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LandWorks Center plans to raise the bar of workplace sustainability and human comfort

BY CHRIS MILLER

Office buildings were reinvented in the late 50's and early 60's. Since then, innovations have led to the development of green technology smart energies systems but construction of new workspaces has replicated, essentially, the same blueprint for the past 50 plus years.

"Once that great new building type was created, they thought we were done," said Dermot Sweeny, co-founder and principal of Toronto-based Sweeny Sterling Finlayson & Co Inc (&Co). "Essentially architects and engineers were made a commodity and the creative side, the innovative side and the imaginative side have been taken away."

He stated that architects spend six years in school to become creative and innovative problem solving professionals just to be told to use the same old design. It was during a flight to New York in 1997 that

Calvary and London that equates to 6,000,000 square feet.

The original driving force behind Sweeny's designs is what he refers to as "human comfort," not sustainability. It was during his general research of energy consumption that he found the United States and Canada combined to use 38 percent of all power produced to air condition office buildings.

"It's not heating homes, it's not driving cars, it's not smelting aluminum – It's air conditioning office buildings. I was staggered by that," stated Sweeny. "People are starting to understand that there is a new way to do things and a new way to make things happen."

He noted that even the northern most climate office buildings are air-conditioned 365 days per year.

&Co's second driving force was the belief that they could fix the problems

heavily on the orientation of the building where we can. It's all indirect light so there's no glare on your computer screen," Sweeny explained of the 11 feet of glass &Co uses on the outside as opposed to the 9-ft. of conventional buildings. "The buildings are very thin, we want light penetration from both sides. We don't do very deep core to glass but we make very efficient buildings."

Sweeny added that &Co eliminates ductwork and ceilings in the buildings they build, rather it's just exposed concrete which he states forces them as architects and structural engineers to design better buildings, in terms of the structure.

Beneath an &Co structure's stone floor is a raised floor plenum, a separate space created for air circulation, that provides a pressurized air supply. The underfloor air and duct (UFAD) delivery system can deliver heating or cooling into any space.

provided comfort, efficiency and sustainability, while promoting a healthier workplace. My wife Marcia and I have worked on this for about 7 years and we have a great team," said Hansraj of their LandWorks LLC development company.

Hansraj, founder of New York Spine Surgery and Rehabilitation Medicine in Poughkeepsie, said the state-of-the-art LandWorks Professional Center with 39,000 square feet of rental space is slated to have its groundbreaking later this year.

The professional center catering to human comfort that would create 8 – 12 office spaces is planning on achieving LEED (Leadership in Energy and Environmental Design) Platinum certification and, before groundbreaking, has leased 14,000 square feet to date.

In LEED certification, there are 100 possible base points plus an additional six points for innovation and design and four points for regional priority. To be LEED Platinum Certified, a building must earn 80 points or above.

Developed by the U.S. Green Building Council (USGBC) in 1998, LEED provides a suite of standards for environmentally sustainable construction. The hallmark of LEED is that it is an open and transparent process whereby the technical criteria proposed by the LEED committees are publicly reviewed for approval by more than 10,000 membership organizations that belong to the USGBC.

The Hansrajs' LandWorks company has worked actively the last five years on their project finding the Fishkill site and having the architectural firm provide estimations and feasibility assessments.

No septic or water leading to the professional center's future stand-alone site created the opportunity for alternative solutions.

Sweeny and his team collaborated with Dutchess County's Michael Gillespie and associates to provide green "off the grid" solutions for onsite water, a modern septic, rainwater storage, and stormwater management.

Sweeny said that cost is often seen as a barrier to better environments. &Co has successfully altered the economic model for commercial real estate to create a win-win situation for both landlord and tenants.

"The planning is excellent and, I think, the pricing is on par with standard commercial buildings," expressed Hansraj.

Sweeny explained that a raised floor



The Fishkill LandWorks Professional Center is preparing for an end of year groundbreaking and is seeking LEED Platinum certification.

Sweeny grabbed a Harper's Magazine and flipped the pages until he reached the index. The Workplace section listed the top two complaints of those working in office buildings – I'm too cold and I'm too hot. The article Sweeny read on the New York bound flight made him rethink the concept of North American office space and, ultimately, transformed &Co into what it is today – a multidisciplinary practice that provides award-winning sustainable architecture and visions.

The &Co chief decided to align his vacations and business trips to visit the world's best state-of-the-art buildings. To date, the architectural firm has plans for a sustainable building in New York City and has designed or built space in places such as San Paolo, Montreal, Vancouver,

associated with air conditioning and heating office space, and that they could also begin looking at saving energy.

Sweeny noticed many of his "fast company" clients that often speak of speed to market, collaboration and big ideas were completely tied to their office buildings. The wiring and cabling that hung from ceilings and ran through furniture of the traditional buildings tied their hands and made mobilizing within their space to create new teams seem like an impossibility.

&Co never puts cores in the middle of the building, they bring them to the outside walls to provide uninterrupted planning space. To tremendously reduce the need for artificial lighting, sunshades and light shelves are used.

"We rely on sunlight and we rely very

Every occupant in the building adjusts their own air temperature and the amount of airflow that rises to their workstation.

By removing the ceiling and raising the floor, two feet in height is gained. A traditional plenum is 4 feet and a raised floor is 18 inches – providing a gain of two-and-a-half feet. The absence of a ceiling also allows for two more feet of glass and a six inch savings of curtain wall.

Dutchess County-based spinal surgeon, Kenneth K. Hansraj, M.D., and his wife, Marcia D. Griffin-Hansraj, D.O., have positioned themselves with Sweeny to create an environment above the minimally lit, averaged-sized office spaces with standard air quality.

"Some spaces boasted a few green features but I wanted an environment that

system has a higher cost than installing a ceiling. Cost is \$9 per foot for the floor but cost is reduced by \$3 for the ceiling, leaving a differential of \$6. &Co then reduces 4 – 6 inches of curtain wall around every floor band at \$65 - \$85 per foot, which closes the cost closer to that of a ceiling-based structure.

&Co designed the first LEED Gold NC building in North America, The RBC Centre won Green Building of North America last year in Chicago and Green Building of Canada. Eventually, it went on to become a finalist for Green Building of the World.

The structure was built with very large floor-plates with two offset cores. Completed last year, the structure is a developer building, built on standard rents.

“We had had to match the rent of a standard building designed by a leading developer in Toronto,” Sweeny explained. “We could redesign the building but we had to build it for the same dollars.”

Heating in the RBC Centre is flush with the floor. All &Co buildings have 11-foot ceilings with 11-feet of vision glass from carpet to concrete. At the perimeter, rather than a dual-zone, there is an 8-inch grill that strips the heat from the return-air side on the cooling and it is redirected through a coil system on the perimeter. The air travels down the cooled glass then returns to the top, creating a warm air current. Each individual in the workspace can adjust a readily moveable round diffuser to control their temperature.

Just like what will be incorporated into Hansraj’s LandWorks facility, the 1.2 million square feet of rentable office space in the 41 story RBC Centre utilizes a Daylight Harvesting System, which removes glare with angled fins that collect and direct sunlight deeper into the build-

ings on lower floors.

“Study after study in Europe says if the blinds are up and people are connected to the exterior, they’re stimulated, they’re

we’re now down to 0.6 – 0.7 watts per square foot versus a typical office building that uses 1.5 – 1.8 watts per square foot.”

He added that even though &Co’s design uses approximately only half the watts per square foot of conventional office buildings, their goal is to reduce it further to 0.3 watts per square foot.

Sweeny stated that he wants tenants in a building to have the flexibility to pick up and move – forwarding telephones and emails of a tenant from space to space. &Co is currently working on backbones of buildings that are so sophisticated that they’re aligned with security, temperature readings, CO2 and O2 air quality, light levels and employee identification, including in and out of work times.

Flexibility was a primary factor for Canada’s largest grocery chain, Loblaw Companies Limited. Their head quarters, located north of

culturally, socially and environmentally at work and at home.

Since Loblaw moved into their new HQ five years ago, their 3,200 employees have moved 3.5 times. Some employees have moved 6 times in Loblaw’s constant effort to reinvent themselves.

Sweeny noted the pressurized plenums, like those used in &Co’s buildings, are high pressure but the space for humans are normal pressure. Conventional modern office buildings are completely high pressure, which according to the &Co head could contribute to employee sickness, and breathing and sinus problems.

The proposed LEED Platinum LandWorks facility will be constructed of steel and glass with Douglas Fir ceilings. An improved glass will be installed in the professional building that will allow more light inside while blocking damaging UVA and UVB rays.

Hansraj said that technologies such as the Daylight Harvesting System with its low-e high performance glass allows light through while blocking heat in the warm months and cold in lower temperature months.

Low-e glass contributes an expected efficiency of 50–60 percent compared to a conventional building.

“The low-e glass skin of the building is highly efficient and will save us a lot of money,” Hansraj explained of its expected efficiency of 50 – 60 percent compared to a conventional building. “It is feasible we’ll achieve an energy efficiency of 70 percent.”

The LandWorks facility will also incorporate a “free cooling” system. During the warmer months when temperatures reach 90 degrees and above, a built in system opens the windows for two hours from 3 – 5 am while temperatures are in the 70’s.



RBC Centre, designed by architects Kohn Pedersen Fox, Bregman Hamann, and &Co.



The Loblaw Companies Limited HQ building is arranged in two parallel, four story wings, offset from one another and oriented with their long sides facing due south to take maximum advantage of solar exposure.

ing. Natural light levels are measured, automatically turning off artificial lights around the perimeter of the building when not needed.

Other green engineering highlights of the building include a sustainable Enwave Deep Lake Cooling System, raised flooring for maximum HVAC (Heating Ventilating and Air Conditioning) distribution and energy conservation, power conservation through indirect lighting and lighting sensors, energy efficient exposed ceiling option, sunshades on the podium floors and energy wise operational win-

puts the blinds down and keeps people off the glass.”

In Sweden, Norway, Poland, Belgium, France, Germany, parts of Italy and most of Spain, legislation is in place for workers’ proximity to glass, access to glass and amount of sunlight.

Rather than 55-foot and 60-foot candles of light systems used in conventional buildings, &Co designs their buildings to use 30-foot candles of light.

“We can use a lot less light and achieve much more even levels of light,” explained Sweeny. “In terms of energy,

Toronto, is 550,000 square feet with one level of parking, below grade. The structure’s floor plate is 130,000 square feet, which is one of the largest to be built in the last 50 years.

The Loblaw HQ represents a major initiative in the company’s ongoing commitment to the environment and its employees. The client’s objective is to create a high-quality work environment—one that could embody and reflect the company’s own philosophy of sourcing with integrity, while making positive differences in the community and in the way people operate

“This will allow people to walk into a building filled with cool, fresh air,” Hansraj expressed. “In 2004, when I realized that I wanted to build my own project, I had a feeling of what I wanted but it wasn’t until I went to Toronto and saw the Loblaw building that I knew. The LandWorks Professional Center will contribute to higher productivity for its tenants as well as improved health and comfort for the tenants’ employees.”

For more information, please contact Dr. Kenneth Hansraj at 845-471-9200 or LandWorks Center at 845-485-9500