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(FORM UPDATED: 08/11/2010)

WISCONSIN STATE LEGISLATURE ...
PUBLIC HEARING - COMMITTEE RECORDS

2005-06

(session year)

Senate

(Assembly, Senate or Joint)

Committee on ... Veterans, Homeland Security,
Military Affairs, Small Business and Government
Reform (SC-VHSMASBGR)

COMMITTEE NOTICES ...

- Committee Reports ... **CR**
- Executive Sessions ... **ES**
- Public Hearings ... **PH**

INFORMATION COLLECTED BY COMMITTEE FOR AND AGAINST PROPOSAL

- Appointments ... **Appt** (w/Record of Comm. Proceedings)
- Clearinghouse Rules ... **CRule** (w/Record of Comm. Proceedings)
- Hearing Records ... bills and resolutions (w/Record of Comm. Proceedings)
(**ab** = Assembly Bill) (**ar** = Assembly Resolution) (**ajr** = Assembly Joint Resolution)
(**sb** = Senate Bill) (**sr** = Senate Resolution) (**sjr** = Senate Joint Resolution)
- Miscellaneous ... **Misc**



AMERICAN COUNCIL OF ENGINEERING COMPANIES
of Wisconsin

The business voice of the Wisconsin consulting engineering industry



AMERICAN COUNCIL OF ENGINEERING COMPANIES
of Wisconsin

3 S Pinckney Street, Suite 800, Madison, WI 53703
Tel: 608-257-9223 Fax: 608-257-0009 www.acecwi.org

March 22, 2005

Senator Ron Brown
Chair, Senate Veterans, Homeland Security, Military Affairs,
Small Business, and Government Reform Committee
Wisconsin State Senate
P O Box 7882
Madison, WI 53708

RE: SB 56 – State Contracting Requirements

Dear Senator and Members of the Senate Veterans, Homeland Security, Military Affairs,
Small Business, and Government Reform Committee:

The American Council of Engineering Companies of Wisconsin (ACEC WI) represents over 80 consulting engineering firms and affiliate members that employ approximately 4,000 highly educated and trained professionals across the state. Many of these firms work as a partner with state agencies in the study, design and construction management phases of projects and improvements to Wisconsin's infrastructure.

We congratulate Senator Cowles for introducing this forward-thinking piece of legislation and keeping the interests of Wisconsin taxpayers in the forefront. ACEC WI supports the Legislature's motivation to bolster the state's oversight policies and to award state contracts fairly and openly.

However, ACEC WI has specific concerns with SB 56 as it relates to uniform or generalized cost-benefit analysis. While the wording seems relatively clear cut, in practice it is difficult to define. The nature and structure of the *private* sector compared to that of the *public* sector make it almost impossible to make an "apples to apples" comparison. In fact, during the capitol budget deliberations earlier this month, the Department of Administration told the State Building Commission, "Facility costs are inconsistently measured and managed." The underlying question, of course, is whether the work can be done more cost effectively by the private sector than by state employees.

Comparing in-house costs and outsourced expenses is very complex. Using the Department of Transportation as an example: The *National Academies Transportation Research Board's 2003 Study of State DOT Outsourcing and Private-Sector Utilization* concluded **no single study emerges as a defining work on the subject**. Published reports by auditors, state DOTs, third parties, and associations have attempted to quantify

the cost-effectiveness of outsourcing engineering services and have come to varying conclusions.

SB 56 directs agencies to conduct a uniform cost-benefit analysis. But, two recently published state reports illustrate the problem...call them the "study wars", if you will. The Wisconsin Department of Transportation published one study and it concluded that state engineers could do engineering work for *18% less* than the private sector. However, a report published by the Department of Administration, came to a completely opposite conclusion...that *private* consultants are less expensive. So at the end of the day, which report do you use for the analysis?

When making an objective analysis, there are 4 elements to consider:

Admin?
Rules?

- Overhead rates
- Expenses not incurred by the state
- Delivery schedule
- Expertise

Overhead rates

Overhead rate is defined as the sum of all *indirect* costs for a company's operation divided by the company's direct costs. While direct costs might be fairly easy to compare – hourly pay while working on a project – indirect costs are not. Will an agency include everything such as office space, telephone charges, technical equipment, vacation pay, retirement plan, etc in this cost? ACEC WI members have heard comments such as, "the state owns the building, not our agency, so it isn't part of our overhead." How will this bill address this concern?

Expenses not incurred by the state

The private sector has some expenses that the state does not incur. These include items such as taxes and liability insurance. These costs need to be identified and considered in the analysis.

Delivery schedule

Sometimes timely completion of a project is a higher priority than the price. With reductions in the size of state government, schedules may slip. Contracts with consulting engineers usually contain penalty clauses if a delivery schedule is not met. How is this issue figured into the uniform cost-benefit analysis?

Expertise

The reduction in the size of government has also resulted in a decrease in internal expertise. Seasoned engineers, with a wealth of experience, have retired and have not been replaced. Using the Department of Transportation as an example, projects are becoming larger and more complex and there has been a trend to have these complex projects awarded to the private sector. The department may not have the technical knowledge to do these projects in-house. This should be factored in to the analysis.

In conclusion, consulting engineers have enjoyed an effective working relationship with state engineers. This is not a matter of right or wrong or white hats versus black hats. This is about maintaining an important partnership that works for both parties and the people of this state. We fully support the legislature's efforts to make certain the state's taxpayers are receiving the best value when contracting with the private sector and hope our concerns will be discussed and addressed as this bill moves forward. We thank you for your time.

Sincerely,

A handwritten signature in cursive script, appearing to read "Carol Godiksen".

Carol Godiksen
Executive Director

attachments

ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES
of Wisconsin

Carol Godiksen Executive Director	3 S Pinckney St, Suite 800 Madison, WI 53703 tel: 608-257-9223 fax: 608-257-0009 e-mail: carol@acecwi.org
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To find out more about ACEC WI - visit our web site at www.acecwi.org or call 608-257-9223

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of Wisconsin

Outsourcing: Why it makes sense

The Need

- The amount of federal aid highway funds and the number of Wisconsin transportation projects have increased dramatically since 1990
 - Federal funding has grown from \$426 million (1992) to \$630 million (2003) – a 48% increase
- The number of Wisconsin Department of Transportation (WisDOT) employees designated for highway improvement projects has decreased by 9%
 - The legislature has mandated WisDOT cannot hire additional staff to execute increased workload
- WisDOT has grown its partnership with consulting engineering firms, large and small, to meet increasing design and construction needs of the state

The Process

- The selection of engineering consultants and negotiations of contracts are handled strictly by the WisDOT. The Legislature and the administration are not involved in the process
- WisDOT conducts annual audits of the firms with which it does business
- Projects are awarded in accordance with federal law
- Mandated by the federal highway administration, state highway projects require a Qualifications-Based Selection process to procure design services [www.qbswi.org]

The Cost

Cost-effectiveness is often a factor in utilizing outside contractors. Comparing in-house costs and outsourced expenses is very complex and no single study emerges as a defining work on the subject.

It is also important to emphasize how critical the working relationship is between outside consultants and state engineers. Both perform vital roles for designing infrastructure.

Who's working on Wisconsin Highway Improvement?

	1999	2004
State Staff (WisDOT)	59%	46%
Consultants	41%	54%

* Department of Administration report, October 1, 2004

History

The ability of Departments of Transportation to contract with the private sector for specific activities and projects allows them to address the ever-increasing demand on in-house resources.

During the 1990s, WisDOT realized dramatic growth in the amount of federal highway funds. The department received annual funding increases ranging from \$66 million to \$140 million, under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

The Transportation Equity Act of the 21st Century (TEA-21), enacted in 1998, provided increases of 40% over ISTEA levels.

The combination of the two acts resulted in funding growth for construction and highway improvement programs by 48% (\$426 million in 1992 to \$630 million in 2003*).

The number of WisDOT workers devoted to the highway improvement program during this period of increased investment and activity has decreased by 9%.

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ENGINEERS SUPPORT CONTRACT DISCLOSURE

OPINION; Guest Column
Monday, January 24, 2005
Paul Tarvin, PE

Assembly Speaker John Gard, R-Peshtigo, has unveiled a bill he calls the "Contract Sunshine Act," which he says will shine light on the "last, dark corner of government" – referring to contracts with state agencies.

We applaud Speaker Gard's initiative, support its passage in the state Legislature and would encourage Gov. Jim Doyle to sign it into law. The bill calls for anyone, including consulting engineers, who wants to do business with the state, to register with the state Ethics Board. Taxpayers will have a better ability to monitor the procurement process.

The American Council of Engineering Companies of Wisconsin consist of 3,753 engineers, designers and other professionals who design the roads, buildings and wastewater treatment facilities that help drive the economic engine of this wonderful state.

We proudly do business with numerous public entities, including the state Department of Transportation, Milwaukee Metropolitan Sewerage District and the Division of State Facilities, to name just a few. ACEC members design many valuable and important projects like the Marquette Interchange, the Highway 151 Mineral Point Bypass and the Fox River Water Pollution Control Center.

Negotiating contracts with the state is both complex and time consuming, but understand that we support vigorous oversight of the process and welcome more scrutiny with Gard's proposal. For example, before a transportation contract is signed, firms are required to disclose all the costs to the state as well as the "profits" calculated to establish a project price tag. Profits, or fees, as we call them, are strictly defined by federal regulations and cost controls imposed by the DOT.

We play an important role in helping Wisconsin meet the ever-increasing demands for transportation infrastructure. Since 1992, funding for highway improvement projects has increased by 50 percent, or \$204 million. As the number of construction projects increased over this time period, the number of people within the state's transportation department responsible for these transportation improvements decreased by 9 percent. Consulting engineers have been asked to help close this gap and meet the needs of Wisconsin motorists and businesses.

Consulting engineers of Wisconsin: You probably haven't heard much about us, but you rely on the projects we design. As taxpayers, we all deserve the security of knowing that state contracts have been exposed to the light of day and our money is being spent wisely.

Paul Tarvin
President, American Council of Engineering Companies of Wisconsin

KEEP CONTRACTING OPEN TO ALL BUSINESS

*Privatizing Services Can Reduce Government Bureaucracy --
But Only When The Deals Are Done Fairly And Openly.*

OPINION

Tuesday, January 18, 2005

State Assembly Speaker John Gard wants to subject state contracting to more sunshine, and the plan should help make sure state officials can't cut backroom deals to funnel state tax money to politically connected private firms.

Contracts for state work should be awarded fairly and openly. Over the past decade, state spending on contracting has more than doubled, but government spending has increased unabated, too, an indication that contracting isn't necessarily saving taxpayers enough money. It has become clear that the state forks over questionably large amounts of money for simple work. The Department of Transportation, for example, paid \$685,000 in a no-bid contract to create and maintain a Web site to help drivers keep track of Milwaukee freeway construction. And the state Elections Board plans to pay as much as \$14 million in a no-bid contract for maintaining a statewide voter registration list.

Gard complains, rightly, that nobody knows exactly how state government awarded these excessively expensive projects to private firms. Gard's proposal would require contract bidders who use lobbyists to register with the state Ethics Board and file reports detailing contacts with state officials. These reasonable requirements would match those now covering other lobbyists who try to influence legislation or state policy. Considering the money at stake, it's a wonder that Wisconsin lawmakers haven't moved sooner to impose the same disclosure requirements for contractors. Eleven other states already impose similar requirements on contractors.

Gard, R-Peshtigo, says his proposal is not designed to rein in state contracting work but instead to better detail who is going after state contracts and what they're doing to win them. That's an important distinction from the more politically motivated agenda of state employee labor unions, which generally oppose contracting out work now done within government bureaucracy.

Contracting still has valuable potential to reduce government bureaucracy. Contractors in many cases can help cut overall taxpayer expenses -- and those who do deserve to keep their contracts.

But recent disclosures of apparently wasteful spending provide solid reasons to tighten up contracting practices. To his credit, Gov. Jim Doyle has already ordered state agencies to more closely track contracting expenses and quality of work, and identify existing contracts that could be consolidated, eliminated or rebid for less money. A resulting review of Medicaid contracting could save the state \$93 million.

As an ideal, contracting should set up a competition between public employees and private companies to see which can do a given task best at lowest cost. When privatization and contracting yield poor results, it's usually because government officials fail to follow the rules and maintain accountability. Gard's proposal would help make sure officials do both.

State government doles out more than \$740 million a year in contracts. The Legislature and governor should approve Gard's proposal to make sure this money flows efficiently and honestly.

The Capital Times

FOR TAXPAYERS AND WORKERS, SHINE A LIGHT ON STATE CONTRACTS

*Privatizing Services Can Reduce Government Bureaucracy --
But Only When The Deals Are Done Fairly And Openly.*

EDITORIAL

Monday, January 24, 2005

Dear Editor:

I am writing on behalf of the 3,753 engineers, designers and other professionals who comprise the American Council of Engineering Companies of Wisconsin.

We're the folks who design the roads, buildings and wastewater treatment facilities that help drive the economic engine of this wonderful state. We proudly do business with numerous public entities, including the state Department of Transportation, Milwaukee Metropolitan Sewerage District and the Division of State Facilities, to name just a few.

Last month, Assembly Speaker John Gard, R-Peshtigo, unveiled a bill he calls the "Contract Sunshine Act," which he says will shine light on the "last, dark corner of government," referring to contracts with state agencies. We applaud Gard's initiative, support its passage in the Legislature and would encourage Gov. Jim Doyle to sign it into law. The bill calls for anyone, including consulting engineers, who wants to do business with the state to register with the State Ethics Board. Taxpayers would have a better ability to monitor the procurement process.

Our companies design many valuable and important projects like the Marquette Interchange, the U.S. 151 Mineral Point bypass and the Fox River Water Pollution Control Center. Our organization members work closely and in concert with all state agencies, including WisDOT, and with union labor to help design and build these important projects.

Negotiating contracts with the state is both complex and time-consuming, but understand that we support vigorous oversight of the process and welcome more scrutiny with Gard's proposal. For example, before a transportation contract is signed, firms are required to disclose all the costs to the state as well as the "profits" calculated to establish a project price tag. Profits, or fees, as we call them, are strictly defined by federal regulations and cost controls imposed by WisDOT.

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As taxpayers, we all deserve the security of knowing that state contracts have been exposed to the light of day and our money is being spent wisely.

Paul Tarvin

President, American Council of Engineering Companies of Wisconsin

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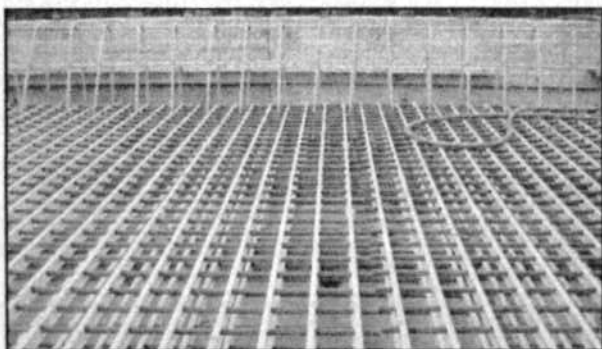
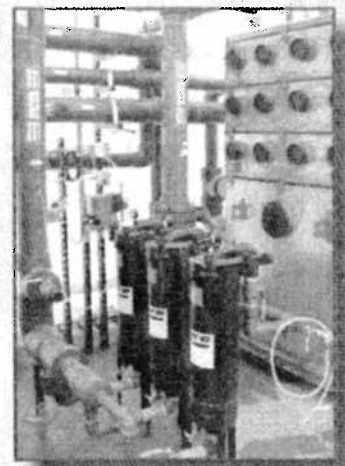
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2005

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A W A R D S



FEB. 23, 2005

Congratulations

to this year's
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our clients' success.



City of Marinette

Hattie Street Brownfield
Redevelopment

State Finalist Award



Wisconsin Department of
Transportation, District 2

Interstate 894 Resurfacing

State Finalist Award

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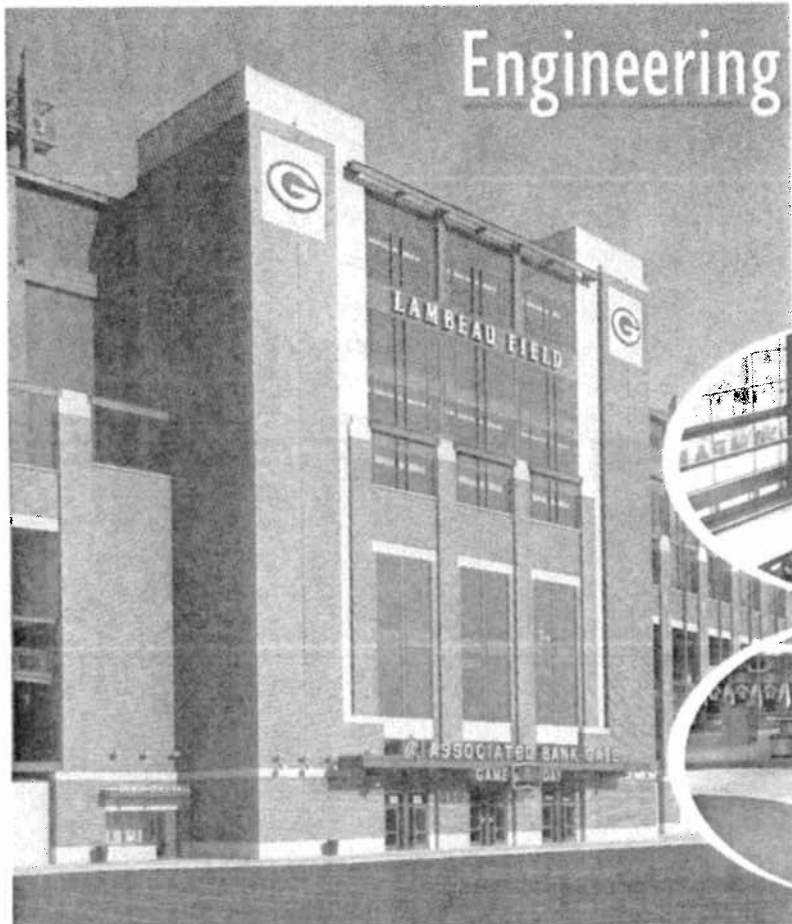
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AMERICAN COUNCIL OF ENGINEERING COMPANIES OF WISCONSIN

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ENGINEERS AND SCIENTISTS

Letter from the President

ENGINEERING A BETTER WISCONSIN



It is my pleasure to present the 2005 Engineering Excellence Awards. With the success of the inaugural publication highlighting the American Council of Engineering Companies of Wisconsin's awards program last year, we are pleased to partner again with *The Daily Reporter* to produce this second edition. Our annual awards program makes winners of all of us in the design and construction industries.

I am proud to be an engineer and a member of ACEC WI. While our training is technical in nature, the results of our work improve the quality of life for our fellow citizens. Our goals are to provide safe drinking water, clean streams, a

safe transportation infrastructure, resilient and comfortable buildings and adequate energy supplies. The list could go on and on. The unique aspect of professional engineering is that we provide added value for a wide range of

clients through a variety of services. We constantly strive to provide a better environment for our clients and the public at large. These Engineering Excellence Award-winning projects are great examples of that.



ACEC WI's professional engineers will continue to play a key role in building the future. From the roads you travel to the buildings in which you live and work, professional engineers play an important role by providing valuable services in the most cost-effective manner to their clients. I emphasize the word role because what we do is just a small part of a much larger picture. We work closely, successfully and, oftentimes, in partnership with

government and organized labor. ACEC WI's members supplement the state's in-house staff in delivering the programs necessary to sustain Wisconsin's economy. We also support the state's mission of expanding and modernizing Wisconsin's infrastructure.

The Wisconsin member organization of ACEC has sponsored this awards program for the last 32 years. Our industry is proud of each and every one of these award-winning projects. Please take a moment to read about them in these pages.

I am honored to serve the organization as this year's president. I am also grateful for the leadership demonstrated by my predecessors, and I am confident in the future direction of the organization. On behalf of ACEC WI, I would like to thank our member firms and all others who have made this publication possible by entering the competition and through sponsorships and advertising. Without the generous support of our members and other sponsors, the advocacy mission of ACEC WI would be greatly diminished.

PAUL TARVIN, PE
ACEC WI President



BY CAROL GODIKSEN
Executive Director

Reaching out to promote the profession

A CLOSER LOOK AT ACEC WI AND ITS AWARDS PROGRAM

ACEC WI actively promotes the engineering profession to acknowledge and demonstrate the significance of its members' work.

Our Engineering Excellence Awards Program celebrates the outstanding achievements and leadership of ACEC WI's members. Each project submitted this year brought value to its community and saved taxpayers' money. These projects had an economic impact not just on the engineering profession but also on the state of Wisconsin.

As a forward-thinking business organization, ACEC WI represents more than 70 of the premier engineering firms in the state. Being a member of ACEC WI builds for a firm respect in the greater business community and earns it recognition as being the best in the business. We are proud of our membership and of what we have accomplished together as the business voice of the Wisconsin consulting-engineering industry.

Founded in 1958, ACEC WI supports member firms that employ more than 3,500 engineers, architects, planners, geologists, soil scientists, hydrologists, surveyors and other highly educated, experienced professionals. Our mission is to enhance business opportunities for member firms by advocating initiatives for success.

An effective organization with a national connection, ACEC WI is also part of ACEC — a national federation with more than 5,800 member firms. ACEC works with Congress, federal agencies and international organizations to promote the business interests of engineering companies. It also manages the largest political-action committee in the engineering/architectural industry.

Wisconsin members benefit from a variety of different services. ACEC WI offers liaisons with state agencies, committee involvement and networking, Qualifications-Based Selection information, educational outreach, positions on important legislative issues and, of course, the annual Engineering Excellence Awards Competition. ACEC WI also provides communication tools and publications

including the ACEC WI Web site, membership directory and monthly newsletter as well as public relations efforts and insurance services.

The Engineering Excellence Awards Program

ACEC WI's Engineering Excellence Awards Program recognizes and celebrates engineering achievements that demonstrate the highest degree of skill and ingenuity. Established in 1973, this statewide competition effectively ensures firms achieve the recognition they so richly deserve. They are applauded not only for projects in both the public and private sectors — which, through exceptional engineering design, significantly contribute to the quality of life of the state's citizens — but also for their expertise and dedication to the profession.

This program also increases the public's knowledge of what consulting engineers really do. Entry into the competition offers invaluable public relations and marketing opportunities for professional engineering firms and others included in the award submissions. Past recipients have reported the recognition highlights to clients and their communities the value of the projects.

How we judged and awarded the projects

A panel of highly qualified judges from outside the association membership reviewed this year's entries. Each entry was judged on its own merits. The panel based its decisions on each entry's effective use of engineering techniques, originality, future value to the engineering profession, social/economic/sustainable-design considerations, complexity, quality of work and level of customer service.

Projects that met the above criteria, according to the judges, received a State Finalist Award. The Best of State Awards were given to the projects achieving a specific point value determined by the judges. The winner of the Grand Award is selected from the Best of State Award winners and will be announced for the first time at the ACEC WI Awards Banquet on March 11. All of the winners will be recognized at this banquet. ■

Join the team that makes it all happen

ACEC WI's Public Relations Committee is charged with coordinating the Engineering Excellence Awards Program each year. It is a part of the committee's overall mission, which is to promote the positive image of the professional engineering industry. The committee is always looking for ways to improve the awards program and gain more recognition for professional engineers. Any ACEC WI member interested in joining the committee is encouraged to call ACEC WI Communications Coordinator Betsy Gardner at 608-257-9223.



ACEC WI thanks this year's judges

- David L. Benzschawel, PE, Madison Department of Public Works, Engineering Division
- Jeremy Harrell, *The Daily Reporter*
- Bill Huxhold, University of Wisconsin-Milwaukee Department of Urban Planning
- Larry E. Jones, Wisconsin Department of Transportation
- Gerald Novotny, PE, Wisconsin Department of Natural Resources
- Michael G. Oliva, University of Wisconsin-Madison College of Engineering
- Yapeng Pu, Xuhui Science and Technology Commission, China
- Kevin Shafer, PE, Milwaukee Metropolitan Sewerage District
- William Truman Stark, JD, Federal Highway Administration
- Robin Zentner, PE, Wisconsin Department of Administration, Division of State Facilities



www.acecwi.org

Capitol Idea



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— Bill Fruhling, AICP, Principal Planner and
Steve Gohde, PE, Project Engineer, City of Madison, WI

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ENGINEERING

THE ACADEMY AWARDS FOR CONSULTING ENGINEERS

Like the Academy Awards for the film industry, the Engineering Excellence Awards showcase the best of the best in the professional consulting-engineering industry.

Seven engineering projects were chosen as finalists for the top award in this year's Engineering Excellence Awards Program. The complexity, quality and ability to exceed customer expectations shown in these projects made this year's judging extremely difficult. The 10-member judging panel tapped projects for Best of State Award from Earth Tech of

Milwaukee, Donohue & Associates of Sheboygan, Miller Engineers & Scientists of Sheboygan, Earth Tech of Sheboygan, Alfred Benesch & Co. of Kenosha and R.A. Smith & Associates Inc. of Brookfield.

These projects are all eligible to compete at the national level for the American Council of Engineering Companies' Engineering Excellence Awards. One of the seven projects will receive the Grand Award at ACEC WI's annual Awards Dinner on March 11 at the American Club in Kohler.



AND THE

WINNER IS ...

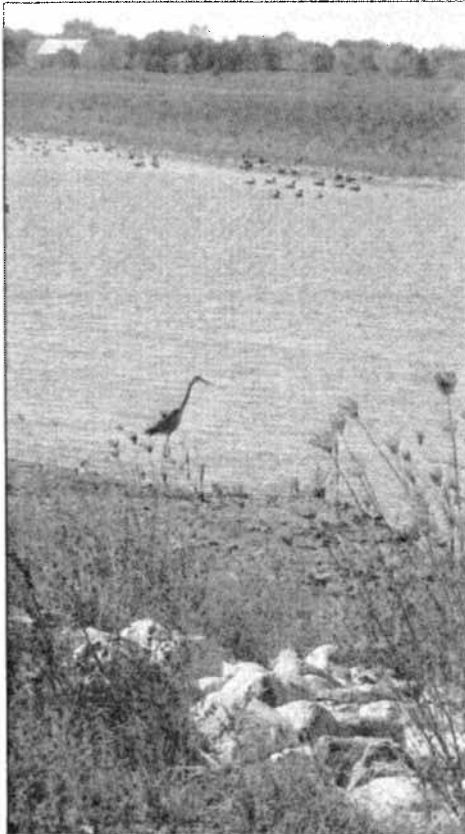
ONE OF THE FOLLOWING

**BEST
OF STATE**

AWARD WINNERS

WILL TAKE HOME THE TOP PRIZE AT
ACEC WI'S ANNUAL AWARDS
BANQUET ON MARCH 11 AT THE
AMERICAN CLUB IN KOHLER.

FLOW CONTROL SPAWNS FISH HABITAT *Earth Tech Inc., Milwaukee*



After construction, wildlife returns to this portion of Trinity Creek.

- **CLIENT:** City of Mequon
- **CATEGORY:** Water Resources

EARTH TECH won a Best of State Award for going above and beyond client expectations in the planning, design and construction of the Kathleen Lane Detention Facility, also called the Trinity Creek Wetland and Stream Enhancement Project.

The city of Mequon retained Earth Tech in 2000 to complete the final plans and specifications for the project, which was developed in response to the regular flooding of 24 homes and a church downstream of the project's location.

Earth Tech's design accomplished numerous ecological, educational and water quality and quantity goals, far exceeding the expected benefits outlined in the master plan.

"Earth Tech's imagination in responding to the city's request is why I ranked it so high," said EEA Judge Bill Stark. "The city asked for flood control, and Earth Tech came back with a much broader vision, giving them more than what they asked for, going above and beyond what they were thinking."

Water quality was improved by reducing the nonpoint-source pollutant loadings through sedimentation and conversion of cropland to wetlands. Storm-water flow attenuation was maximized on the site with the addition of almost 40 acre-feet of floodplain storage. Invasive plant species were removed and more than 35 acres of

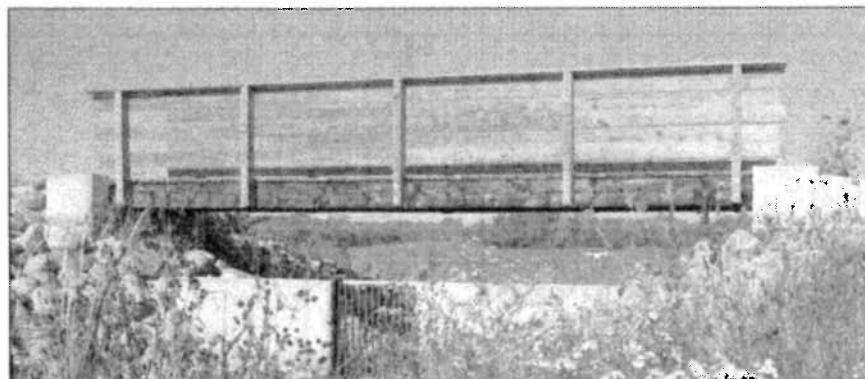
wetlands were created or preserved. Marshland habitat was enhanced, incorporating a northern pike spawning habitat.

The creek's linear channel was converted to a sinuous, meandering brook with wide floodplain areas instrumental in slowing the speed in which the water flows and inciting additional natural infiltration and sedimentation. A walking trail with educational signage was created around the northern pike spawning grounds, arguably the most unique aspect of the project, where one can observe and learn about all aspects of the facility.

"Most retention sites are eyesores," said EEA Judge Bill Huxhold. "This project is a model for what can be done to make a retention site more enjoyable, going from an eyesore to a pleasant place where people can go for walks."

Constructed by excavating contractor CW Purpero Inc., Milwaukee, this project involved an amalgamation of interested public and private stakeholders, including the Wisconsin Department of Natural Resources, University of Wisconsin-Milwaukee faculty, the Milwaukee Metropolitan Sewerage District, Wisconsin Coastal Management, Mequon-Thiensville School District and neighboring land owners.

Each association was key in providing either funding, technical expertise or assisting Earth Tech with the successful design and construction of the facility. Grants and other noncity funding sources comprised approximately 60 percent of the project budget, a success story in itself. *



The structural elements of the Trinity Creek project are minimized, softened and blended into the background wherever possible.

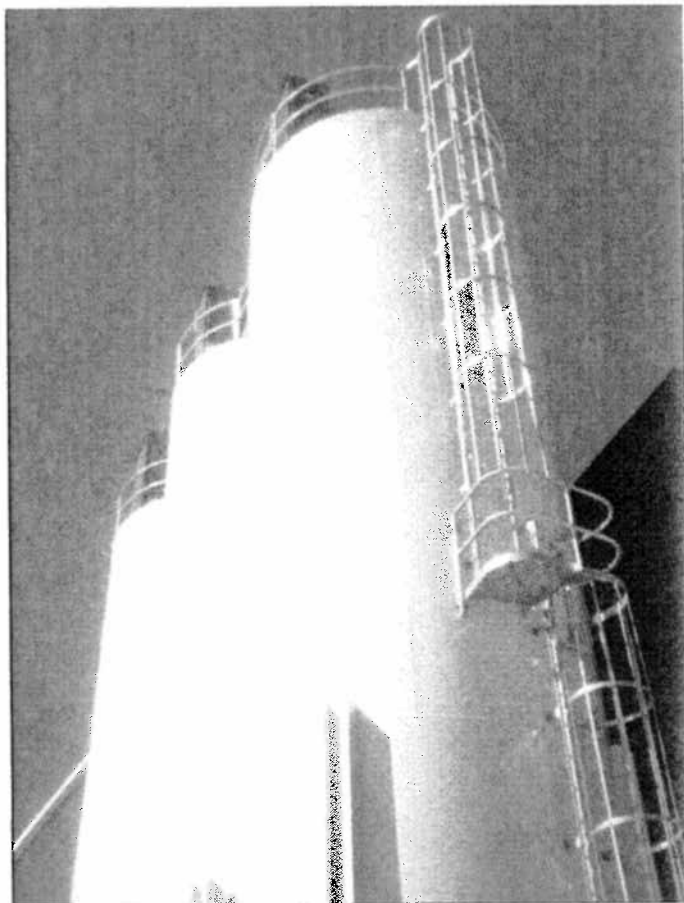


The project team places five themed signs along the recreational trail to provide historical information and present key elements of the Trinity Creek project.

2005

OVERCOMING ADVERSITY FOR BIOSOLIDS REUSE

Donohue & Associates Inc., Sheboygan



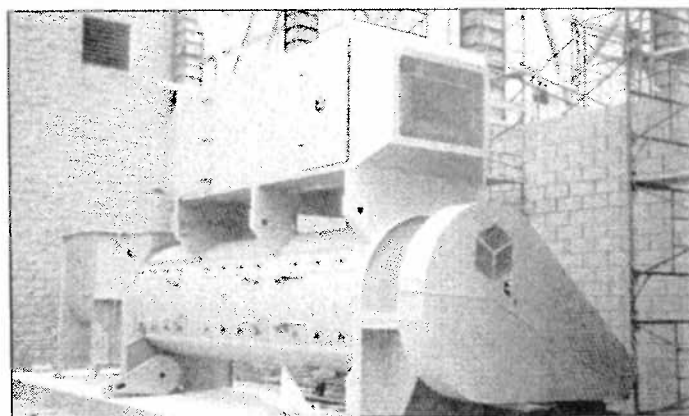
The Hutchinson biosolids drying facility is the only known wastewater facility in the upper Midwest to produce a pellet product. The pellets are stored in silos until they can be applied.



The pelletized product produced in Hutchinson has many potential applications for beneficial reuse. The Crow River Country Club used this equipment to spread the product on its golf course.

■ **CLIENT:** City of Hutchinson, Minn.

■ **CATEGORY:** Water and Wastewater



The Hutchinson biosolids drying facility utilizes a direct dryer, which uses circulated hot air to dry the biosolids. This drying method is used in only one other wastewater facility in Minnesota.

DONOHUE & ASSOCIATES won a Best of State Award for its innovative use of existing pelletizing equipment in designing a new biosolids drying facility for the city of Hutchinson.

This project was initiated because the facility was becoming overloaded with solids and needed additional capacity to avoid permit violations. Donohue's project team worked collaboratively with the city to develop a facility that uses heat drying to convert its solids into nutrient-rich organic material, a desirable class A biosolid for use as a soil conditioner.

The biosolid was pressed into a clean, nonodorous pellet. This innovative project used technologies from the grain industry and applied them to the wastewater industry. It is the only known wastewater facility in the upper Midwest to produce a pellet product.

The pellets offer several advantages over traditional heat-drying products. They are cleaner, produce less dust, are free of noxious odors and, in general, are more appealing to the public. They have a variety of land-application uses to improve soils. For example, the product has been applied to golf courses with exceptional results.

"It struck me as being a good application of a nontraditional technique that could possibly make money," said EEA Judge Jeremy Hurrell.

In the past, drying facilities have not been considered economical for smaller communities. This project has shown that a mid-size community can implement cost-effective biosolid drying facilities and produce a reusable end product that benefits the environment.

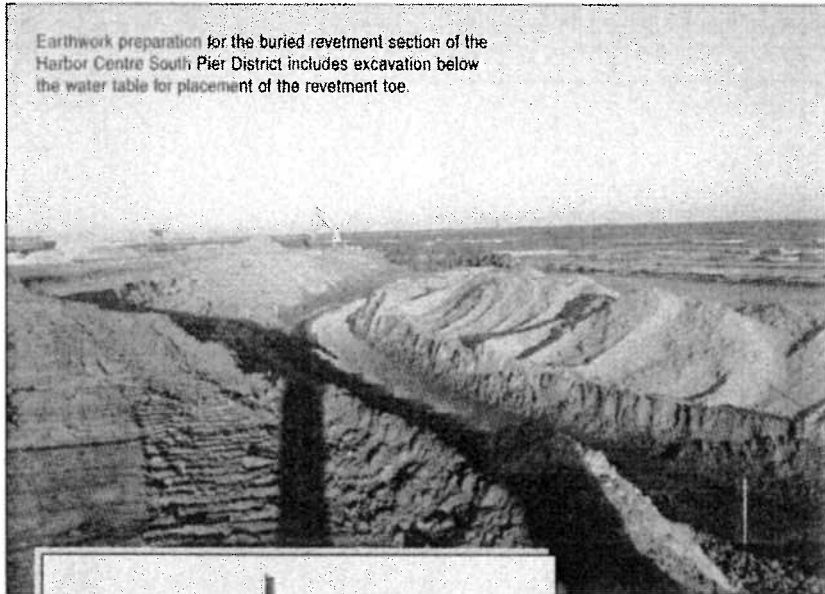
"Not only does this project demonstrate an innovative use of existing pelletizing equipment, it also enables small facilities to get into this type of project, which are both valid points," said EEA Judge Gerry Novotny. *

HARBOR CENTRE SOUTH PIER DISTRICT

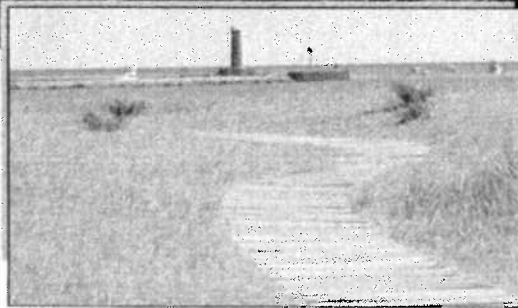
Miller Engineers & Scientists, Sheboygan

■ **CLIENT:** City of Sheboygan

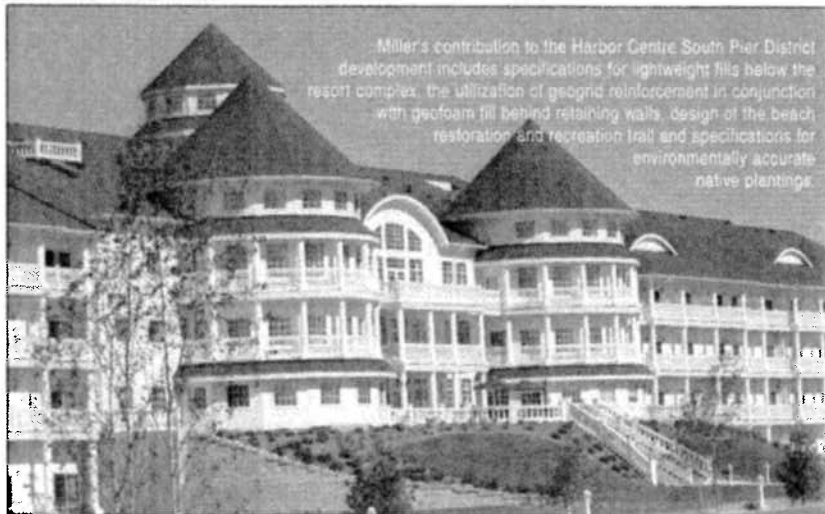
■ **CATEGORY:** Environmental



Earthwork preparation for the buried revetment section of the Harbor Centre South Pier District includes excavation below the water table for placement of the revetment toe.



The boardwalk, which connects to the main recreational trail, provides a pedestrian path that approaches the dune area in the Harbor Centre South Pier District.



Miller's contribution to the Harbor Centre South Pier District development includes specifications for lightweight fills below the resort complex, the utilization of geogrid reinforcement in conjunction with geofoam fill behind retaining walls, design of the beach restoration and recreation trail and specifications for environmentally accurate native plantings.

MILLER ENGINEERS & SCIENTISTS won a Best of State Award for turning the derelict former Reiss Coal property into a productive piece of land.

The Harbor Centre South Pier District Peninsula, where the Sheboygan River enters Lake Michigan, supported a busy commercial port for more than a century. Perceived environmental impairment and the need for major infrastructure reinvestment had been insurmountable barriers to redevelopment until the city stepped into the lead role. Miller Engineers & Scientists worked for the city and designed many of the features, providing the most public use of the surrounding mile of waterfront and preparing the land for private investment, the first of which was the \$54 million Blue Harbor Resort complex.

"The resort part of the project had some very innovative features," said EEA Judge Bill Stark.

Miller combined normal weight, medium weight and ultra-lightweight fill materials to allow the use of conventional structural systems in the construction of the resort complex as well as its indoor water park and the cottage condominiums.

For the resort's wall system, Miller recommended using modular-block retaining walls, in lieu of rigid concrete walls, because of the modular's deformation tolerance. Modular block systems derive their lateral stability from layers of geogrids placed horizontally in the fill behind the wall, and, in this case, it was imperative to use geofoam as the fill. This was the first time both geogrids and geofoam were used together in a project. Miller developed a simple technique to effectively grip geogrid shapes between geofoam blocks.

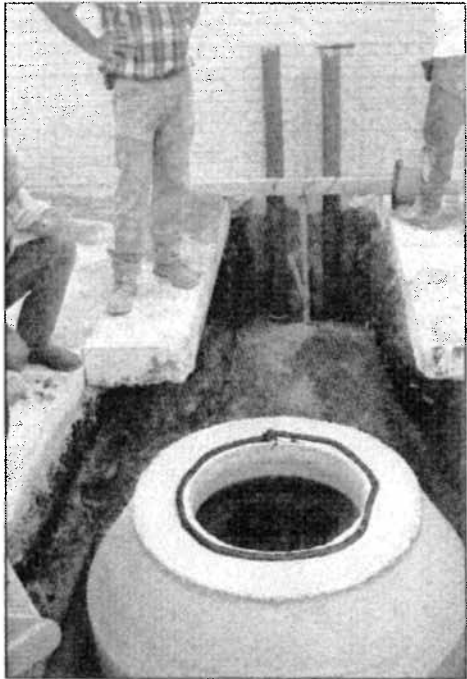
Aside from the resort complex, restoration of Lake Michigan's half-mile shoreline included public trails winding among reconstructed dunes planted with native species. Beneath the dunes are revetments that protect development inland but don't interfere with natural beach dynamics. This system avoids the adverse impact on the lakeshore caused by conventional revetments.

"I liked how they buried the revetments to hide them instead of having them stick out like a sore thumb," said EEA Judge Larry Jones.

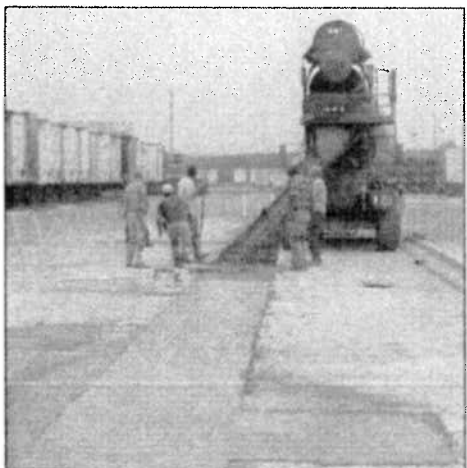
Miller emphasized design in harmony with the physical and aesthetic characteristics of man-made and natural environments. The city, together with Miller, has successfully implemented the project, turning this once underutilized piece of property into the focal point of Sheboygan's revitalized riverfront and lakeshore area. Especially with the development of a resort complex, this former industrial peninsula has become the crown jewel of the community in just 18 months. ◀

AQUIFER RECLAMATION - "IT'S A BUG'S LIFE"

Earth Tech Inc., Sheboygan



The injection well vaults at the DaimlerChrysler Dayton Thermal Products facility are installed below grade to contain the injection well and equipment.



The injection-well piping is installed below grade at the DaimlerChrysler facility in the areas where trucks service the plant.

■ **CLIENT:** DaimlerChrysler Corp.

■ **CATEGORY:** Environmental

EARTH TECH won a Best of State Award for its creative engineering solutions in the design, construction and operation of the groundwater-remediation system at the former DaimlerChrysler Dayton Thermal Products facility in Dayton, Ohio.

When chlorinated volatile organic compounds were discovered in groundwater underlying the site, DaimlerChrysler voluntarily addressed the problem. DaimlerChrysler initiated an aggressive remediation program to protect Dayton's drinking-water supply. Earth Tech's solutions met the client's immediate needs and demonstrated its commitment to protecting the groundwater resources in the Dayton area.

The unique groundwater-treatment system cleans VOC's from the aquifer by promoting their natural biological degradation through in-situ reductive dechlorination. While pumping the groundwater to prevent contaminants from leaving the property, the groundwater is mixed with a food source for the bacteria present in the aquifer. The water is then re-injected into the aquifer, and the food source enhances the growth of the bacteria. As the bacteria grow and look for additional food sources, the VOC's are consumed and broken down to the nontoxic compounds ethane and ethene in-situ in the process.

By pumping the groundwater along the property boundary and re-injecting it at strategic locations inside the site, the treatment system creates a closed-loop bioreactor. In this system, the contaminated groundwater circulates from the pumping wells to the injection wells until it meets regulatory requirements.

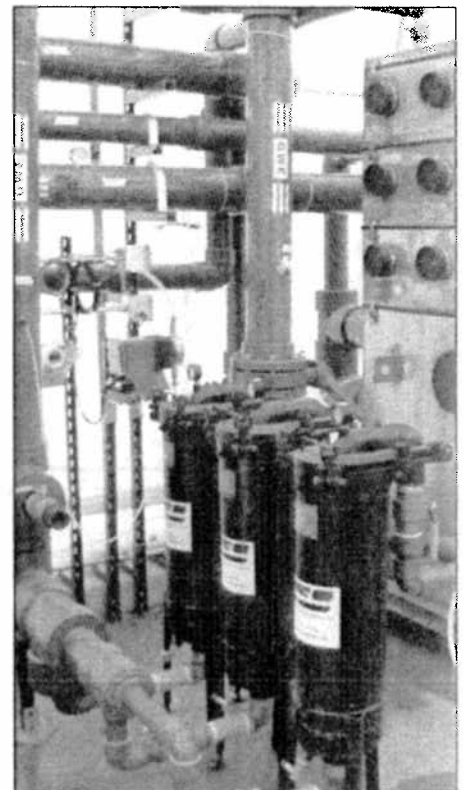
This system is a distinctive engineering achievement that combines the old groundwater "pump and treat" scenario with new groundwater-remediation technology to produce an effective, efficient and rapid remedy that protects human health and the environment.

"I liked how Earth Tech combined several techniques in an interesting way," said EEA Judge Gerry Novotny.

The judges also recognized Earth Tech's partnership with DaimlerChrysler, state and local governments and neighborhood groups to meet the common goal of protecting the groundwater resources.

"They worked well with the community and with DaimlerChrysler," said EEA Judge Rohin Zentner.

Earth Tech held frequent meetings with the city of Dayton, Ohio Environmental Protection Agency and local community groups to solicit technical input and suggestions regarding community issues. This level of involvement heightened the community's sense of involvement and demonstrated DaimlerChrysler's commitment to a cleaner environment. *



These air strippers and pre-filter bag filters are used to treat groundwater prior to discharge to the storm sewer.

FRP CAGE-REINFORCED BRIDGE DECK

Alfred Benesch & Co., Kenosha

- **CLIENT:** University of Wisconsin-Madison
- **OWNER:** Wisconsin Department of Transportation, Structures Division
- **CATEGORY:** Structural Systems

ALFRED BENESCH & CO. won a Best of State Award for its novel, innovative use of fibrous polymer technology on a new bridge-deck reinforcement project.

Corrosion of conventional reinforcing steel in bridge decks is a constant problem requiring repeated rehabilitation. This project investigated the feasibility of entirely removing the corrosion-susceptible steel reinforcement in a bridge deck and replacing it with a fiber-reinforced polymer cage.

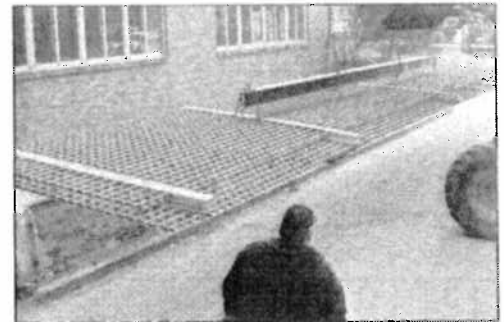
As part of the Innovative Bridge Research & Construction Program financed by the Federal Highway Administration, Alfred Benesch & Co. teamed with the UW-Madison to provide state-of-the-art research, testing and structural design to construct the first bridge deck in Wisconsin reinforced with a prefabricated FRP reinforcement cage.

"They took existing material and used it this way for the first time ever worldwide," said EEA Judge Mike Oliva. "There are ASTM standards with steel. FRP has no standards."

Each three-dimensional, prefabricated cage is made of two grids that function as the top and bottom bridge-deck reinforcement. They're separated by FRP spacers that also protrude below the bottom reinforcement to function as chairs.

The prefabricated units were delivered to the job site and placed directly on the bridge deck formwork. They were laid edge-to-edge across the bridge span and spliced using an open overlap of top and bottom grids.

The FRP cages are noncorrosive, lighter than conventional steel reinforcement and require no labor to tie the cages together. Therefore, the FRP cage reinforcement provides rapid placement of highly durable elements that will

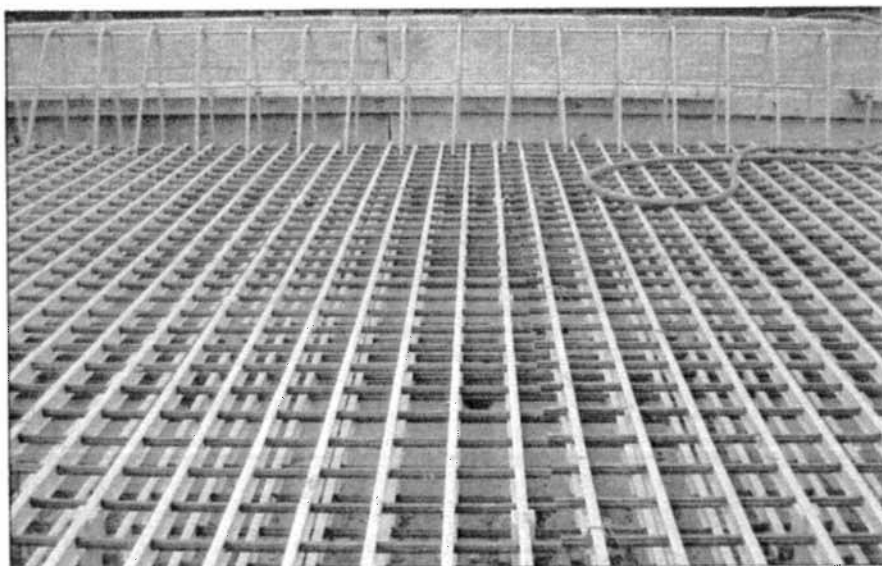


The FRP reinforcement cage, used by Alfred Benesch & Co., requires only a two-point pick-up method.

decrease deck-replacement time and increase the usable life of the deck structure.

"I like the fact that they can just take it and set it in," said EEA Judge Larry Jones. "That's a lot different than tying steel."

The lowest design life of a bridge is typically the bridge deck, especially in cold-weather states that require the use of deicing salts. This project confirms that replacing steel deck reinforcement with FRP material can be performed in a manner that is quicker, lighter and easier to install than conventional steel and with only a marginal increase in material cost. This material cost is compensated by decreased construction time and reduced future impacts on the traveling public. *



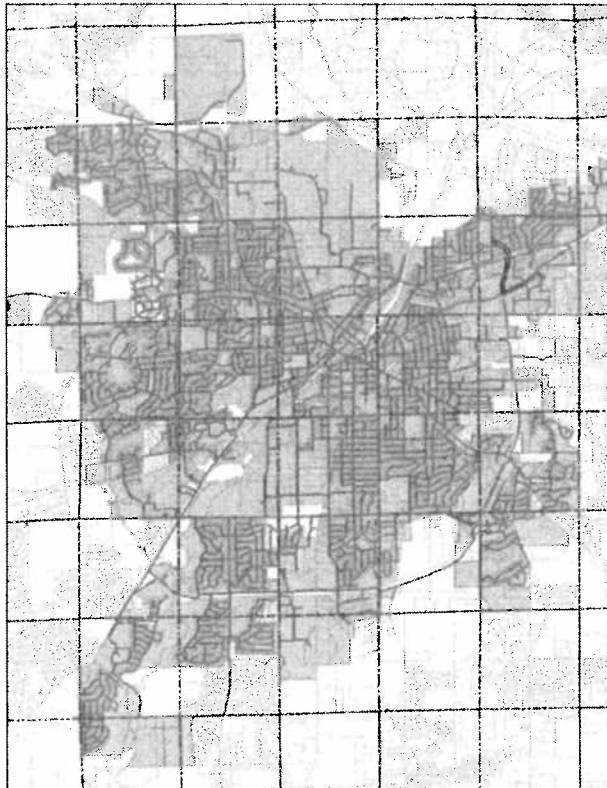
Alfred Benesch & Co. uses the FRP reinforcement cage/steel-reinforced parapet connection at the abutment for its new bridge-deck reinforcement project.



Alfred Benesch & Co.'s completed bridge project features the first bridge deck in Wisconsin reinforced with a prefabricated FRP reinforcement cage.

WAUKESHA WATER UTILITY GIS

R.A. Smith & Associates Inc., Brookfield



R.A. Smith's GIS database allows users to display the entire Waukesha Water Utility distribution system on one screen.

- **CLIENT:** Waukesha Water Utility
- **CATEGORY:** Surveying and Mapping Technology

R.A. SMITH & ASSOCIATES won a Best of State Award for developing a geographic information systems database for the Waukesha Water Utility that set a standard for data management and addressing water quality and supply.

This project is one of the first of its kind in Wisconsin due to its innovative features, such as an enterprise perspective to data management, a customized tool that changes how work is performed in the field and the ability to address critical water supply and quality issues.

The GIS also has far-reaching implications as a model for other utilities that face water-supply issues and want to better manage their data. The GIS eliminated duplicate information and replaced it with one source of consistent, reliable information. Thousands of pieces of data dating back more than 100 years were converted from a variety of both hard copy and digital formats into one common, easily accessible format.

One of the system's most unique and innovative features is its ability to let field staff gain ready access to the data without knowing how to use GIS or the software.

"Engineers designed it to be very user friendly," said EEA Judge Bill Huxhold.

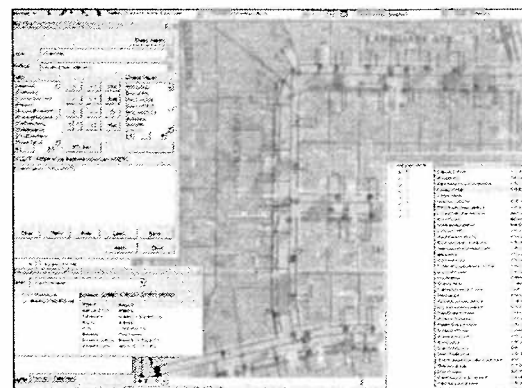
When the user clicks on a particular water main, a box appears displaying formatted database attributes, such as the age of the water main, length of the pipe and connections to other water mains. Having critical information at their fingertips is vital to field workers in critical situations. They can find out exactly where to shut off a valve when a water main breaks or locate the closest fire hydrant when a house is on fire.

The reliability and accuracy of the GIS brings significant value to the community by protecting the public's health and well-being.

"This project will have a lasting impact on the community for years to come," said EEA Judge Mike Oliva.

The community now has a safer water supply, adequate fire protection and better management of water as a scarce resource. The project also resulted in significant cost savings to the utility. ✪

This image shows the complexity of the Waukesha Water Utility's water distribution system and the connections to hydrants, valves and services.



The power of GIS rests in its ability to let users query the database. This Waukesha Water Utility example shows services residing on Millwood Lane.

SUSTAINABILITY IN DOWNTOWN RACINE

Earth Tech Inc., Milwaukee



The Racine Main Street Streetscape Project features redesign and reconstruction from storefront to storefront.

- CLIENT: City of Racine
- CATEGORY: Transportation

EARTH TECH won a Best of State Award for its innovative engineering solutions in the redesign and reconstruction of Racine's downtown Main Street.

This project was successful on all fronts and resulted in a lively, flourishing business district that captures the historical character of the new downtown park and business area while incorporating 21st century technology.

"There was a good contrast between new technology and historic preservation," said EEA Judge Bill Huxhold.

The Main Street Streetscape Project was the culmination of many smaller downtown projects and tied all the elements together. It brings significant value to Racine's residents and business merchants and is an excellent example of technical and public service that brings cultural, economic and sustainable elements to the city.

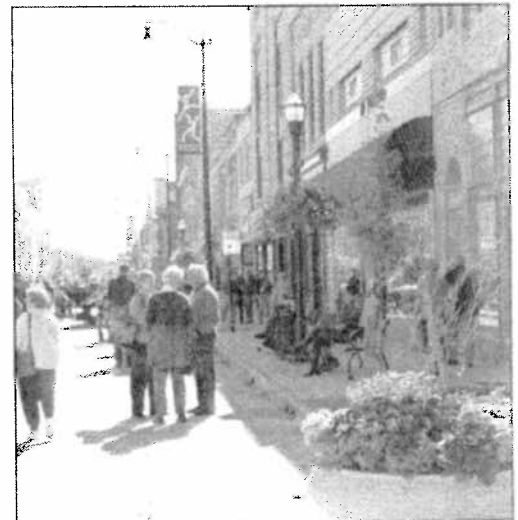
The award recognizes Earth Tech's ability to craft the final touches of the design criteria and manage the design process in a manner that was constructible and affordable. Earth Tech's ability to manage the nuances of old infrastructure — underground storage vaults, utilities and the overall storefront-to-storefront construction — was commended. Innovative applications in managing sanitary sewers with a pipe-bursting mechanism in lieu of excavation also saved the project time and money.

"I was impressed with the complexity of this project, which required a high level of coordination and scheduling," said EEA Judge Dave Benzschawel.

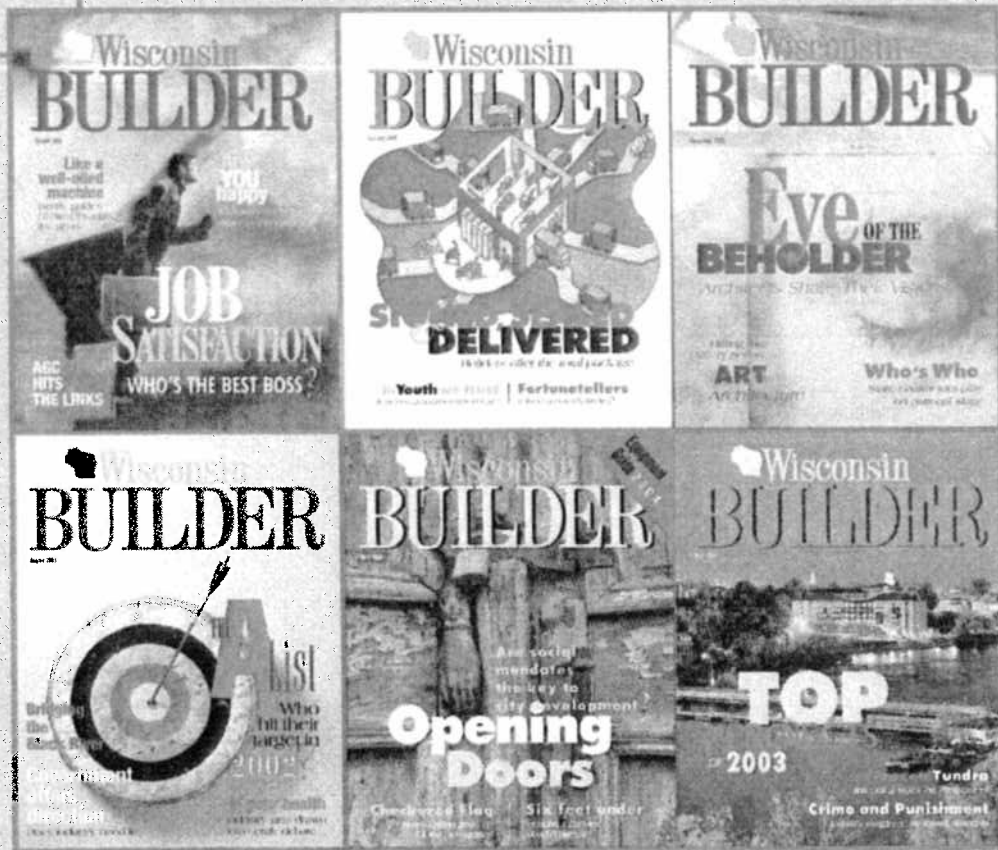
Other consultants providing assistance were The Smith Group JJR, which provided design guidelines for implementing the streetscape project; Martinsek & Associates, which was instrumental in keeping business merchants and residents informed and educated throughout the life of the project; and Schreiber Anderson Consultants for providing signage that was useful in guiding traffic. *



The parking stalls in Earth Tech's Racine Main Street Streetscape project are designed to save cars from the common mishaps and dents associated with bump-out curbs.



The Racine Main Street Streetscape preserves and enhances the downtown's historical presence by incorporating old-fashioned light fixtures, enhancing sidewalks with decorative concrete and lacing the streets with European-style flower urns.



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STATE FINALIST AWARD WINNERS PROVE THEIR VALUE

The 13 winners of the ACEC WI State Finalist Award exhibited innovation, quality planning and technical expertise.

Whether it was reducing fatalities on a dangerous interchange, alleviating high levels of arsenic from a small town's drinking water or encouraging student participation in a centralized sports facility, the projects submitted this year improved the quality of life for fellow citizens.

The winning engineering firms were as diverse as the projects they submitted, representing small and large companies and coming from all across the state.

These State Finalist Awards are tributes not just to the engineering firms but also to the clients, owners, subconsultants, contractors and everyone else who played a role in making these projects a reality. Take a moment to read through each of these projects. You might just find one from your area.



CANADIAN PACIFIC RAILWAY BASCULE BRIDGE

Westbrook Associated Engineers Inc., Spring Green

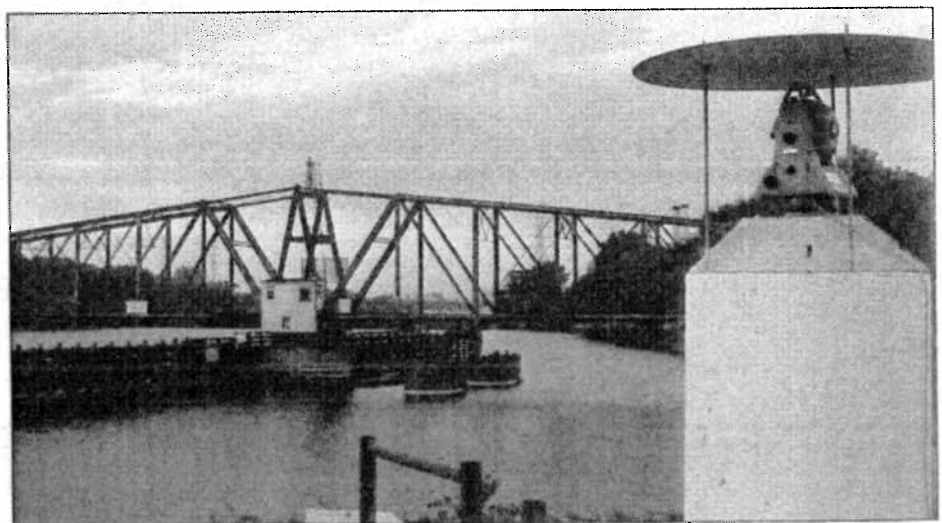
- CLIENT: Edward Kraemer & Sons Inc.
- OWNER: Canadian Pacific Railway
- CATEGORY: Structural Systems

WESTBROOK ASSOCIATED ENGINEERS won a State Finalist Award for contributing its construction-engineering experience to replace a railway bridge over the Black River in La Crosse.

The 100-year-old Black River railway bridge had to be replaced to secure the location as a strategic shipping point for years to come. Canadian Pacific Railway owns the structure and relies on it as part of the firm's mainline track to carry products throughout the Midwest. About 24 freight trains, two Amtrak passenger trains and 10 marine vessels utilize this bridge every day.

Edward Kraemer & Sons contracted with Westbrook to aid in the replacement of the swing-span structure with a single-leaf bascule structure. Westbrook provided survey control, falsework design, in-depth analysis, design of float-in and float-out barge stability procedures and calculated the final balancing of the bascule.

When the existing piers experienced excessive settlement during the installation of the approach piers, Westbrook's scope increased. The settlement occurred due to the poor soil quality and



Canadian Pacific Railway Bascule Bridge

contributed to significant delays in the project. To ensure the approach pier settlement was restricted, Westbrook aided in monitoring the swing-span pivot pier during construction and provided real-time construction data online.

Maintaining the track and keeping the swing span operational during construction was the No. 1 priority set by the owner. Track closure would lead

to rerouting train traffic at an extremely high cost. The swing span had to remain operational until the 72 hours allotted by CPR to switch out the two structures. Westbrook achieved its objectives. The bridge was fully replaced in the time allotted without any interruptions to traffic. It also saved an astronomical amount of money and satisfied both the client and the owner. *



EAST CAPITOL DRIVE RECONSTRUCTION PROJECT

Welch Hanson Associates, a division of Yaggy Colby Associates, Delafield

- **CLIENT:** Village of Hartland
- **CATEGORY:** Transportation

WELCH HANSON ASSOCIATES won a State Finalist Award for its full-service expertise, design excellence and proficient administration in the East Capitol Drive/Cottonwood Avenue Project in Hartland.

East Capitol Drive began as a basic paving program for the village. But Welch Hanson saw a bigger and better picture for this heavily traveled and poorly functioning intersection. Utilizing input provided by the Southeastern Wisconsin Regional Planning Commission regarding traffic flow, multiple design options were created for the village's approval. The improved intersection design created additional pedestrian space and allowed for a new gathering area designated as the Village Center.

Instrumental in making Hartland's vision a reality, Welch Hanson designed the street improvement, landscape and streetscape plans. The firm also performed construction observation. Welch Hanson's planners coordinated with the Village

Plan Commission, the Hartland Area Chamber of Commerce and village of Hartland staff to design an attractive, informal gathering place featuring benches, raised planters, brick accents and trees with decorative grates and guards.

Design elements improved pedestrian access through the downtown shopping area and gave special consideration to handicapped access. This project was the centerpiece of the village's \$800,000 paving program for 2004. The cost of this quarter-mile project was half of that, but the true value far exceeds the installation cost as it contributes to downtown revitalization.

Through the implementation of an effective planning and design process, the project has maintained the unique character of the downtown, enhanced safety and invigorated business opportunities. The application of access-management techniques helped reduce traffic speed while improving traffic flow. This exceptional project demonstrates a successful fusion of a multidisciplinary practice with municipal goals and objectives. The end result is an urban renovation project that achieved functional improvements while producing a beautiful community asset. *



East Capitol Drive Reconstruction Project

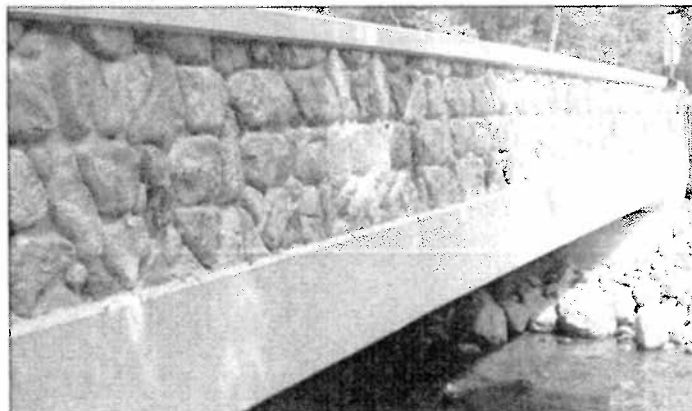


COUNTY HIGHWAY X BRIDGE REPLACEMENT

Mead & Hunt Inc., Madison

MEAD & HUNT won a State Finalist Award for incorporating aesthetics into a transportation facility in Saylesville.

What began as a routine bridge replacement evolved into a project requiring a context-sensitive design solution to maintain the character of a historic district. The County Highway X Bridge is located in a significant 19th century settlement recognized as a National Register-eligible historic district. Though considered historic, the 1934 steel-girder bridge had deteriorated and did not



County Highway X Bridge Replacement

- **CLIENT:** Waukesha County Department of Public Works
- **OWNER:** Transportation

have the necessary clear-roadway width to comply with design criteria. Mead & Hunt was challenged to design a replacement structure that maintained the district's historic character.

The new bridge incorporates aesthetic treatments into the parapet, guardrail, riprap and the structure's approaches. The concrete parapets were created using form liners to achieve a stone-like appearance while maintaining strength and durability. Fieldstone riprap was used for the bridge abutments and adjacent stream banks to control erosion with an attractive look. Even the galvanized-steel guardrails received special brown color treatment to blend in with the surrounding historic buildings.

The bridge design also minimized the impact on a historic fieldstone blacksmith shop at the east end of the bridge, only a few feet from the road. To preserve the historic setting, grid pavers that allow grass to grow were incorporated in front of the building along the structure's approach. The pavers are visually attractive and meet necessary safety standards.

The bridge design offers the residents of Saylesville and Waukesha County a safe transportation facility. It is a sustainable design that provides an aesthetic addition to the historic district and rural environment. Local residents and the county are pleased with the new aesthetically designed structure and the consideration that was given to preserving the district's historic character. *



HATTIE STREET BROWNFIELD REDEVELOPMENT

Ayres Associates, Madison

- **CLIENT:** City of Marinette
- **CATEGORY:** Environmental

AYRES ASSOCIATES won a State Finalist Award for securing grants to finance a long overdue project in Marinette.

Marinette had long been interested in remediation, developing and revitalizing former industrial and commercial properties that bordered its downtown. The properties held contamination and were the site of a deteriorating railroad depot that held historic significance. Residents were using the abandoned railroad grade as a shortcut to a nearby industrial park. Ayres was challenged with tackling this massive project while keeping taxes under control during a time of tight budgets.

The solution came in the form of various grants Marinette was awarded to help finance the project. Ayres Associates used its grant-writing expertise to assist the city in securing various grants for acquiring and demolishing blighted buildings, cleaning up contaminated areas, constructing a commuter street extension and help-

ing to preserve the historic railroad depot. Ayres used a combination of state and federal grants to accomplish the development goals of the city. By combining grants, Marinette was able to use one grant source as a match for another, minimizing its capital outlays.

Beyond its aesthetics, the project vastly improved environmental conditions in the area and created jobs. After Ayres helped the city secure a grant to conduct additional environmental assessment activities, it was apparent remediation was needed. As a result, structures on the site were razed and debris was removed, including some building material containing asbestos.

A new Walgreen's store opened for business on the property in June 2004, bringing 29 permanent jobs to the city along with an attractive building and landscaping. Marinette residents now have a more attractive community thanks to efforts to clean up the blighted corridor leading into their downtown. And the work was easier on taxpayers' pocketbooks than it would have been without the help of Ayres Associates' grant-writing skills. *



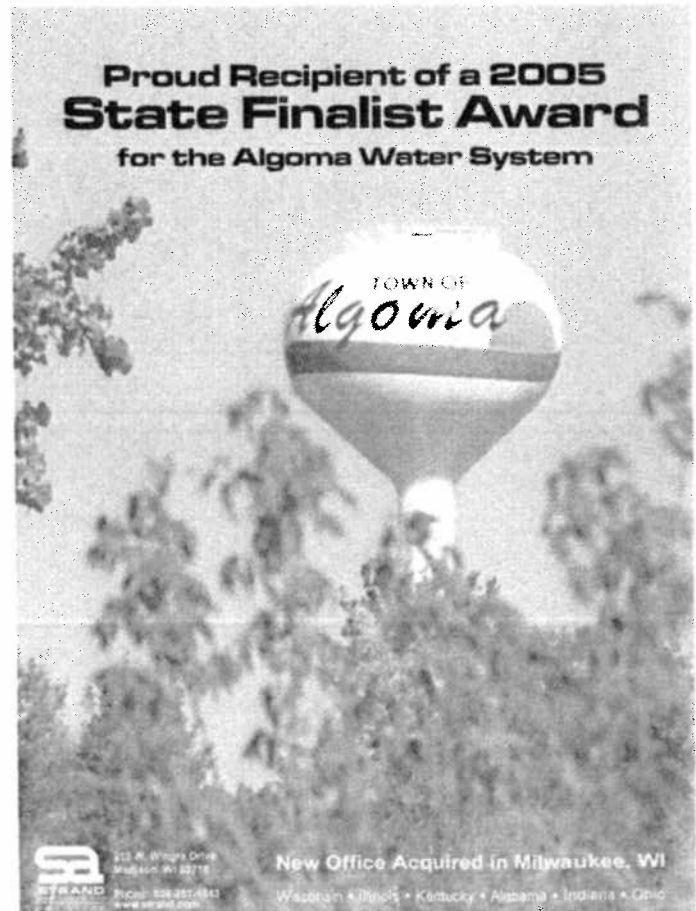
Hattie Street Brownfield Redevelopment



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INTERSTATE 894 RESURFACING

Ayres Associates, Waukesha

- **CLIENT:** Wisconsin Department of Transportation, District 2
- **CATEGORY:** Transportation

AYRES ASSOCIATES won a State Finalist Award for designing repairs to a major Milwaukee County bypass while causing minimal disruption to motorists.

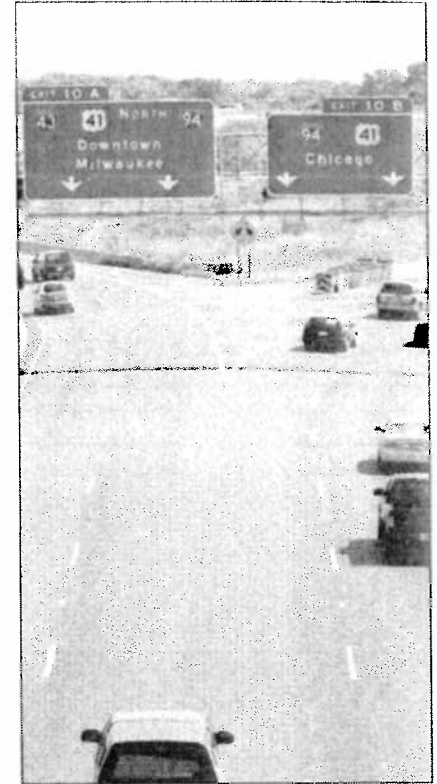
Approximately 150,000 motorists use the six-lane Interstate Highway 894 daily to bypass downtown Milwaukee. WisDOT officials wanted the reconstruction to disrupt this traffic as little as possible and to reach completion quickly. This freeway needed an upgrade before more motorists joined the traffic load to detour around reconstruction of the Marquette Interchange in Milwaukee and before the Harley Davidson Motor Co.'s 100th anniversary celebration in late August 2003.

The Ayres Associates team designed a plan to resurface Interstate 894 and make several safety improvements to the 8.59-mile roadway in a quick and cost-effective manner. The key was urging WisDOT to use rubblizing, a pavement resurfacing technique, for the project. It was the first time the Milwaukee freeway system incorporated this technique, which involved using a machine with hammers to

break the original concrete roadway after removing overlying layers of asphalt. The shattered concrete pieces provided a strong base, and asphalt was then laid on top. Rubblizing was suggested for its speed of construction and cost effectiveness compared to the concrete-base patching method. It is also expected to handle the traffic load for a longer period of time than traditional resurfacing methods.

A significant improvement was to the Mitchell Interchange, which sends traffic north up Interstate 43 to Milwaukee or south on Interstate 94 toward Chicago. The middle lane of 894 in that accident-prone stretch of the bypass was expanded into two lanes as it approached the interchange, giving motorists more time to decide which way to go.

The project also included safety improvements to 22 areas within the project limits, including 12 freeway ramps. Ayres was responsible for 60 percent of the design work, with WisDOT completing final designs. The \$22.3 million project was completed in July 2003. *



Interstate 894 Resurfacing

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INYO COUNTY CALIFORNIA GEOPHYSICAL STUDY

Ruekert/Mielke, Aquifer Science & Technology Division, Waukesha

- **CLIENT:** Inyo County
- **CATEGORY:** Studies, Research and Consulting Engineering

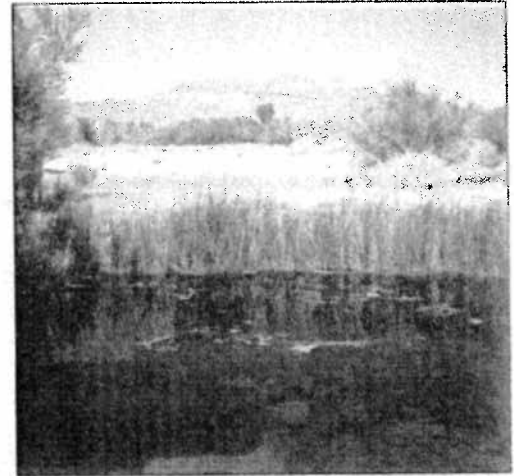
AQUIFER SCIENCE & TECHNOLOGY, a division of Ruekert/Mielke, won a State Finalist Award for the firm's work on a geophysical study near Death Valley National Park in Inyo County, California.

At 282 feet below sea level, DVNP receives groundwater flow from much of southern Nevada. Nevada's Yucca Mountain is the site of the only proposed repository for spent nuclear fuel and high-level radioactive waste in the United States. An estimated 52,000 tons of spent nuclear fuel is stored around the country. This nuclear waste, which will never decompose, is a national health and security problem. If the nation's nuclear waste is moved to Yucca Mountain, Inyo County is concerned it could be the ultimate destination for contamination leaving the Yucca Mountain site.

The hydrogeology of the Death Valley

Drainage Basin was important in understanding the movement of groundwater from Yucca Mountain and the spring discharge in DVNP. To better understand the regional water flow of the 15,800-square-mile basin, the study team had to work in some of the harshest conditions in the nation. Much of the survey area was designated as wilderness, which meant no motorized or wheeled vehicles were allowed. Permanent disruption of the land surface was not allowed either.

The work conducted by Ruekert/Mielke's Aquifer Science & Technology Division was a critical component in this high-level, high-security project. The firm provided geophysical services to map the surface geologic structure of the area. The key to the entire project was to successfully drill monitoring wells into the Lower Carbonate Aquifer to obtain water samples and measure water level. The firm's main task was to find ways to map the top of the aquifer from the mountains into the valley and identify areas where the aquifer could be intercepted by monitoring wells approximately 2,000 feet deep. Through a series of gravity



Inyo County California Geophysical Study

and high-resolution electrical resistivity surveys, the hydrogeology of the area is being mapped in detail. This project represents yet another piece of the puzzle to the complex and still evolving Yucca Mountain Nuclear Repository project. *



LAMBEAU FIELD REDEVELOPMENT

Graef, Anhalt, Schloemer & Associates Inc., Madison

- **CLIENT:** Ellerbe Becket Inc.
- **OWNER:** Hammes Co. Sports & Entertainment LLC
- **CATEGORY:** Structural Systems



Lambeau Field Redevelopment

GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC. won a State Finalist Award for playing a key role in the renovation of Lambeau Field, one of the most legendary stadiums in all of sport.

Although its aura and charm are arguably unrivaled, in many ways the stadium was like a large, unfinished bowl, lacking the amenities of today's modern National Football League stadiums.

GAS provided site/civil/utility design as well as structural steel and foundation design for the project. Among many responsibilities, GAS offered solutions to tricky structural issues in the spectacular Tifletown Atrium, the players' home locker room and the new entrance tunnel into the bowl. In a mere eight weeks, GAS provided solid design expertise important in making sure the facility remained open during the 28 months of renovation and construction.

Additional GAS contributions included a new loading dock, upgraded utilities, increased and automated sanitary sewer capacity and water service and newly landscaped exterior entrances featuring a statue garden of Packers greats. Player and media parking areas were also extensively upgraded.

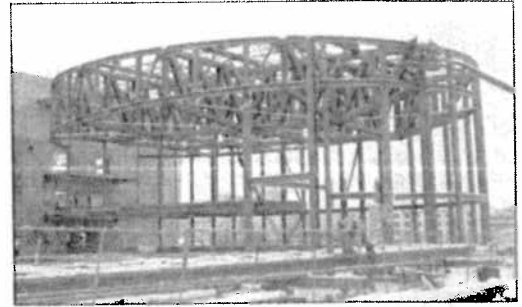
Completed on time and within a strict budget, this highly successful project has been the subject of universal acclaim. The new facility maintains the intimacy of historic Lambeau Field while making the stadium one of the most modern and functional homes in the NFL. GAS was afforded the opportunity to play a vital role in providing the Green Bay Packers and its loyal fans with a modern facility. Prior to the renovation, the stadium was used only 10 days a year for Packers games. Now it is a year-round facility giving back to the greater Green Bay community in many ways. In an era of extravagant building programs, this project is a cost-effective, adaptive reuse that maximized taxpayer value and solidified the Green Bay Packers' home for generations to come. *



**MILWAUKEE SCHOOL OF
ENGINEERING KERN CENTER**

Arnold & O'Sheridan Inc., Brookfield

- CLIENT: Uihlein Wilson Architects
- OWNER: Milwaukee School of Engineering
- CATEGORY: Structural Systems



Milwaukee School of Engineering Kern Center

ARNOLD & OSHERIDAN won a State Finalist Award for its engineering-systems design at the Milwaukee School of Engineering's Kern Center.

MSOE's Roscoe Raiders will no longer be the Raider's of the lost ark. Their ark has been built. For the first time in 100 years, all sporting activities will be located in one facility.

MSOE wanted to establish a centralized location that students, faculty and alumni could identify with. It also wanted to provide current students ample access for personal-fitness programs and competition and to create an environment that attracts new students to the campus.

Arnold & O'Sheridan was responsible for the engineering components of the project. Looking at the design elements, building size and uses, vibration considerations and site constrictions, the firm's solution was to design a building system with two major building masses arranged on each side of a straight line division wall. This innovative solution created a separation between the two buildings, allowing each side to remain independent in the event of a fire on

either side of the building. The independent division wall allowed the use of two different types of occupancy codes. It allowed creativity in regard to height requirements and code restrictions. Its use as an expansion joint ultimately resulted in greater cost savings.

The \$31 million, 21,000-square-foot facility, with its grand, glass elliptical entrance, beckons students, faculty and neighbors to participate in its numerous amenities. Housed in this five-level structure are a 1,600-seat hockey arena, a 1,200-seat basketball arena, a wrestling area, a suspended running track and a field house with two full-sized tennis courts, three full-sized volleyball courts and a pole vaulting and long jump pit.

Arnold & O'Sheridan was elated to be a part of an engineering project that encouraged participation and education of MSOE students. Student participation in specialized areas of engineering was an important part of the project. Watching the project unfold before them brought their studies to life. Today, there is no question where the MSOE Raiders reside. *

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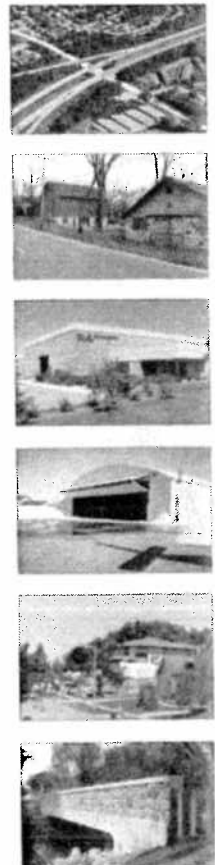
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Mead & Hunt is a proud winner of the State Finalist Award for the C/O X Bridge Replacement in Waushara County in the 2005 ACEC WI Engineering Excellence Awards competition.





ROOT RIVER PATHWAY — PHASE I

Clark Dietz Inc., Kenosha

- **CLIENT:** City of Racine
- **CATEGORY:** Transportation

CLARK DIETZ won a State Finalist Award for improving public access to Racine's natural resources in Phase I of the Root River Pathway Project.

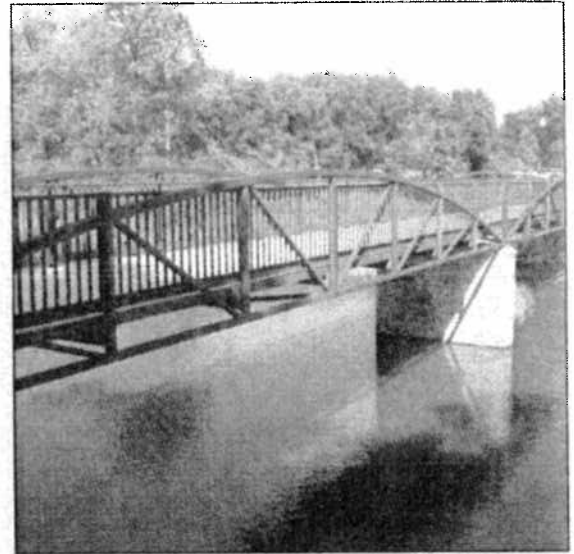
Like many similar cities of this size and age, Racine's lakefront and rivers were historically utilized for industry and trade. These outstanding natural features had not made the transition back to becoming resources that could be enjoyed by today's residents and visitors for the features' aesthetic beauty and recreational opportunities.

The Root River Pathway has converted part of the central city's river edge into a park-like trail that benefits the entire community. The two-mile segment of this multiple-use pathway runs through the heart of the city along the Root River. It provides connecting links between three parks, the corporate headquarters of CNH Global and the Lake Michigan waterfront. The designed amenities

provide for viewing and utilizing the river for recreation. Decorative lighting provides safety and extended hours of utilization.

The project also involved the redesign of a crossing under a railroad bridge. Textured and colored concrete was used for the scenic overlook and the new 160-foot, two-span pedestrian bridge constructed over the Root River. River access and accommodations for anglers and canoeists were provided at selected points along the path.

This project demonstrates how engineers can have a positive effect on local residents and their activities. By developing and implementing this bike path system in manageable phases, improvements would be noticeable and fiscally manageable over a short time. Racine wanted a showcase bike path it could advertise as the beginning of the city's rejuvenation. The city's wish was granted. Racine was officially declared a "Bike City — USA" at a dedication ceremony on July 3, 2004, for the creation of 15 miles of new bike paths. *



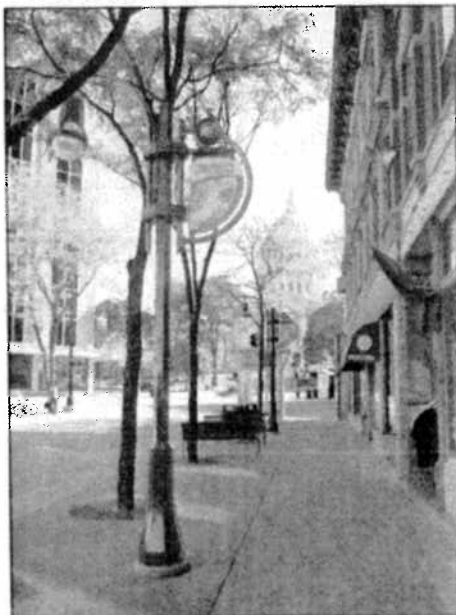
Root River Pathway — Phase I



STATE STREET MALL RECONSTRUCTION

MSA Professional Services, Madison

- **CLIENT:** City of Madison
- **CATEGORY:** Transportation



State Street Mall Reconstruction

MSA PROFESSIONAL SERVICES won a State Finalist Award for reconstructing the heart of the downtown University/Capitol Square area in Madison.

The eyes of the Midwest were on Madison's State Street as it was reconstructed to coincide with the grand opening of the world-class Overture Center for the Arts. The renovation needed to enhance the character of this well-known street, keeping what makes it special while meeting the needs of a variety of stakeholders, including businesses, pedestrians, residents, the Overture Foundation and the city. As the prime consultant for this project, MSA met a tight eight-month time frame for design.

Since aesthetics were so critical to retaining the sense of place for State Street, the team searched for a design to save the 52 existing trees, most of which had 30-year growth. A reinforced concrete

structural sidewalk slab was designed to span the tree planting zones, resulting in minimal disturbance of existing tree roots and giving them increased space and room to grow. This was the first time this application was used to improve growing conditions for existing urban trees.

Public involvement was a critical aspect of the project. The MSA team participated in approximately 100 meetings as it met with interested parties throughout the design and construction phases to identify and address concerns. Street access was maintained for pedestrians and 50 small businesses.

The MSA team, as the designer of the first two blocks, also established the identity of the State Street District through a custom logo and banner system, lighting, bus shelters, kiosks and newspaper corrals. This flexible and timeless design established the visual thumbprint for the remainder of the State Street Mall reconstruction project. *

**STATE
FINALIST
AWARD**

TOWN OF ALGOMA WATER SYSTEM

Strand Associates Inc., Madison

- **CLIENT:** Town of Algoma Sanitary District No. 1
- **CATEGORY:** Water and Wastewater



Town of Algoma Water System

STRAND ASSOCIATES won a State Finalist Award for its design of a water system for the Algoma Sanitary District No. 1.

The town was without a municipal water system, and 40 percent of its residents' private wells had significantly elevated levels of naturally occurring arsenic. The community could not address its arsenic problem townwide because the remaining 60 percent of residents whose wells were untainted by arsenic objected to financing a water system that would not benefit them directly.

The deadlock was broken in late 2002 when the developer of a new subdivision promised to connect all his new lots to a public supply if it could be operational by 2004. With a guarantee of paying customers for the new system, the town was able to start design and construction of a well, water mains and an elevated tank that would serve those parts of the community most in need of clean water supplies. Residents with uncontaminated wells would not be required to connect to the system, sparing them from having to bear any financial burden for the project.

Instead, with Strand Associates' help, the Algoma Sanitary District became the first new water system to receive Wisconsin Department of Natural Resource's safe drinking water low-interest loan financing, which further helped the system become a reality.

The first phase will serve 450 homes within three years. It was designed with the ability to expand to nearly 900 homes in five years. The phased approach allowed ease of expansion to serve all residents who request water in the future, while minimizing initial capital costs. Because of the cooperative efforts among all parties, public water service was available in September 2004, two weeks ahead of schedule and at a price below budget.

The project was so successful that Algoma recently signed an agreement to provide water to the adjacent town of Omro. Overall, the voluntary water system has been a major success, providing great tasting, excellent water, without a trace of arsenic, to those who need it most. *



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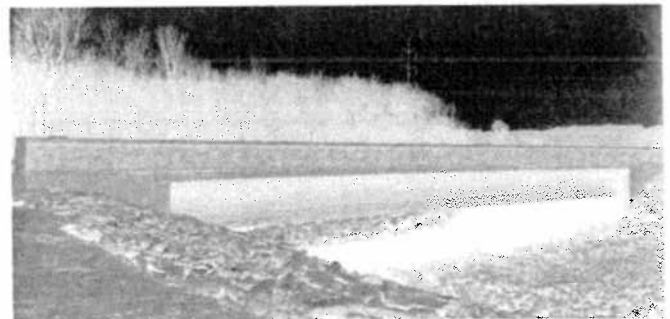
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WATER STORAGE STANDPIPE REPLACEMENT PROJECT

Davy Engineering Co., La Crosse

- **CLIENT:** Village of Fairchild
- **CATEGORY:** Water and Wastewater

DAVY ENGINEERING won a State Finalist Award for designing and engineering a replacement for the village of Fairchild's 34-year-old, 100,000-gallon, welded-steel standpipe.

The village's standpipe was badly deteriorated and required extensive welding of pitted areas. It also needed complete surface preparation and painting of both interior and exterior surfaces. Removal, containment and disposal of lead-based paint made this project too costly for the maintenance budget of this small, 550-person community.

GME Consultants Inc. and Engineering America Inc. assisted Davy Engineering in replacing the standpipe on the existing foundation. Planning a strict schedule of milestones for project completion, the team demolished the old tank, erected a new tank and got it online in only 23 days, less than one-half the estimated time to repair and repaint the existing tank.

In a joint effort with the village, Davy Engineering filed a successful application with Rural Development for federal assistance. The result was a 52 percent grant and a local share that was 42 percent less than the alternative of refurbishing the old tank. The new, glass-fused-to-steel standpipe is a minimum-maintenance structure that offers renewed life expectancy and considerable long-range cost savings for the village.

The new standpipe provides increased capacity and pressure that will serve the village's current and projected needs. A design feature of the new tank offers the ability to add capacity by inserting 4-foot-high rings at the tank bottom anytime.



Water Storage Standpipe Replacement Project

A detailed soils, foundation and load-bearing capacity analysis, up-front research and planning and outstanding coordination between the engineer, village, suppliers and contractors were key elements to the success of this project. These vital elements minimized downtime and guaranteed the compatibility and suitability of the existing foundation and new tank. *



WAUPACA INTERCHANGE & AIRPORT RUNWAY

OMNNI Associates Inc., Appleton

- **CLIENT:** Wisconsin Department of Transportation, District 4
- **CATEGORY:** Transportation



Waupaca Interchange & Airport Runway

OMNNI ASSOCIATES won a State Finalist Award for solving a highway-safety hazard and improving air transportation while saving taxpayers thousands of dollars.

The project involved a new interchange on U.S. Highway 10 to replace the hazardous, at-grade intersection with County Highway A. It also involved a new runway for the Waupaca Municipal Airport to accommodate jet aircraft.

Several fatalities had occurred at the Highway A intersection on Waupaca's southeast corner, prompting the sheriff and others to plead for a safer alternative. The interchange was originally scheduled for construction in 2006 as part of the Waupaca East Bypass of state highways 22 and 54. To answer these concerns, the project was advanced to 2003 to coincide with the planned airport expansion.

By combining the airport project and interchange project into one construction contract, more than \$500,000 was saved. However, to make this work, OMNNI had to fast-track the interchange design and deliver plans three years

ahead of schedule. In addition, the project required the unique cooperation of the Wisconsin Department of Transportation's Division of Transportation Districts and the Bureau of Aeronautics, as well as the Wisconsin Department of Natural Resources, the U.S. Army Corps of Engineers, the city of Waupaca, town of Waupaca, town of Lind and Waupaca County. A project of this magnitude could have been overwhelming if not for the strong cooperation, teamwork and partnership of all participants. As a result, the project was completed significantly ahead of schedule and under budget.

This project is a great example of successful public/private partnerships. It demonstrates the successful collaboration of state and local governments as well as the flexible role of the engineering consultant in helping the public sector achieve its goals. The redesigned roadway and airport greatly improves safety for its users and increases economic development opportunities, all to the delight of the residents of the city of Waupaca and the entire Chain of Lakes area. *

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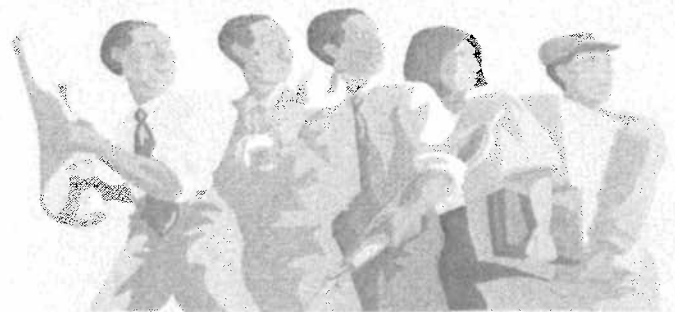
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The QBS Process

1. Planning
2. Selection
3. Negotiation

For details, check out the QBS Manual on www.qbswi.org.

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Qualifications-Based Selection (QBS) "When quality and value matter"

When someone in the public or private sector is faced with an engineering or architectural need, the most important decision for the project's success is the selection of a professional engineering or architectural firm.

This decision influences the level of success of every project element, including issue identification, option analysis, stakeholder participation, design, budget, schedule, permitting, aesthetics and operating costs, to name a few.

Qualifications-Based Selection is the best method to select the right professional. It's used in the government sector with federal agencies, the majority of state agencies and more and more local units of government requiring QBS.

QBS has proven to be the most effective means of getting the expected results when quality and value matter.

What is QBS?

Qualifications-Based Selection is a procedure designed to help owners find the most qualified architect or engineer for their projects. It is an objective, fair, defensible and competitive selection process based on qualifications and competence in relation to the work to be performed.

Experience has shown that using QBS can be more efficient, more effective and less costly than using alternative selection processes.

What kinds of municipal contracts don't have to be competitively bid under state law?

The bid law only applies to public-construction contracts. It is not necessary to advertise for bids when hiring engineers, architects and other professionals to work on municipal projects.

How does one select a design professional?

When a feasibility study or design project is undertaken, the selection of the most qualified architect or engineer is critical to project success. The architect/engineer's performance can influence the entire project's outcome, including financial feasibility, public response, appearance, functional efficiency, construction costs and operating and maintenance costs during the project's life.

The QBS Program is an invaluable resource to board members, committees and staff when an organization begins project planning.

QBS Wisconsin provides, at no charge, a facilitator to help owners learn about the QBS process and train selection teams on the specifics of proposal preparation and interviews.

Which organizations use QBS?

- American Public Works Association
- Federal Highway Administration
- U.S. Army Corps of Engineers
- Wisconsin Department of Commerce
- Wisconsin Department of Natural Resources
- Wisconsin Department of Public Instruction
- Wisconsin Department of Transportation
- Wisconsin Division of State Facilities
- Wisconsin Association of School Boards
- Wisconsin League of Municipalities
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