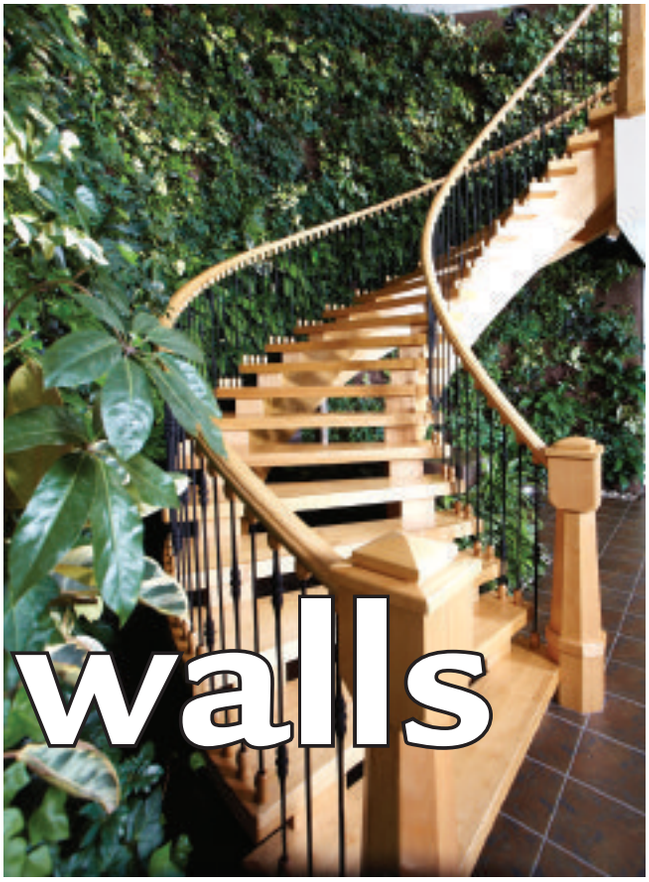
Living walls



By Charlene Peck

As Parry Sound's first Rotary exchange student Alan Darlington readily absorbed the club's ideals of international humanitarianism.

During his exchange year in New Zealand in 1976/77, his keen interest in nature flourished. Seeds of how he could make a difference in preserving the environment at a global level were cultivated.

On November 28, 2012, the Parry Sound Rotary Club welcomed Darlington back to honour him as a Paul Harris Fellow in recognition of his international humanitarian contributions and achievements as owner of Nedlaw Living Walls Incorporated. Under his leadership, Nedlaw designs, manufactures, installs and maintains green biowalls that purify air in buildings.

The award is particularly meaningful for Darlington.

"These are the same people who sent me off on that adventure 35 years ago, and for them to give me this sort of recognition is very humbling," he says. "It is very easy to draw a straight line between the opportunity the Rotary Club of Parry Sound gave me and what I have been able to

Alan Darlington receives the Paul Harris Fellow from Parry Sound Rotarian Ray Pavlove. (Above) University of Waterloo Summit Centre, Huntsville.

Helen, Alan and Jim Darlington.

accomplish with my professional career. And for that I will be forever grateful to them."

Growing up in Parry Sound as one of five children of Helen and Jim Darlington, nature was always emphasized as part of family life.

"I spent half my youth it seems, out being part of the natural experience that our area has to offer," he recalls. "As a kid, my ideas of what I wanted for a career jumped around a lot, but it always involved biology.

For him, New Zealand was a perfect choice for his Rotary exchange.

"It was a place where – like Parry Sound – they are extremely connected to the land, but the land was so different from what I was used to," he says. " New Zealand was such a lush green country that I could not help but be overwhelmed by the power of nature and the importance of stewardship in our dealings with it. This has carried through my entire academic and profession career."

After the Rotary exchange, Darlington returned to the Parry Sound High School for Grade 13 and high school graduation in 1978. Several post secondary graduations later, he'd earned a PhD, with distinction in controlled environmental systems, from the University of Guelph, where he'd studied the interaction between plants and their physical environment.

While working on research at the University of Guelph using plants to produce fresh air on long distance spacecraft missions, he began considering innovative business applications on Earth.

In 2001, he formed Air Quality Solutions and successfully transferred the technology from the lab to the market place. In 2008 he merged Air Quality Solutions to form Nedlaw Living Walls Incorporated.

The Living Wall systems he developed use the ability of plants and the microorganisms that live on their roots to remove volatile pollutants out of stale air, providing fresh air that is healthy for humans.

While the biowalls appear as simple plant walls, they actually are sophisticated pieces of machinery that are fully integrated into the building's mechanical system.

Dirty air in the space is drawn by fans through the plant wall and as the pollutants pass through the root zone, beneficial microbes pull out and consume the contaminants. The cleaned air is returned to the occupied space.

"It is this drawing of the room through the system that separates what we do from just simple "plants on the wall," Darlington explains.

He likes to use the example of being outside having a coffee and dropping some sugar on the ground.

"You don't really have to worry about sweeping it up because the ants come and take it away for you," Darlington explains. "That is exactly what happens in the biowall, but instead of dropping sugar on the ground, we release things like formaldehyde and benzene into the air. And

(Right) A 22-foot wide, 80-foot tall biowall is the centerpiece of Drexel University's Papadakis Integrated Science Centre in Philadelphia, PA.

One Kids' Place, North Bay.

instead of relying on ants, the biowall relies on beneficial microbes within the system to get rid of the garbage."

The other difference, he explains, is that instead of the ants coming to the sugar, the system has to bring the contaminants to the microbes that live in the biowall.

"It is no secret that poor indoor air quality is not good for us," Parry Sound Rotarian Ray Pavlove pointed out, when presenting the Paul Harris Fellowship to Darlington. "Nedlaw can get rid of 60 to 70 per cent of the pollutants in the air after a single pass through the filtration system. It means that less fresh outdoor air has to be brought in to maintain air quality and that significantly reduces the energy required to heat or cool that air. Economic and health benefits are staggering."

Typically, heating or cooling this additional air – depending on the season – represents up to 30 per cent of the energy consumed by a building. The biowall, Darlington explains, can generate the same quality of air for 70 per cent less energy.

Nearly 200 biowalls have been installed in Canada and the United States; and. last year, Nedlaw installed the largest known indoor living walls in both countries. Several are over 1200 square foot, five-stories high walls.

Currently Nedlaw is also working on projects in a number of European and Middle Eastern countries.

Closest to home is the Living Wall in Huntsville at the University of Waterloo Summit Centre, as well as installations at Nipissing University and One Kids' Place in North Bay.

"The potential for Alan's company is mind-boggling when you consider that he is currently developing a biofiltration system for private residences," Pavlove told Rotarians and guests at the November foundation dinner. "He is unquestionably a world leader in his field. I do not know how he is able to cope with the demands and enquiries from around the world for his product. His story of success, ingenuity, determination, creativity and innovation is nothing but amazing. The challenge of balancing marketing initiatives and research development is real and ongoing."

For Darlington, the biowalls he designs are part of that connection with nature he acquired as a Parry Sound boy experiencing the outdoors, and his subsequent resolve to play a stewardship role.

"We spend so much time indoors in very artificial conditions," he explains, simply. "Everything about the indoor space is so controlled by machines. The biowalls are really just trying to reconnect the building with the natural environment." ❋