

## 2017-2018 Elective, Option Studio, and Research Studio Course Descriptions

### Elective Course Descriptions

Fall 2017

Winter 2018

### Studio Course Descriptions

Fall 2017 Option Studio

These courses are open to Master of Architecture, Master of Landscape Architecture, and Master of Urban Design students as topic specific advanced design studios, where a range of conceptual, technological, urban, or regional problems can be explored.

Winter 2018 Research Studio

This sixth studio in the Master of Architecture program sequence is an advanced studio. The studio is organized by each professor around a focussed theme, which forms the basis for student research and design and establishes the thematic and research framework that will become the basis for the students' final thesis project.

# Fall 2017 Elective Course Descriptions

ARC1100HF: Selected Topics in Design – Brian Boigon

## Locomotive Design and The Inertial Frame



How shall one enter into the computational practice of Architecture? Should it simply be a matter of attaching our thinking and feeling selves onto the codes inside machines? And how then, if we are given operational deftness to maneuver in this world, are we, pray tell, supposed to experience the physics of another realm and then transpose it back to our own? This seminar on Locomotive Design and The Inertial Frame will attempt to draw insights from within other disciplines that have shaped experience through modelling movement as the main tour de force; as both a wave and a particle, an action and an object all at once and the same.

The problem of framing movement in physics has a legion of sources from Newton to Einstein. In Einstein's Special Relativity, the concept of an inert figure upon which to measure mass and movement is shaped by his discussion of the "Inertial Frame" the roots of which predate him by at least two centuries.

"A "frame of reference" is a standard relative to which motion and rest may be measured; any set of points or objects that are at rest relative to one another enables us, in principle, to describe the

relative motions of bodies. A frame of reference is therefore a purely kinematical device, for the geometrical description of motion without regard to the masses or forces involved. A dynamical account of motion leads to the idea of an “inertial frame,” or a reference frame relative to which motions have distinguished dynamical properties. For that reason, an inertial frame has to be understood as a spatial reference frame together with some means of measuring time, so that uniform motions can be distinguished from accelerated motions.”

*DiSalle, R. (1988). Space, Time and Inertia in the Foundations of Newtonian Physics. Unpublished Ph.D. Dissertation, University of Chicago.*

Thus, one can argue that experience itself is both a form of movement (wave) which is filtered through a variety of Inertial Frames (particles).

This “movement” cannot be experienced unless it is put in relation to a relevant Inertial Frame. For Architecture, the frame of a window would suffice as the analogy of the Inertial Frame in which movement is represented through its dimensionality.

The fixtures of such an analogy are somewhat true and false and therefore represent one of the deepest paradoxes in the designer tool shed.

And while we do not design moving architectures per se; nor do the tools of design scripting express the codex beyond their (materialistic) extrusions; there is much to be gained from studying the routines of movement and applying insights back into design practice itself.

The theoretical argument for exploring Locomotive Design and Inertial Framing modalities is to expose the Design Student to alternative movement routines and motion pathways.

Several areas of locomotive design will be explored and exported onto the designer runway such as: video games, cartoon animation, painting, sculpting, drawing, special effects animation, literary devices, archery, martial arts, formula one racing, ceramics, knitting, ballistics and cooking.

The seminar will include lectures and presentations based on required readings followed by class discussion. Students will be produce and present group and individual assignments.

Deep within the measurable fields of the wired/wifi world lies the the problem of dynamical locomotive design. Steeped in the rhetoric of cumbersome scripting and modelling lies a central problem of maneuverability.

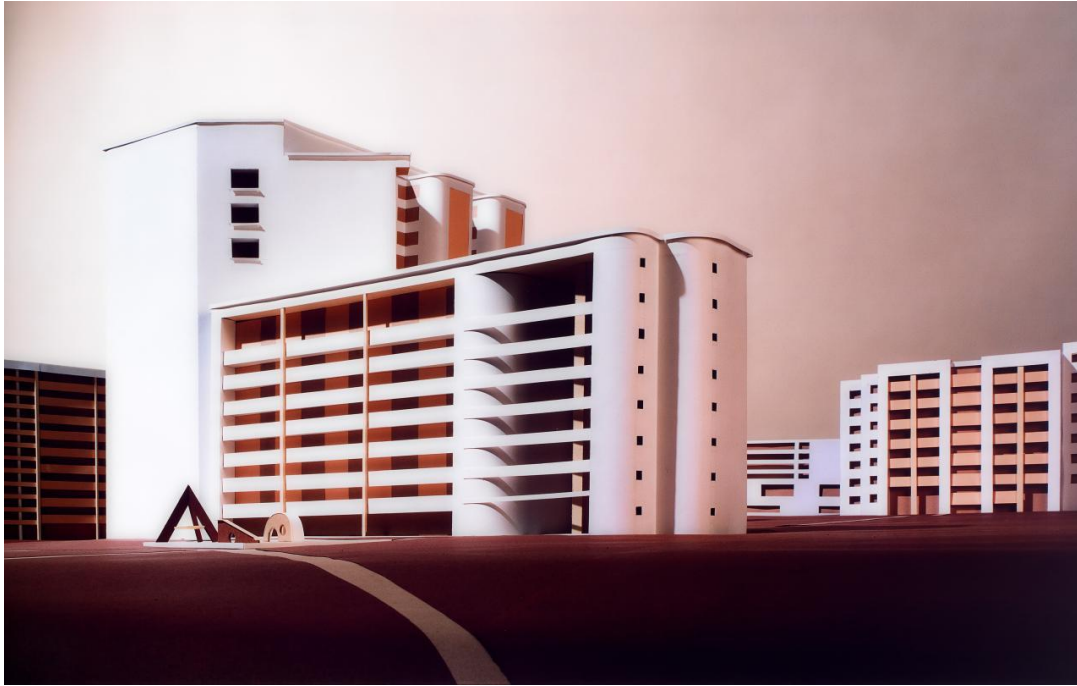
And as such, it will remain a priority for this seminar, to look outside the design profession at the movement regimes where these working worlds provide a modal range of pathways across all the senses and senseless.

**Students who previously completed ARC3033HF6 in Fall 2013, ARC3033HF1 in Fall 2014, or ARC3033HF2 in Fall 2015 are not permitted to enroll.**

**Valuing Architecture**

In debates about architecture's role and meaning within late-capitalist systems, architectural agency continues to be a source of anxiety. Through techniques such as representation and the manifesto, architects make claims about the future value of their work. They respond to political, social, and economic contexts by producing architectural effects and modes of practice that draw upon financial models, building regulations, program, and other sources of limits and inventiveness. This seminar examines historical and contemporary values of architecture—from symbolic to instrumental—by analyzing writings about the discipline's capacity for speculation.

Through course readings drawn from architectural history, theory, sociology, and criticism, we will construct a history of architecture as an agent of urban transformation. We begin with the study of property, in particular its material and symbolic valuation, and the architectural fictions projected on the North American landscape since the early 19<sup>th</sup> c. The development of architecture and urbanism is viewed through the lens of the discipline's professionalization. Each week's readings, lecture, and discussion will focus on a case study drawn from the history of architectural modernism (e.g. Plan Voisin, Seagram Building, John Portman's atrium buildings, Pyramide du Louvre, etc.). These case studies will serve as the starting point for independent research, with students producing a 3,500-4,500 word essay that analyzes a building/plan and articulates a position on architectural value.

**The Photographic Mediation of Architecture**

Thomas Demand, *Public Housing* (2003). Image from National Gallery of Victoria, Melbourne, Australia.

From Julius Shulman's idealizations of California modernism up to Helène Binet's present-day interpretations of Zaha Hadid's and Peter Zumthor's buildings, architectural photographs tell us much about architecture in its cultural and intellectual contexts. Sometimes images correspond to the intentions of architects, their clients and the imagined publics for whom buildings have been designed; in other cases, photographs reveal previously hidden aspects of built space and invite new interpretations. While the relationship between buildings and their representations is necessarily complex, themes including space, subjectivity, materiality, ornament, mimesis, interiority and otherness all find their expression in architectural photographs.

Using significant works and thematic explorations, this seminar will offer a broad survey of architecture's contemporary and historical relationship with photography. The status of this relationship in the 21<sup>st</sup> century will be a key focus. In an age of digital production seemingly untethered from the real, architects and photographers have developed new representational techniques and tactics. These include architectural fictions such as Philipp Schaerer's *Bildbauten* series and Edwin Zwakman's *Fly Over III*, the use of photomontage by Dogma and Office Kersten Geers David van Severen, and Thomas Demand's model photographs.

Beyond photography, this course will explore numerous analogous media such as drawing, plaster casting, 3D scanning and printing, and cinema.

Seminar participants will complete three assignments:

- 1) The presentation of an object from the Canadian Centre for Architecture's photography collection;

- 2) The making of an image or object in response to the themes raises in this seminar; and
- 3) The writing of a short theoretical paper on a relevant topic; the relationship between text, image and caption will be a key focus for this assignment.

**\*\*Please note that an optional visit to Montréal is provisionally scheduled for October 13–15\*\***

### ARC3310HF: Selected Topics in Arch History and Theory – John Harwood

#### **The Architectures of the North American Railways: Architecture and Logistics.**

Contemporary projects for “greener” infrastructures, automated transportation, and global supply chains—alongside perceived crises in all three areas—have brought the railroad back into the center of urban, architectural, and political discourse. This course will examine the architectural history of the railroads of Canada, the United States, and Mexico. Although there is an ample literature on the architecture of railroad stations—beginning with Carroll L.V. Meeks’s landmark *The Railroad Station* (1956 and still in print)—this subject has been investigated largely within the confines of an architectural history that privileges canonical monuments and symbolism largely removed from their industrial and political context.

The seminar will take another tack, drawing inspiration from the University of Toronto’s own Harold Innis, one of the founding figures of media studies in general and one of Canada’s most important historians of political economy. Considering the railroads as vast and rapidly changing infrastructural apparatus, *and* by taking seriously the technical aspects of railroads as media (communications and cultural technologies), this course will seek to re-examine architecture’s role in articulating a contemporary imaginary and praxis of logistics. In short, we will examine exemplars of every component of the railroad systems from the smallest switch to the most complex timetables and stock offerings in an effort to reframe the architectural history of the railroad in relation to economic and technical realities.

Readings will be drawn from primary and secondary sources, and the seminar will include an introduction to the unique archival resources available at the University of Toronto related to the history of the Canadian and US/Canadian railway systems.

### ARC3311HF: Selected Topics in Arch History and Theory – Matthew Allen

#### **Procedure, Image, Architecture: Theories and History of Computational Aesthetics**

In this seminar, we will examine contemporary architectural ambitions by looking closely at where they came from. The premise is that, in the decades since the 1940s, values and ideals associated with computers have come to permeate all aspects of architecture culture -- even areas that seem to have nothing to do with computation. Hidden within images are the values and theories that informed their creation. We will look closely at historical and contemporary images in order to extrapolate a set of aesthetic categories for digital and post-digital architecture.

One goal of the seminar is historical. We will look at the history of architects using computers from the 1960s to the present, emphasizing 1) the many different concepts of “the computer” throughout this period; 2) the divergent ways of doing architecture these resonated with; and 3) some of the specific media technologies, image-making practices, and graphical conventions that were developed to further these architectural ambitions. We will reconstruct the theoretical foundations of several computer-related epistemes that have slipped from historical memory. Why did Cedric Price create a punch-card information storage system for his office in the late 1960s? Why did SOM turn to wireframe graphics in the late 1970s? And why did postmodernists invent parametrics in the 1980s? We will also look at the more familiar digital architecture of the 1990s and 2000s.



Another goal of the seminar is theoretical. We will look, in particular, at theories of aesthetics in art and architecture. Several points will emerge: images create a conversation within a subculture; images stake claims of expertise; aesthetic categories encode specific and elaborate ways of seeing the world; aesthetics is always political. We will spend the most time with the "aesthetics of administration" of the 1960s and its aftermath in procedural aesthetics, algorithmic aesthetics, digital aesthetics, and, finally, post-digital aesthetics.

Readings will be drawn from architectural history, theory, and criticism, new media theory, history of science, and philosophy. In writing assignments, students will examine historical aesthetic categories, develop alternative genealogies of digital architecture, and speculate on contemporary practices.

ARC3400HF: Selected Topics in Architecture and Technology - Ted Kesik

### Wood-Frame Construction Technology



This is a practical, introductory-level course aimed at providing students with an understanding of wood-frame construction technology within the context of the Canadian housing industry. The course examines wood-frame construction technology within the scope of residential and small buildings. It explores the various technical elements of residential buildings from foundations through to finished exteriors and interiors. In addition to reviewing conventional wood-frame house construction, the course will also review advanced framing, structural insulated panels (SIPs) and engineered wood products such as cross-laminated timber (CLT). The environmental performance of wood-frame housing will also be assessed through performance standards such as Passivhaus. Students will be given the opportunity to apply the requirements of the Ontario Building Code to gain proficiency in sizing structural elements and detailing the building enclosure. The course will conclude with a survey of contemporary

wood-frame construction technology, innovations and trends. (Important Note: This course is not suitable for students seeking an advanced level wood construction technology course.)

This course is intended to provide students with the opportunity to engage the following learning objectives:

1. Gain an understanding of the numerous applications of wood-frame construction technology in building design.
2. Become fluent in the various methods and materials of wood-frame construction technology;
3. Cite the relevant codes and standards, including better practices;
4. Develop the ability to render a set of drawings and specifications for small-scale wood-frame building projects; and
5. Establish a framework for future exploration, research and study of wood-frame construction technology.

**Students who previously completed ARC3400H are not permitted to enroll.**

**ARC3600HF: Selected Topics in the History & Theory of Arc & Health - Stephen Verderber**

### **Health and the Built Environment**



This seminar explores the timeless relationship between the built environment, public health, and human and ecological well-being. Landmark events in history, theories, and care settings from antiquity to the present, and prognostications for 2050 are explored. Healthcare delivery systems are examined, transcending static disciplinary barriers. The fundamental goal is to foster a transactional understanding and appreciation of key responsibilities, concerns, and priorities in the planning and design of the built environment in both the civic and private realm in relation to individuals' and organizations' charged with the stewardship of human health in the built environment (architects, landscape architects, industrial designers, direct



care providers, and public policy makers). Case studies are drawn from diverse global cultural contexts vis-à-vis a space-timeline chronology, as this provides a basis for examining patterns of adaptation and the diagnosis of dysfunctional, counter-therapeutic, or otherwise maladaptive care settings both in the institutional milieu and in everyday built environments.

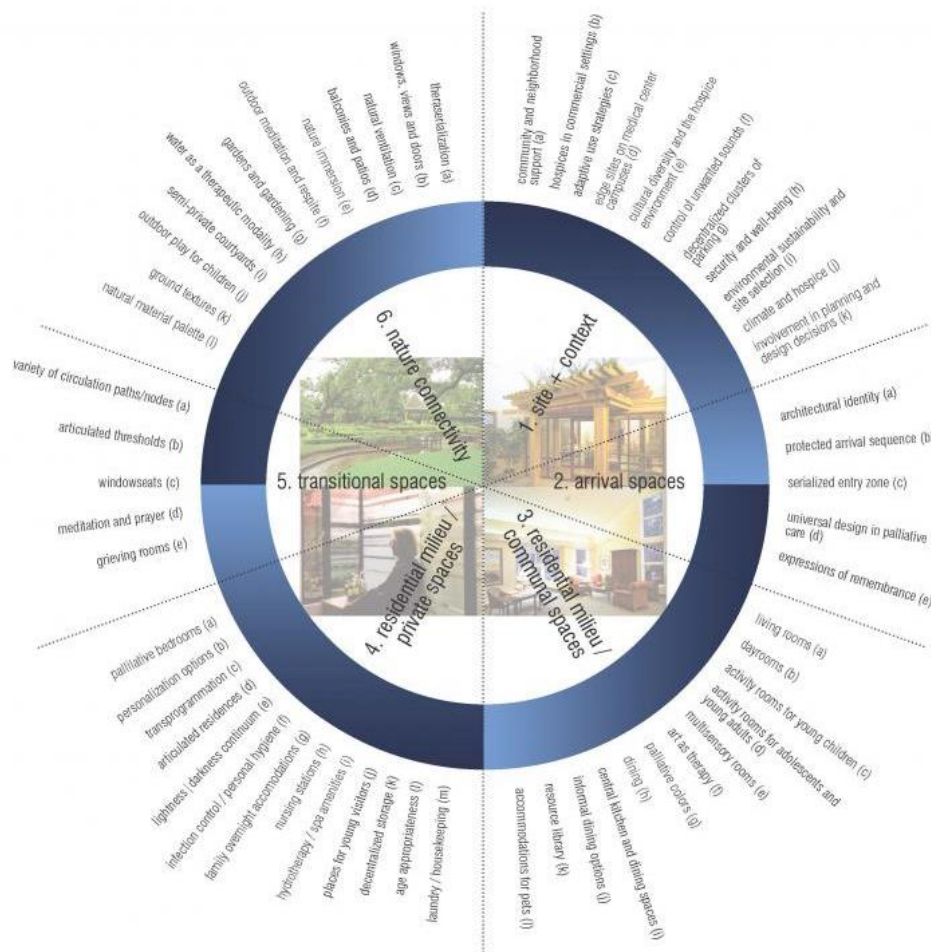
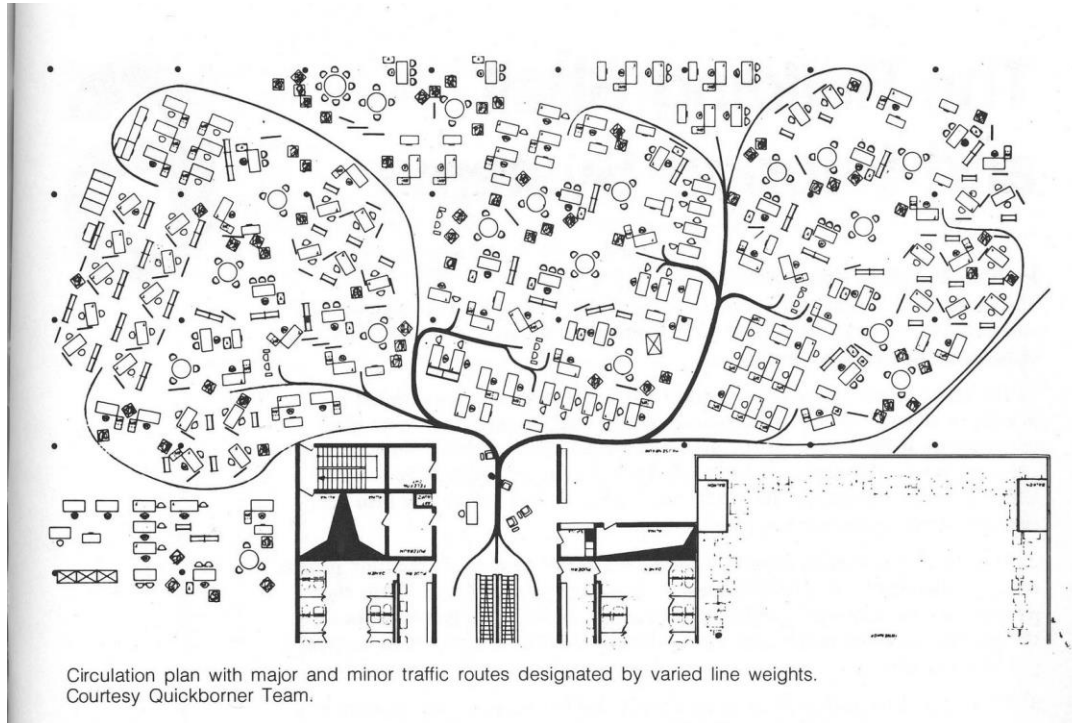


Figure 1: Architectural and Landscape Design Considerations in Residential Hospice Environments

Topics discussed include architectural typologies for health, affordance theory, biophilia, salutogenic care settings, health promotion and community wellness, societal aging, environmental perception and cognition, and sustainable planning and design. Readings, class discussions, and an independent term project are supplemented with architectural, landscape, and community-based precedents (it is the only course of its kind *anywhere*).

**Students who previously completed ARC3600H are not permitted to enroll.**

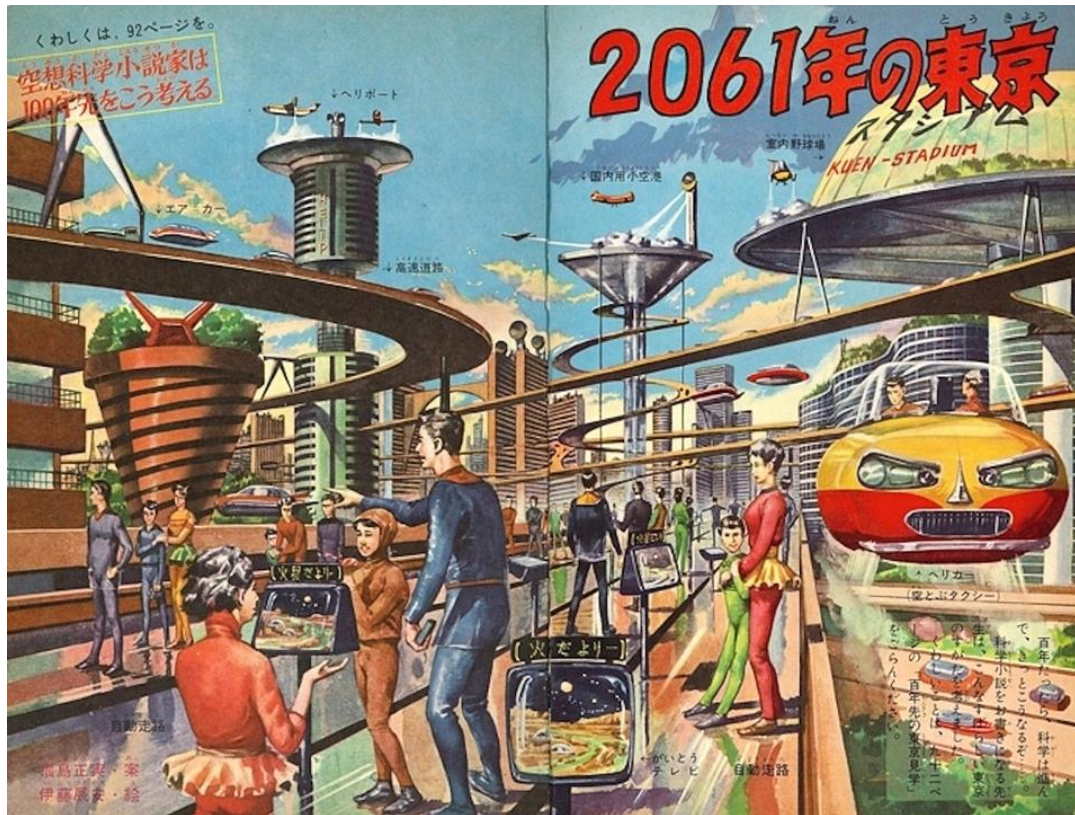
### The Architecture of Work



This seminar is focused on the evolving architecture of work. We will observe and discuss the typological inventions and technological tendencies of the workplace since 1955. The course will consider the “spatial protocols” (Easterling) of work such as corporate complexes and office parks that foster the contemporary labour force. Architects, prodded by corporations, have often sought efficiency and Taylorist order in the design of the workplace. However, there have also been experiments in the transformation of work culture, which has impacted the spatial and social conditions of the workplace. In addition there are numerous small innovations that have had large spatial impacts such as the water cooler, the cubicle, and the personal computer, among others.

In this seminar, we will consider a range of people, ideas, and products including the work of Eero Saarinen and Norman Foster, the readings of Keller Easterling and Reinhold Martin, and the cultural transformations of co-working and mobile technology. The structure of the course will be in two parts. The first part is structured as a seminar including foundational readings, presentations, and discussion. The second part will involve a drawing-based research analysis of the architecture associated with a contemporary form of work.

## Near Futures: Scenarios for Building Tomorrow



Given all predictions and speculations about how climate change, science, technology and human behaviour are changing the biosphere, it is highly relevant to ask what this all means for the future of architecture, and for architecture of the future.

This seminar examines and explores how the design, production and use of architecture, and cities, is affected by rapidly and dramatically changing circumstances. The effects of climate change, the promises and threats of technological and scientific advancements, the near-certainties of how demographic developments will affect the coming decades: all these large trends will most likely make deep impacts on the (built) environment, and on the life led in and between buildings. But how will it work out? In this seminar students will create scenarios, in words and images, of plausible futures, to develop a deeper understanding of the future of architecture and their own critical position in it.

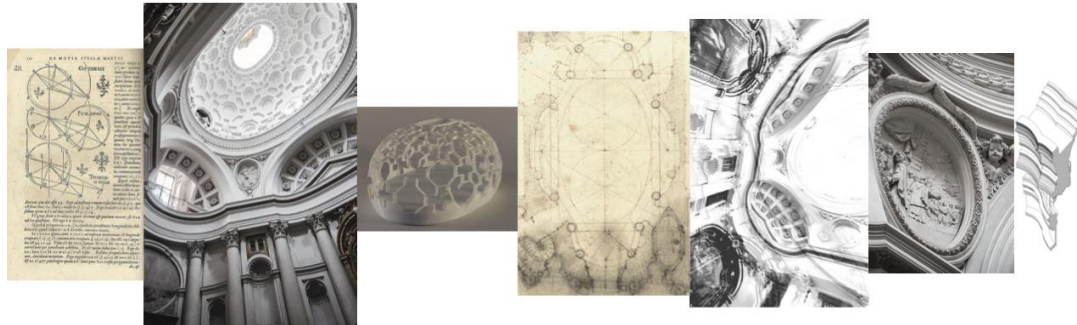
The course will look back at futures of the recent past and look forward to potential, possible, probable, and plausible futures of architecture and cities. What will be the impact of driverless cars on mobility, online shopping on city centres, artificial intelligence on the design of buildings, virtual realities on material worlds, or a jobless society on how the built environment is used and people interact, to give just a few possible questions which could be addressed in this seminar.

The course consists of brief lectures, scenario writing instructions, discussions, and student presentations.



## Finding San Carlino

A course in Analysis, Making, and Meaning.



Architecture has been investigated through broad *Analytic Frameworks* of *Form*, *Syntax/Language*, *Space*, *Volume*, and *Façade* to name a few. Analytic frameworks are immaterial modes of cerebral conception and forms of artistic intelligence that inevitably inform making processes in art and architecture. These are by no means neutral or void of social, cultural, and political agency; both conscious and subliminal. We will work with three such trans-historical Frameworks - *Flatness*, *Space*, and *Surface*; making an analytic artifact (of San Carlo alle Quattro Fontane) for each.

### San Carlo alle Quattro Fontane

Francesco Borromini's San Carlo alle Quattro Fontane has been extensively investigated since its inception in 1634, most of these analyses attempting to reconstruct through geometry an *ideality* of the church through its design evolution. The church (and its representations) sustain numerous incongruous readings of geometry, form, symbolism and space. Certain parts of the church correspond neither with these readings nor with the geometry shown in Borromini's drawings. Not only do they fail characterization in terms of their formal and canonical architectural identity, but also in the rules that dictate their means of coherence. Borromini worked his ideas through orthographic drawings and sketches. How then did he conceptualize and reconcile the distinct yet synchronously active systems of logic, modes of geometry, and spatial illusions into a synthetic architectural artefact? In the absence of geometrical *facts*, how might one interpret San Carlino? Since the established tenets of analysis (and design) often fail to describe San Carlino, it necessitates interrogating these very modes of analysis; and proposing alternative Analytic Frameworks. With these, we aim to represent and make manifest some of the architectural intelligence active in Borromini's thinking that transcended drawing and transcended geometric composition.

### Analytic Frameworks: FLATNESS | SPACE | SURFACE

*Flatness* will challenge the process of designing using a Flat Surface - be it a stone tablet, paper or a computer screen. Flatness will be informed by the spectrum of thinkers from Alberti & Brunelleschi to Clement Greenberg & Michael Fried.

*Space* will address the human body's physical and psychological being in, and assimilation of the environment. Thinking to explore Kant's space as an a priori intuition, Descartes' space as a coordinate system, Schmarsow's space as a result of bodily motion, Leibniz's differential space, Einstein's Space-Time, Lobachevsky, Gauss and Riemann's topological spaces, and Gibson's ecological approach to perception.



*Surface* is the encounter between inside and outside, material and immaterial, geometric and intuitive. Surface is not the residual (or outermost) layer of a form/solid or a volume; but an entity decoupled from all of the above, that constructs its own subjectivity and its own present-ness. Surface is to be investigated through Michelangelo Buonarroti, Adolf von Hildebrandt, Alois Riegl, August Rodin and Rachel Whiteread.

#### Objet

Sparing three weeks for each Framework, each student (or team) will make three artifacts – *drawings*, *models* (carved and modelled), *digital models*, *animations* and *collages*. Each three week phase will commence with a lecture and discussion of relevant readings and conclude with a complete artefact. The focus will be on *artistic imagination* rather than on historical or tectonic accuracy. And San Carlino will serve as a *vehicle* rather than an *object* of analysis, for students to devise their own Frameworks to observe, think, and make. We will unravel through these artefacts - architectural fictions nascent in the myth that is San Carlino.

#### URD1031HF: The History of Toronto Urban Form - George Baird

This course will present a history of the development of the urban form of the city and the urban region of Toronto from the late eighteenth century to the present.

In each session of the course, a presentation will be made by the instructor (sometimes accompanied by a visitor), and this will be followed in each session by class discussion. It is hoped also that it will be possible to organize a series of walking tours of significant parts of the city, but the tours in question will need to take place outside the regular times of the sessions of the course, and will depend on the availability of students to participate in them.

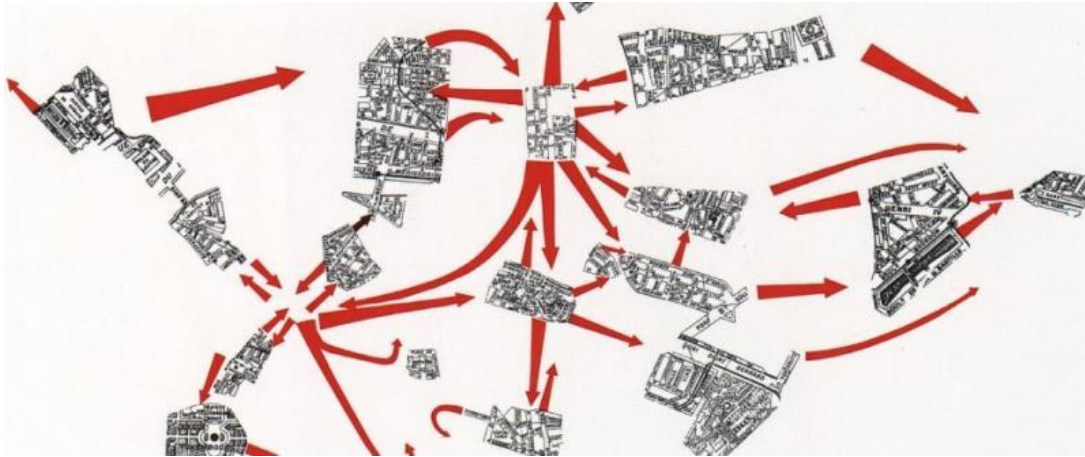
The course will explore the characteristic relationships that have grown up over the years between the distinctive topography of the city; the early patterns of its settlement, and the evolution over time of its successive infrastructures, including railways, port facilities, expressways, transit lines and pedestrian walkway systems. These characteristic infrastructures will be described in terms of their gradual, systematic impact on the evolving form of the city.

At the same time, the architecture of the city will also be described, but this description will demonstrate primarily how buildings became typological in the historical evolution of Toronto. One might say that the buildings will be depicted to the extent that they demonstrate the typical relationships of the city's building typologies to its emergent urban morphology.

The course has been conceived to be of particular interest to urban design and planning students, but it is open as an elective to students in the architecture and landscape architecture programs as well.

**Students who previously completed URD1031H are not permitted to enroll.**

## URD1041HF: Introduction to Urban Design Theory - Mark Sterling

**Urbanisms**

This course, which will be delivered in seminar format, is an introduction to contemporary urbanism and urban design. In the seminar, students will explore: theoretical writings and manifestoes; and projects and practices as attempts to shape the physical organization of cities in response to the forces which drive change in modern urban society. This course is not intended to be a comprehensive historical survey. It will be a critical review of approaches to urbanism composed of theories, positions and design projects as well as glimpses into contemporary urban design practice.

The course focuses on selected modern practices across different scales, from the late nineteenth century to the present, and is intended to provide a context for contemporary urban design practice which, it must be recognized, is situated in the midst of histories and attitudes that were mostly determined and established in the latter part of the last century. A critical review of these histories and attitudes is intended to raise questions for urban designers about future trajectories and territories for urban design.

The seminar is open to graduate students from all programs at the Daniels Faculty of Architecture Landscape and Design as well as to graduate students in the Department of Geography and Planning, Program in Planning pursuing an Urban Design specialization. The course is open to students in other faculties and programs at the University of Toronto subject to the availability of space and the instructor's permission.

**Students who previously completed URD1500H are not permitted to enroll.**

## URD1503HF: Selected Topics in Urban Design – Roberto Damiani

### Regions of Adjacencies



“The whole is greater than the sum of its parts.” —Aristotle

Since Aristotle, Western thinking has recognized the whole and its parts as the two primary entities informing both intellectual and physical experience. For a long time, what holds parts together occupied only a marginal position, but in the twentieth century, a cross-disciplinary debate placed relationships and interactions at the core of the cultural debate. If the city is the human artifact par excellence, how did thinking about reality as interconnected entities affect urban thinking?

Cross-referencing architecture, landscape, and urban design, the seminar will serve as an exploratory platform to discuss the possibility of theorizing the urban condition as regions of adjacent entities. The oppositional visions of city/countryside and downtown/suburbs, the unsuccessful tool of zoning, and contemporary urban polynucleated models, such as the city as an archipelago, do not provide successful examples of facing the increasing heterogeneity of modern cities. As an alternative, the seminar will investigate conditions of urbanity nestled between urban structures, and their relative degrees of relatedness.

As a requirement for each class, students will be asked to present and discuss urban concepts and design projects. As a final project they will produce a dossier, choosing a case study of either an urban concept (in-between, terrain vague, porosity, etc.), an urban project, or a real urban condition from around the world.

The seminar is open to graduate students from all programs in the Daniels Faculty of Architecture, Landscape, and Design as well as to graduate Planning students in the Department of Geography and Planning who are pursuing an Urban Design specialization.

## URD1504HF: Selected Topics in Urban Design – Ruba Kana'an

### Cities, Architecture, and Landscape in Muslim Societies

This course addresses architectural design, urban space, and landscape in ‘Islamic’ cities from early Islam (7<sup>th</sup> century) to our current day. The course approaches the Islamic city and its architecture both as an urban phenomenon and as a modern analytical concept focusing on the notion of territory, or the link between land and identity. The course explores cities such as Cairo, Damascus, Aleppo, Baghdad, Fez, Rabat, Samarqand, Isfahan, Istanbul, and Delhi, as well as the most iconic architectural monuments in them. Its content cover some central themes in the study of Islamic architecture and urbanism including stereotypes and orientalist imagination, the architecture of power; and the notion of the garden as earthly paradise. The course takes the form of introductory lectures, group discussions

of maps and models, and student projects on the relationship between the representation of cities and monuments and the world they seek to depict.

VIS1010HF: Contemporary Art Since 1960 – Luis Jacob

### **Narrating Place in Toronto**

This course considers the various ways in which the identity of “place” is constructed in Toronto. We will explore the means by which the city is represented in art, film, literature and urbanism. We will also critically examine how questions of “place” enable an engagement with the contradictions of colonial, nationalist, regionalist and cosmopolitan frames of reference. The course is offered as a series of seminars, with assigned readings, research papers and presentations by students.

**Enrolment:** Mandatory for MVS 1st Year students. Non MVS students can enroll subject to approval by the MVS Program Director **Charles Stankieveh**  
contact: [charles.stankieveh@daniels.utoronto.ca](mailto:charles.stankieveh@daniels.utoronto.ca)

**Students who previously completed VIS1010H are not permitted to enroll.**



## Fall 2017 Option Studio Course Descriptions

ARC3015YF LEC0101: Architectural Design Studio 5 – Monica Adair, Stephen Kopp

ARC3015YF LEC0102: Architectural Design Studio 5 – Brady Peters, Ultan Byrne

ARC3015YF LEC0103: Architectural Design Studio 5 – Adrian Phiffer

ARC3015YF LEC0104: Architectural Design Studio 5 – Peter Sampson, Liz Wreford

ARC3015YF LEC0105: Architectural Design Studio 5 – Dan Wood

ARC3015YF LEC0106: Architectural Design Studio 5 – TBD

LAN3016YF LEC0101: Design Studio Options – Fadi Masoud

LAN3016YF LEC0101: Design Studio Options – TBD

URD2013YF LEC0101: Design Studio Options – Alfredo Landaeta

## Winter 2018 Elective Course Descriptions

ARC3200H: Selected Topics in Advanced Computer Applications – TBD

LAN2202HS: Landscape Architecture Topics: Design – TBD

LAN2701HS: Landscape Architecture Topics: Society - TBD

LAN2901HS: Landscape Architecture Topics: Theory – TBD

URD1501HS: Selected Topics in Urban Design – TBD

URD1504HS: Selected Topics in Urban Design – TBD

VIS1020HS: Contemporary Art: Theory and Criticism - TBD

This course engages major developments in contemporary theory and criticism as pertinent to the history of contemporary art. The course attends closely to the relationship between art practice and its interpretation. Major focus on critical writing, close reading of work, and the development of pertinent frameworks for the explanation and interpretation of contemporary art and artistic practice. Course is offered as a series of seminars, with assigned readings, research papers and presentations by students.

**Enrolment:** Mandatory for MVS 1st Year students. Non MVS students can enroll subject to approval by the MVS Program Director **Charles Stankievech**  
contact: [charles.stankievech@daniels.utoronto.ca](mailto:charles.stankievech@daniels.utoronto.ca)

**Students who previously completed VIS1020H are not permitted to enroll.**

# Winter 2018 Research Studio Course Descriptions

ARC3016YS L0101: Research Studio – TBD

ARC3016YS L0102: Research Studio – TBD

ARC3016YS L0103: Research Studio – TBD

ARC3016YS L0104: Research Studio – TBD

ARC3016YS L0106: Research Studio – TBD

ARC3016YS L0107: Research Studio – TBD