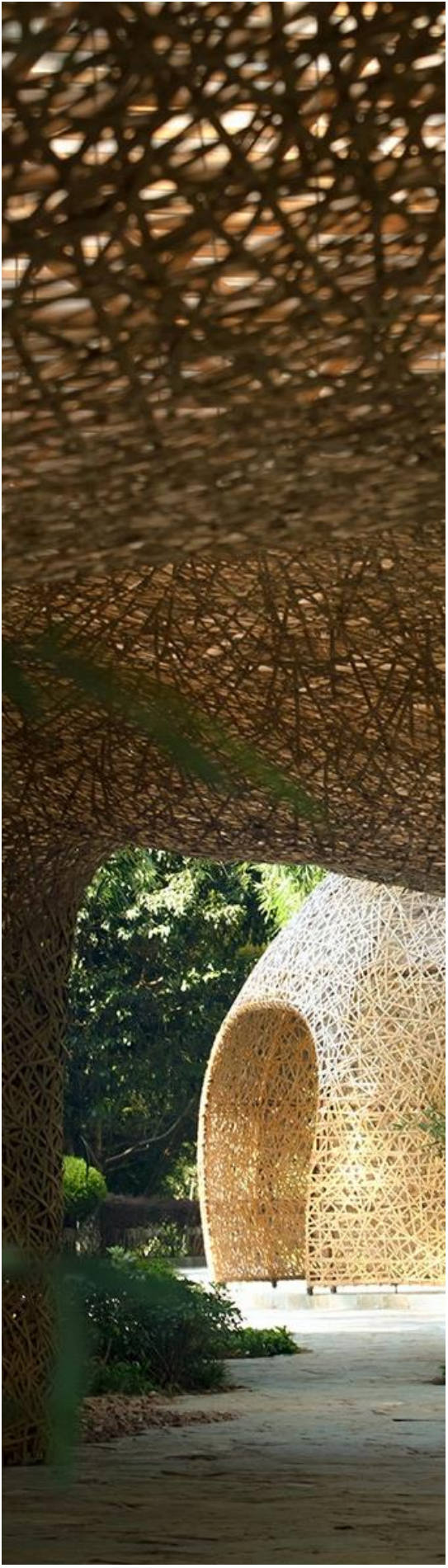

Bamboo Bamboo, Impressions Sanjie Liu, Yangshuo, Guilin. llLab 2020. Photography by Arch-Exist

material narratives

UNIVERSITY OF WATERLOO | SCHOOL OF ARCHITECTURE
David Correa | david.correa@uwaterloo.ca | office 3017
Arch 690 | Winter 2021 | Mondays 9:30 AM – 12:30 PM | 1:30 PM – 5:30 PM
Thursdays 9:30 AM - 12:30 PM | 1:30 PM – 5:30 PM

> *" I listen to my inner ear and see what experiences I can call on to tackle a new building job....You make a start and then have to let go to find out where the material is taking you. I find it quite surprising how the images come up in my mind - sometimes its like the cinema. Its in moments like that where I am not in control that the essence of the design emerges. But also as the design progresses, it occurs that I wake up and find myself somewhere in the building and think to myself, that this wall or that door's not quite right. I don't have to do anything it just comes."*
>
> *Peter Zumthor, Talking Architecture,*
>
> *2008 Prestel, H. Rauterberg.*

The material narratives studio focus on the tangible dimensions of spatial inhabitation. The active presence of the self in space is affected by both the movement of the body, the wandering gaze of the eye and the psychological constructs of the mind. Each of these dimensions is deeply rooted in the very material reality of the body, from the physiological construct of the eye, the neurological structure of our brains to the physical exertion of the body. The interaction is reciprocal, the material presence of a building interacts with the body in multiple ways. Thermal radiation, light, humidity, electrical radiation, and smells carried by air are all modulated by the building. When a building is entered, the body touches, smells and tastes that which exists within a space. Each sense inhabits different dimensions of the architecture, and with them, a comprehensive picture of an experience is created in the mind of the visitor. However, inhabiting a building is not a singular moment. Perception is only possible within the dimension of time. Perception is both a physical, cultural and a social act. As a visitor enters a building, it shapes the atmosphere of that experience for everyone within it – the visitor is both the audience and a key participant in the stage that the building offers within that ephemeral moment.

Studio Summary:

This studio offers students the opportunity to investigate the tools and strategies that are used to construct spatial narratives and architectural atmospheres. Through an experiment-based approach, students will investigate how design creatives, artist, architects and cinematographers engage our senses in order to convey ideas, emotions and stories. However, the studio is equally concerned with the precise material definition of the built form as it is with the ephemeral and constantly changing nature of perception.

Studio Structure

The studio is structured such that extensive material investigations physical and digital are required.

Students are required to work in teams of 3 – see 'Collaborative Work' section.

The studio will be structured around three phases, the following is a summary of each.

Please note that a more detailed project brief and evaluation criteria will be provided for each project as they are introduced.

Fair Contingencies for Emergency Remote Teaching

We are facing unusual and challenging times. To provide contingency for unforeseen circumstances, the instructor reserves the right to modify course topics and/or assessments and/or weight and/or deadlines with due notice to students. In the event of further challenges, the instructor will work with the Department or Faculty to find reasonable and fair solutions that respect rights and workloads of students, staff, and faculty.

Phase 1: Cinematography - Analytical Observation & Investigative Creation (3.5 weeks)

Focusing on film, this phase invites students to attentively study cinematographic tools used to communicate spatial qualities, atmosphere and narrative in film. Understanding the role that composition, sequencing, light and storytelling have in visual communication in film is essential to the understanding of physical experience within built form.

This phase will involve the analysis, interpretation and re-composition of film.

During this phase, students will:

- Explore physical phenomena, through real-world observations of constructed environments, and generate hypothesis about how and why these phenomena affect the perception of space.
- Implement systematic study, observation and experimentation with cinematographic techniques as they apply to architecture.
- Translate qualitative observations into analytical diagrams of functional relations
- Develop methods for investigation of time-dependent phenomena
- Develop cyclical workflows and methods of formal investigation that oscillate between digital and physical media.
- Develop a rigorous and creative engagement with theorists and makers (architects, painters, sculptors, filmmakers) whose practices and methods open up new territories of the formal, temporal and material imagination.

Phase 2: Assemblage - the structure of space in relation to time movement and inhabitation (3 weeks)

This phase tests the abstracted principles observed in the first phase through the creation of physical and digital models. This is a highly creative and rigorous process of iteration where multiple structures will be made and tested. The assemblage is not centered about the extensive properties that make them and artifact (length, width and height). Instead, each assemblage is built around an experiential narrative that actively engages the occupant. No symbols or explanations needed.

During this phase students will:

- Develop an initial understanding of cinematic technique, terms of reference, and critical works that will enrich the architectural imagination
- Explore the alchemy of form, space and matter through time
- Identify design opportunities and assess technical challenges of both a particular material and an atmospheric effect.
- Become experts in slow but progressive design development through an iterative series of evolutionary prototypes
- Draw correspondences and make visual reference to related contemporary works in architecture, cinema and the visual arts, with special emphasis on resonances between spaces and events.
- Build skills in critical analysis through observation and synthesis
- Demonstrate the affective capacities of design through an assemblage of associated images and text, model photographs, schematic diagrams, scaled drawings and vignettes, and through whatever graphic means best communicate ambitions and intentions.

Phase 3: Intensive Space (5.5 weeks)

This phase challenges students to apply the cinematic, material and experiential principles to a defined building function. This phase requires students to connect structural, material and environmental functional relationships to spatial and architectural considerations.

- Synthesize previous experiential architectural principles into technical building assemblies
- Develop a compelling and speculative approach to programs and events and how these conceptual and affective forces might be enhanced through the architectural frame
- Mediate between the experiential goals and local architectural considerations of site, program and spatial quality.
- Asses the architectural feasibility in terms of ecological impact, comfort, aesthetic qualities, as well as capital and operational costs.
- The student must demonstrate an ability to use the broad range of design tools available to the architectural discipline, including a range of techniques for two- dimensional and three-dimensional representation, computational design, animation, modeling, simulation, and fabrication
- The student must demonstrate an ability to assess, as an integral part of design, the appropriate combinations of materials, components, and assemblies in the development of detailed architectural elements through drawing, modeling, and/or full-scale prototypes.
- The student must demonstrate an ability to document and present the outcome of a design project using the broad range of architectural media, including documentation for the purposes of construction, drawings, and specifications.

Course Goals & Learning Objectives

By the end of the course, students will be able to/have:

1. Introductory understanding of cinematic technique, terms of reference, and critical works that will enrich architectural design sensibilities and forms of expression
2. An advanced understanding of spatial sequencing in Architecture. This includes an understanding of the role that spatial sequencing and spatial composition have in articulating complex conceptual ideas in film, painting, sculpture and film.
3. Strategically use composition, atmosphere and narrative as key drivers of functional and spatial programming.
4. Apply new methods, tools and techniques for concept development commonly used in various design practices (stage and installation design, film, product design, art, sculpture, etc.)
5. Applied understanding of accessibility, wayfinding and barrier free design. Expanded understanding of the impact spatial planning has on physical mobility and multi-sensorial perception (haptic, acoustic, temperature, smell).
6. A developed "understanding of the broader ecologies that inform the design of buildings and their systems and of the interactions among these ecologies and design decisions." (CACB_B5 Ecological Systems)
7. Applied understanding of the role that fabrication and manufacturing processes have in defining the properties of material assemblies
8. Demonstrate an understanding of material research, iterative prototyping methodologies, and fabrications, as integral parts of the creative process of design
9. Apply theories and concepts of lighting and building illumination, both natural and artificial, to create atmospheric effects. This includes and applied understanding of color temperature, light scattering, directed light, diffused light and occlusion.
10. Build design and detailing skills at a 1:1 scale.
11. Develop a more complex understanding of the overall design process as integrated with other disciplines.
12. Demonstrated understanding of human scale. This includes both the relation between proportional elements in a composition and the relation between the human body and the spaces it occupies both physically and visually.
13. Develop skills in physical prototyping and visual representation that can effectively convey both formal and spatial ideas as well as more complex conceptual ideas (affective capacities, atmosphere, projected and actual materiality, etc.).

Collaborative Work

Design is a collaborative undertaking – **Students will work on groups of 3 (P2 & P3)**

Professional practice in architecture, design or engineering takes place through close collaborations between teams of people. Identifying effective ways to communicate, assign responsibilities, identify milestone and achieve objectives are essential skills to succeed in professional practice. For this reason, the studio will require students to work in teams. This collaboration should allow for intensive work and iteration to take place in parallel. Generally, the more iterations are pursued the stronger the work.

Working in groups also means that you will be evaluated as a group – thus, pick your team wisely.

As it will be presented in the course, working online with teams distributed across various continents has been standard practice over the last few decades. However, as difficulties might emerge, faculty will work with students to work through problems and make accommodations in group formations to support the production of high-quality work as needed.

Costs

While the term will be conducted online, the Material Narratives Studio is a material-oriented investigation. The studio requires intensive material explorations that have material costs. It is expected that participants can purchase required materials (as locally available) to support these explorations.

Please budget $200 / student for the term.

Reference Readings

The following readings are for your reference:

- Of Other Spaces: Utopias and Heterotopias, Michel Foucault. 1967
- The Space of Play: towards a general theory of heterotopia, Lieven de Cauter and Michiel Dehaene, 2008
- The Architectural Promenade and the Perception of Time, Michael Lowe, 2016
- Forward to Public Intimacy, Architecture and The Visual Arts, Giuliana Bruno, Massachusetts Institute of Technology, 2007
- Pleats of Matter, Folds of the Soul, Giuliana Bruno, 2003
- The Architecture of Image: Existential Space in Cinema, Juhani Pallasmaa, 2001;
- A Picturesque Stroll around “Clara Clara”, Yve-Alain Bois, October, Vol.29. (Summer,1984)
- Animate Form. Greg Lynn. New York: Princeton Architectural Press. 1999.
- Solving Tough Problems, Adam Kahane, 2007
- Thomas Heatherwick: Making, Thomas Heatherwick, 2012
- The Craftsman, Richard Sennet, 2009
- The Inner Studio, Andrew Levitt, 2006
- The computational Fallacy, Kwinter, 2003
- Computational Material Culture, Achim Menges, 2016
- Computational Design Thinking, Menges and Ahlquist, 2011
- The New Materiality, Manuel DeLanda, 2015
- Chemists and the school of nature, Bensaude-Vincent et al. 2002
- Nature’s hierarchical materials, Fratzl and Weinkamer, 2007

Additional readings, video clips and sources will be provided with each assignment via LEARN and TEAMS.

Schedule

		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
JANUARY		27	28	29	30	31	1	2
		3	4	5	6	7	8	9
	WK 1	10	11 Lecture 1 P1 issued	12	13	14 Lecture 2 P1A hand in P1B issued	15	16
	WK 2	17	18 Lecture 3	19	20	21 P1B presentation P1C issued	22	23
	WK 3	24	25 Lecture 4	26	27	28 desk crits	29	30
FEBRUARY	WK 4	31	1 P1C review P2 issued	2	3	4 desk crits	5	6
	WK 5	7	8 Lecture	9	10	11 desk crits	12	13 reading week
	WK 6	14 reading week	15 reading week	16 reading week	17 reading week	18 reading week	19 reading week Furture of Prefabrication Symposium 12 - 2:30 PM EDT	20 reading week
	WK 7	21 reading week	22 Lecture	23	24	25 P2 Review	26 Furture of Prefabrication Symposium 12 - 2:30 PM EDT	27
MARCH	WK 8	28	1 Lecture P3 Issued	2	3	4 Desk Crit	5 Furture of Prefabrication Symposium 12 - 2:30 PM EDT	6
	WK 9	7	8 desk crits	9	10	11 Lecture 06	12 Furture of Prefabrication Symposium 12 - 2:30 PM EDT	13
	WK 10	14	15 No classes	16 No classes	17	18 desk crits	19	20
	WK 11	21	22 desk crits	23	24	25 P3 INTERIM REVIEW	26	27
APRIL	WK 12	28	29 lecture	30	31	1 desk crits	2	3
	WK 13	4	5 desk crits	6	7	8 desk crits	9	10
	WK 14	11	12 desk crits	13	14 Friday Schedule Last day of classes	15 pre-exam period no classes	16 pre-exam period no classes	17 First day of Exams
	WK 15	18	19 FINAL REVIEW	20	21	22	23	24
	WK 16	25	26 Last day of Exams	27	28	29	30	

Official Business

ARCH 690 is scheduled as follows:

Mondays 9:30 AM – 12:30 PM | 1:30 PM – 5:30 PM

Thursdays 9:30 AM - 12:30 PM | 1:30 PM – 5:30 PM

Course Time Zone

All dates and times communicated in the document are expressed in Eastern Time (EDT Local time in Waterloo Ontario, Canada).

Winter 2021 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.

Grades

The grade for the term will be based on the following breakdown:

- Course Project – Phase 1: 20%
- Course Project – Phase 2: 20%
- Course Project – Phase 3: 50% [Final Project]
  Participation – 10%

Participation

The Studio is a structured space for experiential investigation and speculative dialogue. Each student and student group are expected to provide constructive feedback with regard to their own work and the work of others.

Participation includes active engagement in lectures, desk-crits and reviews.

The work in the Studio also requires a commitment to the development of multiple iterative physical prototypes, films and various visual communication material.

Evaluation

Each assignment throughout the term will be assessed on the following basis:

- Ambition, clarity and appropriateness of the ideas addressed within the work.
- Invention, innovation and vision embodied within the work.
- Architectural/spatial quality and technical resolution of the proposition.
- The effectiveness and completeness of project documentation and the work's capacity to communicate a project's intentions in the author's absence.
- Integrity in the development of the project from initial to final phase.
- Precision and craft of physical artifacts created.

In addition to this list, a more specific set of measures will be identified in individual project handouts. Grades will be made available to students through LEARN. Faculty will do their best to publish grades in a timely manner.

Late Work

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 Graduate Student Services Co-Ordinator and accepted by the Graduate Office.

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]

Technological Platforms

Since there will be no access to the computer lab at the school, students are expected to have Rhino on their computers. While associative modelling workflows for geometric modelling are encouraged, they are not required.

Image capturing (camera) and video editing software, such as Adobe Premier, will be needed to appropriately document the projects under controlled conditions.

Remote Course Delivery Platforms & Communication

During remote learning, we will be using additional platforms to deliver, organize and share course content, learning and work. Here is a breakdown of tools we will use in this course:

MS TEAMS – Virtual Hub for the course. Used for organizing course documents, activities and discussions. Students will be added to the course team in the first week of class.

LEARN – Official communication, work submission, and grade recording and release.

MIRO – group desk-crits, graphic feedback, discussion with classmates' work.

Student Notice of Recording

The course's official Notice of Recording document is found on the course's LEARN site. This document outlines shared responsibilities for instructors and students around issues of privacy and security. Each student is responsible for reviewing this document.

All live lectures, seminars and presentations including questions and answers will be recorded and made available through official course platforms (LEARN and/or MS Teams). Students wishing not to be captured in the recordings have the option of participating through the direct chat or question and answer functions in the meeting platforms used.

Course events, if any, that will not be recorded are indicated in the course schedule.

Individual desk critiques/meetings and small group meetings will not be recorded.

Mental Health Support

All of us need a support system. We encourage you to seek out mental health supports when they are needed. Please reach out to:

Campus Wellness [https://uwaterloo.ca/campus-wellness/]

Counselling Services [https://uwaterloo.ca/campus-wellness/counselling-services]

We understand that these circumstances can be troubling, and you may need to speak with someone for emotional support. Good2Talk [https://good2talk.ca/] is a post-secondary student helpline based in Ontario, Canada that is available to all students.

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 office, Graduate office, 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.

Academic integrity, grievance, discipline, appeals and note for students with disabilities:

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: AccessAbility Services, located in Needles Hall, Room 1401, 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 AccessAbility Services at the beginning of each academic term.

Turnitin.com: Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin in this course.

It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit the alternate assignment.

Online Academic Integrity

All students are expected to work individually and submit their own original work – unless indicated otherwise. Under Policy 71, the instructor may have follow-up conversations with individual students to ensure that the work submitted was completed on their own. Any follow up will be conducted remotely (e.g., MS Teams, Skype, phone), as the University of Waterloo has suspended all in-person meetings until further notice.

Land Acknowledgement

We acknowledge that we live and work on the traditional territory of the Attawandaron (Neutral), Anishinaabeg and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, the land promised to the Six Nations that includes ten kilometers on each side of the Grand River.