

Everything Old Can Be Made New Again

Circular Economy - Rails to Trails - Fashion Sharing - Circular Food Systems

Introduction

Hello from 2121. Take a tour of a new Canadian city called Hiro, which was established in the 1990s in the province of Ontario. Hiro has plenty of entertainment for all ages; amusement parks, natural parks, and much more. Three million people live in this pretty-as-a-picture city on Lake Ontario.



Nearby Algonquin Provincial Park with moose, bear, loons and lots of nature to enjoy! In the winter it gets below -30 Celsius in the winter. Hiro is known for ice skating, hockey, and their food.

Natural Features

The Canadian Rockies is a “must-see” city on any traveler’s “to-do” list. Stay in one of the best glamping spots in The Great North.



An Iconic Dish

The most famous food in Hiro is Poutine. An iconic dish that originates from Quebec, made in the 1950’s, and sold in snack bars, it was highly popularized. Poutine is made with French fries, gravy, and cheese curds.

A Closer Look

City Life

There are many things to do in neighborhoods. People walk, ride a bike, drive, or ride the bus around the city to get to where they need to be. Bikes save energy, give fitness and inspiration. Streets are redesigned for pedestrians and bicyclists, and

some cars. Along the streets are bus stops, coffee shops, shopping, schools, restaurants, and gardens! The city design helps active living and healthy choices now and for the future.

Jobs

- Delivery drivers
- Restaurants
- Schools
- Farmers
- Chefs
- Quality Engineers
- Disaster Recovery Manager
- Emergency Response Team leader
- Development Engineer
- Bakers
- Training Managers
- Teachers
- Marketing Managers

Infrastructure for All

Rails for Trails

Abandoned railroads turned into walking and biking trails for the community brings many people across Hiro and Canada. Over 19,000 miles of abandoned rail lines transformed into 1,600 walking and bicycling trails through innovative Rails to Trails programs. Some of the old materials are recycled to build the trails to bring others around for a safe chill area. Other metals are used in projects in the city, so you don't have to mine more materials from nature for construction.

Highways Underpasses become Parks

Isolated underpasses, which are often places for crime, are found directly below highways. Hiro knows that underpasses are “diamonds in the rough, ready to be

polished”. The city of Hiro reuses highway underpasses to create community parks. Hiro is connecting neighborhoods and creating valuable green spaces.

Toxic Brownfields into New Developments

Hiro is redesigning other forms of infrastructure too. Designing around their transportation systems. Transforming old water infrastructure, turning polluted waterways and toxic brownfields into new developments that create new business. These approaches are environmentally sustainable and use existing infrastructure rather than simply pulling down and disposing of old infrastructure.

Wave Energy on Lake Ontario

Hiro uses wave energy, which is energy that is produced by water and by buoys. It is produced by wave energy because Hiro is located along Lake Ontario. The wave energy is healthy for the community because it is green energy.

City Services

1. Transportation On Demand

In Hiro, Canada to travel faster and get where you need to be faster there is an organization all around the country with car services called "Go Go Rush" in case teenagers or elderly people need to be somewhere. Call a number, and boom they show up.

2. Education

School teaches what's actually needed; life skills, how to write a check, pay bills, work a 9-5 job, on the weekends to get the feel for it, and cook good food. Show how poems or the Pythagorean Theorem will work in the real world. The focus is teaching what's needed in day-to-day life. One priority in education is job training in Information

management, resource management, and software engineers. In Hiro, there is relevant education for all ages.

The Problem

A linear economy is where people "make, take, use, dispose" which hurts the environment a lot. Clothes and textiles are thrown out and waste fields make micro fibers that go in air, soil, plants and water. Plastic products get old and break down into tiny pieces that get into air and water, making it a plastic soup.

- Over 300 million tons of plastic was released into the open and were produced worldwide each year.
- 5 million tons of it ends up in oceans, the rest is dumped on land, sea, or in sewer lines.
- Plastic causes damage to ecosystems.
- Lack of recycling and reusing items isn't sustainable, such as fashion and food.
- Of all plastic used, 40% is used once. Every year several billion items such as bags, bottles, trays, and food packaging are used. Some people are careless with packaging and leave it as litter.
- 30% of food is wasted or thrown out, 40 million metric tons of food every year. When this food is thrown away we get rid of things we could reuse.

Solutions

Design and Plan for a Circular Economy

- Cradle 2 Cradle is the design and production of materials and products that can truly be recycled, that breakdown and go back to nature, or the landfill at the end of their life.
 - Example: Building a park from building demolition waste.
- Digital Technology, Waste + Information = Resource
 - Digital watermark, QR code, or DNA Markers help track movement of materials and products so they can match buyers.
 - Information from materials and products that is tracked includes:
 - Type of material
 - Where the product or material is from
 - Age

- Location

- One priority in education is job training in Information management, resource management, and software engineering.
- The Leadership CreativeSpace is for entrepreneurs and business people to focus in and work in to get things done.
- Sharing Economies
 - Reuse old clothes and pass them onto family members or people in need.
- Waste Policies and Rules
 - Plastic management and use of compactors to reduce the space for waste.
 - Reuse materials from the demolition of old buildings and products.
 - Compost food waste for farms and gardens.

Circular Fashion Share and Swap

The sharing economy is a part of the fashion industry that includes rental services, swapping, and subscription models. Polyester is one of the most commonly used plastics in textiles/clothes. Hiro reuses old clothes to reduce the chances of a dirty environment.

- Clothing Donations: Sell their clothes to people in need or families.
- Fashion Swap: an app and service that keeps clothes in use and doesn't just add them to the landfill.

Circular Food

Everyone needs to start making smart food choices, conserve energy, try to use eco-friendly products, recycle to lower waste, start composting, environmentally friendly packaging, and conservation practices.

Composting Fields

Separate sections of landfills are for breaking down and throwing away food for compost. Compost is used many times to grow plants. Compost is a material that can be added to soil to help plants grow. Food scraps and yard waste, together currently make up more than 30% of what we throw away, and could be added into compost instead. Making compost keeps these materials out of landfills where they take up space and release a greenhouse gas.

Rather than bending nature to produce food, food can be designed for nature to thrive.

- Businesses can use a bigger range of ingredients in products.
- For example, sweetness comes from sugar cane, sugar beet, or corn, but it can also come from date palms, carob, and coconut.
- Planting a variety of crops can make food supplies more resistant to disease or shocks.

Spirulina is an algae and one of the richest protein sources available.

- Algae is one of the world's most environmentally efficient crops.
- Spirulina produces 20X more protein per acre than other crops like corn or soybeans while using 10X less water to produce it.
- Compact bioreactors are used to grow fresh spirulina more efficiently and sustainably.
- Switching from high impact animal proteins to lower impact plant proteins is good for nature.

Sustainable Reconstruction - Everything Old Can Be Made New Again

The City of Hiro uses pieces of building waste to make or build new parks and buildings. For new parks, we can use steel and wood to build what is needed in that park such as swings and playgrounds. This is a way to bring the community and everyone all together, parks and buildings for people to go to and have fun.

- 1) Use building demolition materials to create new cities and parks.

- 2) New Structures; Recycling Centers, Housing, Chuck E Cheese, dog parks.
- 3) Create new jobs for many ages by taking old buildings or materials, and making new ones.

Conclusion

Hiro, Canada is a very good looking place to live and visit, with many things to do. We are most known for our stunning vistas, friendly people, and vibrant culture - bringing flocks of new residents and visitors time and again!

References

- “Bigbelly - the World Leader in Smart Waste & Recycling.” *Bigbelly*, 17 Nov. 2021, bigbelly.com/. Accessed 16 Dec. 2021.
- “Changing the Path Forward for Plastic | Greenbiz.” *Greenbiz.com*, 2021, www.greenbiz.com/article/changing-path-forward-plastic. Accessed 17 Dec. 2021.
- “Circular Economy in Denmark - the Movie.” *State of Green*, 26 July 2019, stateofgreen.com/en/partners/kollision-tell-green-stories/solutions/circular-economy-in-denmark-the-movie/. Accessed 17 Dec. 2021.
- “Circular Economy Facts & Statistics.” *TRVST*, 11 June 2021, www.trvst.world/environment/circular-economy-facts-statistics/. Accessed 17 Dec. 2021.
- “Circular-Economy-Related Opportunities.” *Circular-Economy-Related Opportunities*, 2021, themasites.pbl.nl/o/circular-economy/. Accessed 17 Dec. 2021.
- “Circular Economy Examples.” *Ellen Macarthur Foundation.org*, 2021, ellenmacarthurfoundation.org/topics/circular-economy-introduction/examples. Accessed 14 Dec. 2021. <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/exam>
- Ellen MacArthur Foundation. “Cities Consume 75% of Natural Resource - How Can a Circular Economy Tackle This?” *YouTube*, 6 Aug. 2019, www.youtube.com/watch?v=o3ByrTTx9M. Accessed 17 Dec. 2021.
- Ellen MacArthur Foundation. “What Are the Limits to Recycling? | Seeing the Bigger Picture.” *YouTube*, 30 May 2012, www.youtube.com/watch?v=RX14rA-tylo. Accessed 17 Dec. 2021.
- Ellen MacArthur Foundation. “This Zero-Waste Packaging Is Made from Seaweed | Meet the Designers Eliminating Waste | Episode 1.” *YouTube*, 17 July 2019, www.youtube.com/watch?v=PvAd7t33fdo. Accessed 17 Dec. 2021.
- Ellen MacArthur Foundation. “Retaining and Reusing Building Materials to Redesign a Building | the Circular Economy Show.” *YouTube*, 19 Nov. 2021, www.youtube.com/watch?v=SUhc23pBAH0. Accessed 17 Dec. 2021.
- “The Circular Economy Opportunity for Urban and Industrial Innovation in China.” *Ellenmacarthurfoundation.org*, 2021, ellenmacarthurfoundation.org/urban-and-industrial-innovation-in-china. Accessed 17 Dec. 2021.

“Designing Our Future: Sustainable Landscapes.” *Asla.org*, 2017,
www.asla.org/sustainablelandscapes/Vid_ActiveLiving.html. Accessed 14 Dec. 2021.

Environmental Services School Outreach. “Environmental Services School Outreach.”
Tucsonaz.gov, Aug. 2014,
www.tucsonaz.gov/es/school-outreach#:~:text=Talking%20Trash%20in%20Tucson%20is,to%20the%20waste%20they%20generate.. Accessed 16 Dec. 2021.

“Moving to a Circular Economy for Food Will Help People and Nature Thrive.”
Ellenmacarthurfoundation.org, 2021, ellenmacarthurfoundation.org/topics/food/overview.
Accessed 17 Dec. 2021.

“Redesigning the Future of Fashion.” *Ellenmacarthurfoundation.org*, 2021,
ellenmacarthurfoundation.org/topics/fashion/overview. Accessed 17 Dec. 2021.

Reilly, Anna. “The 14 Best Clothing Subscription Boxes of 2021.”
Mysubscriptionaddiction.com, My Subscription Addiction, 17 Nov. 2021,
www.mysubscriptionaddiction.com/best-clothing-subscription-boxes. Accessed 17 Dec.
2021.

“The Big Food Redesign Report | Shared by Food.” *Thirdlight.com*, 2021,
emf.thirdlight.com/link/TheBigFoodRedesignReport/@/preview/1#. Accessed 17 Dec.
2021.

“UNECE Launches the Forests4Fashion Sports Challenge | UNECE.” *Unece.org*, 7 Oct. 2021,
unece.org/media/news/360670. Accessed 17 Dec. 2021.

“Urban Mining and Circular Construction – What, Why and How It Works.” *Metabolic*, 2021,
www.metabolic.nl/news/urban-mining-and-circular-construction/. Accessed 17 Dec.
2021.