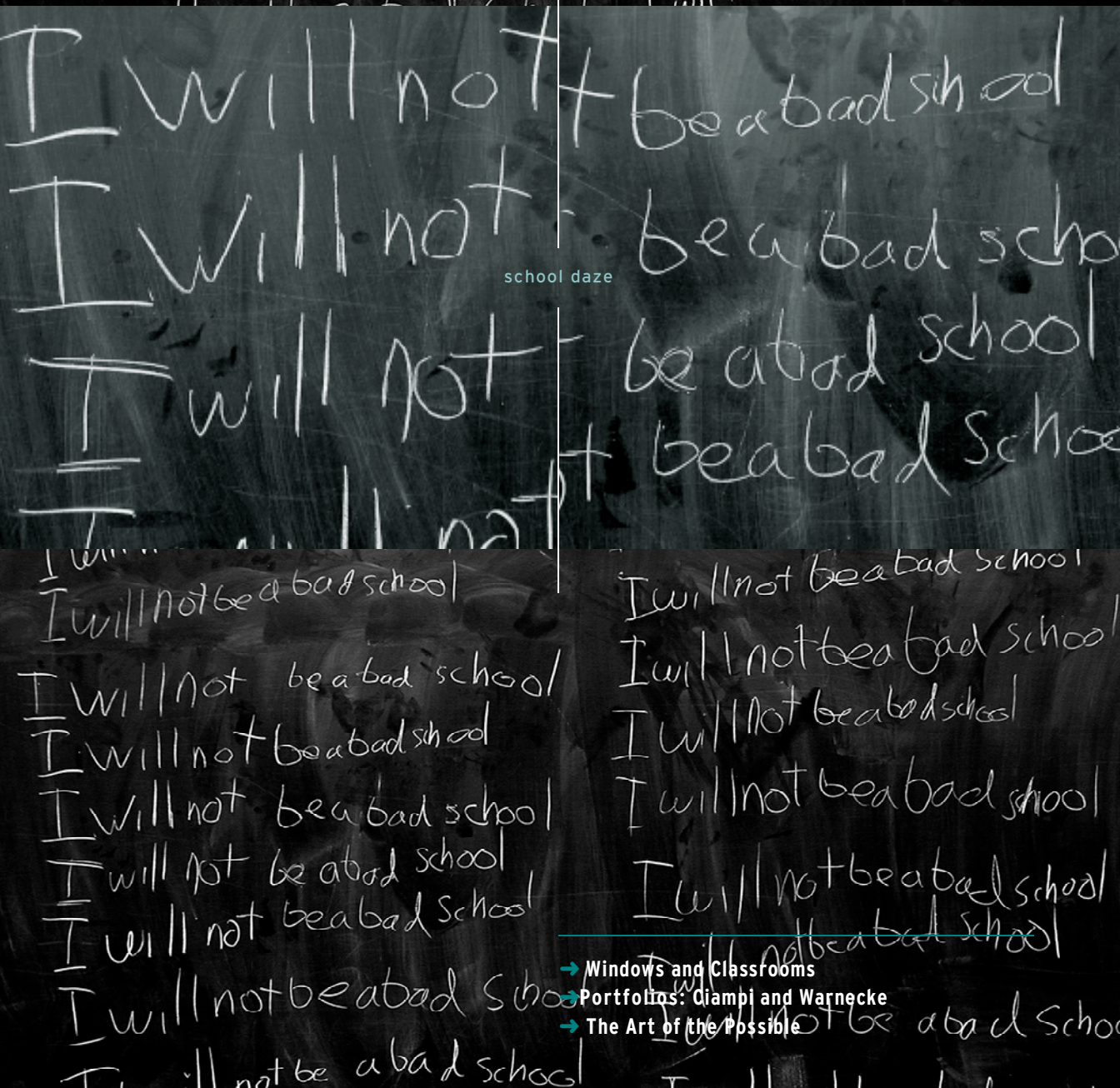


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architecture california
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works/sectors issue

02.4



school daze

- Windows and Classrooms
- Portfolios: Ciampi and Warnecke
- The Art of the Possible

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Comment

A man's home is his castle, and so is his castle. These two building types excepted, architecture typically brings people together, rather than keeping them apart. Some people say the first work of architecture was the painted cave, "shelter with decoration on it," in Venturi, Scott Brown, and Izenour's terms. But others would say it was the rug spread on the ground by a merchant to display his or her wares, a neutral gathering place around which antagonistic tribes would suspend their animosities.

One thing about that rug—as about any building—is that it is not abstract but concrete. Whatever the benefits of virtual space, it is characterized by interpersonal abstraction—or anonymity, which is the same thing—making anger easy. Witness road rage, or e-mail flaming. Or presidential campaigns.

You may have noticed that, in the recent election coverage, commentators offered opposing predictions for President Bush's second term. Some—including Willie Brown—suggest that a lame-duck president, even with his own party controlling Congress and the Supreme Court, cannot afford to perpetuate the current polarization of the American electorate, at least not if he hopes to secure in history a favorable judgment. Others counter that divisiveness has worked fine for the administration so far, and we may expect the President to "stay the course" in this as in all else. I will suggest that who turns out to be correct will depend not insignificantly on how the President moves about the built world.

I have taught at both Rhode Island School of Design and California College of the Arts, schools with nearly identical offerings and structures. Both are terrific schools. But they differ dramatically in at least one way: at RISD, almost every department has its own building; at CCA, the architecture and design departments, along with

many fine artists, are all bungled up together in more-or-less open studios. Not surprisingly, interdisciplinary exposure and understanding are greater at CCA.

As an architect, I believe that any rapprochement between the parties and the frightfully divided country they represent will require that the President spend a lot of time in rooms with Democrats. Because I've noticed that even I find it hard to dislike Republicans when I encounter them face to face, whereas at a distance even the sweetest among them are barely tolerable. No doubt the converse is true, as well.

Now, I realize that being in the same space does not guarantee friendly relations. It's probably a good idea, for instance, for Israel to excuse itself from the Gaza Strip; and things can get pretty coarse even on the floor of the U.S. Senate. But we are gregarious creatures, and we're more likely to maintain friendships—or at least a sense of one another's humanity—over a cup of espresso or a glass of beer, through the clasping of hands, by gathering in spaces that have become places through the magic of architecture—than over a T-1 line. Which is why buildings are important.

A couple of other notes. First, two fine, new books have come in over the transom. One is Mitchell Schwarzer's lively exploration, *Zoomscape: Architecture in Motion and Media* (New York: Princeton Architectural Press, 2004). The second, which could alternatively be subtitled "Architecture in Stasis and Stone," is Steven & Cathi House's beautiful *Mediterranean Villages: an Architectural Journey*, with Luci Ferrari and James P. Warfield (New York: Images Publishing, 2004). Check 'em out.

Finally, a word of thanks to Carol Shen, FAIA, who is completing a much extended term as chair of the **arcCA** editorial board. Carol has done a fabulous job of seeing us through the transition to the current format, mustering energy, ideas, and support with a panache that is hers alone. Thank you, Carol.

Tim Culvahouse, AIA, editor

Contributors

Bruce L. Beck is principal of Westlake Village, California-based public relations firm DB&R, which specializes in the representation of firms in the real estate and financial services industry.

Stephan Castellanos, FAIA, served until recently as California State Architect. He is the incoming President of the AIA California Council.

Nate Goore is Principal and COO and oversees strategic initiatives for MKThink, San Francisco. He combines architecture, business, and management consulting backgrounds to develop and implement high-value solutions for clients. Throughout his career, he has focused on integrating business processes, technology, organizational change, and the physical environment to create lasting economic value.

Paul N. Halajian, AIA, is a principal of The Taylor Group Architects of Fresno. He holds a Masters Degree from UC Berkeley and is currently serving on the editorial board of **arcCA**, which he will chair in 2005. After working in the San Francisco office of EHDD Architects, he returned to the San Joaquin Valley to become actively involved in the urban and architectural transformation occurring in the region. His practice is currently working on a number of public libraries and university projects throughout the Valley as well as master plans for revitalization of downtown residential neighborhoods in Fresno.

Lisa Heschong is a principal of Heschong Mahone Group and a licensed architect who has divided her professional practice between energy research, writing and building design. Her publications include *Residential Windows: A Guide to New Technologies and Energy Performance* (WW Norton), and *Thermal Delight in Architecture* (MIT Press), and she is a co-author of the *Advanced Lighting Guidelines*, the *CHPS Best Practices Manual*, and the *Skylighting Guidelines*, all web-based publications. As a lighting expert, she developed the successful web-based training program for the Federal Energy Management Program (FEMP) and conducted workshops

across the country for DOE. She has published scholarly papers, written for trade magazines, and conducted numerous lectures and workshops across the country on issues of daylighting, high performance design, energy efficiency, and human comfort.

John King is the urban design writer for the *San Francisco Chronicle*. He was a finalist for the Pulitzer Prize for Criticism in 2002 and 2003.

Mark Miller, AIA, is CEO and co-founder of MKThink. He is responsible for establishing the strategic vision of the practice and for leadership of major client work. He has led conceptual, strategic, and architectural projects on behalf of a range of organizations and building typologies including leading international corporations, financial institutions, non-profit organizations, and institutions of higher education.

Mark Shekoyan, PhD, is a Senior Researcher at MKThink. Using interviews, surveys, and focus groups, Mark provides data for the strategic design and planning of MKThink's higher education projects. Mark holds a Ph.D. in Cultural Anthropology from the University of Oregon.

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Raphael Sperry is national President of Architects / Designers / Planners for Social Responsibility (ADPSR) and works at 450 Architects in San Francisco. ADPSR is a national educational non-profit working for peace, environmental protection, ecological building, social justice and development of healthy communities. For more information, visit www.adpsr.org.

Opposing Prisons: Education versus Incarceration

Raphael Sperry

“Contentions” is a new, occasional feature, offering an Op Ed opportunity. For more information, please e-mail the editor, Tim Culvahouse, AIA, at tim@culvahouse.com.

Between 1983 and 2003, California built 23 new prisons and just one new university. California raised prison guard salaries above teacher salaries, but cut academic and vocational training for prison inmates. Prisons, the antithesis of schools, seem to be in the future for more and more Californians. While this prospect is deeply disturbing, architects are in a unique position to help reverse it.

Architects / Designers / Planners for Social Responsibility (ADPSR) calls on architects to boycott the design of prisons. The way we see it, our current pattern of investing in prisons creates a dead-end future. Prisons take valuable resources we need for other priorities, reward corrupt interest groups, and return brutalized individuals with few prospects to our communities. The more we build prisons, the more we anticipate a future of increased violent crime, racial division, and suffering. Architects are essential to envisioning more positive alternatives, and we must take an active role in advocacy to realize them.

Why are prisons so bad? First, prisons take away needed resources from the kind of educational and development programs California (and other states) need but cannot afford. During the 2003 bud-

get crisis, while California's K-12 and higher education budgets were cut, corrections was the only area proposed for an increase. Nationally, from 1977 to 1999, spending on corrections increased about 2.5 times the rate of increase of spending on all levels of education, and California spent \$5.3 billion on prison construction. Currently, we spend \$4.8 billion per year on prison operations. We clearly cannot afford both the corrections system we have and the education system we would like.

Second, building prisons increases the number of people in jail, irrespective of the demands of justice. The U.S. now has a prison population over 2 million (160,000 in California, second only to Texas), and more prisoners per capita than any country in the world; however, our crime rate has lowered to 1970's levels. Why do we have so many people in prison? Politicians have criminalized new activities and increased sentences in response to a climate of fear, eloquently described in Michael Moore's film *Bowling for Columbine*. But mass imprisonment also benefits some sectors of the economy. The California Correctional Peace Officers Association, or prison guards' union, is the largest contributor to California political campaigns. Private prison operation companies build and operate speculative prisons, making profit on a per-prisoner basis. Many powerful financial interests in the "prison-industrial complex" are deeply invested in locking up more people, regardless of whether crime increases or, as has happened lately, decreases.

Third, new prisons send a bad message to our society, especially to those who are most vulnerable. Children in low-income neighborhoods may not have toilet paper or textbooks in their school, or may learn in decrepit thirty-year old portable classrooms, but many know there's a space for them in prison. In 1997, the federal Bureau of Justice Statistics estimated that an average African-American man had a higher chance of going to prison than getting a bachelor's degree.

Prisons in many ways are the mirror opposites of schools. Schools embody our hope that people will improve themselves and their communities. Prisons destroy that hope and tear apart the communities that prisoners come from. Through the routine use of violence, enforced work at skill-less jobs, and lack of rehabilitation (and support upon release),

prisons teach prisoners how to fail in society, show that violence is the most important survival skill, and prepare prisoners to re-offend. In a way, California's prison system is a vast criminal university, which makes us all less safe.

ADPSR knows architecture as a profession of optimism, and architects as those who strive to make the world better through design. Our profession is enthusiastic about designing schools because of the great opportunity to help others and directly improve our society. Prisons are the antithesis of these professional aspirations, just as they are, in many ways, the antithesis of schools: prisons realize a drastically pessimistic view of society, and actively make individuals and society worse. Many groups from Quakers to teachers to ex-convicts are opposed to the prison-industrial complex, but few architects are aware of the scale of the problem our prison system has created. By speaking out as a profession, architects can add a major voice to the growing chorus demanding change in our legal and penal systems and end the prison epidemic. We encourage you to join our campaign to raise awareness of this issue and pledge not to design prisons at www.adpsr.org/prisons. ●

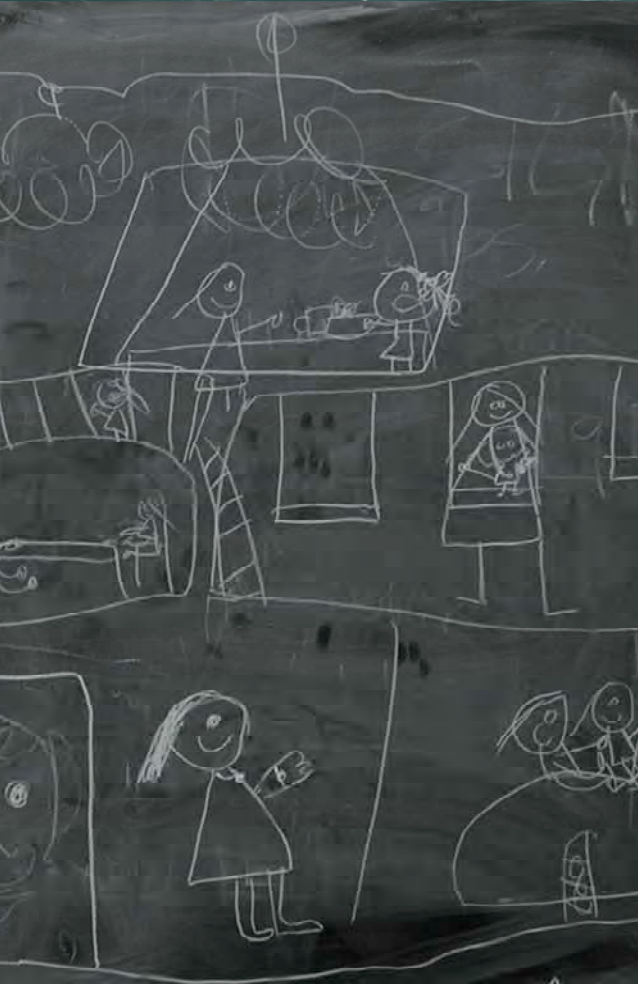


photos: Prison cells under construction at the \$750 million Delano II State Prison in the Central Valley. Is this the future for California's next generation?



The Mission of DSA /Schoolhouse

Stephan Castellanos, FAIA



DSA/Schoolhouse is an institution. Founded nearly eighty years ago after the Long Beach earthquake, DSA (Division of the State Architect) has set safety standards, provided plan and field review, and provided for a stock of public school buildings today, in which basic health and safety are taken for granted by parents, school administrators, architects, and engineers. Little has changed with regard to the DSA process in the last eighty years, with the exception that today the volume of school construction in California is at unprecedented and historic levels. This volume causes challenges for DSA, frustration for architects and school districts, and delays, which of course cost money.

Now, a couple of “radical” ideas have resulted in a strategic plan for DSA that is changing how we do business. The first is the idea that school districts are our public agency partners in delivering safe, accessible, and healthy schools. The second is the idea that the process of designing and building good schools is a collaborative, shared responsibility, requiring good communication and better data to succeed. DSA now has a vision and a mission like any other organization.

The objectives of the first strategic plan adopted in 2001 include:

1. Respond to customer and stakeholder business imperatives by providing responsive, accurate, prompt, and value-added service.
2. Develop and implement improvements, innovations, and technology that ensure internal processes and systems are fast, effective, customer friendly, and responsive to changing needs.
3. Implement systems, procedures, and practices that encourage high morale, highly developed core competencies, and fully trained employees and technical consultants at every level.
4. Working collaboratively with stakeholders, enhance program planning and building design to ensure that public schools and state buildings are high performing and produce a positive architectural legacy.
5. Be a proactive leader in writing legislation, codes, and policies that promote the principles of universal design and Excellence in Public Schools and Public Buildings.

Much remains to be done; indeed any organization must be focused on continuous improvement. Nonetheless, DSA has created a very effective advisory group made up of stakeholders from all segments of industry and the school districts. We have focused on creating effective partnerships with school districts. We have rolled out, with more to come, technology solutions that will lead ultimately to a fully on-line submittal, review, and approval process. We continue to develop more robust training programs for DSA staff, consultants, and the industry. The access compliance program has become the Office of Universal Design, and we are well on our way to success in certifying California's access codes with federal standards. The Excellence in Public Buildings program has become department policy, resulting in sustainable and higher performing public buildings and schools. We are joined in this effort by numerous state agencies through the Collaborative for High Performance Schools, and the DSA website for Sustainable Schools has become a valued resource for architects and school districts as they implement their school construction programs. Over a dozen school districts in California have adopted these standards to date. Lastly, DSA has created two distinct

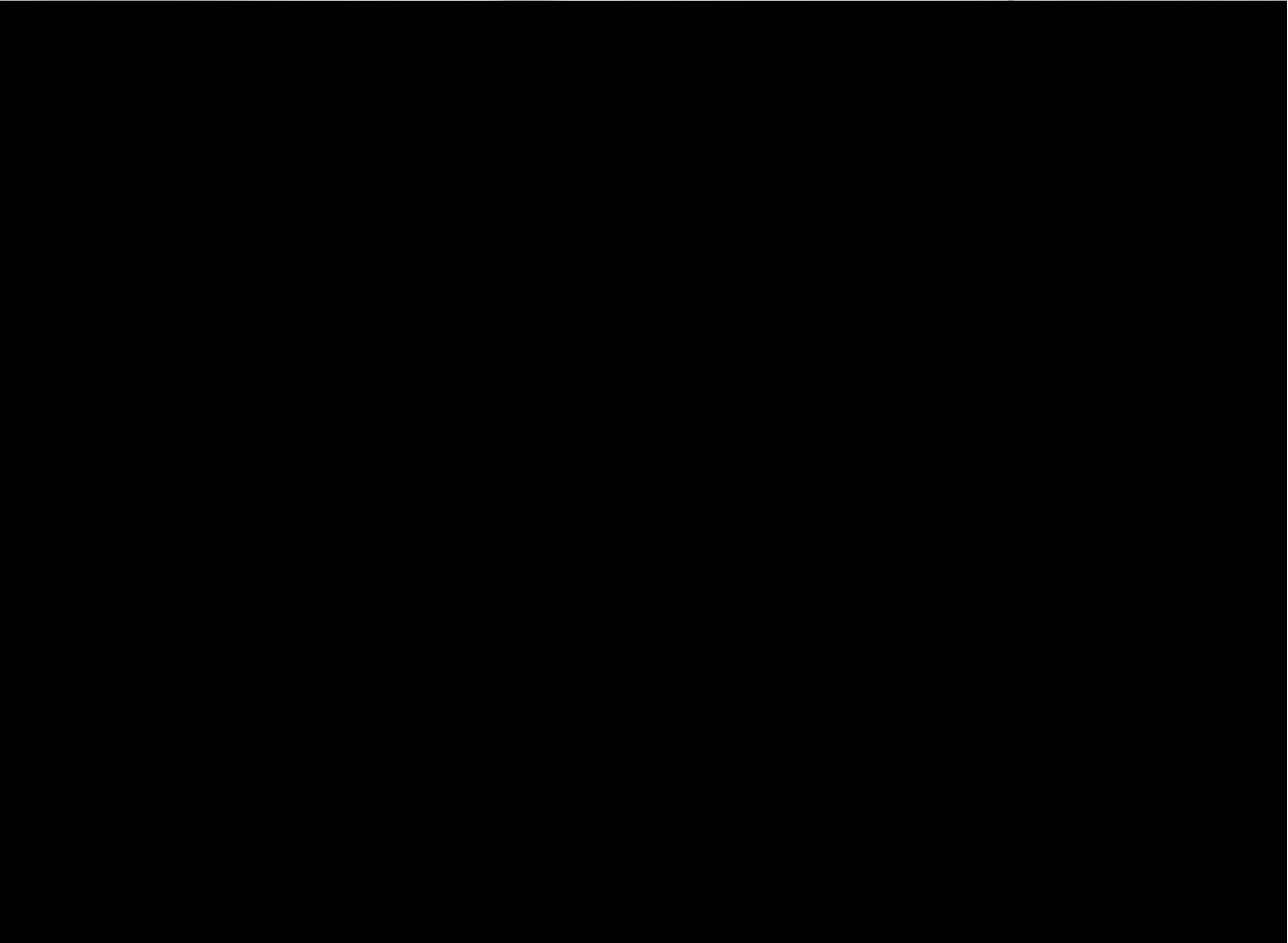
branches, one focusing on regional operations and the other on codes, standards, and policy. With this reorganization we have begun to provide the leadership called for in the strategic objective.

More recently, we have renewed our commitment to the strategic plan and adopted a set of guiding values. DSA values include a commitment to consistency and expertise. They include a commitment to keep our promises, and to provide leadership.

In the next few years we will be focusing on:

Developing consistency through standards.
Improving and expanding training.
Assuring that adequate resources are in place.
Developing performance measurement systems.
Creating more collaborative mechanisms.
Improving and expanding communication and recognition.

Much remains to be done, but our shared goal is successful children, whose learning is improved with better facilities. ●



by District: District

a Comparison of Architectural Strategies

Paul N. Halajian, AIA

A visit to the Coalition for Adequate School Housing web site (www.cashnet.org) clearly illustrates the vast array of professionals (not just architects) who make their livelihood planning, funding, designing, constructing, furnishing, operating, evaluating, and—yes—even litigating in matters that impact the California public school system. A great measure of energy and effort is focused on the forward momentum of the school system. And yet much of the editorial content of local news in our communities questions our school system's effectiveness in preparing California's up and coming generations to meet the known—and perhaps more importantly, the unknown—demands of life in the turbulent years ahead.

Six million students are enrolled in California's public schools, a number roughly equivalent to the population of Tennessee. There are almost 1,000 school districts in California, ranging in size from over 600,000 to less than 20 students, and almost 8,000 individual schools. The monetary expenditure that fuels public education in California approaches the Gross Domestic Product of a small nation. School facilities in California are valued at over \$80 billion, and public school expenditures exceed \$50 billion annually, with an additional \$40 billion required to build new schools and modernize aging schools.

To the innocent bystander, however, the goals of

school construction in California are unclear, and it is questionable whether or not the conditions that currently exist can in fact provide the types of learning environments that will be necessary for students not only to learn but to pursue a lifelong curiosity that continues the educational process long after graduation.

CHALLENGES: URBAN VS. SUBURBAN

The public's perception of the quality of a school—or even of an entire school district—is often the outgrowth of the governing mind-set of the district's leadership and its resulting organizational culture. When neighboring school districts with differing demographic representations are compared, often it is more than test scores and matriculation rates that distinguish the two.

An example exists in the San Joaquin Valley. Fresno Unified School District (FUSD) is the fourth largest school district in California, with over 82,000 students and 102 school sites. Clovis Unified School District is adjacent to Fresno Unified and is much smaller; there are only 33,400 students and 37 school sites in Clovis Unified. Transience is high in the Fresno Unified classroom, where 60% of the students who start school are not the same 60% at the end of the school year and where only 32% of the students are English learners. Fresno Unified is 52% Hispanic, 18% White, 16% Asian, and 12% African American. Clovis Unified is 21% Hispanic, 61% White, 12% Asian, 3.5% African American, and 2.5% other. FUSD is often criticized for low performance and financial instability, while Clovis Unified is viewed as a district that strives for excellence in everything from athletics to architecture.

Often, when an older district is situated adjacent to a newer suburban district with demographics similar to Clovis and Fresno, the perception is that one is desirable and the other not. The spin-off effect of being at a "good school" as it relates to home prices and land acquisition has the power to alter the macroeconomics and growth patterns of an entire region. Land values have more than doubled in certain pockets of Clovis Unified over the past seven years, specifically because of the particular school that happens to be in a given neighborhood. Developers willingly pay Urban Growth Management Fees to develop new housing tracts in Clovis Unified School District and use the proximity to Clovis schools as part of their marketing strategy, because of the perceived quality of the schools.

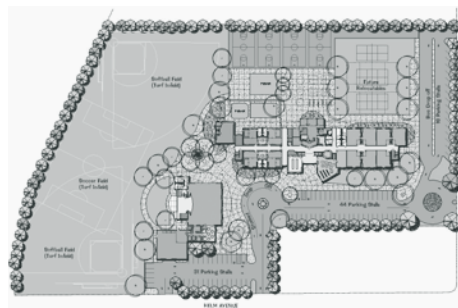
THE COST OF LAND, AND A RESPONSE

Mike Berg, Facilities Director for Fresno Unified insists that an FUSD facility provides the same infrastructure and ameni-

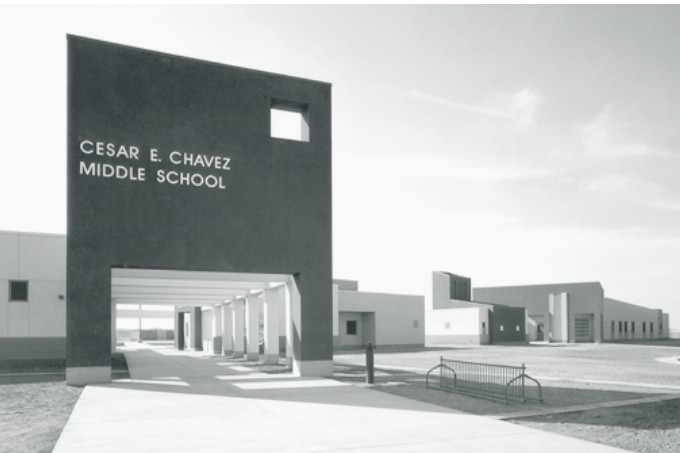
ties as a facility built in the more affluent Clovis Unified School District. He indicates that the disparity between the two districts is related not only to their respective demographics but also to land acquisition costs. Each district in the state receives the amount of money needed for off-site, on-site, and building costs, based on a formula that translates into construction dollars per student. Site acquisition must also be accounted for, however, and this is where the inner city schools suffer a great disadvantage. For inner city districts, land acquisition costs consume a much larger portion of the budget than in suburban districts, where raw land is plentiful and available. FUSD does not have the luxury of large tracts of undeveloped land.

While CUSD is purchasing orchards at approximately \$40K per acre, Berg estimates that FUSD is paying approximately \$750K per acre for a school site, and it must rely on eminent domain and the relocation of families to acquire land. Many who live in the inner city are immigrants, and often more than one family may live in one dwelling. The purchase of one dwelling may therefore require the relocation of more than one family, which escalates relocation costs. In addition to relocation costs, FUSD must pay for hazardous material abatement and demolition before construction can commence. Consequently, dollars from state allocation plus local matching funds spent on building construction are much less in inner city schools than in suburban districts.

In response, the new elementary school prototype for Fresno Unified School District, designed by David Iwanaga of S.I.M. Architects in Fresno, is being built on approximately seven acres and features a two-story building that houses classrooms, administration, multi-purpose room, and library media center. Fewer ball fields are provided than traditionally found on an FUSD site. Iwanaga's compact and efficient two-story approach requires less land area and represents a radical departure from the finger plan on ten to twelve acres that is typical of older schools in California. Clovis is not faced with the same pressures and can still build single-story schools with a complement of ball fields, basketball and tennis courts, and an amphitheater.



Mollie S. Bakman Elementary plan



top: Cesar Chavez Middle School administration and
bottom: Cesar Chavez Middle School front

A DEEPER ROLE FOR ARCHITECTURE

Edwin S. Darden Associates (EDSA), an architectural firm based in Fresno, has provided service to Clovis Unified School District for over three decades. Ed Darden, Jr. heads the firm started by his father, who began a fruitful working relationship with Dr. Floyd Buchanan, a past superintendent of CUSD. This relationship has generated some of the strongest school architecture in the state. Darden speaks of an interactive working relationship that started with Dr. Buchanan's vision that educational facilities are a forceful component of the education process. Darden says his firm has maintained a strong working relationship over the years, because they understand the mission and culture of the district intimately. Their work and the work of others has established a benchmark and given a physical presence that has "branded" a Clovis Unified campus in much the same way that a consumer product is branded.

There is a characteristic quality that defines a Clovis school as a hub of the neighborhood. That is not to say

that all CUSD schools are stylistically the same. The look, however, is modern, colorful, and bold, featuring interior spatial complexity and daring site design not typically found in public schools. It stands in sharp contrast to the many Fresno Unified campuses that were designed during the school construction push that took place after the Second World War, when the "finger plan" was the state of the art, and are now undergoing "modernizations" to extend their useful life. Architecture is part of what defines a Clovis Unified campus.

RESPONDING TO CULTURE: PLANADA UNIFIED

Darden points to Cesar Chavez Middle School for Planada Unified School District as another example of what is possible. The overwhelming majority of those who live in Planada, a community in Merced County, are migrant farm workers from Mexico. The children of Planada are at risk and a new school was vitally important to the community. Tony Avila of EDSA designed the school to be a strong representation of the community. As such, the design of the school took influences from traditional Mexican architecture as a framework for modern technology. A plaza and courtyard are among the most powerful elements of Mexican public architecture, and the school is planned around a central plaza and amphitheater, which have become the main public spaces of the community. Rather than build the entire master plan in one phase and rely on relocatable classrooms to reduce cost, the community decided to build only what was needed immediately, but to build permanently. The remainder of the master plan will come, as funding is made available.

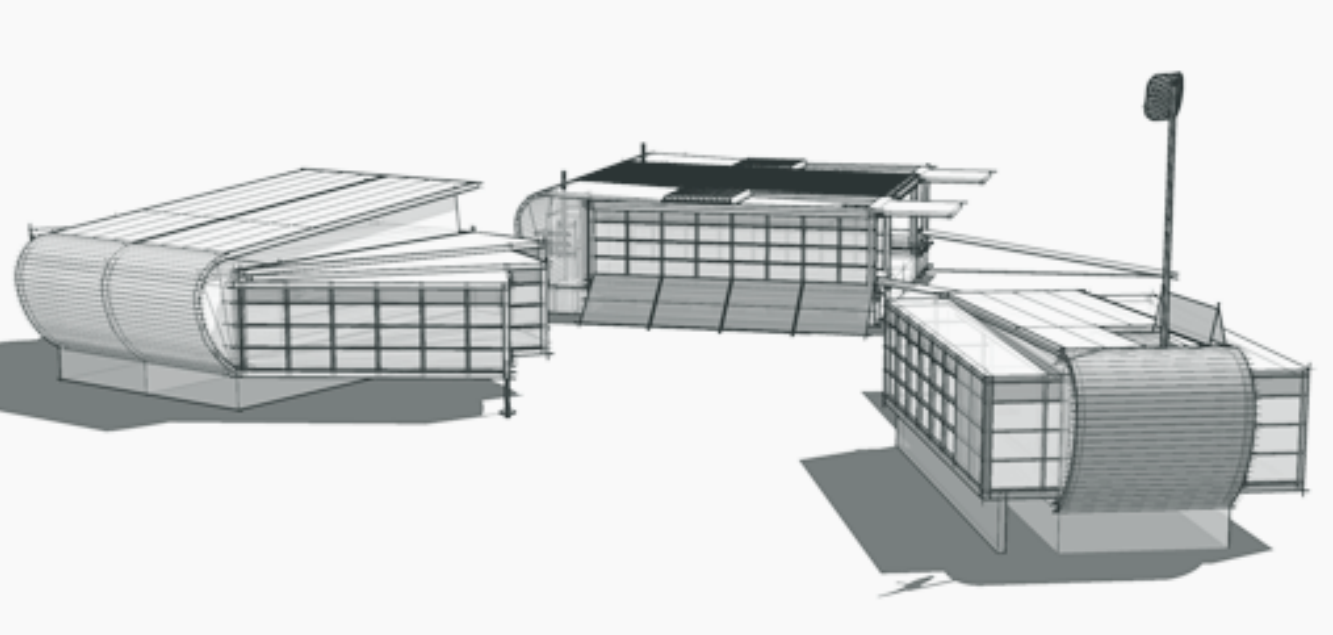
A district with a clear leadership vision and commitment can have an extraordinary influence, not only on education but also on the overall economic and cultural health of the community it serves. Darden points to Planada Unified and Clovis Unified as examples of what is possible when engaged leadership and an insightful architect work together to create learning environments that become the center of community pride and activity. He sees the role of the architect in school design as a member of a team whose duty it is to take the goals and aspirations of the district, regardless of demographics, and make great architecture that has the power to transform and propel the entire community. ●

Editor's note: for more on the architects and projects discussed here, please see their respective websites:

Edwin S. Darden Associates, Inc.:

<http://www.dardenarchitects.com>.

S.I.M. Architects: <http://www.simarchitects.com>.



The **Art** of the **Possible**

Mark Miller, AIA, Nate Goore, and Mark Shekoyan

The name MKThink suggests that this architectural firm might be up to more than just designing award-winning buildings. Indeed the unique philosophy of synthesizing research, strategic planning, and conceptual thinking merits closer scrutiny. MKThink's goal is to align research and innovative thinking with client's institutional goals and objectives. This very approach initiated an interest in the significance of the ubiquitous presence of modular trailers as learning environments throughout America. A profound discrepancy between a client's requirements of high quality learning environments, and the reality of these less than ideal spaces, prompted MKThink to undertake a research project to evaluate modular trailer deployments on college and university campuses with the intent of offering better alternatives.

The driving questions for this research included: What is the scope and scale of modular deployment? What are the rationale and goals for their deployment? How well do these environments perform? What is their ultimate impact on the quality of learning? Initially the study was focused on post-secondary campuses. This research demonstrated that while there is a significant and valid demand for temporary environments in education the performance and quality of modular trailers are mediocre. An extended hypothesis was that a range of better alternatives could be developed for

temporary educational environments if the design is fundamentally based upon the key environmental criteria for enabling education.

In order to explore this topic, research began with the examination of the general state of the industry. This review of secondary materials gave insight into the parameters of the market. From this launching point, a detailed and focused survey was created and distributed to college facilities planners and managers. Following review and analysis of the data, MKThink began to produce a range of ideas concerning alternatives to temporary learning environments leading to multiple prototype designs. This tight linkage of research strategies and design proves to be a highly useful approach in addressing solutions to the problem of temporary space needs for education.

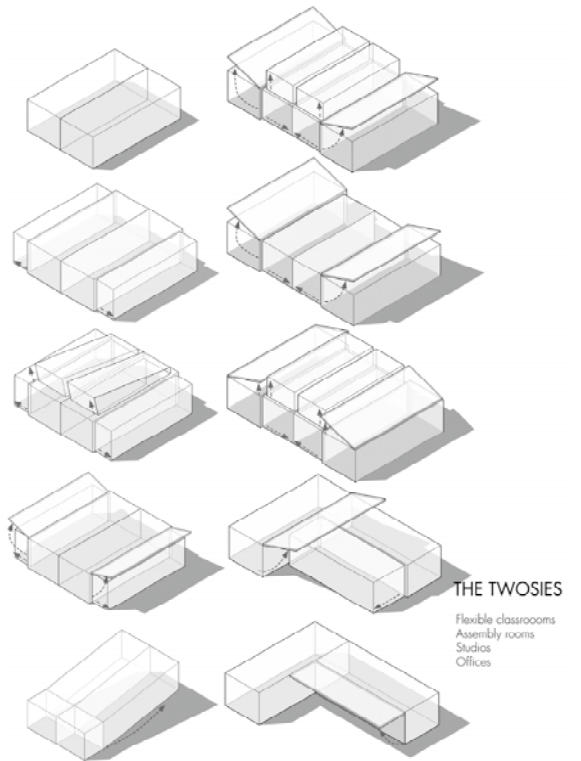
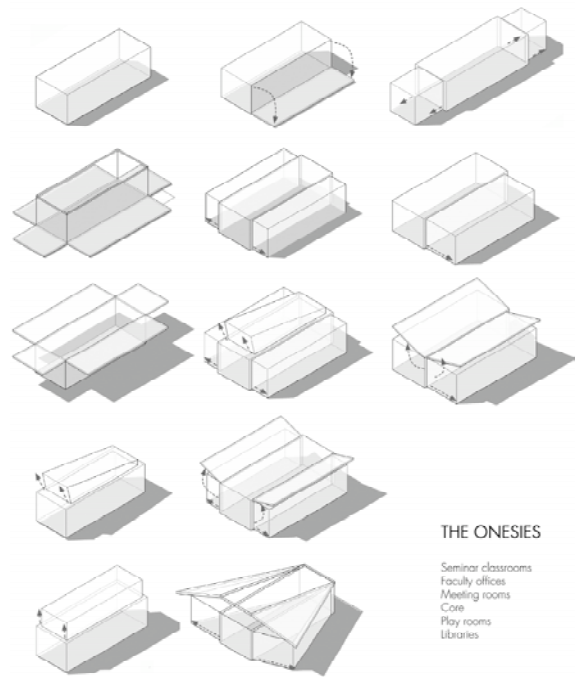
FRONT END FINDINGS

According to the modular industry, in 2002, the total market for modulars including wholesale, manufacturers, and dealers was between 4.8 and 5 billion dollars. With 30% of modulars being sold in education, this results in an overall educational market of roughly 1.5 billion dollars.

The role of modulars in education as a whole is pervasive. Until 1998, in K-12 education alone, the state of California mandated 30% of its new classrooms as temporary, with an estimated total installation cost, not including maintenance, of over \$500 million. Though California no longer legally mandates modular use, schools continue to rely on them as an expedient solution for class surge and flexible space needs.

Though most modulars are found in K-12, MKThink's analysis suggests that the post-secondary market is in the range of \$350 million per year. By way of comparison, this equals roughly 15% of all new library book purchases and 15% of all spending on additions to existing buildings at college campuses in 2003. Those percentages interpret into secondary learning environments for the significant number of students and teachers who have to spend time in them. Furthermore, the growth in demand for temporary learning environments in post-secondary education is projected to increase by 15-20% over the next eight years. At roughly \$80,000 per 12' x 32' singlewide unit, this amounts to an increase of almost 875 modular trailers across college campuses around the country.

The order of magnitude of the current number of modulars on post-secondary campuses translates into approximately 450,000 full time equivalent college students per year attending 'classrooms in the can'. Approximately 3.15 million students have contact each year with classroom trailers on campus.



The Onesies and the Twosies Modulars

Clearly, the need for temporary space is not going to go away. Unfortunately, the education marketplace and the manufacturers that supply it are characterized by their use of adapted, existing, low-end products that lack an appreciation of the requirements of education. The result is limited opportunities for better products and a marketplace that is not organized to leverage purchasing power to drive innovation.

SURVEY FACTS

In 2003, MKThink initiated an online research survey targeting college facilities planners and managers, entitled "Classrooms in the Can." The initial hypothesis was that modulars failed to serve the needs of their users. The MKThink survey of 2003/2004 suggests, however, that modular units do meet basic needs of making available modest cost, temporary solutions that require short planning cycles to mobilize. The results confirm that these needs are fundamental, but additional data points showed that they serve only a fragment of the overall requirements for high performance education. In other words, the current standard for acceptance by educational consumers is very low compared to standards for traditional educational environments. Because of the actual duration of use of these units, a large number of students and faculty need to overcome significant obstacles in their physical environment to have an appropriate place for education.

CONSIDER SOME OF THE SPECIFIC DATA POINTS:

Modulars are not intended to be long-term solutions for temporary space needs. According to MKThink's research, however, 76.5% of planners who intended to use them for the short term ended up using them longer than expected. Over 79% of respondents claimed they set up modulars longer than 2 years, a time period during which a new building could be built.

Of these deployments at colleges and universities, approximately 44% own, 19% lease, and 38% do both. This implies that the acquisition of modulars by facilities planners is weighted more toward longer-term use even though modulars are created as temporary structures.

In terms of use, the survey showed that modulars were utilized largely for human enclosure, with 76% being used for general classroom, 29% for laboratory, 71% offices, and 24% storage (these categories overlap). Though some modulars were converted to storage, most were actively housing people at the time of the research.

Most modular units found on college campuses are less than 1,600 square feet. They are used primarily for smaller classes, with most (35.7%) being configured for 21-35 seats. An additional 29% of these units have 36-40 seats. Thus, most

modular classroom environments occur in intimate, cramped spaces, necessitating even greater attention to detail when considering their educational performance.

While most planners are satisfied with modulars across a range of schedule and cost features, none were very satisfied with any particular feature. Satisfaction with features ranged in the high 60%, but when asked if they were very satisfied with a range of features, scores averaged around 16%. For instance, when asked to rate the value of modulars in terms of learning, acoustics, and climate control, scores were all beneath 20%. Modulars are thus considered adequate, but not excellent, in any particular category. They serve a need but because no other alternatives exist, planners settle for them as mediocre, temporary space solutions.

The reduced expectations and achievements of these modular units become more apparent when the faculty perspective is considered. While planners and facilities administrators find modulars sufficient, faculty satisfaction is much different. According to the research findings, 75% of planners feel modulars serve the educational goals for which they were deployed, and 60% of faculty avoid modular classrooms when given a choice. This is a discrepancy rate of 35%.

The tangible only begins to capture the dissatisfaction of educators with this standard for the built environment. Butte College President Sandra Acebo summarizes the problem, saying,

"A college is not a trailer park. It should not look like one...My first teaching job was in a prison, and the rooms were nicer than these. If you were all excited about going to college, wouldn't you be disappointed?"

Given these facts, it is clear that the modular trailer as the default solution for temporary space is a lowest common denominator solution. A range of alternative possibilities for temporary spaces exists, but none of these have been significantly explored in the design of modular trailers. This led to an exploration of the "Art of the Possible," which revealed a range of ideas for the design of temporary spaces.

THE ART OF THE POSSIBLE

If the requirement for temporary environments exists and is increasing and the quality of the accepted solution is substandard, how can opportunities for better, low-cost, temporary environments for learning be improved? To address this question, MKThink looked to successful, dynamic approaches in other examples of the built environment.

MKThink's work with traditional and non-traditional academic institutions indicates a set of key criteria for perfor-



CLASSROOM IN A

CAN

mance. These critical factors for any successful learning environment include: proportion, density, lighting (natural and artificial), sight lines, mechanical systems, identity, character, flexibility, and site design.

How can these be incorporated into a modular structure? Several areas offer insights: 1) Successful academic precedents for modular design, 2) Explorations into pre-fab housing experiments, 3) Futurist thinkers, and 4) Creative exploration of temporary environments including mobile marketing facilities, traveling and other temporary outdoor exhibits, and designs for event pavilions.

ACADEMIC PRECEDENTS

Though traditional trailers are the dominant form of temporary space solutions on college campuses, a few campuses have successfully implemented modular and prefabricated systems.

One such example exists at Yale University's Prospect Place. Factory built as a temporary structure to house graduate students, this 1,700 square foot structure was completed in 141 days. It features extensive natural light through abundant windows and skylights and a cantilevered steel frame that eliminates the need for columns or internal

structural supports that block sight lines.

Seattle Pacific University offers another positive starting point. To solve their temporary space needs, the university deployed a 3,000 square foot modular classroom facility built to completion in 78 days. By utilizing artificial brick siding on a modular core, the design meshes with the overall campus environment. In addition, high ceilings and a covered courtyard provide a comfortable interaction space in which students and faculty can enjoy the learning experience.

PRE-FAB HOUSING

Some of the most dynamic inspirations MKThink found were in the creative exploration of prefabricated housing. Arising from the modernist pre-fab movement of the 1950s are some bold and innovative designs for contemporary living. For example, Jennifer Siegel and her Office of Mobile Architecture explore a model for portable living that captures abundant access to natural light and view through the use of lightweight composite materials. The idea of a quality temporary space that will tread lightly on the land, and that provides a dynamic internal environment, offers great clues to the possibilities for temporary educational spaces.

FUTURIST THINKERS

The potential for pre-fabrication to capture human aspirations in a creative and flexible environment is nothing new. Mies van der Rohe's Barcelona Pavilion sets the standard for dynamic, next generation environments to be explored through temporary architecture over a half century ago.

The visions of Frank Lloyd Wright included built and un-built prototypes for mass-produced housing exuding character that were highly functional, low cost, modular, and pre-fabricated. Buckminster Fuller integrated his training with the design of confined spaces learned as a naval architect with a unique design sensibility to explore temporary future environments. These works and others present unique and often elegant syntheses of functionality, flexibility, and utility of design, with direct relevance as a point of departure for the study of contemporary learning environments.

POTENTIAL CONTEMPORARY PROTOTYPES: EXHIBITS, PAVILIONS, AND MOBILE MARKETING

Today, some of the most dynamic and realized opportunities are found in the world of portable and temporary commercial and entertainment spaces. So-called "mobile-marketing" transforms trailers into dynamic stage sets that are unpacked on site. These trailers explode the box when unpacked, as the walls, floors, and roof are manipulated to create a self-contained marketing experience. Many of the venues for these ephemeral events use temporary approaches in creative and dynamic ways.

CONCLUSION

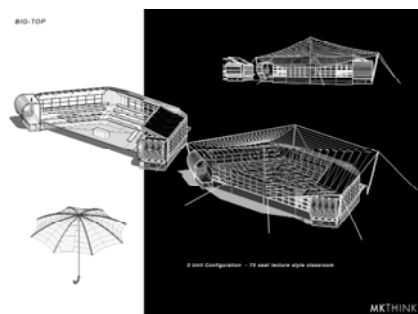
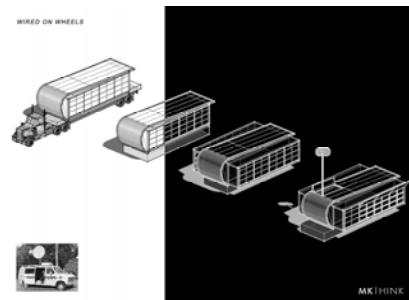
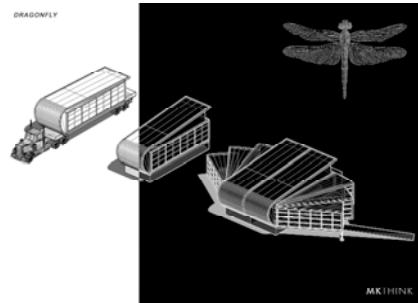
Based on the front-end analysis, MKThink identified a need in the marketplace that could be met with well thought out designs. Using these findings, MKThink created a series of concepts that are now turning into prototypes for temporary space in education.

More than just a product, however, the modular trailer is a metaphor for our whole society's focus on pragmatic utility and speed at the expense of beauty, quality, value, and long term performance. But what message does it send to our youth to put them in expedient and ugly spaces? Expedient, ugly spaces in education contradict the nature of the activity they are meant to serve. Second-rate spaces get easily translated as second-rate education.

MKThink challenged these assumptions in their research and design solutions, recently published in the August/September 2004 issue of *Metropolis* magazine. Using the research as a base, the firm engaged in a rapid prototyping exercise and created a range of creative, flexible, aestheti-

cally pleasing, and functionally efficient designs for temporary space in education. By applying thoughtful and intentful design, MKThink pushed beyond the comfort zone of the traditional modular trailer and created a new range of possibilities.

Designers can impact the world in a number of ways, and, by taking such socially relevant topics as temporary environments in education, they become agents for active and progressive change in the larger world. MKThink urges other designers to "Raise the Bar" when contemplating the impact of their designs on the world around them. ●



Dragonfly, Wired on Wheels, and Big-Top Modulares



Windows and Classrooms:

a Study of Student Performance

and the Indoor Environment

Lisa Heschong

This study, undertaken on behalf of the California Energy Commission's Public Interest Energy Research (PIER) program, investigates whether daylight and other aspects of the indoor environment in elementary school student classrooms have an effect on student learning, as measured by their improvement on standardized math and reading tests over an academic year. The study uses regression analysis to compare the performance of over 8000 3rd through 6th grade students in 450 classrooms in the Fresno Unified School District, located in California's Central Valley. Statistical models were used to examine the relationship between elementary students' test improvement and the presence of daylight in their classrooms, while controlling for traditional education explanatory variables, such as student and teacher demographic characteristics. Numerous other physical attributes of the classroom were also investigated as potential influences, including ventilation, indoor air quality, thermal comfort, acoustics, electric lighting, quality of view out of windows, and the type of classroom, such as open or traditional plan, or portable classroom.

PREVIOUS STUDIES

This study is the third in a series of studies looking at the relationship between daylighting and student performance. The first, *Daylighting in Schools*, which was completed for Pacific

Gas and Electric in 1999, examined school districts in three states. In Seattle, Washington, and Fort Collins, Colorado, where end-of-year test scores were used as the outcome variable, students in classrooms with the most daylighting were found to have 7% to 18% higher scores than those with the least. In San Juan Capistrano, California, where the study was able to examine the improvement between fall and spring test scores, we found that students with the most daylighting in their classrooms progressed 20% faster on math tests and 26% faster on reading tests in one year than in those with the least.

A second study, the *Daylighting in Schools Reanalysis Report*, completed for the California Energy Commission in 2001, further investigated the results from the Capistrano school district. We investigated whether better teachers were being stationed in more daylit classrooms, and thereby inflating the importance of the daylight variable. In that district, we found that there was no assignment bias of better teachers to more daylit classrooms. Furthermore, the addition of information about teacher characteristics to the original student performance models did not reduce the significance or magnitude of the daylight variables. Among twelve models considered in that study we identified a central tendency of a 21% improvement in student learning rates from those in classrooms with the least amount of daylight to those with the most.

FRESNO STUDY

This study's primary goal was to examine another school district, one with a different climate and curriculum, to see whether the original methodology and findings would hold. We collected more information about the lighting and daylighting conditions in the classrooms, to allow us to test which attributes of a daylit classroom were more likely to contribute to a "daylight effect," if any. We also wished to understand how other aspects of the indoor environment affected student performance and interacted with daylight. To accomplish these goals, this study gathered detailed information about classroom conditions, including lighting and daylighting, HVAC, ventilation, windows, surface coverings, view, and indoor air quality. Whereas we had done on-site surveys of only a sample of classrooms for the previous studies, for this study we went on-site to measure attributes in every classroom, surveying a total of 500 classrooms in 36 schools.

The preliminary statistical analyses replicated the structure of the models used in the previous studies. They used a holistic variable called the Daylight Code to rate classrooms by the amount of daylight available throughout the school year. In these replication models, the Daylight Code was not significant in predicting student performance for

Fresno. It had the least explanatory power of the variables considered, and lowest significance level. Thus, we could not replicate the Capistrano findings based on a similar model structure. We proceeded with more detailed statistical analysis to see if we could identify specific influences of school or classroom design on student performance, and perhaps gain some insight as to why the Daylight Code was not significant in Fresno as it had been in Capistrano, Seattle and Fort Collins.

We used multi-linear regression analysis to test a wide variety of variables to see which provided the best explanation of student performance. Of the variables describing the physical conditions of classrooms and schools, characteristics describing windows were generally quite stable in their association with better or worse student performance. Variables describing a better view out of windows always entered the equations as positive and highly significant, while variables describing glare, sun penetration and lack of visual control always entered the models as negative.

In addition, attributes of classrooms associated with acoustic conditions and air quality issues followed a similar pattern. Those variables representing sources of internal noise such as a loud HVAC system or a loud ballast hum from the lighting system, were consistently associated with negative student performance, while increasing the amount of carpet (which reduces acoustic reverberance) in the classroom was associated with better student performance in reading. Variables related to indoor air quality showed that in Fresno automatically controlled mechanical ventilation (No Teacher Control of Fan) was positive, while visible water damage or a surveyor assessment of musty air in the classroom was negative.

SUMMARY OF STUDY FINDINGS

The findings of regression models in this study support the general conclusions that

- The visual environment is very important for learning.
- An ample and pleasant view out of a window, which includes vegetation or human activity and objects in the far distance, supports better outcomes of student learning.
- Sources of glare negatively impact student learning. This is especially true for math learning, where instruction is often visually demonstrated on the front teaching wall. Per our observations, when teachers have white marker boards, rather than black or green chalk boards, they are



fort, outdoor air quality, and acoustic conditions. Teachers often must choose to improve one while making another aspect of the classroom worse.

THE IMPORTANCE OF SCHOOL DESIGN CHOICES

These findings suggest the importance school planners should give to the architectural design of schools. The statistical models repeatedly demonstrate that physical conditions of classrooms and schools are just as likely to affect student learning as many other factors commonly given much more public policy attention. Variables describing the physical conditions of classrooms, most notably the window characteristics, were as significant and of equal or greater magnitude as teacher characteristics, number of computers, or attendance rates in predicting student performance.

Even though the physical characteristics of a classroom have a very minor potential influence on the performance of a given individual, they will reliably affect hundreds or thousands of students over the life of the building, typically fifty years. Since the design of classrooms is entirely within the control of the school district, much more so than student or teacher demographics, optimized design of schools should be a central concern for all new school construction. ●

more likely to use them, and children perform better in math.

- Direct sun penetration into classrooms, especially through unshaded east or south facing windows, is associated with negative student performance, likely causing both glare and thermal discomfort.
- Blinds or curtains allow teachers to control the intermittent sources of glare or visual distraction through their windows. When teachers do not have control of their windows, student performance is negatively affected.
- The acoustic environment is also very important for learning. Situations that compromise student focus on the lessons at hand, such as reverberant spaces, annoying equipment sounds, or excessive noise from outside the classroom, have measurable negative effects on learning rates.
- Poor ventilation and indoor air quality also appear to negatively affect student performance. However, in FUSD these issues are almost hopelessly intertwined with thermal com-

Editor's note: this article was excerpted from the executive summary of the 2003 Windows and Classrooms study. The full text of both the executive summary and the study itself are available on the Heschong Mahone Group website, <http://www.h-m-g.com>.



Turnkey Construction with the Community in Mind

Bruce L. Beck

The fallout from the California budget crisis is widespread, and one of the chief victims has been the state's K-12 school system, one of the largest centralized public school systems in the nation. Although school spending represents one of the largest items on the state budget, increases in school enrollment in California continue to pace the nation, only exacerbating the problem for local school districts desperately in need of additional classrooms.

But where some see problems, others see opportunities. Such is the case in the Southern California seaside community of Oxnard, 60 miles northwest of Los Angeles in Ventura County. Here, a group of homebuilders has teamed with the local school district to guarantee the timely construction of two new elementary and one intermediate school, which will ultimately serve more than 3,000 students. This innovative solution to new school construction was born from the collective vision of the City of Oxnard, The Rio School District, and the development and design team of RiverPark, a new, master-planned neo-traditional community that will also include parks, recreational facilities, and open space; 2,800 residential units; and 2.5 million

square feet of commercial and community-serving retail space.

In California, funding for new school construction is shared equally by the state and the school district, the latter's share raised by the imposition of developers' fees and/or the passage of a bond by the local community. In the case of the new RiverPark schools, in lieu of fees, the master developer, a joint venture between Shea Homes, Centex Homes, and Standard Pacific, agreed to build the three schools at their cost, relieving the district of its share of the financial burden. The remaining fifty percent will come from the proceeds of a \$15 billion bond, part of newly-elected Governor Schwarzenegger's bailout plan, which voters passed in March.

While the decision to build the school in lieu of simply paying the school fees may be more costly in the long-term, all parties see the tremendous benefits of the agreement. "The schools are a core component to the overall RiverPark project, and you cannot attach a dollar amount to developers' commitment to the quality of the product," says Rio School District Superintendent Patrick Faverty.

"The Rio School District, like other districts, has real funding issues," adds Steven Seeman, vice president and regional manager for Shea Homes. "The cost to build the three schools may in the end be more than what we may have paid in fees. However, if the schools couldn't find the wherewithal to finance their portion of the construction in a timely fashion, the development couldn't move forward."

It was indeed in the best interest of the developers to see to the timely and successful completion of the schools, as certificates of occupancy for the first 700 homes now under construction will be withheld until the first elementary school is operational. Similar thresholds have been established for the intermediate school and the second elementary school.

As homebuilders with little or no experience in the construction of public schools, the master developer surrounded itself with what Seeman describes as the "right consultants," which included WWCOT, a Santa Monica-based architectural firm that has developed a long-standing reputation in Southern California for its work in K-12 and university school design.

Drawing upon the "smart growth" principles upon which RiverPark is based, the architects



River Park School Site Plan

set out to create a plan that would emphasize shared benefits, open space, and maximum use of land. A 30-acre parcel located on the community's eastern border will accommodate the new River Park East Elementary and Intermediate schools, which will be coupled with a "joint-use" park, to be shared by both schools and the general public. From a master planning point of view, the campuses help to integrate the new development with the existing community by serving as an eastern gateway to RiverPark from Vineyard Avenue, one of Oxnard's main north-south arterials.

WWCOT also opened up the campus to the community by straying from traditional school design tenets, which typically call for administrative buildings and classrooms at the front of the campus. To reinforce the public use function of the school's facilities—a 16,000 square-foot gymnasium, a 14,000 square-foot multi-purpose room, and the campus's architectural centerpiece, a 9,500 square-foot library, which is enclosed in a wedge-shaped glass storefront below an expressively canted roof—are all located at the school's entrance perimeter. This skillful site planning creates a natural separation between the classroom buildings and the publicly-shared buildings, promoting student safety by creating a secure perimeter while maintaining vistas to the surrounding areas.

The architectural plan also includes informally landscaped amphitheaters that can be used during the school days as outdoor classrooms, as well as public gathering areas for the community when school is not in session. These common spaces are part of the joint use park that adjoins the campus. The park, which is accessible via a network of trails and walkways to meet neighborhood and community needs, will be maintained by the City of Oxnard. ●



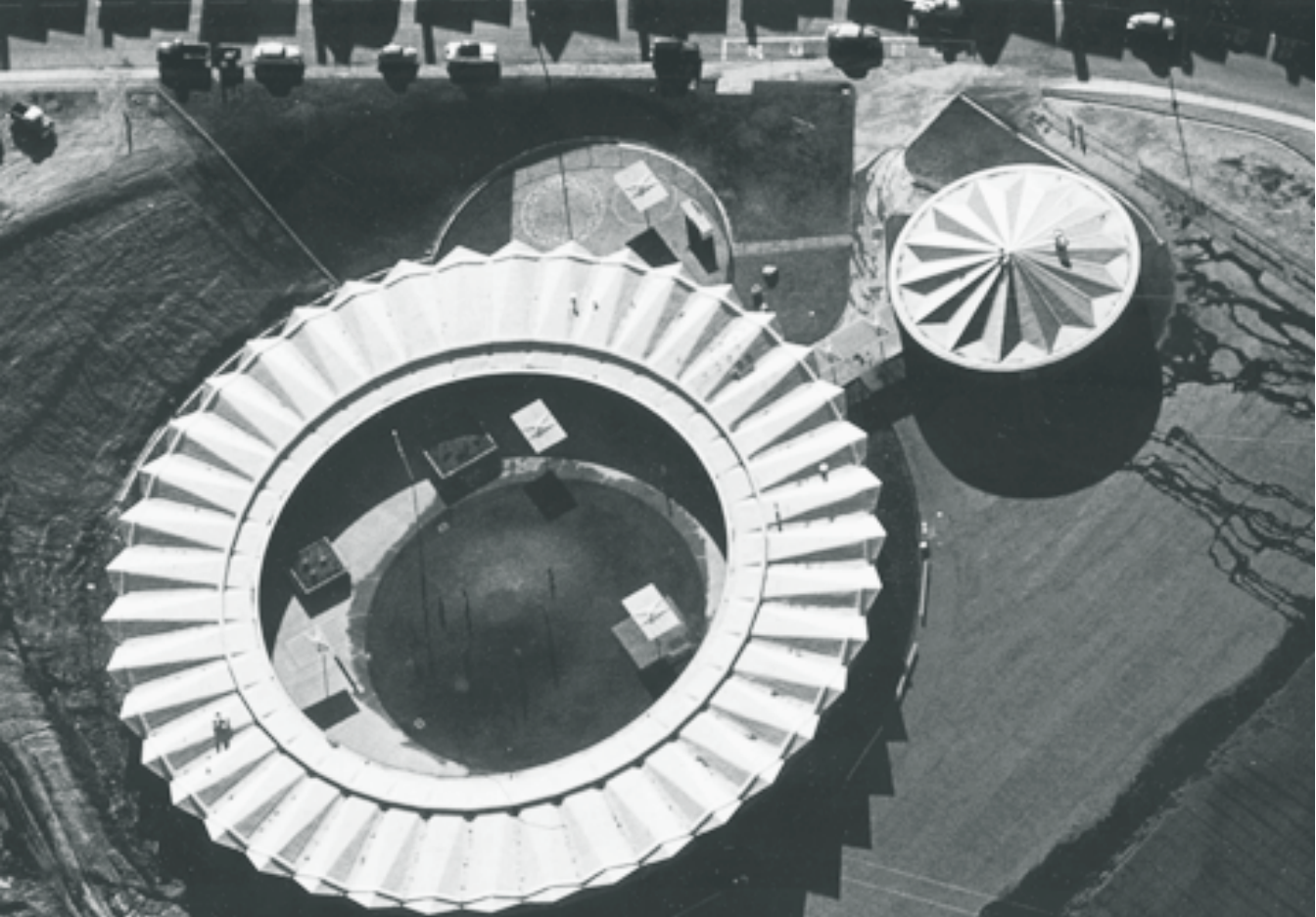
Innovations in School Architecture: A Progression

Richard W. Smith, PhD, AIA

HORACE MANN, JOHN DEWEY AND UNIVERSAL PUBLIC EDUCATION

The teaching of the young by an older generation may be regarded as the defining characteristic of initial human society. The formalization of this process into schools in Western civilization can be traced back to the era of Plato and other Greek philosophers. And yet, while schools developed into institutions in the early Renaissance, universal public education is a relatively recent innovation.

Universal, mandatory, public education was a fundamental innovation introduced in the United States in the mid-nineteenth century, following the advocacy of activists such as Horace Mann. Later, in the last decades of the nineteenth century and in the early twentieth century, John Dewey developed a compelling rationale for universal public education in his writings and lectures. Where the education of the young had taken place previously in churches and the buildings of religious institutions, the new public schools were accompanied with the development of a new type of building.



Ciampi - Vista Mar Elementary School

THE COUNTRY SCHOOL HOUSE AND URBAN SCHOOL

The country schoolhouse was initially, and typically, a derivative of the country church, complete with bell tower. It served a population within walking distance and was a single-room space devoted to a multi-grade class. The urban equivalent was built on limited land area, a one or two story building on a rectangular footprint. It served a larger walk-in population and was multi-roomed and multi-graded. The candidates for the building type from which this model derived are numerous, but a likely one is the light industrial building with its various craft rooms, administrative offices, and cafeteria/multi-purpose room. The program for the urban school soon acquired an auditorium, a gymnasium for physical education, and a shop for trade education.

THE GARDEN CITY MOVEMENT

The Garden City Movement—largely social, economic, and political—originated in early nineteenth century England as a response to the urbanization of the population and industrialization of the economy and

led to the development of early “new towns.”

Ebenzer Howard, in his book *Garden Cities of To-morrow* (1902), advocated a break from the “evil” city. The new town was enabled by the suburban commuter rail lines but was still economically dependent on the adjacent city. Separated from the adjacent city and limiting growth was the Green Belt—a circumferential band in which development was forever prohibited. Examples of these communities include Radburn, New Jersey (Clarence Stein, planner; Henry Wright, architect; 1928), and Baldwin Hills Village (Clarence Stein, planner; Wilson, Merrill and Alexander, architects; 1939).

The Garden City prototype provided a greenway connection between residences and the local school. The greenways provided vehicle-free access for the children, as well as play areas adjacent to the schools. The ideal primary school form emerged—one that would provide single story classrooms with direct access to the outdoors and generous play areas. The opportunity for formal innovation did not escape the notice of architects interested in modern health-oriented design.

These planning models were to be only partially emulated by later suburban developments, which became known as “planned unit developments” and disparaged as “bedroom communities,” since they provided little more than schools and residences, while the adjacent city continued to provide places of commerce, business, and industry. Yet, they did provide the nucleus of the model for the school building form for the rest of the twentieth century.

THE POST WORLD WAR II ERA

Immediately after the Second World War, suburban development began in earnest and provided the opportunity to develop prototypes not seen before. Fueled by the federal Interstate Highway program, beginning in 1956, the already underway, automobile-enabled suburbs exploded.

Large school sites provided by developers were typically 10 to 25 acres. Single story school buildings surrounded by large athletic fields became ubiquitous. Initial responses resembled the military approach to construction characteristic of the Army Corps of Engineers, which was typically a geometric pattern of repetitious units. Many opportunities for new functional and spatial designs often involved geometric clusters expressing site organization. The building footprint itself, however, more often resembled an organizational chart of the staff and functions than a response to the site or environmental forces.

These suburban models were modified and significantly improved by innovative California architects, with respect to site planning, building configuration, solar orientation, interior programming and design, and architectural expression. Bay Area examples include Mario Ciampi’s Fernando Rivera Elementary, Daly City, where he developed a reduced building scale to better relate to the scale of children. His Vista Mar Elementary, also in Daly City, shows the reduction of a complex building program to a simple building configuration—a cylinder and a torus, both with folded plate roofs. John Carl Warnecke’s Mira Vista Elementary, in Richmond, provides the classrooms with relatively constant natural light through a diffusing grid and northern orientation.

SCSD

Nevertheless, the conventional school design, however improved, could not respond to fundamental pro-



John Carl Warnecke, FAIA, Mira Vista Elementary School

grammatic needs. They could not be built fast enough to keep up with population demand, and they were too expensive. They were typically inflexible in terms of subsequent interior spatial changes that were necessitated by changes in curriculum, teaching style, and methods.

The School Construction System Development (SCSD) program was created in 1962 in response to the explosion of California’s suburban school needs and the inability of conventional design and construction methods to meet them.

SCSD presented a rationalization of building construction, with influences from “systems thinking” and the experience gained in California’s aerospace industries. Buildings were characterized by the integration of structure, HVAC, electrical, plumbing, lighting, and communications into components or sub-systems, which were mass-produced. Flexibility (changeability) and erection procedures became crucial aspects of the design process. Building could be viewed as assembly, rather than trade-oriented construction. The focus was on design

process and production/construction procedures. Building appearance still largely conformed to the plan and design of the typical suburban school.

A group of school districts combined their support for this system and new schools began to appear in the mid 1960s. The SCSD program was not as successful as envisioned, largely because of political resistance and school district discomfort with “standard” schools. Yet some two thousand school buildings were built with the SCSD system. Moreover, the system was emulated for other building types, including university residential projects, Veterans Administration buildings, and Post Office buildings.

Nevertheless, the sad fact is that California is still in need of vast numbers of new schools. New schools will have to be built because of the poor seismic performance of the existing stock and the population surge of Boomer Grandchildren. Visualize what will happen in the next 20 years: as much change as in the last 100 years? Very likely.



SCSD School Interior



Chabot Space and Science Center, Oakland

Fisher Friedman Associates, 1997

LOOKING AHEAD: THE SCIENCE CENTER AS THE SCHOOL OF THE FUTURE?

The Science Center is an innovation springing from the mid-twentieth century, combining museum, library, education, and entertainment functions, all integrated with current communication, visual computing, and media technology. Berkeley’s Lawrence Hall of Science (Anshen and Allen, 1963) is a good example from the mid-sixties, and the Chabot Space and Science Center in Oakland (Fisher Friedman Associates, 1997), is a good contemporary example. Important innovations include “distance learning” via the Internet and multi-media display, with material integrating many scientific fields and organized by the age of the learner. Science Centers are developing capabilities in teaching and presenting science and research to the general public at all ages.

The future of education lies in the integration of multiple disciplines. Currently, educational institutions tend to perpetuate the disciplines in separate “silos.” Yet, educational systems are beginning to respond to recent events in society that require the integration of multiple disciplines for research, development, and implementation. Examples include the space program, global warming, the development of nanoscience, and genomic science and applications. Visualize history taught as history / economics / politics, or science taught as chemistry / physics / mathematics / biology.

The Science Center is an appropriate model for emerging educational facilities, because it is dedicated to discipline integration, multi-media and multi-modal learning, and learning for people of all ages. As a hub in a community learning network, it would integrate with traditional schools and connect to people in their homes for more in-depth learning in particular disciplines. Much of the required organization is in place: schools are being built with fiber-optic networks, and some 50% of American homes have high-speed Internet access. Internet2 is just around the corner, and speeds are increasing.

IMPLICATION FOR EDUCATIONAL SYSTEMS

The focus of learning would shift from the formal to the informal, linking with the home and community at large. School would become more social, less “educational.” Education would become integrated into people’s lives, at all ages. People will go to

school to share resources and discoveries and to develop their own knowledge, understanding, technical skills, and the capability to work effectively in groups and in team efforts. School will become more of a resource and less “where one takes classes and gets grades”; more about learning than getting degrees. A better education will be possible with schools more integrated into the physical community and into people’s lives.

IMPLICATIONS FOR PLANNING

Bringing the schools to the people is only possible if the acreage associated with current school athletic fields is separated from the school. The separation of playing fields from schools will provide new options and opportunities for better planning due to reduced site constraints. Options for locating new schools in the built-up communities that need them will increase. The separation could also result in better athletics, since staff and facilities could be optimized.

The school building does not have to “look like a school” in the current sense—a building sitting in a large site with more site area dedicated to parking and athletic fields than to the building. It can be less constrained in terms of the palette of “educational” form and materials. It can be more associated with a street block face and provide a varied response to its context.

IMPLICATIONS FOR DESIGN

Freed from the image of athletic or day-care facility, the new school can become a hierarchical system of rooms and buildings throughout the community, linked by an electronic network, as well as by a network of social arrangements. A resurrected and even more rigorous SCSD-like system of design and construction could provide replacement schools and urban schools on in-fill sites, which would serve as local access “ports” for the community learning network. A new room in the home or housing complex—not an entertainment room but an education room—would become a component of the community education network. The possibilities in architectural expression are endless. ●

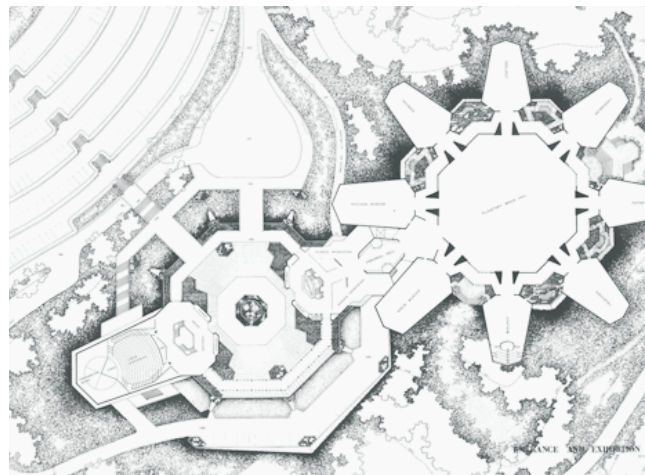
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a building sitting in a large site

with more site area dedicated to parking and

athletic fields than to the building.



Lawrence Hall of Science, Anshen + Allen

Post-War Schools Portfolio I:

Mario Ciampi, FAIA

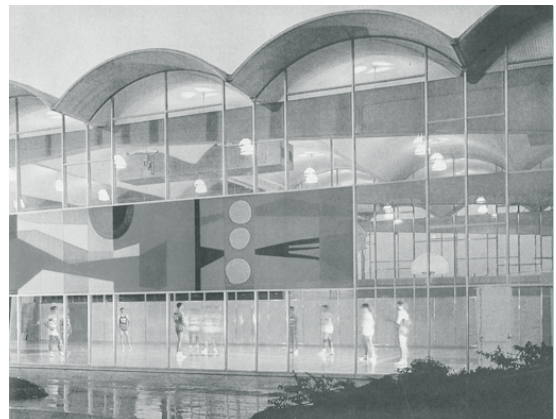
97-year-old Mario Ciampi, FAIA, architect of the extraordinary Berkeley Art Museum, designed numerous innovative schools in the late 1950s and 1960s. Among them are the Westmoor School, with its precast concrete barrel vaults spanning sixty feet; the Fernando Rivera Elementary School, with a prefabricated wood folded plate roof; and the circular Vista Mar School, all in Daly City; and an elementary school for Ciampi's hometown of Sonoma. All are characterized by novel structural systems integrating clerestory lighting, leaving large wall surfaces that incorporate significant artwork in relief. *(see pages 30-35 for more images)*



left: Fernando Rivera Elementary (1960)

right: Sonoma School (1955)

bottom: Westmoor School (1959)





Post-War Schools Portfolio II:

John Carl Warnecke, FAIA

Mario Ciampi's junior by more than a decade, John Carl Warnecke, FAIA, is, like Ciampi a graduate of Harvard. Warnecke attended the Graduate School of Design during World War II, when Walter Gropius was dean, then returned to his hometown of Oakland to begin his practice. Warnecke's father, a Beaux-Arts architect who worked with Arthur Brown on the San Francisco City Hall, had been one of the few architects in Oakland to maintain a practice throughout the Great Depression. Familiar with historical styles through his father's practice, and a great lover of nature, Warnecke pioneered the idea that modern buildings could be designed in sympathy with the natural and built context. His Mira Vista Elementary School in Richmond does just this, drawing its section not only from the angle of sunlight, but also from nearby natural forms—rocks, grass, and waves. Other early schools of Warnecke's include the White Oaks Elementary School in San Jose and the Frank C. Havens Elementary School in Piedmont.





this page: Mira Vista Elementary (1951)
facing page: Frank C Havens Elementary (1956)





this page: White Oaks (1954)



Under the Radar

Martin Studios, Oakland

Architect and Structural Engineer:
Endres Ware, Berkeley

Design Team:
Ian Young
Paul Endres
John Ware
Christi Azevedo

Geotechnical Engineer: Alan Kropp & Associates

Energy Analysis: Monterey Energy Group

Owner and General Contractor: Ian Martin



Martin Studios is a mixed-use building designed to awaken a nascent street life and revitalize its community. The client, a photographer and novice developer, envisioned a building that would provide a home, studio, and income, as well as a neighborhood gathering place. The resulting building reflects his passion for photography and has engaged the community through and beyond its construction. The following account of the building is an excerpt from a column by John King, the urban design writer for the San Francisco Chronicle. It is reprinted with permission.

The building is two blocks from Berkeley's border and barely half a mile from Oakland's urbane Rockridge district—but I can't imagine either bastion of know-betterism allowing anything like this. And that would be their loss. The bold strokes of 6500 Shattuck aren't gestures aimed at a magazine spread; they're forged by creative people who have a lasting stake in the outcome.

Designed by the Berkeley firm EndresWare for owner/resident Ian Martin, the building is as eclectic as this neighborhood where the jumble of auto shops and small stores gives way to friendly looking old houses once you step in from Shattuck Avenue. The ground floor is occupied by the Nomad Cafe; the look is wide open and spare, with dark blue structural columns and broad panes of glass that rise nearly eleven feet from floor to ceiling. The glass shows off the cafe interior as if it were a stage; similarly, the black awnings that push out over the sidewalk reinforce the sense that this building wants to engage its surroundings.

The second floor goes to the opposite extreme; two apartments hide behind a flat stucco wall with no detailing beyond narrow rectangular windows. But the third floor makes up for the lack of drama. Martin lives in a space framed by cedar walls on the east and west, but with metal cladding on the surfaces that face north. Where there's glass inside, exterior wooden slats screen the sun and offer privacy while also accenting the larger design. It's an unexpectedly delicate touch.

I discovered 6500 Shattuck by chance, driving north on mental autopilot until the enticing cafe and the metal prow of the third floor caught my eye. A show like this is the last thing I expected to see at a corner shared by a muffler shop, a nail salon, and a smog control center—and where the number of bill-



Martin Studios, south elevation and third floor plan

boards (two) exceeds the number of crosswalks (zero).

But the location allows the building to exist. It's a bit of a void—and a void lets people take chances. Martin, a photographer, bought the site in 2000. Being a novice in the development trade, he asked around for design advice. Someone steered him to EndresWare, a firm where the eight employees are fluent both in engineering and architecture—a nice combination, balancing the architectural impulse to make a splash with the engineering imperative to make sure the building endures. Each side nudged the other to take chances, leading to a design that fits the neighborhood in its scale but not its appearance.

So how did it survive? One key reason was that void; the neighborhood lacks a formal review process, the type that flourishes in more established or affluent settings. There was no meeting where a panel of appointed skeptics started chipping away at anything unusual.

Instead, Martin involved the community in the old-fashioned way: He made it his business to

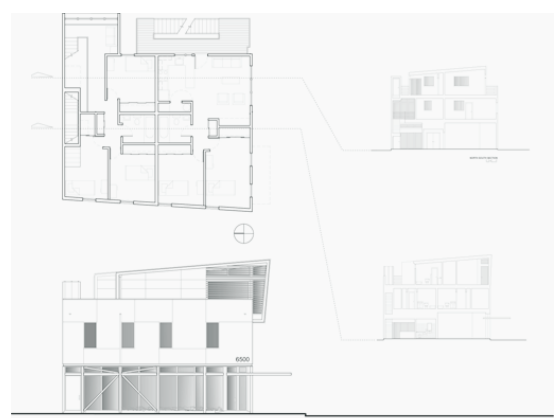
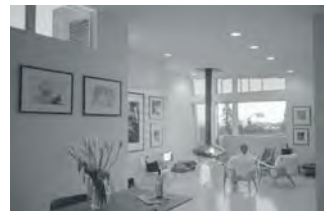


Martin Studios

knock on every door nearby to explain what he hoped to do. “Knowing this is a neighborhood with a long history of political activism, and where developers are not always welcomed with open arms, I wanted to humanize the project,” Martin says. “It was our job to show everyone that we were well-intentioned and wanted to do a quality project.”

In the process, he also made connections that made the result better. One neighbor turned out to be a contractor who specializes in high-end stucco work, but took on this small project anyway. The muffler shop on the next block blended touch-up paint for the third floor steel.

Another neighbor is Christopher Waters, who moved to the block seven years ago and has dreamed of seeing the corner thrive ever since. When Martin stopped by to explain his plan, Waters asked if anyone had leased the ground-floor space. Now he runs the Nomad Cafe. There’s music most weekends, paintings by local artists hang on the walls, and the books on the shelf in the back include Howard Zinn’s *A People’s History of the United States*. ©



Martin Studios, west elevation, second floor plan, and sections

Credits

arcCA welcomes submissions for Under the Radar. To be eligible, a project or its architect must be located in California; the project must not have been published nationally or internationally (local publication is OK); and construction must have been completed within the last twelve months or, for unfinished projects, must be 60%-70% complete. Architects need not be AIA members. Submissions from widely published firms (as determined by the arcCA Editorial Board) may not be accepted. Please send your submissions to the editor by email at tim@culvahouse.com, attaching three to five JPG images with a combined file size of no greater than 1.5MB. Describe the project in fewer than 200 words in the body of the email, providing a brief caption for each image, keyed to the image's file name. (If you don't have the capability to submit by email, you may send the equivalent information by regular mail to: Tim Culvahouse, AIA, Editor, arcCA, c/o AIACC, 1303 J Street, Suite 200, Sacramento, California, 95814, Re: "Under the Radar.")

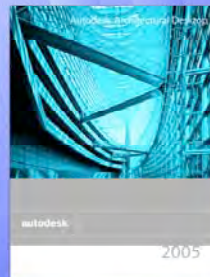
cover: calligraphy, **Emily Aufuldish**; design, **Bob Aufuldish**
page 6-7: all photos, **California Department of Corrections**
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page 17: photos, **H.S. Barsam Photography**
page 18: rendering, **MKThink**
page 20: rendering, **MKThink**
page 22-23: drawings and renderings, **MKThink**
page 24: photo, **Ragina Johnson**
page 27: photo, **Ragina Johnson**
page 28-29: drawings and renderings, **WWCOT**
page 30: photo, **courtesy of the architect**
page 32: photo, **courtesy of the architect**
page 33: photo, **Rondal Partridge**
page 34: (top to bottom), photo, **Rondal Partridge**;
photo, **Richard Smith**
page 35: drawings, **Anshen + Allen**
page 36-37: photos, **courtesy of the architect**
page 38: photo, **Rondal Partridge**
page 39: all photos, **Rondal Partridge**
page 40: all photos, **Rondal Partridge**
page 41: all photos, **Ian Martin**
page 42: drawings, **Martin Studios**
page 43: all photos, **Ian Martin**; drawings, **Martin Studios**
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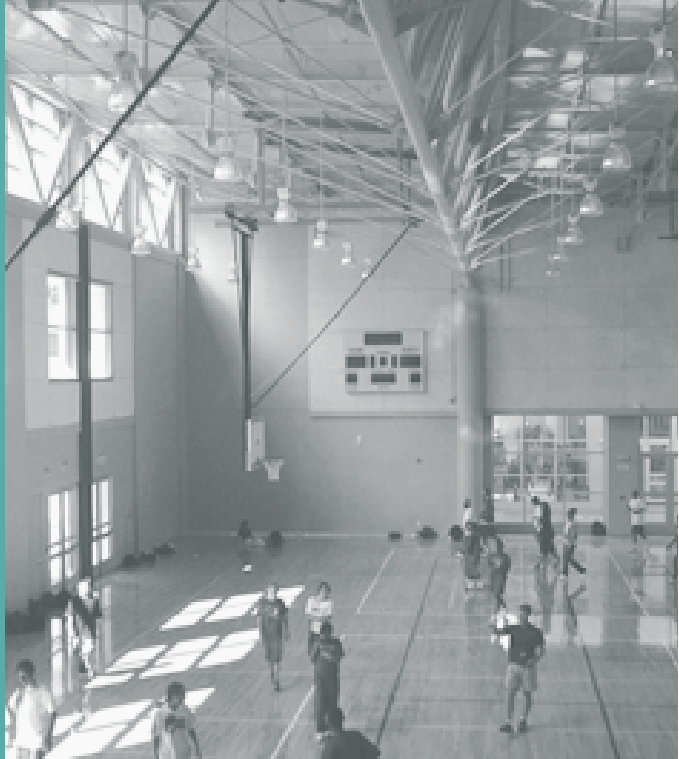
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Coda



Fruit Bowls and Free Shots

Tim Culvahouse, AIA

In *Dwell* magazine's opening issue, the editors made a declaration they dubbed "The Fruit Bowl Manifesto." The gist of it is, that whenever one sees a fruit bowl in a photograph of the interior of someone's home in *Dwell* it is there not as a stylish prop, but because the homeowner likes to eat fruit. A corollary principle is that the people who live in the home ought to appear in pictures of the home; or, more broadly, that photographs of buildings should show them in use by human beings.

Pictures of buildings with people in them are more true to life; but in addition to the question of verisimilitude, there is the question of where we focus our design attention. As Herman Hertzberger has suggested, we might better think of buildings as pedestals, awaiting the presence of people, rather than as sculptures, complete without them.

One dramatic, but dependable, place to compare spaces with and without people is a schoolyard. Get there ten minutes before classes let out for recess, find a comfortable bench, and wait. These shots of the new Berkeley High School gymnasium, by ELS Architecture and Urban Design, suggest the effect. ●