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VOL. 20 NO. 4

THE MAGAZINE OF AIA MINNESOTA

JULY/AUGUST 1994



18. Day-Surgery Center



24. St. Paul Rehab Center

- 5 Sketches
- 8 Sketches: Coming to a neighborhood near you... New-order medical facilities, by Janet Whitmore
- 10 Previews: Minnesota 1900 at the Minneapolis Institute of Arts
- 13 Insight: Critical differences: The changing look of medical design, by Bette Hammel
- 15 Practice: Cleanroom technology
- 17 Editorial: Health watch

18 Health-care focus From senior-care centers to big-city hospitals and East African clinics, Minnesota architects pave fresh approaches to designing health-care facilities, by Eric Kudalis

34 Team Approach Ellerbe Becket's health-care division applies decades of experience in meeting the challenges of an expanding medical market, by Rick Nelson

37 Growing Practice Horthy, Elving & Associates finds that diversity of client services is the key to successful medical design, by Eric Kudalis

40 Pastoral remedies At Minnesota's historic tuberculosis sanatoriums, site and design met to heal, by Rolf Anderson

- 42 '94 Architecture for Health Portfolio
- 59 Advertising Index
- 59 Credits
- 60 Lost Minnesota

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26. Minneapolis Pathways



34. Ellerbe Becket's latest designs

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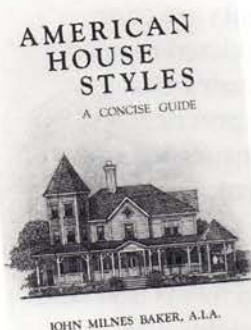
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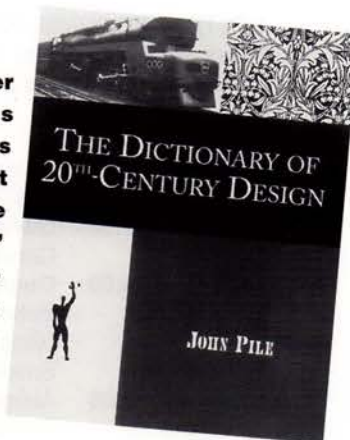
Drive through the average post-World War II suburb and you may get the indication that every house is pretty much the same. American houses, however, are as diverse as the people who inhabit them. From colonial days to yesterday, American residential architecture has reflected the unique character of its era and place. *American House Styles: A Concise Guide*, by John Milnes Baker, demonstrates the diversity of house styles found across the country, from the New England Colonial to the antebellum plantation house. In writing the book, the author developed a basic two-floor, four-bedroom house plan and then designed variations of this plan, demonstrating the stylistic differences between New England colonial, Queen

Anne, International style and post-modern eclecticism, among many other styles. Each section begins with a historical overview of the period followed by commentary on the different styles and details from that era. Baker, an award-winning architect specializing in residential work, lives in Katonah, N.Y. His previous book is *How to Build a House with an Architect*. *American House Styles* is published by W.W. Norton & Company, New York.



Why is clothing designer Perry Ellis known as "anti-fashion"? What was the original intent of that pylon atop the Empire State Building? Who put "kitsch" into art? And what's so great about the LEGO brick, anyway? If you're dying to know, then grab a copy of *The Dictionary of 20th-Century Design*, by

John Pile. You'll learn about Anchor blocks, Arabia china, Samuel Bing's shop, the buildings of Paul Cret and the design concepts at Braun. The book contains information on industrial and interior design, furniture, tableware, glass, silver and graphic design. The dictionary also covers styles, periods and movements; museums and design schools; designers, manufacturers and dealers; as well as technical terms, materials and manufacturing techniques. That's 1,200 entries with 200 black-and-white photographs in all. John Pile is a regular contributor to design journals. His other books include *Perspective for Interior Designers* and *History of Industrial Design*. *The Dictionary of 20th-Century Design* is published by Da Capo Press, Inc., New York.



Too young to designate ... Too old to award

The Mayo Diagnostic Building, designed by Ellerbe Becket, has been a landmark on the downtown Rochester skyline and Mayo Clinic complex since 1954. The original program called for a 10-story structure with a cross-shaped footprint that ushers natural light into most of the exam rooms and offices. The architects added more floors in 1967. The building capitalizes on the Mayo Clinic's emphasis on putting patients' comfort and needs first. The Mayo Clinic is known for its history of group practice, which brings together the special skills of various physicians to care for each patient. A typical floor contains the physicians' offices and exam rooms, patient waiting, staff seminar and support spaces, and a reception/medical histories desk that serves as the floor's control center. The building has proven flexible in accommodating the technological changes that have transformed the medical profession over the decades. Stylistically, it reflects the clean, modernist thinking of its time. It was one of the first buildings to use a curtain wall of extruded aluminum and one of the first to be completely air conditioned.



Courtesy Ellerbe Becket

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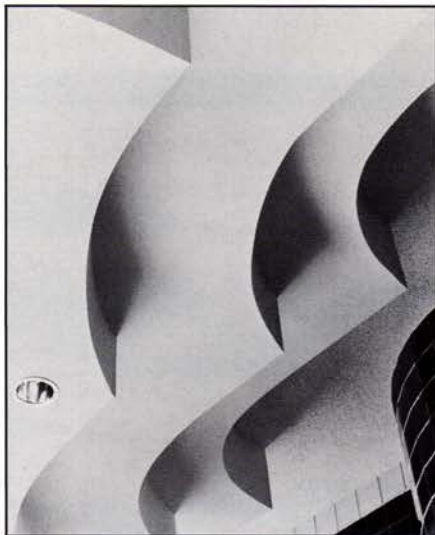
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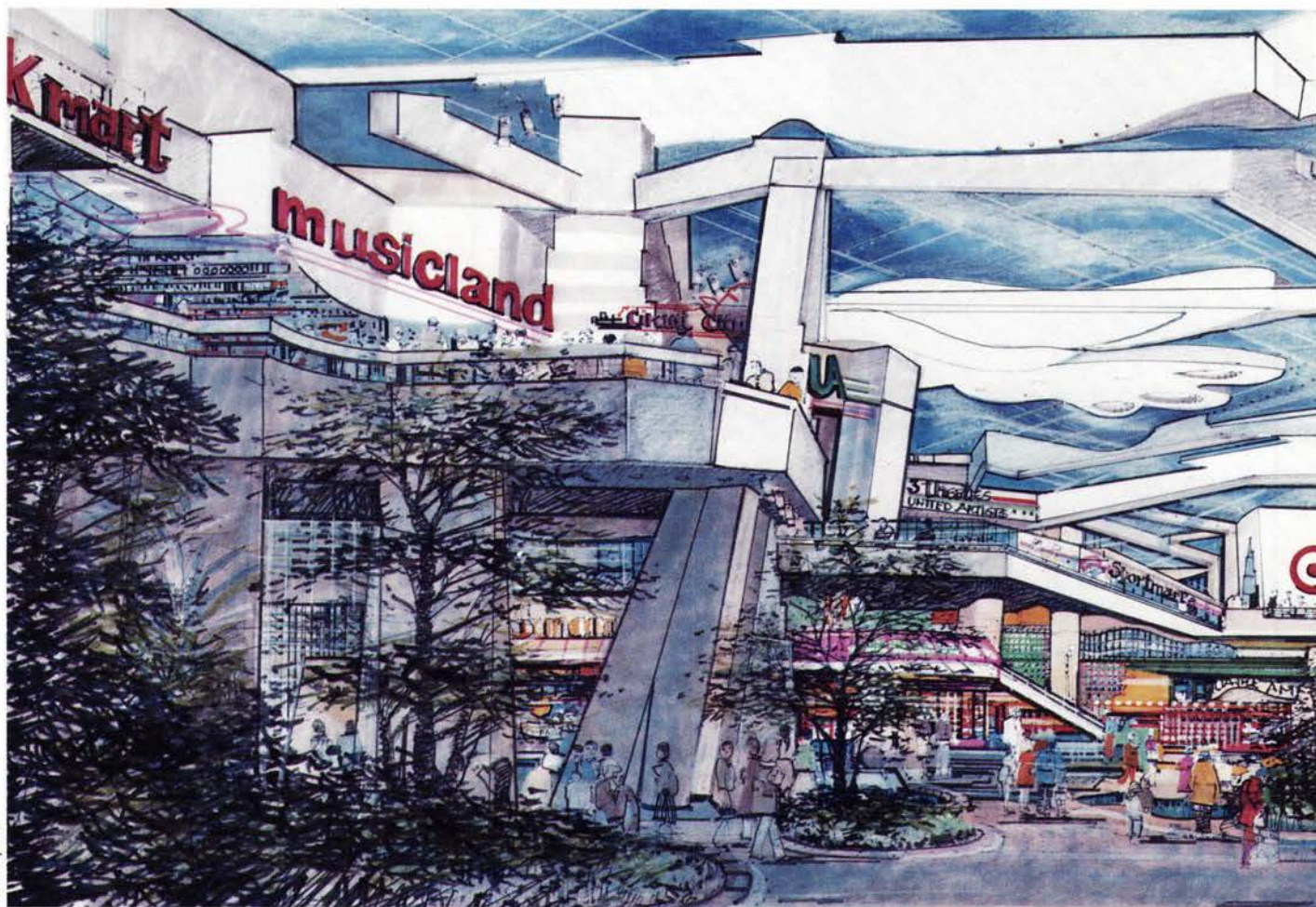
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sketches



Courtesy KKE

Coming to a neighborhood near you. . .

From shopping malls to suburban office buildings, medical facilities are popping up all over the place

By Janet Whitmore

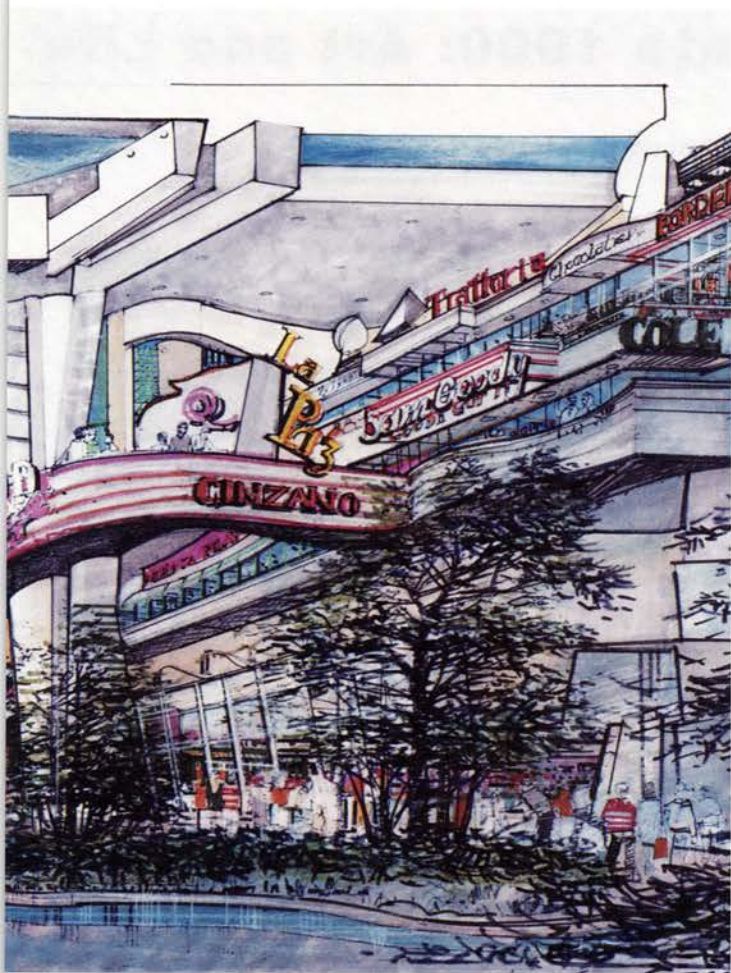
In the last decade, health-care organizations have changed dramatically, not only in how services are provided but in where the public receives those services. Contemporary physicians' offices are found in shopping malls, suburban office buildings and even municipal-development projects.

This decentralization of medical services has significantly changed the architect's role in designing health-care facilities. Traditionally, a health-care provider would hire an architect to design a facility for a specific site. The architect would work closely

with administrative and medical staff to identify the facility's needs and design a building that responds to those needs.

Today, that process is increasingly based on a relationship between the health-care organization and a developer rather than an architect.

At first glance, this new model seems to complicate an already complex process. Two factors are critical in understanding the change. First, health-care organizations are uncertain about building new facilities in an era of undefined regulations. Second, developers saw an opportunity



Marking the wave of the medical-care future, this proposed \$70 million redevelopment of the Met Stadium in Bloomington, Minn., calls for a mix of retail boutiques, as well as clinics and specialty medical facilities.

As the design process neared completion, Ryan began construction through the contracting division of the company. In addition, Ryan is responsible for designing, purchasing and installing all the medical equipment, furniture, casework and art work in the clinic. When MCMC moves into the building late this summer, Ryan will assist in providing property-management services through yet another division within The Ryan Companies. In short, the developer provides a single source of responsibility for the health-care organization. According to Chester Yanik, vice president of Ryan Medical Buildings, this may be the first complete turn-key medical building in Minnesota.

Yanik views this process as a distinct advantage for health-care providers. "There is a pent-up demand for medical construction," he notes. "Minnesota Care has already had an impact on this market. The development of medical buildings has slowed down in Minnesota because of the uncertainty about regulations and procedures. Health-care organizations need the strength of a developer as they expand into new markets."

It is hard to argue with the numbers. In the Twin Cities, the few new medical facilities built in the last five years were all developed using this type of process. The proposed Met

Stadium project, one of the more intriguing medical developments currently under consideration, exemplifies the developer-driven, design/build process. Located immediately adjacent to the Mall of America, this proposed \$70 million mixed-use development will house not only a plethora of retail outlets, but a number of clinics and specialty medical facilities. The development partners in this proposal are the Fairview Hospital Systems, the University of Minnesota Hospital and Clinics, the Aspen Group and The Ryan Companies. The architectural firm is Walsh Bishop Associates of Minneapolis.

Dennis Lanz of Hammel Green and Abrahamson observes that the design/build development process is "particularly well suited to the design of clinic networks where the real-estate expertise of a developer can be a distinct advantage." It may be less useful for hospital remodeling projects that do not require site selection and complex financing.

As an experienced health-care architect, Lanz also notes that the decision-making process has changed radically in recent years. "Administrators and facility managers are not as involved in the process today. The decision-makers are more likely to be corporate executives who run large health-care conglomerates."

According to Lanz, future health-care facilities will be based on the model we see developing today. "There will be a system of small clinics feeding into larger specialty clinics

to expand their market as the 1980s building boom diminished. Together, these factors support the creation of a new relationship between health-care providers and development companies.

From the health-care providers' perspective, the developer offers an opportunity to continue expanding services while minimizing the financial risk. The developer becomes an owner and partner in the project, providing all real-estate services including financing for the purchase of land, as well as the design, construction and management of the building.

The new Minneapolis Children's Medical Center (MCMC) Ambulatory Services Center in Minnetonka, Minn., is a typical example. Ryan Medical Buildings, a division of The Ryan Companies, offered MCMC a partnership that allowed them to broaden its service area in the Twin Cities's west-suburban market. Ryan purchased the land, arranged the financing and hired KKE Architects to prepare a master plan for the site. Working with MCMC to establish programmatic objectives, Ryan set the budget and schedule. KKE Architects then developed the design.

Continued on page 56

Minnesota 1900: Art and Life

The Minneapolis Institute of Arts
June 19–Sept. 4

This large-scale, multifaceted exhibit, one of the most ambitious ever mounted by the Minneapolis Institute of Arts, will highlight the region's artistic and architectural innovations in the late 19th and early 20th centuries.

Minnesota experienced its greatest population growth during this period; with that growth came expanding industries—flour milling, railroad building, iron-ore exploration and farming. The creative professions prospered with the economy. From paintings, drawings and sculpture to period sets displaying architectural elements, furniture, lighting fixtures and ceramics, *Minnesota 1900* showcases the era's cultural achievements that still influence today's creative stage.

The program is divided into six exhibits throughout the Dayton Hudson and Cowles galleries.

With **Architecture and Design**, visitors will see samples of some of

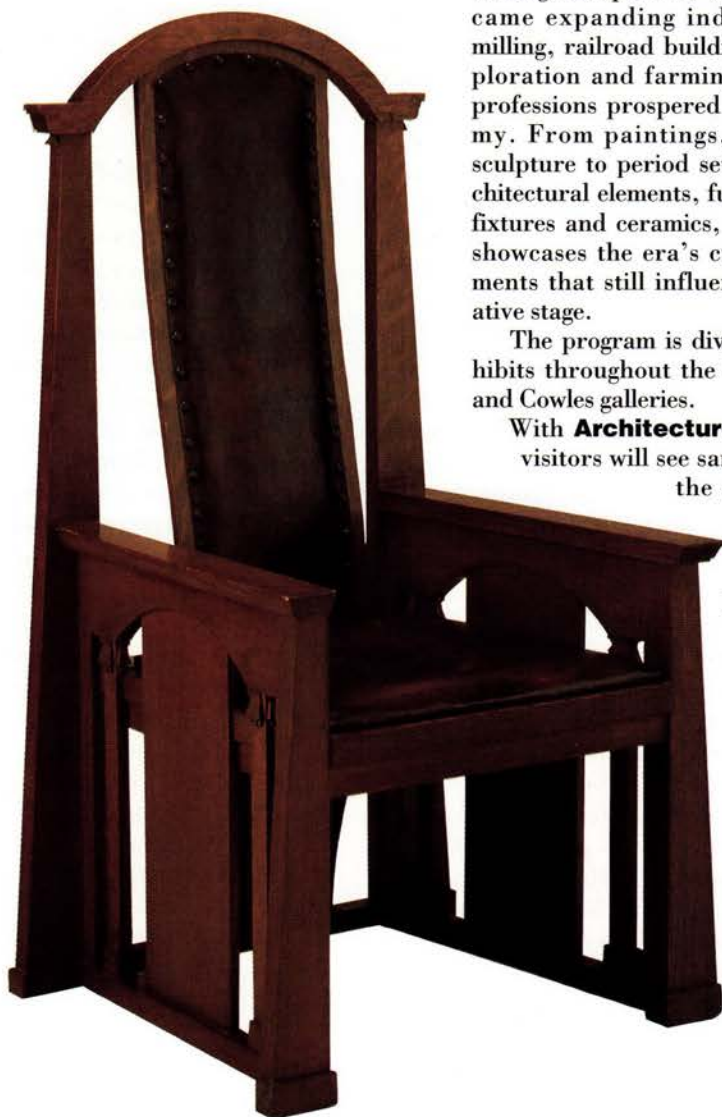
the era's most recog-

nizable architects, including Frank Lloyd Wright, George Maher, Cass Gilbert, LeRoy Buffington, Harvey Ellis and Edwin Hewitt. The range of building types designed in Minnesota—from residential, commercial, institutional and ec-



clesiastical—is explored in this section. In addition, **Robert Koehler and Painting in Minnesota** will emphasize the life and work of one of Minnesota's premier artists and arts educators. Koehler was the second director of the Minneapolis School of Art (1894–1917), the first president of the Minnesota State Art Society, and founder of the Artist's League. Several of his paintings will hang alongside those of his many students and contemporaries. Further on is **The Handicraft Guild of Minneapolis**. Active between 1904 and the 1920s, it was one of the nation's first arts-and-crafts societies. This exhibit looks at the members' work, from ceramics and metalworks, to jewelry and graphic design.

For those interested in turn-of-the-century interior design, **Bradstreet's Craftshouse** examines the work of John Scott Bradstreet. His interior work often reflected his interest in Islamic and Moorish design and Japanese-inspired Art Nouveau. Bradstreet established the Craftshouse in 1904 to



on the Upper Mississippi, 1890-1915

serve as a showroom and gathering spot for other artists. Continuing along the residential avenue, **Purcell and Elmslie Architects** showcases the Prairie School designs of this duo, who were among the busiest—and most respected—architects working within the Prairie School precepts. The Purcell-Cutts house in Minneapolis is considered by many architectural historians and critics as one of the finest examples of residential Prairie-style design. Rounding out the six main exhibits is **Native American Arts**, which features traditional, ceremonial and tourists goods produced by the Ojibwe and Dakota people.

Special features include a John Bradstreet-designed room, reassembled—piece by piece—from Duluth's Prindle House, and a replica of the Handicraft Guild's showroom. In addition, the museum is rebuilding the entrance hall to the Little House, designed by Frank Lloyd Wright at Lake Minnetonka and razed in 1972. Purcell and Elmslie will be spatially represented with a recreation of a dining room designed by the team.

While the primary show remains at the Institute, a smaller traveling show will make the rounds to 20 different locations through July 1995. The 18-panel traveling show features images of life and art during this period, while accompanying text—frequently in the words of those who lived then—will highlight the artistic, business, social and political life of Minnesota's communities. In addition, some 40 local historical societies and organizations are planning exhibits, lectures and tours to coincide with the Institute's show.

For more information about the exhibits, lectures, tours, activities and special programming, call the Minneapolis Institute of Arts at (612) 870-3131.



On exhibit are a 1912 armchair by George Washington Maher (opposite left); a cabinet door (opposite top), ca. 1905 by John S. Bradstreet; and a gallery-space rendering of Bradstreet's Craftshouse (above). The Purcell-Cutts house (left) designed by William Gray Purcell and George Grant Elmslie is open for public tours.



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CRITICAL DIFFERENCES

Today's health-care facilities are designed with the patients' comfort and emotional well-being in mind

By Bette Hammel

"Going, going, gone" could well be the catch phrase for today's hospitals as we know them.

The sterile atmosphere, confusing circulation patterns and cheerless patient rooms are being replaced by a warmer aesthetic as architects become significant team players in the rising health-care revolution. Studies have demonstrated that the hospital environment affects a patient's recovery process, and health-care industry leaders and architects are cueing in on this data in designing new health-care facilities. The patient's comfort and well-being are paramount as designers strive to make health-care facilities less threatening, less intimidating and more efficient.

Talk to doctors, health-care officials, architects, interior designers and others and you hear a common theme: "patient-focused care." You also hear them talk about "wayfinding," the use of graphics, interior finishes and colors to help people find their way around a hospital; new and expanded ambulatory centers as outpatient treatment and outpatient surgery become more common; and physician integration that places the physicians' offices in the hospital instead of separate medical-office

buildings. These are the trends that are now evolving and shaping the new medical centers.

At the crux of all this is cost containment—keeping costs down and making life and treatment better for the patient. What then, you might ask, is patient-focused care?

"It's a matter of involving the patient," says Barry Graham, senior vice president of Ellerbe Becket's health-care division. "The idea is to decentralize patient-care units, to create a soothing, safe environment for staff and family."

Paul Williams, director of health-care architecture at Hammel Green and Abrahamson (HGA) in Minneapolis, says that the movement toward patient-focused care means "making the patient the most important part of the health-care delivery system. Rather than taking the patient here and there and having him wait ... everything is being brought to the patient."

Gar Hargens of Close Associates in Minneapolis says, "Architects have to humanize hospitals, make them more welcoming to both patients and families."

To interior designers, patient-focused care means a new emphasis on patients contributing to their own well-being. Nancy Cameron, HGA's chief interior designer, calls it "patient empowerment. Patients will be able to take part

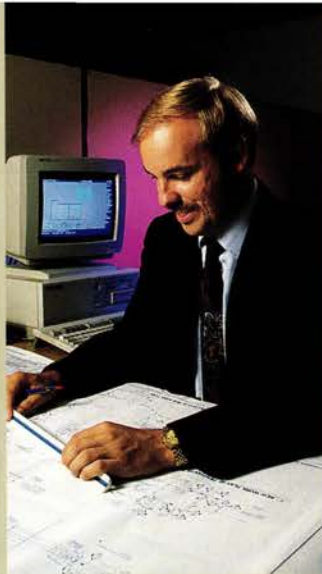


Children's Hospital of St. Paul designed by Close Associates.

Continued on page 56



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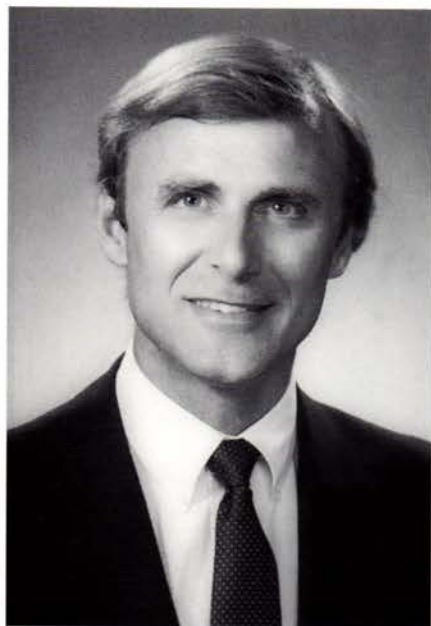
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Architecture Minnesota recently spoke with Dan Ilten, an architect, mechanical engineer and principal with Symmes Maini and McKee Associates in Minneapolis about the architecture and technologies surrounding laboratories and specialty environments of medical and health-related fields.

What is a cleanroom?

A cleanroom is an enclosed area designed to significantly reduce airborne contaminants.

How is this accomplished? What role does architecture play?

Generally speaking, contaminants are controlled by airflow. If you are trying to keep contaminants away, then the spaces are usually under positive pressure. If you are trying to contain contaminants, then the spaces are usually under negative pressure.

For example, if you're testing a contagious virus, you want to keep it contained. Also, if you have a product that must be sterile, you don't want anything getting in it. It's also important to effectively control how people move in and out of these cleanrooms and how they work in these environments. You don't want to contaminate an employee, nor do you want that employee to contaminate a product. Understanding the cleanliness of space is a key component of architecture. Cleanroom architecture has to support the containment aspects right down to the way air conditioners, doors, walls, etc., are developed.

Who uses cleanrooms?

The pharmaceutical industry, medical manufacturers, the microelectronics industry, and researchers and developers all use cleanrooms. Manufacturers are finding that it makes good business sense to use controlled environments. They can achieve a higher quality product by reducing contaminants and they can increase productivity through a higher rate of recycled materials. This means that the right cleanroom architecture can affect the bottom line.

What are the common concerns of these special environments?

Cost is always a concern, because cleanrooms and high technology can get expensive. Also, maintaining a building's real-estate value and resell value are important to a client. Architecture plays an important role in addressing both of these issues. Developing a highly effective environment that's on the cutting edge of technology and meets the budget of the client is critical. You want to create a building that can adapt to a client's needs, whether that is an expansion, consolidation, or even relocation.

How important is the integration of architecture and engineering in cleanroom technology?

It's a mistake to try to separate the design of cleanrooms into architecture and engineering because cleanroom technology is so sophisticated. Integrated design solutions are the most successful. The design has to be complementary on both parts.

How does technology affect cleanrooms? What changes are we seeing?

We are seeing standardization developed. This will help ensure that products will work and be consistent. The architecture has to respond to and support the standards being developed. It's a little bit like going to McDonald's in Minneapolis and McDonald's in California—the Big Mac is the same Big Mac. The fast-food industry has created a procedural standard from which it doesn't waver. The health-care industries are developing the same thing with sutures, aspirin and major diagnostic procedures.

AM



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The American health-care system is perhaps the finest in the world. The system is also one of the most expensive. In the Third World attitudes toward health are different from our own. Here we emphasize medical research and technology. We expect science to cure all ills, and when it doesn't

Health watch

we feel cheated and angry. Poul Bertelsen, whose Minnesota-based firm MSAADA designs health-care facilities in eastern Africa, says people in Africa frequently look beyond medicine and technology. "Many people put a lot of stock in fate and providence," Bertelsen says.

In some ways, we might be better off putting more stock in fate and providence. Advances in medical treatment and technology surely have made our lives better. We're living longer and healthier lives than we did 100 years ago. But at what price? Medical science creates as many problems and ethical dilemmas as it does cures. Health care costs money. Where are the medical resources and money more wisely spent, on the 8-year-old leukemia patient or the 80-year-old cancer patient? Machines can keep people alive when nature has long since given out. But what's the value of life when it's spent in a vegetable state hooked up to a machine? A generation ago, living wills were nonexistent. Today, people are making choices about how they wish to live, the extent to which they wish to receive medical treatment, and when it's time to die.

In this issue, we feature a selection of health-care projects that deal with the different stages of life and illness. From a senior-care facility to a drop-in hospice and East African clinics, the projects illustrate the unique circumstances that influence health-care design. The hospice for Minneapolis Pathways, for instance, is a place for the mind and spirit, a place that offers solace for those with life-threatening illnesses. For the clinics in East Africa, where medical care lags behind the U.S. (although it has made advances in recent years), the facilities are utilitarian structures that stress preventative care. At Rosewood Estate, seniors are offered a comfortable homelike setting that still offers all the medical care found in a traditional nursing home.

As medical science continues to advance, the approach to designing medical facilities continues to advance. The environment and surroundings are part of the healing process. The mind is part of the healing process. Technology, science and medicine—meant to restore and save—are cold and impersonal. The architects' role is to bring heart and soul to the healing environment.

Eric Kudalis

An outpatient surgery center cuts to the core of good design

By Eric Kudalis

Surgical comforts



Shin and Joel Koyama

A series of bays relieves the massing of the 4-story façade along the main pedestrian route (opposite). A winglike canopy (above) marks the entrance on the southwest corner.

des

The United/Children's Hospitals Day Surgery Center in St. Paul may not take the fear out of having surgery, but it certainly lessens a bit of the anxiety.

Designed by Hammel Green and Abrahamson of Minneapolis, the \$24 million, 4-story facility on the outskirts of downtown St. Paul houses outpatient surgery for children and adults, a radiation-therapy center and physicians' offices on the upper two levels. Located on a wedge-shaped site, the hospital is the flagship facility boasting some of the latest technology for the United Hospital and Children's Hospital campus. The surgery center also boasts some of the latest and most innovative thinking in hospital design.

This is no standard, plain-faced medical facility with icy, impersonal interiors that we've come to expect in medical design. The clients insisted on design excellence and something different that would make an architectural statement.

To avoid the typical pratfalls that undermine many institutional buildings, HGA employed a number of architectural devices that humanize and enhance the building's scale.

The hospital's primary façade and pedestrian entrance to the day-surgery center, for instance, face Smith Avenue across from an existing hospital. Here the architects brought the building flush with the sidewalk, reinforcing the street grid and creating a strong urban wall. To reduce the scale of the 4-story brick façade, HGA designed a series of four bays rhythmically interspersed with clear glass, sand-blasted glass and steel beams. The building is sheathed in a textured, sand-molded brick. Planters and landscaping further lessen the massing along this side, creating an inviting approach for pedestrians.

On the southwest corner, which marks the second pedestrian entrance to the day-surgery center, the architects designed a winglike canopy. Just opposite this entrance is the vehicular entrance to a 3-level, 500-stall parking ramp,



Shin and Joel Koyama





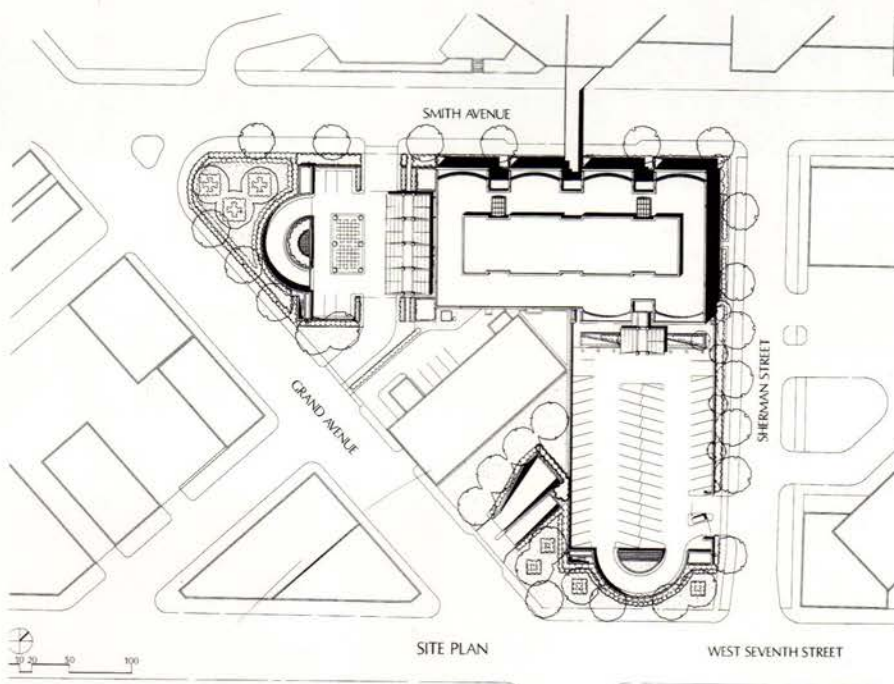


The building sits on a wedge-shaped site (plan below). Most parking is below grade. A dark-paneled lobby to the radiation-therapy center (left) contrasts with the light wood and terrazzo flooring of the day-surgery center lobby (opposite). The two lobbies are at opposite corners and have no public access between them.

dropped below grade to reduce its visual impact and further enhance the pedestrian approach. The third entrance—which leads to the radiation-therapy center—is shifted to the building's southeast corner between two bays.

Those accustomed to the fluorescent-bathed, linoleum-tiled corridors of typical hospitals will find an entirely different interior at the day-surgery center. On the main first-level corridor, light anegre-paneled walls, terrazzo flooring and diffused lighting through etched-glass ceiling panels offer a warm and inviting introduction. Hospital-related retail space lines the first-level corridor, with windows overlooking Smith Avenue. On the radiation side, which has no public access to the day-surgery center, dark cherry panels and diffused ceiling lights greet the patients.

For those undergoing surgery, the second floor is the heart of the place. Adult and children's waiting and recovery rooms are kept separate on opposite sides of the second floor. Instead of running the circulation spine down the center, shielded from daylight, the architects pulled the corridors to the edges of the building, opening the interior to the exterior. In both the children and adult waiting rooms, floor-to-ceiling, clear-glass windows between the bays allow patients to orient themselves to the city views, which help establish a comfort level when such familiar sights as houses, churches



inviting



A skylight throws light into the children's waiting area (above). The second-phase recovery lounges for children (right) and adults (opposite) are placed on separate ends of the second floor. Frosted-glass windows offer light and privacy.

comfort

and office buildings are visible. A skylight well cut through the upper two floors ushers more natural light into the two waiting lounges.

The second-phase recovery lounges, occupying the two end bays on either side of the building, also take advantage of natural light. Here, though, the floor-to-ceiling windows are sand-blasted to offer privacy while still bringing in light. Private recovery rooms line the periphery of the lounges.

Illness is a scary business. All the architectural razzle-dazzle can never change that. But architecture can do a lot to lessen some of the anxiety by treating the patient with dignity and respect. Done with a steady and creative design hand, United/Children's makes a strong architectural statement while keeping patients' needs and comfort paramount.



Phillip Prowse

Project: United/Children's Hospitals Day Surgery Center
Architects: Hammel Green and Abrahamson
Client: Health One Corporation, United and Children's Hospitals
Contractor: M.A. Mortenson Co.



T h e r a p e u t i c R e h a b

A rehabilitation center finds a colorful new home in an 1894 St. Paul building



Philip MacMillan James

Architects frequently take pride in designing on a shoestring. With a sky-high budget, every surface can be gilded if you choose. But with every penny weighing like diamonds, creating quality design is often an arduous task.

Rafferty Rafferty Tollefson Architects of St. Paul demonstrated the creative potential of a few carefully stretched pennies in designing a 30,000-square-foot facility for the St. Paul Rehabilitation Center (SPRC). Formerly located near the downtown St. Paul Civic Center, the nonprofit SPRC sought out larger quarters in this abandoned 1894 auto-maintenance building on University Avenue to accommodate vocational and physical-rehabilitation services for its clients, who include children and adults.

The program is spread along two levels. On the main floor is the reception desk, placed within view of several entrances, with administration and children's therapy filling out the space. Upstairs are therapist offices and more therapeutic rooms.

Architect Craig Rafferty says that they wanted to avoid an institutional look, which can be intimidating to clients who already have obstacles to overcome. The existing building was essentially sound, needing primarily cosmetic work and new mechanical systems. Beyond structural considerations, Rafferty emphasized color, scale and intimacy. Sheetrock is the major design material, but it is painted in bright, clashing colors that enliven the first-floor lobby. Upstairs the architect arranged a cluster of multicolored office modules into a "village" under a high ceiling encircled with clerestory windows. First-time visitors consult with their therapists in the office village before moving to other sections of the building for audio, physical or occupational therapy.

The building itself has proven a form of therapy for the patients. Illnesses, whether physical or emotional, wear on the psyche. The built environment plays a part in emotional well-being. By adding color, light and playful forms that avoid a sterile timbre, the architects have created a healing environment that encourages patients to emphasize the positive over the negative.

E.K.

Project: St. Paul Rehabilitation Center
Client: St. Paul Rehabilitation Center

Architect: Rafferty Rafferty Tollefson
Contractor: Langer Construction Company



The architects took an 1894 St. Paul auto-maintenance building (above) and turned it into a colorful rehab center that serves a wide range of clients. The reception area (opposite top), entered from several directions, is a deliberate clash of colors. Therapists' offices (top) are clustered into a colorful "village" on the second level. The conference room (left) looks out onto the village.



PIRITUAL CENTER

The Minneapolis Pathways Health Crisis Resource Center is a meditative retreat facing one of the city's busiest streets in the Uptown district. Established in 1990, Minneapolis Pathways is a nonprofit outpatient hospice that offers nonmedical care and programs for people with life-threatening illnesses. According to the organization, "Pathways affirms that healing can occur at psychological, emotional and spiritual levels." The center's resources, which include a lending library, audio/visual tapes, on-site therapists, guest speakers and special classes and series, is designed to complement traditional medical care—not replace it.

"Minneapolis Pathways is about emotional issues, therapy and counseling to heal the mind first," says Nick Winton of Anmahian Winton Architects of Boston, which designed the facility with Shea Architects of Minneapolis as architect-of-record. Completed in 1993, Pathways is a place of peace and solitude, a drop-in center where people can find inner strength that is often bruised during traditional medical treatment.

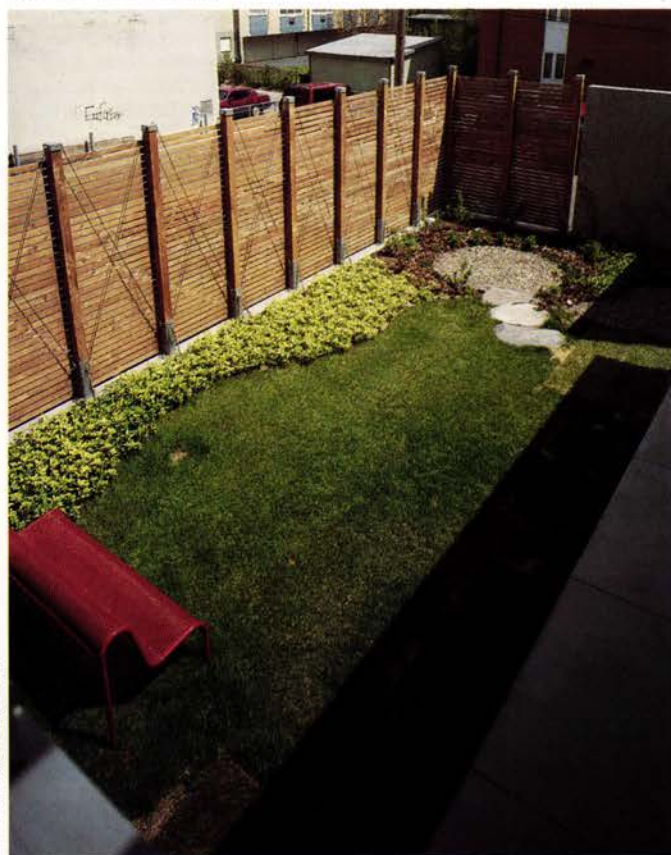
Designing a retreat in a dense urban neighborhood can be tricky business. Houses, apartment buildings, retail stores, restaurants, coffee shops and commercial businesses rub elbows in the neighborhood.

Auto and pedestrian traffic is a constant along Hennepin Avenue. Yet the urban setting is a plus for the center because it's accessible to many people—in fact, nearly 3,000 people throughout the community are visitors.

Winton and design partner Alex Anmahian "wanted a monastic quality and sense of departure from urban life" without ignoring the setting. The 5,000-square-foot facility bridges the transition from commercial businesses to the north and residential to the south. Appropriate to its program, Pathways presents a quiet, understated façade to the street. Sheathed in cedar with a sand-blasted concrete base, the flat-roofed building stands close to the sidewalk, reinforcing the urban wall and street grid. Visitors enter under a front trellis made of cedar posts or along a gar-

**A Minneapolis
health-crisis
center offers
a homelike
setting for
those seeking
solace**

This health-crisis center (opposite) is built along Hennepin Avenue in the Uptown district of Minneapolis. The understated façade is sheathed in cedar. A backyard garden (below) is visible through the windows of the library.



Don F. Wong (and opposite)



den path from the back parking lot.

Inside, the designers created a residential environment that avoids an intimidating institutional look. The main room is the lending library overlooking the garden. Walled in by a 10-foot-high redwood lattice screen, the garden is an extension of the library, an outdoor room appropriate for meditation in warmer weather.

Facilities include a single-person meditation room on the second floor to a guest-speaker room seating 50 on the main floor. Also on the program are therapy rooms, a 10-person meeting room, kitchen, art-therapy room and a guest apartment doubling as meeting space when not occupied.

Such warm materials as southern yellow pine, cork flooring and birch plywood emphasize the interior's residential character. The library with sofa, wicker chairs and high bookcases feels like a living room, just as the designers planned. Each room in the building is designed individually to fit its specific function, according to Winton and Annmahian, who refer to the building as being a "kind of democratic body of individual spaces." While height and scale may change from room to room, common materials and tones tie everything together.

A sense of calm and solitude runs throughout the hospice. One could easily call it home. For those seeking refuge and solace from the ravages of illness, home is the logical choice.

E. K.

The interior (top) with warm woods, book cases, fireplace and comfortable furniture takes its cue from residential architecture. The lending library (opposite) functions as a living room for the drop-in shelter. Windows overlook the garden. Meeting rooms include this main-floor facility (below) seating 50.

*Project: Minneapolis Pathways
Health Crisis Resource Center
Designers: Annmahian Winton Architects
Architect-of-record: Shea Architects
Client: Minneapolis Pathways Board of Directors
Contractor: K.M. Building*







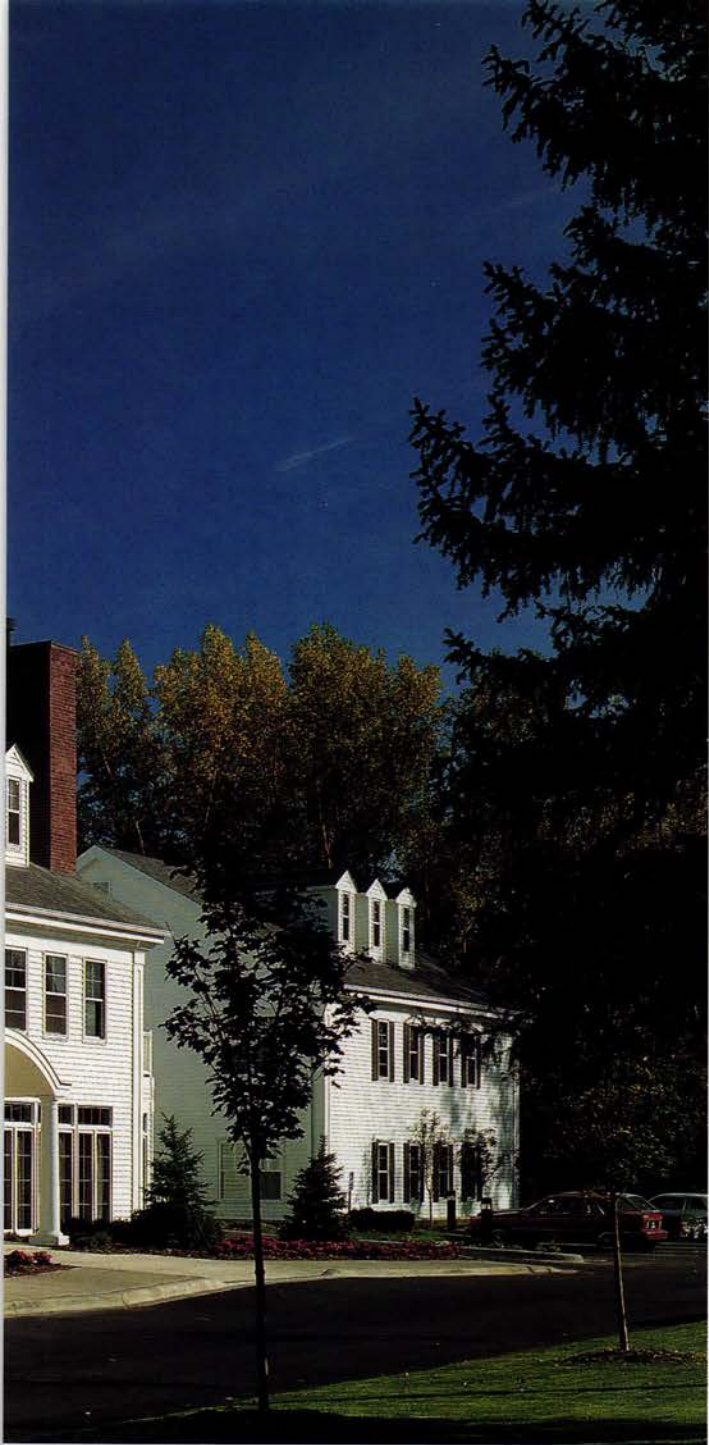
Though sprawling, Rosewood Estate (above) in Roseville, Minn., is designed to architecturally blend with its residential area. Residents, who live in fully equipped apartments, dine together in the main dining room (right).



Senior care

Rosewood Estate offers an alternative to the nursing home with the trappings of home

Arvid Elness has been a guiding force in the senior-housing market since forming his own firm in 1975. In that time, the look and shape of senior housing has shifted from the all-too-familiar, flat-roofed institutional nursing homes to more appealing residential-style, assisted-living facilities. Elness (who merged with BRW Architects recently to form BRW Elness Architects) is designing senior housing to evoke home, not hospital. This means incorporating traditional residential architectural



Courtesy BRW Elness Architects

styles and interior home furnishings without sacrificing the diverse medical needs of the aging population.

Rosewood Estate, in the St. Paul suburb of Roseville, is a prime example of Elness at his best. Originally completed in the late 1980s, Rosewood Estate is an alternative to traditional nursing homes.

"Our philosophy is that we will take care of the residents as long as they want to live here," says Robert Van Slyke of Rosewood Estate.

All the care one could expect from a nursing home is found at Rosewood Estate on an *a la carte* basis, but the look and feel of the place are of a country mansion—not a health-care facility. Van Slyke says that before residents move in, seniors' health-care needs are assessed to determine level of services, which are carried out in the private apartments.

Elness believes that such facilities as Rosewood Estate eventually will house residents historically cared for in the traditional nursing homes. Across Victoria Street from Rosewood is a classic example of a nursing facility, which stands as an anachronism to Rosewood. The contrast between the two facilities demonstrates how Rosewood became successful—Rosewood looks inviting and comfortable; it looks like home. In fact, Van Slyke reports that nearly 50 percent of Rosewood's residents, who average around 82 years old, come from the linoleum-tiled corridors of older nursing homes.

Elness just designed a new 100-unit Rosewood prototype that builds upon the traditional qualities of the Roseville facility with a contemporary flair. The new facilities will soon be built throughout the metro area and other sites nationally.

Originally completed with 68 private apartments, Rosewood now offers 106 units after a recent expansion. Elness says that the addition was dictated by market needs. The original design included studios and one-bedroom apartments for individuals. Rosewood added larger units to accommodate couples, in which one person may need medical assistance while the other is still mobile and independent.

Rosewood Estate combines the best offered by both nursing-home care and private apartment living. Residents have the independence of their individual units, but they also have plenty of common areas for social interaction—from furnished lounges interspersed throughout the corridors to a game room, TV/VCR lounge, greenhouse, arts-and-crafts room, outdoor patio overlooking Lake Owasso and a common dining room. Architecturally, the building fits comfortably into its residential neighborhood. With hipped roof, dormers, white siding and shudders, the building looks like a typical neighborhood house—albeit a large one. Interior furnishings are traditional, not cutting edge. "Interior design patterns are a response to what we view the client wants," Elness says. With familiar architecture and furniture, residents are able to make an easy transition from their life-long homes to the new facility.

Rosewood Estate bills itself an "affordable" alternative to nursing homes. Affordable it is for the well-healed who have the savings and assets to pay the rents and medical services. For those needing government assistance, the choice is the sterile floors of traditional nursing homes. Rosewood Estate and similar projects designed by Elness set a standard for senior housing. Government agencies need to take note and start building senior care centers that promote the same dignity found at Rosewood Estate.

E.K.



Avid Elness says that the lounges (above) are furnished to reflect the traditional residential tastes of the residents.

Project: Rosewood Estate
Architects: BRW Elness Architects
Client: Rosewood Estate Limited Partners
Contractor: Stuart Corporation

African cures

Working with limited resources,

the Minnesota firm MSAADA

designs medical buildings

in eastern Africa's

developing countries

In America, we expect the best that medical technology and modern science have to offer. President Bill Clinton, traveling the nation promoting his health-care reform package, promises basic medical care for all Americans.

In Africa, things are different.

"Africa doesn't have all that much service for medical care," says Poul Bertelsen of the Minneapolis firm MSAADA, which designs health-care facilities and other projects in eastern Africa. "They don't have resources for expensive medical care, so the emphasis is on preventative care. Much more is gained by dealing with issues of infant mortality (which is high in Africa), nutrition, immunization and hygiene."

In a land where medical insurance is virtually unheard of, the clinics and hospitals provide outreach to the communities. Fees often are based on a sliding scale according to patients' ability to pay. As with any sound medical planning, education is the key to preventative care. Education, however, goes only so far.

Attitudes toward health care are different from what exists in the United States. While the level of medical expertise and training is not as high as it is in the U.S., the nations' expectations are different.

"Many people put a lot of stock in fate and providence," Bertelsen says.

Medical care has improved significantly over the past 20 years, becoming more accessible, but cultural traditions often interfere with medical advances. AIDS is one of the greatest health risks in Africa; yet teaching preventative measures, em-

phasizing the use of condoms and abstinence, is nearly futile in countries where polygamy is still a way of life for many.

Many of the hospitals and clinics in such countries as Kenya, Tanzania and Madagascar are built by various churches. Approximately 50 percent of the hospitals in Tanzania are church run. The Bunda Hospital project in northern Tanzania, for instance, is managed by the Evangelical Lutheran Church in Tanzania in cooperation with one of its overseas partners, the Norwegian Lutheran Mission. The government often provides staff, while construction funding comes from various sources. Cooperation between governmental and nongovernmental agencies is increasing steadily in Africa, with no religious-affiliation restriction demanded of patients.

In the years following independence from colonization, many East African nations built hospitals based on the typical European model: compact, multistory structures with heavy reliance on electricity and mechanical systems. This model, however, proved inadequate in developing countries that lack proper resources for maintenance and repairs. When an elevator breaks down, it remains broken. Electricity is often unreliable, making air conditioning and artificial lighting unreliable.

To avoid such problems, MSAADA has based its designs on traditions appropriate to the developing world and its unique climate and conditions.

"We get to the basics in Africa," Bertelsen says. "We have to look at the weather conditions, humidity, rainfall and other factors in designing a hospital."

Typically, hospitals designed by MSAADA are single-story structures with covered ramps, verandas and walkways spread



Courtesy MSAADA

The Usa River Physical and Occupational Rehabilitation Centre in northeastern Tanzania is, like many of MSAADA's African projects, a campus of several low-rise buildings. Stucco, concrete and concrete block are the most common regional building materials.

across large sites. The spaces between the buildings allow for cross ventilation and natural daylight to flow inside the hospital. Mother/child care involving prenatal and antenatal services, child immunizations and the such are in separate buildings to prevent infections of well patients from ill patients. Likewise, toilets and bathing facilities are set apart from the wards and treatment areas for sanitary reasons.

The Bunda Hospital in northern Tanzania near the eastern shore of Lake Victoria is based on these basic design principles. The single-story, 110-bed hospital buildings are arranged at both sides of a covered ramp that climbs the hillside. Corridors are open and have clerestories for daylighting. Workshops and auxiliary facilities are pushed to the perimeter.

The Usa River Physical and Occupational Rehabilitation Centre near Arusha in northeastern Tanzania employs the same basic planning with single-story buildings connected by open, covered walkways and sidewalks. The campus includes student and staff housing, along with classrooms, workshops and animal barns that are used as part of the occupational-rehabilitation program.

Decent staff housing is a major asset when recruiting doctors. Without good housing, staff won't come.

Both projects make the most of scant resources. Tanzania, where MSAADA has one of its Africa area offices, has a scarce supply of building materials. The projects are built with concrete block, reinforced concrete and finished with plastering.

In Madagascar, where MSAADA has another of its Africa area offices, the architects use brick, which is prevalent. The Outpatient Department (OPD) of the Andranomadio Hospital in Antsirabe, Madagascar, is sheathed in traditional fair-faced brick. Because Antsirabe is located at high altitude where temperatures can dip below freezing, the architects designed an enclosed waiting area.

Contrasting this, the OPD of Antanimalandy near the coastal town of Majunga, Madagascar, has an open waiting room, more typical of MSAADA's projects under the hot African sun. To avoid solar gain, the architects placed the windows on the north and south façade, but left the east and west side windowless. Roof overhangs and concrete-grill blocks shade interior spaces.

Tour the newest American hospital and you'll see the cutting edge of medical high technology. In developing countries, that's not the case. Tour the latest East African hospital and you may see American high technology—1950s style. "We're working with a lot of donated materials," says Scott Williams of MSAADA. "We have to make do with what they have." The surgical unit at Andranomadio, for instance, relies on lamps and a surgery table provided to the Health Department of the Malagasy Lutheran Church by American donors.

Whether working with second-hand technology or scarce building products, MSAADA still works toward a common goal of designing the best health-care facilities possible. E.K.



The Outpatient Department of the Andranomadio Hospital (top) in Antsirabe, Madagascar, is built of fair-faced brick, common material in the area. An operating room (above) at Andranomadio relies on donated equipment.



Frank Nemeth



James Jenkins



Barry Graham



John Waugh

Team approach

Ellerbe Becket's health-care division applies decades of experience in meeting the challenges of an expanding medical market

By Rick Nelson

Hometown big-league player Ellerbe Becket is never off the short list of the nation's largest architectural firms, with a perennial placement in the top five. One reason: the firm's hefty health-care practice, which continues to capture a significant market share in an increasingly crowded field.

Just how big is Ellerbe Becket's health-care division? More than 125 people fill the firm's health-care design roster in its downtown Minneapolis office, and another 110 are split between offices in New York and Santa Monica, Calif. The division usually has more than 20 projects on its drafting tables at any one time.

Since namesake Thomas Farr Ellerbe opened his practice more than 85 years ago, the firm has designed facilities for nearly one-fourth of all the hospitals in the United States. The division consistently accounts for roughly one-third of the firm's total billings.

"The health-care division has held fairly steady over quite a number of years, with a total volume between \$10 million to \$15 million in net service fees per year," explains Jim Jenkins, senior vice president and director of health-care services. "Not a growth period for us especially, but certainly a consistent volume of work."

Projects range from simple cosmetic renovations of small health-care facilities to mammoth projects like Chicago's Northwestern Memorial Hospital, a 700-bed, 2 million-square-foot replacement facility with construction costs around \$380 million.

Spend any length of time around the offices of Ellerbe Becket and you're bound to hear the buzzwords "past and continuing," which describe the foundation of their client roster. Clients start with the firm and tend to go

back, year after year, project after project.

"Mayo Clinic was our first health-care client, back around the turn of the century," says senior vice president and design principal Frank Nemeth, who shares design direction for the health-care facilities division with John Waugh, senior vice president. "We've essentially been doing work continuously with them since that time."

Indeed they have. Ellerbe Becket has done innumerable projects for the Clinic's myriad Rochester holdings as well as the master campus planning and several structures for Mayo's two satellite campuses in Scottsdale, Ariz., and Jacksonville, Fla.

Mayo aside, the firm's client list is chock full of past-and-continuing business. Ancient Ellerbe embraces contemporary Ellerbe Becket at William Beaumont Hospital in Royal Oak, Mich. Ellerbe designed the original hospital in 1947 and returned in 1986 for a \$220 million expansion that the firm plans to wrap up by year's end.

Another past-and-continuing client is the Scott & White Hospital and Clinic in Temple, Texas. Ellerbe did the original buildings several decades ago; in the intervening years, a handful of firms created additions. Now Ellerbe Becket is back, creat-



Ellerbe Becket's medical projects, completed and in progress, include Northwestern Memorial Hospital (above) in Chicago; Samuel C. Johnson Medical Research Labs at the Mayo Clinic (opposite top) in Scottsdale, Ariz.; and the Boggy Creek Camp Gang (opposite bottom) in Florida.

ing a master plan and adding some significant spaces.

New clients also account for a fair share of business, including East Valley Medical Center, a \$115 million facility for Los Angeles County, which has been designed but remains unbuilt; Palo Alto Medical Foundation building, a handsome Mediterranean Mission-style facility for a prestigious 145-doctor practice, located across the street from Stanford University; the Walt Disney Memorial Cancer Institute, a \$60 million project nearing completion in Orlando, Fla.; and a series of buildings for East Texas Medical Center in Tyler, Texas.

Flexibility is a key component in this building type, says Nemeth. There are many health-care delivery applications, and Ellerbe Becket has become expert at providing appropriate solutions to many different—and often conflicting—approaches to healing. The firm does not espouse an “Ellerbe” approach to health care; rather, it adapts itself to the programmatic needs of each client. Nor does the firm have a particular design aes-



thetic, again preferring to conform to the wishes and needs of each client.

At a time when other design areas are scrambling for work, the health-care design practice remains relatively prosperous. The reason: bur-

geoning health-care reform.

“There are some catastrophic things happening to the health-care industry,” Jenkins says. “It’s been said that the changes occurring in the health-care industry right now are probably the biggest

industrial changes that we’ve seen in the 20th century, and by that I mean a complete rethinking of how a patient is cared for and thus how these facilities accommodate that patient.”

Changes in health-care economics and legislation have led

to increased emphasis on ambulatory care, outpatient services and managed-care systems, which of course means big changes in the way buildings are designed. Gone are the days of rigid and monolithic acute-care structures housing hundreds of patients. Instead, what are evolving are health-care campuses and health parks dotted with several building types housing different functions that were once all located under one roof.

“What health-care-facilities design might be is probably a lot more than what people tend to think,” Nemeth says. “They usually just consider hospitals, or, if they expand their thinking, clinics. But if you expand further to the health-care-campus concept, you have campus planning, parking structures, lab buildings, administration buildings,



Courtesy Ellerbe Becket



This Mediterranean Mission-style facility is designed for the Palo Alto Medical Foundation in California.

research labs, dietary and long-term-care facilities, hospitality, a whole variety of building types.”

Still, a more complicated building type may not exist. Hospitals in particular are functionally complex, with intricate engineering configurations and dozens of integrated user groups.

“We were pretty much trapped by the module of the patient room,” recalls Barry Graham, senior vice president and director of the firm’s health-care division in Minneapolis. “About half the total square footage in a normal hospital would be patient beds, which means that half the square footage was dedicated to a big module of beds. All the change we’re going to see will require new

design, or at the very least, retrofitting, the creative reuse of existing bed tower space that needs to be used for something else.”

A perfect example of the trend in adaptive reuse is the firm’s latest Mayo Clinic project, a series of renovations to Methodist Hospital in Rochester. Nearly half that facility’s inpatient nursing units were eliminated and converted to outpatient functions.

Rethinking the basic concepts surrounding health-care structures has led to an unexpected windfall: the new design opportunities are attracting a new generation of young, design-oriented architects to the firm’s health-care division.

“We’ve never had a tremendous amount of difficulty getting the more techni-

cally oriented architects and engineers into the field,” says Graham. “It is the aesthetically oriented design architects who may be a little less willing to commit themselves to a career where projects might take 10 to 15 years to complete.”

Not to mention the interminable and intense client meetings and user groups that number in the dozens and can turn over several times before the project is completed. And don’t forget the boring image that has plagued health-care design for so many years.

Still, this remains a building type that is completely reliant on the teamwork principal, and Ellerbe Becket’s practice is based upon this integrated approach. These structures are too complicated for any one person to tackle.

“Lots of other firms will have designers come in, peripheral to the planning process,” Graham says. “They really don’t understand the functional constraints and complexity of the client type and simply take a more cosmetic approach: how to make the building look good, how to put a pretty skin on it. That approach is doomed to failure. This is not a building type where you can have a star architect that does a huge number of buildings. Health-care design does not have someone like an I.M. Pei who can say in all respects that he or she is the single author of everything about the building. It really does take a team approach.”

Rick Nelson is a freelance writer living in Minneapolis.

Growing practice

Horty, Elving & Associates finds that diversity of client services is the key to successful medical design

By Eric Kudalis

In the rough-and-tumble world of medical design, Horty, Elving & Associates (HEA) may seem a bit like a David to the Goliath of Ellerbe Becket. Yet this 38-person firm has had nearly 40 years to tone its medical-design muscles. By the look of its track record, Horty, Elving can race with the giants.

Nearly 55 percent of all Minnesota hospitals bear the firm's stamp. That's just in Minnesota. Scan around the five-state region—the Dakotas, Iowa, Wisconsin—and Horty, Elving & Associates has been there designing health-care facilities. Toss in Illinois, Michigan, Kansas, Wyoming, Montana, Washington, Connecticut, Colorado and Florida and you see a breathlessly busy firm with more than 500 health-care projects under its belt—projects from acute-care hospitals and free-standing diagnostic and treatment centers to mental-health and chemical-dependency facilities, clinics, medical-office buildings, nursing homes and other senior-housing developments.

That averages more than 10 projects a year in a period that has seen enormous changes in the medical profession. Today's hospitals don't look or function the way they did in 1955 when founding partners Burt Fasth, Ed Hillstrom and Thomas Horty left Thomas Farr Ellerbe's namesake firm to set up shop on their own. In the mid-'50s the average hospital was designed for in-patient services, which meant lots of beds. Today, nearly 80 percent of all surgical services are done

on an out-patient basis influenced by advances in medical technology and treatment, as well as pressures from the insurance industry to hold down costs, Horty says. For overnight patients, the average stay is now 2 1/2 days, compared to 4 1/2 days just 10 years ago.

Health-care facilities are poking up in unlikely places—such as in storefronts and the neighborhood shopping malls. This has meant a different approach to design. The buzz-word is "patient-focus" care, which has pushed for changes in the look and feel of hospitals and clinics. Better lighting, interior furnishings, floor layouts and graphics combine to lift the institutional look from the institution.

"The whole idea is to reduce patient stress," says Tom Van



Don F. Wong

Housen, who heads the firm's design/build division.

HEA wouldn't be around today if it didn't evolve to meet the changes and, in fact, direct many of the changes. The firm designed the first all-private patient hospital rooms in the United States under the Hill-

Horty Elving's principals are (back row from left) Leo Monster, James C. Elving, Rick Moore; (front row) Barbara Kassanchuk and Thomas Horty. The firm's specialties include senior-care design, as with Heritage House (below) in Golden Valley, Minn.



Saari & Forrai



One of the firm's largest projects is the Duluth Health Care Center (above and below), which combines multiple facilities for several health-care clients. Also to the firm's credit are the Minnesota Masonic Home (opposite top); and the Anoka Metro Regional Treatment Center (opposite bottom).

Burton Program, followed by full private bathrooms in each room. The firm also led the way with thru-wall sterilization processing, and the separation of clean and soiled functions in dietary, laundry and utility operations.

HEA today is a multidisciplinary firm that is actually three distinct companies providing architecture and design, construction management, and design/build services. Horty, the remaining of the three founders, is president and principal of architecture. He's joined by four other principals, Rick Moore, James C. Elving, Leo Monster and Barbara Kassanchuk.

In the beginning, though, there was simply architecture. Yet the founders identified a need to expand services to include engineering in the late 1950s. Carl Elving, coming aboard, steered the division to include mechanical, electrical and structural engineering.

Engineering, especially with 100 percent of its work in medical, is essential to the firm's growth and success. Trying to separate engineering from architecture is a bit like trying to separate the ocean from water. It can't be done. One is part of the other.

As building technology and medical technology continue to expand, engineering becomes an ever-more important aspect of the design process. Jim Elving, who heads up the engineering division where his father left

off, says that 45 percent of the construction budget goes into engineering.

Engineering involves mechanical and electrical systems, energy-efficiency issues and cost-saving factors. The average hospital has about 40 separate mechanical systems and about 25 separate electrical systems, Elving reports. With all those systems come an army of alarm mechanisms to monitor any foul ups. When the energy crisis hit in the 1970s, clients began talking about cost-saving measures. Now energy efficiency is part of the natural building program, not just the catchphrase of the day, Elving says.

"We're always concerned about the aesthetics of a building, but we're also always concerned about the functionality of a building," Horty says.





Aesthetics and function go hand in glove at Horty, Elving. As hospitals' interior finishes and furnishings grew in importance, HEA added an interiors department in the 1960s. With increased interest on patient-focused care, HEA's three-person interiors staff is designing hospitals and health-care facilities that look less intimidating by adding comforting elements and furnishings. The residential approach is particularly important in the firm's numerous senior-care facilities.

Beyond interiors, pragmatic concerns led the firm to establish Construction Coordinators, Inc., in 1970, which oversees all construction management of a project.

"The construction phase is the most vulnerable part of the design process for the architect," says Mark Anderson, director of the construction-management division. "There always will be unforeseen problems on a project, and you need three partners to resolve issues—the construction manager, the owner and the architect. Being involved in construction management gives us more control over the final project."

In 1989, Horty, Elving further flexed its business muscles by establishing D + B Collaborative, Inc., a design/build company that recently completed five projects exceeding \$7 million. D + B Collaborative, with Van Housen at the helm, provides a single-point reference for design and development of a project. In a typical design/build commission, the architect essentially works for the developer, rather than the client. Because the developer calls the shots, architects have limited design con-

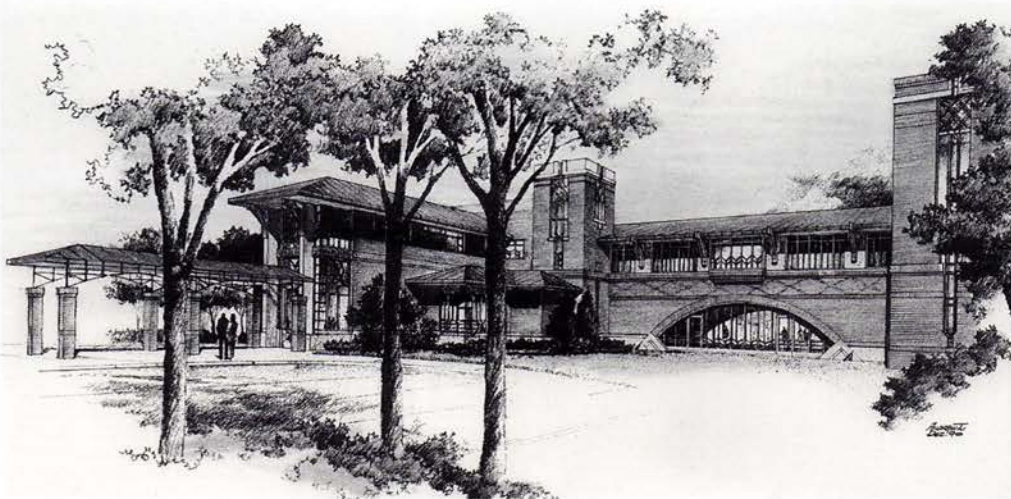
trol. With D + B, the firm is able to maintain architectural integrity of a project because it is the developer, too.

Stylistically, a HEA-designed health-care facility sidesteps any particular label. That's partly because the firm works on a diverse range of facility types; it's also because the firm puts the client's needs first.

The Duluth Health Care Center, for instance, combines multiple facilities for four local health-care institutions: Miller-Dwan Medical Center, St.

Mary's Medical Center, Duluth Clinic and Polinsky Rehabilitation Center. Features include a fitness center, clinic space, reception and administrative areas, patient rooms and a 4th-level skyway that links the existing medical buildings to the new structure. On a smaller scale is the 24,000-square-foot River Valley Clinic in Hastings, Minn. This single-level structure was designed initially to accommodate 20 physicians. As with many of the firm's projects, River Valley is designed with expansion in mind. Many of the firm's senior-living facilities, such as Minnesota Masonic Home Care Center in Bloomington, Minn., Cristwood in suburban Seattle and Covenant Retirement Community in Golden Valley, Minn., incorporate familiar residential features that avoid the traditional sterile look of nursing homes and retirement villages.

When the recession blanket-ed the building industry in the early 1990s, many architectural firms, scrambling for work, shifted to medical design. Horty, Elving & Associates sailed through the recession because it spent decades building upon its experiences. By offering health-care clients one-stop services, the firm is able to keep moving ahead.



Pastoral remedies

At Minnesota's tuberculosis sanatoriums, site and design met to heal



By Rolf T. Anderson

Minnesota's tuberculosis sanatoriums are nearly a forgotten memory among the state's medical institutions. Many have been demolished or converted to new uses that obscure their original function. Yet their construction was instrumental in helping eradicate a disease that had been identified centuries earlier. Architecturally, they represent fascinating collections of buildings that often convey a powerful presence. Most intriguing is the unique medical role of architectural design, in which careful site selection and specific design features were considered key elements in the healing process.

Tuberculosis, or consumption as it was commonly known, was primarily a lung disease, although it actually could infect nearly every part of the body. The disease had been identified in Minnesota as early as 1834. By 1850 TB sufferers were coming to Minnesota from the eastern states and Europe to be cured by an "elixir in the air." One such visitor was Henry David Thoreau, who visited the state in 1861.

The concept of the curative powers of climate and fresh air was somewhat European based and was later promoted in the United States by Dr. Edward Trudeau, who founded Saranac Lake Sanatorium in New York after finding his own tuberculosis had subsided while living in the Adirondack Mountains. Trudeau had also visited Minnesota in the hope of finding a cure.

An important discovery was made in 1882 when Dr. Robert Koch of Germany announced he had isolated the tubercle bacillus. This established the contagious



Built along the Cannon River, this Craftsman-style building at Mineral Springs Sanatorium (opposite, now razed) features a stucco exterior and columned entrance. While many of the county sanatoriums remained relatively small facilities, Hennepin County's Glen Lake Sanatorium (above, razed 1993) become the largest in the state. Ah-Gwah-Ching (below) opened on Leech Lake near Walker in 1907.

nature of the disease, which earlier had been thought to result from a hereditary predisposition. Moreover, his discovery marked the beginning of the modern medical treatment of TB.

Unfortunately, the medical community was slow to accept Koch's discovery. By the turn of the century tuberculosis had become a serious problem in the state. In fact, the State Board of Health reported that between 1887 and 1899 more than 20,000 Minnesotans had died of TB. It became clear that state and local governments had to assume a role in the treatment and prevention of the disease. As a result, the legislature authorized an executive investigation to study the advisability

of establishing a state sanatorium for tuberculosis.

A commission was appointed and sanatoriums were visited throughout the United States and Canada. Popular theory concluded that the primary cure for tuberculosis was "fresh, pure air, free from dust or other impurities, properly used under the semimilitary discipline of institution life, good food and hygienic living." The cold of a northern winter was thought to be a valuable stimulant, and a site with well-drained soil, a good water supply and a southern exposure located above the surrounding country were considered indispensable.

After traveling extensively throughout the state, the commission recommended a 700-acre site overlooking the south arm of Leech Lake near Walker, Minn. The state legislature approved a bill in 1903 authorizing construction of the facility, and on Dec. 27, 1907 the Minnesota State Sanatorium for Consumptives was officially opened. It was called Ah-Gwah-Ching, an Ojibwe word for fresh air.

Ah-Gwah-Ching, it soon became apparent, was unable to handle the large influx of patients. In addition, patients were sometimes reluctant to be hospitalized long distances from friends and family. As a result, the state legislature of 1913 appropriated \$500,000 for the construction and maintenance of county sanatoriums under state supervision. A county could construct its own sanatorium or form a partnership to build a



Courtesy Ah-Gwah-Ching Center

Continued on page 58

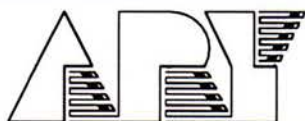
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Architecture Minnesota appreciates the support of these firms which has enabled us to significantly broaden the distribution of this special issue to include healthcare leaders and decision makers throughout the state.

Should you wish further information about Minnesota's architects or how to select architects, please call us at AIA Minnesota, 612/338-6763.

Peter Rand, FAIA

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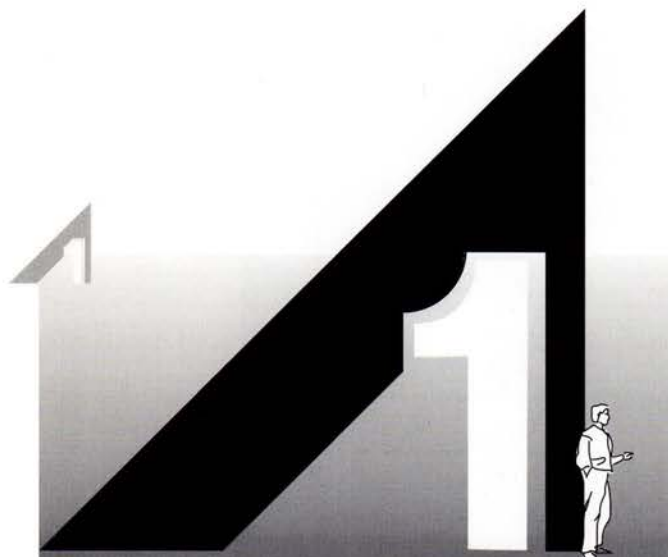
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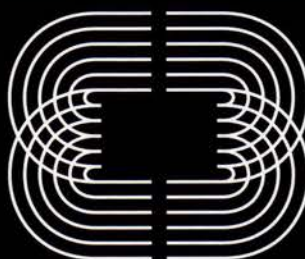


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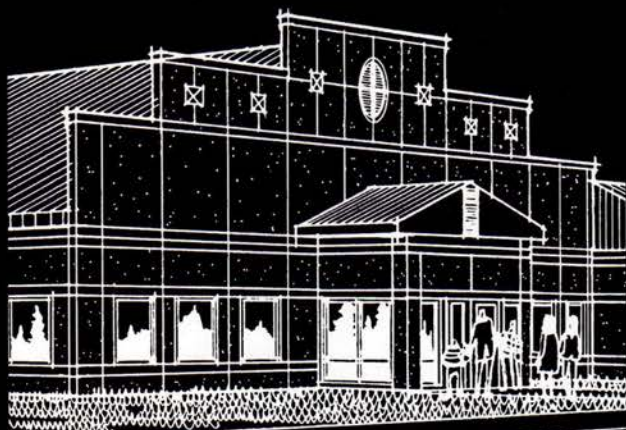
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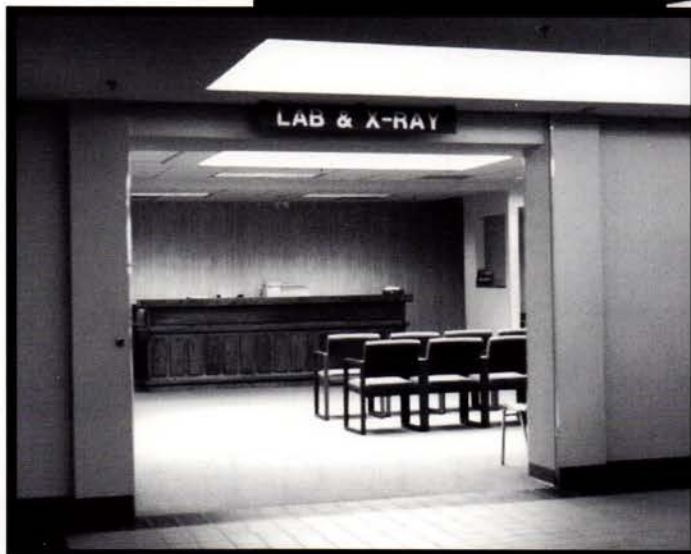
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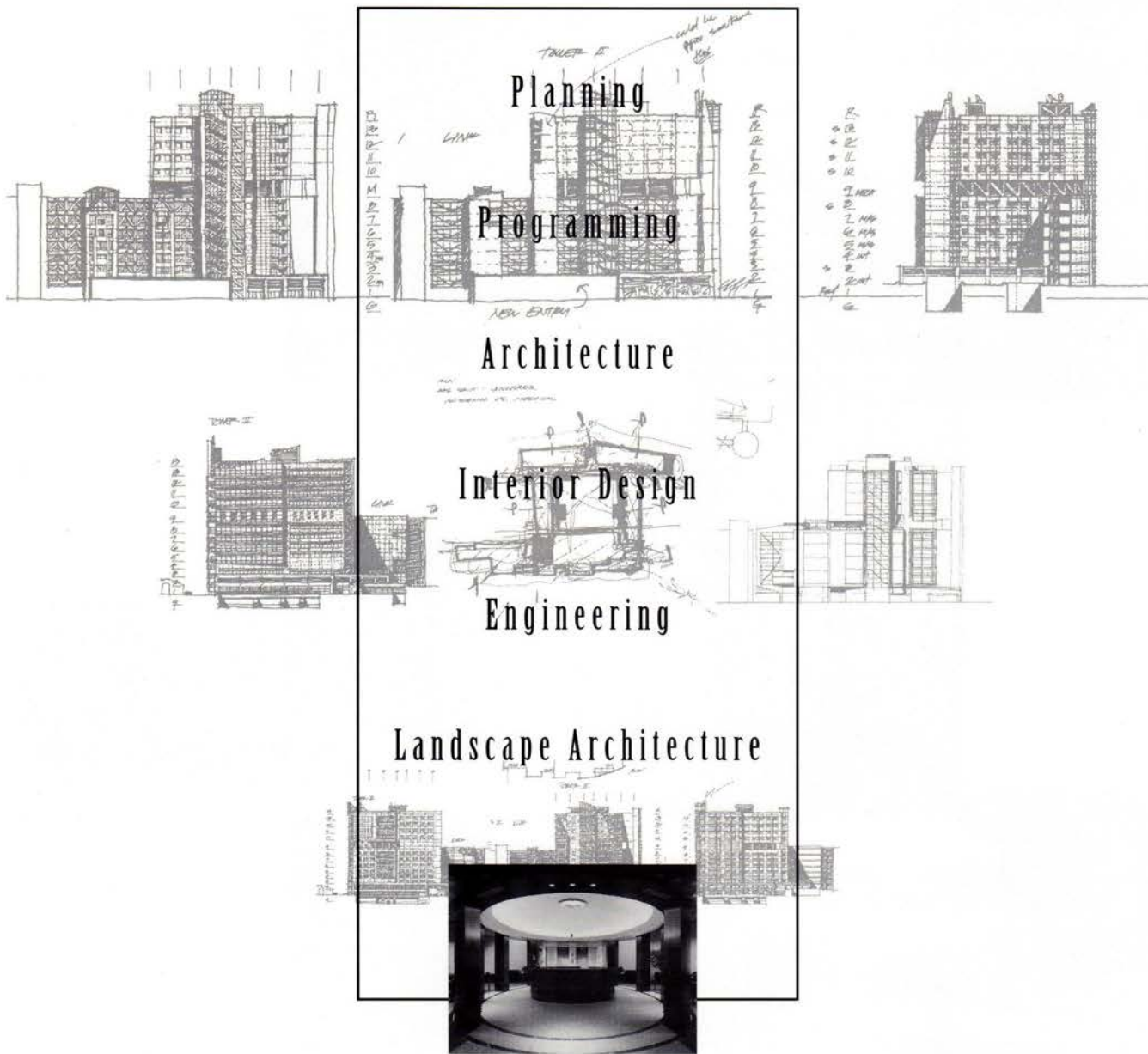


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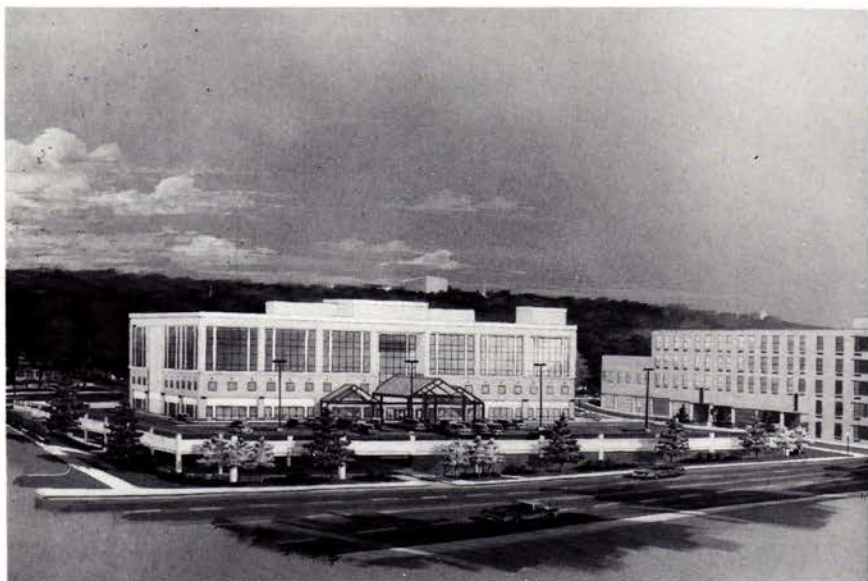
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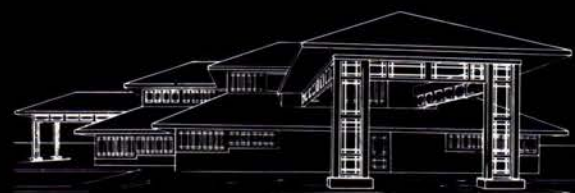
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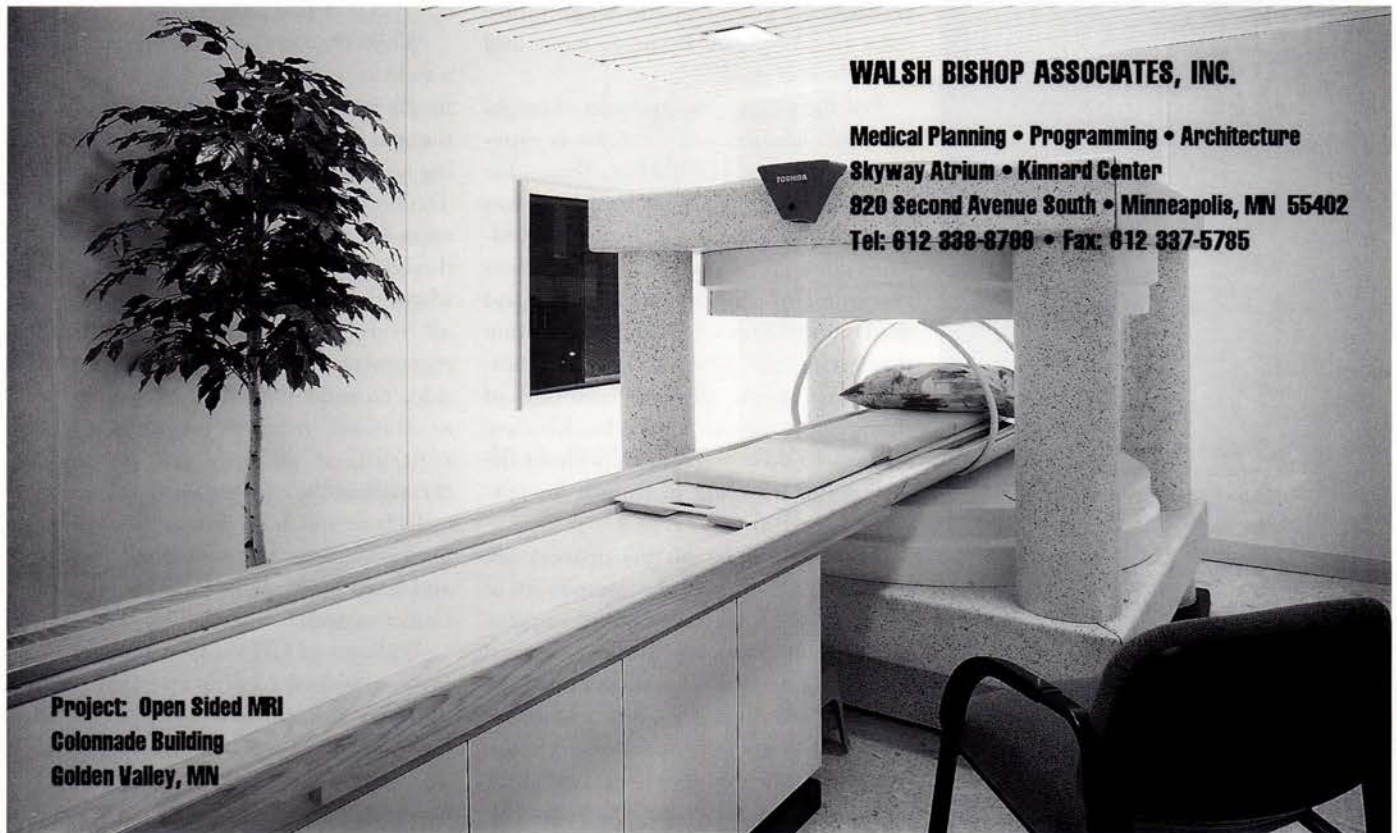
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sketches

Continued from page 9

which, in turn, will channel seriously ill patients into a hospital. It may even be possible for physicians to make house calls as the system becomes more and more decentralized."

For the public, the prospect of neighborhood health-care facilities is especially attractive. In Hibbing, Minn., for example, Ryan Medical Buildings has teamed with the Mesabi Regional Medical Center, the University of Minnesota Hospital and Clinics, Adams Clinic and the Duluth Clinic to develop a radiation therapy center, a new clinic and a hospital expansion. For the residents of this area it means better health-care services in their community without the expense of traveling to Duluth for specialty procedures.

The advantages of this process are abundant. However, the complexity of designing a health-care facility remains an unknown factor. As facilities demand increasing technical sophistication, the experience and knowledge of health-care architects become proportionally more critical to a successful project. Architects and developers today have the opportunity to create the partnerships that establish the standard for the future.

Janet Whitmore is a writer and communications specialist working in Minneapolis. She is chairman of the AIA Minnesota Publications Committee. AM

insight

Continued from page 13

in their own progress back to wellness."

Nancy Stark, interiors director of Ellerbe Becket's health-care division, says, "In the new hospitals and clinics we're designing, we like to achieve a balance of normalcy for patients."

Many interior designers and architects already are striving for "normalcy" by using more color and fabric, residential-style furnishings and materials, wooden surfaces, art work and plants.

"Hospitals can no longer afford to look, feel or even smell institutional," HGA's Cameron says.

Natural lighting and softer lighting, for instance, is replacing the traditional

institutional fluorescent tubes. At St. Paul Children's Hospital, Sara Homstad and Hargens of Close Associates removed the harsh direct lighting and replaced it with semicircular light canopies crafted of wood to define patient areas.

While the interior environment plays a role in patient recovery, social and family integration also aids in health. In the new hospitals, architects are providing spaces for families to stay overnight. The hospitals are becoming more convenient for patients, too. Rooms are being designed so that equipment can be wheeled in. Instead of moving the patient all over the hospital, technicians and equipment will come to the patient's bedside. To make this all move easier, nurses' stations in newer hospitals are less centralized as they are dispersed throughout the care-giving areas.

"There will be a den or study where patients can go to see their own charts and learn more about their own illness," Cameron adds.

Williams of HGA sees a time of "paperless medical records and filmless radiology. Computers will provide the high-tech diagnostic component and humans will provide the healing or touching component."

Ambulatory care centers also are moving into the forefront of medical design. Overnight hospital stays for many medical procedures are becoming a thing of the past and hospitals no longer require the large number of beds they once did. About 80 percent of today's surgical procedures in hospitals are done on an outpatient basis; in the 1950s that figure was around 10 percent, reports Thomas Harty of Harty, Elving & Associates, whose firm specializes in medical design. For admitted patients, the average stay is 2.5 days, compared to 4.5 days 10 years ago.

This means that in the years to come, architects will have plenty of work designing clinics, outpatient surgical centers, specialty treatment facilities and other outpatient facilities near growing regions.

"It means easy access for patients without getting involved in a hospital," Graham says.

Tomorrow's hospitals, to use computer lingo, will be more user friendly. Part of the growing trend in designing medical facilities is to increase circulation ease. Using wayfinding techniques, architects,

interior designers and graphic artists devise ways to help patients navigate through a labyrinth of corridors. Designing atria and special entries, for instance, helps solve certain circulation problems as well as help orient visitors to their surroundings.

Stark uses the "main street" concept, complete with street addresses for the West Health campus in Newton, Kans., for Ellerbe Becket's new Newton Medical Center. Simply color-coding floors, as Close Associates did at St. Paul Children's Hospital, helps patients and visitors find their way through unfamiliar hospitals.

Minneapolis graphic designer James Johnson was called in right from the start in 1988 when Hargens and his team at Close Associates began remodeling parts of St. Paul Children's Hospital. Using the hospital's circular logo as a basis, Johnson designed a series of childlike signs for the hallways and elevators. Architecture, interiors and graphics say that this, indeed, is a place for children.

With better-designed circulation patterns, patients will have an easier time finding their physicians, too. Newer health-care facilities are moving physicians' offices from separate medical-office buildings into the medical centers themselves, putting them in closer contact with patients. For instance, BWBR is designing the new West Health Campus in Plymouth, Minn., a joint venture between Abbott Northwestern Hospital and North Memorial Medical Center. The first building in a planned multiphase project is an ambulatory-care center, with physicians' offices on the second floor. Ellerbe Becket is working on interior design. Such moves are also a cost-saving measure because certain diagnostic equipment and other medical-office supplies won't have to be duplicated. All technology will be accessible at a single location.

Just as medical technology and information continue to expand and improve, health-care facilities, whether small neighborhood clinics or large urban hospitals, are continuing to expand. Ellerbe's Stark sees health-care facilities becoming all-inclusive in the future.

Says Stark, "You'll begin to see centers providing not just health care but services that promote wellness."

Bette Hammel is a frequent contributor to Architecture Minnesota. **AM**

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joint facility. Such was the case with Lake Julia Sanatorium, which was sponsored by Itasca, Koochiching, Beltrami and Hubbard counties. If a county had no facility, it could send its patients to Ah-Gwah-Ching.

By 1918 Minnesota had one state, 14 county, one city and two private sanatoriums. Like Ah-Gwah-Ching, the majority were located in pastoral settings, often on lakes or rivers, which are reflected in their picturesque names such as Sun-nyrest, Mineral Springs, Fair Oaks Lodge, Sand Beach, Buena Vista, Oakland Park and Riverside.

The smaller facilities typically included a main hospital building, a nurse's residence, several service and support buildings, and in some cases a superintendent's residence. The early buildings were usually Craftsman-style designs with stucco exteriors, exposed rafter tails and columned entrances. Later construction often included classically inspired designs and elements of the Georgian-revival style.

While the majority of the state's sanatoriums remained relatively small, several grew into immense medical complexes that could treat hundreds of patients. These included Ah-Gwah-Ching, Hennepin County's Glen Lake Sanatorium and the St. Louis County facility near Duluth called Nopeming. The modest structures of earlier days gave way to large hospital buildings, extensive staff quarters, power plants and separate buildings for treating children. Glen Lake expanded dramatically throughout the 1920s until it became the state's largest sanatorium with space for more than 700 patients. Even a children's summer camp was constructed, which was the only element of the facility to survive the county's 1993 demolition of the site. Farms and gardens were also common at many of the facilities. Ah-Gwah-Ching even had its own train station.

New construction continued into the 1930s, utilizing funding available from the federal-relief programs of the New Deal. The largest sanatoriums had come to resemble self-contained communities generating their own power and producing much of their own food supply.

While state architect Clarence Johnston designed several of the early buildings at Ah-Gwah-Ching, the Minneapolis

firm of Sund and Dunham emerged as the principal designers of the state's sanatoriums. They are known to have been responsible for at least 10 of Minnesota's sanatoriums, working over a 17-year period on Glen Lake alone.

Just as careful site selection was an important element in successful treatment, specific architectural features were also incorporated in sanatorium design to assist the healing process. Large screened porches were included in the early buildings in order to increase the patients' exposure to fresh air. Patients of-

By the late '40s

more than

53,000 people had

been treated at the

state's sanatoriums

with an 80 percent

recovery rate.

ten would sleep on these porches year around, sometimes waking to find themselves covered with snow. While this approach was soon abandoned, other design features such as rooftop terraces and south-facing balconies aided in sun treatment, which was considered particularly effective for such extra-pulmonary tuberculosis as tuberculosis of the bone.

In time, medical advances offered ad-

ditional treatment options. A procedure was developed to collapse the lung to allow it to rest and heal. Other surgical techniques were also developed, such as the removal of all or part of a diseased lung. In 1943 Dr. Selman A. Waksman of the Department of Microbiology at Rutgers University discovered an antibiotic called streptomycin, the first effective antituberculosis drug. Waksman lacked adequate facilities to test the drug, so he sent a sample to his colleagues Drs. William Feldman and H. Corwin Hinshaw of the Mayo Clinic in Rochester, Minn., who had been experimenting with possible drug therapies for TB. Experimentation with tubercular animals met with enormous success. The results were so promising that human experimentation began at the nearby Mineral Springs Sanatorium. History was in the making as the first human patient to receive the drug made a complete recovery. Research continued and other "miracle drugs" were discovered, which were often used in conjunction with streptomycin.

By 1948 more than 53,000 people had been treated at Minnesota's state and county sanatoriums with an 80 percent recovery rate. Through various treatment methods, including fresh air, bed rest, surgical procedures and finally drug therapy, the disease came under control and the patient population dwindled. One by one the state's sanatoriums began to close. Ah-Gwah-Ching closed in 1962, although its program was transferred to Glen Lake for its final years. While many of the state's sanatoriums have been demolished or radically altered, several have been adapted to new uses. Ah-Gwah-Ching, Nopeming and Fair Oaks Lodge in Wadena, for instance, now serve as long-term care facilities.

Minnesota's tuberculosis sanatoriums achieved their goal. Those suffering from the disease were isolated from the general population and placed in a healthy environment in which to recover. Through decades of commitment TB was nearly eradicated. Sadly, as tuberculosis is now making a comeback and drug resistant strains are emerging, we recall these nearly forgotten institutions with their picturesque landscapes and their remarkable architecture where site and design met to heal.

Rolf T. Anderson, President of the Preservation Alliance of Minnesota, is a consultant for the State Historic Preservation Office of the Minnesota Historical Society.

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Advertising Index

AIA Documents, p. 6

Fred G. Anderson, Inc., Cov. II

'94 Architecture for Health
Portfolio, pp. 42-55

Architectural Consultants, p. 14

Engineering Design Group, p. 56

Exhibit! AIA Minnesota
Convention & Products Expo,
p. 12

Damon Farber Associates, p. 7

Minnesota Architects, Cov. IV

Minnesota Ceramic Tile Industry,
Cov. III

Minnesota Dryall Council, p. 7

Minnesota Masonry Institute,
p. 16

National Facilitators, Inc., p. 56

Spancrete Midwest Co., p. 2

Unicel Inc., p. 4

Wells Concrete Products
Company, p. 1

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Location: Minneapolis

Client: Minneapolis Pathways Board
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Design Architects: Anmahian Winton
Architects

Architects-of-record: Shea Architects,
Inc.

Project manager: Dave Witt
(Shea Architects)

Project architects: Alex Anmahian and
Nick Winton

Structural engineers: Stroh Engineering

Mechanical engineers: R.L. Feig &
Associates

Contractor: K.M. Building

Interior design: Anmahian Winton
Architects

Landscape architect: Anmahian
Winton Architects

Landscape consultant: Otten Bros.,
Inc.

Photographers: George Heinrich and
Don F. Wong

Windows: Marvin Co.

Project: Rosewood Estate

Location: Roseville, Minn.

Client: Rosewood Estate Limited
Partners

Principal-in-charge: Arvid Elness

Project manager: Paul Madson

Project architect: Paul Madson

Project designer: Paul Madson

Project team: Steve Burch, Jim Salzl

Structural engineer: Fowler Hanley Inc.

Mechanical engineer: LWSM
(Lundquist, Wilmar, Shultz + Martin)

Electrical engineer: LWSM

Contractor: Stuart Corporation

Interior design: Arthur Shuster Inc.

Landscape architect: Damon Farber

Windows: Windsor Windows

Roofing: GAF

Siding: Wolverine Vinyl siding

Project: St. Paul Rehabilitation Center

Location: St. Paul, Minn.

Client: St. Paul Rehabilitation Center

Architects: Rafferty Rafferty Tollefson
Architects, Inc.

Project team: Eric Amel,
Paul Anderson, Tom Cassidy,
Gordon Christofferson, Ruth Foster,
Michael Huber, Joe Krumpelman,
Tom Lillyman, chip Lindeke,
Craig Rafferty, George Rafferty,
Richard Rafferty, Rob Rafferty,
Karen Taney, Chad Tollefson,
Lee Tollefson, David Ekroth

Contractor: Langer Construction Co.

Advisory engineer: Gausman & Moore,
Inc.

Structural engineer: Allen Van Sickle &
Assoc.

Landscape architect: Sanders Wacker
Wehrman Bergly

Project: United Children's Hospitals/Day Surgery Center

Location: St. Paul, Minn.

Client: Health One Corporation, United
and Children's Hospitals

Architects: Hammel Green and
Abrahamson, Inc.

Principal-in-charge: Dennis D. Lanz

Project manager: Ted R. Rozeboom

Project architect: Mark Hanson

Project designer: Vince James

Structural engineer: David Gotham

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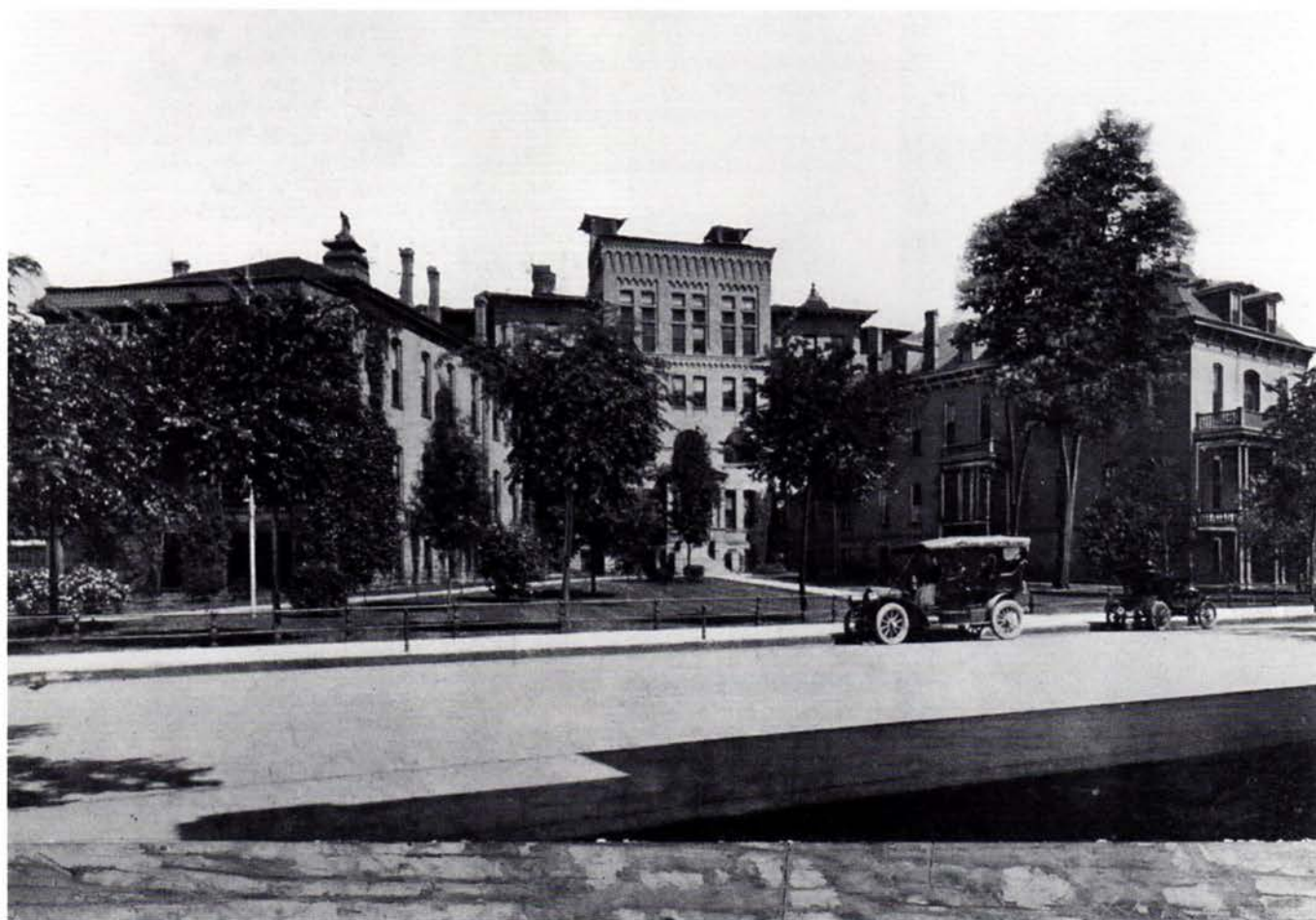
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St. Joseph's Hospital, Ninth and Exchange, St. Paul ca. 1911

Courtesy Minnesota Historical Society

Like many health-care institutions, St. Joseph's Hospital in St. Paul has continuously refurbished, redesigned and added onto its facilities during its 141-year existence. The hospital that now bears St. Joseph's name mostly was built during the past 25 years, with little remaining from its earlier era.

The hospital sprang into being in 1853 when a cholera epidemic ravaged St. Paul, then a hamlet of barely 1,000 people. Four nuns, sisters in the order of St. Joseph of Carondelet, shouldered the burden of helping the sick. They established their first infirmary in a log church built in 1841, near today's intersection of Minnesota Street and Kellogg Boulevard. Within a year, a donation of

an open field at Ninth and Exchange streets, a gift of money from Bishop Joseph Cretin's own family in France and timber provided by Dakota Indians of the Lake Calhoun band allowed for the construction of a 4-story stone hospital at the then-outskirts of town.

This hospital served the community for 40 years. On Sept. 24, 1886, in its small operating room, Dr. Justis Ohage, Sr., became the first surgeon in the United States to successfully remove a patient's gallbladder.

Seven years later the building was demolished in preparation for a new St. Joseph's facility, completed in 1895. The new hospital, a 4-story structure, boasted four general operating rooms

and a top-floor amphitheater for the instruction of medical students. Over the next four decades it added receiving facilities for St. Paul's first ambulance service, an early X-ray machine (1902), and a turkish bath in the basement for the treatment of patients with rheumatism. It was a busy place; between 1922 and 1932 its physicians delivered 6,191 babies and performed 37,750 operations.

Ensuing years brought many alterations and added wings, but eventually the hospital needed a more modern facility. All parts of the 1895 structure were razed to make way for new buildings in the 1970s. But a north wing constructed in 1922 still stands and remains the oldest part of the complex. **Jack El-Hai**

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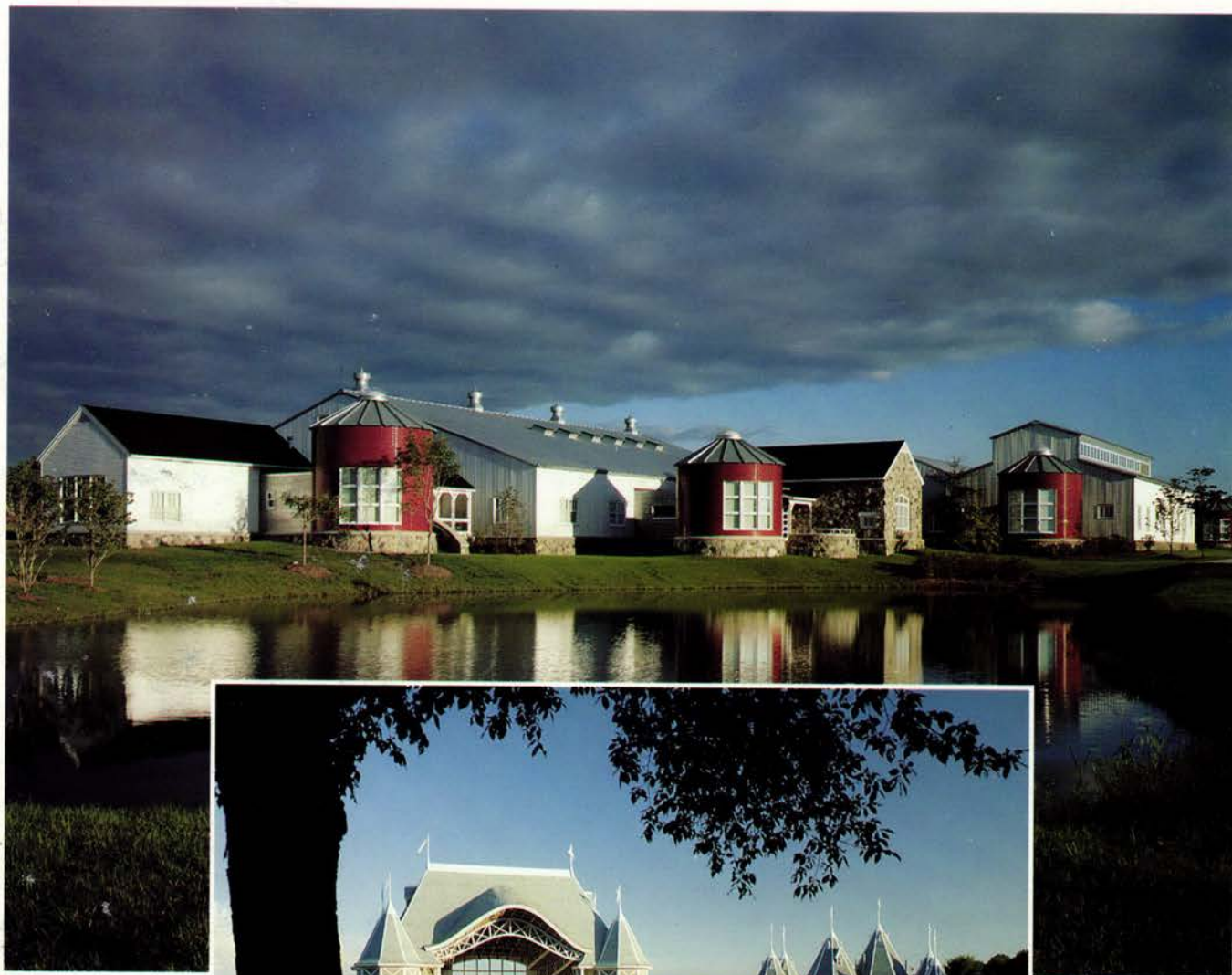
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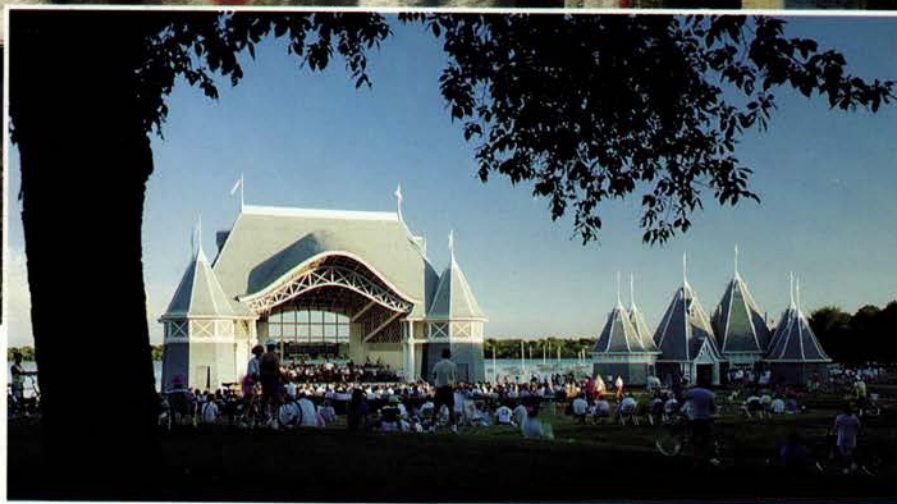
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