



Reimagining Ontario Tech's Physical Campus Spaces:

A Paper to Foster Community
Discussion on What is Next

February 2021

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1.0 Preamble

Universities are rethinking their physical spaces to align with how people teach, learn, research and work today, and seeking to understand how those needs will continue to evolve over time. Ontario Tech wants to employ an innovative approach to space design and allocation within our existing and future facilities. This is based on a desire to maximize efficiency while creating more space for a wider variety of learning, research, and social spaces for all campus community members. However, rethinking our physical spaces is also a product of our economic reality as institutions of higher education are challenged by an increasingly uncertain fiscal future.

The public-health directives and restrictions imposed as a result of COVID-19 have forced us to find alternative ways to work and study. We have transitioned to using virtual spaces while at the same time reducing our presence within our existing brick and mortar buildings. This leads to a series of questions, not the least of which is how should we envision our use of virtual and physical campus spaces going forward? Will our use of technology and physical space change? Are there opportunities for us to reimagine our use of such spaces to address some of our longstanding space challenges? Last but not least, what opportunities might emerge if we combine this discussion with a vision of improving our student, staff, and faculty experiences for the future? By reimagining our use of space and establishing new space allocation targets, we will begin to address the institution's historical challenge to provide social spaces and maintain equitable space allocations while at the same time restraining the growing cost of building operations and maintenance.

The proposed grand challenge for discussion is how can we work together to reduce our total office and traditional lecture theatre space to allow us to reallocate more space for dynamic learning and research activities and reduce our reliance on leased spaces?

There is no one-size-fits-all approach. Each unit must think about how they can contribute to this effort so that we may become a more progressive university where everyone is engaged and the campus is literally a hub of activity.

As you read the discussion paper, we ask you to consider the following questions:

- How do we have conversations to best articulate this vision and its implementation?
- What information do we need to understand in order to move forward?
- What wasn't working before/isn't working now and how might we use this as an opportunity to address those issues?
- How do we define the right balance between remote work and connectivity on-site?
- What impact would a move to increased (or different) blended or hybrid learning options have on university operations and course scheduling?
- How can shared areas be modified/located to better support research collaboration?
- What policies/processes need to be developed or reshaped to meet our vision?
- How can we incorporate environmental sustainability and inclusion considerations?

We have the opportunity to create new forward-thinking collision spaces for learning, research and innovation to ensure meaningful connections are made when our student, faculty, staff and partners are on campus. Creating an environment that supports the desire to stay on campus, when on campus, will lead to deep discussions and engaging events. Importantly, we are articulating a vision that will allow for maximum flexibility in space usage while at the same time allowing for Ontario Tech to be seen as a hub for learning, research, and social enrichment within the Oshawa City Centre, Durham Region and Northumberland County.

2.0 The Vision: Build Forward Better

Our space design vision is built on the concept of becoming the best research-intensive and dynamic-learning university in Canada. To accomplish this transition, our [Integrated Academic-Research Plan](#) and our [Strategic Research Plan](#) will guide us. As highlighted throughout these plans, we currently find ourselves immersed in an environment filled with tremendous opportunity and heightened expectations amidst immense societal, economic and technological disruptions. **Under these circumstances, we appear to be driven to the conclusion that continued adherence to a traditional university model is not, and will not be, a viable option as the world around us continues to change. This requires innovation and a forward-thinking approach¹.**



As difficult as 2020 has been, it has also prompted us to think about the possibilities for the future of our campus. By complying with government and public-health directives and largely eliminating in-person usage of campus facilities in response to COVID-19, we have all been forced to operate using a different space usage model from which longer-term lessons can be learned. This presents us with an opportunity for innovation and strategic advancement as an institution.

Our strategic priorities will guide us as we create the learning environment that we all envision—one where purposely dedicated spaces supports the creation of a dynamic learning environment. This will require us to re-purpose potential underutilized space to the type of spaces our students, faculty and staff crave: research, teaching and practice lab spaces; meeting places; and social places. Such spaces naturally bring people together and create opportunities for engagement. As we plan for the continued expansion and evolution of our on-campus spaces, we must ask ourselves: **How would an innovative, tech-focused, forward-thinking university reimagine its campus spaces for the future?**

We aspire to be the most forward-thinking and tech-focused university in Canada. We leverage technology to support the delivery of all aspects of our teaching, research and operational programming. However, we recognize that an increasingly digital, tech-focused learning experience must be **counterbalanced** by building and maintaining physical space on our campus to nurture exceptional one-of-a-kind experiential learning and research opportunities.

¹ Smith Group (2019). Evaluating the user experience, Tradeline Space Strategies Conference.

3.0 Space Assets Reimagined: A New Campus Experience

Reimagining our spaces invites creative, innovative and inspirational thinking. It will also generate some discomfort as some decisions will lead to disruption and change. One opportunity is to consider the merits of a quality pedagogical approach that involves digital, tech-focused learning large-group experiences supported by physical spaces, which foster small-group engagement. **Transforming the design of our physical campus based on this possible approach gives rise to** potential opportunities for change including:

- Reducing the need for large lecture halls while simultaneously adding more spaces for dynamic, hands-on learning experiences.
- Increasing the use of virtual services resulting in less space required for in-person support services. This will allow some private offices to be converted to work spaces for collaborative work interactions.
- Creating more multi-purpose research spaces to encourage collaboration and inter-disciplinary research in conjunction with the creation of core support areas (e.g., Machine Shop or Materials Characterization Facility) to better facilitate this type of activity.

Our success in **building forward better** will be determined by our ability to sustain continued growth in enrolments, and therefore enhanced and predictable revenue streams. Simply put, resourcing our institution—including investments in our physical and virtual infrastructure over the immediate and long-term—can't be dependent principally on government support. Our potential should not be reliant on, or limited by, the government's ability to fund new capital expenditures and the accompanying operating costs associated with the growth of a traditional university model. Instead, we must focus on our strategic priorities and leverage our points of differentiation to attract students in increasing numbers² to a highly engaging educational and social environment.

The quantity and quality of our space significantly affects the recruitment, retention, and productivity of our students, staff and faculty. In the absence of further investment in facilities, it will be increasingly difficult to provide sufficient space to support innovative learning and high-tech research environments. The Council of Ontario Universities (COU) sets space standards that may be seen as a **target** to be achieved, a **minimum** to be met, a **maximum** not to be exceeded, an **optimum** to strive for, or a **guideline** to be used as a benchmark. These standards are expressed as net assignable square metres (NASM) of usable space.

² Supporting growth to 20,000 students over an unspecified time as seen in section 5 of the [Campus Master Plan](#)

In 2019, we were at 80 per cent of the COU standard for instructional space (Table 1). This calculation includes more than 20,000 NASMs of leased space. This is by far the greatest percentage of leased space for any Ontario university. To meet the standards we need to increase our current space by 13,000 NASMs. To eliminate future leases and reach the COU standards, we require a construction investment of more \$200M.

Table 1. Inventory of Physical Facilities

Category Description	% of System	% of Standard
Classroom Facilities	114%	90%
Teaching / Research Lab Space	90%	82%
Academic Dept Office & Related Space	47%	78% ³
Library Facilities & Study Space	54%	60%
Admin Office & Related	108%	92%
Non-Library Study Space	69%	46%
	78%	80%

We don't want to conform to these standards. We want to be different than the others. We want to create our own indicators. Given our current and projected demands for space and the anticipated scarcity of immediate or future financial resources to build and maintain them, we must explore new and innovative options. To achieve this, we must optimize the use of our existing space. Today, our space structure does not support the dynamic and highly engaged learning and research environment we want to be known for, which is why we must reconfigure and renovate. We propose a discussion with users to look at the following grand challenge: **Where are the opportunities for us to work together to reduce our office and lecture theatres by an average of 50 per cent?**



³ Our Academic Offices total is lower than the system, yet faculty offices are 120% of the standard while research associates / graduate student spaces are at about 25% of the standard.

3.1 The Future of Learning

Compared to provincial competitors, and likely because of our roots in technology, Ontario Tech University community members have demonstrated our ability to adapt to technological change. The new Integrated Plan⁴ reaffirmed our long-standing pledge to embed technology throughout our market-driven educational programs, our learning environments and our research enterprise. A commitment to contribute to economic and social cohesion within our communities via campus-based learning (i.e. **creating a sticky campus**), and engagement in socially relevant research projects with industry (i.e. **partnerships**) are our differentiators. Importantly, these commitments align with an anticipated global **paradigm shift** within higher education⁵ over the next 20 years. Experts predict an increase in the delivery of degree programs through virtual platforms and an emphasis on research that is relevant and impactful for the communities where we live and work. Doing so will make higher education increasingly **accessible and responsive**, unconstrained by geographical or financial barriers.

While we have yet to define how our community will participate in this global shift, we are leaders in the use of technology to deliver high-quality online educational experiences in the province. We hope to leverage this advantage to improve access to education, while at the same time challenging ourselves to offer the best on-campus learning experiences in the country. **The next great challenge for universities—one that is a priority for employers—focuses on procedural and conditional knowledge acquisition by offering top-notch and high-quality hands-on and experiential learning opportunities.** For a long time, universities have focused primarily on increasing quantities (e.g. large group lecture settings) while ignoring the resulting decreases in the quantity and quality of small group hands-on offerings (e.g. tutorials, labs). University instructors often teach as they were taught with pedagogical change being driven by a small number of classroom innovators. At Ontario Tech, we have faculty who are considered leaders in the delivery of online education. Now is the time to enhance our online offerings by becoming leaders in the creation and delivery of quality face-to-face dynamic and highly engaging learning activities.

⁴ See <https://shared.ontariotechu.ca/shared/departement/provost/integrated-plan-full/integrated-plan-brochure-full.pdf>

⁵ As one example, see van der Zwaan, B. (2017). *Higher education in 2040: A global approach*. Amsterdam: Amsterdam University Press and University of Chicago Press.

3.2 What We Already Know About Using Technology in Learning

Prior to the pandemic, Ontario Tech already had some courses delivered via a 50 per cent online and 50 per cent in-class approach. In many cases, this includes presenting lectures online and tutorial or lab content in a traditional face-to-face setting. However, as we are learning from our faculty, changes to this approach are limitless and there is an opportunity to tailor courses to meet the needs of each individual class, year and discipline.

Choosing to designate lectures as being online with smaller group gatherings (i.e. labs, tutorials, etc.) offered face-to-face makes sense because of the type of knowledge that is gained in different settings. Many of our degree programs already require the use of a blended-learning format. We want competent and capable graduates who will go out into the world career-ready. We know we do not want to be an online university and these degree programs cannot be taught fully online as students need appropriate hands-on training to develop skills fundamental to their future careers. Understanding how to optimize on-campus, physical space and opportunities for students to develop these skills will allow us to continue to differentiate our programs and learning environments from those at other institutions.



3.3 Moving to Telework

The traditional reasons cited for needing a private office are evaporating, especially as mobile computing allows us the flexibility to work from almost anywhere⁶. One key to flexible office space usage is effective scheduling of the workforce. There are numerous variations that may be developed depending on unit needs. The increasing premium placed on space at our university can be offset if we acknowledge changes in how people work. For example what if a single office was time shared by two people—effectively cutting our space needs in half—or if a double office was shared by more than two people?

Globally, the COVID-19 pandemic has clearly illustrated that change is possible. In a matter of weeks and out of necessity, institutions of higher education discovered that they can securely and efficiently telework. We know this has not been easy. For many, this meant significant adjustments to balancing work and family responsibilities. It has required our staff and faculty to continue to perform their duties while struggling with one of the biggest health security challenges we, as a society, have faced in our lifetime. It must be acknowledged that the circumstances we all faced under the COVID-19 lockdown do not represent a model telework experience.

Going forward from this experience, we have the opportunity to establish best practices for telework success while building on what we already have. We have heard from our employees that there are also positive aspects. For many, the ability to work remotely, even part time, offers opportunities. Globally, telework has increased over the last decade. Generally, this movement has been driven by employees desiring increased flexibility. Studies reveal as much as 80 per cent of employees want the flexibility to work away from the office at least part time⁷. For millennials, employers that offer telecommuting are considered highly desirable when considering job offers⁸. For this reason, an increase in telework can be an ideal recruitment strategy for talented individuals. The statistics show that the appeal of telework is high, yet it must be acknowledged that not all jobs can be done remotely.



⁶ Biemiller, L. (2018, May 6). Does the faculty office have a future? *Chronicle of Higher Education*.

⁷ Owl Labs, State of Remote Work, 2019

⁸ Ypulse Trend Report: The Millennial Handbook

3.4 Benefits of Telework

Employees value telework because it offers increased flexibility in their day and may enable them to create a better work-life balance. Those that participate in telework regularly report an overall increase in productivity as a result of fewer interruptions and involvement in office politics.

An employer's ability to offer telework to their employees creates opportunity to increase diversity, particularly when considering employees with physical disabilities for whom commuting to a physical workplace can represent additional barriers (e.g. ease of access to public transportation). For employees who are able to work remotely, 82 per cent report lower levels of stress due to less commuting times and fewer workplace interruptions⁹. Similarly, they are more engaged, report a higher level of morale and lower absenteeism¹⁰. The increased flexibility offered from a work-from-home initiative decreased turnover by as much as 50 per cent in one study¹¹.

There is also a financial return for employees that work from home. Statistically, employees who shift to a part-time work-from-home model save both time (i.e. about 11 workdays spent commuting) and money (i.e. \$2,000 to 4000) per year¹². These savings represent decreases in transportation costs, parking, vehicle wear and tear, tolls, professional clothing purchases, and incidental spending (e.g. coffee, snacks, and lunch).

The tertiary benefits of teleworking must also be recognized. While we champion an environmentally responsible campus, decreasing the physical space needed to occupy our campus would reduce our current carbon footprint. Reducing our commuter-travel requirements would also allow us to further reduce this footprint.



⁹ A. Loubier, Benefits of Telecommuting for the Future of Work, Forbes. Published July 20, 2017

¹⁰ A. Loubier, Benefits of Telecommuting for the Future of Work, Forbes. Published July 20, 2017

¹¹ Bloom, N.' J. Liang, J. Roberts, Z. J. Ying; Does Working from Home Work? Evidence from a Chinese Experiment ; The Quarterly Journal of Economics (2015) 165-218 doi: 10.1093/qje/qju032

¹² K, Lister, Telework in the 21st Century

3.5 Further Considerations

Telework, including the online course delivery, is not a new concept for Ontario Tech. In 2008, we invited faculty members to participate in a pilot program to assess its feasibility. Those who participated in the pilot program demonstrated a positive attitude about telecommuting with many citing that it had helped improve their quality of life. However, some concerns were also expressed about the perceived absence of operational supports¹³. As we move forward, ensuring the necessary infrastructure is in place to support a virtual campus will be instrumental to maintaining the quality of our academic and operational work. This will require investments in areas such as:

- Employee and faculty training.
- Curricular evolution.
- The creation of community connections.
- Information technology.

In transitioning to a new way of being, it will be absolutely essential for us to commit to, and maintain, community connections between our students, staff, and faculty. Proposing the creation of a co-located workforce, a balance must be achieved in determining how to schedule employees in ways that complement work activities and resources while still ensuring our workforce comes together as a single unit.

Similarly, the benefits associated with interpersonal interactions between classmates, and between students and their instructors must also be considered. Additional valuable learning, or informal learning, occurs outside of the classroom. The scope of this learning includes:

- Empathy towards others.
- Intercultural awareness.
- Social skills.

Social isolation can also negatively impact mental health. Humans are social beings and university students have always valued the opportunity to come together on a campus to meet new people, access great facilities, and to explore future career opportunities through engagement in classes, clubs, and other campus activities. By creating more collision spaces on campus for interactions between faculty, staff, and students, we are allowing for the type of innovation and collaboration that naturally occurs in an engaged community.

¹³ Percival, J., Vogel, E., Muirhead, W. (2010). Telecommuting in Higher Education: Faculty Perceptions of Strategic Implications for Traditional Postsecondary Institutions. *International Journal of Management in Education*.

4.0 If We Build It, Will They Come?

Many university campuses have invested in forward-thinking learning spaces. Inspired by learner-centered pedagogies, these spaces avoid the conventional row-and-column classroom model in order to better support active and collaborative teaching and learning. The physical features of those spaces (e.g. flexible furnishings, technology, and ubiquitous white boards) support active-learning instruction. However, we don't believe that simply building that type of classroom will suffice. Our own institution's recent experience in planning and implementing active learning spaces in the Software and Informatics Research Centre revealed that classroom design was but one small component of fostering the adoption of the dynamic-learning concepts. **A greater focus needs to be placed on the technology systems, instructional supports, curricular development and other processes and procedures to truly transform active-learning spaces from stand-alone campus novelties to cross-campus learning hubs.**

A key outcome of our proposed reimagining of space includes the deliberate intent to erode artificial subject-based boundaries in order to stimulate cross-disciplinary discussion. Subject disciplines as "packets of study" have become progressively redundant as increasingly complex problems require multidisciplinary solutions arrived through collaborative means. The way we design our spaces must respond to this blurring of boundaries to encourage and support innovative solutions. This must be explored in all four of our major space groupings:

1. Classrooms and instructional spaces.
2. Office spaces.
3. Research and teaching labs.
4. Common spaces (indoor and outdoor).



4.1 Classrooms and Instructional Spaces

It is important that we facilitate a wide range of teaching and learning modes in our instructional spaces. Desirable classroom configurations include the use of technology and physical spaces, which enhance peer learning. Research on learning-space design demonstrates that the design of a classroom impacts the way in which students and instructors interact and engage in teaching and learning. **An active layout could look much like the one below where peer learning is facilitated by various flexible furniture solutions, such as separate tables and chairs, and also larger tables for classes to divide into groups.** Our goal is to decrease tiered lecture spaces with fixed seating while increasing active-learning classrooms.



4.2 Office Spaces

The office is not going to disappear, but it will require a fresh, new approach. People will still need places where they can come together, connect, build relationships and develop. Our office spaces may be utilized differently to better align with the emergent flexible tele-workforce. **By creating shared, multi-purpose, flexible meeting spaces, we can provide options for our faculty and staff.**



4.3 Research and Teaching Labs

Most traditional academic buildings were not designed to support the interdisciplinary, collaborative, or entrepreneurial dynamics that are hallmarks of cutting-edge research and innovation. Researchers increasingly require access to a growing toolbox of collaborative techniques, insights and approaches from a wide variety of traditional disciplines. The problems being tackled and the research programs being proposed are more complex than ever, and often require heavier infrastructure and expensive, specialized equipment within labs to allow for more intense analysis and simulation. Collaboration and sharing equipment means more than just making space for people to work side-by-side at the bench. It is about planning for direct and indirect forms of interaction between offices, classrooms, and labs. There needs to be flexibility to quickly reconfigure spaces to capitalize on new opportunities, and to expand and contract spaces as projects grow or contract over time. **A research laboratory could look much like the one below, with floor space that allows for layout reconfiguration. The furniture needs to be flexible so that it can be re-configured in response to changing research needs.**



4.4 Common Spaces (Indoor and Outdoor)

Through numerous space consultations, the message has been loud, clear and strikingly consistent: Ontario Tech is short of common spaces. Our Library spaces are notable exceptions to this phenomenon and as such, eagerly sought out and utilized by our students. The Library today and into the future will be a key “hub” for student and community activities.

Our community longs for spaces where students may work informally in groups and where faculty, students, and staff from all disciplines may come together and cross paths. We recognize that these informal collision spaces are an increasingly critical part of the student experience and essential in today’s learning environments. It is important to create these environments (e.g. outdoor and indoor spaces, social spaces, food service areas) to foster learning through social interaction and group work. Such spaces form the crux of our Sticky Campus. They make students, faculty, and staff want to stick around because they want to be here.

5.0 Next Steps

We invite you to contribute your thoughts to this discussion.

Reimagining Ontario Tech's physical campus spaces is an important opportunity to advance our strategic priorities. There are many advantages to be realized by intentionally changing our approach to space utilization. More effective use of space combined with a deep commitment to user needs (i.e. faculty, staff, student, alumni, and broader community members) is a must as we seek to reimagine learning and create a sticky campus culture amidst an environment of constrained fiscal resources. While we must address challenges, many of these challenges are operational in nature and should not stop the move towards our vision. More directly, a thoughtful investment of time and imagination will:

- Foster communities of learners within a campus made up of a network of dynamic convertible people-centred spaces.
- Lead to higher space utilization, functionality and flexibility (i.e. greater mixed use).
- Reduce our carbon footprint and lower occupancy costs.
- Contribute to our brand, leading to greater student recruitment and retention as a result of healthier learning environments and improved engagement.
- Make the university a better place to work for our staff and faculty.
- Support a shift towards online/hybrid learning and experiential learning models enhanced by technology and support systems.
- Create new student spaces including innovation hubs that support discovery, creativity, team building, entrepreneurship, design and prototype development.
- Reinvent libraries as modern community information commons.
- Enhance interdisciplinary engagement and research effectiveness.

This discussion paper outlines the opportunity, need and value in moving to a more flexible and visionary approach to space allocation. It is also the first step in outlining a new vision for our virtual and physical campus communities. More work will need to be invested in expanding this concept. We understand and acknowledge that these changes may be perceived as a source of anxiety for some if they are not planned for, and implemented, carefully. Our goal is to embrace virtual spaces to help us rethink our physical spaces to create reimagined workspaces that will increase interaction, productivity and employee satisfaction. Importantly, we invite all members of our community to contribute to this vision. We look forward to your comments and reactions to this discussion paper.