

*Lafarge Bath Plant*

# concrete connection

## In this issue

Gravel Bed Filter  
incident

Introducing our  
Plant Manager,  
Ignacio Arroyo

Habitat For Humanity  
Volunteer Event

Lafarge Canada is  
investing over \$20  
million to upgrade  
the Bath plant's  
environmental  
performance

Lafarge's  
Looking beyond  
Covid-19



# Looking beyond COVID-19

## Thanks to our frontline workers!

We want to thank the doctors, nurses, EMTs, hospital workers, police officers, food handlers, postal carriers, delivery drivers - and more - who are working around the clock to get us through this safely. While many of us stay home, these essential workers are keeping society running, ensuring we have food, medical care, safety, and access to the resources we need.

Our sincere gratitude for your tireless work and dedication to others. Take a moment to thank an essential worker and ask them how you can make their lives a little easier.

## What are we doing to support our neighbours?

The Bath Cement Plant donated 10,000 face masks to our local front line workers. We diverted funds from our annual fireworks to make the purchase. The masks will be used when firefighters are travelling together in trucks, and may also be used for fire emergencies and for

supplemental support in nursing homes.

Additionally, two hoods and collars were given to the Napanee General Hospital and used to fit test their health care workers. Our employee, Shane Flake, took it upon himself to assist with this task, investing an entire day to help new hospital staff whose N95 masks hadn't yet been fit tested. Thank you Shane for supporting your community and helping our frontline heroes in the healthcare industry!

## We have been working through the lockdown period

Construction at various levels was deemed an essential business by the Government of Ontario, so the plant continued to run through March and April. We adopted new safety practices based on our international experience and are operating according to the guidelines laid out by Health Officials. We have done everything possible to minimize the impact of CoVid-19 for our employees. We have reduced the normal scope of

our operations, segregated workers to respect distancing protocol, and have adopted best decontamination practices from other cement plants.

Due to CoVid-19 restrictions, some plant projects slated for completion in 2020 have been postponed. We are unable to bring in the international experts required for testing and commissioning. Work will continue throughout 2020 with intentions to complete these projects in 2021.

Please reach out with initiatives, we are always looking for ways to help the community, including working with local farmers to purchase food for local food banks. If you know of an initiative that needs support, please reach out on Twitter @Lafarge\_Canada or LinkedIn.

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*In the photo below from left to right: James Hegadorn, Deputy Mayor, Carol Parks, Loyalist Township Councillor, Ric Bresee, Mayor, Robert Cumming, Our head of environment and public affairs, Ignacio Arroyo, our plant manager, Fred Stephenson, Director of Emergency Services*



# Gravel Bed Filter incident

Last October, we had an environmental incident in which dust settled on vehicles and other property in our shared community. Many of you were concerned about what the dust was made of and if it was hazardous to our health or the environment. We want to take this opportunity to clarify what happened and update you on our plans to ensure this doesn't happen again.

## What was in the dust?

Based on observations and reports from our community, we now know the dust was “clinker dust” — an intermediate product of the cement production process. Our kiln is on a very slight angle which allows raw materials (limestone etc.) to be added at the high end and to slowly work their way downwards. As they are heated up, they undergo a mineral transformation into a material that we call clinker. Clinker is essentially a granular form of raw cement, which is ground into a fine powder and blended with gypsum to produce Portland Cement. This cement powder is combined with water, sand, and gravel to make the concrete.

When the now hot clinker reaches the end of the kiln, it is discharged into the clinker cooler where air is blown through it to cool it down. Most of the hot air is recovered elsewhere in the process but some of it is directed to a filtration system to capture any coarse dust. At the time of the incident, our filtration system had some mechanical issues and its efficiency was reduced.

## Is the dust harmful?

We consulted with both KFL&A Public Health and Intrinsik, a private environmental and health science consulting firm, to determine the health and environmental impact of the clinker dust.

To evaluate the potential impact on the health of the neighbouring community, Intrinsik worked with RWDI, a company that specializes in atmospheric and weather simulations.

The assessment considered a range of scenarios, including the worst-case health implications for potentially sensitive individuals living in the surrounding community. In all cases, the predicted air concentrations following the incident were less than the regulatory-recommended health-based benchmarks.

It was noted that people near the facility during the incident may have experienced short-term effects, such as skin and eye irritation, allergic skin reaction and respiratory irritation. However, these effects are temporary and are not associated with chronic health outcomes.

KFL&A Public Health worked with Public Health Ontario (PHO) and the Ministry of Environment, Conservation & Parks (MECP), who oversees emission requirements for Industry to protect the natural environment and human health, to conduct an investigation including reviewing the Intrinsik report and data from MECP.

**“Based on the information provided by Intrinsik and PHO, neither short nor long term health effects are expected as a result of exposure to the accidental dust release by Lafarge in October 2019. Bath ON residents may have experienced temporary skin, eye, upper and lower respiratory tract irritation.”**

## What are you doing to prevent this from happening again?

We are taking firm measures to address dust emissions and ensure there are no repeat incidents. First, we are voluntarily making a \$17 million dollar upgrade to our filtration system. “The new filtration technology is called Baghouse. It's one of the most modern technologies available and is much more efficient than what we have in place,” says Brenda MacPhee, Environment & Systems Manager, “It will dramatically reduce our existing emissions and will be much more reliable going forward.”

In the interim we have made improvements to operation and maintenance procedures, and have stepped up the inspection programs.

The replacement project is currently in the engineering phase. “We had aimed for installation in early 2021, but with the global pandemic the project will be delayed by 6-12 months” says Ignacio Arroyo, Plant Manager.

The Bath plant is 47 years old right now and investing in its future is essential. “We're a crucial part of Canada's infrastructure—is the equivalent of a New York City being built around the world every month. Building better towns and cities is important, and we want the Bath plant to contribute for many years to come,” says Arroyo. “We have over 100 years of limestone reserves for supply. It's the right time to invest, breathe some new life into the plant with this environmental upgrade and prepare for the next generation of operations.”

# Introducing our new Plant Manager, Ignacio Arroyo

You may have already heard from our Plant Manager, Ignacio Arroyo. Along with plant operations and staff, he's in charge of representing Lafarge in the community and is the area's line of communication to the plant. Although Ignacio started with us last summer, we haven't formally introduced him yet—here's his story.

Ignacio is an industrial engineer and has been working in cement plants for 22 years. In April 2019, he became part of Lafarge Canada. Ignacio has worked as an Environmental & Process Manager, and as head of the Production and Maintenance departments.

Over the last 6 years, he acted as Plant Manager at two different plants. He's taken his expertise all over the world from Spain and Abu Dhabi, to Romania and now, Bath.

Ignacio came to Canada with his wife and 4 children. He will never forget his first trip to Canada:

"When we came to visit, it was February and it was so cold the schools were closed, we thought if we like it here in this weather, we can be happy in Canada."

However cold it was outside, Ignacio and his family thought people were very warm. Ignacio made the move to Canada on April Fool's day (he didn't know about April Fools) and his family followed at the end of the school year in June. "We participated in the Bath Canada Day Parade. People were so welcoming and asked us if we needed anything. We also love being surrounded by nature and the beautiful landscape in the area."

As Plant Manager, Ignacio is responsible for plant operations including the approximately 100 employees and several contractors working with him. There are many people that indirectly work for the plant too, like suppliers and drivers. He is also the plant's community liaison, keeping everyone up to date on what's happening and making himself available to address

concerns. His main goal is to keep everyone in the plant and in the community safe.

Life with four children is quite busy. When Ignacio has free time he likes to hike and run. Last year he participated in the Tri-Island Race Series, running on Howe, Wolfe and Amherst Islands last summer. Like most Spaniards, Ignacio likes soccer and he is learning to play golf. He also likes to watch hockey and support the Frontenacs.

"There are so many nice places to visit near Bath, like Sandbanks and Parrott's Bay Conservation Area, and all the Provincial Parks are less than one hour driving distance. That makes this area a fantastic place to live and to enjoy."

Ignacio has worked with cement throughout his entire career. "A cement plant is like a small world and I love the unique challenge of keeping that world running at its best," says Ignacio. "There are so many aspects to oversee and

optimize, including the people's development, the maintenance of equipment and everyone's safety. The work is very dynamic, starting right at the quarry. You never get bored. You don't have time for that!"

Having spent most of his career in Europe, he brings years of experience successfully reducing CO2 emissions in plants. He plans to bring the same results to the Bath plant:

"We are developing new products to reduce CO2 emissions. The cement industry has historically been a "dirty" industry and we are working every day to reduce our impact. We want to lead the way for the future of the industry and for our community."

Ignacio sees the community as an invaluable partner to address the common issues and to agree in which ways Lafarge can support the area: "We continually get feedback from the community and we are



always working with them to figure out what measures we can take, the Community Liaison Committee (CLC) is a very active source of community feedback, which is wonderful. We meet throughout the year and share information and results, respond to questions, and discuss concerns and ideas.”

His message for the community in 2020 is about moving forward, new technology and partnership. “We had an environmental incident last year and we are working hard to ensure this type of thing doesn’t happen again,” says Ignacio.

“We are focused on developing and implementing new technology, upgrading our equipment, and modernizing the plant. We received substantial funding to make improvements, all of which will reduce emissions and environmental impacts.”

As always, Ignacio wants to involve the community in the modernization of the plant: “As we incorporate new technologies, we want to hire more people from the Bath area. We would love to have more people from the community working with us.”



## Habitat For Humanity

In February 2020, a group of Lafarge Bath employees spent the day volunteering their skills with Kingston Habitat for Humanity. Over a period of two days, the group worked to construct a home, installing a vapour barrier and

drywall. This was the first time our team has done this type of volunteer work and everyone had a positive experience. We look forward to our next opportunity to help out our community.

## Hockey match in support of the Picton Food Bank

On February 15, 2020, the Picton Cement Plant and the Lafarge Cement Plant played a friendly hockey game to raise money for the Picton Food Bank.

Both teams played hard but the match ultimately went to Lafarge. The cup is back in Bath! In solidarity to our neighbours Lafarge made a donation to the Picton Food Bank.

**We look forward to next season when Picton tries to win the cup back. Thank you to Lehigh for a great game and for organizing the event.**



Special thanks to our captain (and goalie), Ben Struthers for encouraging the players and the rest of the team (Eric McCabe, Paul Davis, Jeremy Fox, Remington Stinson, Zack Knapp, Murray Cuthill, Travis Coates, Luke McDonald, Brendan Bureau, Nolan Vanvlack, Evan Benn, Corey Farrell, Devon McCann)



## We are pleased to share some good news!

Lafarge Canada is investing over \$20 million to upgrade the Bath plant's environmental performance, ensuring the future of our operations with a smaller environmental footprint. This investment means we'll have access to the best technology available and that we're doing our part to respond to the climate crisis.

The majority of the investment is going towards 3 large projects which are aimed at the three most significant emissions from the plant:

### Low Carbon Fuel upgrades

We want to replace many of our fossil fuels with low-carbon locally sourced fuels. This voluntary initiative is the result of 10 years of work. "We conducted 5 public meetings and have worked with Queen's University to test and determine the effectiveness of these lower carbon fuels," said Robert Cumming, Environment & Public Affairs Director.

During the testing phase, we were using a pilot facility at the plant. We are upgrading to what is now a larger scale commercial facility with assistance from the Ontario Centres of Excellence. The new installation will enable higher and more steady fuel consumption so we can increase the rate at which we replace fossil fuels. "With new equipment, we're now in a place to reach our goal of 30% fossil fuel replacement," added Robert. "We'll

be working over the coming years to achieve this."

An important aspect of this program is that we're using select landfill bound materials as an alternative to fossil fuels.

**"By using materials that would have otherwise gone to landfill, less methane is produced at the landfill itself, and we leave fossil fuels in the ground."**

### Baghouse upgrade to our Gravel Bed Filter

We are also making a \$17 million voluntary upgrade to our clinker dust filtration system. As explained in our Bath incident article, our current filter technology is old and we've had issues in our community due to poor performance.

"The new filtration technology is called a Baghouse and works like a household vacuum, but more akin to having over a thousand 3-metre long vacuums working together. It's among the most modern technologies available and is much more efficient than what we have in place" says Cumming.

Baghouses can typically filter over 99% of particles and are well suited to the high temperatures of cement production. "The new technology will dramatically reduce our existing emissions and will be much more reliable going forward."

### Selective Non Catalytic Reduction (SNCR)

Also included in our plan to lower our emissions is the addition of a Selective Non-Catalytic Reduction (SNCR) system to respond to changes in Canadian regulations.

Cement kilns operate at extremely high temperatures, which produces oxides of nitrogen—a group of compounds also known as NOx. SNCR is a proven way to lower these emissions by injecting a solution of ammonia and water into the kiln itself. When added, the ammonia solution converts a percentage of the NOx into water vapour and nitrogen, reducing the amount of NOx we release into the atmosphere.

Water vapour and nitrogen are natural components of the atmosphere. This upgrade will reduce NOx emissions by approximately 33%.

**"SNCR is proven technology that is improving air quality in countries all over the world. It will have a positive impact on our carbon emissions" says Cumming.**

These projects are complex, and require special equipment and international experts, so COVID restrictions pose a challenge. Work will continue throughout 2020 with intentions to complete the installation in 2021.

# Employee spotlight, Lucas DeGelder

In every issue, we like to highlight one of our employees so you can get to know the people behind the plant. In this issue, we'd like to introduce you to Lucas DeGelder, Maintenance Engineer, who just passed his one-year anniversary at the Lafarge Bath plant. Let's learn more about his story:



## Hi Lucas, tell us a bit about your background.

I grew up in Vancouver, BC. I lived there for 17 years until I moved to Montreal, where I studied Mechanical Engineering at McGill. While I was still at McGill, I did two co-op placements at Teck Resources. One of the placements was in Reliability Engineering, which was incredibly interesting. Now, I'm a Maintenance Engineer at Lafarge.

## Did you always know you wanted to be an engineer?

No, I didn't. I wasn't 100% sure about the program when I started, but I thought it would give me good options after finishing university. As I got further along, I really started to love the discipline.

## What is Reliability Engineering?

Reliability Engineering involves monitoring a plant, or process to ensure it performs its function as efficiently as possible. I'm constantly analyzing performance and making adjustments in order

to maintain product quality and reduce the likelihood of failures. I help sustain the reliability of our products.

## How long have you been at Lafarge and what made you choose to work here?

I started at Lafarge in 2019. January was my 1-year anniversary. I chose to work at Lafarge because the company has a great Leadership Development program and because working with cement has some interesting challenges. The program, the work and the potential for advancement made Lafarge a very appealing option.

## What does a Maintenance Engineer do?

Simply put, I'm responsible for finding inefficiencies at the plant and then creating long-term solutions for those inefficiencies. For example, I'll look at the past month's downtime, find the equipment that causes the most trouble or the most frequent failure, and work on a permanent

solution. I'm usually out in the field solving these problems.

## What do you enjoy most about your job?

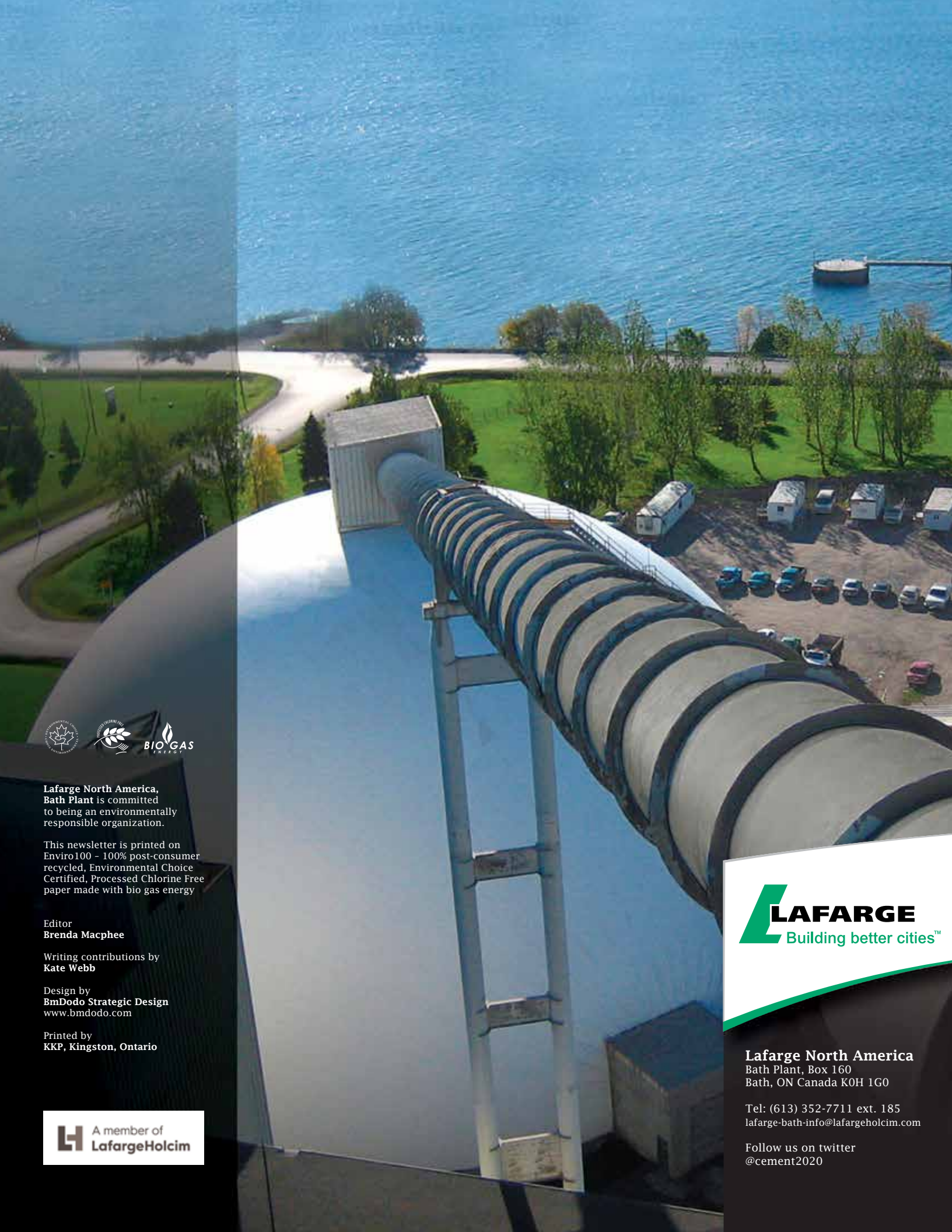
I like the challenge. There's so much going on and you need to decide how to spend your time. I like figuring out what's going to help the plant the most.

## What do you like to do outside of work?

Since I grew up on the West Coast, I love to sail. When I moved to Kingston, I bought a fixer-upper boat, which I'm enjoying working on. I can occasionally take the sailboat out for a weekend and it's fantastic. I also bought a fixer-upper house, so I'm having fun with my projects right now.

## What's something people might not know about you?

I was into rowing; it was my sport all throughout university. I went to the world championships twice before starting my career.



Lafarge North America, Bath Plant is committed to being an environmentally responsible organization.

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