



THE LINK

YORK UNIVERSITY
COMPUTER MUSEUM

...to link, inform, motivate, inspire



The Lassonde School of Engineering at York University was created by Founding Dean and Renaissance Engineer Janusz Kozinski backed by a \$25-million donation from gold mining entrepreneur and philanthropist Pierre Lassonde.

Lassonde currently has 2000 undergraduates in 11 programs, 200 graduate students, 100 professors and four academic departments.

The new Bergeron Centre for Engineering Excellence – a \$115 million zero-lecture hall creative space that is home to the Lassonde School of Engineering – officially opened in 2016.

Why?

Between now and 2050 humanity will face great challenges: climate change, access to clean water and energy, and cyber security, to name just a few. The opportunities for engineers will be even greater in areas such as big data, driverless cars, nanotechnology, artificial intelligence, and many more.

What do all these challenges have in common? They are complex, they are borderless and they transcend traditional divides. To solve these big problems and to seize these enormous possibilities, the world needs engineers who are more than just technical experts.

Employers too are increasingly seeking graduates with more than just theoretical knowledge. At the same time, students facing unpredictable career paths expect to develop breadth and depth of knowledge that sets them apart in the global market for talent.

The world needs a different kind of engineer, employers want a different kind of engineer, and students expect a different kind of engineering education to prepare them for the challenges and opportunities that they will face in the next 50 years.

Our Programs

Civil Engineering
Mechanical Engineering
Electrical Engineering
Computer Engineering
Software Engineering
Geomatics Engineering
Space Engineering
Computer Science
Computer Security
Digital Media
Earth & Atmospheric Science

What is a Renaissance Engineer?

The Lassonde School of Engineering has been created to be the home of the Renaissance Engineer: a place where students are free to explore their passions and gain different perspectives from the world around them.

Renaissance Engineers think in big systems not little silos
design with people in mind
embrace ambiguity

How are we different?

The School is creating a different kind of learning experience built on three founding principles:

1) Renaissance Curriculum | engineering + law + business

Lassonde students experience a broad “Renaissance” curriculum with integrated courses in law and business taught in partnership with the Schulich School of Business and Osgoode Hall Law School.

2) Flipping the Classroom | \$115 million home with zero lecture halls

Lassonde is flipping the classroom so that students can watch lectures online anywhere, anytime and come to class to solve problems together.

3) 50:50 Challenge | achieving a gender balance

Lassonde has set a challenge to be the first engineering school in Canada to reach a 50:50 gender balance.

York University

With more than 54,000 students, 11 Faculties, 5,000 courses, 28 research centres and nearly 300,000 alumni, York University is much more than just Canada's third-largest University. We are also one of Canada's leading hubs for interdisciplinary research and innovative teaching, opening our students' minds through a comprehensive and cross-curricular academic education and a diversity of perspective and experience.

YORK UNIVERSITY COMPUTER MUSEUM

Formed in December 2002, the York University Computer Museum (YUCoM) in the Lassonde School of Engineering is Canada's first physical museum dedicated exclusively to the history of the Canadian computer industry.

The main motivation behind its creation was to create an academically significant research collection that would provide scholars, students, writers, artists, and the media with primary historical sources to research the development of computer technologies in Canada and their impact on Canadian society.

Since then, YUCoM has become the largest single collection of Canadian computer hardware, software, documents, and other items of historical significance. The scope of the collection, the conducted research, publications, and research collaborations with several North American institutions made YUCoM an internationally recognized collection.



THE LINK EXHIBITION

THE LINK will be a free access, interactive, and permanent computing and information technology exhibition. This world-class installation will **showcase and celebrate Canadian contributions** to computing and information technologies. It will link our technological heritage with the digital future and tell the story of technology's role in shaping Canadian society, its aspirations and values. And through this link to inspire and motivate future scientists and engineers to follow in the footsteps of the Canadian scientists and technology pioneers, the exhibition will lead the conversation on technology's role in modern society.

Narratives & Artifacts

The LINK will use historical artifacts from the YUCoM's extensive collection, still images, and interactive multimedia displays to offer several narratives of pioneering work on computing in Canada.

The exhibit will be organized around several narratives about our Canadian computing heritage and the role of Canadian men and women in advancing computing and information technologies world-wide. Although the exhibit is designed to be a permanent installation, the history of computing threads will be changing over time, showcasing new stories and new technological solutions to narrate them.

For its launch, the exhibit will focus on three themes: personal computing, software, and networking and wireless communication technologies. The following pages expound on these themes in greater detail.



Figure 1. Interacting with the LINK exhibit (preliminary in-house concept - not final design).

- **Personal Computing**

Canadian electronics companies were among the first firms to fully recognize, articulate, and act upon the immense potential of microprocessor technology and the development of a new generation of computing hardware – personal computers. Micro Computer Machines (MCM) of Toronto introduced possibly the world's first personal computer – the MCM/70 – in 1973. MCM was soon followed by other Canadian manufacturers of desktop computers and computer peripherals.

By mid-1980s, from East to West, the Canadian microcomputing landscape had been saturated with a variety of companies, from small to large, manufacturing home and desktop computers, designing computer peripherals, and publishing software.

The PC narrative will present the achievements of several Canadian companies that are (or were, if no longer in business) world leaders in the personal computer hardware and software sectors. ATI (now AMD), Commodore, Corel, Dynalistic, Lanpar, Matrox, Microsystems International, MCM, Nabu and Volker Craig are some of these companies. The narrative will also focus on computer pioneers and events that painted the backdrop for personal computing in Canada, events such as the introduction of significant products as well as the launching of computer clubs, shows, publications, and educational initiatives (such as the “Bits and Bytes” program produced by TVOntario in 1983 or the “Icon” education computer project in Ontario).

To situate this part of the exhibit in the global North American context, some non-Canadian companies that significantly impacted the Canadian personal computing scene in the last century will also be presented, such as Apple, IBM, Dell, and HP.

While the artifact section of the exhibit will mostly host computer hardware, the interactive display section will offer visitors the opportunity to interact with vintage hardware through emulation on multi-touch screens. A visitor will be able not only to select and execute software but also to experience the computing environment offered by a particular computer hardware of interest to the visitor.

- **Networking and Wireless Communication Technologies**

Canada has been one of the most “wired” countries in the world. This stimulated the development of networking and communications technologies over several decades and resulted in the emergence of the Canadian high-tech and networking giants with immense global impact. For years, and, in some instances for decades, companies such as Nortel (initially Northern Electric), I.P. Sharp & Assoc., and RIM (now Blackberry) were world-wide industry icons. This part of the exhibit will present over a century worth of Canadian research and development in the area of communication and networking technologies, starting with Northern Electric, presenting IPSANET network of I.P. Sharp & Assoc., and showcasing the achievements of RIM and Mitel. The exhibit will also present lesser known but ground breaking initiatives such as proto-Internet networks Telidon (Norpak), the NABU Network (NABU Manufacturing), and display phone technology promoted by companies such as Bell Canada.

In the interactive display section, a visitor will be able to “surf” the networks of the past: access financial data on IPSANET, check flight information on a Telidon terminal, play games on the NABU Network, or check the latest news using the Bell Felix system.

- **Software**

The Software exhibit presents the achievements of the Canadian software industry focusing on the success and wide scope of software publishing in Canada. Themes presented here will include computer gaming, digital media and office software (published by, for instance Alias, Corel, and OpenText). Products such as Maya (computer animation and modeling software), corelDRAW (computer graphics software), and Livelink (Web-based collaboration and document management system from OpenText) became known and widely used around the world. Web and mobile apps will also be represented.

Canada is also one of world's biggest publishers of video games. In 2015, there were close to 500 video game companies in Canada (including Behaviour, Beenox, Big Viking, Big Blue Bubble, BioWare, Capcom, Digital Extremes, Electronic Arts Canada, Fuel Industries, Other Ocean, Rockstar, Ubisoft and Uken Games) which published over 1,200 titles.

This part of the exhibit will be divided between an artifact section and the interactive display section. The interactive display section will allow a visitor not only to access information about a specific software publisher or specific software but also to execute such software. For instance, a visitor can try to create an image using an early version of the corelDRAW program or play a computer game.

Architecture

The exhibit will be located the lobby of the Lassonde Building on York's Keele campus.

The exhibit will consist of two integrated sections: the artifact section and the interactive display section. The artifact section will display historically significant hardware and software in specially designed display hardware (cabinets). The interactive display section will be built around interactive digital display hardware such as digital walls, multi-touch displays, and head-mounted augmented reality displays. This section will be used for, among other purposes, interactive self-guided navigation through the exhibit, screening historical material (images, videos) as well as for interacting with some of the Canadian-designed systems and software using the artifacts' emulators. Both the artifact and interactive display sections will be integrated in several ways from the design of content to the extension of the use of augmented reality gear into the artifact section of the exhibit.

The technological sophistication and unique content of the proposed displays would make the exhibit one of the most innovative high technology presentations by a Canadian university.



Figure 3. Exhibit viewed from the outside of the Lassonde Building (preliminary in-house concept - not final design).

Enhance Student Experience through Research and Outreach Programs

The exhibition will enhance the learning experience of all York students; it will provide computer science, engineering, and digital media students with an opportunity to work and experiment with the newest digital display technologies through their involvement in projects related to the content development, maintenance and continuous enhancements of the exhibit.

The exhibit will also become a significant part of the Lassonde School's outreach program offering visiting high-school students a unique learning experience.

Location

The LINK will occupy the area on the main floor of the Lassonde Building adjacent to a wall of windows facing Campus Walk, one of the most high traffic thoroughfares on the York campus. The exhibit's main display area would be viewed from inside the building with additional narratives designed to be viewed from the outside of the building through the glass wall.

The exhibit will be a destination landmark at York University dedicated to preserving and showcasing the outstanding contributions of Canadians to our present-day digital reality.



Figure 4. Exhibit viewed from the inside of the Lassonde Building (preliminary in-house concept - not final design).

SPONSORSHIP OPPORTUNITIES

The opening of the LINK will be celebrated in the fall of 2017. This coincides with the 50th anniversary of the first computer at York University and of course, Canada's 150th anniversary.

Sponsorship opportunities are available. If you would like to discuss them further, please contact:
Suzie Lee Hortness, Senior Development Officer (416.736.2100 x 44156, suzie.lee@lassonde.yorku.ca).

In recognition of your support, we would be pleased to collaborate on the following recognition opportunities:

- Naming opportunities for exhibit narratives and themes;
- Updates on the LINK exhibit on a regular basis;
- Invitation to to the opening event and opportunity to provide remarks;
- Media releases in connection with your support; and,
- Other acknowledgment ideas that we discover as we collaborate on this project over time.

Thank you for your kind consideration of the LINK.



CONTACT US

For more information, please contact:

Suzie Lee Hortness

Senior Development Officer
Lassonde School of Engineering
416.736.2100 x 44156
suzie.lee@lassonde.yorku.ca

Zbigniew Stachniak

Associate Professor, Dept. of Electrical
Engineering & Computer Science
Lassonde School of Engineering
416.736.2100 x 77877
zbigniew@cse.yorku.ca

APPENDIX

COMPUTING EXHIBITS ELSEWHERE

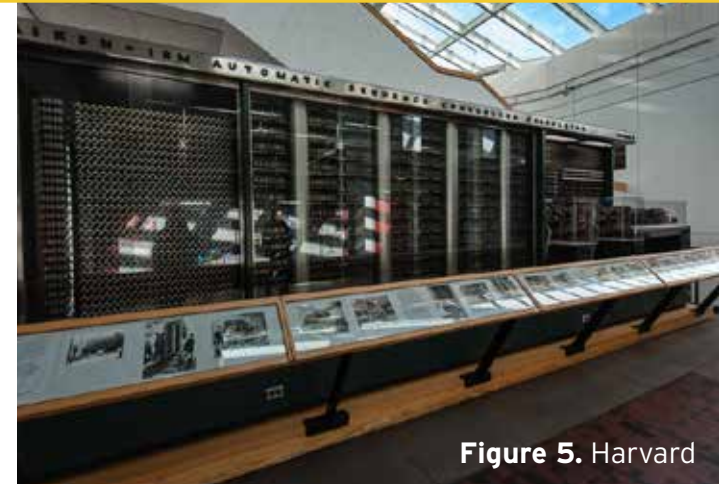
Several top American universities have successfully enhanced their students' focus by creating social hubs and social spaces (complete with dedicated exhibit and installations) that showcase engineering artifacts and narrate innovation and technological creativity. These hubs inform, motivate, and inspire. Dedicated technology exhibits and museums at Harvard, MIT, Purdue and Stanford can serve as examples (see Figures 5-6).

The 'Because Dreams Need Doing' permanent and interactive exhibit installed in the Neil Armstrong Hall of Engineering at Purdue University has successfully demonstrated that technology and engineering exhibits could be powerful outreach tools.

At MIT, dedicated exhibition spaces and public programs illustrate the school's history. It inspires people of all ages about the possibilities and opportunities offered by science and technology.

PROFESSOR ZBIGNIEW STACHNIAK

Zbigniew Stachniak is an associate professor in the Department of Electrical Engineering and Computer Science at York University. His main research areas are artificial intelligence, history of computing, and history of mathematics. He is an author of several books on these subjects. Since 2002, he has been curating the York University Computer Museum.



lassonde.yorku.ca

