McGill University Collections Centre

Navigating the journey to a sustainable robotic off-site library storage facility

Joseph Hafner, Associate Dean

McGill | Library Bibliothèque

Every journey begins with a first step

Data Driven Road to Storage at McGill

- Fiat Lux new library building project
- Can we weed?…. What is our role vis a vis the “collective collection”
- What type of storage will fit our budget? What is available on the market? How can we ingest 2.2 million volumes in 6 months?
- Planning for the robotic future with AutoStore
- Incorporating sustainability into our plans

GreenGlass/OCLC surveys

- Only ~300,000 monographs candidates for weeding
- Large portions of the collection were not widely held by other libraries
  - 1.2M unique in Quebec
  - 1M < 5 other Canadian libraries
  - 1.9M not in HathiTrust
  - 1.8M zero use in 30 years (50% usage)

Shared Print Commitments

for the Collective Collection

Québec

- **400,000** titles / over 500,00 volumes
- Québec and Canadian

Canada North/Nord

- 200,000 titles
  - Canadian Government Documents
  - Canadian University Presses
  - Indigenous works

HathiTrust

- **900,000** volumes
- Monographs with digital copy in HathiTrust

Future of shared print

- More collaborations between libraries in this

Step 2: Analyse the marketplace

- McGill: last research-intensive library in NA without storage
  - Visited peer installations (NYU, Princeton, Chicago, Library and Archives Canada, Toronto, UBC, UCLA, etc.).
  - IFLA LBES hosted a storage seminar at Statsbibliothek in Munich
- Three standard options:
  - High-bay - Harvard Model
  - ASRS - Automated Storage and Retrieval System (forklift on track)
  - Electronic Compact shelving

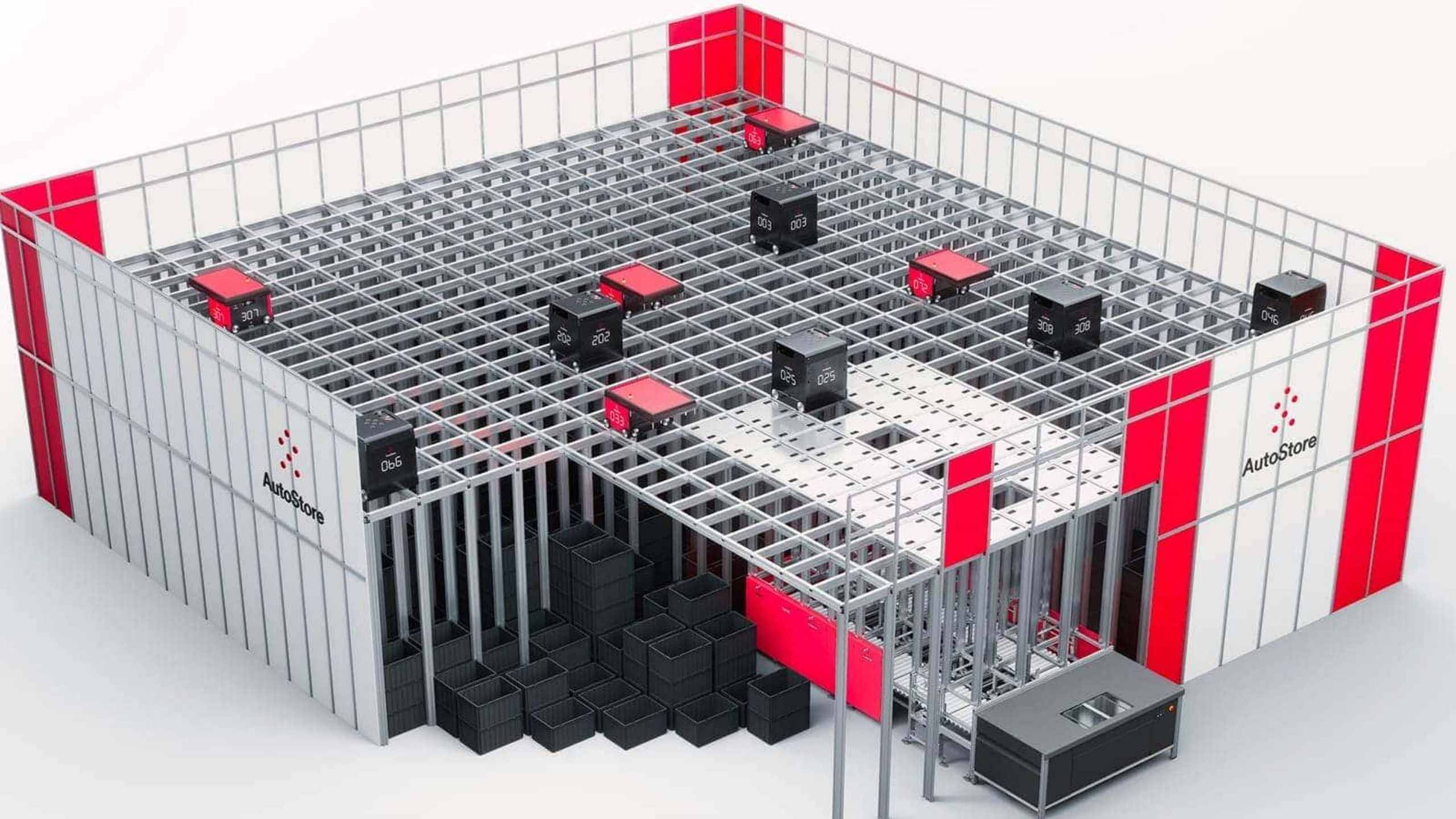
Our journey veers off-road in a new direction

Chart a new path with robots on a grid!

Dramatic developments supporting fulfillment and distributions centres

- AutoStore
  - Norwegian company, partnered with systems integrator, Dematic
  - Ingenious idea of stacking containers on top of each other for storage and retrieval using robots.
  - Rubics cube!
  - 1,200+ systems in 50+ countries worldwide.
  - Plastic bins manipulated by robots that “dig” the requested bin and deliver to ingestion port.

If the world’s largest companies use AutoStore to store and retrieve materials, why not libraries?


AutoStore
AutoStore

AutoStore at McGill – key advantages

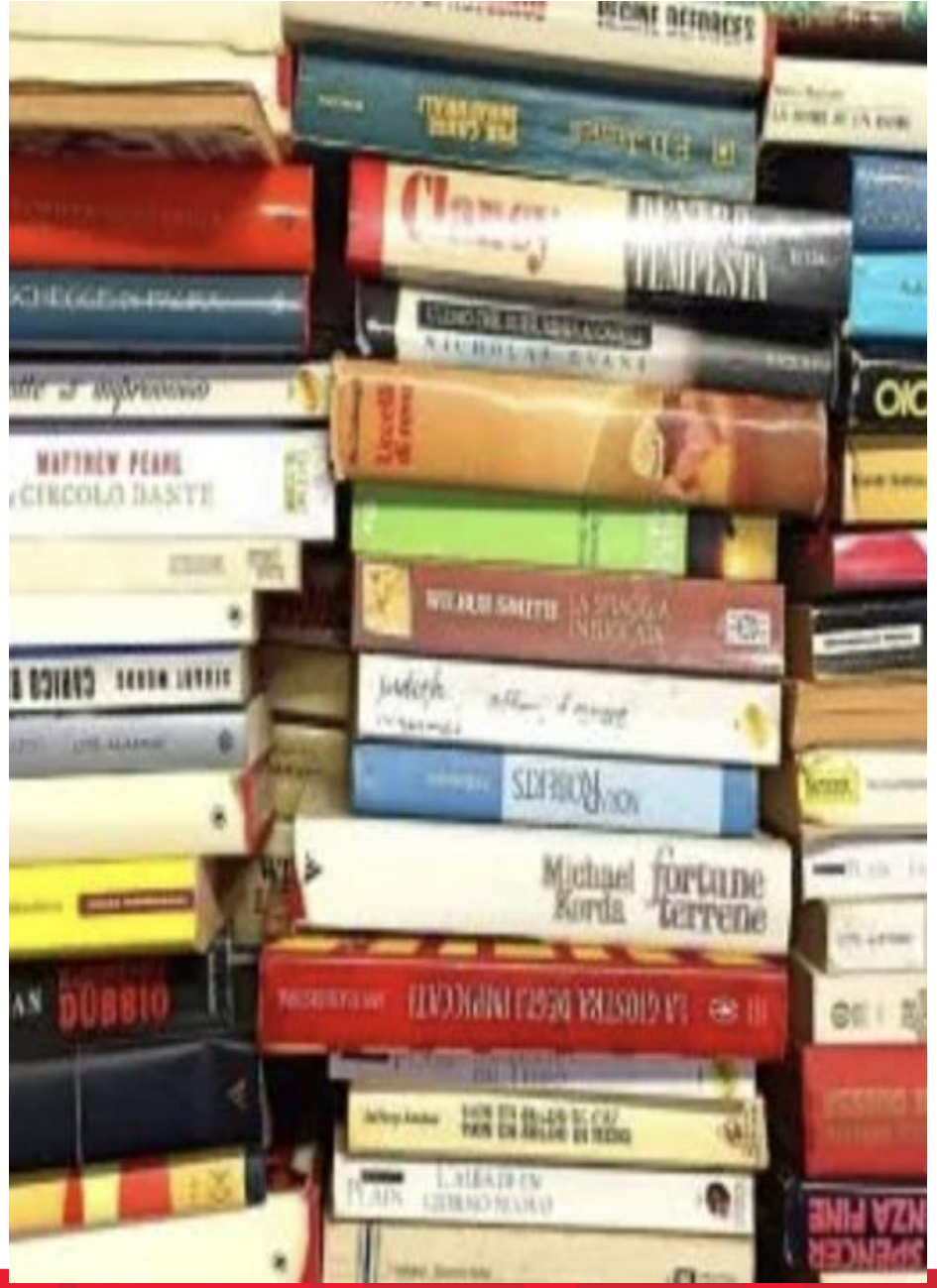
- Books stored in plastic bins – 95,840 bins storing 2.2M volumes.
- Footprint of warehouse – 4,200 square meters (45,000 sq feet).
- 33 kg limit per bin – no need to measure, sort and “box” material.
- Real estate footprint much smaller and less expensive than high-bay or standard ASRS. No aisles. The grid fills the warehouse, no wasted space. Pure flat floor not required.
- Grid easily expandable. Ideal if we partner with other Quebec libraries.
- FAST ingestion. Books scanned to bin, and then bin scanned into grid.
- Goal: 6 months!
- Minimal catalogue manipulation. APIs communicate between Dematic inventory system and OCLC WMS.

Timeline of the journey

The collection prep journey

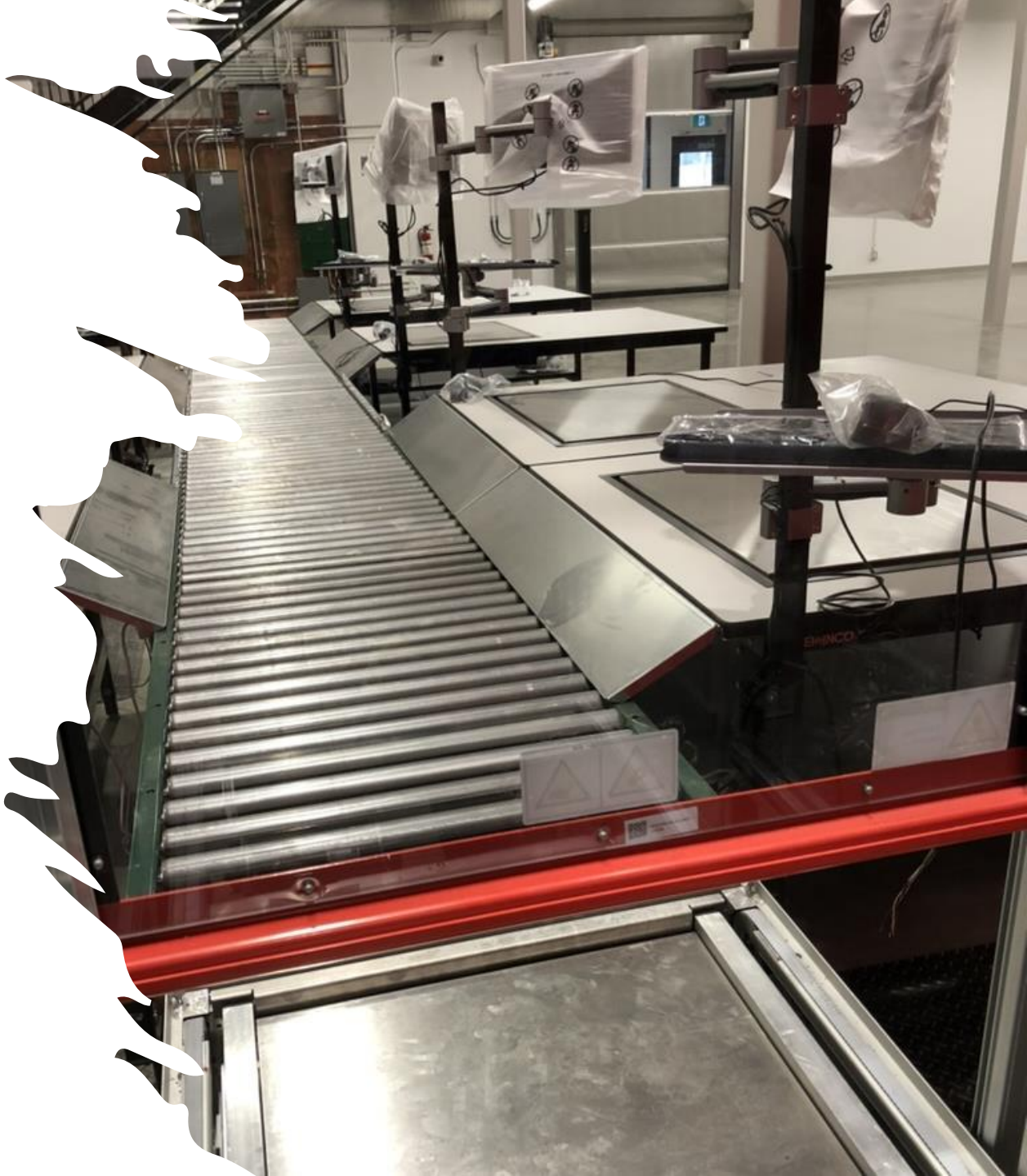
Three years to review and prepare the collections:

- Ensure everything in the online catalogue
- Barcodes and items on all journals and books
- Replaced old, missing or damaged barcodes
- Updated some formats along the way and filled gaps
- Preparation complete Summer 2023
- Migration of materials Sept. 2023 - Spring 2024



Collection Ingestion

- Moving company loads books from shelves onto carts and ships
- Carts arrive at the 14 workstations
- Bins are scanned
- Items are scanned and placed into bins
- Bins are pushed along a conveyor
- Bins are scanned and ingested into the robotic system



McGill Collections Centre

- Deliveries 5 days a week to all branches
- PDFs of articles and chapters
- State of the art security & fire protection
- Climate-controlled environment
- LEED Building with sustainability in mind with design and operations

Sustainable Storage at McGill's Collections Centre

LEED Certified Facility

Energy efficient building, low maintenance exterior grounds, electric car charging stations, choosing the right building materials and more.

High Density Storage

High density storage that reduces the footprint of our warehouse building by up to 75%.

Energy Efficient Robots

Running 6 robots for a 24-hour shift uses less energy than running a vacuum for 30 minutes.

Sustainable Moving Goals

Moving contract was awarded to a company meeting our sustainability goals, including a maximum in fuel efficiency and a minimum waste of packaging to move 2.4M volumes.

Efficient Delivery

Digital versions of requested materials will be offered to users. Delivery vans for physical materials will be electric.


AutoStore
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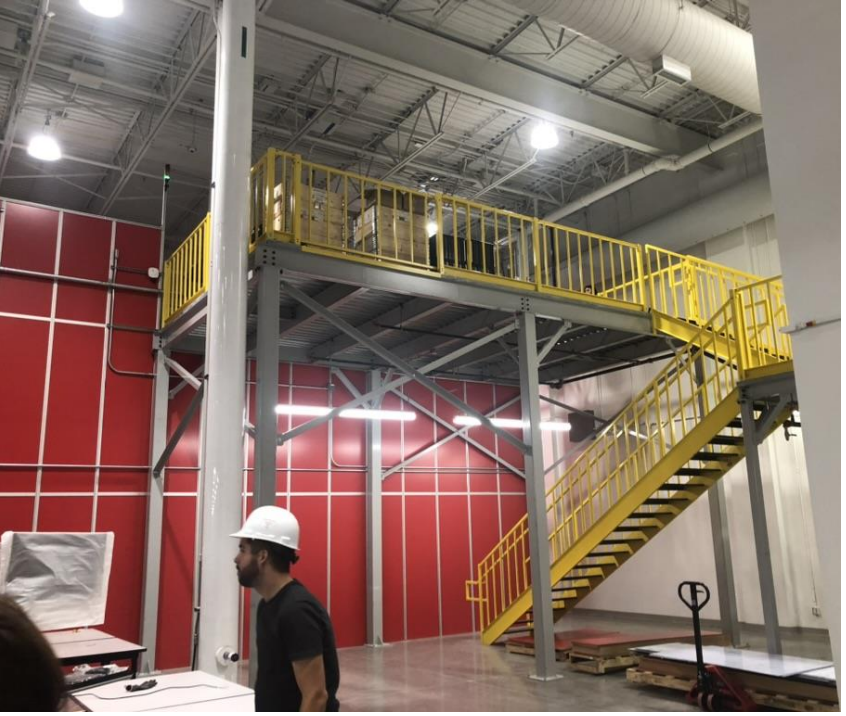
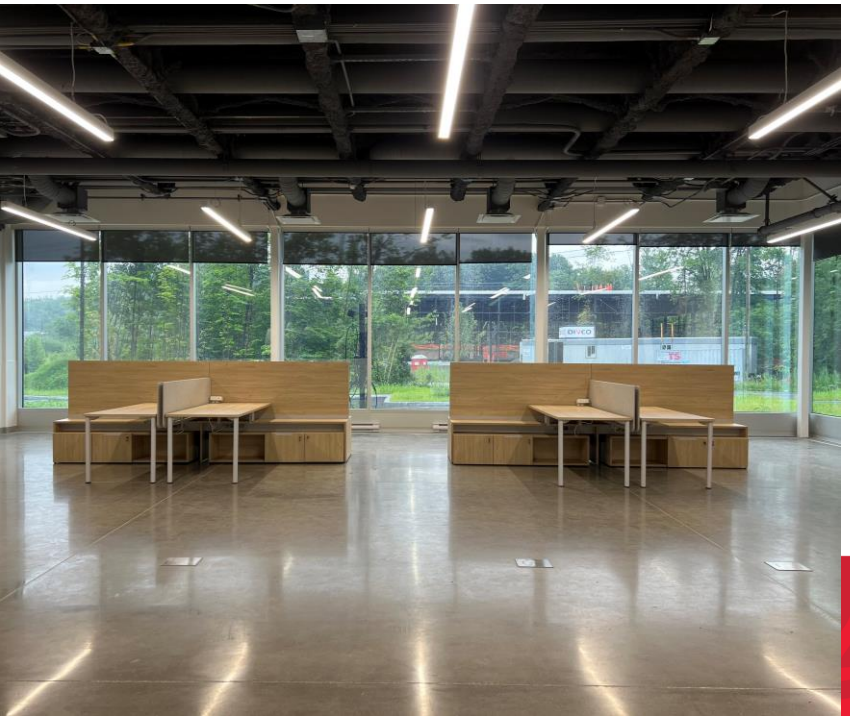
TRANSPORTS
LACOMBE


BIENVENUE
WELCOME
AutoStore
025
EPAL





Fiat Lux Project: Updates & FAQs

Facilities Projects Update

https://mcgill.ca/x/Ues

Fiat Lux Library Project

- The Fiat Lux Project is anticipated to begin in 2025 and will take an estimated two to three years to complete.
- Although the McLennan-Redpath Library Complex will be closed during this period, **additional temporary study spaces and service points will be added.**
- The McGill community will be informed of temporary study locations as soon as they are confirmed.
- The Collections Centre will be fully operational when construction begins.
- **Visit the project site for more information including timeline and frequently asked questions.**

Frequently Asked Questions

https://reimagined.library.mcgill.ca/faq

Frequently Asked Questions

- What is the Fiat Lux Project?
- When are you expecting to begin construction? Will the Library be closed during construction?
- What is the status of the project?
- Has McGill consulted with the McGill community on this project?
- Has McGill consulted with Indigenous communities on this project?
- How is the project being funded?
- What are some of the new library's service and space offerings?
- How will technology be incorporated into service and space offerings?

Thank you!

joseph.hafner@mcgill.ca