Smart Buildings Living Lab Call for Proposal

The proposal was developed in partnership between Center of Excellence for Next Generation Network (CENGN) and Morguard

Submit your proposal using our secure online portal:
https://portal.cengn.ca/prog/call_for_proposal_smart_building

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About the CENGN Living Lab Initiative

With $45 million in funding from the Federal Government's Innovation, Science, and Economic Development (ISED), CENGN is developing eight Living Labs across Canada to support over 100 Canadian startups and scaleups looking to prepare their innovative network technology products for market entry, commercial growth, and industry adoption.

The CENGN Living Labs initiative is set to drive nationwide digital transformation for key Canadian economic sectors. Through these living labs, CENGN will provide the services, expertise, and infrastructure required to test and validate network technology solutions. This initiative will advance the competitiveness of Canadian industry while also supporting the development of new intellectual property and the growth of our most innovative tech startups and scaleups.

Overview of the Call

This call was developed through a partnership between CENGN and Morguard, a fully integrated real estate company that owns, manages, and invests in a diversified portfolio of office, industrial, retail, residential, and hotel properties across North America, while also providing real estate investment and advisory services to institutional and private clients.

Background and Rationale

As Canada's Centre of Excellence in Next Generation Networks, CENGN helps drive the innovation and adoption of advanced networking technologies across Canada. To support this mission, CENGN provides the connected infrastructure, technical expertise/services, talent development, and partner ecosystem to support Canada's digital and economic growth.
CENGN is establishing eight living labs across British Columbia, Ontario, and Quebec to accelerate technology innovation and industry growth. These real-world testing environments provide Canadian companies with the services, expertise, and infrastructure needed to test and validate next-generation network technology solutions.

The Living Labs initiative is focused on supporting technologies that are driving digital transformation across key economic sectors in:

- Smart Mobility
- Smart Buildings
- Advanced Manufacturing
- Robotics
- Smart Agriculture
- Networking Technologies

Key Objectives

This call for proposal seeks to develop a project action plan and execution to address Morguard's smart building challenge areas. The project should support improvements in Morguard's smart energy management, computerized maintenance management, premise safety and security, and tenant experiences and services. The applicant's solution could be applied in one or more of urban, high-rise, multi-unit residential, enclosed regional shopping center or suburban campus mid-rise office.

Applicants may address all these challenge areas or select specific statements that align with their expertise and proposed approach.

Industry Challenges

Smart Energy Management

Smart energy management uses IoT sensors, automated systems, and intelligent software to monitor and optimize building energy consumption in real-time. These systems automatically adjust HVAC, lighting, and other operations based on occupancy, weather, and demand patterns while maintaining comfort.

Challenge Areas

1. **Reducing High Operational and Utility Costs**
   Buildings are experiencing elevated electricity and utility expenses, driven by inefficient energy consumption and lack of real-time monitoring. We invite solutions that can identify and eliminate energy waste, provide actionable insights through data analytics, and implement automation strategies to reduce overall operational costs.

2. **Optimizing HVAC Performance, Air Quality, and Electricity Usage**
   There is significant room for improvement in how HVAC systems operate, how indoor air quality is maintained, and how electricity is consumed across facilities. We are looking for technologies that enhance HVAC efficiency, monitor and improve air quality, and intelligently manage electricity usage—ideally through predictive maintenance, occupancy-based controls, and smart grid integration.

3. **Achieving Sustainability Goals Within Tenant Constraints**
   Most sustainability initiatives are challenged by tenant privacy concerns and lease limitations, which restrict access to granular energy data and system integration. We seek solutions that can work within these constraints—offering privacy-respecting data collection, modular system designs, and tenant-friendly engagement strategies—they help in meeting environmental targets without compromising tenant trust or contractual obligations.

Potential Use-Cases

1. IoT-enabled smart metres & sensors
2. AI-based automation

3. BMS/BAS (HVAC eg. Boilers, Fans, Coils, Chillers)
4. Metering: Electrical, Water
5. Smart Lighting
6. Predictive Maintenance

CMMS – Computerized Maintenance Management System

Computerized Maintenance Management Systems (CMMS) is software that helps schedule and track maintenance activities for building equipment. CMMS integrate with energy monitoring systems to automatically trigger maintenance when equipment isn't operating efficiently ensuring that energy-consuming equipment stays well-maintained, which is essential for sustained energy efficiency and cost savings.

Challenge Areas

1. **Lack of Intelligent Preventive Maintenance Alerts**
   Our existing systems do not consistently generate timely or intelligent alerts for equipment maintenance needs. Maintenance is often reactive rather than proactive, leading to increased downtime and repair costs. We are seeking CMMS solutions that can integrate with building systems to automatically generate preventive maintenance alerts based on equipment usage, performance data, and predictive analytics. The goal is to shift from reactive to proactive maintenance, improving asset longevity and operational efficiency.

2. **Inconsistent Preventive Maintenance Execution and Tracking**
   Preventive maintenance schedules are not always followed or tracked effectively, resulting in missed service intervals and reduced equipment performance. We invite proposals that offer robust scheduling, tracking, and reporting capabilities for preventive maintenance tasks. Solutions should support automated workflows, technician assignments, and compliance monitoring, while providing visibility into maintenance history and performance metrics.

Potential Use-Cases

1. Automated Maintenance systems to extend life of the equipment
2. Adding QR codes to track history, operation manuals, maintenance required– saving costs with HVAC, Lighting/electrical etc.

Operation Safety and Security

Morguard seeks operational safety and security enhancements using integrated systems such as access control, parking monitoring, and emergency communications that work together through a centralized platform. These systems use technologies such as IoT devices, and AI to provide real-time monitoring and automated responses.

Challenge Area

1. **Enhancing Security, Operational Efficiency, and Tenant Experience**
   There is a need to improve the integration of security systems with building operations to ensure a seamless and safe experience for tenants, while also boosting operational

efficiency. We invite solutions that unify security infrastructure (e.g., access control, surveillance, emergency response) with building management systems to provide real-time insights, automated responses, and improved tenant engagement. Proposals should show how safety can be enhanced without compromising convenience or operational flow.

2. **Inconsistent Communication and Training of Security Staff Due to High Turnover**
   Frequent turnover among security personnel leads to inconsistent training, communication gaps, and reduced effectiveness in incident response and tenant interaction. We are seeking platforms or processes that support continuous training, standardized onboarding, and real-time communication for security teams. Solutions should address workforce stability and ensure consistent service quality regardless of staff changes.

3. **Monitoring of Long-Hour and Overnight Parking in Outdoor**
   Outdoor parking areas are not consistently monitored, especially during long hours and overnight periods, leading to potential security risks and unauthorized usage. Proposals should include smart parking monitoring systems that use sensors, cameras, or analytics to track vehicle activity, identify unauthorized parking, and enhance safety during off-peak hours. Integration with security protocols is essential.

4. **Illegal Parking and Shortage of Designated Spaces**
   Illegal parking and a shortage of designated spaces are causing operational disruptions and tenant dissatisfaction. We are looking for solutions that optimize parking space usage, enforce parking rules, and provide real-time availability updates. Technologies such as digital permits, automated enforcement, and dynamic space allocation are encouraged.

Potential Use-Cases

1. CCTV & analytics
2. Access control expansion/smart access control (mobile apps, biometric authentication, RFID, cloud-based platforms, mobile entry)
3. Occupancy tracking, motion sensors
4. Cloud-based monitoring
5. Emergency response tech
6. Autonomous security patrols (robotics, drones, autonomous mobile robots (AMRs))
7. License Plate Recognition
8. Parking control

Tenant Experience and Services

Morguard aims to improve their tenant experience by leveraging technology to enhance occupant comfort and convenience. Their goal is to create a seamless user experience that attracts and retains tenants.

Challenge Areas

1. **Supporting an Omni-Channel Retail Environment**
   Retail tenants operate across multiple channels—physical stores, online platforms, and mobile apps—but building infrastructure and services are not fully aligned to support this hybrid model. We seek solutions that enhance the omni-channel retail experience by integrating digital and physical touchpoints, enabling features like smart signage, mobile engagement, and real-time inventory or promotional updates. Proposals should demonstrate how the building can become a strategic partner in retail success.

2. **Facilitating Seamless Navigation and Wayfinding for Tenants and Visitors**
   Visitors and tenants often face challenges navigating large or complex building layouts, which can lead to frustration and reduced engagement. We invite proposals for intuitive wayfinding systems—such as interactive kiosks, mobile apps, or AR-based navigation—that help users easily locate amenities, retail spaces, services, and exits. Accessibility and multilingual support are key considerations.

3. **Enhancing Overall Tenant and Customer Experience**
   There is a need to improve the overall satisfaction and engagement of tenants and customers through personalized services, responsive support, and modern amenities. Solutions should focus on creating a more connected and enjoyable environment, whether through digital concierge services, feedback platforms, loyalty programs, or smart building features that adapt to tenant preferences.

4. **Increasing Foot Traffic and Retail Sales**
   Retail tenants are seeking ways to attract more visitors and boost sales, but building-level strategies to support this are limited. We are looking for proposals that use data-driven marketing, event programming, or digital engagement tools to increase foot traffic and drive retail performance. Integration with tenant campaigns and building-wide promotions is encouraged.

5. **Implementing Real-time location Services**
   The building lacks real-time location tracking capabilities that could enhance safety, service delivery, and personalized tenant experiences. Proposals should include technologies such as Bluetooth beacons, Wi-Fi triangulation, or RFID to enable real-time location services. Use cases may include indoor navigation, asset tracking, or personalized service delivery.

6. **Modernizing Tenant Communication in Residential Buildings**
   Tenant communication in residential buildings is manual and inefficient, often involving site teams printing, folding, and distributing notices door-to-door. We seek digital communication platforms that streamline tenant engagement, allowing for instant updates, two-way messaging, and document sharing. Solutions should reduce manual labor and improve responsiveness while respecting tenant privacy.

Potential Use-Cases

1. Wayfinding
2. Smart Digital Signage
3. Interactive Display Screens/Kiosks
4. AI-based content management
5. Resident Engagement Apps - Notices/Alerts/Digital signage/boards/amenity booking

Power Management

Power management monitors and optimizes electrical power consumption and distribution in real-time. These systems automatically adjust power loads during peak demand, manage backup power, and integrate renewable energy sources.

Morguard seeks to improve their power management in the following challenge areas:

Challenge Areas

1. **Managing EV Charging Demand and Load Balancing**
   As EV adoption increases, tenants and visitors are demanding more accessible and reliable charging stations. However, the addition of EV chargers places significant strain on building electrical systems, especially during peak hours. Without proper load balancing, this can lead to power outages, increased utility costs, and compromised performance of other building systems. We are inviting proposals that offer intelligent EV charging and load balancing solutions, including:
   - Dynamic load management systems that distribute power based on real-time demand
   - Smart scheduling of EV charging to avoid peak load periods
   - Integration with building energy management systems (BEMS) for holistic control
   - Renewable energy integration (e.g., solar + storage) to offset EV charging loads
   - User-friendly interfaces for tenants to monitor and manage their charging sessions

Potential Use-Cases

1. EV charging
2. IoT charging stations
3. Demand management/load balancing

Water Risk Management

Morguard seeks to implement water risk management solutions into their buildings to monitor systems to detect leaks, track water usage, and prevent water-related damage. These systems provide real-time alerts for unusual water flow patterns, pipe bursts, or flooding, enabling rapid response to minimize property damage and repair costs. This protects building assets, reduces insurance claims, and maintains a safe, healthy environment for tenants.

Morguard looks to address the following challenge areas:

Challenge Areas

1. **Water Leak Detection and Response**
   Water leaks—whether from plumbing systems, HVAC units, or building envelopes—often go undetected until they cause visible damage. This reactive approach leads to costly repairs, potential mold growth, tenant disruption, and insurance claims. We are inviting proposals that offer smart, scalable leak detection and water management solutions, including:
   - Real-time leak detection sensors with automated alerts
   - Predictive analytics to identify high-risk zones and potential failures
   - Integration with building management systems (BMS) for centralized monitoring
   - Automated shut-off mechanisms to prevent escalation
   - Tenant notification systems for rapid response and transparency

Potential Use-Cases

1. Leak Detection
2. People Counting
3. Environment Sensors
4. Water Flow Metering

Funding Scope

This call for proposals was developed through a partnership between CENGN and Morguard.
As a result of this call, up to six grants of up to CAD 100,000 each will be awarded. The project duration is up to 12 months, encompassing all research, testing and validation activities and final reporting.

Please note that the program operates on a cost-reimbursement model, covering up to 40% of eligible project expenses. Applicants are responsible for securing the remaining funding from other sources.

No reimbursements will be issued until a fully executed Ultimate Recipient (UR) Contribution Agreement has been returned to CENGN by the applicant.

Eligibility Criteria

1. Applicant must be a **registered organization in Canada** with **499 or fewer full-time employees**.
2. The technology solution must be **deployable in a CENGN Living Lab**.
3. Proposal must include a **firm, all-inclusive price** for the work and eligible supported costs, **not exceeding CAD $100,000**.
    a. At least **90% of the eligible supported work must be performed in Canada**.

4. Applicant must declare the **combined level of government financial assistance**:
    a. **≤ 75%** of eligible supported costs for **Industry Collaborators**.
    b. **≤ 100%** of eligible supported costs for **Post-Secondary Collaborators**.
5. All participants must be **willing to sign a participation agreement**.
6. Applicant must demonstrate **financial management capacity**, including:
    a. **Credit review** (e.g., Dun & Bradstreet).
    b. **2-year cash flow forecast.**

Submission Process/Timeline

Activity	Date
Launch Call for proposal	October 1, 2025
Deadline for submitting proposals	Nov 14, 2025
Application Review and award Decision	Jan 16, 2026
Project Start	Feb 1, 2026

Notes:

- Submit your application electronically using CENGN Portal
- Late Applications will not be considered

Submission Guidelines

- All submitted proposals must provide a comprehensive overview of the proposed solution, including its technical approach and relevance to the identified challenges.
- Proposals should detail the core features of the solution and demonstrate its ability to integrate with existing infrastructure such as HVAC, lighting, building management systems, security platforms, and tenant platforms.
- To support the solution's credibility, examples of successful deployments in similar environments should be included.
- An implementation plan outlining the timeline, scalability, and support model is essential.
- Proposals must present an impact analysis, including estimated return on investment (ROI), projected energy savings, and risk reduction metrics.
- Considerations for tenant privacy, lease compliance, and accessibility should be addressed, along with a clear explanation of data security and privacy measures

Requirements for Proposal

- Applicants must present a clear and concise description of their product or solution, including its core capabilities, value proposition, and current Technology Readiness Level (TRL) as per the Government of Canada's TRL Guide.
- They should highlight real-world testing, customer feedback, and adoption progress.

- The proposal must also define the market problem being addressed, supported by industry data or trends, and explain how the solution offers a unique advantage.
- Applicants should outline their Total Addressable Market (TAM) and Serviceable Addressable Market (SAM) and provide evidence of market demand through lead customers or stakeholder commitments.
- If a Canadian adopter has been identified, a Letter of Intent (LOI) should be included.

Evaluation Criteria

Applicant selection will be ranked according to their total overall point rated score, region, and available Project capacity at the Living Lab.

Mandatory Criteria

Mandatory criteria are essential, non-negotiable requirements that an Applicant must meet to have their Project proposal considered for selection.

Criteria	
M1	The Applicant must be a registered organization in Canada with 499 or fewer full-time employees.
M2	The Applicant must provide the following business information: a. Registered Business Name b. CRA Business Number c. Location of Incorporation d. Articles of Incorporation
M3	The technology solution must be capable of being deployed in a CENGN Living Lab.
M4	The Applicant must provide resumes of all key team members proposed.
M5	The Applicant must submit a firm proposal, all-inclusive price for the Work and Eligible Supported Costs, which must not exceed the maximum funding available of either CAD $250,000 for an Innovation Project or CAD $500,000 for an Adoption Project. At least 90% of the Eligible Supported Cost work must be performed in Canada.
M6	The Applicant must declare combined level of financial assistance from all government (federal, provincial, territorial, municipal) sources as to not to exceed seventy-five percent (75%) of Eligible Supported Costs incurred by any Industry Collaborator and one hundred percent (100%) of Eligible Supported Costs incurred by any Post Secondary Collaborator.
M7	For Adoption Project Proposals, the Applicant must provide a minimum of one (1) Letter of Intent from a Canadian customer for whom the technology has been developed for and commitment to support public facing blueprint development.
M8	All participants must be willing to sign a participation agreement.
M9	The Applicant must demonstrate financial management capacity to carry out the Project: • Credit review (Dun & Bradstreet) • 2-year cash flow forecast

Point Rated Criteria

Project proposals which meet all the mandatory criteria will be evaluated and scored as outlined in Table above. Applicants must achieve a minimum score of 70.

Criteria		Maximum Score	Minimum Score
R1	Benefits to Canada	15	10
R2	Understanding of Market Challenge, Solution Value Proposition and Commercial Potential	10	N/A
R3	Team Experience and Capability	10	N/A
R4	Project Plan	25	15
R5	Risks management and mitigation strategies	10	N/A
R6	Value of the Project in Meeting the Technical and Business Objectives Through Access of the Living Lab	30	20
Overall score		100	70

Selection Process

Step 1: Eligibility Screening

All submitted applications are first reviewed by the CENGN team to ensure they meet **eight mandatory eligibility criteria**. Only applications that satisfy all requirements will proceed to the next stage.

Step 2: Comprehensive Evaluation

Eligible applications are then evaluated by an **External Review Panel** and the **CENGN Living Lab Project Team**. This stage uses a set of **predefined scoring criteria** to assess the project's value, feasibility, and alignment with program goals.

Step 3 : Feasibility and Definition Phase

Following a successful application review, selected SMEs will enter the project planning phase in collaboration with CENGN and the Living Lab Project Team. This phase ensures the project is strategically aligned, technically feasible, and ready for implementation within the Living Lab environment.

- Project Charter: Define project scope, objectives, and success criteria.
- Technical Feasibility Assessment: Evaluate the solution's readiness and compatibility with Living Lab infrastructure.
- Project Schedule and Work Plan: Outline key milestones, deliverables, and timelines.
- Budget and Funding Award Details: Finalize cost estimates and funding breakdown.
- Partner Feedback and Contributions: Integrate input from technology partners and stakeholders.
- Risk Identification, Dependencies, and Mitigation Strategies: Identify potential risks and develop contingency plans.

- Master Project Agreement: Upon approval of the project plan, CENGN will issue a Master Project Agreement. This agreement will detail all project requirements, reporting obligations, and the roles and responsibilities of the SME, Project Technology Partners, and Living Lab Hosts.

Post Selection Process

Once the Master Project Agreement is signed, the selected SME will begin the project execution phase in collaboration with the Living Lab Host and Technology Partners. During this phase, the SME is responsible for carrying out the approved project activities, with ongoing support from the CENGN team to ensure alignment with project goals and successful implementation within the Living Lab environment.

Eligible Project Costs

Eligible costs are those that are reasonable, necessary, and directly related to the approved project activities outlined in the Contribution Agreement. These costs must be non-recurring and specific to the proposal. Additionally:

- Costs incurred outside Canada must not exceed 10% of the total eligible costs.
- Ecosystem-related expenses are eligible, including:
- Organizing networking events
- Participation in collaborative R&D activities
- Attendance at conferences and workshops
- Operation of regional offices across Canada
- Operational costs may include:
- Salaries
- Office equipment
- Professional services
- Overhead
- Travel
- Funding for R&D projects is also considered eligible if it supports innovation and commercialization.

All eligible costs must be well-documented, auditable, and aligned with the project's scope and objectives.

Certain costs are not eligible for reimbursement ("Ineligible Costs"), regardless of whether they are reasonably and properly incurred by the Recipient in the carrying out of the Project.

Ineligible Project Costs include:

- Allowance for interest on invested capital, bonds, debentures, bank or other loans together with related bond discounts and finance charges

- Legal, accounting and consulting fees in connection with financial reorganization, security issues, capital stock issues, obtaining of licenses and prosecution of claims against the Minister (except legal, accounting and consulting fees incurred in connection with obtaining patents or other statutory protection for Project Intellectual Property)
- Losses on investments, bad debts and expenses for the collection charges
- Losses on other projects or contracts
- Federal and provincial income taxes, goods and services taxes, excess profit taxes or surtaxes and/or special expenses in connection with those taxes
- Provisions for contingencies
- Premiums for life insurance on the lives of officers and/or directors where proceeds accrue to the Recipient
- Amortization of unrealized appreciation of assets
- Depreciation of assets paid for by the Minister
- Fines and penalties
- Expenses and depreciation of excess facilities
- Unreasonable compensation for officers and employees
- Product development or improvement expenses not associated with the work being performed under the Project
- Advertising, except reasonable advertising of an industrial or institutional character placed in trade, technical or professional journals for the dissemination of information for the industry or institution
- Entertainment expenses
- Donations
- Dues and other memberships other than regular trade and professional associations
- Extraordinary or abnormal fees for professional advice in regard to technical, administrative or accounting matters, unless approval from the Minister is obtained; and
- Selling and marketing expenses associated with the products or services or both being developed under this Agreement.

Data Protection and Intellectual Property (IP)

- External reviewers, infrastructure partners and Living Lab hosts engaged in CENGN supported projects may access sensitive SME data and intellectual property (IP) strictly for project-related purposes.
- This data must be treated as confidential, handled securely, and not shared with third parties without written consent from both the SME and CENGN.
- All IP developed by the SME remains its property unless otherwise agreed.
- ERP Consultants may not claim ownership or use of SME data or project-generated IP.
- SMEs must agree to provide non-confidential summaries of the data and IP created during their projects. These summaries will be shared with other CENGN partners, who may then reach out to explore partnerships or further development.

Submit Your Proposal

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For additional questions, please contact our business development team at bd@cengn.ca.