On Sept. 17, Ralph Mayfield was recognized for the second time in two years at the CHES National conference. On this occasion, however, his Horizon Energy Network peers remained in their seats while Mayfield took to the stage to accept the 2018 Hans Burgers Award for Outstanding Contribution to Healthcare Engineering.

“It was very exciting,” says Mayfield, who is part of the six-member team that was acknowledged in 2016 with the Wayne McLellan Award of Excellence in Healthcare Facilities Management. “I am grateful that my colleagues deemed I was worthy of this honour, which is a crowning achievement in my career.”

This says a lot as Mayfield’s work in the New Brunswick healthcare system has been recognized at the provincial level. In 2014, he received the Premier’s Individual Champion Award for Energy Efficiency.

Under Mayfield’s leadership, Horizon Health Network’s Saint John Regional Hospital (SJRH) reduced energy consumption by 2.7 million equivalent kilowatt hours per square foot or approximately $227,000 in 2013, compared to 2011.

“It was really a collaborative effort,” says Horizon’s director of facilities, engineering and property management about the accomplishment. “In any job, you’re only as good as the people who support you.”

Mayfield’s passion to make healthcare facilities operations as efficient as possible was evident early on in his 35-year career. Shortly after joining Sussex Health Centre (SHC) in 1983, the then-maintenance manager installed an energy management system to monitor, control and optimize energy performance, which paid for itself in six months.

However, it was in 1994, when Mayfield oversaw the installation of an open loop ground source heating system at SHC that he began to realize his full potential. The Aquifer Thermal Energy Storage (ATES) system — only the second in Canada at the time — improved the hospital’s energy performance from a 1:1 to a 1:6 ratio since it was an all-electric building.

“What this means is that for every kilowatt of electrical input, you get six kilowatts of electrical output,” says Mayfield, noting that the project was nominated for a Natural Resources Canada (NRCan) energy award in 1996.

This marked the beginning of a long list of energy projects championed by Mayfield. It also heralded a promotion to engineering and maintenance regional manager for the Atlantic Health Sciences Corp., one of four health authorities that merged 10 years ago to form Horizon, which operates a dozen hospitals across New Brunswick.

In his new role, Mayfield had the opportunity to apply already proven energy savings measures across the entire hospital network as well as embark on new conservation ventures, something he was excited to do with the goal of improving patient comfort.

“Beginning in 2002, we switched from oil to natural gas to heat our buildings, undertook a major T-8 lighting retrofit project and started to replace pneumatic thermostats with direct digital controls,” says Mayfield.

These measures, among others, and their results garnered Horizon’s SJRH the Energy Star label in 2018. Energy Star certified buildings perform in the top 25 per cent of buildings nationwide, based on weather-normalized source energy use that takes into account occupancy, hours of operation and other key metrics. Only buildings that earn a score of 75 or higher on NRCan’s one to 100 energy performance scale and are verified by a licensed professional engineer or registered architect can use the certification mark.

SJRH obtained a score of 88.

“It’s a wonderful feeling to earn the rating, especially since the hospital is the first healthcare facility in Canada to receive it,” says Mayfield, who notes that improving energy efficiency is an ongoing effort and more can be done.

Most recently, SJRH installed two photovoltaic panels on its roof as part of a small (20 kilowatt) pilot project. The solar panels have been designed so they can be adjusted and optimized seasonally, thereby harvesting as much energy from the sun in all seasons. Mayfield says he’d like to...
eventually put enough on the roof to take care of at least half of the hospital's electrical requirements.

“When I began to oversee operations (at SJRH), the hospital was using 52.8 equivalent kilowatts per square foot and now it's using 45.8 equivalent kilowatts per square foot,” he notes. “My goal is to reach 45 equivalent kilowatts per square foot before I retire.”

The 69-year-old says this could come as early as next year but he hasn’t yet come to a final decision.

“When you like what you’re doing, it’s not work anymore,” he says. “I couldn’t have asked for a better profession.”

Though it wasn’t what Mayfield originally set out to do.

After graduating with a second degree in civil engineering technology from Southern Tech, a division of Georgia Tech, in 1975 (Mayfield also holds a bachelor of science from the American University of Puerto Rico), he moved with his wife, Wanda, from Atlanta to Anagance, N.B. There, he started a greenhouse business with his father-in-law, growing 30,000 pounds of tomatoes and 12,000 pounds of cucumbers per week. Business was booming until the energy crisis in the late ’70s took its toll, doubling and even tripling the cost of production. Mayfield and his father-in-law were forced to close the company’s doors but as it would happen, another one opened for the environmental enthusiast.

Around the time that he landed his first job in the healthcare sector, Mayfield got involved in the Canadian Healthcare Engineering Society (CHES) on the advice of George Seely, who would later win a Hans Burgers award, too. He, along with a number of colleagues in Atlantic Canada, created the Maritime chapter, which Mayfield would later serve as chair of for three consecutive terms (2002-2009).

Recognizing the value of CHES membership and the correlation in delivering quality healthcare, Mayfield has held various other leadership roles, including New Brunswick vice-chair (1992-2002) and chair of four CHES National conferences. He was also involved in the creation of a bursary program in memory of Per Passe and played a key role in the formation of the Newfoundland and Labrador chapter. Then part of the Atlantic chapter, the province was not receiving the full benefit of its CHES membership, says Mayfield.

“Due to demographics, members from Newfoundland and Labrador were unable to participate in educational sessions, conferences and trade shows,” he explains, noting CHES Maritime became CHES Atlantic when Newfoundland and Labrador joined in 1995, but then reverted to its original name when the province seceded from the chapter in the late 2000s.

Mayfield approached Bill Squires, a CHES member from Newfoundland, at the 2007 CHES National Conference in Calgary, to discuss how the province could be better served. This led to two years of separation talks, culminating in the creation of the Newfoundland and Labrador chapter at the 2009 CHES National Conference in St. John’s, Nfld.

“We awarded all the conference revenue that would’ve gone to CHES Atlantic to the new Newfoundland and Labrador chapter to help it get started,” says Mayfield, noting this amount to $20,000.

While Mayfield’s role in CHES has diminished in recent years, he is still a staunch advocate of the organization, often encouraging others to become involved because of its intrinsic value.

“CHES has been a tremendous support for me throughout my career,” he says. “It has provided endless networking opportunities, and enriched my knowledge and skills in healthcare engineering.”