

cleanBC

# Government Buildings Program





## INTRODUCTION

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With CleanBC, we're changing how we live, work, and get from place to place, moving towards cleaner, more efficient solutions. Led by the Ministry of Citizens' Services, the *CleanBC Government Buildings Program* will make core government operations cleaner, smarter, and more energy efficient.

The Province's CleanBC plan means using more clean and renewable energy in how we get around, heat our buildings and fuel our industry. We're working to a long-term goal of net-zero-energy ready government buildings, through a combination of efficient design and on-site or near-site renewable energy systems.

Across B.C., all new provincial buildings will be net-zero-energy ready by 2032. That means we need to keep pace when it comes to key efficiency improvements. As most of our existing buildings will still be in use in 2050 and beyond, we're upgrading and retrofitting those buildings to:

- reduce energy use and greenhouse gas (GHG) emissions
- enhance occupant experience and improve service delivery to citizens
- lower costs to improve the province's lifecycle return on investment

**By 2050, we plan to reduce emissions in our core provincial buildings by 80% compared to 2010 standards. With more than 1000 buildings in the government's portfolio, our work is helping B.C. meet its climate goals.**



CleanBC is transforming all buildings in B.C. by raising our standards for new construction and renovations and encouraging energy-saving improvements with rebates and other incentives. The *CleanBC Government Buildings Program* covers core government buildings, which account for about 8% of total emissions from provincial public sector buildings.

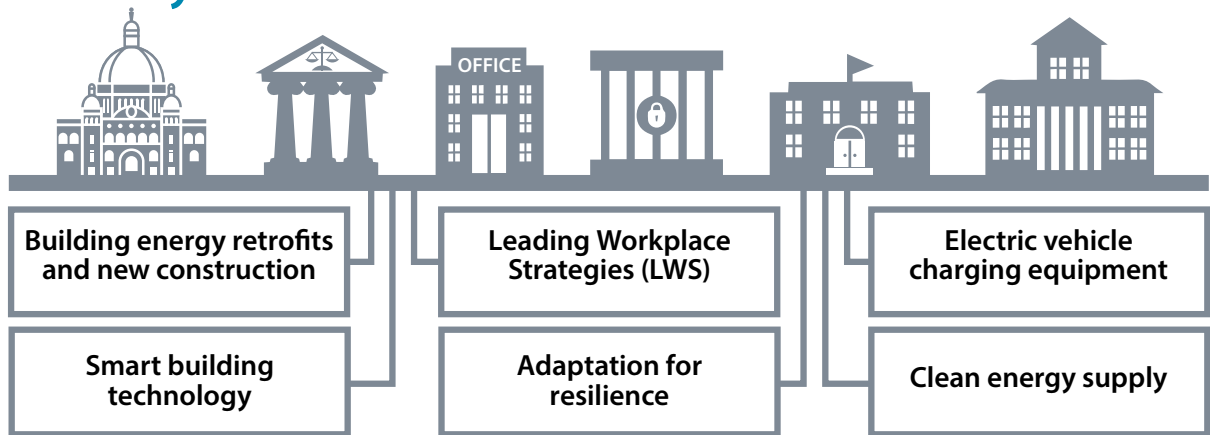
## CLEANBC GOVERNMENT BUILDINGS PROGRAM—KEY PATHWAYS

This is a five-year, rolling initiative—we'll review it every year, assess our progress, and make any needed refinements as we go.

The *CleanBC Government Buildings Program* sets out a series of actions through 2023 and beyond to make our offices, correction centres, courthouses, warehouses and other provincially-owned buildings more efficient and resilient to climate change. Along with reducing pollution, our work also supports jobs and encourages innovation in our building and technology sectors.

We've organized our actions along six pathways, with milestones along the way to help us stay on track.

### Pathways:



The Ministry of Citizens' Services has saved British Columbians \$13 million in utility costs between 2010 to 2018 through energy management. That's with initiatives like:


- Kamloops Correctional Centre Life Cycle Extensions—with improvements to hot water tanks, more efficient water heaters, and other boiler and HVAC system renewals, reductions of 4,900 GJ and 170 tCO<sub>2</sub>e are expected with savings of \$82,000 per year in utility costs.
- Prince George Courthouse HVAC Upgrades—reductions of 1,355 and 86 tCO<sub>2</sub>e are expected with potential savings of \$18,000 per year in utility costs.



## ENERGY RETROFITS AND NEW CONSTRUCTION

As part of CleanBC, we're steadily improving energy efficiency standards for all buildings in B.C. as we move to a future where buildings have net-zero greenhouse gas emissions. The *CleanBC Government Buildings Program* supports this work by:

- ensuring all new core provincial government buildings meet the highest energy efficiency standards
- retrofitting provincial buildings to achieve significant savings in energy use and reductions in greenhouse gas emissions
- implementing proof of concept projects for energy retrofit products, such as heating, ventilation, and air conditioning systems
- studying, and creating showcase buildings to demonstrate deep retrofit building designs
- setting, and reporting on, energy performance standards for all provincial buildings
- continuing to gather data on energy use, facility conditions and building automation systems to support evidence-based decision-making
- engaging with users of provincial buildings to encourage greener choices; this includes setting up dashboard screens in common areas to share information about topics such as energy and water use and waste diversion



Energy retrofits generally result in a minimum of 25% energy savings. Deep energy retrofits include building envelope improvements and deliver a minimum of 40% energy savings.

## SMART BUILDING TECHNOLOGY

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Well-placed building and information technologies can play a key role in reducing energy consumption, enhancing productivity and generally improving daily life for building users. To capture more of these benefits in provincial buildings, this initiative includes:

- creating standards and conducting assessments to enable smart technologies and ensure they are included in provincial building retrofits
- upgrading controls, metering and other systems in at least 10 buildings every year
- working with industry to expand the range of technology solutions available to the B.C. public sector
- increasing the weighting of energy savings in decisions around new workplace devices
- continuing a range of actions to improve the efficiency of tools such as laptops, printers and phones
- implementing proof-of-concept projects for smart technologies such as wifi-enabled building controls—these adjust heating and cooling in various parts of a building based on how many wifi-enabled devices are in use
- creating a showcase smart building by 2022/23



## LEADING WORKPLACE STRATEGIES (LWS)

LWS is a corporate initiative to modernize and better use government workspace. While more traditional approaches allocate a fixed amount of space, including a cubicle or office, for each employee, LWS recognizes that the modern workforce is mobile, and that people want to choose from a variety of workspaces throughout the day to suit their needs.

For example, Victoria’s Capital Park -1 building, completed in 2017, was purpose-built as a Leading Workplace, utilizing LWS throughout 120,000 square feet over five floors. Employees are either “residents” with a dedicated workspace, or “internally mobile” with a locker and access to a variety of open and enclosed work settings with computers, printers and other equipment available as needed. Nearly half of the 700+ employees in the building are mobile—significantly reducing space and energy-use requirements (and thereby costs) while offering workers more choice and flexibility.

Along with Leading Workplaces, new, smaller scale, 100% mobile workspaces called LWS Nodes are being introduced within existing provincial buildings to accommodate a growing mobile workforce across B.C. Two nodes are expected to be operating by the end of 2019/20.

LWS will also see the roll-out of Sharespaces—our trademark ready-made, high-performance-mobile office spaces shared by ministries on a short-term subscription basis, similar to co-working. Two pilot Sharespaces are being designed in the Victoria region.



## ADAPTATION FOR RESILIENT BUILDINGS

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Climate change has major implications for provincial buildings, so we're taking steps to make them more resilient. This includes:

- conducting a risk assessment and prioritizing actions across the provincial building portfolio
- establishing climate-resilient design criteria for new construction
- integrating climate risk into business continuity planning

Resilient buildings will help to protect both people and critical public assets during future extreme events. An adaptation strategy for all of B.C. is being developed as part of CleanBC.





## ELECTRIC VEHICLE CHARGING EQUIPMENT (EVCE)

More British Columbians are choosing electric cars, thanks in part to CleanBC which provides incentives for buyers and invests in more public charging stations. This initiative supports these efforts by installing new charging stations at provincial public buildings for employees and our clients.

- by 2021, all new government facilities will include EVCE stations. For existing buildings, this equipment is being added based on levels of user demand

Work under CleanBC is also underway to add more electric vehicles to public sector fleets. The *CleanBC Government Buildings Program* will ensure that the EVCE infrastructure keeps pace with the acquisition of these electric vehicles.

**BY 2040, EVERY NEW  
CAR SOLD IN B.C.  
WILL BE A ZERO-  
EMISSION VEHICLE.**



## CLEAN ENERGY

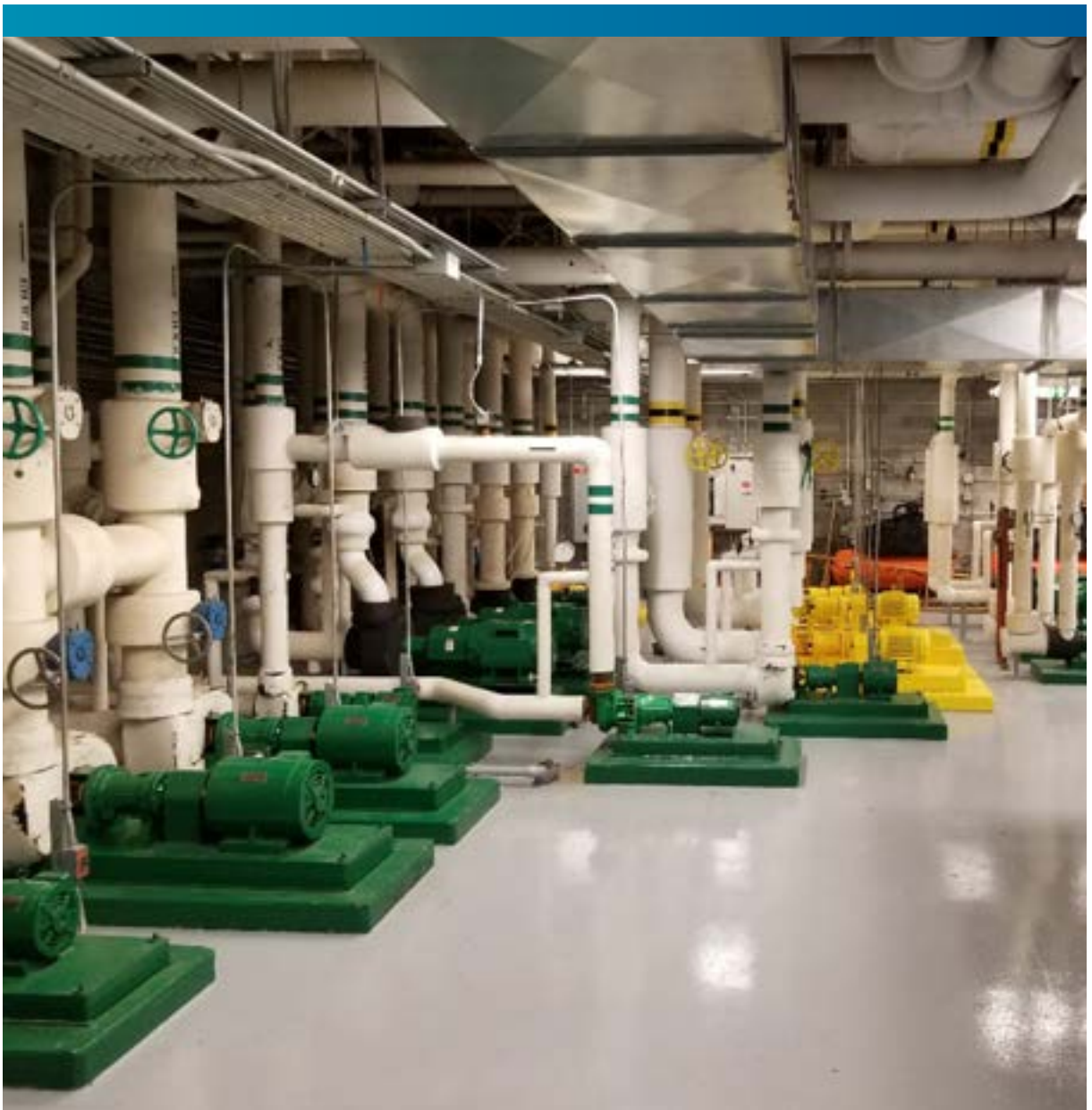
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Switching from fossil fuels to clean and renewable energy sources will drive our growth—and reduce pollution—in the years to come. Through this initiative, the province commits to using 100% clean energy in all new core government buildings beginning in 2022/23.

For existing buildings, we're focusing on:

- replacing older, inefficient heating systems with clean alternatives, such as heat pumps
- identifying clean energy or co-generation opportunities in places where several large facilities are co-located and connected to a shared, district or community energy system

We will also track and report on clean energy use, so British Columbians can follow our progress year over year.



## CONCLUSION


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CleanBC is putting our province on the path to a cleaner, better future—with a low-carbon economy that creates opportunities for all while protecting our clean air, land and water. It addresses every sector of our lives, from how we get around to how we can eliminate waste and generate clean, renewable energy.

With the *CleanBC Government Buildings Program*, we're making provincial public buildings cleaner, smarter and more efficient by taking advantage of the latest technologies.

Early analysis of net-zero construction shows that savings more than make up for any added costs. And as we retrofit older public buildings in communities throughout B.C., we'll create opportunities for local businesses, Indigenous peoples, professionals and trades people to develop new skills and expertise.

It's one more example of how our province is rising to the challenge of global climate change and building a better life for all British Columbians.



For every 1% improvement in its energy efficiency, including buildings and vehicles, B.C.'s public sector—including schools, hospitals and Crown corporations—saves provincial taxpayers an estimated \$4 million a year.



June 2019

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