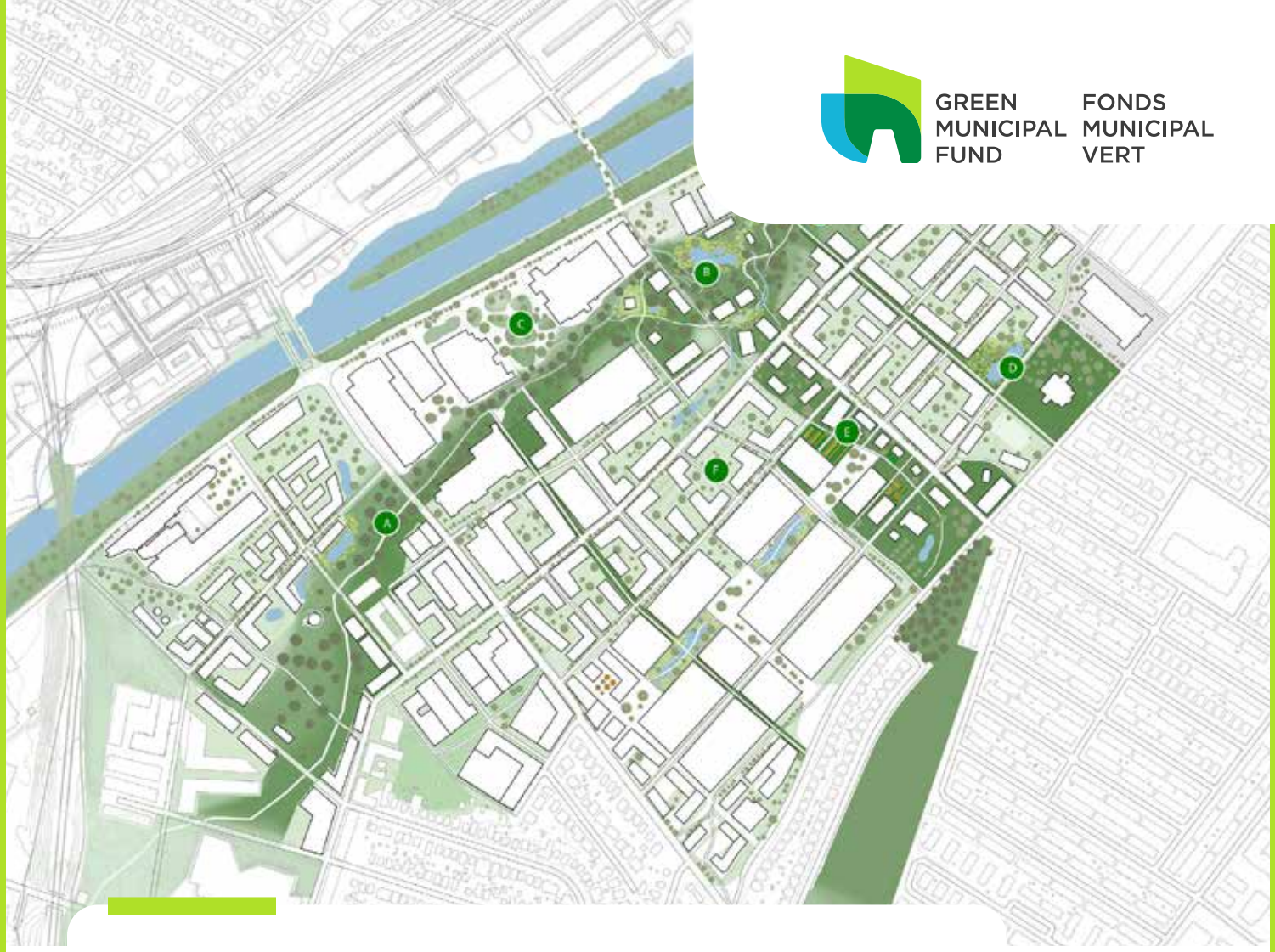
GREEN MUNICIPAL FUND
FONDS MUNICIPAL VERT



IMAGINING CIRCULARITY ON A NEIGHBOURHOOD LEVEL

What if the abandoned industrial sites we see today could become the foundation of tomorrow's cities?

Across Canada, land that once served as industrial hubs now sit unused, but still holds potential for creating greener, more connected communities. An interdisciplinary project led by the Lab Construction in LaSalle, Ville Saint-Pierre and Lachine-Est in the southwest of Montréal, is developing circular transformation scenarios that incorporate existing industry, green infrastructure, industrial heritage and community needs. This neighbourhood-level analysis of circularity strategies could help cities meet their sustainability goals.

A program of/
Un programme de la
FCM

CERIEC
Centre d'études et de recherches intersectorielles en économie circulaire

ÉTS
Le génie pour l'industrie

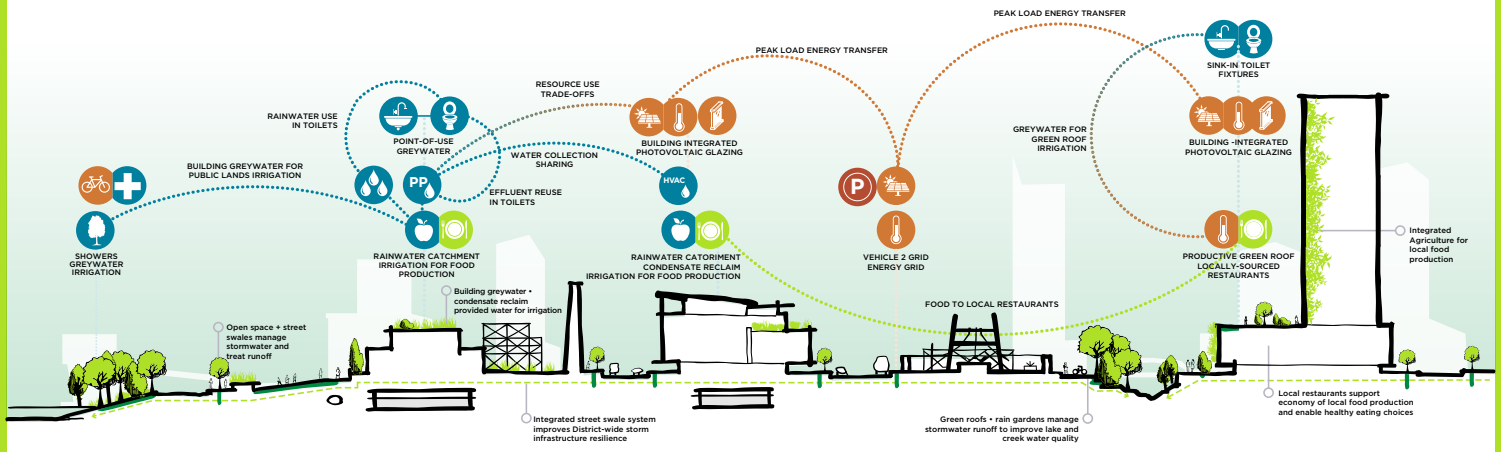
The study looked at the area around Lachine Canal, which has suffered decades of neglect since the canal was closed to commercial shipping in 1974. A whole series of buildings and lots have been left there to decay on contaminated soils, a reminder of the area's industrial past. But this gap in the city is an opportunity to build new neighbourhoods that are safe, liveable, affordable and welcoming. For the project team, largely made up of architecture and engineering students, it's a kind of open-air laboratory for thinking about the post-industrial city with a view to 2050.

Their approach to revitalization is guided by the theories of the Barcelona Urban Ecology Agency, which attach great importance to aspects like social cohesion, complexity and circularity. "Despite some local nuances, the underlying urban issues are similar throughout the West," said Camille Chabas, a doctoral candidate in environmental sciences at Université du Québec à Montréal, who took part in the discussions. "People nowadays are looking more for a home than a home base," said Daniel Pearl, a professor at Université de Montréal's School of Architecture and one of the three project leaders.

A HIGH-LEVEL VISION

When studying the area, the project team found the existence of many industrial buildings that were worth preserving, and not just for their heritage value. "It's about the carbon footprint," said Pearl. "It's always better to use what's already there than to knock it all down and start over." The absence of green infrastructure is another emerging issue. Apart from the banks of Lachine Canal, there's a shortage of green, non-waterproofed spaces. The result is poor air quality, numerous heat islands, low canopy percentage and inadequate run-off management, especially when the snow melts in spring.

TOWARDS SUSTAINABLE NEIGHBOURHOODS: EXAMPLES OF CIRCULAR THINKING WITHIN A DISTRICT



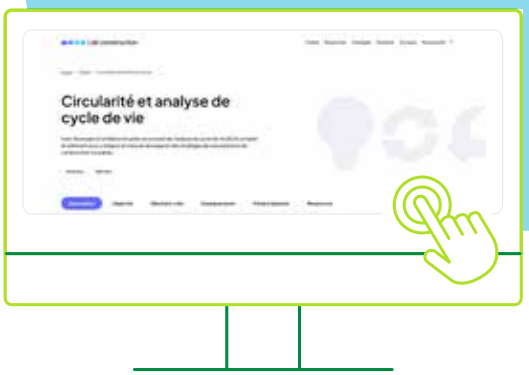
Source: Seaholm EcoDistrict in Austin, Texas, via **www.cmpbs.com**

The researchers used life cycle analysis (LCA) to set a course. By assessing the potential social and environmental impacts of a product or service throughout its life cycle, LCA provides critical support for urban design decisions. “The macro view provided by LCA shows us a project as the midpoint of a web of interactions that reverberate at the micro level,” said Camille Chabas. LCA is a recognized scientific methodology subject with an International Organization for Standardization (ISO) series of standards.

It also highlights how addressing one problem might inadvertently create another, also known as impact transfer. For example, a mitigation measure at one stage of the life cycle might lead to greater environmental impacts at another. Those impacts may be on biodiversity, human health or natural resources. An **article** (link in French only) on the project in the scientific journal *Organisations et Territoires* puts it this way: “Avoiding impact transfers is an important strategy for reducing the environmental impacts of an urban development scenario.”

Consult the Methodological Guide for Circular LCAs

This guide explains how to integrate circular strategies into the life cycle assessment (LCA) of buildings. It offers methodological adjustments based on current standards and research to better evaluate environmental impacts and facilitate decision-making at the design stage. An essential resource for LCA professionals wishing to adapt their practices to circularity. (Link in French only)



KNOWLEDGE TRANSFER

There were plenty of ideas for reusing and improving the area in sustainable ways—particularly for the buildings of Cité Industrielle LaSalle, a 24-hectare complex surrounded by residential areas and the Lachine Canal. They concerned the renaturalization of part of the site—establishing for example a new nature park along a highway—and installing green energy infrastructure including solar panels, a biomethanization facility and a geothermal system. Green roofs and walls appeared in many proposals, although the structure of the buildings involved may not currently allow for them.

To test their vision against reality, the project team presented their proposals to civil society stakeholders. A group was invited to take part in a series of workshops in fall 2024 in the Montréal boroughs of Lachine and LaSalle. The purpose was to break down the traditional silos of research through joint reflections and joint creation. “We were there to listen to the participants rather than force our project on them no matter what,” said Camille Chabas. “Despite a degree of consultation fatigue everyone feels at times, we still got a pretty good response.”

This paves the way for the next phase of the extensive revitalization of this neglected area of Montréal. “Cities have a definite role to play in planning and fostering circular neighbourhoods,” added Daniel Pearl. “They have to game the rules so that people are forced—so to speak—to make the right decisions.” For him, it all comes down to our urban communities’ resilience in a world of environmental crises. “The issue is not whether to promote urban ecosystemic synergies, but how to promote them. We need to take meaningful action to challenge outdated models of society,” he said.