THE UNIVERSITY OF NEW BRUNSWICK, FACULTY OF KINESIOLOGY

The University of New Brunswick, Faculty of Kinesiology had a grand vision to create a new facility that would wholly embody the philosophy of the science of kinesiology and personify the synthesis between wellness and sustainability. UNB and Architects Four Limited collaborated to create a facility which combines the seven wellness concepts of air, water, nourishment, light, mind, fitness and comfort, while achieving LEED® Gold certification.

As the second phase of the three-part "Healthy Living Village", the facility parallels kinesiology's broad cross-section of interdisciplinary studies and collaborative nature through its imitation of human anatomy. The interior circulation pathways are the backbone and the connective tissues; the Central Core, as vital organs, allows uninterrupted passage of light, air and people throughout; the Grand Stair, similar to a heart, provides vital access to all levels; and the Earth Tubes simulate the building's breath. Combined with generous glazing on all levels, the interior is visually open and inviting with a natural ambience.

On track for WELL Certification, the building is designed with a special emphasis on natural features, transforming healthy learning environments and improving the wellness and well-being of its students, faculty, and staff studying the science of human movement and apply the latest evidence-based research to improve function, health and wellness to people in all settings and populations.

A biophilia plan outlines the way nature is incorporated through environmental elements, lighting, and space layout; as well as the way it incorporates nature's patterns, and opportunities for human-nature interactions. At the project's onset, local Indigenous representatives from traditional Wolastoqey territory blessed the site and the trees harvested for re-use in the building.

The building is situated in a park-like setting on the UNB's downtown Fredericton campus, gently integrated into the hillside between MacKay and Peter Kelly Drives. The steep sloped site provides the unique opportunity for street-side, barrier free entrances at each floor level.

An expansion to MacKay Drive Plaza at the roof level of the building, creates an outdoor space overlooking the building's vegetated roof and extraordinary views of the City and the Saint John (Wolastoq) River. Drought resistant vegetation populates the roof, while the surrounding landscape design incorporates native and adaptive plant species.

Despite being set into the hillside, natural light graces most occupied spaces through large windows, rooftop monitors and borrowed light through interior glazing. Subterranean earth tubes supply naturally tempered fresh air to the mechanical ventilation system. The building also draws in fresh air from the operable windows, and past a 54m² living wall, before exhausting out rooftop monitors using stack effect.

Fossil fuel dependence is reduced by accommodating future photovoltaic integration and utilizing the campus's district energy plant, that's base loaded by locally sourced biomass. Furthermore, alternative modes of transportation are encouraged through the inclusion of solar powered bicycle shelters, electric vehicle charging stations and integration into the campus active transportation plan.

Learning spaces in the 6,275m², three-storey facility include research and teaching laboratories, High Performance Training Centre, teaching kitchen for university and community outreach, student learning commons, classrooms and lecture theatre.

The building educates occupants not only in the classroom, but also with sustainable design strategies on prominent display. On the exterior, Earth Tubes, grade-level access and the vegetated roof are visually significant elements that signal to the building's sustainable aspirations.

On the interior, an electronic dashboard displays the energy usage, rainwater harvesting and wellbeing of the building and its occupants, windows provide visibility into the thermal tank storage room, and resource reduction is encouraged with water filling stations and recycling. These features raise awareness and expectations of building standards and inform occupants of future design potential.

Photos: Julian Parkinson

LEED Scorecard - Gold

Sustainable Sites	19 / 26
Water Efficiency	10 / 10
Energy & Atmosphere	19 / 35
Materials & Resources	5 / 14
Indoor Environmental Quality	10 / 15
Innovation in Operations	6 / 6
Regional Priority	4 / 4
TOTAL	**73 / 110**