

ARCHITECTURE MINNESOTA

March April 1976

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ARCHITECTURE MINNESOTA

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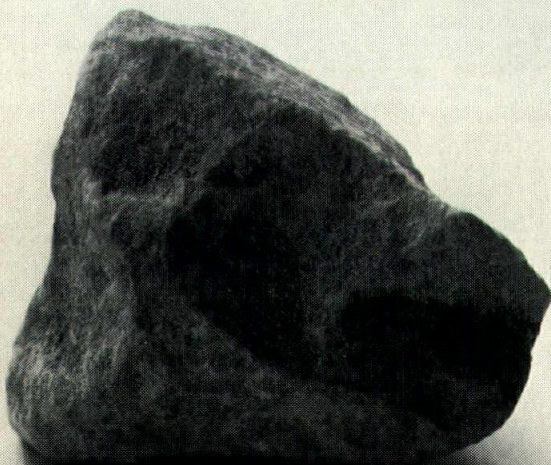
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Keystone



Gravel

CHAPTER 11

From the Editor

A prominent Minnesota architectural firm recently sought protection from its creditors under the rules of Chapter 11 of the Federal Bankruptcy Laws. This news stirred the business and architectural community. Among architects and businessmen alike there was the sudden realization that architects are indeed part of the scene, that they run business operations and that they **are** vulnerable.

It is ironic that architecture as a business has become most vulnerable in terms of economic success at a time when, as a profession, it has achieved more public respect and support than ever before. Hardly any major civic building built in the last 15 years does not boast an architect of note and seldom are any city planning or preservation efforts undertaken without major input from the profession. Architecture is actually really **in**. The proliferation of books on architecture, the popularity of historic preservation efforts, tours and exhibits confirm this.

There still remains, however, the nagging shadow of Chapter 11. What was that all about? It was just the case of a business, an architectural firm, which due to a number of illogical and unforeseeable reasons was forced (or thought it best) to seek the protection of Chapter 11.

It is true that architecture is a profession that is closely tied to the state of the economy since expenditures for physical assets are ordinarily the first

to be restricted in times of strained financing. No profession can depend solely on the magnanimity of its patrons for survival.

Fortunately, however, more and more private corporations are learning that good design is good business. They already knew that well designed shavers or cookie packages sell better than others. Now they have begun to appreciate that a better working environment makes happier and more efficient workers and that a handsome and well-planned building becomes a source of pride to the community — and that is **also** good business. Profits are dedicated — though at times reluctantly — to community, art and architecture.

Even though it sometimes appears that architecture is being displaced by mortgage loan companies, developers, package dealers, even though architects are sometimes pressed to make commitments which get them into trouble, we take cheer that architecture is very much part of the system now. This has not always been so Today the complexities of urbanized society call out for the talents of the professional architect, but also envelop him in the complexities of its logic and its market place.

As businessmen, as planners, as artists, as architects, our most urgent task is to help overcome the inefficacies of delivery systems and the persistent injustices and environmental bankruptcies which threaten us all. □

— Bernard Jacob



20-YEAR-OLD SWIMMERS... 46-YEAR-OLD POOL!

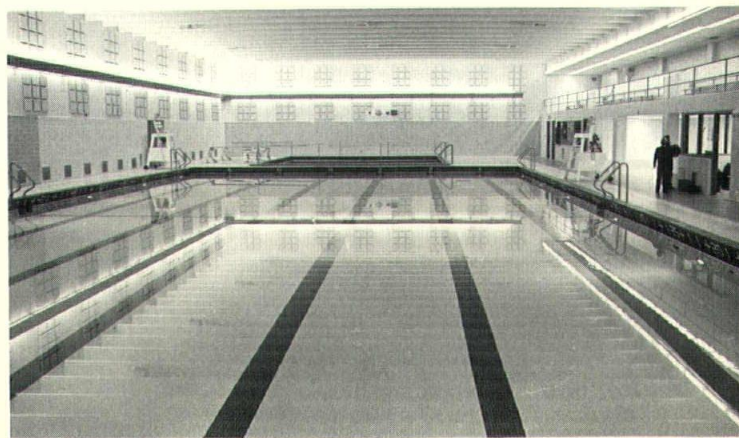
This pool at the College of St. Catherine in St. Paul was built in 1929. The beautiful and functional design of Ceramic Tile is the reason this 46-year-old pool is still in use.

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MINNESOTA CERAMIC TILE INDUSTRY

A LASTING BICENTENNIAL GIFT

FROM THE EXECUTIVE DIRECTOR
MINNESOTA SOCIETY OF ARCHITECTS

There are museums with big buildings and little public programs, but there are seldom little galleries with lasting, meaningful, educational programs and exhibitions. The University of Minnesota Gallery, however, is foremost among the latter.

A little gallery with a big program and unlimited energy, the University Gallery more than three years ago initiated plans for the Bicentennial Exhibition of Art and Architecture which made its debut in Dayton's Minneapolis auditorium on February 11. The Minnesota Society of Architects joined with the Gallery in planning and sponsoring the exhibition — now winding its way along state highways on a year-long tour to 19 out-state communities — and in giving leadership to *A Guide to Minnesota Architecture*. The guide, by Dr. David Gebhard and Tom Martinson, and *Minnesota Painting and Sculpture 1820-1914*, by Dr. Rena Cohen, are being published by the University Press in conjunction with the exhibition.

The Bicentennial has been the midwife to a great deal of activity, programs, and projects. Some are lasting; some are not. Some are extremely important; some are not. Some you should take the time to see; a great number are not worth the time.

The exhibition, which was believed possible by only a few when first conceived, may be the most lasting contribution resulting from the Bicentennial in Minnesota. And it is fitting that the University — which has contributed such a legacy to this state — has played a large part in this effort to organize the first comprehensive exhibition of the state's art and architecture.

While still in the planning stages, a \$300 thousand project seemed almost insurmountable. But undaunted were Barbara Schissler, Lyndel King and the University Gallery staff. They had just finished an extensive Victorian Exhibition, which included Malcolm

Forbes' collection, and national media such as Time and Newsweek had taken note of their accomplishments.

The Victorian Exhibition had included concerts, seminars and lectures. The Gallery had similar visions for the Minnesota Art and Architecture Exhibition, which includes not only 400 paintings and architectural photomurals and two books, but also an educational tour of the exhibit for school children, a series of art lectures, several radio and television programs and an Architectural Encounter Series.

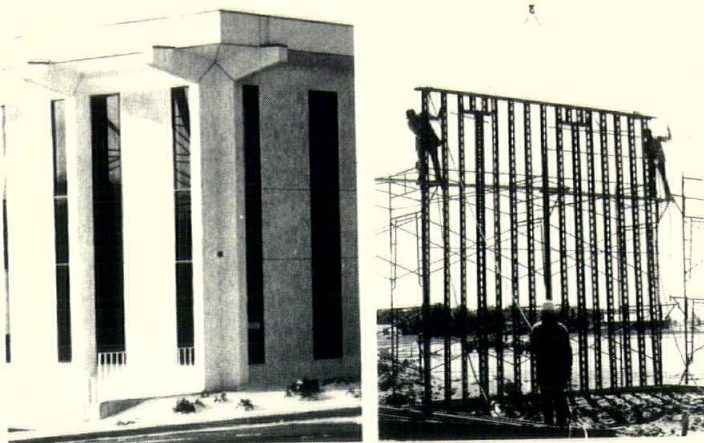
More than 50 organizations provided funds and services for the total project. Among them: the National Endowment for the Arts, the Minnesota State Arts Council, the Minnesota Bicentennial Commission, the Minnesota Humanities Foundation and numerous state corporations, businesses and foundations.

The exhibition, which will have traveled in reduced form within 50 miles of all Minnesotans before the close of the year, has limitations as most exhibitions do. Ideally, an explanation of the history and significance of each painting and building would have been included in the display. Although impossible in the exhibition, the two books go a long way toward achieving that goal.

The more-than 200 paintings included in the original exhibition were not only works by famous artists, but also works by explorers, soldiers, travelers and early settlers. Native American paintings and art objects also are included, reflecting the wealth of artistic creativity exhibited by Minnesota's first inhabitants.

The development of Minnesota architecture is presented through photomurals, decorative artifacts and stained glass windows. Represented along with the state's famous and monumental buildings are the houses, small commercial buildings and rural farms which characterize Minnesota's unique architectural heritage.

minne-wall



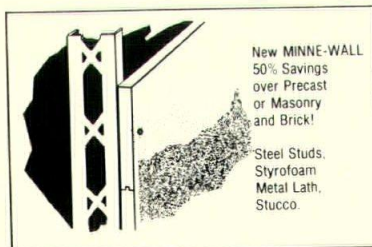
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A Guide to Minnesota Architecture, to be published this spring, is more than a guide. It is also a strong piece of historical research. Tom Martinson, a young Minnesota architect, and Dr. David Gebhard, a native Minnesotan and architectural historian, have done an exceptional job in capturing Minnesota's history, the evolution of its communities and their architecture. Gebhard, University of California at Santa Barbara Gallery Director, is one of the most prolific and respected architectural historians. Martinson, who did a great deal of research and all the photography for the guide, also is primarily responsible for the architectural portion of the exhibition.

Dr. Rena Cohen's *Minnesota Painting and Sculpture 1820-1914*, already available in book stores, is an exceptional work which should be included in art and history collections of all state libraries.

There are still nine months left to go before the 42-foot van (made possible by the Minnesota Motor Transport Association) carrying the exhibition of Minnesota Art and Architecture makes its final stop.* But based on its highly competent performance thus far, the University Gallery staff will carry the project through to the end practically without flaw.

So many thanks to Barbara Schissler, director on leave; Lyndel King, acting director responsible for overall organization and supervision of the project; Nina Archabal, transplanted musicologist who has been singing solos before foundations and corporate fund-givers; and Susan Brown, overseeing production of the architectural guide and television programming. They have given all Minnesotans a lasting Bicentennial gift. □

— Daniel J. Sheridan

*(Schedule: see Architecture At a Glance column)

ARCHITECTURE AT A GLANCE

Peanuts, popcorn and pronto pups will again highlight the palatables, and numerous merry-go-rounds will still move on the Midway, but the Minnesota State Fair may feature something entirely new in 1977 — an arts pavillion totally heated and cooled with solar energy. The 27,000 square-foot structure is planned for year-around use employing a solar energy collector to power heating, air conditioning and electrical systems. During the fair the proposed pavillion would house the Minnesota Art Exhibition, and throughout the year it would be used for art-related activities. The board of managers of the Minnesota State Agricultural Society, the fair's governing body, hopes the federal Energy and Research Development Administration would share funding of the \$1.4 million structure. **Dennis Holloway**, associate professor of architecture at the University of Minnesota, has completed a feasibility study and model of the pavillion in association with **Perry Blackshear**, University professor of mechanical engineering.

While the proposed arts pavillion is studied this year, a 42-foot, red-white-and-blue trailer carrying Minnesota paintings, architectural photo-murals and Native American art objects will wind its way along state roads to 19 communities. The traveling exhibit — a portion of the Bicentennial Exhibition of Minnesota Art and Architecture displayed in Dayton's Minneapolis auditorium February 11 through March 6 — is sponsored by the University of Minnesota Gallery and the Minnesota Society of Architects. Among communities which will host the exhibition for 10 days are: **Willmar**, March 26 - April 4; **Marshall**, April 9-18; **Worthington**, April 23 - May 2; **Winona**, May 7-16; **Mankato**, May 21-30; **Rochester**, June 4-13; **Austin**, June 18-27; **Saint Paul**, July 2-11; **Alexandria**, July 16-25; **Brainerd**, July 30 - Aug. 8; **Little Falls**, Aug. 13-22; **Grand Rapids**, Aug. 27 - Sept.

6; **Hibbing**, Sept. 10-19; **International Falls**, Sept. 24 - Oct. 3; **Duluth**, Oct. 8-17; **Bemidji**, Oct. 22-31; **Moorhead**, Nov. 5-14; **Crookston**, Nov. 19-28; **Saint Cloud**, Dec. 3-19. Transportation is provided through cooperation of the Minnesota Motor Transport Association, and the insulated van is supplied by Fruehauf Division-Fruehauf Corporation and Thermo King Sales and Service of Saint Paul.

The Midwest's first major office building to use solar energy as its primary heating source is being planned for **Cottage Grove**, a suburb of Saint Paul. The building, which will house the Park Grove National Bank and other businesses, will be situated on the side of a hill with a southern facade of solar panels. Architects for the project, which is expected to cost between \$500 thousand and \$600 thousand, is **Charles Wahlberg** of the Saint Paul firm **Bergstedt, Wahlberg, Bergquist & Rohkohl Associates**. The project is one of 24 solar-energy projects in the country which will be partially funded by the federal Energy Research Development Administration.

Solar reflective windows and a unique energy-recovery system which collects heat from light, machinery and humans already have been implemented in a \$3.5 million office building recently completed in Plymouth, a western suburb of Minneapolis. The S.J. Groves & Sons Company headquarters, designed by Minneapolis firm **McEnary, Krafft, Birch & Kilgore, Inc.**, is located on a 30-acre site which includes a creek, ponds, and footbridges and benches for the use of employees.

One block in the heart of downtown Saint Paul eventually will house a 19-story residential high-rise, an eight-story medical building, a commercial galleria, a science museum and planetarium, an outdoor plaza and a municipal parking ramp. Total development of the block — bounded by Wabasha, Saint Peter, Exchange and Tenth Streets — is a cooperative effort among



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the city, the Housing and Redevelopment Authority, the Science Museum of Minnesota and Sherman/Antler Joint Venture. **Winsor/Faricy Architects** of Saint Paul, coordinating architects for the housing and office portion of the project, will design the 114,400 square-foot medical office building and the galleria. The 613-car parking ramp and the residential tower will be designed by Minneapolis firm **Miller, Hanson, Westerbeck, Bell**. Saint Paul architectural firm **Hammel, Green and Abrahamson** will design the Science Museum featuring a 300-seat, domed Omni-Theater to be used for 180-degree projection of one of the most technically advanced audio-visual shows in the country. (See page 24.)

A block in downtown Saint Cloud also has been the center of much study and activity in recent months. Sometime this year, the city may lose two of its oldest buildings to urban development. But a volunteer group of local architects and residents is working to persuade city officials and the Housing and Redevelopment Authority to renovate the buildings and transform the area into an historic "old town". The buildings, which formerly housed a bank, a furniture store and a funeral parlor, are located on Fifth Avenue — the hub of the city's activity at the turn of the century. Saint Cloud architectural firm **Wemlinger, Remely and Associates** has agreed to study the economic feasibility of restoring the Kain-Hanson and Colbert Buildings.

Just as the thermometer's mercury begins to climb for spring, construction will begin in Duluth on an enclosed skyway bridging the area between the Arena-Auditorium and the downtown business district. The 900-foot-long pedestrian walkway, estimated to cost approximately \$1 million, will connect the Auditorium annex with two downtown parking ramps, and eventually will cross over railway tracks at a peak height of 25 feet above the ground. Arena-Auditor-

ium Board members and Duluth architect **Thomas Vecchi** have chosen April 1 for the opening of bids.

An unusual shopping center featuring 1890s decor and approximately 200 shops is scheduled to open in June on a portion of the historic Earle Brown Farm in Brooklyn Center. The center, to be called the Earle Brown Towne Market, was designed by Brooklyn Center architect William Hunzinger to resemble an early stockade on the outside and to achieve an outdoor effect inside, with winding walks and lanes leading from store to store. The site of the planned center was once a ranch operated by Earle Brown, a Hennepin County sheriff.

Both broadcast waves and organ music will be emitted from the Fourth Baptist Church in north Minneapolis, once studios and offices for educational radio station WCTS-FM are completed on the church's second floor this May. Minneapolis firm **Armstrong, Torseth, Skold and Rydeen** designed both the 2,400-seat worship auditorium, built in 1973, and the new radio station facilities. New construction will include a control room, production studios, individual and group studios and office areas.

By January, 1977, Robbinsdale will have its first senior citizen's apartment building, and the nation's first project to be funded by the federal Department of Housing and Urban Development's Section 8 program. The seven-story, 110-unit apartment building will be built on a site once used by A.B. Robbins — who platted Robbinsdale — to build a home for his daughter. Project architect is **Miller, Hanson, Westerbeck, Bell, Architects** of Minneapolis, in association with Akira Yamashita of Boston, Mass.

The Native American Learning Center, to be displayed for twelve weeks at a Folk Art Festival sponsored by the Smithsonian Institute, was designed by the team of Dennis Sun Rhodes, Jerry Johnson and Tom Hodne of the

Minneapolis firm **The Hodne/Stageberg Partners, Inc.** Eleven architectural firms from various parts of the country were asked to submit designs for the temporary structure, which will go on display June 16 on the Washington Mall. The Hodne/Stageberg team's winning design is a lodge-pole structure with a fabric covering of Native-American graphics. Hodne/Stageberg also placed first in a design-approach competition recently sponsored by the National Endowment for the Arts in cooperation with the U.S. Immigration and Naturalization Service. Out of 170 applicants, the firm was chosen to design \$150 thousand border stations in Boundary, Washington and Scobey, Montana. The competition marks the first time the department of Immigration has retained architects outside of the department to design border stations.

The United States Air Force has commissioned Saint Paul architectural firm Adkins-Jackels Associates to prepare definitive designs and programming for chapels to be located on Air Force bases throughout the world. Architects chosen to design the chapels in various regions will base their plans on Adkins-Jackels' work.

Two Edina architects, Foster Dunwiddie and Tom Martinson, have been elected chairman and vice-chairman of the Edina Heritage Preservation Board. The Board was appointed by the city council in December to advise the council and the planning commission on areas of Edina which have particular historic, architectural or educational significance. Dunwiddie also is a member of the Edina Historical Society, and Martinson is co-author of **A Guide to the Architecture of Minnesota**, soon to be released by the University of Minnesota Press.

For further information, contact Noel Schenker, Public Communications, Minnesota Society of Architects, 227-0761. □

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THE DESIGN IMPLEMENTATION

John W. Lackens, Jr. and
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The process of design and implementation of any physical facility, no matter what the type and size, includes numerous activities and tasks encompassing various phases such as programming, schematic design, design development, working drawings and specifications, bidding and award, construction and post-project evaluation.

Once the architect and his consultants have completed the contract documents (working drawings and specifications), they are submitted to the owner and any required agencies for review and approval.

If the project is for a public or governmental agency, an advertisement for bids is published, and interested and qualified contractors express interest in bidding. If it is a project for a private organization, generally a selected list of contractors is invited to submit competitive bids.

Whichever the case, the contractors (General, Mechanical, Electrical, Ele-

vator, etc.) are given a set of the contract documents by the architect or the client and have a specified length of time to review these and submit a bid. For that work which the respective contractors do not accomplish themselves, they obtain sub-bids from various manufacturers and subcontractors.

In order that all interested manufacturers and subcontractors can review the contract documents, they are generally available for review at the offices of the architect and the client, the Builders Exchanges and the F.W. Dodge Corporation.

Depending on the size and complexity of the specific project, the contractors will have from three to five weeks to compile their bids. During that period, a pre-bid conference will often be conducted at which time the architect and client will clarify the scope and time frame of the project, the bidding procedure, and answer any questions which the contractors may have.

The architect answers questions during the bidding period regarding the contract documents and reviews any qualified requests for considerations of manufacturers or products not specifically named. Any revisions to the contract documents are issued as addendums and appropriately distributed to all concerned parties prior to receiving bids.

Bids are received at a specified time and opened publicly in the case of public work or — usually — privately in the case of private work. If the bids are within the scope of the budgeted dollars available, the award of the construction contract is generally made to the low bidder. If all bids received substantially exceed the available budgeted dollars, revisions are generally made which decrease the cost through the process of negotiating with the low bidder or by rebidding the project.

Once a construction contract award is made, the contractors are required to submit the necessary certifications of insurance coverage, labor and material cost breakdowns, list of subcontractors and manufacturers, construction time schedule and other pertinent data prior to commencing the actual construction work.

The architect remains involved throughout the construction phase, and his work during that time is described elsewhere in this issue. □

Messrs. Lackens and Lembke, principals of The Architectural Alliance of Minneapolis, are also authors of "The Architect with the Hard Hat" appearing elsewhere in this issue.

THE BUILDING EXCHANGES



Playing an essential role in the construction industry are the Building Exchanges in Minneapolis, St. Paul, Duluth and seven other cities in Minnesota. During the bidding phase the architect's plans and specifications are maintained on file at the Exchanges' plan rooms. This makes it possible for a large number of subcontractors, manufacturers and suppliers to make a "take-off" from the plans to determine the amount of material and/or the scope of work involved in the particular project. The take-off is subsequently priced and the price is submitted to the general contractors who are bidding the job.

Generally there is no cost to the architect or owner for filing the plans and specifications with the Exchanges. However, to use the plan room the subcontractor or supplier must be a member of the Exchange. Membership dues provide the funds necessary to operate the non-profit Exchanges. Dues are approximately \$125.00 per year and the major Exchanges of Minneapolis, St. Paul and Duluth have a combined membership of over 1700 firms.

Members of the exchanges represent all segments of the construction industry, from general contractors, subcontractors and suppliers to financial institutions to bonding and insurance agencies and real estate brokers. Through ties with such organizations as the Associated General Contractors, Minnesota Society of Architects and Consulting Engineers Council, the Exchanges work to improve the construction industry.

In addition to the Twin Cities and

Duluth, Exchanges are located in Austin, Mankato, Rochester, Saint Cloud, Fairmont, Marshall and Winona. Minnesota Exchanges process about 3,000 building projects annually. Plans come from over 400 architectural offices and projects are located in North and South Dakota, Montana, Iowa, Wisconsin and Minnesota.

The Builders Exchanges have been an integral part of the construction scene for many years. The Minneapolis Exchange was founded in 1888, Saint Paul in 1900 and Duluth in 1902.

Each Exchange is operated independently although all Exchanges cooperate closely. They are governed by boards of directors elected by the membership and administered by an executive officer hired by the board.

In addition to maintaining plan rooms, most Exchanges publish weekly bulletins listing all projects currently on file plus bidding information, due dates, etc. An annual Buyers Guide and Directory is published by the major Exchanges.

Another widely used plan service is provided by F.W. Dodge, a division of McGraw Hill. Dodge publishes the "Dodge Report" and "Dodge Bulletin" which provide the construction industry with information relative to upcoming projects. Contractors, subcontractors and suppliers who subscribe may use the Dodge planroom, which is located in Edina. A specialized service is Dodge/Scan which microfilms bidding documents and sends the microfilm to subscribers for take-off in their own offices.

— James I. Lammers

CONTRACTING FOR CONSTRUCTION

Richard Allen Peterson

The contracting methods for construction of both public and private projects vary widely. The construction can be undertaken using Single Prime Contractors, Multiple Prime Contractors, Owner's Pre-Purchase of materials assigned to contractors, etc. In any given project, the merits of one method versus another should be carefully weighed to provide the greatest advantage to the owner's budget. Availability of materials, size and diversity of the work to be contracted for, limits of the time frame available, and major scope divisions consistent with labor trade categories must be considered.

Single Prime Contract

Under this method of contracting, the construction contract is awarded to one contractor who has compiled his proposals using sub-bids from all categories of trade and other contractors (acting as subcontractors) required by the drawings and specifications for the construction of a project.

Under this method the Contractor has total responsibility for the performance and execution of the work of his subcontractors, and for this responsibility he adds a fee of 5% to 10% to each subcontractor's proposal.

Advantages:

1. The size of the construction project requires larger bonding and increases selectivity of contractors.
2. Single responsibility for construction narrows scheduling and field coordination problems.
3. Construction management is simplified.
4. Contractor can be selective in working with subcontractors with whom he has had previous experience and cooperation.

Disadvantages:

1. Owner pays a higher cost if the Prime Contractor has a minimum number of trades in his own complement of work force and is a "broker"

for the trades that are not part of his normal competency.

2. This method encourages "big-shopping" *after the award of the contract* to enhance the Contractor's financial advantage without benefit to the Owner.

3. Owner has less control of subcontractors for major trades such as mechanical or electrical work.

4. Completed documents are required for the total construction defined or required under the single contract, thereby lengthening time requirements before bids can be solicited.

5. Any changes in the work of subcontracting trades reflect higher costs by the Prime Contractor's fees.

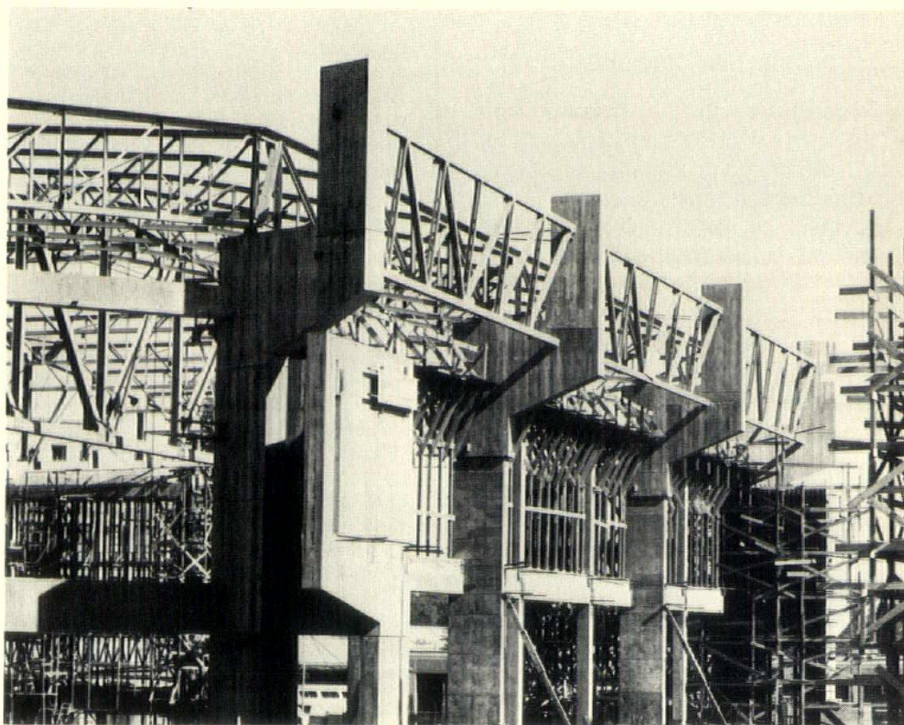
Multiple Prime Contracts

Most construction projects in this area involving multiple trades, such as normal building construction, award multiple contracts to a minimum of three prime contractors: General Construction, Mechanical Construction and Electrical Construction.

Within the last five years, it has become increasingly more common to have greater divisions of subcontracts awarded as prime contracts directly to the Owner. This has been principally due to higher construction costs, higher construction financing rates and tight budgets.

Accepted normal procedure on most construction programs is to award Multiple-Prime Contracts in at least the minimum of three basic categories—General, Mechanical and Electrical.

It has been common practice that a Prime Contractor, having the principal major work lead, such as the General Contractor in a building project, be designated as the Coordinating Prime Contractor and have the responsibility for the construction coordination and scheduling of work of the other Prime Contractors. Since this is accepted as normal procedure in any building project, the resulting cost incorporated in a bid proposal under general construction has been minimal



without the over-ride normally assessed to the owner for the single prime contract.

Advantages:

1. Direct responsibility and more project control for the owner.
2. More direct selectivity of contractors.
3. Greater number of competitive bids.
4. Direct payment to each Prime Contractor from the Owner rather than through a "middleman" reflecting savings in contractor's financing and extra over-ride charges.
5. More time flexibility in contract awards.

Disadvantages:

1. More refined construction documents required for contract scope definition.
2. More complex construction management.
3. Reduced scope of each prime allows broader range of possibly less-qualified contractors.

Pre-Purchase of Material

Currently in the construction industry severe shortages are beginning to appear which could hamper or affect the construction time and costs.

Further, all governmental entities are exempt from payment of the 4% sales tax on all materials directly purchased by the agency. This is in contrast to the taxes that are paid by the agency if a contractor purchases the material and incorporates the materials in a construction project under contract to the agency. In some instances pre-purchase of materials will be mandatory to meet construction schedules. Any construction package should be reviewed for this consideration. In our view, limited use should be made of this approach due to the added responsibility placed on the Owner for quality control and deliveries meeting construction schedules. □

THE SUBCONTRACTOR

A subcontractor is simply a firm performing one specialized aspect of the building task. He provides the required materials and installs them, under a secondary contract with the general contractor, who has responsibility for the entire package of construction work. Usually the sub performs one skilled trade, such as painting, plumbing or bricklaying.

Typically a small operator working out of a pickup? Not exactly. Many of them have payrolls over \$1 million a year. Many have large fabricating plants. Some vertically oriented firms not only furnish and install their materials, they design and manufacture them as well. A sub's installation men are highly-paid highly-skilled specialists who come to the job armed to the teeth with such a big investment in electric tools and electronic gear they look like men from space. No self-respecting ceiling crew or pipe installer would show up without a laser beam unit.

And, today, a number of subs go much further than one specialty. Some are systems contractors. For example, an interior systems subcontractor may provide integrated ceiling assemblies which include heating, air conditioning and lighting, plus the partitions (completely finished) and carpeting. There are subs who do extremely specialized work, such as caulking or drilling holes in concrete. Some firms contract to custom fabricate materials but not to install them, others contract to furnish specialized installation labor only.

It is estimated that 80 per cent of the materials and labor on an average project are provided by subcontractors. Further, on some types of projects, one sub alone may contract for well over 50 per cent of the job. Subcontractors often have subcontractors of their own. And at times they themselves become prime contractors.

Subs and suppliers, with their specialized technical know-how, are an important information source for architects. As projects go through the design stage and the pre-bid stage their contracts are frequent. Even as the construction work progresses they keep talking. Problems arise, questions come up on shop drawings and samples. Theoretically, since standard contract documents say there's no legal relationship between architect and subcontractor, all official communications between them should go through the general contractor. Architects and subs follow that route for formal notifications, but on an informal day-to-day basis they usually talk and correspond directly.

Subcontractors have made some noises in recent years because they feel that standard contract forms, particularly subcontracts, are still geared more to the days when they were small outfits working out of a pickup truck. They find payment terms and retainages especially irksome. They worry even more about being paid now during the weak construction market, with contractor failures increasing.

In the early 60's, subcontractors in the Minneapolis-Saint Paul area formed Commercial Construction Industries, a group which focuses on the credit and payment performance of general contractors. The group now numbers more than 100 of the area's major subcontractors and suppliers, and includes also a number of interested architects, bankers and bonding firms. The group's efforts have eased payment problems in this area. CCI recently submitted to the industry as a whole a proposed plan to speed payment flow through all parties involved in construction contracts. The plan is currently under review by the Construction Industry Cooperative Committee of Minnesota.

— Wallace Neal

THE ARCHITECT WITH THE HARD HAT

John W. Lackens, Jr. and
Richard D. Lembke

Many attempts have been made to define the duties and responsibilities of the architect during the construction phase of a project. These activities are often referred to as the administration of the construction contract. The AIA documents basically define the Architectural Project Representative as an individual who administers the construction contract to determine if, in general, the contractor's work conforms to the contract documents. They go on to state that compliance with the requirements of the contract documents is the ultimate responsibility of the contractor who in turn needs the cooperation of his superintendent, every subcontractor, foreman and mechanic.

We have yet to see the position of an Architectural Project Representative defined to its fullest extent, or to our liking. We label the construction phase of our services the construction coordination phase and the individual responsible, the Project Construction Coordinator.

In our opinion, the documents should include the stipulation that the contractor needs the cooperation of the owner, the architect and his consultants. It should state, in fact, that the only way to achieve a successful end product is through the concept and actual practice of a total team effort, an effort in which all parties concerned have a basic understanding of the intended goals and are in basic concurrence with the desire, intent and need to achieve those goals in the best possible manner.

Although the architect is generally retained by the owner and is directly compensated by the owner, it is the architect's responsibility to be aware of the involvement of all concerned parties and their responsibilities (i.e. owner, contractors, subcontractors, manufacturers, etc.) and to see that these responsibilities are carried out properly and fairly and that no one party takes unfair advantage of another.



In the following paragraphs, we will attempt to indicate how we feel this necessary coordination can be accomplished. We will base the majority of our comments around the responsibilities and procedures utilized by the *Project Construction Coordinator* because we feel that the basic services an architectural firm provides during the construction phase hinge on this position.

A Project Construction Coordinator, in our definition, is the individual who administers and coordinates the construction contract so as to assure

that there is a team effort working toward a common goal which is to obtain for the client all that is rightfully his under the terms of the contract documents.

In today's society, the concern for documenting contractual responsibilities and liabilities is greater than ever before. The legal profession and the insurance companies have brought to the forefront the attitude that no profession, firm or individual is beyond reproach when questions of legal and financial responsibilities arise.

We have no basic quarrel with the concept of the architect standing behind his responsibilities but an over-emphasis on this concern has and is continuing to make the

architect and his consultants extremely cautious and gun shy. This is due to the fact that the cost of the professional liability insurance which architects must carry has increased in some cases as much as 200% to 300% in the past two to three years and is showing every sign of doing the same thing again in the next few years.

We mention this and feel that it is important to address this point due to its overall effect on the American Institute of Architects' and many individual architects' attitudes toward procedures utilized during the construction phase.

The concern for the architects' legal liabilities has substantially changed the wording of the American Institute of Architects' standard agreements and specifications. For example, the architect no longer *inspects* the construction in progress, he merely *observes* its progress.

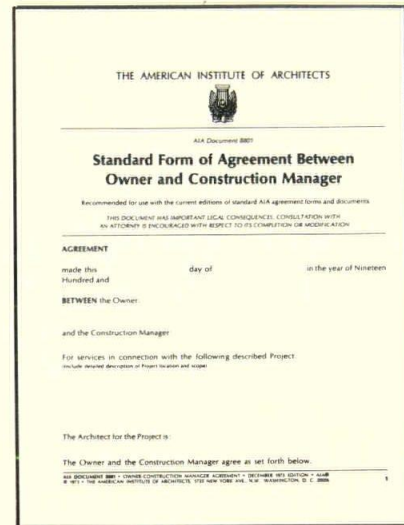
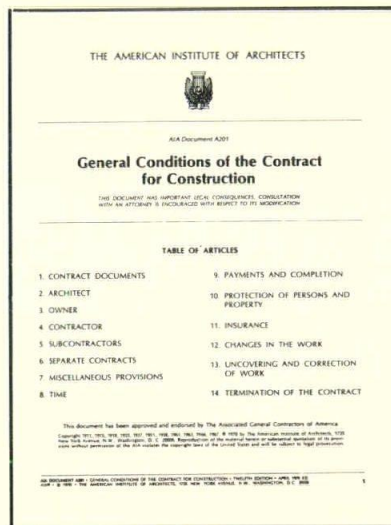
No matter how the wording changes or what the written intent is, the necessary activities and tasks of the Project Construction Coordinator remain primarily the same. If an architect in any way relinquishes any of his necessary responsibilities, he minimizes the chances he has to assure that the client's goals will be achieved.

Although the basic responsibilities of an Architectural Project Construction Coordinator do not substantially differ due to the type and size of construction projects, the degree and intensity of accomplishing the various activities and tasks will deviate considerably.

Some of the things which will vary the activities to some degree are the size of a project, its complexity, its time duration, whether it is negotiated or bid, etc.

If the project is, let's say, over \$4,000,000 to \$5,000,000 in construction value, it should justify a full time Project Construction Coordinator located at the construction site. If it is smaller, it will only justify periodic services which will vary in intensity, depending on the size and complexity of the project and the different states of construction which the project is in.

(Continued on page 40)



DOCUMENTS

CONSTRUCTION MANAGEMENT

AN ARCHITECT'S EXPANDED SERVICE

Richard Allen Peterson

In this geographic area construction management consulting firms have only recently been recognized as a separate and distinct professional service available to owners for the construction of major building projects. The firms providing this service have been, up to now, primarily general contracting organizations which furnished cost data during the design and construction phase.

The publication of AIA document B801 (titled Standard Form of Agreement Between Owner and Construction Manager), provided a much-needed definition of the professional construction manager and of the services he renders. This has promoted a greater acceptance of construction management in both the private and the public sector of the construction industry.

From the beginning of the acceptance of the construction management methodology as a desired professional service, a question that has consistently persisted is "How does the construction manager's role affect the architect?"

It is possible for the architect to provide both construction management and architectural services on a project. This has the effect of reducing the manpower requirement, reducing time delays for decisions, and provides closer control of the extension of the design disciplines in the field. It is also possible for a construction manager to perform construction work on a project directly with his own forces and, in that case, he would be acting as a general contractor on the project. Such an arrangement may involve a profit mark-up against a guaranteed cost of construction, unless the work is performed on a fixed fee plus cost basis. When the two prior situations are joined into a "design build" combination, commonly referred to as "turn-key" construction, the profit mark-up versus a guaranteed cost of construction is of paramount concern to the owner.

Let us assume a client has made a decision to retain the services of a professional construction manager. The relationship between the owner, the architect and the construction manager should be reviewed in order to define the responsibilities and scope of work as well as to establish the lines of communication. Four possibilities are common to the construction industry:

1. Separate, but equal, contracts between the owner and the architect and the owner and construction manager.

2. The construction manager acts as a consultant to the architect, who has a direct contract with the owner.

3. The construction manager and architect act in a joint venture with a direct contract with the owner.

4. The construction manager acts as the project manager with a direct contract to the owner and supervises the services of the architect who has a direct contract with the owner.

If the standard AIA Owner/Architect Agreements are used, there is virtually no overlap of responsibilities with the standard AIA B801 document for the professional services of a construction manager. Construction management's biggest advantage to an owner is the potential for over-all project cost savings.

Typical construction management services include:

1. Cost management — this includes budget estimate, contractor's cost analysis, value engineering study, and life cycle costing.

2. Scheduling — this includes network diagramming for the design phase as well as the construction phase and working with each of the prime contractors.

3. Document review — this is a coordination check to identify potential construction or coordination problems prior to bidding.

4. Bid packages — this is defining separation of work for separate prime contracts as well as pre-purchasing.

5. Site management — this is providing supervision, inspection, construction administration, coordination and communications flow.

Construction projects are generated by an owner's need and usually involve a time frame and/or budget considerations. Combining construction management with project management from the initial inception of a project allows for maximum input into cost savings. It permits an initial time-frame study which can consider such diverse factors

(Continued on page 46)



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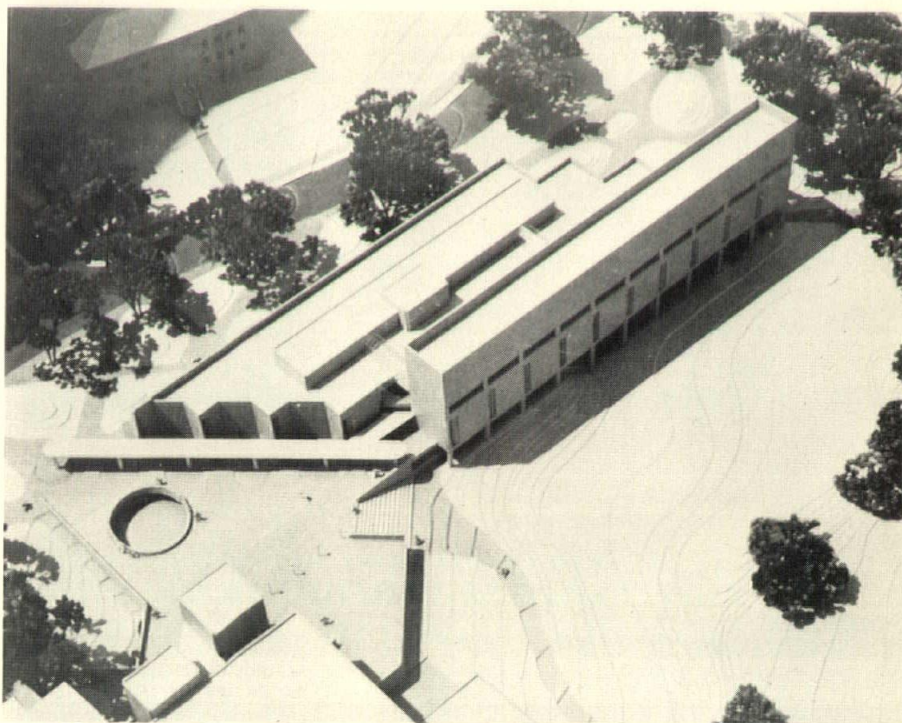
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WORK IN PROGRESS

James I. Lammers

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(UNIVERSITY OF MINNESOTA) LEARNING CENTER PHASE I TWIN CITY CAMPUS - ST. PAUL

A desire to simultaneously satisfy the objectives for the functional planning of the Learning Resources Center together with the implementation of the policies and concepts of the St. Paul Long Range Development Plan, and additionally, that both be accomplished as a phased extension of an existing facility, all have represented an exciting, complex and challenging architectural problem.

Two ideas are basic to the proposed design: The first is that the existing building, representing approximately one-third of the total facility, will function as the core of the new building. A totally new form has been provided by enveloping the building completely on four sides with new construction.

The second idea responds directly to the concept outlined in the Long Range Development Plan which calls for the provision of interior pedestrian corridors linking buildings together. A pedestrian spine has been created as an extension of the concourse in the adjacent classroom building.

Two additional ideas should be noted: The "24 hour reading" room is designed as a

feature along the pedestrian spine. With views outward to the south, skylighted at the north, and ranging in height from one to four stories, it provides a central focus and a point of orientation in the building.

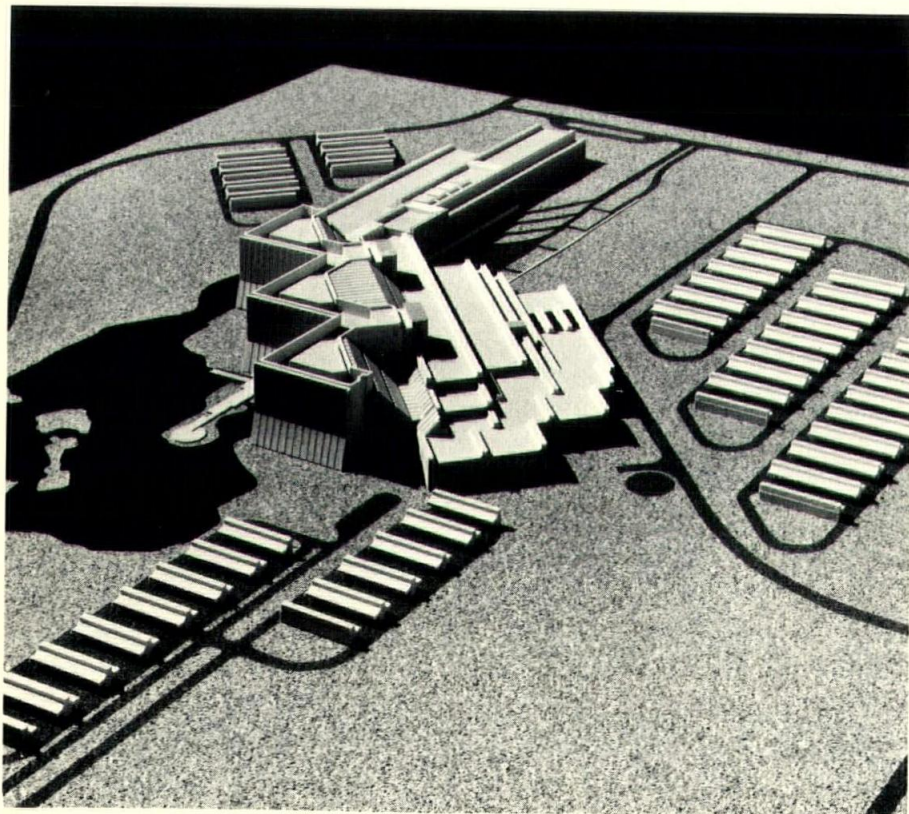
Ramps are provided within the spine to connect various entrance points having different conditions of level. The ramps provide continuity floor to floor, giving an element of flexibility in the arrangements of the various sections of the collections and offer convenience to both staff and user in vertical movement.

In addition to the above ideas, phasing of the building over time has been carefully considered. With an anticipated addition of over 150% beyond the completed Phase I addition, a scheme has been outlined for expanding the pedestrian spine, providing an extension of basic mechanical spaces and structural systems, allowing a tie to a possible underground mass-transit station, and developing other internal pedestrian patterns as an extension of the basics provided in the Phase I facility.

ARCHITECTS
Frederick Bentz/Milo Thompson & Associates, Inc.



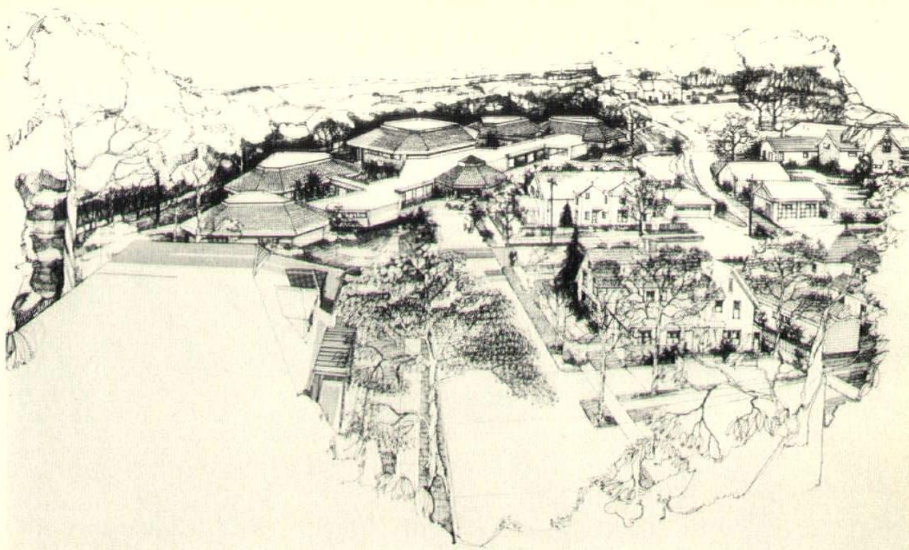
Booth Manor, a residence for the Elderly in Minneapolis, is sponsored by the Salvation Army. The \$2,631,000 apartments complex will occupy the former site of the Salvation Army's Evangeline Girls' Residence. The federally financed project was designed by The Architectural Alliance, Minneapolis.



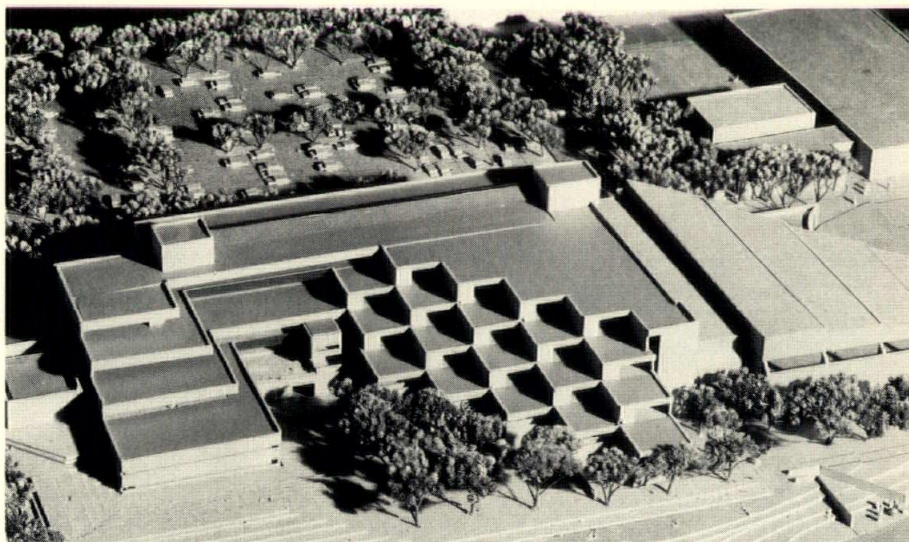
*Taif General Hospital
Kingdom of Saudi Arabia
Ellerbe/DMJM*

The 330 bed acute care and long-term convalescent hospital, located 3 miles north of the city of Taif. Supporting site facilities include housing, educational, religious, commercial and recreational buildings, with base support and utility plant. The site has a high density development on roughly 100 acres.

Winsor/Faricy Architects of Saint Paul are the architects for the Phoenix Home, a residence for the physically handicapped to be located east of St. Paul. Based on a "normalization" concept the project will house 48 persons in 4 residential type living units. Construction is expected to begin in spring 1976.

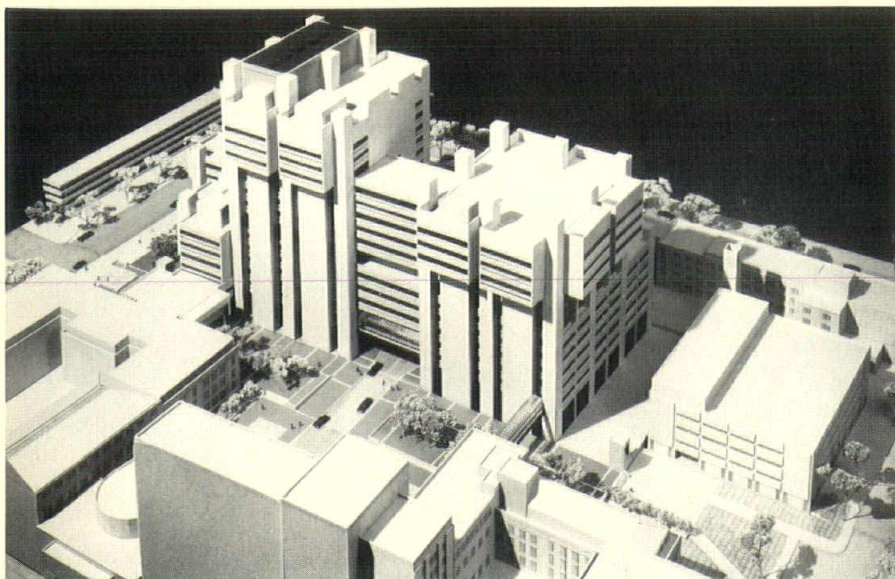


The new Law School to be located on the West Bank of the Minneapolis Campus is unique in being planned and engineered as the most energy efficient building in the University system. Designed for Parker/Klein Associates, Minneapolis, the building features terraced roof gardens which minimize heat loss/gain. Judicial use of sun orientation, screening, reflective glass and sub grade class rooms further minimizes energy needs.

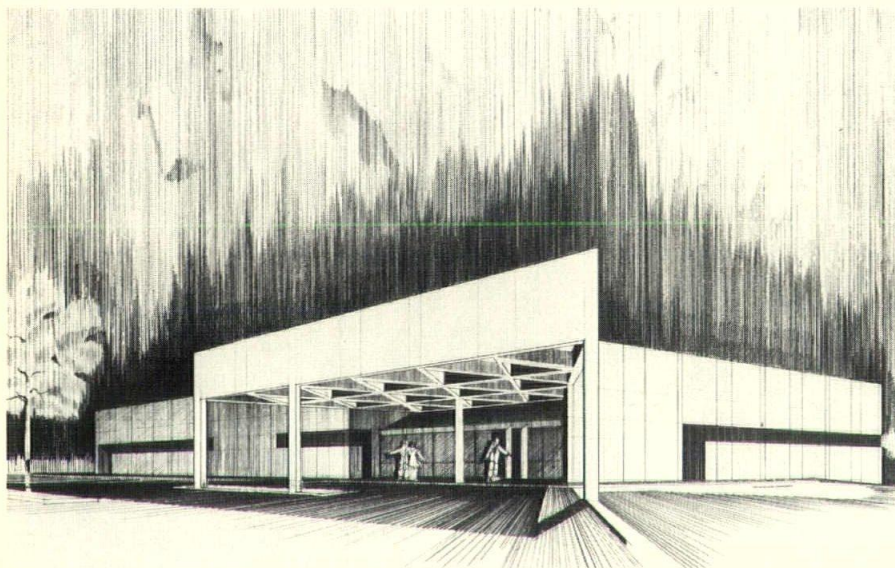


In Duluth the Bayhill Condominiums and Marina is presently being designed by H.W. Fridlund, Minneapolis. The project will be constructed in phases to begin in the spring 1976. Two 12-story towers, townhouses, marina and recreation facilities are contemplated.

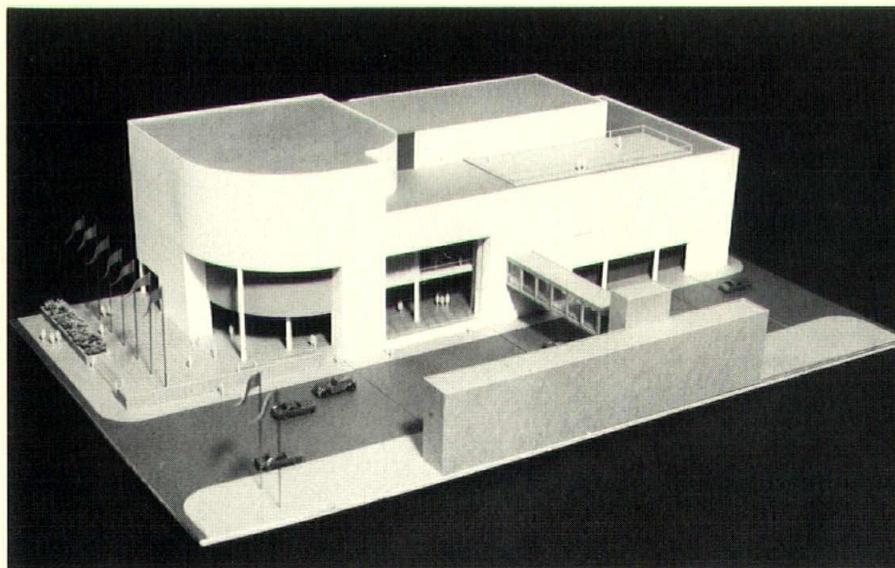




Currently in working drawings is the B-C phase of the Health Sciences Expansion, Minneapolis campus. Designed by the Architects Collaborative in association with the Cerny Associates, Hammel, Green & Abrahamson, and Setter, Leach & Lindstrom. The B-C phase will house out-patient services and medical research labs.



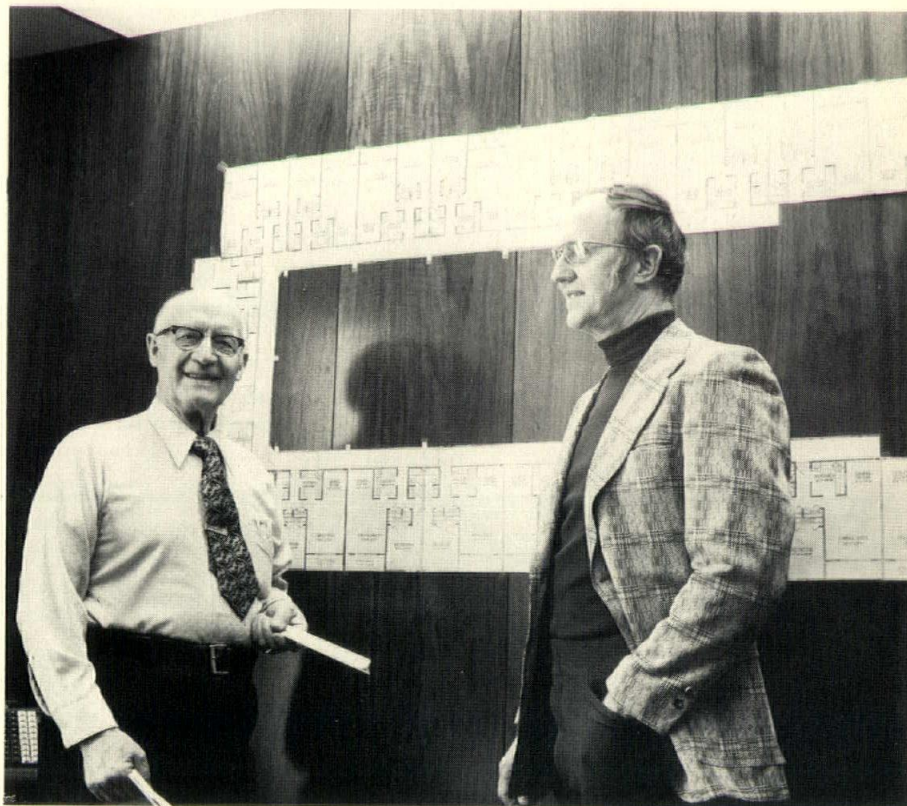
Construction is underway for the new headquarters of the Automobile Club of Minneapolis located in St. Louis Park. The new structure will occupy 35,000 square feet and feature a drive-up window for domestic travel routings. Architects are Setter, Leach & Lindstrom, Minneapolis.



Still another project designed for the 7A block in St. Paul is the Minnesota Science Museum. This \$5 million project will contain exhibit spaces, theater and planetarium. Hammel, Green & Abrahamson are architects for the project which is expected to start construction in summer 1976.

TENACITY AND INGENUITY

Wallace Neal



Both Gunnar I. Johnson and his son, Iver, say the project that gives them the biggest sense of achievement is the re-building of the 1600-foot long East Breakwater at Two Harbors, Minnesota. To understand why this ordinary-sounding job rates so high, you have to know the father-son team who started Gunnar I. Johnson and Son, Inc., as a general contracting firm 25 years ago this May.

At only 19, Gunnar came alone from Norway to work on an uncle's farm in Michigan. He was quickly disillusioned. The \$75 pay for his first six months as a farmhand was far less than his earnings working on his dad's farm in Norway. He had helped his dad build some farm buildings, so he decided to sign on as a carpenter's apprentice. That was 1923.

His first job as a carpenter foreman was in 1927, working for James Beck Co. on the Ann Arbor, Michigan, football stadium. He kept working for Beck and others until construction dried up in the early 30's.

"No use trying to find a job then," says Gunnar, "so I tried contracting by myself." In the Delavan, Wisconsin, area he built two houses, two barns and an apartment building. One of the barns, he recalls, was converted from an old church. There wasn't a nail in it. It was built of timbers, all dowelled together. The fascia was made of three-foot by 30-foot sections of solid white pine.

After a year-and-a-half in contracting, Gunnar found competition getting tougher. He recalls bidding \$6,000 for an entire barn including stanchions. The

owner asked him to separate out his costs, and when Gunnar told him he figured 80 cents per hour for himself and 70 cents per hour for his men, the owner complained that he could hire all the help he needed for one dollar per day. "I said I won't do it for that," Gunnar recalls, "and I just tore up the bid sheets right in front of him!"

In 1932 he moved to Minneapolis with his wife of five years and their children, Iver and Ann, and began working for several large contractors.

Gunnar was general superintendent for Hagstrom on a large Army hospital project in Temple, Texas. He successfully met a six-month schedule to erect 30 brick-faced one-story infirmary

buildings plus six remodellings, but not without some difficulties along the way.

There were seven inspectors on the job and Gunnar was aggressively pushing them plus all the trades and subcontractors to keep the job moving. When painters dragged too far behind, he went ahead and installed radiators. That did it—mutiny was in the air. Some felt Gunnar had to go. The Army called a formal hearing. The head purchasing officer on the job testified that Gunnar was not fit to run the job—"He can't even talk English." (Gunnar admits that even today he has what he calls a Norwegian "brogue.")

"Then it was my turn to stand up

and defend myself. I felt like I didn't care what I said, I just wanted to get out of there alive! So I just said that their purchasing officer didn't know anything about construction, and that I had to do it my way to get the job done in time."

The Army brass concluded that Gunnar had been doing a "remarkable job" and suggested to the others not to fight him but join him. The job was completed on time.

When his son Iver was 13 he was left home with a sitter for a few weeks while mother joined Gunnar at the Army hospital job. Gunnar laughs in telling of the day they came home: "I could tell the stairs to the basement looked diff-



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erent somehow. Iver had built a ten-foot dinghy down there and he couldn't get it out. He tore out all the treads and risers, and then re-built the stairs, but they were a little crooked."

Iver's boat-building had started even earlier. When about 8 he made a miniature toothpick navy — little six to eight inch long battleships, cruisers, even submarine chasers with depth bombs. In his teens he built a succession of full-size fishing boats and sailboats. He and three buddies built a working tugboat, used it a while on the Minnesota River and then sold it to a boat yard operator. At 15 he and his friends bid successfully for salvage of a new 36-foot cruiser which had burned and sunk in the Minnesota. They dived to the murky bottoms and brought up the engine, keel and other parts and then proceeded to build a 36-foot plywood cruiser in the Johnson back yard. It took more than a year.

One day while that project was underway, Gunnar received a complaint call from the telephone company. It seems the youthful boat enthusiasts had tired of coming in the house to use the phone. They had spliced into the phone line running conveniently a few feet above the cruiser cabin.

Iver's ingenuity persisted and during his first year in college he and a friend made a machine to manufacture bowling pins. The pins were beautifully turned out but they found competition with the large firms too severe. Next, the two entrepreneurs decided to make steel clothes poles. Again, although a number were sold, they found it tough to market them in quantity.

Gunnar owned four vacant lots at 52nd and 31st Avenue in Minneapolis, and he told his son, "If you'd put as much effort into building houses, you'd do a lot better." By the time he finished college Iver had built three houses and had made enough to buy a pickup and put \$2,000 in the bank. The truck and money became Iver's



Johnson family portrait — 1954. All but Iver's baby daughter Deborah, center, worked for the firm in its early days. Seated are Iver and his wife, Marilyn. Standing are Agnes and her husband, Gunnar. "Debbie" is now married, will graduate from college this spring.

share of the capital he and his father invested to start Gunnar I. Johnson and Son, Inc. The day Iver graduated as a math major from the University of Minnesota the business was ready to take on its first contract.

The idea of starting their own construction firm had been family talk for several years beforehand. Agnes, Gunnar's wife, hadn't the formal training for the job but insisted she was going to be office stenographer and bookkeeper for the new firm. She prepared, practicing on a beat-up antique typewriter, took on the job when they started and kept working there until 1970.

One of the firm's first jobs was remodelling the horse barns at Fort Snelling — a \$14,000 project, and some fragrant memories, no doubt. The first few years much of their work was on military projects. All the work had to be "by the numbers," Iver says. "The military required precision paperwork." Evidently the cigar-chomping, pencil stub contractors didn't accommodate to that too well, so the Johnsons found that work easy to get.

Then school buildings began blossoming everywhere. Gunnar I. Johnson and Son, Inc., built their share. Among some early ones was a series of elemen-

taries in Bloomington. They built the White Bear Senior High School, the first circular school in this part of the country. They built Lindbergh in Hopkins, known as one of the most deluxe high school plants in the area. Their largest contract was the \$5.2 million Anoka Senior High School.

Other major projects they take special pride in are the dramatic O'Shaughnessy Auditorium and Fine Arts Building ("A financial disaster but an artistic success," says Iver) and an office building at the College of Saint Catherine, Saint Paul; the Marcel-Breuer-designed Library and Science Hall at Saint John's University, Collegeville; and the main building and two dormitories at Golden Valley Lutheran College, Golden Valley.

In their record year, 1970, they had \$25 million in construction work under contract.

Ann, Iver's sister, worked there in the early years and still works part time. Her husband, Jim Dosch, joined the enterprise in the late 50's. He is now Office Manager and a part owner. More recently, two project superintendents, Ray Olson and Merle Nordeen, were named Vice Presidents and be-

(Continued on page 36)

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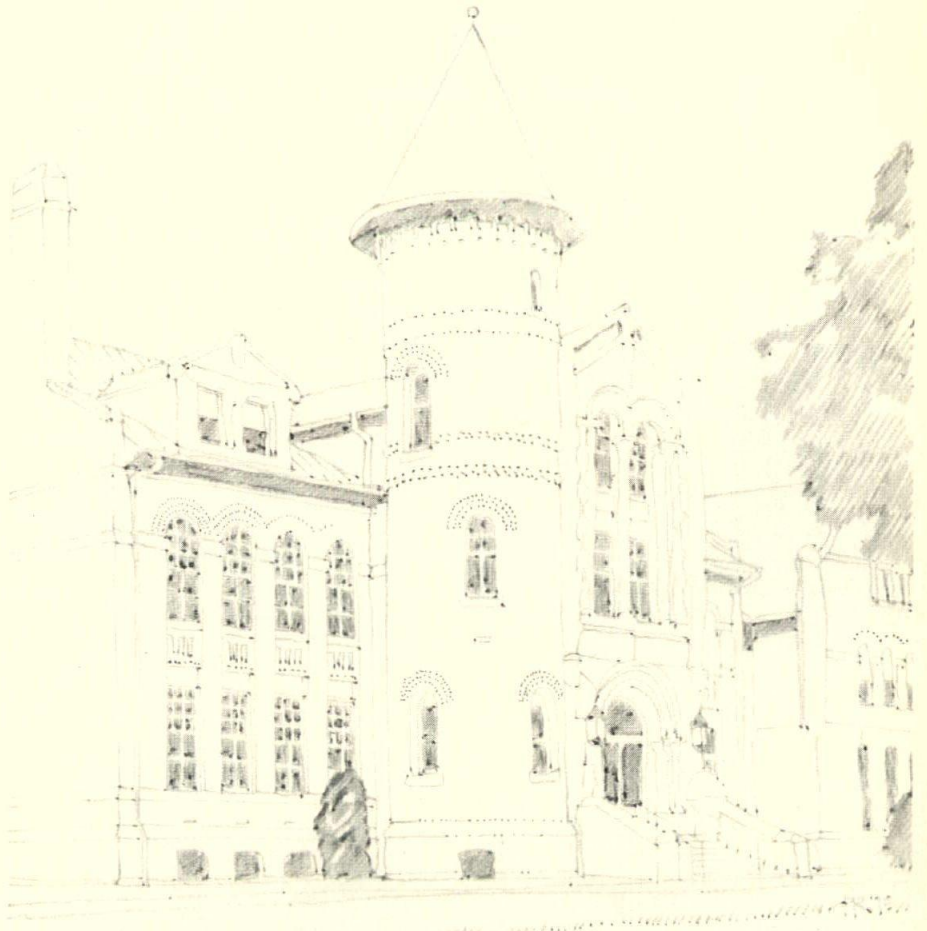
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OWATONNA-RECOGNIZING THE OLD THAT'S WORTH SAVING

Mary Leach



Owatonna is a very special town with several unique qualities. This city of 16,500 is located on the Straight River about an hour's drive south of the Twin Cities on Interstate 35. Called a "city of friendliness and beautiful parks", Owatonna has more industry and business activity than most towns twice its size, and is the home of 30 national business firms. At least six of these began in some local dreamers' attics, basements or garages and have grown to international trade.

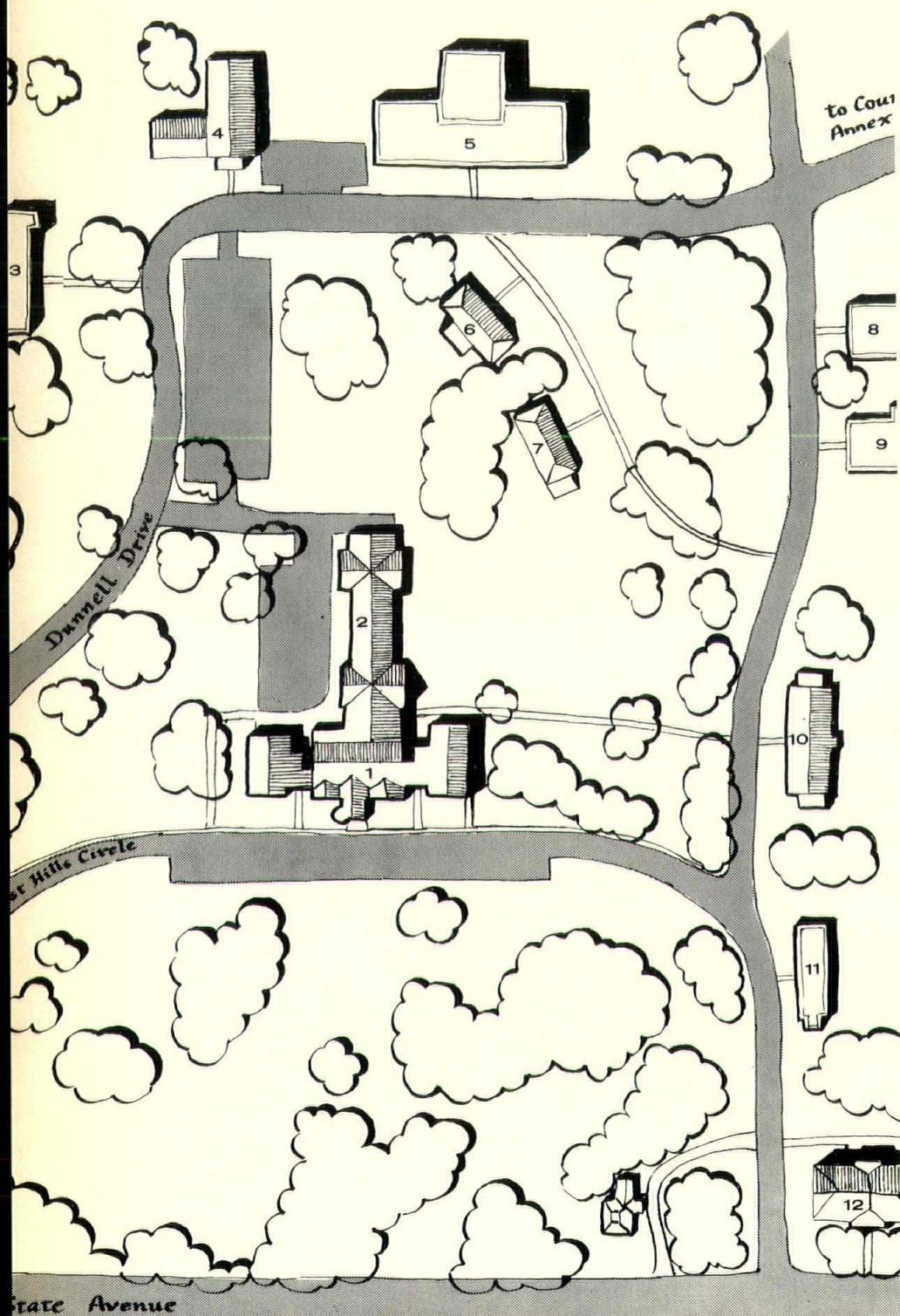
Architectural fame is claimed for this community by the Louis Sullivan bank building located in the heart of the business district across from Central

Park. Built in 1907 it is now the home of Northwest National Bank. This beautiful example of Sullivan's "Prairie banks", with its tapestry brick, Lake Superior Sandstone and terra cotta trim, is a timeless landmark.

John Galsworthy has said, "How to save the old that's worth saving, whether in landscape, houses, manners, institutions or human types, is one of our greatest problems, and the one we bother least about." The citizens of Owatonna are dealing with just such a situation — indeed are turning a deserted institution into an active place for people.

On the west edge of the residential

1. Administration Building
2. Arts Center wing
3. Park and Recreation department
4. Gymnasium
5. Classroom Building - Little Theater auditorium
- Bookmobile
- 6 & 7. Dormitories that remain empty
8. Carpenter Shop - leased by school district for storage
9. Power Plant
10. Old hospital building
11. Former baby hospital
12. Vocational Building - leased by day care center



area, adjacent to Interstate 35, is a parcel of rolling land, laced with a variety of stately old trees and dotted with vintage buildings. Looking back in time we see its recorded history beginning in 1885 as a State School for Dependent and Neglected children. Situated on a knoll, in the geographic center of the campus, is the original Administration Building which was completed in 1887. The architecture is derivative of Norman Romanesque, as expressed by round arched elements on the East facade and an engaged circular tower with a flared, conic-shaped circular roof. The construction is of brick masonry with Kasota limestone embellishments. With all the dignity of a 19th century castle it reigns over the smaller structures that surround it on curving streets. It is empty now. But therein lies the story of a town, a problem and a prize possession.

Times change and the need for the school changed. In 1946 it became a home and school for educable retarded children, and continued as such until 1970, when the State closed it entirely. The land was divided, the farm acres sold, and another parcel, with several dormitories, was sold to a developer. In 1974 the remainder, 75 acres with 27 structures valued at over \$1 million, was offered to the City of Owatonna at a purchase price of \$200,000.

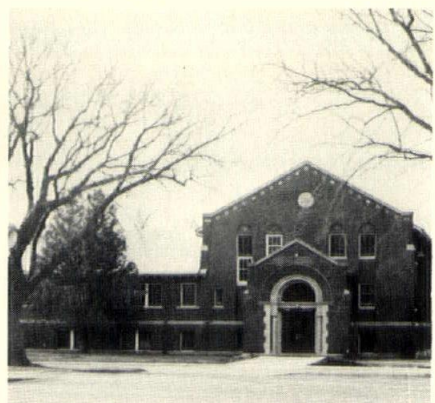
A citizens information committee was formed to study the pros and cons of such a purchase and to carefully evaluate the buildings. Brochures that briefly and accurately listed the facts, as established by this committee, were distributed through the local super markets.

In addition, open house was held one weekend in April when the people of the town were invited to come see for themselves. Guided tours were offered and volunteers from the citizens committee were stationed in each building to answer questions.

One week after the open house citizens went to the polls and a 93%



Corner stone by the main entry to the Administration Building bears the date 1887.



The well-kept gymnasium has two gyms, a jogging track, and an indoor pool. Six new tennis courts, covered by a huge "bubble", are adjacent on a lower level behind.

majority voted in favor of the purchase.

And so the bargain buy was made and the old State School property became "West Hills", a new name for a new life as plans were formulated to use the park-like setting for cultural and civic programs. A seven man commission was appointed by the mayor to take charge of the complex and make recommendations to the city council when major decisions are needed. A smaller building utilization committee interviews prospective tenants and reports back to the commission.

Among the first tenants were Little Theater of Owatonna and the Park and Recreation Department. The former classroom building has an auditorium that seats 600, with a small but adequate stage. LTO is an active group of local amateur actors that presents stage plays 3 or 4 times a year.

Park and Rec. is temporarily housed in old classrooms while their own building, a nearby dormitory, is being remodeled. The Bookmobile, a library on wheels that benefits out-of-the-way areas, leases the old library room in the same building. The existing shelf space provides ideal storage for books and periodicals between trips.

Two gyms and a jogging track are now equipped and used regularly by exercise groups. The Golden Agers hold square dances in the gym.

Down the hill just behind the gym, six new tennis courts have been built by the city. During the cold months the courts are covered by a giant bubble operated by private enterprise.

The Steel County Courthouse had been bursting at the seams for some time when the county board decided to consider moving some offices to West Hills. The newest dormitory on the campus was purchased from the city and remodeled for a County Annex. New offices now using this building include the County Engineer, Welfare Office, and County Extension Offices.

The old power plant still provides

steam heat for most of the West Hills complex, via underground tunnels, and at the time of purchase was geared to high pressure steam. This, however, requires the full time attendance of licensed engineers. To help the budget the system was converted to low pressure.

One of the older buildings, a brown brick, once housed vocational classes for the State School. The voices of young children again brighten its halls as a day care center, called "Wee Pals", now leases the space.

The water tower and a deep well were sold to the Owatonna Public Utilities, substantially boosting their existing resources.

There are other smaller structures at West Hills, garages, a barn and greenhouse, and two small houses among them. The houses are rented to two policemen and their families. Part of the rental agreement is that the men patrol the grounds and buildings at odd hours with their German shepherd dogs to provide an added measure of security.

A place for the arts

When the building at West Hills were first explored on that weekend of open house, one was discovered that was ideally suited for an Arts Center. It was the west wing of the Administration Building and had been recommended for demolition by the investigating committee. It is interesting to note that the original cost of the building had been \$50,000, and the estimate for demolition was \$60,000.

On May 3, 1974, an Arts Council was formed with the purpose in mind to establish an Arts Center in the large west wing. The group was later incorporated as a non-profit organization and signed a lease with the city.

A designer was hired to lay out plans for galleries, and display panels were constructed by amateur carpenters working evenings and weekends. Fifteen rooms were cleaned, repaired

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and painted. A local contractor loaned scaffolding to facilitate the work, since ceilings on the main level are 15 feet high. Floors are of ceramic tile and terrazzo and in excellent condition.

Many of the volunteer helpers were retired people who enjoyed using their time and talents. A retired plumber repaired drains and faucets. A retired carpenter trimmed and hung doors. Others repaired windows and accomplished dozens of other odd jobs.

The old kitchen was transformed into Studio I.



Studio I doubles as a gallery for display of textiles.

On the lower level was a bakery complete with huge oven and flour mixer. The bakery became Studio II.

Farther down the hall is Studio III, an old storage room lined on two sides with open wooden shelving.

The old butcher shop, after much scrubbing with soap and hot water, made a handy custodian's work room. Walk-in coolers provide much needed storage space.

The office, a former steam table room on the main level, was furnished with desks and chairs from Federated Mutual Insurance Company when they

refurnished one of their own offices.

On May 3, 1975, one year from the day we met to organize an Arts Council, the doors were opened for the gala celebration of the first show. The galleries are complete with track lighting and colorful acoustical panels. A lovely laminated glass reception desk was designed and built by Viracon, a local environmental glass manufacturer. They also built glass display cases on steel frames, and steel frames for benches. The benches were topped with foam padding and earth-toned fabric by some handyladies.

Refreshments were served in the Performance Hall, formerly a dining room, with shining white octagonal tile floor and high beamed ceiling.

Tested and proven acoustically ideal for music, the hall seats 200 for concerts or recitals. Stacking chairs were purchased with the aid of funds raised by the annual Women's Club Holiday Ball. The room is also equipped with portable stage sections and choral risers, furnished by Wenger Corporation, who builds them.

An antique square grand piano was donated by a local gentleman in memory of his wife. The piano was made in Boston in 1861 and arrived in Owatonna on a covered wagon.

All in all, at least 75 individuals and 30 businesses and industries have contributed time, materials and equipment. Any project so enthusiastically supported by the community is bound to succeed. And part of the success is in graphically demonstrating that a once doomed building has a lot of life left in her.

Plans for growing

One giant step in the direction of preservation was made when the Administration Building was added to the National Register of Historic



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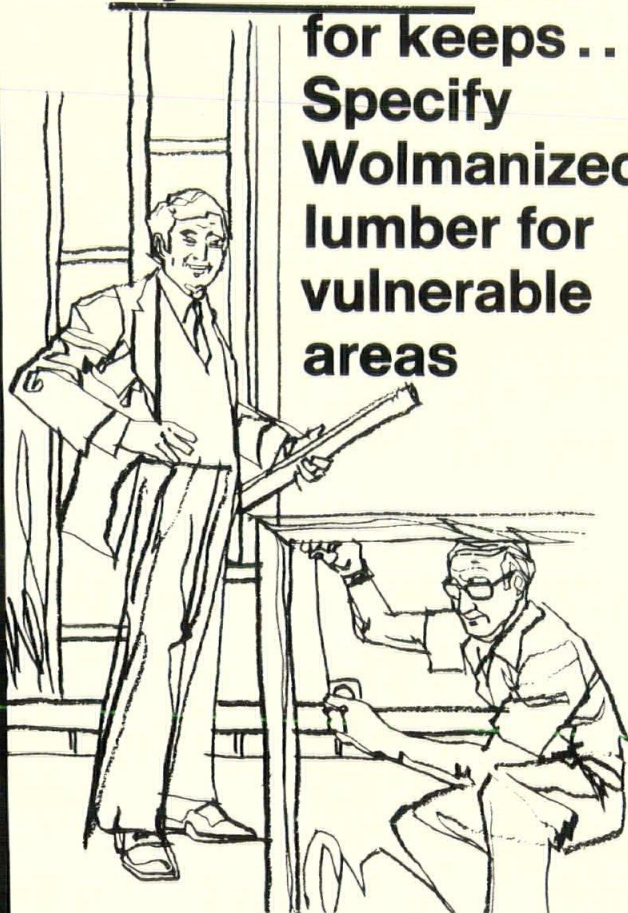
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Places. Another was in the hiring of architects Brooks Cavin and John Rova, of Saint Paul, to do a feasibility study and draw basic plans for using this stately old building for city government. Midwest Planners were also hired to devise an overall plan for use of space in West Hills that is compatible with the rest of the city.

To help you see the complete picture you need to know that City Hall is presently located upstairs over the fire station. Space is inadequate and antiquated, and the only access is a steep tall stairway. If one is physically handicapped it is an insurmountable obstacle.

The Administration Building at West Hills, designed by architect Warren B. Dunnell, is ideal for city government. The Greeks saw the psychological advantage of putting government buildings on a hill. Government needs to be literally looked up to, and that is true today more than ever.



One of the older buildings on the campus, this brown brick was once home for vocational classes. The present tenant is a day care center for small children.

A chapel room on one end has a ground floor entrance and would be more than adequate in size for public attendance of City Council meetings. The City Clerk's office and related space would be nearby.



The old State School Administration Building, an ideal place for City Government.

The opposite end of this front section would accommodate the city engineer's office and drafting rooms, with the main entry opening into a connecting hall. Upper floors could be developed for office space in later phases.

On the north a parking lot is planned and a ground level entrance will lead to a new elevator.

On the sunny south side of the arts wing, a multi-level sculpture garden will be created. Underneath the Performance Hall, with its high arched windows, a rathskellar will some day entertain guests with an atmosphere of wine cellars and a cask of amontillado. Excavation near the building would add an outdoor eating area, opening from the restaurant and having steps leading up to the sculpture garden. Above, a new large entry will lead to a grand foyer connecting the Performance Hall with the City Hall area.

There are empty acres between the main part of West Hills complex and the freeway. These may one day be sold, put back on the tax rolls and the profit used to finance other West Hills projects.

At this point we are limited only by our imagination and determination. The German philosopher, Goethe, put it this way: "What you can do, or dream you can, begin it; boldness has genius, power and magic in it". □

Mary Leach, a free lance commercial artist and interior designer, is President of the Owatonna Arts Council and a member of the West Hills Architectural Committee.

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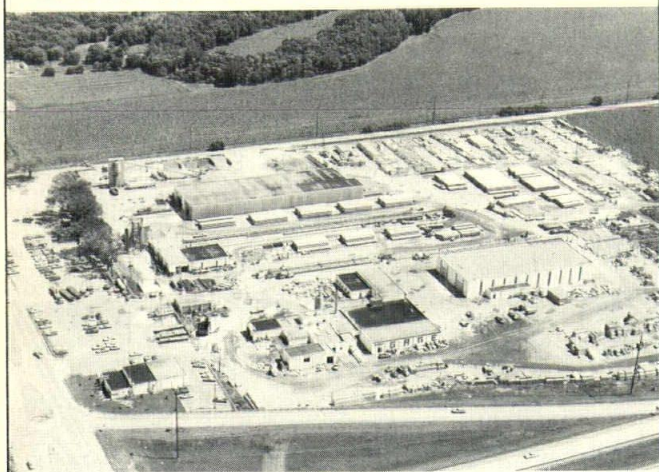
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TENACITY AND INGENUITY

(Continued from page 27)

came ownership participants. The firm has had a profit sharing plan for about 15 years.

How are they doing in today's slim construction market? Iver says it's difficult to get a conventionally bid project now. There are almost always some desperation bids submitted, and you might have to go up three or four bids to find the price needed for a profitable operation. The firm remains busy, however, with seven negotiated projects currently under contract.

Iver's inventive nature has spawned another venture which may help offset the current slump in bid construction. It's called Glas-Con, Iver's trade name for spray-applied fiberglass-reinforced concrete.*

*Spray applied to forms to produce strong, thin membrane panels.



Burt Iwaszko, left, and Iver Johnson inspect form used to produce sample Glas-Con sections. Iwaszko is in charge of production for the glass-reinforced concrete operation.

In 1968, Gunnar became the first to be awarded the Minnesota Society of Architects' Annual Construction Industry Award. The citation read: "For consistently superior craftsmanship and for his contributions toward the



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faithful execution of the designs of grateful architects."

The firm has a reputation for craftsmanship, ingenuity and good project management. This seems to rise quite naturally out of Gunnar and Iver's background and personalities. Gunnar's relaxed smile and lilting accent tend to disguise a hard-driving tenacity and a penchant for detailed planning. Although he says he's "pretty well retired now," he was out one recent wintry day checking workmanship on their jobs and, he says, "I watch them to be sure they are being run in the most economical way." The two weeks previous to that he had spent time drawing up layouts for concrete work. Cutting formwork lumber, bracing and staging the work was all being pre-planned on paper for use by the construction foreman — that's quite typical of this firm's approach to running a building project.

Iver puts a joyful enthusiasm into everything he does. He seems to get his biggest kicks from coming up with novel approaches no one else has thought of. Hauling sail on Lake Superior or listening to bids at a letting, he's an excited competitor.

Knowing Gunnar and Iver, it's easy to understand why they might single out the Two Harbors breakwater job as a favorite.

The East Breakwater was originally built in 1942. Its base was a wide ridge of dumped boulders, stretching out across the harbor almost a third of a mile into waters more than 60 feet deep. Extending from this base from 20 feet below the surface to about six feet above the water line was a crib structure made of 12 inch square fir timbers, filled with boulders.

In 1970 The Corps of Engineers took bids on restoring the weather-damaged above-water portion, converting it to a concrete structure. The plans called for underwater cutting-away of some of the timber structure, and placing 12½ ton pre-cast concrete

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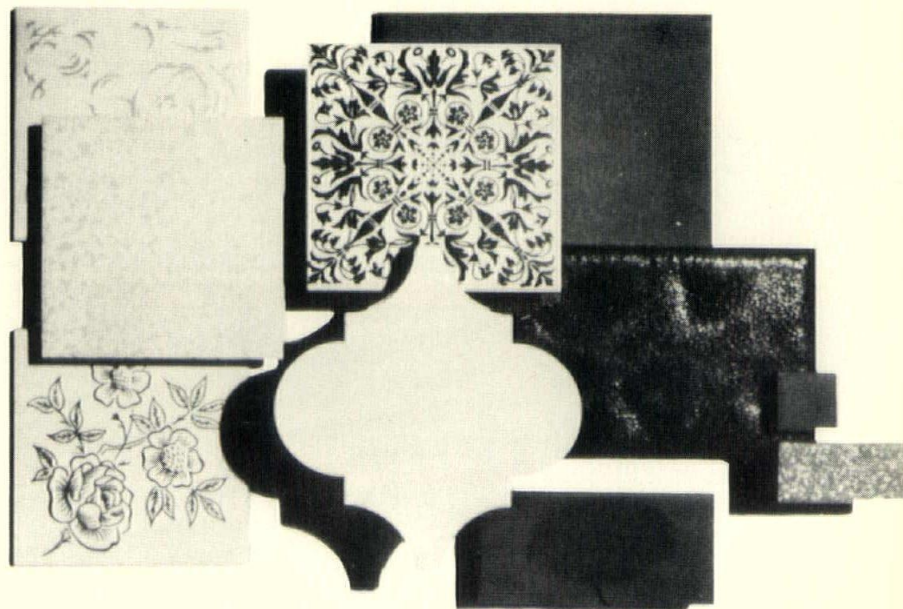
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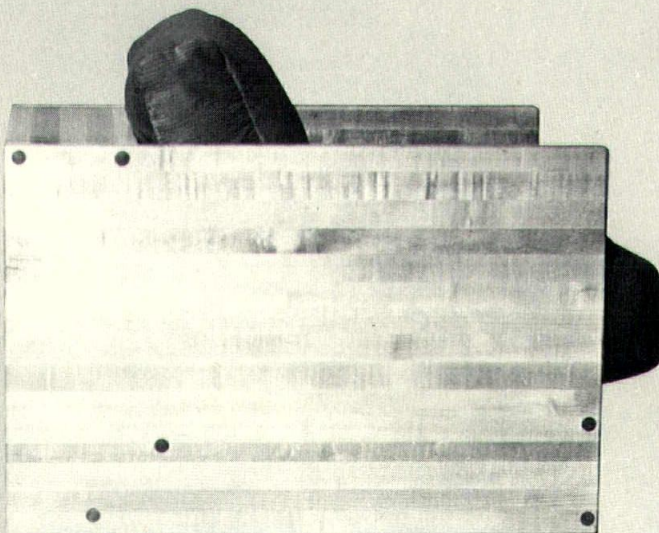
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sections. An alternate was permitted for poured-in-place concrete. It was a job geared for a marine contractor.

Iver says he bid it because it was near their North Shore cabin, and "because it was interesting." The Corps, he found, planned on pre-cast because they assumed the contractor would work off a rail siding in the harbor. A pre-cast shop could be set up there, and the big blocks barged out and placed with a floating crane. Iver could see that the crane would have to alternate from the inside to the outside of the long breakwater for each succeeding placement, making it a slow process. He noticed that specifications called for the contractor to provide his own site access. Off he went to the register of deeds office, where he found there was a perpetual easement over private land to the land end of the breakwater, for Corps maintenance. Iver came up with his own unique approach to the job, and submitted a bid, based on the poured-in-place alternate.

His bid was \$825,000. That was \$500,000 below that of the next lowest bid, and other bids ranged up to \$1,600,000. The Corps offered to let them out of it. Gunnar confesses saying to Iver at that point, "Let's get out." Iver persisted. They took the job, which had a two-year completion schedule, finished it in four months and made a clear profit of 30 per cent.

Iver's plan was to use the land access. He built a concrete drive over the first 300-foot section where the rubble was above water and there was no cribbing. After preparing the timber crib footings, the rest of the job was erecting forms, making pours, and repeating out to the end.

Iver recalls the Corps officials were nervous about using this method. They told him waves might get 15 feet high, and break his forms before the con-

Gunnar and Iver Johnson liked the challenge of re-building the East Breakwater at Two Harbors, Minnesota, for the Corps of Engineers.

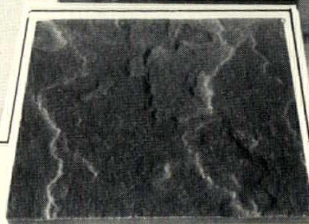
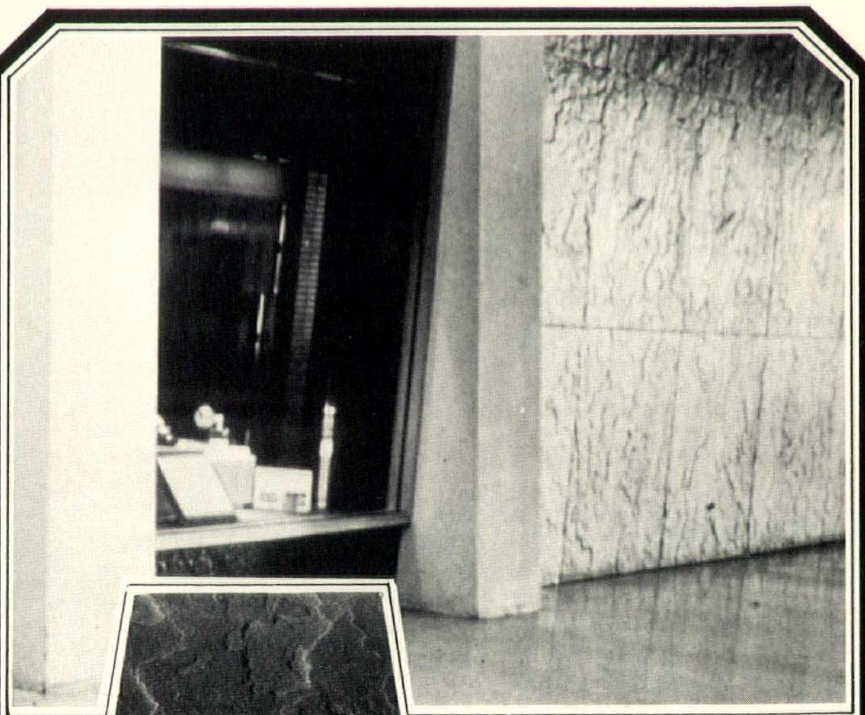


crete would set. But Iver told them he'd been sailing on the lake for 15 years and never saw waves that high at Two Harbors. Summer weather typically is not violent as it tends to be in the fall and winter. He says he had only one or two days where weather held up pouring.

Later, one of the other bidders saw Iver and asked how he did it. What kind of marine equipment had he used? Iver said all he had was a small pontoon boat with a 25 horsepower engine. The other contractor laughed in disbelief. So did Iver — all the way to the bank. It was the truth.

A typical general contractor? Hardly. But it could be said that Gunnar I. Johnson and Son, Inc., is representative of the different breed that make up most successful general contracting firms. □

Wallace Neal was for 22 years a part of W.E. Neal Slate Co., manufacturer and subcontractor of chalkboard and partition products, the last 10 years as president and owner. He has been active in industry organizations, including CSI, CCI, and the Construction Industry Cooperative Committee of Minnesota. In 1974 he did a mid-career shift back to being a professional writer and consultant, a career begun initially after graduating with a BA in Journalism from the University of Minnesota in 1950.



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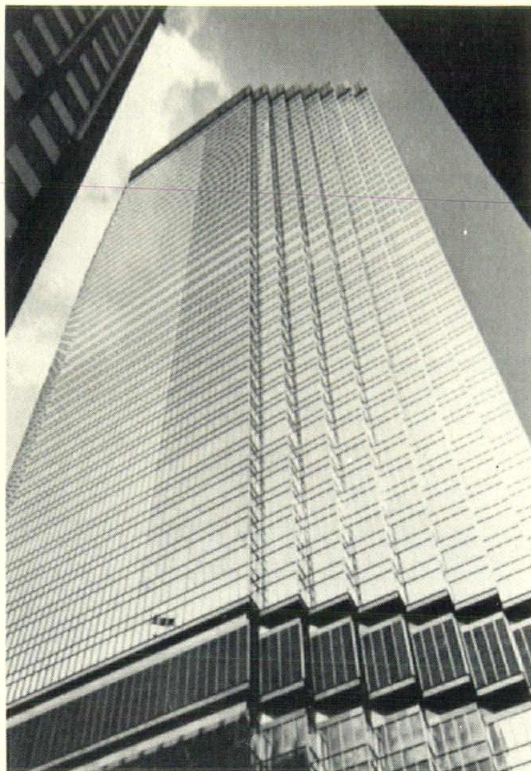


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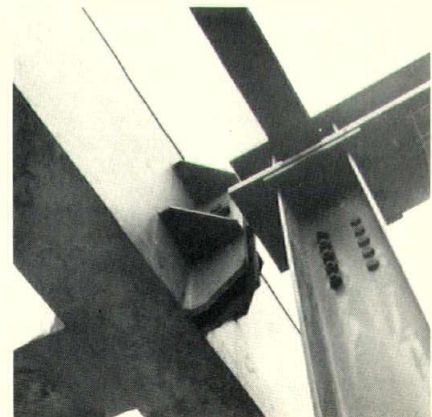
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THE ARCHITECT WITH THE HARD HAT

(Continued from page 18)

A negotiated project, where the prime contractors may be a part of the design team long before the contract documents are completed, will require a slightly different service than one in which the contractors are selected by competitive bidding after the completion of the contract documents (working drawings and specifications).

In order to properly perform his responsibilities, we feel a Project Construction Coordinator must have a basic knowledge of the architectural profession. He must also have a basic knowledge of the construction industry and a thorough knowledge of construction techniques and procedures required to implement the actual construction of a physical facility. He can't be expected to be an expert in every aspect of construction, but he must have a good overall knowledge, understanding and appreciation of the various construction trades and their methods of operation. He must also be able to clearly read and interpret the technical drawings and specifications. He must have a personality which allows him to converse and communicate with the construction tradesmen as well as the various architectural and engineering professionals and the client. This individual may be an architect or he may be a person who has come up through the ranks of the construction industry. Often on smaller projects, the Project Architect will act as the Pro-



ject Construction Coordinator during the construction phase.

The basic responsibilities of the Architectural Project Coordinator are as follows:

A. To act as the prime liaison between the architect and his consultants, the contractor and the client regarding all construction matters.

B. To attend and participate in a pre-bid conference scheduled and conducted by the architect at the time of issuing the project for competitive bidding. This conference should include the contractors who desire to bid the project, the client and the architect and his consultants. The purpose of the meeting is to clarify the scope and time frame of the project, the bidding procedure and to answer any questions which might be raised by the contractors.

C. To schedule and conduct a pre-construction conference following the award of the construction contracts, and prior to commencement of construction. This conference should include the contractors, the owner and the architect and his consultants. Its purpose is to establish a clear set of procedures and understandings as to how the organization and coordination of the construction phase will be handled by the Project Construction Coordinator.

D. To observe the various phases of work, techniques and materials used on the project and to see that they conform to the construction documents.

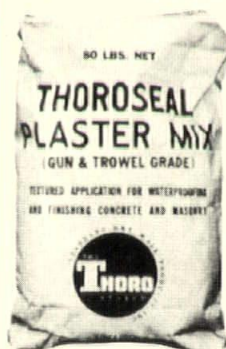
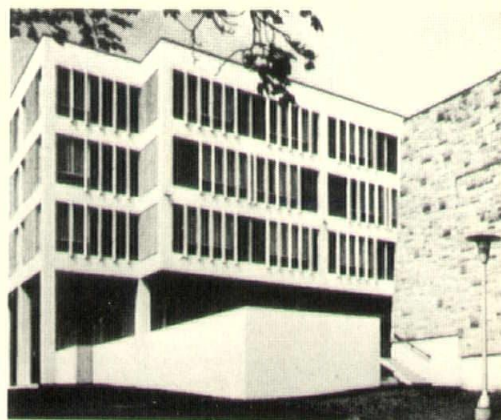
E. To interpret the working drawings and specifications. Any questions regarding these documents should be brought to the attention of the Project Construction Coordinator by the contractor and answered by him directly or after he has reviewed the question with the architect or his consultants.

F. To schedule and preside over periodic construction progress meetings and to document and distribute minutes of all meetings to all concerned parties.

G. To maintain a daily job log which documents all pertinent facts, discussions, decisions, etc. regarding the project during the entire construction phase.

H. To prepare and submit to the owner, periodic written progress reports. We generally prepare these on a monthly basis in addition to the weekly progress meeting minutes and the notations in the daily job log.

I. To issue field directives for any revisions or additions to the contract documents and attach any required supporting documentation. These field directives may be instigated due to a field condition, a client's request, a contractor's request, an architect's directive, etc.



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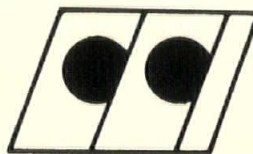
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J. To prepare and distribute an official change order to the construction contract when required. One change order may include one or more field directives, which could result in an add, a deduct or in no change to the amount of the construction contract.

K. To coordinate during the construction phase the efforts of the architect and his specialized consultants (i.e., mechanical, electrical, structural engineers, etc.) and to see that they visit the construction site as required to observe their respective phases of the work.

L. To keep an accurate set of marked-up as-built working drawings and specifications denoting any basic revisions, additions or deletions to these documents which occur during the course of construction.

M. To maintain or be aware of the location of a complete set of all shop drawings and written project correspondence in order to coordinate all aspects of the work.

N. To receive, review, correct if necessary, and recommend for payment the contractor's periodic application and certification for payment.

O. To continually "punch out" the project as the completion work progresses and to compile a final documentation of "punch list" items upon the contractor's substantial completion of the work.

P. To follow up on the completion of the punch list items to assure a smooth and rapid close-out of the project.

Q. To understand the client's move-in desires and to act as a liaison between the contractor and the client in order to assist in the proper timing of the work's completion and the client's move-in and to assure the protection of all concerned parties' rights.

R. To continue to monitor the project following the client's occupancy to assure the contractor's and manufacturer's adherence to all applicable items and to assure awareness of any problems or concerns before they become irritable or out of hand.

S. To clearly note and document any problem items observed throughout the construction phase in order to attempt to prevent similar items in any future work. Items of this nature should be brought to the attention of the architect and his consultants, the client and the contractors.

Although the above items are not all encompassing and do not cover every aspect of the architect's responsibilities during the construction phase, they are the basic responsibilities as

we see them. Any off-shoots and variations which may occur will most likely be due to specific situations which are unique to each individual project.

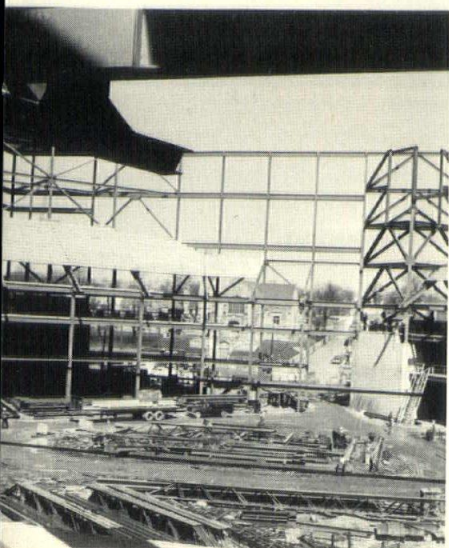
In summary, it should be stated that —

A Project Construction Coordinator must be constantly alert for potential problems and attempt to intercept them before they occur. An ounce of prevention is worth a pound of cure.

A Project Construction Coordinator should *not* tell a contractor how to accomplish his work. He should simply concentrate on and convey the desired end results and let the contractor determine how (within specified limits) he is going to accomplish it. He should be willing to discuss the specific situation with the contractor and suggest possible constructive alternatives, but *not* specifically instruct him on how to do it.

A Project Construction Coordinator does not have to justify his existence by "nit-picking" or purposely looking for something to find fault with. Anyone can do that. Only constructive criticism will gain others' respect and permit him to convey a team spirit and accomplish proper coordination.

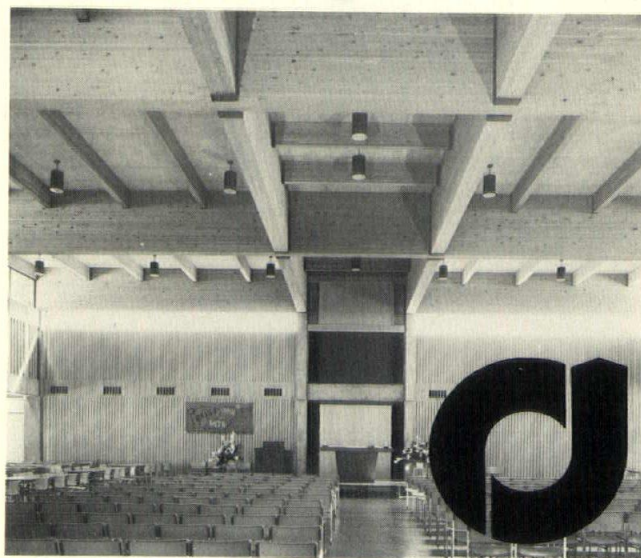
A Project Construction Coordinator



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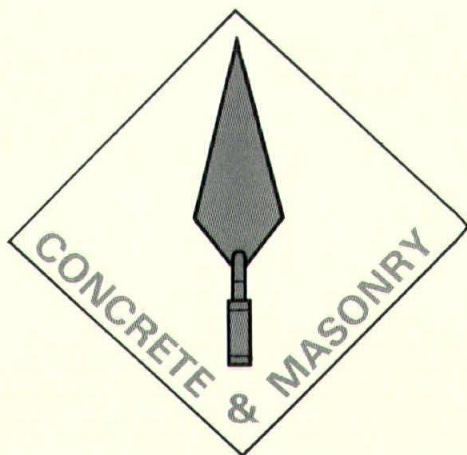
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CREDITS

Particular recognition is due several Architecture Minnesota committee members who contributed to this issue: James Lindberg, President of Lindberg-Pierce, Inc., Architects, Minneapolis; James Lammers, Associate with Close Associates, Architects, Minneapolis; and Fred Richter, project designer with Ellerbe Architects, Bloomington.

Neighborhood Preservation

When Congress passed the Housing and Community Development Act, it shifted federal funding from the strictly defined categorical aid programs to the now widely acclaimed Block Grant Approach. Central to this shift is the Congressional intent of placing the responsibility for establishing priorities in the hands of the local officials. This shift, however, has created a tremendous demand for information on locally initiated programs used elsewhere to satisfy community needs.

Prompted by this pressure for information, HUD's Office of Policy Development signed a contract with Real Estate Research Corporation to undertake a comprehensive survey of various programs. As a result, a 286-page document has been completed, entitled, *Neighborhood Preservation: A Catalog of Local Programs*. This catalog contains information on 100 locally initiated programs, profiling the objectives of each, how the program was initiated, operations, funding sources, strengths and problems. As a reference tool, this publication can be very useful. Copies can be obtained from the Superintendent of Documents, Government Printing Office, Washington D.C., 20402, for \$5.15 per copy.

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should never be afraid to admit that he may not know the answer to a specific question. He should, however, as expeditiously as possible, check with the appropriate individuals to obtain the answer and then inform the contractor.

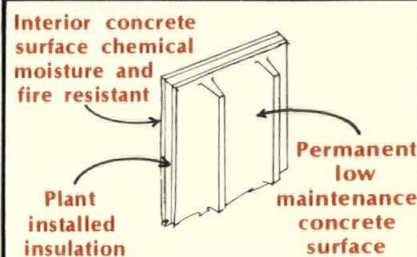
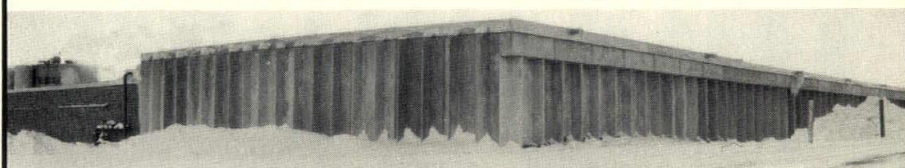
A good architectural Project Construction Coordinator is a well rounded, knowledgeable and creditable individual who conveys the concept of a team effort and is fair with and has the respect of all those he deals with. He should be personable and be able to communicate with others. He must be well organized and he should carefully document and disseminate all pertinent information. He is an extremely important and indispensable member of the total design and implementation team if a project is to be successfully completed and properly serve the owner for its intended use.

The Construction Phase is, therefore, an extremely important aspect of an architect's total service and needs to be administered with the utmost concern and care. □

John Lackens is a graduate architect from the University of Minnesota and Harvard and has been involved in the administrative, contract document and construction phases of various projects.

Dick Lembke has been involved in the construction industry for over 20 years. He has been a construction laborer, a foreman, a general superintendent and architectural project representative (Project Construction Coordinator). Familiar with the makeup of the overall construction industry, he is currently responsible for the construction coordination for all projects of The Architectural Alliance.

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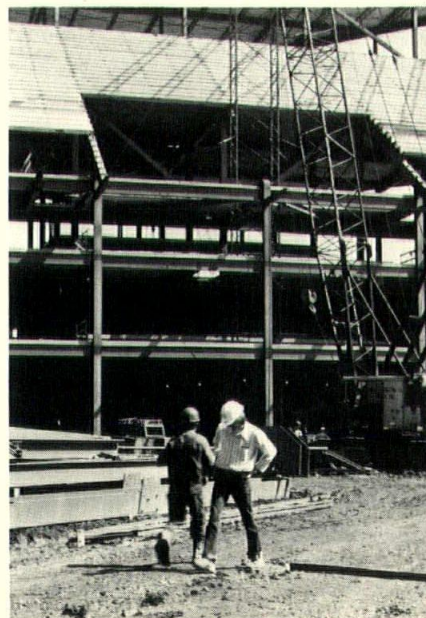
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CONSTRUCTION MANAGEMENT

(Continued from page 19)

scheduled if the owner is to maintain as architect/engineer selection, programming the owner's requirements, site selection, environmental impact analysis, tax potentials, zoning requirements, utility availability, code requirements, energy studies, interest rates, financing methods, material shortages, union problems, public relations programs, etc. Too often, the lack of a realistic time table for initial arrangements, financial negotiations, public approvals, and a well-organized public relations program results in costly delays and frustrations. There is an initial necessity to advise the owner that his activities must also be coordinated and an autonomous role in the review of the documents and the numerous decisions and approvals that are required. This is especially true if the owner is an organization with many in-house skills which can be used to a project's advantage. Establishing lines of communication and decision authority is likewise essential and critical.

In construction management, time scheduling is as important as cost management as a device in controlling and reducing costs. Tight but realistic schedules for the activities of all in-



volved parties are essential to cost control. As pointed out previously, this begins with the owner's activities, covers the programming phase, the architect-engineering design and contract document phase, involves the construction manager's various duties and responsibilities, and extends through the bidding and construction activities phase.

Time schedules must be constantly monitored and up-dated as activities progress. As construction contracts are awarded, the contractors must be involved in the preparation and review of the scheduling of their in-field activities, shop drawing submittals and material deliveries.

It is obvious that construction-man-

agement services reinforce the usual architect/engineer functions and that the architect/engineer remains responsible for design control. The architect must interpret the contract documents, review shop drawings and act as the owner's agent in all matters relating to design. □

Richard ("Bud") A. Peterson is a principal of the Minneapolis architectural firm Peterson, Clark and Associates, Inc. His firm was the associate architect responsible for the construction and administration on the Hennepin County Government Center in Minneapolis. It is also part of the Zoo Team, architects for the Minnesota Zoological Garden under construction. In this instance, as in many others, the firm is advising the owners on breakdowns into multiple contracts and, where appropriate, the pre-ordering of materials.

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CONSTRUCTION INDUSTRY NEWS

Robert Snow

E.E. Christianson, President of Industrial Electric Company, 600 South 9th Street, Minneapolis, was elected President of the 750-member Minneapolis Builders Exchange at the most recent meeting of the Board of Directors. He succeeds Eugene F. Grazzini, Jr. of Grazzini Bros. & Company, Minneapolis.

Christianson has been a member of the Minneapolis Builders Exchange Board of Directors since 1973 and served as vice president last year. He is a graduate of the University of Minnesota in electrical engineering, served on the electrical industry apprenticeship committee, is a past member of the Board of Directors of the Minneapolis Chapter of National Electrical Contractors Association and member of the Minnesota Society of Professional Engineers.

Robert Snow, President of Snow-Larson, Inc., 1221 North 2nd Avenue,

Minneapolis was elected First Vice President and Dale Moll, of Twin City Testing and Engineering Laboratories, Inc., 662 Cromwell Avenue, Saint Paul, was elected second Vice President.

Two new Board members were elected to three-year terms. They are Clifford Lund, President of Lund-Martin Company, 3024 Randolph Street N.E., Minneapolis, and Charles Nasby, President of Charles Nasby Associates, Eden-100 Building, 5100 Eden Avenue, Edina.

Ken Kline has been appointed Vice President of **Snow-Larson, Inc.**, Minneapolis-based distributors and representatives of construction materials. All sales and marketing activities will be directed by Kline in his new position.

Kline, the current Treasurer of Producers' Council, Minnesota-Dakota Chapter, is a graduate of Temple Uni-

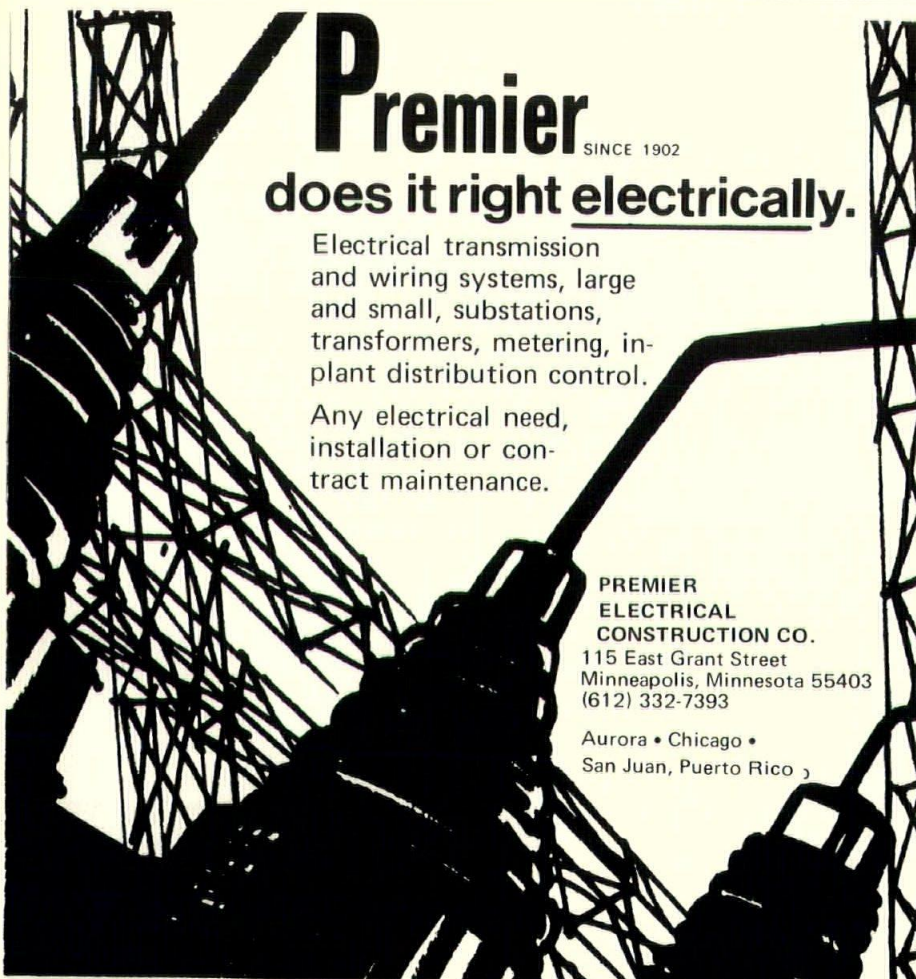
versity. After three years of military service, he became a representative for Libby-Owens-Ford, New York City. For the past two years, he has been associated with Owens-Corning Fiberglas in the midwest. In addition, he is the Company Commander of the 353rd Transportation Company, United States Army Reserves.

Two officials of **Diversified Insulation Inc.**, Hamel, Minn., have been named to head national industry associations for 1976.

J. Dale Pollock, president of Diversified, was elected president of the National Cellulose Insulation Manufacturers Association. He was vice president of the association last year.

F.E. "Red" Homuth was re-elected president of the Vermiculite Association, Inc. He is vice president in charge of sales and marketing for Diversified.

Diversified Insulation Inc. manufactures and markets cellulose fiber insulation and application machinery, vermiculite insulation and spray-applied acoustical and insulating coatings. The firm operates manufacturing



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plants at Minneapolis and Hamel, Minn., and Wellsville, Kans.

A new indexing system makes product data easy to find in the revised edition of the **Neal Slate Data File** now being distributed to architects in the five-state Upper Midwest area by W.E. Neal Slate Co., Eden Prairie, Minnesota.

Future updating of the loose-leaf product file will also be easier because all catalogs and data sheets are numbered and dated, and a table of contents is provided. Also added in the new edition are guide specifications for most products.

Data File information covers chalkboards, tackboards and related products; display and trophy cases, bulletin boards and directories; and partitions and space dividers. A novel feature is a section of color-selection samples of cork, vinyls, carpet surfacing and chalkboard facings. The samples are easily removed from clear plastic pockets, and have tags which can be mailed for replacements when samples are used.

Entirely new contents packets are being mailed or delivered to architects registered as holders of Neal Data File binders. Architects who have not yet received a binder or the new contents may contact W.E. Neal Slate Co., 7975 Wallace Road, Eden Prairie, MN 55343, phone 941-2441.

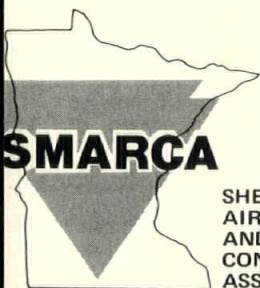
Morris Edlund, formerly with the Aaron Carlson Co., will be the new architectural representative for the Minnesota Chapter of the Architectural Woodwork Institute. He will cover the Twin City area as well as the State of Minnesota and may be contacted at 6151 Sunrise Drive N.E., Fridley, Mn. 55432. Telephone 612-571-1520.

With the state of the economy today, "accounts receivable" must, of necessity, be watched more closely than ever. They appear as assets in the financial statement but their worth diminishes for every day they are not collected promptly. The National Association of Credit Management points out that under present circum-

stances an account which is allowed to become 60 days delinquent receives what really amounts to a 12% discount. This is good business in reverse. Only those who pay promptly should get discounts if any are to be given.

Sherwood D. Jensen, Wm. Poppenberger & Son, Inc., Saint Paul, was elected President of the Builders Exchange of Saint Paul at the organization's 76th Annual Meeting. John W. McNamara, McNamara Sales Co., was elected Vice President and Gerald A. Person, Dale Tile Co., has been appointed to a second one-year term as Treasurer.

Newly elected Directors to serve for a two-year term are: Kenneth B. Fick, Sheehy Construction Co.; Donald J. Flood, Molin Concrete Products Co.; Morrie M. Hedlund, Commercial State Bank in Saint Paul; Edward E. McCarty, Midwest Erectors, Inc.; Paul H. Mueller, Mueller Construction Co.; and Richard C. Schumacher, Anchor Block Co. Roger E. Miller is Executive Secretary. □



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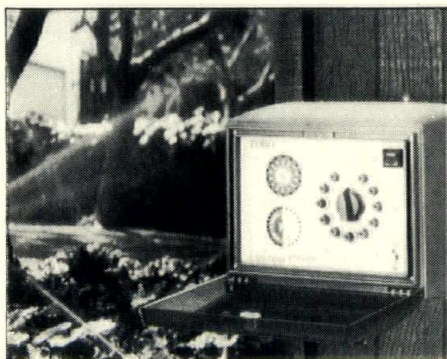
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AGC: WHAT DOES IT STAND FOR?

AGC is the acronym for the Associated General Contractors of America, Inc., the trade association of the construction industry. AGC of Minnesota is an affiliated chapter of the national organization. Presently 650 Minnesota general contractors, heavy construction contractors and major subcontractors are members of AGC.

One of the major thrusts of the AGC is in the area of labor relations. The AGC negotiates agreements with seven Minnesota craft unions: carpenters, cement masons, teamsters, operating en-

gineers, ironworkers, brick layers and laborers. Copies of all negotiated labor contracts are distributed by AGC and in addition members receive notices of all wage scale and fringe benefit changes as they occur.

Labor bulletins are issued regularly to AGC members. These bulletins contain information on arbitration and court decisions affecting application of labor agreements as well as case histories of recent jurisdictional disputes or other labor incidents. AGC staff is available to assist members with any grievances or disputes with any labor organization. Advice regarding state and federal labor laws is available. Should an issue be taken

to arbitration or court by any member, the AGC will provide full representation.

Outside the labor area the AGC works through several committees to deal with problems on a variety of fronts ranging from insurance and safety to subcontractor relations. A prime example is the Construction Industry Cooperative Committee (CICC) which acts as a liaison between the MSA, the Consulting Engineers Council and the AGC.

The Associated General Contractors of Minnesota was founded in 1919 as the Northwestern Association of General Contractors. The present name was adopted in 1972.

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