

Concordia University

A Green Economic Recovery for an Inclusive, Low-Carbon and Sustainable Future

Brief Submitted to the House of Commons Standing Committee on Finance for the  
Pre-budget Consultations

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## Summary of recommendations

Concordia University is calling on the federal government to incorporate the following recommendations, which we believe are tangible ways of ensuring a green, sustainable and ongoing economic recovery for Canada, into Budget 2021. The pandemic will pass, but the challenge of fighting climate change will remain. That is why we believe it is vital to ensure that economic growth in Canada can be supported by bold and concrete measures to address the challenges of climate change and significantly reduce greenhouse gas (GHG) emissions. We therefore recommend:

1. That the federal government provide funding for research to make buildings more energy efficient and lower their GHG emissions, with a focus on urban areas.
2. That the federal government continue to invest in projects led by cities and municipalities to reduce their carbon footprint, GHG emissions and energy consumption.
3. That the federal government invest in new models of urban development, such as Concordia University's Quartier Zéro-9, to make Canada a world leader in designing and building smart, connected, cyber-secure, climate- and health-resilient, carbon-neutral urban environments with minimal GHG emissions, in close partnership with the business community.

## Introduction

Concordia University is a next-generation university, located in the heart of vibrant and multicultural Montreal, seeking to rethink the future of higher education through its innovative approach to experiential learning, research and online education. We have been ranked best university under 50 in North America by QS, a prestigious academic ranking system, for two consecutive years now. Concordia is striving to break new ground through its ambitious interdisciplinary research to tackle major societal issues. With over 50,000 students and 7,000 employees, the Concordia community contributes to Montreal's vitality by conducting relevant research, promoting innovation and organizing lively cultural events.

Last year, Concordia was honoured to receive the prestigious Canada Excellence Research Chair (CERC) in Smart, Sustainable and Resilient Communities and Cities. Under the leadership of Professor Ursula Eicker, who has more than 20 years of experience in the industry and in innovative research, the research chair's interdisciplinary team is designing the cities of tomorrow, today.

Furthermore, in 2020, Concordia was ranked 19th among universities by the Times Higher Education Impact Rankings in the "Climate Action" category.<sup>1</sup>

As the COVID-19 pandemic continues to disrupt every aspect of life in Canada, universities are playing an important role in helping the country navigate the storm. We are confident that universities can continue their efforts and lead Canada toward a green economic recovery. Our recommendations propose tangible ways to support this recovery by rethinking how cities, communities and infrastructure are built, while developing high-value, exportable expertise in all areas of urban development. This includes innovative urban planning practices, new construction and energy consumption standards, resilient communities in terms of their people, health, technology and energy, as well as cyber-security and privacy in connected environments. Such initiatives will prove beneficial to Canadian businesses, research institutions and society at large.

### 1. Investing in research to reduce energy consumption and greenhouse gas emissions

Once the pandemic subsides, governments will implement recovery plans with various economic stimulus measures, and, as in the past, the construction industry will be heavily involved. **It would therefore be beneficial to develop Canadian expertise and leadership relevant to designing and building urban neighbourhoods that help cities address climate challenges and successfully transition to sustainable urbanization practices.**

While the health crisis will undoubtedly bring about major economic challenges, the global climate crisis will become increasingly urgent to address. And cities contribute significantly to climate change. According to UN-Habitat, cities consume 78% of the world's energy and produce more than 60% of GHG emissions, yet account for less than 2% of the Earth's surface.<sup>2</sup>

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<sup>1</sup> [https://www.timeshighereducation.com/rankings/impact/2020/climate-action#!/page/0/length/25/sort\\_by/rank/sort\\_order/asc/cols/undefined](https://www.timeshighereducation.com/rankings/impact/2020/climate-action#!/page/0/length/25/sort_by/rank/sort_order/asc/cols/undefined)

<sup>2</sup> United Nations. 2020. "UN-Habitat." <https://www.un.org/en/climatechange/cities-pollution.shtml>. Accessed August 3, 2020.

If we want to improve the energy balance of our communities, we must urgently change our practices to stop building structures and neighbourhoods that add to our carbon footprint. We need to quickly develop construction and urban planning standards for carbon-neutral buildings in neighbourhoods that are designed to reduce the environmental footprint of their residents and users, provide them with a healthy environment and protect them from the impacts of climate change, all in a connected, yet cyber-secure and privacy-friendly manner.

**To do so, we must invest in research into new green technologies and all areas of expertise related to urban development. That way, Canadian cities will eventually be able to help the country meet its GHG emissions reduction and climate change targets. In addition, these investments will promote a green economic recovery by giving Canadian businesses the tools and partnerships they need to quickly become world leaders in the industry.**

## 2. Investing in pilot projects such as the Quartier Zéro-9

Led by Concordia University's CERC in Smart, Resilient and Sustainable Cities and Communities, the Quartier ZÉRO-9 project (Zero-9) **seeks to develop the Canadian leadership relevant to designing and building urban neighbourhoods that help cities address climate challenges and successfully transition to sustainable urbanization practices.**

This concept is based on the nine tracks presented by the UN during the 2019 Climate Summit:

- Mitigation
- Social and Political Drivers
- Youth and Public Mobilization
- Energy Transition
- Industry Transition
- Infrastructure, Cities and Local Action
- Nature-based Solutions
- Resilience and Adaptation
- Climate Finance and Carbon Pricing

**A project is currently underway with the City of Laval to build the first prototype of a Zero-9 neighbourhood.** This project is based on a partnership between the city, the public, researchers and industry in order to design, build, monitor and optimize a full-sized next-generation neighbourhood, together.

Zero-9's design will be influenced by an interplay of public input and extensive research, and the neighbourhood will feature novel technical and technological solutions, including energy production from local renewable sources, carbon neutrality at all stages of the neighbourhood's life, zero waste, circular reuse, privacy for data collected and used in order to monitor the neighbourhood, and continuous optimization.

Zero-9's urban planning will be based on reducing travel and prioritizing active modes of transportation, in addition to offering mobility solutions adapted to different uses and users.

The core purpose of the neighbourhood, which will include places to live, play and work, is developing and showcasing new ways to design and build urban neighbourhoods that are not only efficient,

effective and safe, but also pleasant, healthy, vibrant and affordable for both residents and users. Lastly, Zero-9 will also promote the social, generational and socio-economic diversity of its residents.

Zero-9 will be a kind of living, urban-space laboratory. Our researchers will work on developing a model, but more importantly, tangible expertise in building smart, resilient and sustainable cities. The research carried out at Zero-9 will allow us to explore new horizons for reducing urban GHG emissions.

This ambitious project will also enable us, through private-sector partnerships, to develop and test new materials and novel green technologies that will provide Canada with unparalleled expertise in the industry.

### 3. Economic benefits of becoming a leader in smart, resilient and sustainable communities and cities

Not only do Zero-9 neighbourhoods enable dense urban development, promote energy efficiency, curb GHG emissions and showcase community resilience, particularly to climate change, but they also offer tremendous economic potential.

The Zero-9 concept is based on a close partnership between local governments, research institutions and internationally renowned industry stakeholders. With its extensive and top-grade R & D, Zero-9 will reap significant financial benefits for every level of government at each stage: design, planning, construction and long-term monitoring. The Zero-9 neighbourhood currently in development with the City of Laval could bring in several hundred million dollars in R & D alone, without even considering the financial rewards of building the actual neighbourhood.

Canadian cities are looking for new sources of funding and ways to grow without destroying the environment or increasing Canada's GHG emissions. At the same time, Canada needs to think about ways to restart its pandemic-affected economy from a green and sustainable perspective. This is the right time to explore new approaches for urban development in Canada. Canada and Canadian businesses must absolutely seize this opportunity to become world leaders in a forward-looking industry that offers significant opportunities in North American and global markets.

## Conclusion

We at Concordia University firmly believe that universities have always been and continue to be unique and essential stakeholders that are well positioned to address major contemporary challenges, whether environmental, economic or social. We also believe that each crisis and new challenge also creates new opportunities.

With strategic investments right now, the federal government can bring the country's economy to the forefront of several industries best equipped for the future. We believe that assembling cutting-edge Canadian expertise in building and developing next-generation cities must be an integral part of this strategy.

Thank you for considering our recommendations. Concordia University would welcome the opportunity to appear before the Finance Committee or to address any member at any time. We would also like to invite all Committee members to visit Concordia and discover our next-generation university.