

University of Waterloo School of Architecture

ARCH 684-002 - Design Build Graduate Elective - Fall 2018

First Nations / University of Waterloo Design Build Program 2018

Course instructors - John McMinn and Paul Dowling

## COURSE DESCRIPTION

*The architect Douglas Cardinal has said, 'Cultures are based in harmony as a way of being.' And the indigenous meaning was very close to that of the Greeks or of Leibniz or Shaftesbury. Harmony was a concept of the whole and of a balance that went far beyond mere humans. What's more, in their negotiations among themselves and with Europeans, Aboriginals invariably placed themselves and their argument within the concept of harmony. It was an all-inclusive view of the natural order of things, an order in which humans were merely a part. It related to their complex balancing of individualism and group and place, each existing at the same time apart, in complex relationships of cooperation and as nodes 'in an interconnected web.' There are myriad Aboriginal expressions for this. One well-known Cree concept is Witaskewin, or harmonious living, which means living together on the land, that is, an agreement to live together in peace. You could translate it today as democratic federalism or practical environmentalism.*

*John Ralston Saul*

Despite our shared history and common geography, reconciliation with First Nations culture remains elusive from everyday experience for many of us. The Design Build program offers the opportunity for the practice of a pro-active and pragmatic form reconciliation, through collective experiential learning, linked to the idea of embodied knowledge, intrinsic to First Nations culture and the means of passing on knowledge and skills from generation to generation.

The Design Build program provides an opportunity for students to work directly with indigenous communities, collectively developing a design, carrying it through to the detailed level of working drawings, then subsequently testing and refining the project through prototyping, final prefabrication and on-site construction of full scale permanent structures. By engaging with the cultural history of the Grand River valley and the relationships to land, natural habitat and heritage of both the Anishinaabeg whose territory this was traditionally, as well as the Haudenosaunee peoples who have lived in the valley since the late 18<sup>th</sup> century, the Design Build program allows us to explore what role the process of architectural design and building can play in understanding, enhancing and strengthening the growth and goals of these communities, their people and culture.

Traditionally wampum belts have been created to commemorate nation to nation treaties. In Iroquoian/Haudenosaunee culture the two-row wampum belt, consisting of two parallel rows of purple beads on a white bead background, records the agreement between the Haudenosaunee peoples and European settlers, symbolizing two autonomous peoples, traveling along parallel paths, boats upon a river, in a compelling symbol that embodies the spirit of reconciliation. They operate independently with mutual respect, each contributing different experience and capacities to co-exist peacefully. This powerful symbolism is resonant for the potential relationship between indigenous and non-indigenous peoples everywhere.

Both the Cambridge School of Architecture building and the main University of Waterloo campus sit within the Haldimand Tract treaty lands, ceded to the Iroquoian confederacy in 1784 for their service to the British Crown during the American Revolution. In the complex evolution of treaty lands, the Mississaugas of the New Credit, the First Nation we'll be working with for the duration of this course, have shifted locations during the last century and now reside adjacent to the Six Nations Reserve near Hagersville on a small portion of the original Haldimand Tract.

The 2018 fall term graduate elective is part of a multi-course sequence in which design and fabrication prototyping is carried through design/construction and shop drawings, in the testing of experimental building component elements, which anticipate further construction during a 2019 spring term option studio course. For any students whose thesis work may be in some way related to the subject area of this graduate elective, there could be an opportunity for continued involvement in a mentoring role with the undergraduate spring term course.

Throughout 2018 the Design Build program has been working with the Mississaugas of the New Credit First Nation for the design and construction of a new pow wow arbor in a sacred oak grove at the heart of the community. This is one of two pow wow arbors the community plans to build, in collaboration with the Waterloo Architecture Design Build program, with the second structure to be located on a new expanded cultural site in the community.

The winter term 2018 grad elective saw the preliminary design and modelling of the current arbor structure, with the spring term 2018 undergrad elective completing construction of several elements of the arbor on site. Development and prototyping of the main spanning structure of the arbor will be a core enterprise of the term, involving modelling and testing of methods for forming the complex interweaving of ash wood lathes that span from the centre to edge of the arbor.

The current term will start with an introductory research exercise in which members of the class will become familiar with aspects of the material culture, traditions and history of the First Nations who reside in this region.

The course will be divided into three main phases/activities:

1. A. Research on local First Nations material culture and traditions  
B. Research on grid shell structures  
This research project will conclude with an informal colloquium, involving student research presentations in conjunction with talks by elders from the Mississaugas of the New Credit First Nation.
2. Design, modelling, prototype testing
3. Fabrication of forms and spanning elements

## COURSE STRUCTURE

The course is structured around primary activities of cultural research and experiential learning through design and fabrication. It is both an exciting opportunity to be involved with design and fabrication of full-scale components of a building with a real client and program, and also an ambitious undertaking requiring a significant commitment on the part of course participants.

## LEARNING OBJECTIVES

In conjunction with technical / construction details undertaken in the course, students will produce building components that will be integrated into a larger whole building assembly and its final construction on site.

1. Engage in critical evaluation of the role of architecture in response to First Nations cultural awareness, through community programming, community development initiatives, building form and material expression over time.
2. Explore a variety of options for the design, technical development and detailing of a small scale public building, with consideration of an integrated and holistic relationship between concerns of environmental occupation, the judicious deployment of natural and manufactured materials, and the means of fabrication within a specific First Nations cultural context.
3. Experience the processes of collaboration and consensus building, working with a First Nations community, consultants, fabricators, material and product suppliers, and each other.

## EVALUATION

Project / Phase	Grade value
P1. Research on: First Nations culture/traditions and grid shell structures	20%
P2. Design modelling and prototyping of formwork and span elements (lathes)	30%
P3. Fabricating forms and preliminary fabricating of lathes	50%

Assessment is based on the course instructors' comparative review of each student's contribution to the work of the group they are involved with, as well as the effectiveness of the group and the contribution of their part of the research, design prototyping and fabrication. Assessment is gauged by; the ambition, clarity and appropriateness of contribution; quality and technical resolution of the work; effectiveness and the completeness of group's work. Participation within the overall group structure of the course is a critical element of the design build process, and a portion of the grade for each project will be based on the course instructors' assessment of the visible participation of each individual's contribution to their group's work. This participation assessment will not be treated as a separate element of the course grading, but will be integrated into the three project/phase grades given for the course.

## REVIEW OF COURSE WORK

Given the nature of the design build course, review of the work done in the course will be carried out through presentation and discussion sessions, as well as consultation meetings with the course instructors and with client representatives, determining if the work produced meets the practical and technical requirements for the final pavilion assembly. There will be regular meetings for planning purposes, to discuss the integration of the various component elements of the project and to ensure all aspects of the project are coordinated.

## HAND-IN AND SUBMISSIONS

Students and the groups they are working within must complete their research assignment, design prototyping and fabrication of building components to an acceptable level to obtain a passing average in order to receive credit for this course. As the course is based on collective work, active participation and engagement with the larger group for the purpose of completing the project will be the benchmark for successful participation in the course. In this sense grading is not the ideal measure of success of each students' participation and success in the course, but grading is the required currency of university course work, so we will endeavor to bridge these two reference points without the grading becoming a distraction to the larger goals and ambitions of the course.

Documentation of the process and all aspects of the course, is important for a number of reasons: including students' portfolios, communication about and promotion of the design build program, and fundraising for the ongoing program requirements. This is considered a part of the course deliverables. We suggest that one or two members of the class take on the role of coordinating documentation of the work done in the course, as well as contributing to an up to date storage/file system for managing photographic materials, as well as drawings, and images of the completed project. Completion of this requirement will be assessed as part of the participation grade.

#### LATE WORK

All the work of the various groups will need to be completed in a timely manner, to ensure necessary coordination of the production of the course deliverables. Requests for extensions of agreed upon deadlines must be made as early as possible to the course coordinators and must be made in advance of the given completion phase.

#### SCHEDULE AND COURSE ATTENDANCE

The course schedule runs Wednesdays from 2:00 – 5:00 pm, however we will discuss the option of adjusting the schedule to allow for longer working session during some portions of the course

Class attendance and participation play a key part in the course and will be noted and evaluated by the instructors.

#### COMMUNICATION WITH COURSE INSTRUCTORS

During the term, the course coordinators will need to send communications to studio participants. Each student should confirm their current active email address with the Graduate Student Service Coordinator during the first week of class. Any official correspondence must be addressed to the course coordinators at the following email addresses:

[jcmminn@uwaterloo.ca](mailto:jcmminn@uwaterloo.ca)

[pdowling@uwaterloo.ca](mailto:pdowling@uwaterloo.ca)

#### RECOMMENDED READINGS

Recommended readings may be distributed at various stages throughout the term and as applicable will be held on reserve in the *Musagetes Library* for use by the class, or will be provided in pdf form. All students are encouraged to actively use the *Musagetes Library* collection and *recommended* readings.

#### ACADEMIC INTEGRITY AND AVOIDANCE OF ACADEMIC OFFENSES

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check [www.uwaterloo.ca/academicintegrity/](http://www.uwaterloo.ca/academicintegrity/) for more information.]

**Grievance:** A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4, [www.adm.uwaterloo.ca/infosec/Policies/policy70.htm](http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm). When in doubt please be certain to contact the department's administrative assistant who will provide further assistance.

**Discipline:** A student is expected to know what constitutes academic integrity [check [www.uwaterloo.ca/academicintegrity/](http://www.uwaterloo.ca/academicintegrity/)] to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean.

For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, [www.adm.uwaterloo.ca/infosec/Policies/policy71.htm](http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm). For typical penalties check Guidelines for the Assessment of Penalties, [www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm](http://www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm).

**Appeals:** A decision made or penalty imposed under Policy 70 (Student Petitions and Grievances) (other than a petition) or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals) [www.adm.uwaterloo.ca/infosec/Policies/policy72.htm](http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm).

**Note for Students with Disabilities:** The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.