

Arc393_f20

Open Architecture Studio:

Architecture for People by People (A4PBP)

“Almost no buildings adapt well. They’re designed not to adapt; also budgeted and financed not to, constructed not to, administered not to, maintained not to, regulated and taxed not to, even remodeled not to. But all buildings (except monuments) adapt anyway, however poorly, because the usages in and around them are changing constantly.” – Stewart Brand¹

“In a world where change is the norm, end-user development (EUD) is a necessity rather than a luxury because it is impossible to design artifacts (including: software systems, socio-technical environments, and learning environments) at design time for all the problems that occur at use time.” - Gerhard Fischer²

“I think the challenge facing the next generation of architects is ‘how are we going to turn our client from the 1%, to the 100%’ – Alastair Parvin³

We acknowledge that the School of Architecture is located on the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. The University is situated on the Haldimand Tract, the land promised to the Six Nations that includes 10 kilometres on each side of the Grand River. (see references here: <https://uwaterloo.ca/engineering/about/territorial-acknowledgement>)

0.0_Preamble

How might buildings provide organization and order without enforcing hierarchy? In this studio we will study the ways in which buildings change through time, and how architecture can be designed for adaptation by its users. For too long architecture has been designed from the top down as a static product with little consideration for the way it must adapt in the face of changing user needs, desires, and emotions. *Architecture needs process design, not product design.*

In ARC393, students will be introduced to planning tools and methods that allow designers in adjacent fields (such as: strategic design, service design & design consulting) to understand human desires and emotions, and to design processes that unfold in time to address these.

Students will focus these tools on the analysis of existing successful self-build technologies that allow users of architecture to modify their own spaces. In a final project, students will imagine how a ‘toolkit’ approach to architecture might empower people to design and build for themselves.

1.0_Problem

As we look towards the massive amount of building needed to facilitate worldwide growth over the next 50 years, architects need to find ways of scaling their services to serve more than the

¹ Brand, Stewart. How Buildings Learn (p. 2). Penguin Publishing Group.

² Gerhard Fischer, End-User Development: From Creating Technologies to Transforming Cultures (EUD 2013), 1

³ Alastair Parvin: Architecture for the people by the people, TED 2013, <https://www.youtube.com/watch?v=Mlt6kaNjoeI>

fortunate few that can afford them. As noted by Alastair Parvin, founder of Wikihouse – the world’s fastest growing cities are currently being designed without architects. And novice building is not just a distant phenomenon: With 67% of Canadian homeowners now preferring to renovate their homes rather than move, 57% of these owners hope to make these alterations themselves.⁴ Social housing programs in the UK, Europe, and Canada are realizing that sweat equity (DIY home building) housing programs might offer ways of delivering higher quality, more affordable housing. There is a clear opportunity today for architects to help shape future visions about the potential of novice design.

How might architects rethink our role as creators of unique designs, and instead focus on the crafting of tools for empowerment? How might architects onboard professional responsibility for understanding human need and behaviour?

This studio will question the canon of authored image oriented architecture and the attendant tools of static representation (orthographic and perspective imaging), by introducing students to the time-based tools of service and technology development used in the innovation and design industry (the storyboard, the journey map, the process blueprint). Students will hone these new skills in the analysis of a precedent self-build technology and the envisioning of a future building assembly kit.

2.0_Semester Structure

Our semester will be broken down into a set of three projects:

1, The analysis of an existing self-build precedent. 2a, The design of a kit-of-parts structural system. 2b, The design of a kit-of-parts home system.

Each of these projects will be developed and presented through the use of time-based tools with which the students will become familiar: the storyboard [graphic technique], journey map [narrative structure], and process blueprint [systems diagram] that illustrate the necessary procedures and possibilities of a building life un-folding in time. These tools are seen as necessary to amplify the relevance of architectural decision making today – and to familiarize students to alternate forms of practice in which they may choose to work or study.

The fields of Architecture & Human Centred Design jointly discussed in this course will be represented in two course texts: Stewart Brand’s ‘How buildings Learn’ and Don Norman’s ‘The Design of Everyday Things’. Part of class sessions will be dedicated to the discussion of portions of these texts.

3.0_Learning Outcomes

Students should be familiar with the following by the end of this course. These skills will serve them in further independent research and design in other classes and in practice:

3.1 Adaptable Building Knowledge

- Knowledge of successful technologies for building adaptation
- Knowledge with how buildings change and why
- Understanding of long-term social and financial impacts of buildings

3.2 Time based planning tools

- Ability to produce Journey Maps for architecture
- Ability to produce Service Blueprints for architecture
- Ability to produce Storyboards for architecture

⁴ Canadians Trim Spending on Home Renovations in 2019 (CNW Group/CIBC)

Ability to produce Graphic Instructions for architecture

3.3 Kit of parts concept design

Ability to articulate new design concepts that unfold over time

Ability to link building configuration to human need/narrative

Ability to locate specific material capabilities that enable flexibility & DIY

4.0_Outline

4.1 Handouts

At the conclusion of each project review the next project handout will be made available on Learn. Please review this document prior to the following class in which the project will be introduced.

4.2 Reviews

Reviews will occur in Miro & Teams (concurrent sessions). Peers will follow the presenting group in Miro with audio, text & video communication in Teams.

4.3 Stand Ups

At frequent intervals, students will present progress work to the class from Miro. Including up to date work & showing continual development in stand-ups will contribute to participation.

4.4 1:1s

Individual desk crits held between the course instructor and a group and or single student. Use Miro for visual communication and teams for audio/text communication concurrently.

4.5 Guest Project Discussions

External guests and subject matter experts will be invited to speak to the class on topics and work related to the project at hand. It is expected all will attend and contribute to question and answer sessions which are seen as a focus area in these presentations.

4.6 Readings

Readings from our course texts will be assigned & are expected to be read by the 'reading discussion' date.

4.7 Reading Discussions

At the start of the semester, students will form reading discussion groups of 2. Each group will review & present one reading from the semester for the class on a given date as a multi slide PowerPoint or MIRO board set of layouts. This discussion must present the salient aspects of the assigned reading and present 3 related questions to the class for discussion.

4.8 Peer/Self evals

At the conclusion of the first to group projects students are asked to complete a peer / self-evaluation that will be due to learn. Failure to complete this evaluation will result in a 5% reduction in participation grade.

4.9 Even / Odd

You will be divided into even and odd groups for the final project to allow alternating crit days. During project 2b you will have crits either Monday or Thursday but not both.

*Given the nature of this upcoming term, the following dates are subject to change. Changes that depart from the schedule below will be announced to the class & subject to a majority vote.

W	Date	Project	Lectures[1], Activities[a] - *Recorded on Teams	Reviews, Crits, Expectations - *Synchronous	Homework	
1	-	P1: Precedent Study		Sign up for Miro Educational Account.		
	Th Sep 10		<p>9:30 - 11:00 [1] Intro (HCD, Time, EUDA), Collaboration Tools</p> <p>11:15 - 12:30 [a] Introductions, MIRO, Learn, teams.</p> <p>1:30-2:00 [Redacted]</p>	<p>2:00-5:30 [a] Start up! & Check in's with Jonathan.</p> <p>--</p> <p>3.5h [8*20min]</p>	Video	
2	Mo Sep 14		<p>9:30 - 10:30 Stand-ups [8*7 min]</p> <p>10:30 - 11:30 Video Discussion</p>	<p>11:30-12:30, 1:30 - 5:30 1:1s</p> <p>--</p> <p>5h [8*30min]</p>	Reading 1	
	Th Sep 17		<p>1:30 - 3:00 Guest Project Discussion Kathleen Fu</p>	<p>9:30-12:30, 3:30-5:30 1:1s</p> <p>--</p> <p>5h [8*30min]</p>		
3	Mo Sep 21		<p>9:30 - 10:30 Stand-ups [8*7 min]</p> <p>10:30 - 11:30 Reading Discussion 1</p>	<p>11:30-12:30, 1:30 - 5:30 1:1s</p> <p>--</p> <p>5h [8*30min]</p>		
	Th Sep 24		<p>9:30 - 11:00 Guest Project Discussion TBA</p>	<p>11:00-12:30, 1:30 - 5:30 1:1s</p> <p>--</p> <p>5.5h [8*30min]</p>		
4	Mo Sep 28		<p>9:30 - 10:30 Stand-ups [8*7 min]</p> <p>10:30 - 11:30 Reading Discussion 3</p>	<p>11:30-12:30, 1:30 - 5:30 1:1s</p> <p>--</p> <p>5h [optional sign-up]</p>		
	Th Oct 1		<p>9:30-12:30, 1:30-5:30 Reviews</p>		<p>Reading 2 Project 2 Handout Peer/Self Eval 1</p>	
5	Mo Oct 5		P2a: DIY Structure	<p>9:30 - 10:30 [1] Project 2 Handout</p>	<p>1:30 - 5:30 1:1s</p> <p>--</p> <p>4h [8*25min]</p>	
	Th Oct 8			<p>9:30 - 11:00 Guest Project Discussion TBA</p> <p>11:00 - 12:30 Reading Discussion 2</p>	<p>1:30 - 5:30 1:1s</p> <p>--</p> <p>4h [8*20min]</p>	Reading 3
6	Mo Oct 12		Reading Week			
	Th Oct 15					
7	Mo Oct 19		<p>9:30 - 10:30 Stand-ups [8*7 min]</p> <p>10:30 - 11:30 Reading Discussion 3</p>	<p>11:30-12:30, 1:30 - 5:30 1:1s</p> <p>--</p> <p>5h [8*30min]</p>		
	Th Oct 22		<p>9:30 - 12:30, 1:30 - 5:30 1:1s</p> <p>--</p> <p>7h [8*45min]</p>			

8	Mo Oct 26	P2b: DIY Skin, Service, Space.	9:30 - 10:30 Stand-ups [8*7 min]	10:30-12:30, 1:30 - 5:30 1:1s -- 6h [optional sign-up]	
	Th Oct 29		9:30-12:30, 1:30-5:30 Reviews	Reading 4 Project 3 Handout Peer/Self Eval 2	
9	Mo Oct 26		9:30 - 10:30 [1] Project 3 Handout	11:30-12:30, 1:30 - 5:30 1:1s -- 5h [odd:8*30min]	
	Th Nov 5		9:30 - 11:00 Guest Project Discussion TBA 11:00 - 12:30 Reading Discussion 4	1:30 - 5:30 1:1s -- 4h [even:8*20min]	Reading 5
10	Mo Nov 2		9:30 - 10:30 Stand-ups [8*7 min]	10:30-12:30, 1:30 - 5:30 1:1s -- 6h [odd:8*40min]	
	Th Nov 12		9:30 - 10:30 Reading Discussion 5	10:30-12:30, 1:30 - 5:30 1:1s -- 6h [even:8*40min]	Reading 6
11	Mo Nov 16		9:30 - 10:30 Stand-ups [8*7 min]	10:30-12:30, 1:30 - 5:30 1:1s -- 6h [odd:8*30min]	
	Th Nov 19		9:30 - 10:30 Reading Discussion 6	10:30-12:30, 1:30 - 5:30 1:1s -- 6h [even:8*40min]	Reading 7
12	Mo Nov 23		9:30 - 10:30 Stand-ups [8*7 min]	10:30-12:30, 1:30 - 5:30 1:1s -- 6h [odd:8*40min]	
	Th Nov 26		9:30 - 10:30 Reading Discussion 7	10:30-12:30, 1:30 - 5:30 1:1s -- 6h [even:8*40min]	Reading 8
13	Mo Nov 30		9:30 - 10:30 Stand-ups [8*7 min]	10:30-12:30, 1:30 - 5:30 1:1s -- 6h [odd:8*40min]	
	Th Dec 3		9:30 - 10:30 Reading Discussion 8	9:30 - 12:30, 1:30 - 5:30 1:1s -- 7h [even:8*45min]	
14	Mo Dec 7			9:30 - 12:30, 1:30 - 5:30 1:1s -- 7h [optional sign-up]	
	Fr Dec 11		9:30-12:30, 1:30-5:30 Reviews	Peer/Self Eval 3	

5.0_Evaluation

Evaluation in this course is project based with 10% of the final grade assigned for professionalism, participation, effective group work & punctuality. Course attendance will be taken via saved Teams & Miro attendance.

Schedule, Assignments, Expectations

- P1 - Case Study (pairs) 20%
- P2a - DIY Structure Design (pairs) 20%
- P2b - DIY Home Kit Design (Individual) 40%
- Participation, teamwork & professionalism 10%
- Reading Discussion 10%

6.0_Grading Procedures

Attendance and timeliness for each class is mandatory. Attendance using screenshot and participant logs from Teams and Miro will be taken 5 minutes into each class. Late arrivals will be accounted for in participation grade. Assignments will be graded as indicated above. As we are moving through content quickly, absence for more than 2 classes without a doctor’s note and/or for the final presentation will result in course failure.

Grading deductions for late work will follow the following UWSA protocol: Assignments that are handed in late will receive an initial penalty of 20% on the first calendar day late and a 5% penalty per calendar day thereafter. After 5 calendar days, the assignment will receive a 0%. Only in the case of a justified medical or personal reason will these penalties be waived, and only if these have been officially submitted to the Undergraduate Student Services Co-Ordinator and accepted by the Undergraduate Office.

In conjunction with attendance logs and peer evaluation forms, participation and professionalism grades will be assigned as follows:

Example Grade	
6/10	Has missed a class and frequently arrives 5 minutes past start. Infrequently contributes to voluntary course discussion. Does not post most recent work and does not maintain an organized Miro board. Stand ups fail to present recent work.
7/10	Occasionally arrives within 5 minutes of start. Contributes occasionally to voluntary course discussion. Keeps Miro board relatively organized and accessible to an unfamiliar viewer. Stand ups present recent work well but miss certain developments and lack major development from week to week.
8/10	Attends all classes & is always present at course start time. Works together well with team. Contributes actively to voluntary course discussion. Is considered a discussion leader. Keeps Miro board up to date and precisely organized. Presented work is ordered logically to an unfamiliar viewer. Stand ups present latest work neatly and display continual development.

7.0_Course Deliverables

Deliverables will be due at 11:59PM the night before class to Learn as vector format compiled PDF files (300dpi where asked) and to MIRO as reduced resolution (150 dpi).jpeg versions. All files should be named as follows: Last.First_ProjectX_number *Example: Enns.Jonathan_P2_3*. In any version discrepancy – the most recent upload to Learn will be considered official for the purposes of grading.

8.0_Course Readings

Students are required to buy two reasonably priced course texts. I will assign a series of readings from these. Students will form a reading discussion groups of 2. Each group will be responsible to present the readings to the rest of the class as a slide deck or MIRO presentation. Each presentation must contain: 1) A summary of salient arguments made in text, 2) images sourced by student that help make this argument, 3) a series of 3 questions for the class as a group that was brought up by this text. Presentations should be roughly 20 minutes long and uploaded to Learn on the day of your presentation.

Example Grade	
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6/10	Inaccurately reflects major points made in the text, lack of ambition evident in the slide presentation. Class discussion lacks facilitation.
7/10	Accurately reflects salient arguments in text with decent illustrations/examples given. Class questions spark reasonable discussion. Facilitates an ok discussion.
8/10	Insightful reflection on salient arguments. Clear and imaginative illustration/example images presented. Insightful questions asked that spark lively discussion. Leads an excellent discussion.

- *Brand, S. (1994). How buildings learn: What happens after they're built. New York, NY: Viking.*

*Available on Amazon, Amazon Kindle, and in major bookstores. Example:

https://www.amazon.ca/How-Buildings-Learn-Happens-Theyre/dp/0140139966/ref=sr_1_1?dchild=1&keywords=how+buildings+learn&qid=1599617306&sr=8-1

- *Norman, D. A. (2013). The design of everyday things. New York: Basic Books.*

*Available on Amazon, Amazon Kindle, and in major bookstores.(I do not recommend buying audio version). Example:

https://www.amazon.ca/Design-Everyday-Things-Revised-Expanded/dp/0465050654/ref=sr_1_1?dchild=1&keywords=the+design+of+everyday+things&qid=1599617340&sr=8-1

9.0_Bibliography & Further Reading

The following readings are highly recommended and will greatly benefit the student designer in this course but are, due to time and scope of this course, not required.

Ratti, C., & Claudel, M. (2015). Open source architecture.

De, B. A. (2014). The architecture of happiness.

Bryson, B. (2016). At home: A short history of private life. London: Black Swan.

Pollan, M. (2013). A place of my own: The education of an amateur builder. New York: Random House.

https://issuu.com/adampeterroberts/docs/the_architect_and_self-build_housing

10.0_Course Time Zone

All dates and times communicated in the document are expressed in Eastern Time (Local time in Waterloo Ontario, Canada). From September 8 – October 24 2020 times are indicated in Eastern Daylight Time (EDT, UTC-4:00) and from October 25 – December 31 2020, times are indicated in Eastern Standard Time (EST, UTC-5:00)

11.0_Fall 2020 COVID-19 Special Statement

Given the continuously evolving situation around COVID-19, students are to refer to the University of Waterloo's developing information resource page (<https://uwaterloo.ca/coronavirus/>) for up-to-date information on academic updates, health services, important dates, co-op, accommodation rules and other university level responses to COVID-19.

12.0_UW Policies

Academic integrity: 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 the Office of Academic Integrity 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. 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 to avoid committing an academic offence, and to take responsibility for his/her actions. [Check the Office of Academic Integrity for more information.] 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. For typical penalties, check Guidelines for the Assessment of Penalties.

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. Note for students with disabilities: Accessibility Services, 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 Accessibility Services at the beginning of each academic term.

Turnitin.com and alternatives: Plagiarism detection software (Turnitin) will be used to screen assignments in this course. This is being done to verify that use of all material and sources in assignments is documented. In the first week of the term, details will be provided about the arrangements for the use of Turnitin and alternatives in this course.

Note: students must be given a reasonable option if they do not want to have their assignment screened by Turnitin. See Academic Integrity - Guidelines for Instructors for more information.

Students seeking accommodations due to COVID-19, are to follow Covid-19-related accommodations as outlined by the university here: (<https://uwaterloo.ca/coronavirus/academic-information#accommodations>).

13.0_Equity, Diversity and Inclusion Commitment

At the School of Architecture, we are committed to foster and support equity, diversity and inclusion. We recognize however, that discrimination does occur, sometimes through an isolated act, but also through practices and policies that must be changed. If you experience discrimination, micro-aggression, or other forms of racism, sexism, discrimination against LGBTQ2S+, or disability, there are different pathways to report them:

A) If you feel comfortable bringing this up directly with the faculty, staff or student who has said or done something offensive, we invite you, or a friend, to speak directly with this person. People make mistakes and dealing them directly in the present may be the most effective means of addressing the issue.

B) you can reach out to either the undergraduate (Donna Woolcott or Maya Przybylski), graduate office (Nicole Guenther, Lola Sheppard, or Jane Hutton), or director (Anne Bordeleau). If you contact any of these people in confidence, they are bound to preserve your anonymity and follow up on your report.

C) You may also choose to report centrally to the Equity Office. The Equity Office can be reached by emailing equity@uwaterloo.ca. More information on the functions and services of the equity office can be found here: <https://uwaterloo.ca/human-rights-equity-inclusion/about/equity-office>.