

Don Croteau, managing director of Schauenburg Industries with massive 2.3-metre diameter section of rigid fiberglass ventilation ducting destined for the Crosslinks light rail transit line along Eglinton Avenue in Toronto.

Schauenburg marks half century in North Bay

Company creates innovative ventilation solutions

BY LEN GILLIS

Innovative products and enhanced customer service are just a couple of reasons why Schauenburg Industries Ltd. of North Bay continues to be a success story in Northern Ontario's mining service and supply sector after half a century in operation.

The company has been part of the North Bay industrial scene since 1969 and was established to provide ventilation solutions and convenient transportation to Northeastern Ontario's mining operations. The company now services the mining and tunneling industries across Canada.

Managing director Don Croteau (P.Eng) said the company's 50th anniversary in North Bay is a portent of good things to come as he is anticipating an increase in business to coincide with an upswing in mining.

Croteau seems to have the same sense

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50
YEARS
1969-2019

of optimism that inspired Hans-Georg Schauenburg, a German entrepreneur, to open the North Bay operation with a 6,000-square foot plant to manufacture his own brand of ventilation products to serve the Canadian mining industry.

Over the years, in the 1980s and again in 2010, the North Bay operation expanded to more than 24,000 square feet to include new manufacturing and office space, and a

new warehouse.

One of Schauenburg's innovations was a rigid fiberglass ducting product, for which it is the sole Canadian supplier. More recently, the company developed an interior lining for the rigid ducting to enhance airflow.

"Years ago, energy prices were a lot lower, but electricity costs have gone up, so industry is looking for energy savings." said Croteau.

"We worked with the federal government's Industrial Research Assistance Program and over a period of a couple of years we made changes to our fiberglass ducting, including re-launching it as a brand new product called K-Max."

Croteau explained that the K-factor is a measurement of airflow efficiency. "That was a big deal because of the energy costs. We improved the smoothness of it," said Croteau.

The next step was to find a better way to transport the ducting because the pieces were so bulky they were basically shipping large tubes of air.

"So we looked at tapering them slightly, so they could be stacked like coffee cups," he added.

The rigid ductwork is designed for permanent installations, but the airflow energy savings from K-Max are such that Croteau is hoping to convince mines to consider installing K-Max rigid ducting as an alternative to flexible ducting.

"We launched the product in March 2018, so we've only been working to sell it for under a year," said operations manager Elizabeth Fournier.

The selling process can take a while, said Croteau. He said many companies get used to a certain product and it can take time to change their minds. But he said his ace in the hole is the cost savings – something all mine managers are keen about these days.

Another selling point for Schauenburg's rigid ducting is the fact that it can be configured in the traditional round shape, or in an oval shape.

Croteau said oval ducting saves space underground because it hugs the back of a drift.

"It's been around for about 20 years but I do notice there is more oval (ducting) in the last few years. I think that is because

Company scores big in tunneling ventilation

 Schauenburg offers customers a turnkey solution

BY LEN GILLIS

Along with the success Schauenburg Industries of North Bay has enjoyed in supplying ventilation solutions for Northern Ontario's mining industry, the company is also enjoying success with the tunneling side of the business.

It means Schauenburg is bringing fresh air to companies that create specialized tunnel projects for underground mass transit and municipal sewer and water projects. The company has a big contract to supply ventilation ducting and related products for the 19-kilometre Eglinton Crosstown Light Rail Transit line for the Crosslinx consortium in Toronto, a \$5.3 billion project that runs underground for 10 kilometres. It is also providing ventilation ducting for a British Columbia Hydro tunnel expansion project on the Peace River in the northeastern part of that province as well as a light rail project in Cottana.

Managing director Don Croteau said the company is having success with its turnkey solution for these specialized projects



Schauenburg Industries ducting in use at the Eglinton Crosstown Light Rapid Transit (LRT) project in Toronto.

because the customer doesn't have to search out extra components on a complex ventilation job.

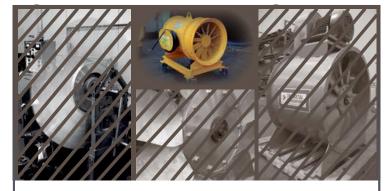
"We can supply the heaters, the fans, the rigid ducting and the flexible ducting that goes down the tunnel," Croteau said.

"Customers like that because it makes

their job easy. They don't have to be dealing with five suppliers. We are working on other projects like that now the same way," he added.

Croteau said Schauenburg has established partnerships with several companies that manufacture separate components for ventilation systems, including fan silencers, dust collectors and even monitors that detect carbon monoxide and methane gas.

Croteau said part of Schauenburg's success over the years has been adapting to change in the industry with solutions such as its turnkey program.



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Diversification grows Schauenburg's business

Spiral ventilation ducting is great for moving air through a mine, but one day, a miner whose wife was a dog agility enthusiast asked Schauenburg Industries if it could supply the product for use as a dog agility tunnel.

Dog agility is a sport in which the handler directs a dog through a course consisting of hurdles, slalom poles, tunnels, seesaws and other obstacles. The objective is to complete the course as fast and as accurately as possible.

Schauenburg delivered its first dog agility tunnel 20 years ago. Today, it operates a profitable side business selling them to clubs and individuals across Canada and the United States.

The tunnels come in a rainbow of colours and are available in a variety of different lengths and diameters.

Another new product Schauenburg Industries hopes to add to its portfolio is an innovative alternative to wooden forms for footings. The product, called NovoForm, consists of plastic sheets welded onto wire mesh and factory folded for quick and easy placement.

The product is sold in the UK by sister company, Schauenburg Technical Solutions, and is now being introduced in Canada.



Dog agility tunnel manufactured by Shauenburg Industries.

"You drop the forms in the hole, put in the rebar, pour cement and walk away," said Don Croteau, Schauenburg Industries' managing director. "It's a labour saving solution because the forms are easier to assemble and don't have to be removed.

"NovoForm has taken off in the UK, so we're exploring the interest level here in Canada. Once we get a few customers using it, we're confident it will take off."

For more information go to www.dogtunnels.net and www.schauenburgtech.co.uk/construction

Meet a selection of our key people

Don Croteau, Managing Director

Don Croteau, managing director of Schauenburg Industries, is steeped in



Don Croteau, Managing Director

the mining industry. Born and raised in Sudbury, earned a mining engineering degree from Laurentian University and went to work Denison for Mines in Elliot Lake. A training program

graduate engineers gave him an overview of underground mining operations, following which he served as a shift boss for four years.

Returning to Sudbury, he leveraged his engineering degree and practical experience for a succession of sales-related jobs selling explosives and mining equipment. He initially joined Schauenburg Industries in North Bay as a sales agent and assumed his current role as managing director in 2010.

The business has grown under his watch, but it has also been through a long cyclical downturn that only now appears to be coming to an end.

Don and his wife have two daughters: a family doctor in Tennessee and a flight attendant in Grimsby.

In his spare time, he enjoys taking day trips on his Harley and relaxing at the cottage.

Elizabeth Fournier, Operations Manager

Elizabeth Fournier, Schauenburg Industries' operations manager, was born



Elizabeth Fournier, Operations Manager

in Smooth
Rock Falls,
104 kilometres
north of
Timmins, and
moved with
her family to
North Bay as a
teenager.

Elizabeth earned a diploma in office practice from Canadore

College and is a certified environmental site assessor. She worked for 37 years with businessman Gordon McGuinty prior to joining Schauenburg Industries in 2014, serving as vice-president of Notre Development, a company spearheading the use of the abandoned Adams Mine in Kirkland Lake as a waste disposal site for the City of Toronto.

The proposed use of the site as a dump was outlawed by the Adams Mine Lake Act enacted by the provincial government in 2004, following which Elizabeth co-authored Trashed: How Political Garbage Made the United States Canada's Largest Dump.

While new to manufacturing, Elizabeth

is a quick learner and uses her considerable business and organizational skills to keep Schauenburg Industries humming.

Dennis Mousseau, Production Manager

Production manager Dennis Mousseau was born and raised in North Bay, joining



Dennis Mousseau, Production Manager

Schauenburg Industries in 1978 – 41 years ago. Starting off

Starting off as a labourer, he quickly rose through the ranks, first as a lead hand and eventually as a foreman and production manager.

Dennis provides leadership for between 16 and 17 production workers, overseeing workflow and quality assurance, scheduling jobs, and making sure that product gets out the door.

Occasionally, he also represents the company at customer sites to troubleshoot, take measurements and share his expertise.

In his spare time, Dennis operates a side business in his garage making multi-clips that he sells to Schauenburg. He bowled and played baseball and hockey in his youth, but now enjoys going out for a ride on his dirt bike.

Dennis has a daughter and a son and is getting married in Hong Kong in March.

Diane Porter, Machine Operator

Diane Porter, the longest serving employee at Schauenburg Industries, joined



Diane Porter, Machine Operator

the company in March 1973 – 46 years ago. Born and raised in North Bay, she headed south for the bright lights of Toronto soon after finishing high school and landed a job with Christie's Biscuits. Laid

off after six months, she returned to North Bay and joined Schauenburg Industries.

Diane operates the long seam cutter and sewing machines at Schauenburg Industries, ensuring that the ducting going out the door meets the company's exacting standards.

The work is appealing because, she said, "I couldn't imagine sitting at a desk all day long."

A world traveller, Diane has been to Korea, China, Thailand, the United Arab Emirates and Ireland. She has also travelled to Alaska and New Orleans. Closer to home, she enjoys going to plays and concerts.

Diane and her partner have five children and 12 grandchildren in a blended family.



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Schauenburg International a family business

The Schauenburg Group, based Mülheim-Ruhr, Germany, is a family business with a long tradition in European industry. The foundation was laid over 200 years ago when the family specialized in shipping and ship outfitting in the Rhine-Ruhr region of Germany.

Hans-Georg Schauenburg, founder of Schauenburg International GmbH, was born in 1916. His career began in earnest after World War II. The worthless German Reichsmark allowed the black market to flourish and bartering and trading were the only means to acquire essential goods. Mr. Schauenburg began his trading company with cooking pots that were manufactured from old steel army helmets. Hundreds of thousands of his cooking pots were used to barter for coal, wood, and other day-to-day necessities.

Currency reform in the late 1940s ended the days of bartering and Mr. Schauenburg changed his company's focus by combining his knowledge of the mining and plastics industries. Although the development of plastics was in its infancy, Mr. Schauenburg invented plastic ventilation ducting to replace the heavy steel pipes then commonly used in underground mines. The vent designs were patented and soon plastic ventilation ducting revolutionized underground mining.

The company began to extend activities beyond the borders of Germany during the 1950s, but it was in 1970 and beyond that the expansion became international with companies in England, France, Spain, Italy, Sweden, South Africa, the U.S., Canada, Southeast Asia, India, China and others. The Schauenburg Group is divided into five distinct sub-groups: hose technology, plastics processing, industrial solutions, engineering and electronic technologies.

At first, expansions outside of Germany were based on licensing agreements. Canada was the first country where Schauenburg set up ventilation duct production without first resorting to licensing.

North Bay was selected as the site for the plant because of its proximity to mines in Northern Ontario and Quebec. The first plant was located in an old church in North Bay. Later, a new production plant was built near the shores of Lake Nipissing. For the opening of the new plant in 1971, Mr. Schauenburg travelled to North Bay with his wife.

In 2006, the Schauenburg Group also acquired another Northern Ontario mining supplier, Jannatec Technologies in Sudbury, a manufacturer of communication technologies and proximity detection systems. ■

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...Schauenburg celebrates half century milestone

From Page 23

it's less development costs in the drift. If you can make the drift six inches or a foot shorter, there is a big money saving," said Croteau.

Schauenburg has other ventilation solutions on the market as part of the company's turnkey approach for specialized tunneling projects, including dust collectors, wet scrubbers, fan silencers, duct storage cassettes, heaters, tunnel waterproofing and sensor systems.

The innovation over the years had paid off. Schauenburg flex tube ventilation systems and the K-Max rigid ducting can be found in mining operations throughout Northern Ontario, northwestern Quebec and across Canada.

Currently, the company is operating one shift daily with 26 employees, but the workforce can be increased if there is an urgent demand for more product. He recalled one incident a few years ago where the workforce was bumped up by another 25 workers and production was ramped up to three shifts around the clock in response to an order from a diamond mining operation.

"They needed this huge order, all to be

"Years ago, energy prices were a lot lower, but electricity costs have gone up, so industry is looking for energy savings."

Don Croteau,

managing director, Schauenburg Industries

7/

made within two months," said Croteau. This was because the order had to be shipped by trucks over an ice road in the Western Arctic.

"It was going very well. And then just like that, the mine shut down. There was no warning. Just a phone call. That was it," said Croteau.

"We learned a lot through it all though. In some ways it was good, because when it was all finished, we regrouped and decided what we could have done better," he said.

"So now we have put things in place so that when our business grows and things begin to pick up – and we know that things are starting to pick up – there are things that we've changed and we will be a lot better equipped to handle it," said Croteau.

Schauenburg Industries 50 year timeline

- 1969 Flexible ventilation duct business established in a former church on Airport Road in North Bay, Ontario.
- 1971 New 6,000 sq. ft. plant constructed and business relocated to 1904 Bond Street, North Bay.
- 1971 New equipment, designed and built in Germany, installed at the new plant.
- 1971 Mr. Hans-Georg Schauenburg (now 102 years of age) attended the grand opening of the plant.
- 1980 A second 6,000 sq. ft. addition was added to the plant for the manufacture of fiberglass ducting (total of 12,000 sq. ft). To this date Schauenburg is the only manufacturer of fiberglass rigid vent ducting in Canada.
- **1984** A new automatic fabric cutting machine was installed in flexible bay.
- 1985 A second fiberglass winder was relocated to North Bay from another Schauenburg plant in South Africa. With the second machine, FRP production could double.
- 1983 First collective agreement with United Steel Workers (USW) was signed in November.
- 1988 A third 6,000 sq. ft. addition was added to the plant (total of 18,000 sq. ft.). The space was dedicated to the manufacture of flexible ventilation ducting. The metal fabrication of cassettes, silencers, dust collectors, etc. occupied one of the other two bays, while fiberglass vent manufacturing occupied the other bay.
- 1990 At the request of a customer, the first dog agility tunnel was fabricated and shipped. Schauenburg is now one of North America's premier suppliers of dog agility tunnels.
- 1995 Customer trend towards oval ventilation ducting instead of round ducting for better air flow and to save header space underground.
- 2000 Schauenburg Industries received the Nipissing University-Canadore College Small Business of the Year Award. Nominated by the North Bay and District Chamber of Commerce, Schauenburg was selected based on the success of the business through growth in sales, employee relations and market attraction.
- 2003 Schauenburg Industries Ltd. receives a Canadian patent for a flexible ducting connection called Simple Williams System (SWS). The connection was developed for the Williams Mine in Hemlo. This connection is now known as Quick Connect and is available today.
- 2008 Electricity costs in Ontario were escalating and mining companies demanded more energy efficient

- ventilation ducting. Research and development began into more energy efficient ventilation options.
- 2009 Schauenburg added Quick Connect (QC) duct connections to its product line as an alternative to standard end ring connections. Customers embraced the new connections as more energy efficient and as a time saver in installation.
- 2010 An 800 sq. ft. office addition expanded existing office space to 1,600 sq. ft.
- 2010 Schauenburg achieved certification under ISO 9001, a comprehensive quality control system recognized globally.
- **2012** Schauenburg expanded its facility with a 4,900 sq. ft storage warehouse (total of 24,500 sq. ft.).
- 2013 Schauenburg Industries was nominated by the City of North Bay for the Northern Ontario Business Award (NOBA) Company of the Year. The NOBA is an initiative designed to identify and celebrate successful businesses throughout Northern Ontario.
- 2015 Customer trend towards zipper connections on ventilation ducting for energy savings and for ease of installation and reduced air loss at joints.
- 2016 Schauenburg developed a greater focus on tunnelling projects, building on previous tunnelling ventilation products. A popular turnkey sales approach was developed and successfully offered to tunnelling contractors as a one stop option for the purchase of fans, rigid or flexible vent ducting, silencers, heaters, dust collectors, tunnel waterproofing and sensor systems.
- 2016 Computerized FX50 heat welding spiral machine added to flexible manufacturing which offered superior product quality for spiral ducting and manufacturing efficiencies.
- 2016 A 1,800 sq. ft. Winkler Outdoor Storage Dome was erected on site for additional cold storage/warehouse space.
- 2017 A property expansion created improved drainage, larger outside storage facilities with improved aesthetic appeal overall.
- 2018 Launch of new K-MAX rigid ventilation ducting was a game changer. The newly designed rigid ducting is the most energy efficient on the market and has an innovative tapered design that allows stacking of pipe for substantial savings in transportation.
- 2018 Awarded the Innovation Award by Schauenburg International for the successful research, development and launch of K-Max Ultimate Airflow Efficiency.



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K-MAX Energy Savings Chart

Example 1: 48" Fan 48" Duct 1000' of Ducting 50,000 CFM

	K- Factor	Fan HP	CFM	Fan QTY	Kw	Cost/KWh	Cost/HOUR	Hours/Year	Cost/Year	50 FANS/Mine
K-MAX	9.5	125	50,000	1	93	\$0.15	\$13.95	8760	\$122,202.00	\$6,110,100.00
Rigid Plastic	10.5	75	50,000	2	112	\$0.15	\$16.80	8760	\$147,168.00	\$7,358,400.00
Steel	16	100	50,000	2	149	\$0.15	\$22.35	8760	\$195,786.00	\$9,789,300.00

Example 2: 48" Fan 48" Duct 1000' of Ducting 80,000 CFM

	K- Factor	Fan HP	CFM	Fan QTY	Kw	Cost/KWh	Cost/HOUR	Hours/Year	Cost/Year	50 FANS/Mine
K-MAX	9.5	180	80,000	1	134	\$0.15	\$20.14	8760	\$176,443.92	\$8,822,196.00
Rigid Plastic	10.5	190	80,000	1	142	\$0.15	\$21.26	8760	\$186,246.36	\$9,312,318.00
Steel	16	275	80,000	1	205	\$0.15	\$30.77	8760	\$269,567.10	\$13,478,355.00

Conclusions

Example 1: K-MAX vs Rigid Plastic - Difference of \$1,248,300/YEAR or 17% savings

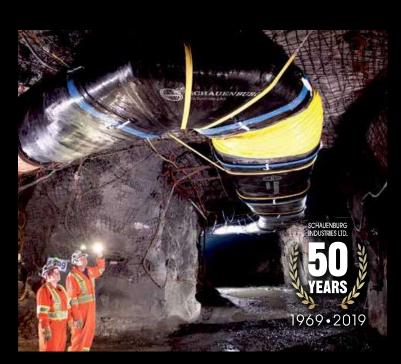
K-MAX vs Steel - Difference of \$3,679,200/YEAR or 37% Savings

Example 2: K-MAX vs Rigid Plastic - Difference of \$490,122/YEAR or 6% savings

K-MAX vs Steel -- Difference of \$4,656,159/YEAR or 35% Savings

Cost/KWh taken from Fraser Institute Report (2016)







SCHAUENBURG Industries Ltd.

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