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intelligent design strategies

A Perfect
(Brain) Storm

Brave New
Design

American
Hardwoods
Rediscovered

HMC ARCHITECTS'
MICHAEL L. TOME,
JOE A. KRAGELUND,
PAM MAYNARD



Brave NEW DESIGN

Big brother is watching your medical treatment—and that's a good thing. As hospitals and healthcare centers race to apply what was once considered futuristic digital technology to the practice of contemporary medicine, they've enlisted another profession, architecture, to provide environments that support this rapid and radical change.



One firm at the forefront of healthcare's brave new world of design is HMC Architects of Ontario, CA. Its staff saw the face of the future at a new diagnostic and treatment pavilion they completed over a year ago in Reno, NV: the Washoe Medical Center South Meadows. There are no X-rays on file at Washoe—all radio graphic equipment is digital. High speed fiber optics connect the center to a main location in Reno so that everything—from patient insurance records to X-rays, test results, building and security systems—is accessible instantly from either location.

When a patient of this center is traveling anywhere in the world and the need arises, his computerized records can instantaneously be made available to local physicians—an unprecedented boon to diagnosis and

RIGHT The design team of HMC Architects, are (from left): Joe A. Kragelund, Pam Maynard and Michael L. Tome.

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Charting a sustainable course through the rapidly (and radically) changing healthcare profession, California-based HMC Architects is effecting healthy change one building at a time for the benefit of patients and the planet.



treatment. What's more, data ports are located in every patient room at Washoe: doctors and nurses use laptops to access patient data (tests, allergies, you name it) on the spot.

But perhaps even more exciting to HMC Architects is the new ground they'll be breaking (both literally and figuratively) at the La Maestra Community Health Center in San Diego, CA. Although the firm has embraced green design and applied its principles to a host of education and corporate projects, this is the first time they are seeking LEED Silver certification in healthcare.

"The process is so new in the [health] field that the Green Building Council is just working on its Green Guide for Healthcare, a set of sustainable design application guidelines that will ramp up efforts for LEED certification in public, private and not-for-profit healthcare sectors," says Eric Shamp, HMC Architects' sustainable design coordinator.

A LEED-certified AIA architect, Shamp says until the past year, any sustainable design for the firm's healthcare clients was based on what

could be done within the owner's requirements. And as with any firm championing green design in various market sectors, application of sustainability principles is recommended on an opportunistic basis—and with cost limitations in mind.

This was not the case with La Maestra, however. Before they even began interviewing architectural firms, leaders at the Community Health Center were aware of LEED and wanted to go for it. In fact, their goal led them to HMC Architects, which happened to have both a corporate sustainability guru (Shamp) and a San Diego branch office, complete with resident healthcare studio leader Michael Roush.

Fast-forward past the screening, bidding and presentation stages, project architect Roush is now commandeering the design of the three-story 32,000-square foot mixed-use facility, while Shamp sorts through myriad sustainability-centric functions like grant rebate and incentive research, building and lifecycle cost analysis, and energy modeling.

Indeed, the process can be exhausting: in addition to following

"I find it quite interesting that when we incorporate the green principles of architecture, which is actually intelligent design, we're not only benefiting the planet as far as the materials, or providing cost savings for facilities managers; we're also giving an advantage to each individual patient, both psychologically and physiologically."

—Pam Maynard, director of interior design, HMC Architects

RIGHT AND BELOW These illustrations show the east elevation and northeast perspective of the La Maestra Community Health Center in San Diego, HMC's first healthcare project slated for LEED certification.



OPPOSITE Designed around a covered interior atrium space, La Maestra's circular floor plan allows easy physical and visual access to various programs and services for low-income patients.





(anticipating may be the operative word) LEED criteria, the HMC team had the city of San Diego to contend with. "The process of getting city approvals took almost a year," Shamp explains. He says that process was critical, however, because La Maestra—located in the heart of the City Heights district of San Diego—was the first project to hit the drawing boards in the community, which the city has targeted in its entirety for redevelopment.

"This is an underprivileged, extremely mixed population," he says about La Maestra, a Public Housing Primary Care Provider to 48,000 low-income patients. "From the beginning La Maestra recognized that green design was not just an opportunity to create a more patient-friendly clinic or a healthier place to work," Roush adds. "They saw it as an educational tool—a way to set an example and encourage more green design throughout the neighborhoods in City Heights as the redevelopment program rolls out."

The La Maestra Center proposed by HMC will encompass an open structure circular design allowing room for future expansion. Some of the ground floor will initially be leased to partner tenants to provide rental income until La Maestra grows into the space. Functional units will be re-engineered within the new facility to improve patient flow. And the design intentionally reinforces the center's Circle of Care mission (it houses a full range of community and health services, educational programs as well as housing assistance and on-site job training and referral services).

Designed around a covered interior atrium space, the circular floor

plan allows easy physical and visual access to each of these programs and services. Windows around the building perimeter will allow natural light to filter through to interior spaces. "The lower level of this atrium space accommodates play and waiting areas," Roush explains.

"A centralized check-in and greeting function provides immediate assistance and orientation for patients, first-time visitors and extended families. The second and third floors each house primary healthcare clinics, with their own distinct waiting and sub-waiting areas to segregate well and sick children."

The architects say the green initiative at La Maestra is product-driven and focused on interior finishes and materials that don't require toxic cleaning. While La Maestra will use its stature in the community to push the concept of green design through public awareness, another green pioneer has been pulling sustainable products into the health-care system via its buying power.

Kaaiser Permanente is a 300-pound gorilla," says Shamp of the nation's largest HMO with 8.2 million voluntarily enrolled members in nine states (over 6 million in California alone) and Washington, DC. Indeed, he has watched this client standardize to Nora rubber and Stratica flooring within the last year due to environmental issues. "They want to eliminate PVCs from buildings," he says, and they're challenging the U.S. Green Building Council to reassess standards for fabric finishes, flooring and wall

coverings, as well. "Because of Kaiser's initiatives, manufacturers are scrambling to find products that perform as well," Shamp reports.

Pam Maynard, director of interior design for HMC Architects, concurs. "Kaiser has initiated a big change in flooring," she says. "For healthcare we used to line all of our corridors and patient rooms with VCT (vinyl composite tile). Now we're taking a step back and using rubber PVC-free products like Stratica—where even the rubber is latex free. There's no off-gassing, the products are recyclable, and less maintenance is required. So, you're using green products, with the advantage of less maintenance. The up-front cost is a little bit higher," she says, "but when facilities look at lifecycle costing over a period of years there is actually an advantage to it."

HMC Architects has worked on Kaiser's medical centers in both Ontario and Baldwin Park, CA, and has projects on the boards for others in Downey and West Los Angeles. Eco-friendly design has proved to reduce lifecycle operational cost of its facilities, but equally important to Kaiser Permanente is the social responsibility aspect of green design, says Maynard.

Currently, HMC is also working on an 80-bed tower addition for

Providence Holy Cross Hospital in Mission Hills, CA—the first phase in a total replacement plan. Necessitated by increased patient load that resulted from area hospital closures, the three-story tower has become a showplace for some of the newly emerging design strategies in healthcare—including the hotly-debated centralization or decentralization of nursing stations.

Indeed, Providence Holy Cross proved the validity of HMC's theory that the best design is collaborative. "We take pride in the fact that we listen to our clients," says Joe Kragelund, AIA, studio leader of the firm's Pasadena office. "On preliminary concepts we like to see how the users react. We try to be as graphic as possible, explore with them three or four different solutions, and through this client interaction find the one that will serve them best."

Although hospital administrators were keen on moving to a centralized nursing station design, interviews with the nurses revealed a desire to maintain a decentralized format. HMC satisfied both factions with a compromise that kept the nurses close to their patients, yet offered central spaces for meetings with doctors, technicians and other staff members as well as private consultations.





LEFT Visitors enter the conference room in HMC's Pasadena office via polycarbonate and galvanized steel doors. Once inside, a steady stream of natural light is experienced as a result of southeastern exposure and a central atrium. A custom-designed table made of medium-density fiber board was assembled using carefully constructed interlocking sections.

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"In patient rooms at Providence Holy Cross, we're incorporating what we call a light shelf," adds Maynard. "Lighting from the exterior window actually bounces off the shelf, thereby requiring a lower use of artificial lighting during the day," she explains. Maynard says she's pushing natural light, windows and the use of indirect lighting in all of the firm's healthcare projects for a multitude of reasons.

"Studies show patients improve at a quicker rate when we incorporate more natural lighting in their rooms," she says. That's why HMC is looking to improve patients' encounters with corridor lighting as well. "Imagine a patient on a gurney looking right up into a fluorescent light," she says. "We're trying to move that light source to the perimeter of the corridor and to incorporate indirect lighting instead."

What's good for the patient is also good for the administrator who wants to cut costs, Maynard points out. Lighting, she says, can account for up to 30 percent of a hospital's energy costs, and eight percent of the facility's total operating budget.

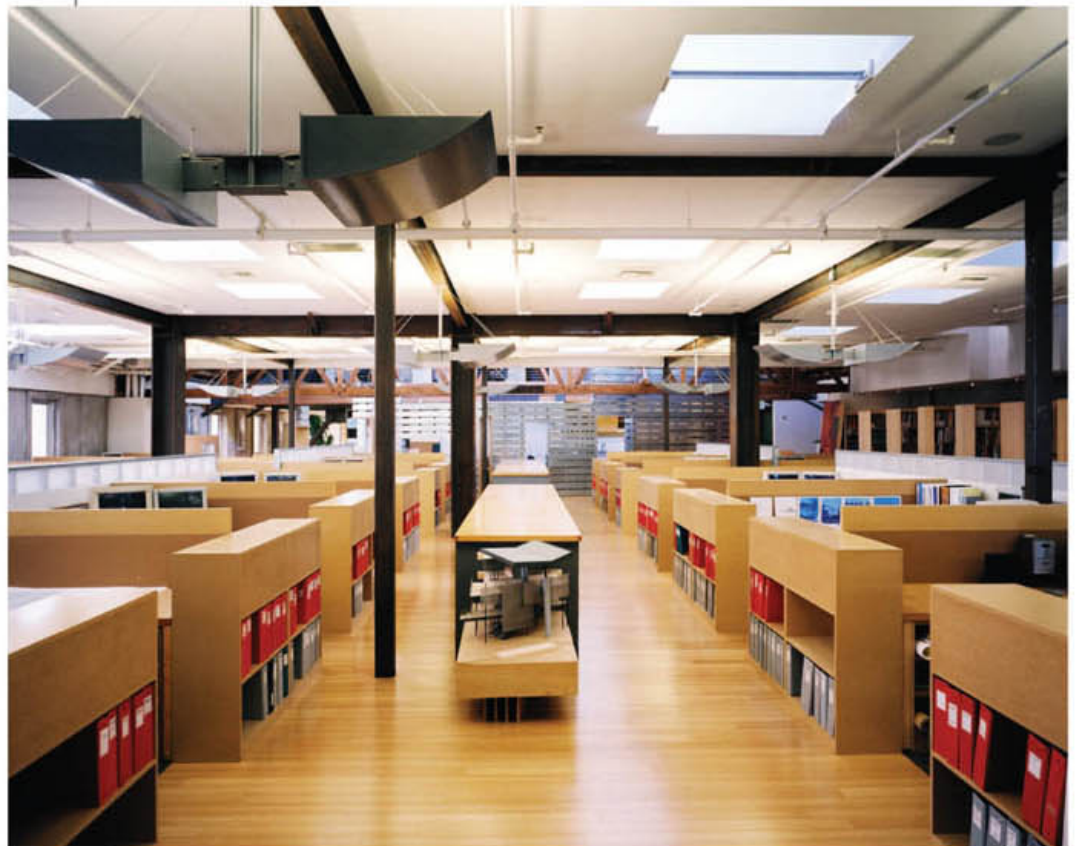
"I find it quite interesting that

BELOW The high-volume workspace in the HMC Pasadena office captures light through operable windows and numerous skylights. Custom-designed fixtures that reflect off the white ceiling supply indirect light for early morning and evening use.

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OPPOSITE The entry reception lobby of HMC Architects' Pasadena office exposes original wood and new steel structural systems, combined with a natural pallet of materials, expressing the true elements of construction.

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HMC Architects are proponents of sustainable design in every market segment served. The emphasis on green schools is growing in California, they say. And a major move to green design in healthcare is on the horizon. Projects include:

- ▶ Curtis Middle School, San Bernardino City Unified School District
- ▶ Golden Hill Elementary, San Diego Unified School District
- ▶ La Maestra Family Clinic, San Diego
- ▶ LAUSD High School #9, Los Angeles Unified School District
- ▶ Banta Elementary/Middle School (Sacramento), Banta Elementary School District
- ▶ Calvary Chapel Master Plan, Murietta, CA
- ▶ Citrus Valley High School, Redlands Unified School District
- ▶ HMC's Pasadena office, renovated historic Florence Theatre
- ▶ San Pasqual Union K-8, San Pasqual Union School District



HEALING Power

Through her work in healthcare, HMC's Director of Interior Design Pam Maynard has researched and applied the healing power of design to actual installations. Isn't it better to use design to effect change both emotionally and physiologically, than simply as window dressing? she challenges. Here are a few tips gleaned over a 25 year career at HMC:

- ▶ Design healthcare facilities that incorporate scenic gardens—ideal rooms offer views of gardens and access to them.
- ▶ Blend natural light, indirect artificial light and task-specific light fixtures.
- ▶ Use skylights to infuse natural light deep into interiors.
- ▶ Remember the purpose of natural lighting: we need to experience its changing intensity throughout the day to maintain our internal clocks, or circadian rhythms.
- ▶ Patients respond better when they can control their environment.

Simple things like dimmer switches and controls for window shades, give patients some sense of control.

- ▶ Minimize fluorescent lighting—research shows its spectral composition can be stress-inducing. Full-spectrum fluorescent lights are better.
- ▶ Make surgical and treatment rooms as comfortable and residential-looking as hospital lobbies.
- ▶ Use color to help patients in hospitals. Warm colors are better for LDR (labor and delivery rooms) and post partum; cool tones in ICU and recovery for calming effect; blues, greens, even rose in patient rooms—and always add a bit of warmth to white base paints.
- ▶ Try to quiet health facilities with acoustical products and design. HMC has added windows to interior walls of patient rooms, so nurses can see inside, but noise is shut out when doors are closed.

● **ABOVE** The open workspace in the HMC Pasadena office, which is organized around the steel structural system, encourages interaction between colleagues within workstations and at central collaboration tables.

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● **OPPOSITE** The recyclable steel stud wall that organizes the HMC Pasadena office into distinct areas is perforated, allowing the original wood bowstring truss-framed clerestory light to filter through the space.

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when we incorporate the green principles of architecture, which is actually intelligent design, we're not only benefiting the planet as far as the materials, or providing cost savings for facilities managers; we're also giving an advantage to each individual patient, both psychologically and physiologically," Maynard explains.

"Isn't that exciting? We're doing something that is good for the environment, but there are all these other benefits, as well. When it comes full circle, it tells you this is the right thing to do."

After 65 years in the business, and with a multitude of green installations, especially schools in California and Nevada under its belt, HMC has chosen to lead by example. Its recently remodeled 8,000-square foot Pasadena headquarters in the historic Florence Theatre recently won a sustainability award from the Pasadena-Foothill chapter of the AIA.

"We demonstrated that it is possible not just to preserve existing buildings, but to design them in a way that blends the old with the new," says Michael Tome, AIA, senior designer and lead proponent on the project. A showpiece for green design, blending environmental sensitivity with resource efficiency and comfort, the office emphasizes the construction process by exposing building systems.

The space hinges on exposed steel, wood framing and concrete walls to define office areas. A wall of metal studs lines the path from the reception area through the workspace into the employee kitchen, dining and library area. "The building's framing and structural systems were influential in our decision to renovate," says Tome, who notes that the project cost just \$20 per square foot.

LEED by Example

With all the green products, natural lighting and clever reuse of furniture, the project had all the bells and whistles to earn an award for green design. But that's just an aside for Maynard. "What I try to impress on my group is that we're not designing projects to win design awards. That kind of falls flat.

"When we're designing a medical center, and provide more of a healing environment or a better place for staff to work—boy that makes all the difference in the world. Then design is not just about making something pretty. It's effecting change within education and healthcare. When we think of our jobs as effecting change rather than just color or just makeup, that's exciting." ●

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What better way to show clients you practice what you preach about green design than to make your own office a showcase of sustainability? HMC Architects did just that and won an AIA award in the process. The blend of old and new materials makes the office a green building laboratory for staff and clients alike.

Here's how they did it:

- ▶ **RENEWABLE MATERIALS:** floors of bamboo, an inexpensive, rapidly renewable resource.
- ▶ **SKYLIGHTS THROUGHOUT THE WORKING ENVIRONMENT:** reduce energy costs by eliminating the need for conventional lighting.
- ▶ **RECYCLED MATERIALS:** office cabinets, bookcases, archive bins and dividers between workstations—specified MDF fiberboard made from recycled sawdust. A clear coat of low VOC sealer contains gases and protects the finish.
- ▶ **KEPT ORIGINAL MASONRY BEARING WALLS AND BOWSTRING TRUSSES IN TACT**—reinforced with recyclable steel framing.
- ▶ **REUSED** the theatre's original bricks as accents in conference room and reception area to keep them onsite.
- ▶ **USED LINOLEUM FLOORING AS WALL COVERING** for cubicles and in pinup areas instead of bulletin boards—it self-seals pinholes.
- ▶ **REUSED EXISTING WORKSTATIONS** (surfaces were actually doors).

