UNIVERSITY OF TORONTO | SCHOOL OF CITIES

MUCP FINAL DESIGN SHOWCASE

2021-2022

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BRONTEFORWARD! - BRONTE BIA

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OBJECTIVE

To improve the walkability of the Bronte Business Improvement Area (BIA), a business district in the Town of Oakville, with special focus given to seniors in the area and their needs. Walkability is particularly important for seniors as it provides them numerous health benefits and grants them more equitable access to daily necessities. The selected strategies should improve three key components of walkability: safety, wayfinding, and vibrancy.

ENGINEERING DESIGN PROCESS AND FINAL DESIGN

The engineering design process aimed to develop solutions that maximized the impact generated while minimizing the cost and effort associated with implementing it.

Pedestrian safety at large intersections in the BIA were identified as a key area for addressing safety needs. The suggested strategy makes use of temporary curb extensions, which would narrow the roadway to make intersections more compact. This improves safety as it reduces the crossing distance at intersection, reducing pedestrians' exposure have to the traffic. It particularly helps seniors as they, on average, tend to have slower walking speeds and so it reduces their overall crossing time. The narrowing of the road leads to drivers turning more slowly. With slower turning speeds, the likelihood of a pedestrian's collision is reduced and the severity of collisions is also lowered. The temporary curb extensions would be made from paint and bollards, which would be cheaper to build than permanent ones. The solution offers high impact as intersections are the source of numerous pedestrian safety concerns. Effort is minimized as the Town of Oakville will be responsible for the implementation and can make use of the preliminary designs developed by the UofT Capstone Team.

Engaging the local community was identified as a means of addressing the vibrancy needs of the BIA. There are currently a number of events regularly held in the BIA, but there is no central platform to keep track of them. The suggested strategy would develop a webpage on the BIA's website which would display information regarding the events in the region. This webpage would be advertised through QR codes, which would be displayed in numerous locations across the BIA. With more access to information regarding events, these events would see higher attendance and engagement, thus improving the vibrant nature of the area. Events also offer more reasons for seniors to walk. This strategy leverages existing events as a means for generating engagement and will make use of a website developed by the U of T Capstone Team, thus minimizing the effort of implementation.

The use of directional signage was identified as a means of addressing both the wayfinding and vibrancy needs. Signage may be developed that shows pedestrians the directions to key landmarks in and near the BIA as well as the amount of time needed to reach the destination. Showing the time needed to reach the destination makes use of the psychology of positive messaging, which provides positive reinforcement to encourage completing a task (i.e. completing a walking journey) to improve the vibrancy component. Since the signs also show directions, it can improve the wayfinding component as well. The signs will show directions to locations not particularly well-known even to locals, thus maximizing the wayfinding impact. The signs will be built from inexpensive reflective material and can be installed on properties owned by the BIA and businesses, minimizing the effort associated with implementation.

IMPACT

The selected strategies will both address factors that may discourage pedestrians from walking (safety and wayfinding) as well as introduce components that can encourage people to walk more (vibrancy). This will result in seniors in Bronte walking more, thus improving their health and access to daily necessities. This will also increase the get, as a more walkable environment offers greater accessibility to the businesses.

PARK PEOPLE - HOMELESSNESS IN PARKS

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Team

Professor David Roberts
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PROJECT DESCRIPTION + OBJECTIVES

Park People is a charity that utilizes national and municipal programming, events, and researchinitiatives to mobilize parks for building stronger communities. Through their Canadian CityParks Report, they recognize that while homelessness is a major challenge for parks departments, few municipalities have implemented inclusive policies.

In September of 2021, the MUCP team of Scarlett Mackay, Victoria McCutcheon, Jessica Spitzer, Goldie Zhu, Maria Wilson, and Renna Cukier began working with Parks People to create a design solution that would assist park professionals with making park spaces more inclusive. The team is made up of fourth-year undergraduate students coming from backgrounds in the fields of Architecture, Sociology, Information, Environmental studies, Geography, ESL (Ethics, Society, Law), Urban Studies, and Political Science. Over the past eight months, this team has worked under the supervision of Parks People's Adri Stark and Professor David Roberts to assemble a guidebook as their final design solution.

PROBLEM STATEMENT

Parks People identified a need for more inclusive park designs that consider the needs of those experiencing homelessness in parks. They asked us to challenge traditional defensive design practices by creating a tool that can inform various park professionals and government bodies about inclusive design alternatives and best practices when designing park spaces.

The solution would need to be

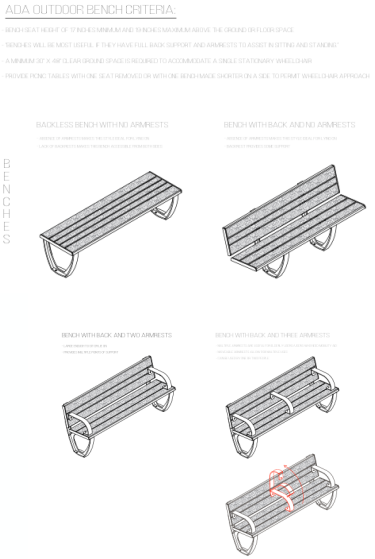
1. Accessible to a widespread audience
2. Informed by numerous park professionals and academics
3. Include physical prototypes of inclusive amenities.

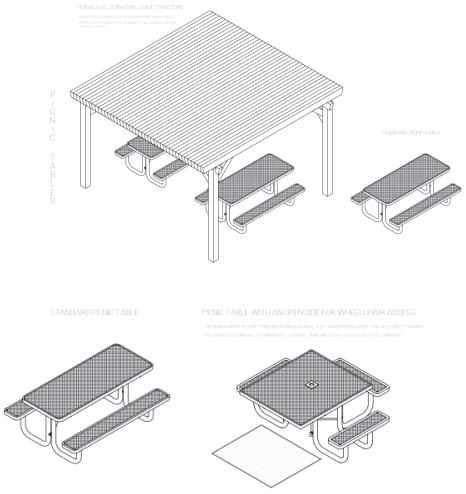
FINAL DESIGN SOLUTIONS

Over the course of this academic year, the team has worked to create a universal guidebook that summarizes our findings from interviews with stakeholders as well as our own research on better serving those experiencing homelessness in parks.

The guidebook, entitled 'Design for Dignity,' consists of four sections: (1) Meet Basic Needs, (2) Balance Safety and Privacy, (3) Use a Harm Reduction Lens, and (4) Build Community. Each section highlights the perspectives of those with lived experiences of homelessness, landscape architects, park professionals, and academics on the right way to approach inclusionary park design

Finally, we have created multiple physical design prototypes to help stakeholders visualize how the designs we have suggested could be implemented into park spaces





HOUSINGNOWTO - AFFORDABLE HOUSING

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BACKGROUND

In collaboration with our client, HousingNowTO, our project covers the site of 3933 Keele Street, one of 21 proposed sites for developing purpose-built affordable rental housing under the ongoing #HousingNow Initiative that aims to create mixed-income living on publicly-owned land. 3933 Keele is situated within the Keele-Finch area, of which is home to a population of predominantly lower-income families, citing a special need for community spaces and/or daycare facilities. Additionally, our site stands adjacent to the Finch West LRT Station, where our team has worked to design affordable housing with respect to the City's goals as they pertain to Transit Oriented Development (TOD).

PROBLEM OUTLINE

Affordable housing in Toronto has grown increasingly limited. While the city funds around 9,700 supporting housing units in permanent and transitional housing, the current waitlist for social housing in Toronto is approximately 97,000 people long, with an average wait time between 10-12 years (City of Toronto, 2018). As such, the city is in need of more affordable housing units.

DESIGN CONSIDERATIONS

Following our team's assessment of Metrolinx's existing plans for the LRT station and related architectural drawings regarding the station itself, we have found that the station box does not have the appropriate structure to allow us to build atop it, making this scenario an unviable option. Initially, our client had asked us to attempt to build on only our site, but after consulting with outside parties, issues due to our land constraints meant that it was impossible for us to meet our desired affordable housing unit target. Keeping this obstacle in mind, our team moved to consider a design that aimed to utilize a cantilever above the LRT station. Unfortunately, the cantilever idea proved to be outside of our proposed budget that targeted our goal of being a self-funded affordable housing development project. An expansion in conjunction with the adjacent land owned by Starbank Development proved to be the most viable design option that fulfills our building goals, but this alternative is not guaranteed and is simply a proposed remedy to our space constraints.

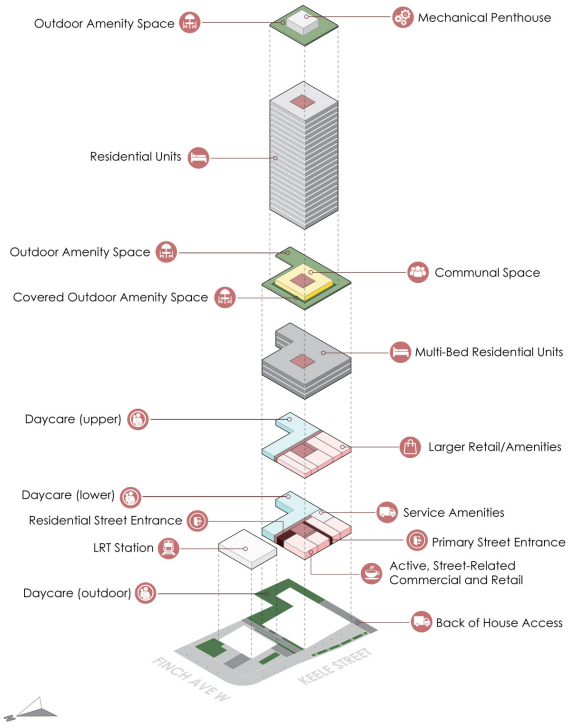
FINAL BUILDING DESIGN

Following our matrix assessment, the design that best fit the project requirements was the tall building, as it surpassed our goal of 190 units with a proposed 213 units — 107 of which would be affordable. Furthermore, this design allowed us to maximize programmatic use to benefit future residents and the contextual urban fabric outlined in the Keele Finch Secondary Plan. The plan outlined a need for retail frontage and civic spaces that created a vibrant public realm. In response to this, our project imagines ground floor retail and commercial space concentrated at the Keele/Finch intersection together with tree planting and landscaping. As per the knowledge and interests of our team, it became a primary goal of our project to embody social, environmental, and economic sustainability. We propose contextualized programming, feasibility for 99 years of afford ability during the lease period, and baseline considerations into architecture, landscape architecture, and management technologies to emphasize further our proposal's relationship to relevantquality of life and environmental reflections.

As per our review of the Toronto Green Standard (TGS), our sustainability considerations sought to maximize soft landscaping as opposed to hard surfaces on site. Furthermore, we recommend that most of this proposed green space utilize systems to help with stormwater infiltration. For the building itself we proposed populating the podium and roof of the building with green roofs. These spaces will be accessible to residents as part of our stormwater management strategy

MOVING FORWARD

As the city moves forward with more transit-oriented development, with reference to this project, it is crucial that transit infrastructure must be planned in conjunction with the surrounding area's developments — most notably for mixed-use and residential developments. Without an appropriate consideration of the area as atotality, future development plans may face constraints that could have been avoidable, an example being ourspacing constraints as a result of a failure to consider the option of building atop the LRT station. Goingforward, we hope that the City prioritizes appropriate planning for future affordable housing developments intransit-oriented communities in ways that are considerate of the location and its future residents.



CITY OF TORONTO - CONNECTTO

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INTRODUCTION

ConnectTO's MUCP group worked alongside the City of Toronto to help formulate a solution surrounding the issue of broadband internet accessibility that is still apparent in many marginalized neighborhoods of the City. Currently, thousands of residents face barriers relating to internet access within their own homes. The City recognizes that internet use is an essential part of people's lives and understands the necessity of creating a framework to more easily capture important data encompassing the livelihoods of residents who face this issue and to evaluate the nuances behind the digital divide.

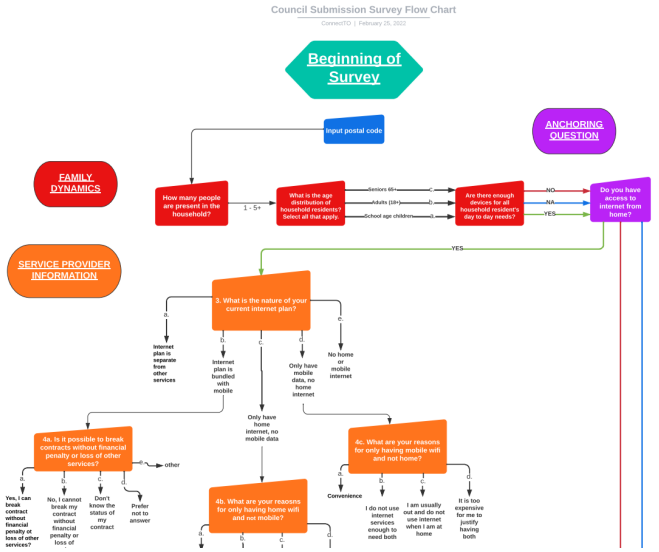
PROBLEM OUTLINE

ConnectTO has asked our team to investigate the social impacts, o pportunities, and limitations that current users of the ConnectTO program face. Previously, the Toronto Community Housing Corporation (TCHC), which is a non-profit organization owned and operated by the City, had conducted a Tenant Survey that looked at the effectiveness of internet services for users living in TCHC buildings across Toronto neighborhoods. While this survey provided the City with the groundwork for understanding user experiences, it needed to be strengthened and updated to include more detailed questions relating to neighborhood socio-demographics, affordability, unique experiences, citizen connection, and how the internet impacts individual users' quality of life. Additionally, the City needed a feedback tool that could be used repeatedly in the future on a long-term basis, and easily modified if needed.

FINAL DESIGN SOLUTIONS

The solution our team came up with was a set of robust and universal survey questions that the City could use as a user feedback tool. Prior to creating these questions, our team performed preliminary research on the neighborhoods they would be sent to and formatted our survey to be welcoming and accessible for diverse populations including seniors, youth, and those with disabilities. The survey acts as a framework by splitting the questions into three foundational categories: (1) Family Dynamics, (2) Service Provider Information and (3) Internet Use.

These categories act as guideposts for deeper and specific questions, as well as highlight the important aspects that help answer questions regarding accessibility needs. The survey questions were created with robustness in mind, as it was important to make the questions and potential answers cover as much detail in responses as possible. Additionally, question funneling was also a feature of the survey that is important to keep it as user friendly as possible.



ARTWORXTO - THE YEAR OF PUBLIC ART

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BACKGROUND

The Toronto Public Art Strategy developed with ArtworxTO and PROCESS is a ten-year plan that aims to strengthen and regulate the City of Toronto's commitment to public art. The strategy presents a vision to have public art spread all across Toronto and enhance community engagement through an understanding and celebration of the history, diversity and culture tied to each site.

PROBLEM STATEMENT

As the city continues to deploy strategies to enhance public art throughout the city, there continues to be a lack of public art services outside of the downtown core. Through an exercise in mapping in *Figure 1*, all art-related resources and community organisations in the city are located, to highlight the absence in neighbourhoods outside the core. An implementation plan to provide creative resources in public spaces would encourage artists to build relationships with the local community and allow for a celebration of neighbourhood diversity while contributing to Toronto's social and economic wellbeing.

RESEARCH PROCESS

An extensive literature review and consultation process was performed through the distribution of a survey as well as one-on-one interviews with a range of stakeholders from experienced to emerging artists, art consultants, architects and local arts service organisations (LASOs). Derived from their advice, concerns and suggestions we arrived at the following requirements to integrate into the proposal: skills and technical training, professional development, community engagement, historic legitimation, resource accessibility, improved transparency and interdisciplinary partnerships.

FINAL DESIGN SOLUTIONS

Public Art Service Stations are proposed as shared, mobile studio spaces distributed to connect community members with local artists in neighbourhoods of Toronto that lack arts-related organisations and resources. PASS will operate in shipping containers that are reconfigured to store various art supplies for public access. PASS will be located in public spaces such as parking lots or green spaces, measured by an accessibility criteria and selected by community members through the PASSBook highlighted in Figure 2. The services provided are designed for users to share resources in a collaborative space, encouraging interdisciplinary partnerships and placemaking activities to emerge through the creation of public art. A four-phase implementation plan for PASS (Community Consultation, Station Distribution, Workshop Initiation and Impact Assessment) is formulated for ArtworxTO as illustrated in Figure 3 within the Pilot Project in Victoria Village.

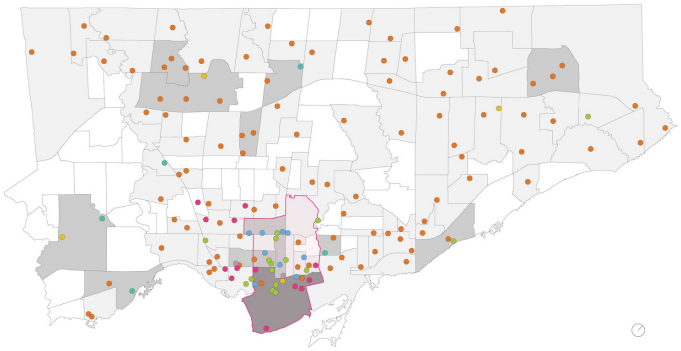

Figure 1: Map of Resources

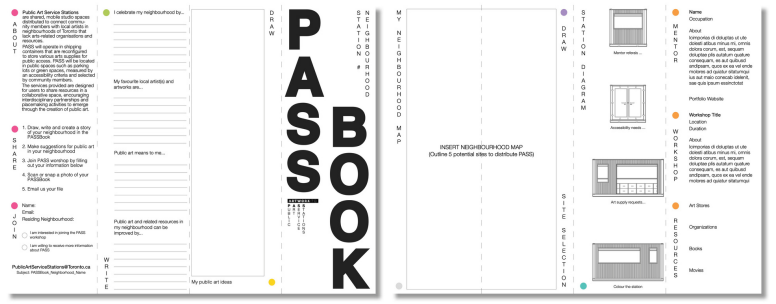

Figure 2: PASSBook

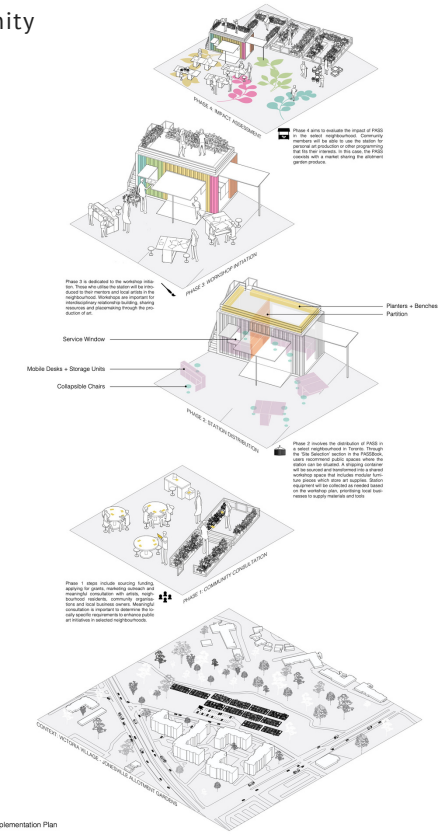

Figure 3: Implementation Plan

WAVELENGTH - REIMAGINING MUSIC VENUES

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PROJECT DESCRIPTION

The 'Reimagining Music Venues' student team has developed a dynamic mobile music venue concept proof in consultation with Wavelength Music. The team draws on expertise from the Daniels Faculty of Architecture, the Faculty of Information, the School of the Environment, and the Department of Geography & Planning to support Wavelength's ongoing advocacy for the live music sector during the COVID-19 pandemic and beyond.

Music venues offer social, artistic, economic, and civic value to the urban landscape. Though Toronto has a storied history of live music venues, ongoing issues, such as gentrification and venues' reliance on bar sales, have been exacerbated by the COVID-19 pandemic and pose an existential threat to their ongoing vitality. The project explores new models for performance and presentation that are aligned with local needs and contexts.

FINAL DESIGN SOLUTIONS

The design solution, based upon principles of operational excellence, sustainability, and value to stakeholders, oriented itself about an equitable recovery in the post-pandemic era to support artists, promoters/presenters, venue owners and operators, and audiences across a variety of musical styles and demographics. With these objectives, a combination of literature reviews, market research, and a design review panel with key stakeholders were conducted to explore venue and production enhancement tools. Mobile stages appear in a few formats to varying degrees of customizability; the stage truck seeks to improve upon these previous models to fill a gap in the existing market, and cater to the project-specific stakeholders. The concept of a vehicle-based venue, fully equipped with sound capabilities and customization tools, was identified as a dynamic resource to the music industry, particularly through its potential to unlock new sites and artistic approaches to live music performances. Inspired by food trucks and other urban mobile units, the stage truck repurposes a Chevrolet P30 to include autonomous electrical, sound, rigging, and staging capacities. It has a fold out stage to accommodate up to six performers, with full safety considerations and state-of-the-art equipment. Build cost and revenue projections estimate the portable venue to be a significantly more affordable option for users, and can be operated under a private sponsorship, social enterprise, or publicly-funded model.

IMPACT

In the future, this work offers a blueprint to build, develop, distribute, and refine the venue as an accessible piece of infrastructure that caters to Toronto's music scene, and advances a reimagining of the urban artistic terrain.

TORONTO LANDS CORPORATION (TLC) - REIMAGINING SCHOOL YARDS

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Professor Matti Siemiatycki
Supervisor

BACKGROUND

This project aims to create new research-based innovative designs to incorporate schoolyards within Toronto's existing urban landscape that are safe, functional and well integrated within the community. These designs include the use of condo podiums, rooftops and neighbouring greenspace.

The Toronto District School Board (TDSB) currently faces many compounding challenges. Rapid intensification has led to schools being as much as 250% overcapacity and there are various concerns of access for students to their local schools. In managing the real estate holdings of the TDSB, the Toronto Lands Corporation (TLC) finds it difficult to address these developmental pressures through renewing and repairing traditional low-rise school designs under the current financial model. The TDSB is looking to create a new design formula for outdoor school spaces that can be integrated within mixed-use urban spaces. With that, potential developments must operate and examine current policy and processes that may cause tensions when designing mixed-use school spaces such as the City Wide Zoning By-law 569-2013, the TDSB Elementary School Design Guideline, and the Ministry of Education Funding Formula.

Program plans for West Don Lands (left) and Christie (right). West Don Lands is the site for a three-storey school that serves 450 to 550 students from JK to grade 8. Christie is the site for a 27.7-acre mixed-use development with the opportunity for 2 elementary schools (TDSB and TCDSB schools) and serves 1,100 students

PROBLEM OUTLINE

The TLC is facing increasing pressures to address capacity and maintenance needs in the TDSB schools and is considering design and procedural shifts to better incorporate schools into redevelopment plans. It hopes to examine the disconnect of outdoor school spaces within the growing context of Toronto and create innovative models to better inform and guide outdoor play and educational spaces for schools in mixed-use developments. The TDSB is also being encouraged to evaluate pedestrian and vehicle circulation, safety, security and community ownership, microclimate considerations, site dimension challenges, and designs for effective site monitoring around potential new school developments.

REQUIREMENTS

- Cost and Financing: acquisition, construction, and maintenance
- Functionality: size, shape, accessibility, and ambience
- Health and Safety: sunlight, air, supervision, containment, and materials
- Community Integration: inclusivity and surrounding context
- Sustainability: environmental impact and durability

DECISION MAKING PROCESS

- Identify Needs: Identify a site in need for incorporating school yard space in mixed development
- Identify Characteristics: Identify characteristics of the site through the summary of best practices
- Apply Practices: Satisfy design principles applicable to the unique characteristics of the site
- Design solution

DECISION MAKING PROCESS

The final design also included research on policy (Section 37 of the Planning Act), accessibility, signage and fencing. Allocation of program spacing was done in reference to “Transforming the Schoolyard: How local school communities design and build their playground learning environments” provided by the TLC.

For West Don Lands (top), the design strategy includes the use of rooftop space and Corktown Commons. Christie(bottom) is integrated into the 8,840 m2 condo podiums and adjacent park space.

CITY OF TORONTO - REMOTE SENSORS

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PROJECT DESCRIPTION + OBJECTIVES

Currently, a wide variety of remote sensors that are both publicly and privately owned, are deployed in Toronto. Some everyday sensors include red light cameras and environmental detection sensors. While a certain number of sensors are known to individual City divisions, there is no centralized source of information on the types of sensors that exist in the City and what information is being collected and stored. Additionally, there is no easily accessible reference point that gives citizens the ability to identify and understand sensors that they may see in the public realm.

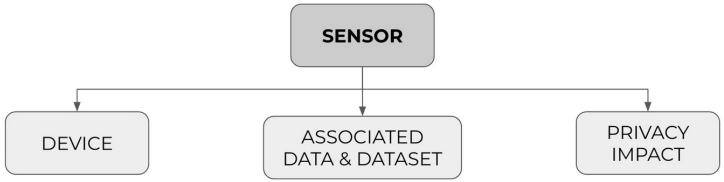
The first objective is to create a registry that comprehensively describes remote sensors in the City of Toronto. The registry should ensure that all citizens and other stakeholders can easily find sensor information that they care about on the City's website.The registry should serve to grow citizens' understanding of sensors and their uses in the City, as well as impact he public's trust in the City's ability to manage increasingly complex digital infrastructure.

ENGINEERING DESIGN PROCESS AND FINAL DESIGN

The team has conducted a jurisdictional scan, policy review, and a mixed method stakeholder inquiry from internal City contacts and remote sensor subject matter experts for the implementation of a public sensor registry to be deployed on the www.toronto.ca website. We adapted design choices by considering existing City web accessibility standards and corporate identity recommendations. The team designed an initial prototype using a wire framing software, Figma. Multiple prototyping iterations and usability testing phases were conducted to yield the final design. The design represents sensors in a visual interactive map and provides more detailed information about each sensor in a table. Additional features include a sensor privacy classification and dataset requests to accommodate for a diverse range of user needs and public interests.

The registry is intended to be widely used by anyone interested in sensors in the City and is designed to not require prior technical experience or familiarity with sensors. Additional features have been added to empower researchers: sensor entries can be linked to associated open data collections on the City's Open Data Portal for further analysis, and users are also able to download the full sensor dataset (i.e., information describing the sensors) for meta-review of sensor technology in the City of Toronto.

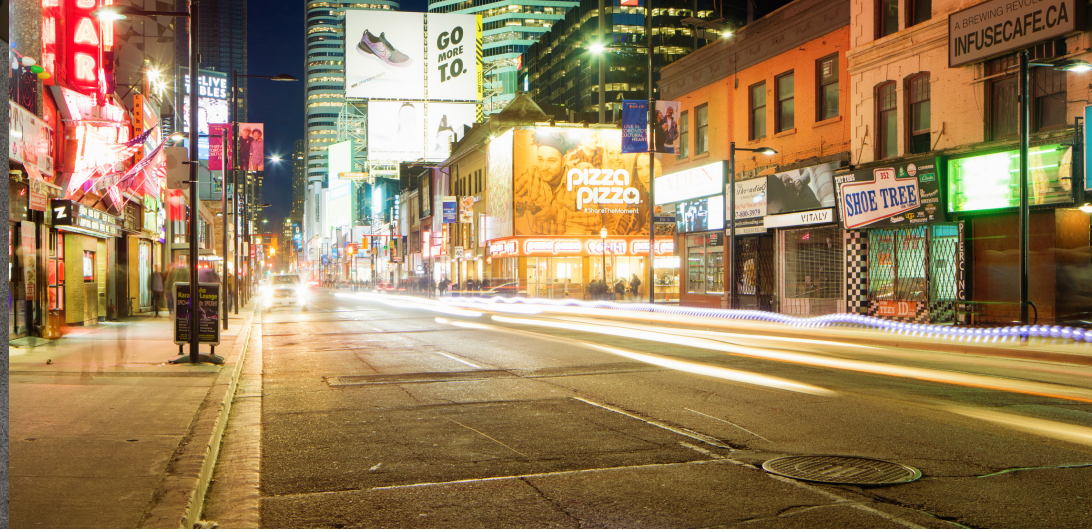
Required Attributes to Describe a Sensor



IMPACT

By creating and maintaining a robust, detailed, and consistent registry of remote sensors in Toronto's public realm, we will have enabled greater dissemination of information to Toronto' sgenera lpublic. In doing so, the registry will permit the public to identify and understand what types of sensors exist in the places they frequent, and be able to access available datasets and technical information.

City employees and other stakeholders will also be able to use the registry to improve programs and keep themselves informed. Continuous upkeep of the registry will create transparency between the City, third-party stakeholders, and the public, encouraging the development of trust in the City's technology management and around data collection



CANADIAN URBAN INSTITUTE - RESTORE THE CORE

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Team

Professor Karen Chapple
Supervisor

INTRODUCTION

COVID-19 has increased the rate of vacant office spaces, which has emptied out Canadian city cores, however,underutilized commercial buildings have the potential to be revitalized. The outcome of our project is a tool that uses a holistic framework for assessing commercial buildings that incorporates a variety of stakeholders including building owners, property developers, city planners, and architects.

DESIGN PROCESS + FINAL DESIGN

During the design process, we conducted a comprehensive literature review and executed a stakeholder engagement plan to gather input and information from CUI and professionals in building management, redevelopment, and city planning. We identified six criteria categories for the framework: Amenities, Economic,Policy, Social, Architectural and Environmental. To test and refine our framework, we chose the city of Regina because it lacks residential buildings, but has several underutilized commercial buildings that could be converted to residential use.

After considering our options, we decided our framework's objective would be to identify the sites for conversion that maximize public good. We would apply a range of criteria from each of the 6 categories, and arrive at ascorecard for each potential site. Our framework utilizes a point/scoring system because it can help speed up the process and help CUI identify gaps in their knowledge when it comes to assessing buildings for conversion. We consulted a wide range of stakeholders to gain a holistic view of needs in the community, then adjusted our evaluation criteria and weights accordingly. To select our two buildings for testing, we conducted an interview about the criteria and building spaces with a city planner from Regina, who introduced us to a building owner experiencing the problem of building vacancy downtown.

Our tool is a graphical user interface (GUI) calculator using Python. It allows the buildings and neighbourhood traits that we collected in our research to be quantifiable. We tested out metrics on two buildings in Downtown Regina, which were identified in our interviews with local stakeholders, to consider the accuracy and usefulness of our metric for assessment. We designed the scoring system to align with our project values, which includes addressing affordable housing, sustainable development, and the revitalization of city cores. We hope this prototype will act as a roadmap for using the scoring systems in other provinces and cities.

IMPACT

This framework and tool will improve the efficiency of making assessments on the viability of converting office buildings to residential spaces. Stakeholders will have a clear and comprehensive feasibility to test and evaluate the feasibility of building conversions, that includes social, community and environmental needs. This tool will impact how urban planning and building con versions can be incentivized through the use of technology and automated assessment.

SCHOOL OF CITIES