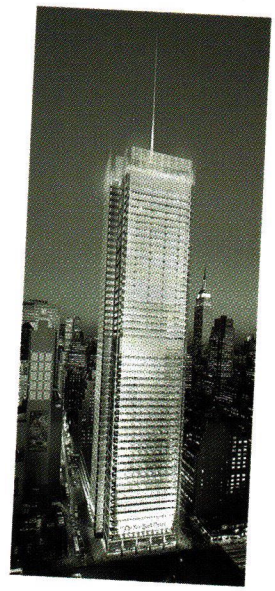

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