

# Gateways

Information from Gateway Geotechnical

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Are you dealing with or have questions about a geotechnical issue? If so, send us an [email](#).

We'll get you the solution!



We are sincerely appreciative of your support, and wish you a thankful holiday with family and friends.

GATEWAY GEOTECHNICAL

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## COLD WEATHER CONCRETE

**Q. What happens to concrete placed in cold weather?**

**A. Hopefully only slower setting and rate of strength gain.**

Just as in hot weather (see Gateways, August 2016 available on our webpage) precautions need to be taken with the placement, finishing, curing, and protection of concrete placed in cold weather. And what's cold weather – below about 40 degrees F, particularly for more than a few consecutive days after placement. Below about 25 degrees F the plastic concrete mixture can freeze, possibly requiring removal and replacement.

If the concrete pour cannot be delayed for warmer weather, special precautions need to be implemented to maintain a temperature of 50+ degrees F. The following are just some general things to think about.

- Place concrete at the lowest practical slump.
- Use air-entrainment, high early Type III cement.
- Maintain ground, forms, reinforcing at temperatures above freezing.

- Consider accelerants such as limited use of calcium chloride.
- Insulate to retain the heat of hydration.
- Use blankets and tarps, or possibly straw covered with plastic sheeting.

As they say it's the details that matter. So check ACI 306R Guide to Cold Weather Concreting, and the many available webpages of information for more tips.

Also, don't forget to protect test cylinders made during the pour. Gateway can provide protective boxes, but that may not be enough. Frozen cylinders seem to happen once or twice every winter. Because of their relatively small mass they are particularly susceptible to freezing. And if so, they will not provide reliable breaks allowing early removal of forms, construction activities, or trafficking.

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## **ANNOUNCEMENT-**

THD DESIGN GROUP, INC is a Chesterfield Valley firm, having served primarily the residential market place and associated infrastructure since 2010. The firm's specialty in civil engineering and surveying is now provided by seven design staff and fifteen surveyors. Earlier this year, Gateway Geotechnical became a Division of the firm, with our staff of five working from co-located office and laboratory facilities.

We are still guided by the same principles we have lived since 2006 – providing professionally competent and responsive geotechnical services. The only difference is our street address which is now 148 Chesterfield Industrial Boulevard, Suite E.

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## **GETTING PAID ON TIME-**

One of the more challenging aspects of running a small business (or even being a part of a bigger business, if you look beyond that regular pay check) is controlling cash flow, which ultimately depends on GETTING PAID ON TIME. These days the cash cycle seems to be getting longer and longer, as many firms have adopted a pay-when-paid policy, or just automatically impose net 90 or even 120-day pay clauses. So, it is imperative that we all do what we can to collect for our work; in fact, we should all expect to be paid on time.

Here's some tips from the industry –

Follow documented collection actions and responsibilities.

You should have a formal procedure for collecting invoices, including who is responsible for following-up unpaid invoices through electronic and direct voice communication, addressing interest or other non-payment penalties, and when to initiate professional collection or legal alternatives. The main thing here is that your procedures need to be adhered to in each and every case, even for your delinquent “friends.”

Collect as soon as possible. Your chance of collecting after 30 days drops to about 90 percent (be thankful for those good clients who pay this promptly), and goes down quickly from there. By the time your invoices are 6 months in arrears, count on only a 30 percent chance of collecting, and after 12 months – 10 percent or just forget it!

Set expectations with clients up front – not only what your technical deliverable will be, but what the payment arrangements are, and sign a contract instead of what seems like verbal agreement. If you still have collection issues, maybe you can set up a payment plan. Slow collection is better than no collection, or winning a hollow settlement in Small Claims Court.

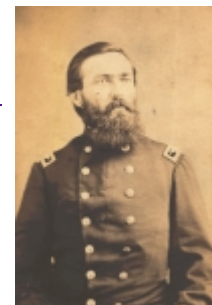
Decide which customers you want to keep. You could include a retainer up front for new clients or those you suspect may be late payers (We don't do this too often, but have never been rejected because we asked for a retainer). Life is a lot better when you shed perpetual deadbeats from your “A” client list. If your uncollected amount is \$10,000 and your average profit is 10%, it takes \$100,000 in additional revenue to just offset the loss – and that's the same as performing \$100,000 worth of work at cost (hopefully it'll be for a better client!).

We can all do a better job of getting paid on time – we deserve it.

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## **HENRY FLAD - A PIONEERING ST. LOUIS CIVIL ENGINEER**

In Gateway's ongoing series of famous St. Louis civil engineers – see our new webpage at [www.GatewayGeotechnical.com](http://www.GatewayGeotechnical.com) for stories about **James Pugh Kirkwood, James Buchanan Eads, Charles Shaler Smith, Robert E Lee, and Guy Dufossat** – we're now recognizing Henry Flad, another pioneering St. Louis Civil Engineer.



**Henry Flad** was born near Heidelberg Germany in 1824 (long before I lived there), graduated with an engineering

degree from the University of Munich in 1846, and emigrated to the United States in 1849. Starting as a draftsman in an architect's office, he soon became a design engineer for the New York and Erie Railroad, and then working on the Cincinnati to St. Louis route for the Ohio and Mississippi Railroad. And in 1854, he joined the Iron Mountain Railroad in Potosi, during its construction.

As an engineer during the Civil War he was involved in numerous military campaigns, and provided repairs to the Mobile and Ohio, Mississippi Central, Memphis and Charleston, and Nashville and Northwestern Railroads. Returning to St. Louis, after becoming a Colonel during the War, James Buchanan Eads, Chief Engineer of the St. Louis and Illinois Bridge Company, hired Flad as his assistant overseeing design and construction of their Mississippi River crossing. Flad's significant contributions included structural analysis of the bridge, and development of a method of erection without falsework.

In 1865 he was named Assistant to the Chief Engineer James Pugh Kirkwood of the newly formed Board of Water Commissioners. Following the design of a new water system at the Chain of Rocks, initial approval by the Water Board, and the subsequent resignation of the Board, he remained as Acting Chief Engineer. A revised plan including facilities at Bissell's Point and Compton Hill was approved for construction and put into service in 1872.

In 1876 he was elected President of the newly formed City of St. Louis Board of Public Improvements, and again in 1880, 1884, and 1888. Following 14 years of service to the City, he succeeded James Buchanan Eads as a Commissioner of the Mississippi River Commission. During this period, the new policy of lowering the low water channel by dredging was adopted, largely as the result of his efforts.

What's his connection with today's civil engineers? Flad managed to be an early force in establishing the St. Louis Section of the American Society of Civil Engineers, serving as the Society's National President in 1886-1887, and as President of the Association of St. Louis Members of ASCE here in St. Louis in 1888. He was also a founding member of the Engineers Club of St. Louis in 1868, serving as its President for its first 12 years.

It's obvious that many of St. Louis's early civil engineers were connected through our history with the railroad and transportation industry.

TMM, November 2017

Credit: Most of the above information was extracted from Wikipedia and the American Society of Civil Engineers, St. Louis Section publications

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## GATEWAYS AROUND TOWN

Here at Gateway Geotechnical, we strive to be creative in solving our clients' needs; and as a reminder of that goal we are bringing back our most-asked about feature - GATEWAYS AROUND TOWN. Here are the rules - the first person to email us the specific location of the following gate will win recognition in our next issue of Gateways and a Barnes & Noble Gift Certificate, perfect for holiday spending.



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