

CHECKPOINT



How to plan a state-of-the-art hospital:

The team behind the scenes

At 2 million square feet, the new Civic development is one of the largest new academic hospitals underway in Canada. The operating rooms alone will require a space the size of two-and-a-half football fields.

"There are a huge number of moving pieces involved in this project," said Debbie McDonald, a Senior Partner at Agnew

Peckham, the Canadian consulting firm leading development of the functional program for the new Civic development. "We need to think about every piece, and how it will affect the other areas of the project and the hospital as a whole."

"The research component and the academic mandate set this project apart. You don't have that in a community hospital," added



Concord Medical Cancer Hospital Proton Therapy Center. Courtesy of HDR Architecture Associates Inc.

Kieran McDonald, a Partner with Agnew Peckham and the firm's project manager for the new Civic development.

Agnew Peckham specializes in health care facilities programming and planning and has completed several projects with The Ottawa Hospital over the years.

Debbie and Kieran have worked closely with The Ottawa Hospital's Executive Director of Planning and Development Karen Stockton and Senior Project Planning Managers Michelle Currie and Lisa Young to complete the functional program, the key document in the hospital's Stage 2 submission to the Ontario Ministry of Health.

The functional program describes each program and service at the new site, how much space is needed, and how programs fit together, based on projected volumes,

workflows, staffing projections, and equipment needs.

The work requires both a careful attention to detail and a big picture approach.

"There will be 44 different programs in the new hospital, with many sub-specialty programs. You can't build a hospital with 44 silos," said Karen. "These services need to be connected to one another somehow in the plan. It's up to the team to see the big picture and translate each group's needs into a plan that achieves those connections."

The Ottawa Hospital's planning team boasts a range of backgrounds and expertise: Lisa, a Registered Nurse, has spent her career in clinical operations; Michelle's background lies in 'back of house' support services, and Karen has led a variety of teams across the hospital in both clinical and administrative roles.



Debbie McDonald, one of Canada's leading experts in hospital functional planning, is a Senior Partner at Agnew Peckham.



Kieran McDonald is a Partner with Agnew Peckham, and the firm's project manager for the new Civic development.

New standards, new models of care to support excellent patient care

As part of The Ottawa Hospital, the new Civic development will function as the hub of an integrated health care system, one that helps connect acute, long term, and complex, continuing care for all of Eastern Ontario, Western Quebec and Nunavut.

The new hospital will have spacious, well-lit patient rooms that will accommodate one patient with a private bathroom. Rooms will have comfortable space for clinicians and family members.

Modern hybrid operating rooms and advanced radiology suites will be equipped with the newest technology to apply the most contemporary treatments and procedures available – some of them created at The Ottawa Hospital – to save and change lives.

Research and education space will be integrated into care areas, making research, the training of the next generation of clinicians and scientists, and collaboration in medical discovery and health science core functions throughout the hospital.

Since early 2020, the hospital's planning team and the consultants from Agnew Peckham have met regularly with leaders and staff members from every program to discuss their space requirements and their projected patient volumes, with an eye on the future.

"As we met with the clinical teams, we encouraged them to think about the best way to care for patients, to work as a team, in new surroundings, without the limitations of our current site," said Lisa Young, Senior Project Planning Manager.

Major advances in information technology will have a major impact on how patient care is delivered in the new hospital. Virtual

care, now widely used during the COVID-19 pandemic, is going to change the way future patients access care.

"When we saw how successfully many teams incorporated virtual care, it showed us it could be done. We were able to revisit projected care volumes and practices to plan how that could become part of our service delivery model," said Karen Stockton, Executive Director of Planning and Development.

The team is grateful that hospital leaders and staff members were able to meet with them to plan the new hospital, despite having many competing priorities and dealing with the pressures of the regional pandemic response.



Executive Director of Planning and Development **Karen Stockton** (top) and Senior Project Planning Managers **Michelle Currie and Lisa Young** (left to right). "It's such a privilege to work on this once-in-a-lifetime project. It makes me proud of the whole team," said Lisa.

A hospital for northern light and the wonders of Ottawa weather:

HDR Architecture Associates Inc. at work on the new Civic design



Jason-Emery Groën, Vice President and Design Director at HDR Architecture Associates Inc., and lead architect for the new Civic project

If it were not for the four seasons in Ottawa, we would not have one of the most beautiful canals and the longest skating rink in the world – both in one place. This duality of weather extremes is a great example of what needs to be considered in the new Civic development.

"Design in our northern hemisphere requires us to balance the pragmatic with the idealistic in all that we do," said Jason-Emery Groën, Vice President and Design Director at HDR Architecture Associates Inc., and lead architect for the new Civic project. "Hospital buildings in northern regions have

periods between climactic extremes that call for simpler, more elemental design. Ottawa's climate requires our buildings to accommodate hot, humid summers as well as cold, dry winters. Our aim is to strive for a clear, elegant and elemental design, a celebration of the northern landscape and the beautiful site we get to build on."

In addition to the weather, the quantity and quality of daylight changes dramatically throughout the year at Ottawa's latitude. The human response to daylight as a key influence on physical and emotional wellbeing, healing and humour was lost on last century hospitals, which were built on large floor plates that prioritized clinical function over patient care, without much access to natural light for anyone, let alone patients.

"In older facilities, it was typical for hospital staff to never see 'the light of day', or for patients to have access to daylight only in their rooms," Jason-Emery said. "In our homes, it was long conceived that the optimal position for a bedroom was to face east, while the dining or living room faced west. This was to make the best use of the sun's path relative to our daily habits. Natural light is a fundamental basis of life."

Jason-Emery is one member of the team from HDR, along with Vice President Ingrid Felso, and Associate Michael Ryan, working on the preliminary design to support the functional planning that is set for completion next month. Their design work is guided by HDR project executive George Langill, former CEO of the Royal Ottawa Health Care Group,



Guangzhou R&F International Hospital, in affiliation with UCLA Health. Courtesy of HDR Architecture Associates Inc.

and a renowned health administrator in the province of Ontario.

The seasoned architecture team is working on simplifying wayfinding in the new hospital, making it easier for patients, visitors, and staff to orient themselves as they navigate the building by being able to see the exterior through windows that flood the interior with daylight.

"We want to create sweeping views of the exterior along major corridors and pathways inside the hospital," Ingrid pointed out. "We hope to create exterior pathways to access the hospital that are matched with parallel indoor walkways to provide a safe, alternate route during inclement weather. The key here is to make each indoor and outdoor route equal as an amenity so that we offer variety and year-round choice but also a visual connection to the exterior while being protected within the facility."

Given the need for greater infection control, the design of the new Civic will segregate public and staff access areas, patient transfers, and service areas to minimize contact among the flow of people and goods throughout the facility. This separation fundamentally changes the organization of the hospital and offers new flexibility in hospital reconfiguration and adaptability in the future.

The new hospital will integrate principles of 'leadership in energy and environmental design,' an internationally-recognized

green building certification system aimed at reducing CO₂ emissions and improving sustainability, energy savings, water efficiency, indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

The new design will accommodate 'architectural intelligence of the future,' contemporary diagnostic technology and testing, and digital connectivity to bring the best in virtual health care delivery to the bedside or to a remote community in the north.

"Our new hospital aims to seamlessly blend the efficiency of its functions with a contemporary approach to creating a beautiful environment befitting of our time," added Jason-Emery. "We believe that the site offers an amazing opportunity to create a place for wellness and convalescence, a facility that is truly designed to improve the human condition, and a landmark that will enhance one of the most beautiful sites in the nation's capital."



Ingrid Felso, Vice President, HDR Architecture Associates Inc.

A conversation with Tony Sottile, Chair of the Development Committee, member of The Ottawa Hospital Board of Governors



Tony Sottile on The Ottawa Hospital Board of Governors, Chair of the newly established Development Committee of the Board. Tony is a professional engineer with 32 years in the construction industry, recently retired as CEO of a major Canadian mechanical contracting firm.

What is unique in the challenge of building the new Civic development?

I do not believe there is any other industry where you bring together hundreds of workers from various unrelated trades, spend \$2 billion to create a complicated and functioning facility in an open environment, who then disband their teams – all in a span of four years! The new Civic development is expected to be a multi-faceted, four-year construction project, beginning in 2024 with the opening day in the spring of 2028.

How does the new Civic development differ from other projects you have been involved in?

Hospitals are complicated institutional construction projects because every conceivable system has to be planned for and constructed: complicated IT and communications systems, dedicated lab and operating room systems, and medical gas, among many other applications.

The integration of these systems is key to the success of this project. The project team will be applying the most sophisticated modeling and layout systems available.

What are some of the learned lessons you bring to the building of the new Civic?

Clear communications and alignment of responsibilities are the keys to make this project successful.

By building our expertise in the development and construction partnership, we will be in a



Guangzhou R&F International Hospital, in affiliation with UCLA Health. Courtesy of HDR Architecture Associates Inc.



The Sir Run Run Shaw Hospital Grand Canal Branch. Courtesy of HDR Architecture Associates Inc.

strong position to manage the process and the inevitable challenges and set clear goals to keep us on time and within budget.

How will the development committee encourage an 'on time, on budget' approach to the new Civic development?

The time pressures during the design and build phases will be enormous but they are manageable. We must create an

environment where hospital and construction culture can work hand in hand.

The proponent we select to construct the facility will have a strong track record on delivering successful complex construction projects, as well as minute-by-minute scheduling of ongoing activity, technical competency, and problem solving. The Ottawa Hospital will ensure that all is in line administratively and contractually. Their success is our success.

What are some of your first priorities?

We are spending time on addressing worker access to the site, on-site parking, storage, and site manoeuvrability. We want to relieve these pressures on the build team and the neighbouring communities. We also intend to stay in close touch with all the communities we serve, not just in Ottawa, but throughout Eastern Ontario, Western Quebec, and Nunavut.



Concord Medical Cancer Hospital Proton Therapy Center. Courtesy of HDR Architecture Associates Inc.

Astronomy, timekeeping and a scientific legacy: The Dominion Observatory

The Ottawa Hospital's new Civic development is surrounded by history – including the history of some of Canada's earliest forays into astrology.

Nestled in a group of historical buildings on the Central Experimental Farm between Carling Ave. and Dow's Lake, the Dominion Observatory was built in 1905.

The building was designed by Chief Dominion Architect David Ewart, who went on to design several other Ottawa landmarks, including the Royal Canadian Mint, the Canadian Museum of Nature, and Rideau Cottage.

When it was built, the observatory boasted the largest refracting telescope ever installed in Canada. The observatory used a transit telescope to track the passing of stars with precision to define the time in Canada, similar to the role of the Royal Greenwich

Observatory in Britain.

From the 1930s to the 1970s, when it was replaced by an atomic clock built by the National Research Council of Canada, the Dominion Observatory was the source of CBC Radio's daily 1 p.m. time signal broadcast.

In addition to its key role in timekeeping, the observatory was the primary reference point for measuring latitude, longitude and altitude in Canada. It was the site of notable Canadian contributions to solar research, studies of other stars and star systems, seismology and earthquake research, among other pursuits.

The Dominion Observatory and its heritage will continue to be revered for all time and celebrated for its historical and heritage significance.



The Dominion Observatory has a long legacy of scientific research, and will be preserved next to the new Civic development site.
Photo by William P. McElligott

Embarking on a “historic journey”: Interview with Foundation Board Chair Michael Runia

A world-class hospital plays a key role in any community and no one understands that more than Michael Runia, Chief Investment Officer at Nautical Lands Group and Chair of The Ottawa Hospital Foundation Board of Directors.

“To have a world-class hospital to care for the people of our region and to lead and support global research initiatives, you need a couple of major elements: you need world-class employers, academia, infrastructure, and world-class health care.”

When Michael joined The Ottawa Hospital Foundation Board four years ago, he was keenly aware of the specialized health care through his own interactions with the hospital, however, he quickly learned the important role that research played.

“What was exciting and eye-opening about joining the Board was learning where The Ottawa Hospital sat on a global scale when it came to research. I always thought it was important to be part a strong health-care facility, but I honestly didn’t appreciate the level of where we sat relative to other institutions across Canada and around the world.”

Today, as Foundation Board Chair, Michael is excited about the historic journey and thrilled to play a key role in making the new Civic development site on Carling Avenue a reality. “To be a part of something that will have an impact on many generations to come is phenomenal.” There will be a role for everyone in the region to play in making the new hospital campus a reality, explained Michael. “Part of my role as Chair is to support the Capital Campaign and to reach out to the community to drive donations and contributions to the campaign. This is

important for us to demonstrate to all levels of government our sincere commitment to this facility.”

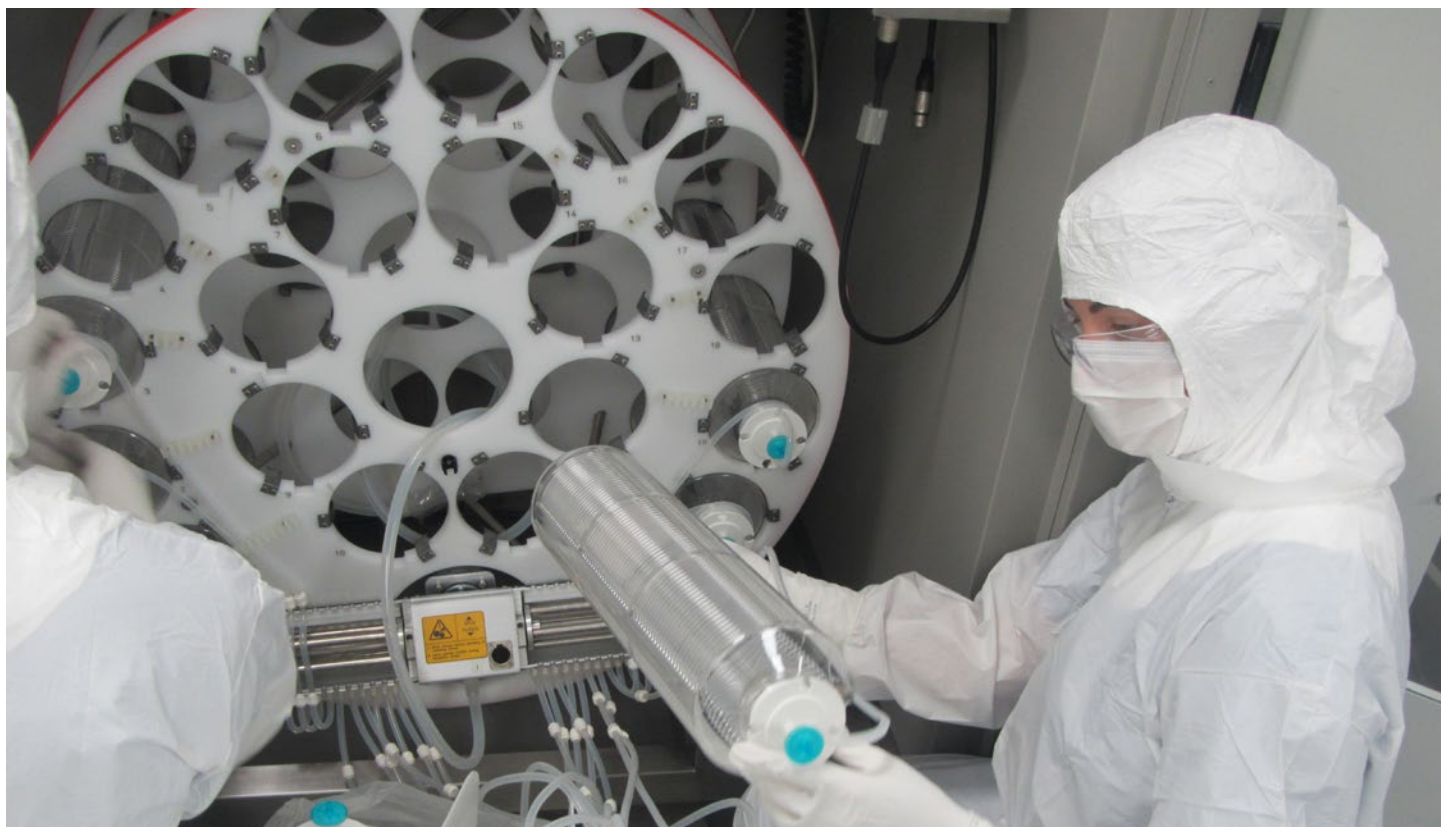
A modern state-of-the-art hospital combined with groundbreaking research and education benefits the region as a whole. “It means we attract the best talent around the world to our hospital – we see it with the top clinicians. It also helps local businesses attract top talent to their own companies, knowing we have a first-class hospital,” said Michael.

Michael is dedicated, along with his fellow board members, to making the new facility a reality. “This is our opportunity of a generation to really elevate what we as a region stand for and to build a world-class hospital. The community support – in any way possible – will be absolutely critical.”



Michael Runia, Chief Investment Officer at Nautical Lands Group and Chair of The Ottawa Hospital Foundation Board of Directors.

The benefits of research in patient care and outcomes at the new Civic



Thanks to The Ottawa Hospital's unique Biotherapeutics Manufacturing Centre, novel experimental therapies can be made onsite and given to patients in adjacent clinics.

From stopping multiple sclerosis in its tracks with stem cells to diagnosing blood clots with artificial intelligence to targeting cancer with immunotherapy, researchers at The Ottawa Hospital are saving lives and redesigning the future of health care.

While the thought of research often conjures up images of test tubes and microscopes, at The Ottawa Hospital, patients and families are at the centre of more than 2,000 research projects.

Some of these projects aim to improve our understanding of a disease, while others focus on developing experimental treatments. Still others focus on improving

quality of life and finding ways to provide more seamless, integrated care for complex illnesses. But whether the research takes place in a lab, a clinic or on downtown streets, improving the health of patients and families is always the ultimate goal.

Unique success in bench-to-beside research

When The Ottawa Hospital's cancer research labs were built more than 25 years ago, founder Dr. Michael McBurney had the radical idea that laboratory scientists and clinicians should work together. To accomplish this, the cancer research floor was built with alternating laboratory and clinical offices and shared spaces to foster

collaboration. Physicians treating cancer patients were embedded in cancer research labs, and basic science trainees were given opportunities to join physicians on patient rounds.

Over the years, similar practices have been adopted in other areas of the hospital, resulting in a unique culture embodied by the hospital's tagline "Inspired by research. Driven by compassion."

Thanks to this unique culture, research teams at The Ottawa Hospital have been able to launch more than a dozen world-first clinical trials using experimental therapies developed right here at the hospital. Some use viruses and immune cells to fight cancer, while others use stem cells to repair damage from heart attacks, septic shock and even COVID-19. Thanks to The Ottawa Hospital's unique Biotherapeutics Manufacturing Centre, these novel therapies can be made

on-site and given to patients in adjacent clinics. No other hospital in Canada has had this level of success in taking research from the lab bench to the patient's bedside.

Every patient is an inspiration

Whether because of an unusual symptom, a family history or even a drug that didn't work, every patient can inspire the clinical team to learn more and make things better for the next patient.

Research is essential for driving constant learning and improvement in health care, but it isn't always easy. That's why The Ottawa Hospital has created the most comprehensive system in the country for helping clinicians turn their ideas into research studies that can make a difference for patients.

The hospital's Ottawa Methods Centre is at the heart of this system. The Centre houses



The collaborative research environment at The Ottawa Hospital means that experts working on different diseases regularly share results and develop new projects together. Blood cancer specialist **Dr. Harold Atkins (middle)**, neurologist **Dr. Mark Freedman (left)** and advanced practice nurse **Marjorie Bowman (right)** pioneered a treatment that uses stem cells and chemotherapy to reboot the immune systems of people with certain kinds of multiple sclerosis. Today, this is accepted as a standard therapy around the world and patients across Canada regularly come to The Ottawa Hospital for this transformative treatment.



As one of Canada's top research hospitals, The Ottawa Hospital is able to attract and retain the most talented and innovative clinicians. **Dr. Darine El-Chaâr**, a high-risk obstetrician and associate scientist, returned to The Ottawa Hospital after training at The University of Toronto and Harvard Chan School of Public Health.

world-renowned experts in areas such as statistics, health economics, knowledge translation and patient engagement. These experts offer free consultations to any member of The Ottawa Hospital with a research idea – whether it's a physician, surgeon, nurse, respiratory therapist or laboratory scientist. They also lead training courses, participate in research seminars and provide dedicated support to more than 200 research projects every year.

Thanks to the Ottawa Methods Centre and other core research support systems, The Ottawa Hospital has grown to become one of Canada's top hospitals for research, with more than 2,000 researchers supported by nearly \$120 million in annual funding. This research, which wouldn't be possible without generous donations from the community, is saving lives and changing medical practice, not only in Ottawa, but around the world.

Once-in-a-lifetime opportunity

The new Civic development offers an incredible opportunity to build a state-of-the-art hospital from the ground up, with research and learning integrated into every clinic, laboratory and office area. This once-in-a-lifetime opportunity will put our region at the forefront of the next revolution in medicine, with patient and families always at the centre.

CheckPoint is a newsletter of the New Civic Project Development Team

Visit us at

www.newcivicdevelopment.ca

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