

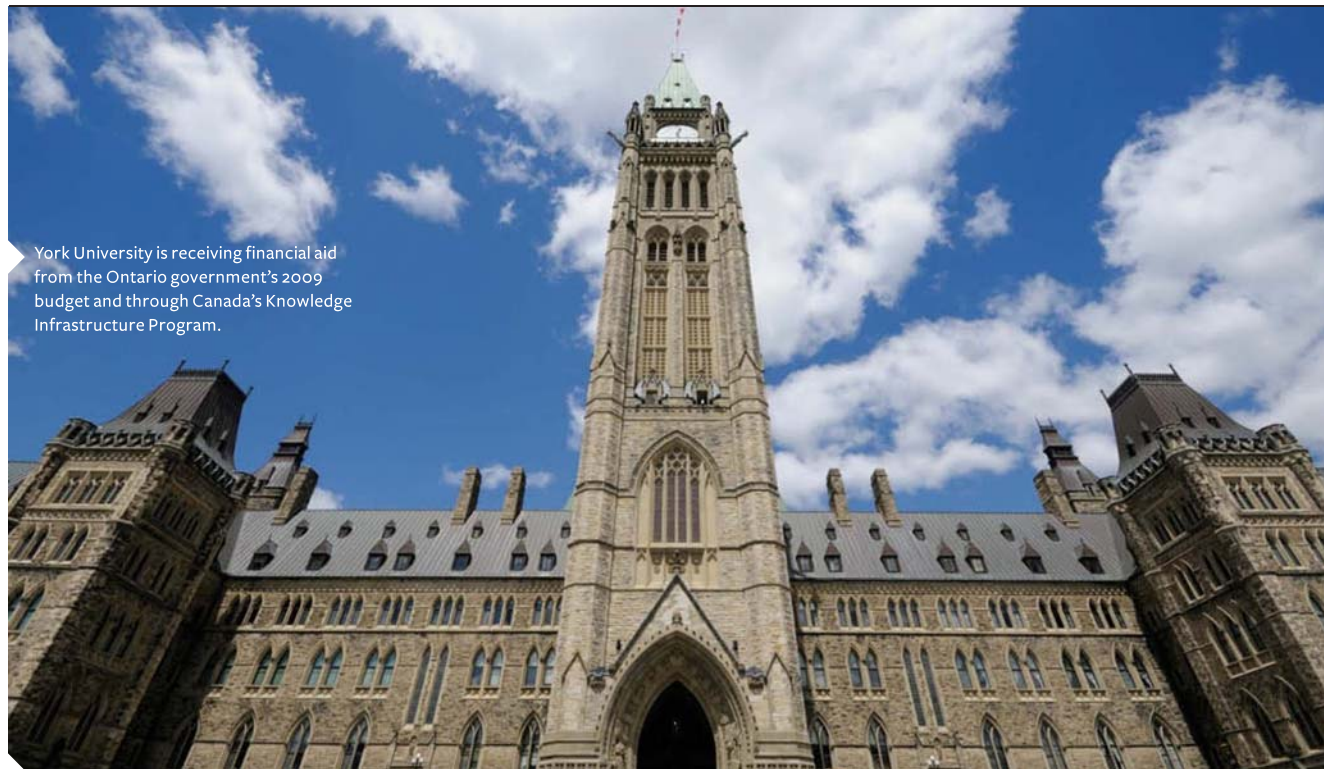
Double Support

✚ Thanks to federal and provincial government funding, the Life Sciences Centre at York University will enhance academic life, create jobs and improve the local economy.

"The Life Sciences Centre will create jobs through its construction, support the needs of the growing student population and continue to lure accomplished faculty to the university."

> Mario Sergio, York West member of the Provincial Parliament

York University is receiving financial aid from the Ontario government's 2009 budget and through Canada's Knowledge Infrastructure Program.



York University – Life Sciences Centre

www.yorku.ca

Budget: \$70 million

Location: Toronto, Ontario

Scope: Construction of a four-storey life sciences building

➤ **Construction is progressing on the** \$70 million, four-storey Life Sciences Centre project at York University in Toronto. The academic facility is on track for a spring 2011 completion, the university reports.

The York University Life Sciences Centre is one of about 50 projects in the province to receive approximately \$1.5 billion in collective funding through Canada's Knowledge Infrastructure

Program (KIP) and the Ontario 2009 budget. The combination of federal and provincial government funding is expected to significantly enhance Ontario's education infrastructure, increase employment and boost the local economy, the university says.

"This joint investment by the provincial and federal government is great news for York University, its students and for the economy," York West Member of the Provincial Parliament Mario Sergio said in a statement. "The Life Sciences Centre will create jobs through its construction, support the needs of the growing student population and continue to lure accomplished faculty to the university."

Project Team

The York University Life Sciences Centre project team includes:

- > **NXL Architects**
- > **SSG Architecture**
- > **Blackwell Bowick Partnership**
- > **Crossey Engineering Ltd.**
- > **Crown Drain**
- > **Blue Bar Excavating**
- > **Alliance Concrete Forming**
- > **Geo A. Kelson Co. Ltd.**
- > **Urban Electrical Contractors**
- > **Flynn Canada Ltd.**
- > **Aquanorth**
- > **Kone Inc.**



Federal Aid

KIP, established in January 2009, is a two-year, \$2 billion economic stimulus measure to support infrastructure enhancement at Canadian universities and colleges.

It is part of the \$12 billion in new infrastructure investment allocated under Canada's Economic Action Plan. "Investments made through the program will not only generate economic benefits and support job creation, they will enhance research capacity, support the attraction of new students and provide a better educational experience for the highly skilled workers of tomorrow," the Canadian government said in an online statement.

KIP provides \$1 billion in 2009 and 2010, and \$1 billion in 2010 and 2011, with funding ending March 31, 2011. Capital from federal sources will cover up to 50 percent of a project's overall cost, leveraging an equivalent amount from its nonfederal partners.

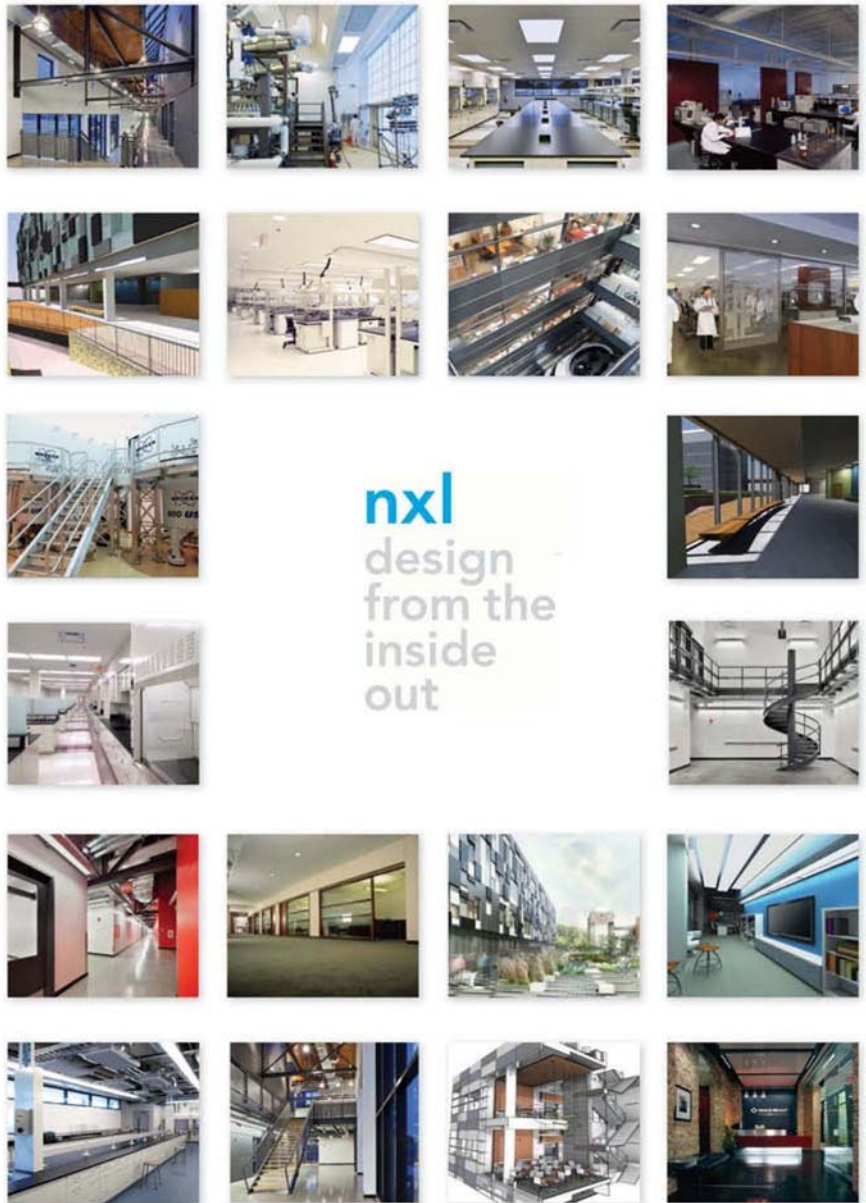
Candidates had until March 30, 2009, to submit proposals. The government said it received roughly 950 submissions from institutions across Canada with total funding requests reaching \$5 billion, which was more than twice the amount of funding allotted.

"In many cases, the funding requested exceeded the maximum allowed by the terms and conditions of the program," it said. Although the maximum level of funding per project was never specified, the Minister of Industry in consultation with the minister of state of science and technology had the authority to approve up to \$100 million per project;

any requests for funding exceeding that amount required cabinet approval.

Projects chosen to receive federal funding were selected based on "project readiness, including their ability to quickly and effectively generate eco-

nomie activity and support job creation, and their ability to enhance research capacity, support the attraction of new students and provide a better educational experience for the highly skilled workers of tomorrow," the government said.



NXL Architects is proud to be supporting York University's future growth. Since 2007, NXL has designed two major research facilities on the York Campus. The Sherman Health Sciences Research Centre is an adaptive reuse project that converted an existing ice arena into a unique, state-of-the-art research centre. Recently, NXL, in association with SSG Architecture, began designing the showcase Life Sciences Building. The 160,000 sq.ft. facility adds new world-class research and teaching laboratories to York's science program, significantly changes the campus landscape, and augments York's efforts in the recruitment and retention of high-calibre researchers.

PROUD TO BE A PART OF YORK UNIVERSITY'S FUTURE
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“Attracting and retaining workers who drive innovation and growth in the global knowledge economy strengthens Canada’s position as a world leader in science and technology to the benefit of all Canadians.”

Only innovation-focused projects, such as laboratory expansions and research centres, or sustainable projects, such as energy-efficient building upgrades, were considered. Recreational projects, such as gymnasiums, did not qualify for KIP funding.

The application process for institutions was the same throughout the country except for those in Quebec, which applied through the provincial government. Institutions from all provinces and territories entered into funding agreements. Roughly 65 percent of the funding was supplied to universities, 35 percent was supplied to colleges.

Local Aid

The government of Ontario has made a long-term commitment to invest in its academic infrastructure, and through its 2009 budget, designated \$780 million to colleges and universities to modernize facilities and boost long-term research and skills training capacity over the next two years. York University says it intends to utilize the funds to strengthen its capacity in life sciences and health. Constructing the Life Sciences Centre will bring the university closer to its goal.

“Through the renewal of college and university facilities, our researchers will have the tools they need to be global leaders in their fields and pursue world-class excellence,” Member of Parliament Louis Brown said in a statement. “Attracting and retaining workers who drive innovation and growth in the global knowledge economy strengthens Canada’s position as a world leader in science and technology to the benefit of all Canadians.”

York University

Established in 1959, York University has grown to become Canada’s third-largest university, it says.

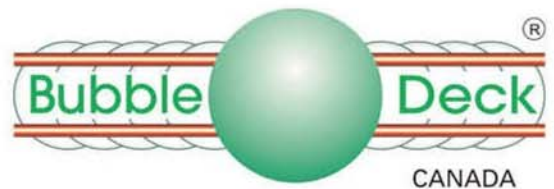
“That’s because we offer an unparalleled academic experience,” it says. “Our top-ranked programs set international standards. Our unique, interdisciplinary approach to learning allows students to study issues from all angles and to combine majors in completely different fields. York’s faculty, among the finest anywhere, expands the horizons of our students.” More than 200 full-time members of the Faculty of Science and Engineering at the university serve more than 3,500 undergraduate students and 400 graduate students.

The department receives more than \$18.5 million in funding annually, largely through the Natural Science and Engineering Research Council, the Canadian Institutes for Health Research and the Canada Foundation for Innovation, it says. ●



York University’s Life Sciences Centre project will help the school meet the needs of a growing student population.

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BubbleDeck® is a revolutionary flooring system, which has proved to be highly successful throughout Europe since its development began over 15 years ago. BubbleDeck Canada (formerly BubbleDeck Atlantic) has successfully completed 4 major projects, just over 50,000m² in Canada over the last 5 years of operation.

BubbleDeck comprises a hollow, flat slab that spans in two directions. The core of the technology is the recycled plastic balls—or 'bubbles'—which keep concrete out of zones where it has the least structural effect. This results in a dramatic overall weight reduction, so that larger spans (L/36) and longer overhangs (L/10) can be achieved; or greater load carrying capacity.

The overall floor area is divided into a series of pre-manufactured planned individual elements, dependent upon site access and grid layout. These elements incorporate the top and bottom reinforcement mesh, joined together with vertical lattice girders (or 'truss'); the bubble is trapped between the mesh to fix their optimum position in the slab. Termed 'the bubble-cage', this can be delivered to site as the cast in place option or the cage is precast into a bottom layer of concrete, usually 70mm thick, providing permanent formwork within the overall finished slab depth. In both options, the individual elements are then 'stitched' together with loose reinforcement across the element joints. After the site concrete is poured, this technique provides structural continuity across the whole floor slab. The joints between elements are then redundant without any structural effect, creating a seamless flat floor slab.

BubbleDeck's technology is also green, qualifying for LEED points for innovation in design, reduction of cement, and recycled content (other categories possible). Not only does it reduce the consumption of material, but the recycled plastic balls can be recovered during the demolition of the building helping to meet the goal of sustainable construction. In addition, it offers less energy consumption during production, transport and on-site activities lowering CO₂ emissions by as much as 50%. 1 kg of recycled plastic, used to manufacture the ball, can reduce as much as 100 kg of cement in the structure.



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+ Cooper Construction is building a home for higher thinking that could change the world. *By Chris Olvera*

"On every project we undertake, [we strive] to exceed our client's expectations [of] budget, schedule, quality, communication, safety and environmental responsibilities."

> William Cooper, president

Cooper Construction Ltd.

www.coopercon.com

Budget: \$50 million

Location: Waterloo, Ont.

Scope: New construction of three buildings on a college campus

> **The Balsillie School of International Affairs** is an institution devoted to the study of international affairs and global governance. All it needs is a home of its own. The school is a collaborative partnership between Wilfrid Laurier University (WLU), the University of Waterloo (UW) and The Centre for International Governance Innovation (CIGI), but it doesn't have a proper campus. That is about to change.

Cooper Construction was hired in April 2009 to provide construction management services for a new three-story structure that will be located next to CIGI, in Waterloo, Ontario. The structure will consist of the Balsillie School of International Affairs, an academic building and an auditorium, all connected to each other. A stone bell tower will provide an anchor to the international affairs building and the new structure will be connected to CIGI's already existing building. The property also will have two parking lots.

Cooper Construction began operations on the site in August 2009 and is scheduled to finish by March 31, 2011. As of August 2010, all the foundations were complete except for the service building, which was being excavated. The auditorium's precast wall panels had been erected and supported and the precast seats were welded in place. In the academic building, ductwork was installed where possible and the bell tower formwork



The campus for the Balsillie School of International Affairs will open in March 2011.

was poured up to the 3rd floor roof. Footings had been placed and underground services were being installed in the service building.

The Balsillie School of International Affairs building will cover 56,000 square feet, the auditorium will be 14,000 square feet and the academic building will add 40,000 square feet.

The Balsillie School is home to a critical mass of extraordinary experts; the school provides students with an interdisciplinary learning environment in which they develop knowledge and

expertise of international issues from the core disciplines of political science, economics, history, environmental studies and related fields. Students prepare for careers in teaching and research in the field of international affairs, as well as for a growing range of careers within national governments, international organizations, the non-government sector and the private sector.

Jim Balsillie, co-CEO of Research In Motion, founded the Balsillie School in 2007. There are more than 60 affiliated faculty teaching in the three programs

currently associated with the school – the Ph.D. in Global Governance, the master's program in Global Governance and the master's in International Public Policy – and more than 50 graduate students at UW and WLU currently hold Balsillie Fellowships.

"This project will create a unique hub in Canada," CIGI Senior Director of Communications Fred Kuntz says. "With the global programs we're assembling and the proximity of the think tank to other research, faculty and students, it has the potential to change the world."

On the Bubble

The architect of the project, KPMB Architects, called for the use of BubbleDeck® technology in the structure, something Cooper Construction was unfamiliar with. However, the com-

pany would not be intimidated by using a new technology and quickly adapted and has been successful with it. The technology is so new to Canada that the campus is only the second structure to use it and is the first in Ontario.

BubbleDeck® technology is a European system wherein hollow plastic balls eliminate concrete with no carrying effect. When the top and bottom reinforcements are linked, the balls lock into place, controlling the reinforcement levels, and the concrete can be poured over the slab.

The Cooper Way

Cooper Construction is a third-generation family-owned Canadian construction company that conducts business throughout southern Ontario in three primary sectors: design/build construction, construc-

tion management, and commercial and industrial real estate development.

President William Cooper Sr. says the company philosophy gives its clients the right to expect extraordinary efforts to deliver an outstanding project. "We have an obligation to meet their expectations," he states. "Through dedicated, transparent communication and demonstrated integrity, we build enduring relationships with our clients." ☺

BubbleDeck Atlantic was involved with the consultants on the Balsillie Campus from the development stage. The building was optimized with BubbleDeck (40-foot spans) giving the consultants open spaces required for the classroom environments. With the use of BubbleDeck, the overall height of the building was reduced resulting in a cost saving of the façade and decreasing the construction time onsite. A new method of cooling also was implemented; cooling lines were installed in the precast BubbleDeck panels using the mass of the structure to maintain temperature inside the building.



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