



Function
Converging Architectural + Performance Goals



Lemay Headquarters, Montreal

The Phénix, a former industrial building, becomes an innovative design hub.

NZB

by **Vilma Barr**, contributing writer

"Louis T. Lemay, President and Excellence Facilitator" is how the head of Lemay was identified when he signed the introduction to the company's first *Net Positive* report. The 42-page document describing the firm-wide dedication to sustainability was issued in 2019, approximately a year after

the transdisciplinary practice occupied its headquarters building, the Phénix, in Montreal.

Built in 1950, the building at 3500 Saint Jacques St. originally served as the distribution center for the former Simpsons' department store catalogue operation and was later used by

a documents storage firm. Now housing Lemay's 350-person local staff, it operates as a net-zero annual energy consumption structure. "It is completely innovative," says Lemay, of the three-story former industrial building, which has been converted into a light-filled, plant-abundant office space. "In

our climate, it has never been done."

Located in the heart of Montreal's South-West borough, a neighborhood where Lemay was founded, the firm is part of the area's upgrading. Lemay undertook an 18-month, \$25 million project to adapt the site to centralize and support employees

who were scattered throughout the city. Lemay was the major investor, aided by a \$1 million government grant applied toward developing the net-zero annual energy project.

Lemay, whose father founded the firm in 1957, and his colleagues, analyzed the type of

headquarters that could serve as an example. The decision was that they would go as far as possible—no closed dedicated offices, an environment to inspire employees with work areas that reflect new trends in collaborative work spaces, and a net-zero energy building that would enhance health and wellness.



EXTERIOR MURAL

They named their 95,000-sq.-ft. building Le Phénix (meaning phoenix) and commissioned Vancouver-based artist Taka Sudo to paint an outdoor mural of a phoenix on the front façade, representational of a phoenix rising from the ashes to become immortal.

CURTAINWALL

Triple-glazed windows and curtainwall from a company that specializes in carrying out large-scale projects, both for new construction and renovations.

Shalwin

www.shalwin.ca

CIRCLE 339



Green Inside and Out

Proximity to the Parc du Premier-Chemin-de-Fer spurred the adoption of the building's biophilic interior as an important environmental theme. Greenery

Energy for the building consumes 15% of what a conventional building of its size would use, and is produced by photovoltaic panels with heat recovery channels.

permeates the indoor spaces year-round, a living wall encourages floor to ceiling plants. Climbing plant modules and a green room improve indoor air quality and balance humidity. All offices areas have access to daylight and views, reducing the need for artificial illumination.

Monitoring of the operational equipment verifies that the building is completely energy independent. Energy for the building, which consumes 15% of what a conventional building of its size would use, is produced by photovoltaic panels with heat recovery channels. Energy storage systems manage power demand during peak periods in winter.

HVAC and electric lighting are designed to coincide with building-occupancy periods. Motion detectors turn lights on or off, and are sensitive to the amount of natural light in work areas. The building's systems were "road tested" through a winter and summer to ensure proper operation.

"The Phénix shows that it is possible to design net-zero real estate projects in Canada that do not break the bank."

PROJECT SPECS

Project: The Phénix

Location: Montreal, Canada

Description: Net-positive retrofit of a warehouse into the firm's design studios and offices.



Louis T. Lemay is the firm's president and "excellence facilitator." He takes an active personal role in Montreal's community activities, and supports his staff's own charitable and cultural initiatives.

NET-ZERO PROJECTS IN CANADA

Louis T. Lemay and his colleagues agree their building demonstrates that sustainable development can be a catalyst for creating a workplace of the future, and for enabling the rebirth of underused sites into healthy, socially responsible environments with significant cost savings.

"The Phénix shows that it is possible to design net-zero," Lemay notes. Clients now visiting the building are impressed. "It is the best calling card possible," he says.

LEMAYLAB

The firm's LemayLab is a framework for its professionals to research innovative procedures and practices to apply to the design and construction of projects worldwide.

CURRENT LEMAY PROJECTS

Lemay Architectural Firm, which celebrated its sixtieth anniversary in 2017, operates branch offices in Calgary, Edmonton, New York City, Quebec City and Toronto.

Current major projects in Montreal include stations for the new REM light-rail transit line that will incorporate wood and natural lighting. Montréal-Trudeau International Airport, which has seen a 32% passenger growth in the last five years, will get a \$1.7 billion expansion.

Lemay is the architectural firm behind Humaniti, a \$200 million hotel-office-condo-rental-commercial complex under construction in downtown Montreal, and Place des Montréalaises, a public square covering part of the Ville Marie Expressway. In Toronto, the former Woodbine Race-track will be a mixed-use project encompassing sustainable strategies.



Lighting System

Lemay designers coordinated with Lumenpulse to plan the entire building's high-performance LED design and installation. Each fixture adjusts in real time to outdoor brightness, saving energy and creating a natural lighting effect throughout the day. In the main corridors, floodlights illuminate entrances leading to the workspaces. Sensors in the workshops allow a balance of the intensity of the lighting, regulating the amount of light between the periphery and the central spaces.

The linear fixtures suspended perpendicular to workstations reduce the amount of lighting equipment needed to perform more intense tasks.

A controlling zone system shuts off the lights when no motion is detected. Users have the option to manually change the light intensity in each zone. At the main entrance, a living green wall improves indoor air quality and balances the natural humidity while promoting a vital natural connection with building's environment. Fixture placement was calibrated to provide the energy needed for plants on the green wall where there is limited natural light.

Seasonal Multisensory Interaction

Lemay staff members interact with the passive ventilation of the Phénix to create a healthy workspace. The Phénix integrates biophilia in several ways. It creates an advanced human-nature interaction by making its users a key part of its own passive climatization atmosphere. A mixed ventilation system with operable windows and a fresh-air supply system allows users to optimize indoor thermal comfort with adequate fresh air rates to promote growth of the plants throughout the office and public areas.

AWARDS

The Phénix boasts a rare (maximum) 3-star Fitwel rating and is aiming for LEED Platinum certification, as well as Zero Carbon Building Standard—Performance and Living Building Challenge—Petal Certification.

Lemay recently accepted the 2019 Stephen R. Kellert Biophilic Design Award for the Phénix, from the International Living Future Institute (ILFI). The Phénix won in the Interior/Renovation category; according to the jury, it "shines for its environmental performance-based strategies and its incorporation of biophilic design elements to create an inviting and inspirational workplace."



GREEN WALLS

Greenery permeates the indoor space year-round: a living green wall, climbing plant modules and a green room improve IAQ and balance humidity.

Alpha Plante
www.alphaplantes.com

CIRCLE 338

LIGHTING

Each fixture adjusts in real time to outdoor brightness, saving energy and creating a natural lighting effect throughout the day. Fixture placement was calibrated to provide energy needed for plants on the green wall.

Lumenpulse
www.lumenpulse.com

CIRCLE 337



OPERABLE WINDOWS

The windows on the south-side curtainwall provides views of natural elements, and a perspective on how seasonal natural processes change the surroundings and the building's functionality.

DAYLIGHT & VIEWS

All office areas have access to daylight and views, reducing the need for artificial lighting and providing enough illuminance to accomplish tasks during daylight hours, while contributing to synchronizing circadian rhythms, boosting mental activity and reducing stress.

PROJECT 'TRANSPARENCY'

The firm cleverly works in some marketing with a display of their project work inlaid in transparent plexi-glass, mounted to mullions, so as to not take away from daylight efforts.

