Andrew Fleck Children's Services

Forest Explorers Outdoor Early Learning Centre

Submission for :

2025 Canadian Green Building Awards

March 7, 2025

The main staircase leading to the second floor, which houses a boardroom, a preschool play/activity room, and office space.

PART 1
PROJECT DESCRIPTION

Use for all categories. Projects are judged based on criteria of sustainable design, architectural merit and innovation. **Please submit Part 1 and Part 2 as separate pdf files.**

2025

CANADIAN GREEN BUILDING AWARDS

THE NATIONAL PROGRAM OF SUSTAINABLE ARCHITECTURE & BUILDING MAGAZINE SABMag

PROJECT CATEGORIES

Identify which Award category you are entering

☐ **1. Residential [small]**
Open to new or renovated buildings less than 600m² in area, of which a minimum of 75% is dedicated to single-family or multi-family residential uses.

☐ **2. Residential [large]**
Open to new or renovated buildings [typically multi-unit buildings or groups of related buildings] greater than 600m² in area, of which at least 75% is dedicated to residential uses.

☐ **3. Commercial/Industrial [small]**
Open to new or renovated buildings up to 2,000m² in area, of which more than 75% is dedicated to commercial or industrial uses.

☐ **4. Commercial/industrial [large]**
Open to new or renovated buildings [or groups of related buildings] greater than 2,000m² in area, of which at least 75% of the floor area is dedicated to commercial or industrial uses.

■ **5. Institutional [small]**
Open to new or renovated buildings up to 2,000m² in area, of which more than 75% is dedicated to institutional uses.

☐ **6. Institutional [large]**
Open to new or renovated buildings [or groups of buildings] greater than 2,000m² in area, of which at least 75% of the floor area is dedicated to institutional uses.

☐ **7. Mixed Use**
Open to new or renovated buildings [or groups of related buildings] of any size, in which no individual use exceeds 75% of the overall floor area.

☐ **8. Existing Building Upgrade**
Open to buildings of any size or type in which the primary focus of the work has been to enhance the performance or extend the life of an existing structure. Entries in this category are required to respond only to the submission criteria appropriate to the project.

☐ **9. Interior Design**
Open to interior design projects of any size or type. Entries in this category are required to respond only to the submission criteria appropriate to the project.

An award will be given in each category at the discretion of the jury.

PROJECT DETAILS

Project name: Forest Explorers Outdoor Early Learning Centre
Address: 415 Corkstown Road, Ottawa, ON K2K 2Y1
Year completed: 2024

PROGRAM AND CONTEXT

Project type: [Identify all uses occupying 10% or more of gross floor area]

Full-time licensed childcare with supporting office space.

Project site: [Check all that apply]

- [X] Previously undeveloped land
- [ ] Previously developed land
- [ ] Urban
- [■] Suburban
- [ ] Rural

Other Building description: [Check only one]

- [■] New
- [ ] Renovation
- [ ] Both [If both, list __% new and __% renovation]

STATISTICS* Provide the following metrics as applicable to your project.

- Site Area: 123,467 m^2
- Building gross floor area: 871 m^2
- Energy Intensity: 65.8 KWhr/m^2/year [Include both base building and process energy]

[optional: report energy intensity separately as follows:

- Energy Intensity, base building: _____ KWhr/m^2/year
- Energy Intensity, process energy: _____ KWhr/m^2/year

- Reduction in energy intensity: 51 %.
- State the reference standard on which the % reduction is based: MNECB, NECB or ASHRAE 90.1

[include version]: NECB 2015 + OBC SB-10 2017 DIV3 c

- Recycled materials content: _____ % by value
- Construction materials diverted from landfill: _____ %
- Regional materials by value: _____
- Water consumption from municipal source: _____ litres/occupant/year

[Include both base building and process consumption]

- Reduction in water consumption: _____%
- State the reference on which the % reduction is based: [ ] LEED or other [ ]

*NOTE FOR PART 9 RESIDENTIAL PROJECTS: PROVIDE THE STATISTICS ABOVE IF AVAILABLE. Include in the Executive Summary [see next page] the EnerGuide or the Home Energy Rating System [HERS] ratings if available, and the WalkScore rating [see www.walkscore.com]. Also, a qualitative assessment of project performance should be included in the appropriate sections of the narrative.

Pathway from the Centre to the forest which hosts outdoor classrooms.

Part 1 - Project Description

Project Summary

Forest Explorers Outdoor Early Learning Centre redefines early childhood education by immersing 73 children, from infants to preschoolers, in a nature-filled environment. Located within Ottawa's Greenbelt, this full-time daycare centre offers a year-round outdoor learning experience where children spend at least half their time exploring nature, rain or shine. The design embraces the principle of "learning through play," fostering sensory awareness, resilience, and life skills through hands-on activities in a forested setting.

The Centre doubles as a research hub for Outdoor Play Canada, advocating for equitable access to unstructured outdoor learning. The facility, inspired by a "cabin in the woods," integrates seamlessly with its environment. Trees cleared during construction were repurposed into siding and furniture, and native species planted up to the building support local biodiversity.

Sustainability was a key consideration in the design, with a super-insulated, airtight envelope, high-performance triple-glazed windows, and bird-friendly glass. Regionally sourced, non-toxic materials were also used throughout. This environmentally conscious approach makes the Centre a model of low-impact design while creating a lasting educational facility that instills a lifelong love for nature in young learners.

Main Project Description

Site Ecology

The Forest Explorers Outdoor Early Learning Centre's site design incorporates several strategies to preserve, rehabilitate, and enhance natural ecosystems. The project minimizes disturbance to the natural grading, with careful site planning to maintain the existing topography and vegetation. The existing trees that were cleared for construction were locally kiln-dried and milled for use as building siding and custom furniture, while some logs were retained on-site to serve as seating and wildlife habitat.

The landscaping features strategic planting of native species, which support local biodiversity and regenerate the surrounding ecosystem. Stormwater management is handled on-site through techniques that promote water infiltration, minimizing runoff and enhancing groundwater recharge.

These site strategies are in line with the National Capital Commission's Sustainable Development Strategy, which focuses on preserving and improving the ecological integrity of the larger Greenbelt area. The integration of these strategies not only enhances the Centre's ecological footprint but also contributes positively to the broader community's environmental sustainability.

Light and Air

The Centre's design maximizes daylighting and fresh air ventilation to enhance indoor environmental quality. Large, triple-glazed windows provide natural light to all occupied spaces, ensuring that the interior is well-lit and connected to the outdoors. Operable windows allow for natural ventilation, fostering a healthy and comfortable indoor environment. The building incorporates a high-efficiency HVAC system with Energy Recovery Ventilators (ERVs) to ensure a constant supply of fresh air, maintaining optimal indoor air quality and reducing reliance on mechanical ventilation systems. Energy-efficient LED lighting systems with motion sensors and daylight harvesting controls further enhance energy conservation, contributing to the building's overall sustainability.

Wellness

The design of the Centre integrates both physical and psychological wellness through biophilic design elements and thoughtful material selection. The extensive use of wood throughout the space creates a warm, natural environment that helps foster a connection to nature and supports mental well-being. No- and low-VOC

Multi-purpose/dining area.

materials, along with formaldehyde-free finishes, ensure that indoor air quality remains optimal, further promoting occupant health. Large windows and open spaces offer visual access to the outdoors, reinforcing the Centre's strong ties to the natural world. Communal spaces such as the wrap-around porch provide areas for social interaction, supporting a sense of community among children, parents, and educators. The outdoor learning spaces, forest classrooms, and nature trails are key to promoting physical activity and engaging children with the natural environment, encouraging exploration, creativity, and overall well-being. These features contribute to the Centre's holistic approach to wellness, fostering both physical and emotional health in a supportive environment.

Water Conservation

The Centre conserves and manages water through a focus on sustainable practices. On-site stormwater management techniques minimize runoff and promote infiltration. The design includes careful selection of native plant species to eliminate the need for irrigation, supporting local biodiversity and ensuring efficient water use.

Operating Energy Present and Future

The Centre's mechanical, electrical, and control systems are designed to complement the building's passive design strategies, ensuring energy conservation and comfort. The building's super-insulated, airtight envelope minimizes heat loss, while the orientation and design—aligned with Passive House standards—reduce the heating and cooling loads. The building's annual energy intensity is projected to be 58 kWh/m²/yr, which significantly exceeds OBC SB-10 requirements. This reduction in energy consumption is primarily achieved through the building's high-performance envelope, including triple-glazed windows and thermally broken door frames, as well as the use of energy-efficient mechanical systems. To further reduce the operational carbon footprint and space and water heating is provided through electricity, eliminating the need for a natural gas connection. The building is designed for future adaptability, with provision for integrating renewable energy systems such as solar panels or geothermal heating. The Centre is committed to being a leader in low-carbon operations, with a long-term strategy to further reduce its energy consumption and environmental impact.

Materials and Resources

The material selections for the Centre prioritize occupant health, environmental sustainability, and long-term durability. The design emphasizes the use of no- and low-VOC materials, ensuring that indoor air quality is optimized for the well-being of both children and educators. The extensive use of natural wood throughout the building creates a biophilic connection to the forest surroundings, supporting both the psychological and physical health of occupants by fostering a calm, natural environment.

A key feature of the design is the use of locally sourced and reclaimed materials. For example,

the second floor wood flooring is from Log's End. Reclaimed Pine logs are pulled from Ontario and Quebec wasterways, reducing the need for new materials and minimizing transportation emissions. In addition, the building incorporates high-durability finishes and materials to ensure longevity and to reduce the need for future replacements or repairs. This approach minimizes both material waste and the environmental impacts associated with the lifecycle of building components.

To further support the Centre's commitment to sustainability, materials were chosen for their low environmental impact, with recycled content used where possible. The project also utilized bird-friendly glazing to protect local wildlife, reflecting the Centre's holistic approach to ecological responsibility. Where appropriate, the materials selected have been assessed for their environmental impact, including embodied carbon, to ensure that the building is not only sustainable during its operation but also throughout its lifecycle.

From the drop off zone, children and their parents walk a 150m forested path to the building and outdoor play area.

Pre-school play/activity room.