

EDITORIAL

Canada's lessons from its plague of pyrrhotite

Editor's note: This is the first of two parts. The second part will appear next Sunday.

In Canada, there are thousands of homeowners, like many in northeastern Connecticut, whose concrete foundations were crumbling because they were contaminated with pyrrhotite.

Connecticut homeowners are counting on state money to help them, because all other aid — insurance, consumer protection laws, federal disaster assistance — has failed them.

It's a different story in Canada.

Some 2,000 families there have gotten help paying for new foundations, and companies have been held to account for allowing pyrrhotite in concrete.

Connecticut is a few years behind Canada in dealing with the same menace. Here's what we can learn from our neighbor to the north.

The Trois-Rivieres story

Drive six hours straight up from Hartford, and you'll come to Trois-Rivieres. This handsome, historic Canadian city in the Quebec province shares many similarities with Greater Hartford — including, alas, pyrrhotite in home foundations.

French-speaking Trois-Rivieres has about the same population as Hartford. But it's far more spread out over its 45 square miles. Roam through its neighborhoods, and you'll see street after street of tidy newer homes from mini-mansions to pretty bungalows.

It's hard to believe that 2,000 of those homes have been jacked up with hydraulic lifts. They've been put on stilts and had their concrete foundations scooped out until all that was left was the original dirt hole. New concrete was then poured.

The high cost of replacing these foundations has been partly covered for some victims, whether by government grants of up to \$75,000 per home or by lawsuit settlements or through five-year warranties on new homes. (Connecticut doesn't have the same generous warranty plan.)

In Connecticut, pyrrhotite victims haven't been so lucky. Virtually all have been stuck with the entire bill. The cost can range from \$150,000 to \$250,000 and more.

But homes on stilts might soon become a common sight west of the Connecticut River. State grants of up to \$175,000 per home are expected to start flowing early next year. Applications open on Jan. 10 at www.crumblingfoundations.org.

The state is borrowing enough money over five years to pay for 650 or 700 new foundations.

How it all started

In the early 2000s, cracks in basement walls began showing up in both Connecticut and Canada.

But in Trois-Rivieres — unlike in Connecticut — a group of homeowners sued the quarry that mined the crushed stone used in their concrete foundations. An out-of-court settlement was reached in 2006, and 30 homes were repaired.

At the time, the Trois-Rivieres homeowners thought the problem was caused by pyrite, a cousin of pyrrhotite that's also wreaking havoc with foundations around the world. Within a few years, however, hundreds and eventually thousands more homes in Canada were showing cracks. The culprit was found to be pyrrhotite.

Around that time, an Ohio geologist, Nick Scaglione, also identified Connecticut's problem as pyrrhotite. A local contractor had sent him basement concrete samples to dissect. The contractor, Don Childree, alerted the state Department of Consumer Protection. Nothing

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happened.

In 2015, all of Connecticut woke to the pyrrhotite problem when TV reporter George Colli broke the story on NBC Connecticut. Soon the Department of Consumer Protection began compiling a registry of foundation complaints. So far, 781 homeowners have registered — 20 complaints on average a month.

In the Trois-Rivieres region, more than twice that number of homes have already gotten new foundations. Businesses, hospitals and schools have also been repaired.

What explains Canada's quicker response to the pyrrhotite plague?

Trois-Rivieres' cracks showed up faster

Hundreds of homes in the Trois-Rivieres region showed cracked basement walls within five years of getting built. About 700 homeowners had their

foundations replaced with the help of new-home warranties.

In Connecticut, the damage usually takes longer — sometimes 15 or more years. By the time telltale spider-web cracks appear, the house is usually past the 10-year statute of limitations for product liability.

Not all foundations with pyrrhotite will crack, however, says Mr. Scaglione. Water barriers may stop the mineral from doing its damage. Studies are underway to figure out more about the mysterious mineral.

The Quebec and Ottawa governments announced in December that they are putting \$5 million toward pyrrhotite research. The UConn School of Engineering, however, has gotten no state or federal funding for its work on a uniform test method for pyrrhotite. Trinity College has, on its own, come up with a test to detect pyrrhotite, at lower cost than other methods.

But there were many other safeguards in place that helped Canada respond much more quickly.

Next week: What did Canada do?

By the numbers: Comparing the pyrrhotite problems in Canada and Connecticut

Canada and Connecticut have had similar pyrrhotite problems but different ways of addressing them. Here are some key ways things have differed through the years.

Canada

- 2,000. The number of foundations replaced so far.
- 4,000 to 8,000. Estimates of homes affected.
- 1996-2008. The years when homes with pyrrhotite were built.
- 2001. The year complaints began.
- 2006. The first major lawsuit is settled. 31 homes are repaired.
- 2014. Homeowners win a mega-lawsuit involving 857 buildings.
- \$52 million (\$39 million in U.S. dollars). Aid pledged by the province.
- \$30 million (\$22 million U.S.). Aid pledged by the federal government.

Connecticut

- 772. The number of foundation complaints filed to date.
- 5,000 to 34,000. Estimates of homes affected.
- 1983-2015. The years when homes with pyrrhotite were built.
- 2001. The year complaints began.
- 2015. TV reporter George Colli breaks the pyrrhotite story.
- 2016. State investigation finds no evidence laws were broken.
- \$100 million. Aid pledged by the state.
- \$0. Aid pledged by the federal government.