His pioneering efforts in making the electric-arc furnace mini-mill concept one of the preferred methods of steelmaking worldwide marked a long and distinguished career.

Gerald Heffernan’s impact on the North American mini-mill industry during the past 60 years has been incalculable.

The University of Toronto-trained metallurgist cut his teeth in the steel industry with Westland Iron & Steel Foundry in the late 1940s and went on to gain more electric-arc furnace (EF) experience with Western Canada Steel in the early 1950s. He built an EF complex at Premier Steel Inc. (later named Alta Steel Ltd.) in Alberta in 1954 and later sold the property to Steel Co. of Canada (Stelco). Heffernan leveraged the capital from the Stelco buyout to build Lake Ontario Steel Co. (Lasco) at Whitby, near Toronto, in 1964.

“If we define a ‘mini-mill’ as one where 100 percent of the output from an EF shop is continuously cast with no ingot mold backup ... then Lasco was the first mini-mill not only in North America but in the world,” according to industry historian John R. Stubbles.

Heffernan’s pioneering efforts in making the EF mini-mill concept one of the preferred methods of steelmaking worldwide in the 21st Century has earned him a spot in AMM’s Steel Hall of Fame.

Born in Edmonton, Alberta, in July 1919, Heffernan got his metallurgy degree at the University of Toronto and served during World War II as a member of the Royal Canadian Engineers. Following the war, he joined the faculty and staff of the University of British Columbia, where he worked under Prof. Frank Forward, a prominent metallurgist.

“I guess you could say that I helped reshape the world’s steel industries. I didn’t start out to do that. I was just trying to create a better product at a better price, but the outcome was revolutionary,” Heffernan told an interviewer in 2007.

Heffernan attributed his success to an entrepreneurial spirit that manifested itself early. In 1932, at the depths of the Great Depression, his family moved to Nelson, British Columbia. “My older brother and I always had schemes on the go to make a few dollars,” he told a Canadian interviewer. “We picked huckleberries, cut and sold firewood, and even sold seeds door to door, to name just a few of our projects.”

There was a jam factory in Nelson. The Heffernan family had a large apple orchard but no way to get the apples to market. Heffernan approached the owner of the jam factory with an offer to provide 30 tons of apples at $5 per ton. When the owner provided a contract, Heffernan went to a garage next to the jam factory and bought a used truck for $125, offering to sign over his checks from the jam factory until the full purchase price had been paid.

Following the war and a short stint at the University of British Columbia, Heffernan followed his entrepreneurial bent into the steel industry. One of his first jobs was to “soup up” the EFs in a Vancouver steel manufacturing plant. “Gaining a detailed knowledge of these furnaces, which are better than blast furnaces at melting scrap steel, stood me in good stead when I ventured out on my own,” he said. “After that company went bankrupt, I got another job building and operating an electric-arc furnace plant to cast ingots.”

Heffernan honed his EF skills at Premier Steel in the 1950s and 1960s, and then built the Lasco complex at Whitby into one of the world’s most efficient steel mills, using Lasco to build the Co-Steel Inc. empire into a mini-mill giant.

Starting in 1970, Heffernan’s Co-Steel created a mini-mill empire in the United States and Canada. The company and its Lasco unit forged relationships with North Star Steel Co. and Canadian engineering company Ferco; in the 1980s, Co-Steel acquired an ownership position in Raritan Steel Co. (Co-Steel Raritan), one of the largest U.S. wire rod producers, and New Jersey Steel (Co-Steel Sayreville), which was one of the largest producers of reinforcing bar; and in 1995, Co-Steel joined Dofasco Inc. in flat-rolled steel by building Gallatin Steel Co. in Gallatin, Ky.

Co-Steel’s 1998 incorporation of Co-Steel Recycling put the Canadian mini-mill producer at the forefront of the movement by mini-mills to integrate downstream into ferrous scrap collection and procurement. In 2002, Co-Steel, Ameristeel Inc., Gerdau Courtice Steel and Gerdau MRM Steel—the old Manitoba Rolling Mills that was one of the first mini-mills to use a two-high reversing mill for roughing—merged into Gerdau Ameristeel Corp., the second-largest steel mini-mill organization in North America. Two years later, Gerdau Ameristeel got bigger still when it acquired North Star Steel Co. from Cargill Inc., adding four steel mini-mills, three wire rod processing facilities and a grinding ball mill to the parent company. And in September 2007, just prior to the onset of the Great Recession, Gerdau Ameristeel acquired all of the outstanding shares of Chaparral Steel Co. and its two mini-mills in Midlothian, Texas, and Petersburg, Va.

Now approaching his 95th birthday, Heffernan remains active. Last December, Gerald and Geraldine Heffernan donated $5 million to the Engineering School at the University of Toronto. Half of the bequest is slated to fund the Heffernan Commercialization Scholarship, half to provide space for the Entrepreneurship Hatchery at the School’s Centre for Engineering Innovation and Entrepreneurship. The program has been renamed the Heffernan Hatchery.