

University of Waterloo School of Architecture

ARCH 285-002 Design Build Elective Course - Spring 2019

Waterloo Architecture Design Build Program 2019

Course coordinator - John McMinn

Fabrication instructor – Bradley Paddock

Teaching Assistant – Tanvi Kundliwal

## 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 and direct connections with First Nations culture remains elusive from everyday experience for many of us. The Waterloo Architecture Design Build program offers a form of 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. Design Build allows us to explore the potential impact of architectural design and community infrastructure building, in the Grand River Basin, where the School of Architecture is situated.

The Spring semester design build elective is focused on hands-on making, for the construction of a new pow wow arbor in a sacred oak grove at the heart of the Mississaugas of the Credit First Nation, near Hagersville Ontario, south-east of Cambridge. The work of the class year builds on the 2B Design Build elective 2018, where students built the first phase of the arborstructure.

The pow wow ceremony is the largest celebration of culture and communal gathering held in many First Nations communities each year. It is part of a renewal of First Nations culture in the last few decades, after the traumas and suppression of traditional cultural practices faced by Indigenous peoples in Canada, through government policies of colonization and assimilation. First Nations communities in southern Ontario hold their pow wow celebrations in sequence, making for what is known as *the pow wow trail*, that involves community members, performers and vendors, travelling from community to community each week throughout the summer, enabling cultural exchanges across the region, as well as throughout the larger regions of Turtle Island (North America). The Mississaugas of the Credit have held their Three Fires Homecoming Pow Wow for two days in late August, on same site for the last 32 years.

The Spring semester design build elective involves the final fabrication of structural elements of the pow wow arbor in the School of Architecture, followed by on-site assembly of the structure, at the pow wow grounds in the heart of their community. The course provides students an opportunity to work directly with First Nations community members, engaging with the cultural history of the Grand River valley and the relationships to land, natural habitat and heritage of the Anishinaabe people whose traditional territory extends throughout this entire region. The Design Build program allows us to explore what role architectural design and hands-on building can play in enhancing the growth and goals of First Nations communities and culture.

#### **COURSE STRUCTURE**

The course incorporates fabrication of structural elements of the arbor frame in the School of Architecture workshop, followed by an on-site build session of up to 7 days, after the Spring semester from August 10th - 16<sup>th</sup>. Given that effective fabrication workshop sessions require more than the three-hour lecture time slot allocated to this course each week, we have found that holding full day sessions on alternate weeks is the most effective way to carry out the workshop sessions. Given the very full course schedule 2B students have, making it difficult to hold these sessions on weekdays, in previous years, we have held the workshop session on Saturdays. However, during the preliminary set-up period (weeks 1-3), larger shop tools only available during the weekdays, may be required, and so some sessions during this period may be held during weekdays.

The class will be divided into groups working alternate weeks, ie. Group A – week 2, Group B week 3 and so on throughout the term.

These groups will be further divided into task groups of 2-4 students, responsible for specific tasks in completion of the project. These groups will be established during the introductory class.

#### **Weeks 1-3: Preliminary set-up period**

- Install the design build tent beside the shipping container outside the workshop
- Lathes - sorted, cut for scarf jointing, glued, rip cut to make 1" x 1.5" lathes, stacked ready for steaming
- Steel clamping brackets – 1 ½ " x 1 ½" angle cut to length - 1 for each attachment point – total 84 brackets
- Drilling holes - 4 holes each bracket
- Wood blocks – 1 for each attachment – total 84 wood blocks
- Drilling holes – 2 holes each block
- Cut wood notches for forms
- Assemble forms in ground floor studio
- Assemble steam box in studio and test for heat level
- Test sample glue joints

#### **Weeks 4-11: Steam and forming – 8 sessions**

- Steam and forming – 8 sessions
- Glue and re-install on forms – 8 sessions
- Remove and store in tent or container

#### **Weeks 10-11: Contingency workshop sessions**

#### **August 9 – 15: On site installation**

Once the term-time workshop sessions are complete, and we begin on-site build portion of the course, we will work each day from 9:00am – 5:00pm, at the pow wow site within the Mississaugas of the Credit First

Nation community at 2789 Mississauga Road, Hagersville ON. We will work in conjunction with community members and volunteers for the on-site assembly of the pow wow arbor structure. Work will be collectively organized with small groups each responsible for specific on site construction tasks.

### LEARNING OBJECTIVES

Working with facilities in the School of Architecture, students will first produce building components for a pow wow arbor structure at the Mississauga of the New Credit community, and then be responsible for its final on-site assembly. Through this process of collective hands-on embodied learning, students will gain experience and knowledge of practical fabrication and construction assembly techniques, and will have the opportunity to engage with community members and learn traditional ecological knowledge (TEK) with community elders. Students will:

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 technical development and detailing of a full scale pavilion structure, 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 context.
3. Experience the processes of collaboration and consensus building, working with First Nations communities, consultants, fabricators, material and product suppliers, and each other.

### SCHEDULE

The course schedule will be structured in two parts, with term time bi-weekly class fabrication workshops, followed by an on-site building program of up to seven days, running from August 9th - 15<sup>th</sup>.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 MAY	2	3	4
5	6 Classes start Lecture	Week 1 Arch 285 Intro Set-up	8	9	10	11 Workshop session 1
12	13	14 Week 2 Wood and steel prep 1	15	16	17	18 Workshop session 2
19 add period ends	20 University Closed	21 Week 3 Wood and steel prep 2	22	23	24	25 Workshop session 3
26	27	28 Week 4 Steam/form 1	29	30	31	1 JUNE Workshop session 4
2	3	4 Week 5 Steam/form 2	5	6	7	8 Workshop session 5

9	10	11 Week 6 Steam/form 3	12	13	14	15 Workshop session 6
16	17	18 Week 7 Steam/form 4	19	20	21	22 Workshop session 7
23	24	25 Week 8 Steam/form 5	26	27	28	29 Workshop session 8
30	1 JULY University Closed	2 Week 9 Steam/form 6	3	4	5	6 Workshop session 8
7	8	9 Week 10 Steam/form 7	10	11	12	13 Workshop session 10
14	15	16 Week 11 Steam/form 8	17	18	19	20 Workshop session 11
21	22	23 Week 1 Steam/form contingency	24	25	26	27 Workshop session 12
28	29 Make-up day for Victoria Day	30 Last Day of Classes Week 13 Steam/form contingency	31	1 AUGUST	2	3 Workshop session 13
4	5 University Holiday	6	7	8	9	10 MCFN Install Day 1
11 MCFN Install Day 2	12 MCFN Install Day 3	13 MCFN Install Day 4	14 MCFN Install Day 5	15 MCFN Install Day 6	16 MCFN Install Day 7	17
18	19	20	21	22	23	24 MNCFN Pow wow
25 MNCFN Pow wow	26	27	28	29	30	31

## EVALUATION

Grading will take place with class members assigned to small groups, responsible for developing expertise in the specific assigned tasks during the workshop portion of the course. The on-site portion of the course will happen as a collective building process, visiting the site each day over the seven-day duration of the build program.

The course will be divided into 3 sections for grading purposes:

- P1. Preliminary set-up pre-fabrication - 20%
- P2. Steaming/forming of the pow wow arbor structural elements – 40%
- P3. On site building assembly at the MNCFN– 40%

Assessment is based on the studio instructors' comparative review of each student's contribution to the work of the group they are involved as well as the effectiveness of the group and the contribution of their part of the work to the larger building assembly. Assessment is gauged by quality and technical resolution of the work; effectiveness and the completeness of the element of the elements the group is responsible. 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 participation and contribution to their group's work.

#### REVIEWS

Given the nature of the design/build course, reviews of student work will be carried out by the course instructors during scheduled workshop sessions, determining if work done meets practical needs 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, to ensure all aspects of the project are coordinated.

#### HAND-IN AND SUBMISSIONS

Each group must complete building components to an acceptable level and 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 studio, but given grading is the required currency of university course work, 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 studio, as well as keeping an up to date storage/ file system for managing photographic materials and images of the completed project. Completion of this requirement will be assessed as part of the course 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 project deliverables. Requests for extensions of agreed upon deadlines must be made as early as possible to the course coordinator and must be made in advance of the given completion phase.

#### COURSE ATTENDANCE

Students are expected to fully participate on all fabrication workshop sessions as well as for the on-site assembly process at the end of the terms. Course grades will be partly assessed on attendance and contribution by each student to the work of their assigned group.

#### COMMUNICATION WITH COURSE COORDINATOR

During the course communications to course participants will be done through LEARN. It is required that each student confirm email address and other identification details are up to date both on LEARN and with the Undergraduate Student Service Coordinator, during the first week of class. Any correspondence to the course coordinator should be sent to the following email address:

[jcmcminn@uwaterloo.ca](mailto:jcmcminn@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.