



Volume VIII  
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BY DESIGN

## Tracking Details

### *Management & Observation Skills Strongly Influence Project Success*



From design to completion, a civil or environmental engineering project typically spans one to two years. Often, a job is identified, designed

and bid during the winter months so that construction can begin with the onset of spring and warmer weather. Appropriate project design and accurate specifications build success in the early stages of a project. Construction quality and client satisfaction, however, are cultivated through the efforts of the project manager and the project's engineering technician. As construction proceeds, these skilled managers monitor and facilitate its development, weaving together the details that ensure success.

#### **On the Job in Hastings, Minnesota**

A nearly completed project in Hastings, Minnesota is case in point. Improved surface drainage on Dakota County Road 42 motivated the project, but extensive utility upgrades,

improvements to four residential side streets, and construction of a bike path to the Mississippi River were included in the comprehensive plan. Improvements to county roads were the responsibility of Dakota

County. The City of Hastings, together with Barr Engineering of Minneapolis (comprehensive storm sewer and ponding design), and Bolton & Menk (design and on-site observation of utilities, City street improvements, street lighting and bike path) handled the rest of the project. The project was initiated in April, 1997

and is scheduled for completion in June, 1998.

Ron Roetzel, P.E., of BMI's Burnsville office served as project manager for the City's portion of the County Road 42 project. He emphasizes the importance of the role played by Tom Overman, Senior Technician, in the successful completion of the work,



*Grading of Dakota County Road 42 moves the the project toward a close.*

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# *City of Saint Peter Project Wins CEC/M Grand Award*

The Consulting Engineers Council of Minnesota (CEC/M) has announced that the Minnesota River Forcemain Project in Saint Peter, Minnesota, has won a Grand Award. The Engineering Excellence Award program was initiated by the American Consulting Engineer Council (ACEC) to increase the public's perception of what it is engineers REALLY DO. Engineer Excellence is an annual design competition that recognizes engineering achievements which demonstrate the highest degree of merit, ingenuity and excellence. A banquet to honor all of the entries will be held on February 13, 1998 in Saint Paul. The top entries from the State of Minnesota will go on to participate in the ACEC National Engineering Excellence Awards program in Washington, D.C. and compete with Grand Award winners from other states. The judging for the national competition will be held in mid-March.

When Saint Peter, Minnesota discovered the flood of '97 had dislodged four feet from a 12-inch forcemain in the Minnesota River bottom, a million gallons of untreated wastewater was pumping into the river daily. The 35-year-old line had been dredged into place to carry wastewater from the city to the treatment facility across the river. Repair or replacement of the pipe was especially difficult in the raging waters. As the river receded, environmental risks grew. Not only could high bacteria levels spawn disease, depleted oxygen levels would endanger marine life.

Bolton & Menk worked with the City to devise a quick and effective solution — directional drilling. Cost comparisons showed that directional drilling would be permanent, faster and cheaper than trenching and would create minimal environmental damage. State permitting for the \$630,000 project took only two days. Drilling began May 8 and sewage was flowing to the treatment facility by May 16.



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recycled paper.*

# Public Perception of Project Value Increases When Details, Costs, and Scheduling are Shared Regularly

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“Tom started with Bolton and Menk at the onset of this project. He came to us with many years of experience and most importantly, a particular expertise in project observation and management. Tom skillfully handled construction observation for the Hastings project, as well as day-to-day coordination of work and communication with property owners. Community satisfaction with the project, to a large degree, resulted from his efforts.”

## What Does a Project Observer Do?

One of the most important tasks handled by a project observer is the prioritization of work. In Hastings, this meant an initial focus on streets used to celebrate the community’s River Town Days. Working closely with City staff, Overman facilitated a progression of work that allowed festival plans to continue as usual.

As construction observer, Overman also monitored the work of contractors and conformance with plans and specifications. This responsibility included testing and quality control of materials, preparation of pay estimates, tracking of project schedules, coordination of staking, and day-to-day communication with the City, contractors and property owners.

Overman facilitated weekly informational meetings with City officials, County officials, and contractors during construction. Perhaps more importantly, he spent a great deal of time

speaking personally with property owners. These conversations helped residents prepare for the inconvenience of construction, and reinforced confidence in the positive long-term impact of the project.

## Observation Keeps Things on Track

Hastings Public Works Director, Tom Montgomery, noted that this project necessitated that the City have someone outside of City staff on the job at all times, “Utility construction is complicated, and in this project one hundred households were directly affected by the project. We did not want people to be without sewer and water service for long periods of time. We needed someone on the job who could facilitate this, and Tom was a wonderful asset. He worked incredible hours and his low-key, helpful attitude earned the respect of homeowners.”

## An Energetic Commitment to Quality & Client Satisfaction

The Dakota County project will come to a close this spring with completion of landscaping, bike trail, and lighting



Good project management and observation encourage high-quality results.

work. The general feeling in Hastings is one of satisfaction; long-term structural needs have been met, and the bike trail, when completed, will create a recreational link to the Mississippi River. Overman, too, is satisfied with results to date,

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Quality Engineering for  
Tomorrow's World.

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“A project like this begins with a combination of optimism and caution. I anticipated the best, then worked to make it happen. In Hastings, Arcon Construction was a good partner to work with — this contractor’s expertise allowed me to concentrate fully on coordination, observation and communication and to make myself available to residents. In my experience, people are generally pleased with utility and road improvements, and can handle the inconvenience of construction when things are communicated well. In Hastings people were, for the most part, excited about the improvements and many used the opportunity to make home improvements. I’m satisfied with the results of the project so far, and am eager to see the finished project.”

You can't *drive to work, walk the dog, cook that pot roast, bake that bread, shower after jogging, watch 60 Minutes, toast the toast, brew the coffee, mow the lawn, call your mother, be cool in the summer, wash your sweat suit, dine out, play computer games, medicate your cold, build your new house, listen to "old blue eyes", ride your bike, videotape that wedding, vacuum the rug, recycle your garbage, play baseball at night, be warm in the winter, fly to Hawaii, check the time, flush the toilet, buy a fresh tomato in winter, fill that cavity, use the cash machine, mail that letter* without an engineer.

## National Engineers Week

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