



A green approach to economic recovery: building a low-carbon, sustainable and inclusive future

Statement submitted to the House of Commons Standing Committee on Finance as part of pre-budget consultations

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Summary of recommendations

Concordia University asks the federal government to include the following recommendations in the 2021 budget. We believe that these recommendations constitute concrete measures to provide for a strong, sustainable and green economic recovery for Canada. The pandemic will pass, but the challenges of the fight against climate change will remain. This is why we feel it is vital to ensure that Canada's economic growth can rely on audacious and concrete measures to address the challenges of climate change and significantly reduce greenhouse-gas emissions. We therefore recommend:

1. That the government of Canada provide financial support for research focused on reducing energy consumption and greenhouse-gas emissions from buildings, with a priority on urban settings.
2. That the government of Canada continue to invest in projects piloted by cities and municipalities aimed at reducing their carbon footprint, as well as their greenhouse-gas emissions and energy consumption.
3. That the government of Canada invest in new models of urban development like Concordia University's Quartier Zéro9, in order to make Canada a world leader in the design and construction of smart and connected urban environments that are cyber-secure, resilient to climate and health factors, carbon-neutral and with minimal greenhouse-gas emissions, all in close partnership with the business community.

Introduction

Concordia University is a next-generation university that seeks to reimagine the future of higher education. Located in the heart of Montreal, a bustling multicultural city, Concordia innovates with its approaches to experiential learning, research and online education. Ranked as the best North American university under 50 years old for the second year in a row in the prestigious QS rankings, our institution is defined by its drive to innovate through ambitious research projects with an interdisciplinary focus that take on our society's greatest challenges. With over 50,000 students and 7,000 employees, the Concordia community contributes to the vitality of our city by conducting important research, promoting innovation and hosting exciting cultural activities.

Last year, Concordia was honoured with the prestigious Canada Excellence Research Chair (CERC) in Smart, Sustainable and Resilient Communities and Cities. Under the direction of Professor Ursula Eicker, who has over twenty years of experience in industry and innovative research, the research chair's interdisciplinary team is working today to sketch the outlines of the cities of tomorrow.

Also in 2020, Concordia was ranked 19th in the world in the Times Higher Education Impact Rankings for institutions of higher learning in the "Climate Action" category.¹

As the pandemic continues to disrupt all aspects of life in Canada, universities play an important role in helping the country to navigate the storm of COVID-19. We strongly believe that universities can continue to pursue their efforts and lead Canada to a green economic recovery. Our recommendations propose concrete measures to support this recovery by reimagining the construction of cities, communities and infrastructures while also developing exportable expertise with high added value in all areas relating to urban development – from innovative urban planning practices and new standards for construction and energy consumption to the planning of communities that are resilient in terms of health, technology, energy and human factors, as well as cybersecurity and privacy protection in connected environments. These measures seek to benefit businesses, research institutions and all aspects of Canadian society.

¹ https://www.timeshighereducation.com/rankings/impact/2020/climate-action#!/page/0/length/25/sort_by/rank/sort_order/asc/cols/undefined

1. Supporting investments in research aimed at reducing energy consumption and greenhouse-gas emissions

As the current health crisis begins to ease, governments will deploy various measures to restart the economy. As in the past, the construction industry will have a major role to play in the recovery plans proposed by different government administrations. In this context, **it would be advantageous to develop Canadian expertise and leadership in the design and construction of urban districts that will allow cities to address climate challenges and successfully transition to sustainable models of urbanization.**

While the current health crisis will surely give rise to significant economic challenges, the worldwide climate challenge is also becoming increasingly urgent – and cities play a substantial role in climate change. According to UN-Habitat, cities consume 78 percent of the world’s energy and produce more than 60 percent of its greenhouse gas emissions. Yet they represent only 2 percent of the Earth’s surface.²

If we want to improve our communities’ energy efficiency, it will be urgent to change our practices quickly to stop constructing buildings and districts that add to our carbon footprint. We must quickly develop construction and urban planning standards that will allow us to construct carbon-neutral buildings in neighbourhoods designed to reduce the environmental impact of their residents and users while providing them with a healthy environment and protecting them from the impacts of climate change, using connected infrastructures that ensure cybersecurity and respect people’s privacy.

This is why it is important to invest in research in new green technologies, but also in all fields of expertise linked to urban development – to ensure that Canadian cities can potentially contribute to national goals for greenhouse-gas reductions and the fight against climate change, and also to encourage a green economic recovery by providing our businesses with tools and collaboration opportunities that could quickly turn them into world leaders in this area.

2. Investing in pilot projects: Quartier Zéro-9

Led by the Canada Excellence Research Chair in Smart, Sustainable and Resilient Communities and Cities (CERC-SSRC) at Concordia University, the Quartier ZÉRO-9 (Q09) concept **seeks to build Canadian leadership in the design and construction of urban**

² United Nations. 2020. “UN-Habitat”. <https://www.un.org/en/climatechange/cities-pollution.shtml> [consulted on August 3, 2020].

districts to enable cities to address climate challenges and successfully transition to sustainable models of urbanization.

This concept is based on the 9 action areas highlighted by the UN at 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 construct the first Quartier Zéro-9 prototype. This project is based on an alliance between the city, its residents, researchers and industry, who will work together to design, build, monitor and develop a complete next-generation urban district.

This new district will be characterized by a design that combines residents' contributions with research advances, with each drawing fruitfully from the other. It will be based on cutting-edge technical and technological features, including local energy production from renewable sources, the zero-carbon concept at all levels of life in the district, zero-waste principles and circular reuse, protection of personal data collected and used to monitor the district, and continuous optimization of its operations.

The new district will feature an urban design focused on reducing travel distances and prioritizing active modes of transportation, and on offering mobility solutions adapted to different types of use and different types of users.

The core mission of this neighbourhood – which will combine residential, work and leisure-activity spaces – is to develop and promote new ways of designing and constructing safe, efficient and effective urban districts that are also friendly, healthy, lively and affordable places for both residents and users. Finally, the district will also emphasize the social, generational and socioeconomic diversity of its residents.

The goal here is to construct a sort of living laboratory for urban spaces. As such, we can use our researchers to develop not only a model, but actual tangible experience in

constructing smart, resilient and sustainable cities. The research conducted here will allow us to advance our knowledge even further with regard to reducing the greenhouse gases produced by cities.

Through partnerships with private businesses, this ambitious project will also allow us to design, develop and test new green materials and technologies that will provide Canada with unparalleled expertise in this field.

3. The economic advantages of becoming a leader in smart, resilient and sustainable cities and communities

While one of the great advantages of the Quartier Zéro-9 concept lies in its ability to enable a mode of denser urban development that is nevertheless frugal in terms of energy consumption and greenhouse-gas emissions, and to encourage the emergence of resilient communities, e.g. with regard to the impacts of climate change, it also offers very strong economic potential.

First, the Quartier Zéro-9 concept is based on a close alliance between local governments, research institutions, and industrial partners of international scope. The very high calibre and intensity of the R&D activities that the Quartier Zéro-9 concept will generate at each of its stages – from design and planning to construction, and on to the long-term monitoring stage – will have major financial benefits at the local, provincial and national levels. For the Quartier Zéro-9 project being developed with the City of Laval, these benefits could reach into the hundreds of millions of dollars in terms of R&D efforts alone, even before taking into account the benefits resulting from the actual construction of the new urban district.

Canadian cities are looking for new sources of funding and new ways to continue their development without damaging the environment or increasing Canada's greenhouse-gas emissions. At the same time, Canada must think about ways to restart an economy that has been affected by the pandemic, while maintaining a green and sustainable perspective. In short, we find ourselves in a highly favourable context for developing new ways to imagine urban development in Canada. It is essential that Canada and Canadian companies seize this opportunity to become world leaders in a forward-looking industry that offers immense possibilities on the North American and world markets.

Conclusion

At Concordia University, we firmly believe that universities have always been and will continue to be unique and essential actors to address the great challenges of their times, whether those challenges are environmental, economic or human in nature. We also believe that every crisis and every new challenge also gives rise to new opportunities.

Therefore, through strategic investments made today, the government of Canada can put our economy in a leading position in the economic sectors with the strongest potential for the future. We believe that building cutting-edge Canadian expertise in the construction and planning of a new generation of cities must be an integral part of such a strategy.

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