

# CITY SYSTEMS YEAR THREE: MAKING EDGE CITIES COMPLETE CITIES

Project Proposal Draft: July 2011

The Institute without Boundaries (IwB) is a unique centre for collaboration, innovation and design thinking. A dual curriculum combines high-level design theory and systems thinking with practical, applied project work to test these theories. Each year we accept 8-12 post-graduate students from a variety of disciplines into our academic program, and these students work together as a team over the course of the year on an over-arching major project.

It is this core practice of taking on real projects with tangible outcomes that makes the IwB such a unique program. The Institute partners with external organizations and community groups to apply design thinking to complex situations. Past project partners have included the Canada Mortgage and Housing Corporation (CMHC), the Ministry of Housing in Costa Rica, Habitat for Humanity Canada, Evergreen, the Toronto Community Housing Corporation and the Chilean City of Lota.

As the IwB enters the third year of the City Systems Project it will take on a new partner and continue to apply the principles of interdisciplinary design collaboration and holistic problem solving to a new challenge. The City Systems Project focuses on the design of the inter-connected built environment and explores both the tangible and intangible systems that make up the urban and suburban environments.

The proposed partner for the 2011/12 year is Markham, Ontario. This project will centre on examining the various systems that make up the municipality and proposing new and innovative sustainable urban practices that build on existing sustainable urban planning practice in the Town of Markham.

## PROJECT TEAM

At the core of the team are the 8-10 post-graduate students who will dedicate their year to this Major Project, but they won't do it alone. They will be supported by 30-40 dedicated part-time faculty (all IwB faculty are working industry professionals). During the course of the year they will also be advised and helped by a pool of more than 100 expert advisors, and will collaborate with students from numerous other post-secondary programs from within George Brown College (such as Architectural Technology and Graphic Design), as well as from local schools (such as OCADU, Ryerson, U of T, Guelph & McMaster) and even visitors from international design programs (such as DuocUC Chile, Politecnico di Milano, Italy & KEA, Denmark).

## PROJECT BACKGROUND

### The Town of Markham

Located on the northern border of the city of Toronto, in the heart of the GTA, the Town of Markham (population 310,000) was founded in 1791. Originally a small farming community, the town was also the centre for local industry until rail connection created competition from larger manufacturers and the area returned to its agricultural roots by the 1900's. It continued this way until WWII, when it began to experience a huge population influx and the municipality's identity shifted to that of a suburban, bedroom community, with many residents commuting to work in nearby Toronto. In the 1970's the population began to expand even further as the Markham became the destination of choice for many new immigrants. Today Markham (comprised of 5 original communities: Thorn Hill, Buttonville, Unionville, Milliken, Markham Village) has one of the most diverse populations in Canada. Just over half of its residents are new Canadians. It now has yet another urban identity as "Canada's High-Tech Capital" due to a successful economic development plan launched in the late 1990's. The town is now home to 900 high-tech and life science companies including Canadian headquarters for high profile companies like Apple, IBM, Motorola, American Express, AMD and Hua Wei Technologies.

The urban face of Markham today is the result of its dynamic growth and evolution. Traces of rural heritage are still prominent in places, with heritage buildings and traditional main streets contrasting the dominant suburban pattern neighbourhood developments. Abundant green spaces, large parks and areas of preserved wilderness make the town feel very green, however, large company "campuses", big-box stores and shopping malls have followed a traditional suburban development pattern resulting in an extremely car-centric urban layout. A successful public transit strategy, the Viva system, has increased modal share in recent years, however, it remains challenging for residents who want to use alternate modes of transportation such as walking or cycling.

Residents of Markham are proud of their beautiful town, and demonstrate their commitment to continually improving its livability, beauty and sustainability. Community involvement is an essential component in the success of several local initiatives such as the *Trees for Tomorrow* program that encourages and funds community tree-planting initiatives and LEAF (Local Enhancement & Appreciation of Forests) that provides home-owner subsidies, guidance and education about tree-planting and reforestation; the *Zero Waste* program that provides residents and businesses with waste reduction guidelines and sets an example with the Markham Civic Centre's 96.5% waste diversion success; and the *Markham Energy Conservation Office (MECO)* with the mandate of fostering a 'culture of conservation' in Markham.

Today the Town of Markham continues to develop from its identity as an "edge city" towards a "complete city". It has already begun to identify key development directions including: fostering a denser urban fabric with a greater range of housing types and price ranges; a stronger identity as a creative hub for innovation; greater integration of sustainable practice into everyday activities; an emphasis on collaboration and fostering new types of businesses (as with the Convergence Centre); and a strong urban infrastructure that supports these practices.

## THE CITY SYSTEMS PROJECT

With a commitment to leadership through design and social innovation, the Institute without Boundaries has been amassing knowledge, wisdom and capacity through design education, research and practice. With the Massive Change Project, the IwB examined the role of design in addressing social, environmental and economic progress. The next project, World House, explored the design of shelter that protects our global home while creating advanced residences that promote inclusion, sustainability, affordability, and technological and environmental responsiveness. In undertaking this work, the students, faculty and industry partners at the Institute have built upon four key pillars:

- Inter-disciplinary collaboration to solve complex problems and issues that face humanity
- Engaging stakeholders, users, communities and members of the public in the design process
- Developing holistic design practices that create robust, long-term solutions
- Taking on the challenge and risk of applied research projects for clients and documenting and exhibiting the results of our learning

The result of working with these principles has been a rewarding and transformative experience that questions preconceptions, stretches the boundaries of convention, and grows the whole person in extraordinary ways. As the Institute has progressed from investigating and reporting on the state of design to developing new knowledge systems for design and ultimately to implementing innovative design solutions for clients, it has become apparent that a secure and prosperous future for all requires balancing the desires of individuals with the needs of the community and the imperatives of an increasingly globalized society. Through the projects we have completed we have come to understand that design is fundamental to how we share resources in the world: design creates a framework that expands or diminishes possibilities. Our work has taught us that it is not the world of design that matters but rather the design of the world. Building on this knowledge the Institute moves from the design of the home with the World House Project to addressing the designs of the interconnected built environment with the City Systems Project.

A city is a system of humanity, integral to the development of civilization. The ability to not just live but to thrive, expand and innovate in dense quarters has defined us as a species and shaped our culture and our lives. In the last sixty years, the rate of urbanization and suburbanization of our planet has greatly accelerated. The city is everywhere, and with modern information and communication technologies, can literally connect most of the habitable space on this earth. With this capacity has come a growing realization that how we use our power and skills is more critical than ever. If we are to create a brighter future we need to act wisely and design more effectively. We need to think of the long term and on behalf of the other species with whom we share our world.

We have built infrastructure to distribute and support the industrialized lifestyle we enjoy. This infrastructure is coming to the end of its useful life span, and much of it is in need of repair, renovation, restructuring or replacement. If we are to make the massive change required for a world house, we will need to reinvent our cities. We will need to coordinate a balance between our personal ambitions, and our need for community and our global responsibility. The City Systems Project will propose new ways of living that will affect this kind of change.

**Year One** examined large-scale social housing projects built during the fifties and sixties, and proposed how they could be rejuvenated to respond to a world that may no longer be powered by fossil fuels and driven by automobiles. The Toronto Community Housing Corporation partnered with the Institute in Year One.

**Year Two** looked at small towns in rural locations and explored their part in a new global network of human-scaled settlement that is connected and vibrant. Issues explored included reducing the carbon footprint of small communities and regenerating the countryside. The City of Lota in Chile partnered with the Institute in Year Two.

**Year Three** will take on edge cities that have grown up around our major urban centres and which have been designed in a manner that makes sustainable urbanization extremely challenging. The Town of Markham, Ontario is the proposed project partner for Year Three.

**Year Four** will explore how a metropolis can layer and enrich itself through design intervention, transforming itself for the 21st century while maintaining its cultural identity while addressing need for renewal and growth. The City of Dublin, Ireland is the proposed project partner for Year Four.

## 2011/12 PROJECT THEMES

Students in Year Three of the Institute without Boundaries' City Systems project will examine the various systems that make up the municipality and explore and propose new sustainable urban practices in the Town of Markham. The final proposal would be a holistic urban plan focused on the main streets of Markham that would include design strategies and key interventions for Highway 7 and the other main streets of Markham: Main Street Markham, Main Street Unionville, Woodbine Avenue in Buttonville, Old Kennedy Road (TBC) in Milliken (and Yonge Street in Thorn Hill).

In addition to proposing new design strategies specifically oriented towards the Main Streets project direction, projects would also serve to enhance Markham's existing growth and economic development strategies and its commitment to sustainability. This would be accomplished through the following themes:

### **Making Markham a Sustainability Leader**

Enhancing Markham's identity as a sustainability leader through the strong branding of high-profile sustainable projects on each of the main streets targetted. This would build on the convergence of several of Markham's target development directions as well as featuring the town's commitment to sustainable development practice.

### **21<sup>st</sup> Century Infrastructure**

More sustainable and resilient infrastructure is an important tool in creating a truly 21<sup>st</sup> century city. The traditional model of infrastructure like roads, sewers and electricity distribution has been centralized; the future might be de-centralized by using "light" infrastructure that incorporate multiple smaller inputs and outputs and considers the "soft" infrastructure such as the social and digital as part of an integrated whole. This distributed model infrastructure would play an important role in the redesign of the main streets.

### **Sustainable Transportation Infrastructure**

Complete cities feature robust, multi-modal transportation infrastructure. If the Town of Markham is to successfully increase both residential and commercial density, a more diverse approach to transportation will be a key element. Currently, the dominant form of transportation in Markham is the car and the structure of roads supports this. Main streets are an ideal test-ground for mixing "competing" modes of transportation in order to enhance the public space, create safer streets and improve accessibility for all users.

### **Community Cultural Cohesion**

More than half of the residents of Markham are new Canadians. This diversity of rich cultural heritage represents a major opportunity for the town. Main street interventions are a prime opportunity to feature inter-cultural exchange that might take the form of shared business opportunities and cultural events and spaces.

### **Live/Work Residential Development & Intensification**

Supporting live/work businesses is an important step in the cultivation of an innovation-economy. Many new businesses get their start in people's homes, and go on to play a significant role in the economy as they expand into small- and medium-sized enterprises. But increasingly, this category of worker is leveraging the networked working world and

choosing to telecommute for much of their day-to-day work. Freelancers and home-based entrepreneurs can benefit from housing designed with integrated flexible working space.

### **Creative Industry Hubs and the Convergence Centre Model**

Expanding on the support of residents who choose a live/work model, local resource centres (such as the business focused Convergence Centre) that offer complementary business services such as shared meeting spaces, teleconferencing facilities, access to shared administrative/support services, peer-networking, training and education services.

## **SCHEDULE**

September – October  
2011

### **Research & Early Design**

IwB students will begin research about the Town of Markham, and begin to explore early design solutions for specific project themes. This phase will include regular visits to the town to meet with municipal staff, members of the community and to conduct field research activities.

September 30 – October  
4/5<sup>th</sup>

### **Fall Charrette:**

#### **Cities of the Future:**

#### **The Role of Digital Technology in 21<sup>st</sup>-Century City Development**

IwB students will act as team leaders for a small charrette (under 50 students) that will bring together students from George Brown College's Architectural Technology, Advanced Digital Design & Graphic Design programs, students from design schools around Ontario like Ryerson, Carleton and OCADU, and potentially international schools like KEA (Copenhagen, Denmark) and Politecnico di Milano (Italy). Each team will propose unique design solutions.

Note: A possible parallel event in Dublin could see teams of Irish design students also undertaking a digital technology themed charrette and presenting results via web.

November – December  
2011

### **Research Document & Project Brief**

As a result of their research, project work and fall charrette, students will produce a detailed research document that includes details about the Town of Markham and information about international precedents that support the project brief. The project brief will outline the final project details that the students will undertake in the second semester.

January – February 2012

### **Exhibit Design**

Students will design and produce an exhibit for the Interior Design Show 2012. The goal of this exhibit will be to promote the project, the program and the Town of Markham at this feature design show. Typical attendance is 50,000+ and this is often the highlight of the program's outreach during the year.

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March – April 2012

**Revitalization Plan**

Students will produce a detailed urban plan for the Town of Markham that builds upon and incorporates the work of the previous 6 months. The results will feature designs in keeping with the project themes and will be presented to the project partner client representative in the form of a detailed proposal.

February/March 2012

**Spring Charrette**

IwB students will each lead a team of students drawn from GBC programs, other post-secondary schools in the province and international schools for an intensive design charrette that will address one or more main project themes of the Major Project. Results feature strongly in the final revitalization plan.

May – June 2011

**Final Communication Strategy**

Project work will be packaged for communication to the public. This will include a book detailing the proposal and highlighting the relationship with the City Systems project, a public exhibition to be shown both at the School of Design and in the Town of Markham that promotes the project results, and a video that documents the process.



## GENERAL DELIVERABLES

General deliverables will be augmented by project and theme-specific deliverables as appropriate to the project direction selected and the project partners objectives.

### Research Document

The first semester will produce a research document that details the project context and explores surrounding themes that may support the solution. This would include:

1. Community profile
2. Design precedents
3. Issues around suburban-urban development
4. City context and larger scale improvement goals
5. Site analysis
6. Research conclusions

### Project Brief

Based on the research process, students will prepare a document that outline the specifics of the project work that will be undertaken in the second semester. This document will include:

1. Executive summary
2. Team roles
3. Schedule
4. Project objectives & considerations
5. Final deliverables

### Revitalization Plan

Following the guidelines set out in the project brief and in regular consultation with the Town of Markham, a sustainable development plan will be developed. This will include:

1. Design concept(s)
2. Concept exploration
3. Schematics
4. Budget projections
5. Material specifications (if appropriate)
6. Site maps and plans
7. Municipal impact evaluation
8. Programming options
9. Implementation strategy

### Exhibition & Publication

Project results will be promoted and shared as part of a public exhibition, a book and video project. These exhibits and publications will communicate the details of the project and share the information with the public both in Toronto and in Markham.



## RESPONSIBILITIES

**The Institute without Boundaries** will be responsible for coordinating project objectives and curriculum. This will include overseeing course development to support the project and client needs, advising on community and client interactions and working to bring expert advisors and guest faculty to support each phase of project development.

1. Schedule and coordinate regular student presentations of project development for each course within the program, and work with the various faculty and expert advisors to ensure a high standard of quality for all design results
2. Coordinate program development and ensure that all project deadlines and milestones are met
3. Create marketing materials, public information dissemination strategies and event coordination as applicable
4. Work with Town of Markham representatives to ensure their standards and expectations are being met and that their expertise is being effectively integrated into the program development
5. Provide working space for students, meetings, presentations and critiques
6. Oversee community engagement activities
7. Coordinate program faculty, guest lecturers and expert advisors for each element of the project
8. Provide design expertise and guidelines for project development
9. Deliver design proposal results for public dissemination
10. All faculty, staff and students will adhere to non-disclosure standards when dealing with materials that are not publicly available as provided by the Town of Markham

**The Town of Markham** will work with the lwB to provide information and logistical support, offer regular feedback about student progress, and coordinate community events and engagement throughout the year.

1. Attend meetings, critiques and student presentations as scheduled via video-conference or in person
2. Provide verbal and written feedback on key student proposals
3. Approve marketing materials or public presentation of information about the project / partnership
4. Provide local contacts - neighbourhood associations, community groups, institutions like schools, churches or sports groups
5. Provide logistic support for setup of community meetings and/or focus groups including working space in the Town of Markham
6. Support the lwB in creating a code of conduct for the staff/students when dealing with residents and staff
7. Provide the lwB with maps, site plans, drawings, and other materials that are required
8. Advise on each area of the curriculum – be available to talk to faculty as they develop course outlines, make presentations to the student group if necessary, attend critiques
9. Provide financial project support for charrettes, student scholarships and the Interior Design Show exhibit project

## INTELLECTUAL PROPERTY

The lwB and George Brown College and its students will retain ownership of any Intellectual property (IP) developed as a result of this project, and grants the Town of Markham permission to use, publish or distribute these materials with proper attribution to the Institute and author when applicable. Any commercial or for-profit use of IP developed will be separately negotiated on a case-by-case basis. The Town of Markham may use such materials for the purpose of advancing development opportunities or otherwise for its own purposes without cost.

This license shall be perpetual, irrevocable and without fee or charge. Assignment and sublicensing of this license to any third party is prohibited without the prior written agreement of the lwB, which shall not be unreasonably withheld or unduly delayed.

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## SCHEDULE [DRAFT]

### FALL SEMESTER

Date	Location	Event	Attendees
<p>Week One</p> <p>Wednesday (Sept 7)</p> <p>10-6pm</p>	Markham	Students' first visit to Markham; set up the Convergence Centre Office Space	IWB students & Faculty (Fiona, Susan S, Michelle, Mark G)
<p>Week Two</p> <p>Wed (Sept 14)</p> <p>Guest Lecture: 10am-11am</p> <p>Civic Centre Tour: 1-2pm</p> <p>Tours: PM</p>	Markham – Boardroom at MCC (Stephen Reserving)	<p>Stephen Chait – Overall Project Expectations from the client perspective</p> <p>Stephen Chait – Tour of the Civic Centre</p> <p>1-2 "My Markham" Tours (TBC)</p>	<p>IWB students &amp; faculty</p> <p>Stephen Chait</p> <p>Markham community members</p>
Week Three	Markham –	Guest Lecture:	IWB students &

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Wed (Sept 21)  Guest Lecture: AM  Tours: PM	Boardroom at MCC	Regan Hutchison, Manager of Heritage, Markham  Regan Hutchison – Tour of His Markham  1-2 "My Markham" Tours  Bike Tour of areas of the city?	faculty  Regan Hutchison  Markham community members
Week Three Friday (Sept 23)  3-5pm	IWB Studio	Major Project Critique	IWB students & faculty  Stephen Chait
Week Four Wed (Sept 28)  Lecture time Flexible	Markham – Boardroom at the MCC	Guest Lecture: Nadine Bailey on Diversity in Markham  Nadine Bailey – tour of her Markham  Field research in Markham – details TBC	IWB students & faculty  Nadine Bailey  Markham community members
Week Four Fri (Sept 30)	IWB Studio	Design Project: Product FINAL PRESENTATIONS	IWB students & faculty

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9:30-11:30am			<p>Markham Representatives:</p> <p>Town Architect: Ronji Borooah</p> <p>Manager of Parks: Design Linda Irvine</p> <p>Director of Planning:</p>
<p>Week Four Friday (Sept 30)</p> <p>Evening – 6/7pm (TBC)</p>	IWB Studio	<p>Charrette Launch: Digital Cities of the Future Charrette</p>	<p>IWB students &amp; faculty</p> <p>Director of Culture – John Ryerson</p> <p>Director of Sustainability Vicky McGrath</p>
<p>Week Five Charrette Saturday (Oct 1)</p> <p>Times TBC</p>	Markham	<p>Team research visits to Markham – 4-7 teams of students would visit Markham to explore targeted research case study sites / themes</p>	<p>IWB students &amp; faculty</p> <p>Students from other GBC programs, Toronto Schools, Int'l Schools, etc</p> <p>Markham community</p>

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			members and/or town representatives  Possible Charrette Research Contacts -
Week Five Charrette Mon (Oct 3) Tues (Oct 4)  1-2hours each approximately 4- 5pm	IWB Studio	Expert advisor sessions with charrette teams	IWB students & faculty  Students from other GBC programs, Toronto Schools, Int'l Schools, etc  Key Markham representatives (town planners, community liasons, economic development, technology)
Week Five Charrette Tues (Oct 4) Evening (5/6pm – 8pm) (TBC)	IWB Studio	Charrette: Final Presentations	IWB students & faculty  Students from other GBC programs, Toronto Schools, Int'l Schools, etc  Markham Representatives, community

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			members and expert advisors  Guests
Week Six Wed (Oct 12)  10am-6pm	Markham	Field research in Markham – details TBC	IWB students & faculty  Markham community members
Week Six Friday (Oct 14)  3-5pm	IWB Studio	Major Project Critique	IWB students & faculty  Stephen Chait
Week Seven Wed (Oct 19)  10am-6pm	Markham	Field research in Markham – details TBC	IWB students & faculty  Markham community members
Week Seven Friday (Oct 21)  3-5pm	IWB Studio	Major Project Critique	IWB students & faculty  Stephen Chait
Week Eight Wed (Nov 2)  3-5pm	Markham – MCC Boardroom	Major Project Critique: Research Report Draft One  MAJOR DEADLINE	IWB students & faculty  Stephen Chait AND Markham Representative(s)



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Week Nine Friday (Nov 11)  9:30-11:30am	IWB Studio	Presentation of Design Project: Systems & Services Results (Timeline Project)	IWB students & faculty  Markham representatives
Week Eleven Wed (Nov 23)  Evening?	Markham	Community Research Presentation  MAJOR DEADLINE	IWB students & faculty  Markham community members, representatives
Week Eleven Friday (Nov 25)  3-5pm	IWB Studio	Major Project Critique	IWB students & faculty  Stephen Chait
Week Thirteen Friday (Dec 9)  9:30-11:30am	IWB Studio	Major Project Critique: Final Research Report & CS Matrix Project	IWB students & faculty  Markham Representative(s)
Week Fourteen Friday (Dec 16)	IWB Studio	ign Project: Environment Final Project	IWB students & faculty  Stephen Chait

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WINTER/SPRING SEMESTER (Full Details TBC)

Date	Location	Event	Attendees
Week 3 (Jan 16-20) Exact Date/Time Flexible as per client availability	IWB or Markham (TBC)	End of Semester Client Presentation	IWB students & faculty  Markham Representatives
Week 4 Thursday (Jan 4) Evening	Metro Toronto Convention Centre	Interior Design Show Launch Party	IWB students & faculty  Markham representatives  Thousands of Toronto designers
Rest of Semester: To be confirmed week 1 of September			