

GFIA protects passengers and the environment

Over the next few months, most of us will spend hours scraping our car windows and turning up our defrosters before we brave the winter roads. But if keeping your car clean ever seems like troublesome work, remember that airline crews at Gerald R. Ford International Airport (GFIA) will be keeping ice off the wings, windows, and wheels of the many aircraft that fly in and out of Grand Rapids every day.



A Northwest Airlines maintenance crew de-ices an aircraft at Gerald R. Ford International Airport in Grand Rapids.

To make sure planes can take off and land safely, airline crews at GFIA use glycol, the only deicing fluid approved by the Federal Aviation Administration (FAA). It works very much like engine antifreeze or windshield deicing fluids, only on a much larger scale.

But while glycol keeps passengers and crews safe, it can harm the environment if it isn't used properly. Deicing an airplane requires much more fluid than deicing a car windshield, and once its work is done, the glycol mingles with the melted ice and snow and flows into GFIA's stormwater system, which empties into Plaster Creek and the Thornapple River.

"Glycol has a secondary affect on the environment," said Prein&Newhof engineer John Stroo. "Its presence in a body of water can cause certain bacteria to multiply, depleting the water's oxygen supply."

In other words, glycol serves as food for hungry bacteria, which can rob fish, frogs, and other organisms of oxygen, destroying the beauty and diversity of a healthy ecosystem.

GFIA has a permit from the Michigan Department of Environmental Quality (MDEQ) to discharge its stormwater, but it must reapply for the permit every 5 years by showing that it is continually improving its stormwater system.

With the help of Prein&Newhof, the airport received its first stormwater permit and is in the process of applying for another. Every year, P&N and GFIA work together to design and implement improvements to the stormwater system. Recently, P&N has been working on a system to test and retain the glycol used by freight carriers at GFIA.

Collaborating with engineering firm Limno-Tech, Inc. (LTI), P&N helped the airport obtain approval for a Best Management Practices (BMP) Program from the MDEQ. A BMP is a game-plan describing what the airport will do to monitor and improve its stormwater management system. It is updated every five years, and it must be approved by the MDEQ.

"The BMP allows the airport to continue deicing aircraft and to improve its deicing fluid release and retention process," said Stroo. "This keeps winter travelers safe while protecting the environment."

The airport's BMP requires (among other things) that three times each winter, a member of the P&N project team visits discharge locations to gather samples. These samples are tested at P&N's Laboratory to determine the level of glycol in the water. Limno-Tech, Inc. compiles the results

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of these tests into a figure representing the amount of glycol released into the environment, collected at the airport, and evaporated into the air. This figure is then included in an annual stormwater report.

Also included in the annual report are recommendations for improvements to the airport's stormwater management system. "We are always looking toward future improvements," said GFIA facilities engineer Ken Klomprens.

One example of an improvement resulting from these recommendations is the hybrid deicing process used by

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Employee Achievement



This spring, the State of Michigan licensed **Daniel Lewis** as a Professional Engineer (P.E.). Dan holds a Bachelor of Science degree in Engineering from Calvin College. He has worked from P&N's Kalamazoo Office since

2001 as a Project Engineer on site development, wastewater, water, and transportation projects.



This spring, the State of Michigan licensed **Nathan Vriesman** as a Professional Engineer (P.E.). Nathan holds a Bachelor of Science Degree in Engineering from Calvin College. He joined P&N full-time in 2001. Nathan works

from the firm's Byron Center Office as a Project Engineer on wastewater, water distribution, and commercial site design projects.

Summer Interns

Prein&Newhof thanks 20 interns for all of their work this summer:

- Matt Ballard, Survey Assistant
- Patrick Brechting, Construction Observer
- Tom Cook, Construction Observer
- Cameron Dulin, Construction Observer
- Lael Galardi, Communications Assistant
- Robert Geske, Survey Assistant
- Dan Gezon, Construction Observer
- Christopher Hanchett, Construction Observer
- John Janssen, Survey Assistant
- Andrew Kraus, Laboratory Assistant
- Jennifer Mastenbrook, Office Assistant
- Steve Oele, Survey Assistant
- Andy Reimink, Survey Assistant
- Tom Reimink, Library Assistant
- Bill Roberson, Survey Assistant
- Chris Ruitter, Construction Observer
- Dan Shira, Survey Assistant
- Eric Stehouwer, Survey Assistant
- Kyle Thompson, Construction Observer
- David Vriesman, Construction Observer

Appointments

At its most recent shareholders' meeting, Prein&Newhof elected four Associates to serve 3-year terms on its Board of Directors. They join Directors Kenneth Bosma, P.E.; Arthur Brintnall, P.S.; Michael Fuller, P.E.; Philip Glupker, P.E.; Thomas Newhof, P.E.; Mark Prein, P.E.; Robert VanderMale, P.E.; and Thomas Wheat, P.E.



Michael S. Bergstrom, P.E., joined Prein&Newhof in 1971. He is the Corporate Secretary and manager of the Personnel Department. Mike holds a Bachelor of Science degree in Civil Engineering from Michigan Technological University.



James A. Cook, P.E., has been with Prein&Newhof since 1977. He is a Corporate Vice President, and he serves as Project Manager for a variety of civil engineering projects. Jim holds a Bachelor of Science

degree in Civil Engineering from the University of Michigan, and a Bachelor of Science degree in Mathematics and Physics from Albion College.



Barbara E. Marczak, P.E., joined Prein&Newhof in 1987. She is manager of the Environmental Services Department and the Office Manager of P&N's Muskegon Office. Barbara holds both a Bachelor and a

Master of Science degree in Civil Engineering from the University of Michigan.



William D. Smyth has worked for Prein&Newhof since 1987. He is manager of the firm's CADD and Information Technology Departments. Bill holds a Bachelor of Science degree in Civil Engineering from

Michigan Technological University.

New Employees



Anisa Clark has joined Prein&Newhof as an Administrative Assistant in the firm's Grand Rapids Office. Anisa is currently pursuing a Marketing degree.



Helen Davis, E.I.T., has joined the Kalamazoo Civil Engineering Department. She holds a Bachelor of Science degree in Civil Engineering & Public Policy from Carnegie Mellon University.



Kevin Gritters, E.I.T., has joined the Muskegon Civil Engineering Department. Kevin graduated from Calvin College with a Bachelor of Science degree in Engineering. He is a past recipient of the

Robert J. Reimink/Prein&Newhof Scholarship.



Kathryn Kurylo has joined Prein&Newhof as the firm's Corporate Librarian. Katie is pursuing a degree in Education through Ferris State University and Grand Rapids Community College.



Kathryn McKinney has joined P&N as the firm's Personnel Coordinator. Kat holds a Bachelor of Fine Arts degree from Eastern Michigan University, and is pursuing a Master of Public Administration degree.



Amanda Ravell has joined Prein&Newhof as a Laboratory Technician. She holds a Bachelor of Science degree in Chemistry from Alma College.



Dennis Todd has joined the Kalamazoo Survey Department. Dennis recently finished 3 1/2 years in the United States Marine Corps, and is currently a member of the Marine Reserves.

Service Milestones

Prein&Newhof extends its appreciation for the years of service each of the following employees have provided to the company. Congratulations on your milestone anniversaries!

Arthur W. Brintnall, P.S., Survey Department Manager; and **Charles E. Vaughn**, Surveyor; both reach 35 years.

Howard "Joe" Crenshaw, CADD Technician, achieves 20 years.

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FedEx. This process mixes hot-air with glycol to reduce the amount of deicing fluid used on the aircraft. Klomprens hopes that more airlines will follow the example of FedEx and begin using the same process to reduce deicing runoff.

P&N is assisting in another improvement this year. A gate will be added in one storm sewer, and the height of the weir will be increased to create a dam-like affect, thereby stopping the flow of water when a high level of glycol is detected.

Currently, the airport is awaiting renewal of its discharge permit from the MDEQ. Once this permit is renewed, the airport will begin working on additional long-term improvements to its stormwater management system.

Prein&Newhof and LimnoTech, Inc. will continue to assist the airport design improvements and manage its vital stormwater system. "We have a long-term working relationship with P&N," said Klomprens. "We are pleased with the cooperative input and effort of this team."



P&N helps Spring Meadows establish county drain

Most people take their utilities for granted, assuming that when they break, a government agency will step in and set things right. But as residents of Jamestown Township in Ottawa County recently learned, responsibility for public utilities isn't always clear-cut.

After a heavy rain last year, two residents in the 75-acre Spring Meadows development discovered that the stormwater pipe running between their properties had collapsed, creating a gaping hole in their lawns. But when the property owners asked who was responsible for having the pipe fixed, they were surprised to discover that no one was.

The failed 4-foot-diameter pipeline, which carried stormwater from Spring Meadows to nearby Rush Creek, was built 15 years ago, and its easement was dedicated to the general public. Even though over 300 Jamestown Township residents relied on the pipe, neither the township nor Ottawa County had the authority to gather funds or fix it.

To remedy their residents' immediate problem and to resolve the ownership issue, Jamestown Township petitioned the Ottawa County Drain Commissioner (OCDC) to establish the pipe and the stormwater system tributary to it as a county drain. This would bring it under the jurisdiction and responsibility of the OCDC. The Drain Commissioner's office could then assess the property owners, the township, and the county road commission for repairs to the newly established drain.

A Board of Determination, open to the public, was convened to determine the necessity of a proposed county drain. Prein&Newhof assisted the OCDC with the information

needed to answer questions from the Board members and the public. The Board accepted the township's petition to establish the pipe as the Spring Meadows County Drain, and retained Prein&Newhof as stormwater engineer for the project.

By evaluating topographic and zoning maps, P&N outlined the boundary of the drainage district—the area of land that contributes water to the proposed drain. The firm then identified the major pipes and drainage swales within the district for inclusion as part of the Spring Meadows Drain.

According to Linda Brown, Chief Depute Drain Commissioner for Ottawa County, choosing a reliable stormwater engineer is very important. "The Drain Commissioner and local municipality have to be able to depend on the engineer," said Brown. "We have never been disappointed with the work of Prein&Newhof." P&N has completed more than 300 stormwater projects for the OCDC.

The OCDC funded the repair by assessing each of the property owners within the drainage district their proportionate share of the repair costs. P&N calculated the amount of runoff each parcel contributes, and this data was used to determine each property owner's apportionment—their percentage of the repair costs. Dividing the cost of the project among all contributing property owners helped keep the cost to each property owner at a reasonable amount.

After the county drain was established and the apportionment completed, construction could begin. The Spring Meadows Drain was repaired early this year, and Jamestown Township residents once again have a working stormwater system.

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