

ARCH 2501 Design Communication 1
Dalhousie University
School of Architecture
Fall 2023

How the course works (Attendance/Class Participation):

This is a course where you learn the content in class, which means student participation is expected and encouraged. Class time will consist of a mix between, short lectures, large and small group discussions, presentations, hands on activities, and/or field work. Students must come to class prepared to discuss the readings and/or presentation for that week. If you are going to be absent, it is still your responsibility to make sure your assignment is on time. I will not provide lecture notes to students. This is a studio class, and if you are not here, your chances of succeeding in this class are not good.

ARCH 2501 Design Communication 1

Dalhousie University

School of Architecture

Class Time: Tuesday, 2:35 to 4:25pm

Room: Sexton A. L. MACDONALD-D BLDG D501

Tutorial Time: Friday, 1:00 to 2:00pm

Room: B102 at Medjuck building

Course Instructor: Ken Kam

Course T.A.: Kaylee Peters, kaylee.peters@dal.ca

Office: B101A (Ralph M. Medjuck Building)

Contact: ken.kam@dal.ca

Credit hours: 3

Calendar Description

This course studies principles and techniques for documenting, analyzing, and presenting characteristics of the built and natural environments. Using manual and digital media, students learn freehand drawing, photographic narrative, and basic computer 3D modeling program.

Additional Description

Architects, scientists, political activists, manufacturers, and others employ a variety of visual tools to study and engage with the world. Students in this course learn to evaluate maps, simple technical drawings, and other visual devices, and use them to analyze actual situations and to generate and present innovations. Hands-on work is emphasized, but no prior experience in drawing or design is needed.

Learning Objectives

- learn to observe, document, and present formal and spatial qualities of the built environment
- gain an awareness of manual and digital media for describing the built environment

For this a three-credit-hour course, each student is expected to spend approximately nine hours per week on course-related activities, including classes, readings, and assignments.

Assignments

Students must complete all assignments to finish course. More details during class.

Equipment and Materials: TBA

- Dalhousie University and the Faculty of Architecture and Planning provide student access to digital software.
- Digital software: Adobe Photoshop, InDesign, Illustrator, Microsoft PowerPoint/Keynotes, Blender
- Printing is available from the Faculty's digital lab, Libraries and commercial printers (Staples, Wade, etc.).

Evaluation Criteria and Standards

Assignments are graded by the instructors, in consultation with the course assistants.

Each assignment is evaluated according to two basic criteria:

- ability to observe, document, and present formal and spatial qualities of the built environment
- awareness of manual media and techniques for describing the built environment

There are no group assignments in the course, so all assignments will be assessed individually. There are up to 12 assignments, each worth from 2% to 20%.

Undergraduate standards are noted in the undergraduate calendar (Academic Regulations > 17.1):

- Excellent (A-, A, A+): Considerable evidence of original thinking; demonstrated outstanding capacity to analyze and synthesize; outstanding grasp of subject matter; evidence of extensive knowledge base.
- Good (B-, B, B+): Evidence of grasp of subject matter; some evidence of critical capacity and analytical ability; reasonable understanding of relevant issues; evidence of familiarity with the literature.
- Satisfactory (C-, C, C+): Evidence of some understanding of the subject matter; ability to develop solutions to simple problems; benefiting from his/her university experience.
- Marginal pass (D): Evidence of minimally acceptable familiarity with subject matter; critical and analytical skills.
- Inadequate (F): Insufficient evidence of understanding of the subject matter; weakness in critical and analytical skills; limited or irrelevant use of the literature.

Without medical documentation, the grade for a late assignment will be deducted 5% per weekday (more detail in class).

Student Rights and Responsibilities

Please see the School's "Academic Regulations" page (tinyurl.com/dal-arch-regulations) for a summary of university policies affecting academic courses:

- Accommodation Policy for Students
- Academic Integrity
- Code of Student Conduct
- Services Available to Students

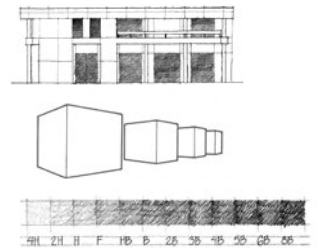
FALL 2023

Exercise 1: Freehand Drawing, Blender, and digital editing (40%)

- Sep. 12 1. Elevation - Freehand Sketch (*Blender tutorials*)
 ↓ 2. Perspectives - Freehand Sketch (*Blender tutorials*)
 3. Perspectives/Tones Sketch (*Blender tutorials*)
 Oct. 10 4. Lights/Camera

Blender tutorial (1-7):

https://www.youtube.com/watch?v=jnj2BL4ch-aQ&list=PLn3ukor7v4vuU3ILv3g3xnUyEGO-QR-D87&ab_channel=GrantAbbitt



Exercise 2: 2D drawings to 3D world (30%)

- Oct. 10 1. Push and Pull, UV unwrap Translate 2D drawings to 3D model.
 ↓ 2. Camera and Lighting in 3D world
 Oct. 31 3. Create a small 3D model of a small city block.
 4. Placement of Virtual Camera and render out images.



Exercise 3: Photographic Narrative (30%)

- Oct. 31 8. Photographic Typology (Photoshop Tutorial).
 ↓ 9. Photomontage (Photoshop Tutorial),
 Dec. 5

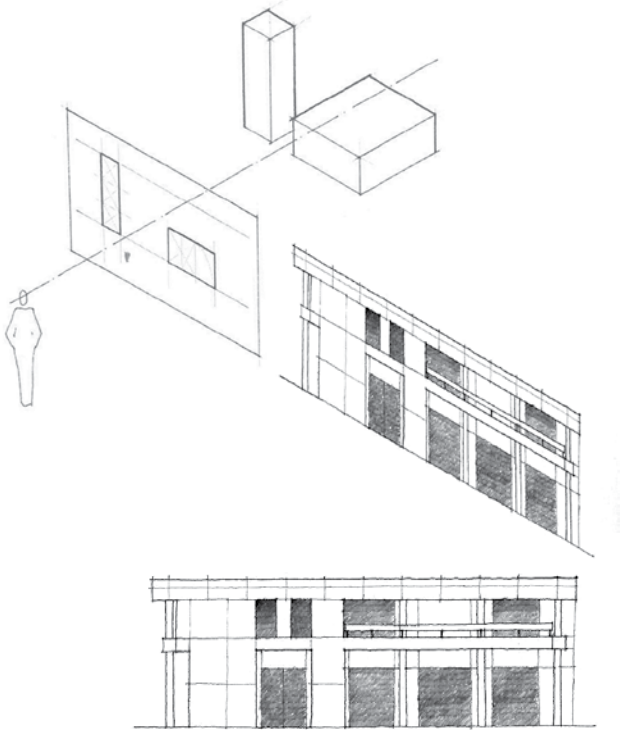
Photoshop tutorial (1-3):

https://www.youtube.com/watch?v=xTzvQkOl-l2U&list=PLLSBGLV3EPIFGSGw2z72K43V5vxM-MMTE&index=2&ab_channel=PiXimperfect



Elevation/Orthographic

1.1



Objectives:

Investigation through Freehand Drawing | Looking at Landscapes: careful observation and description, construction lines, expressive and communicative lines, control, pressure, line weight, placement on the page.

Exercise 1.1: Freehand Sketch Exterior Elevations (intro. to Blender)

You are to draw three exterior building elevations/facades.

General process (more details are presented during class):

1. How to build a drawing.
2. Knowing the “Tools of the Trade”.
3. Understanding - Line stroke, quality, weights, and types.
4. Practice, practice, practice - creating the drawings.

Digital editing your Freehand sketch

Goal:

Using drawing as a mean of **description**. You will be able to analyze and sketch/draw well-proportioned building elevations, and apply proper line properties to area of interest (e.g. windows, doors, roof etc...)

What you need:

- Wood graphite pencils (4H - 8B)
- Multiple sheets of letter size paper
- laptop with Blender and photoshop

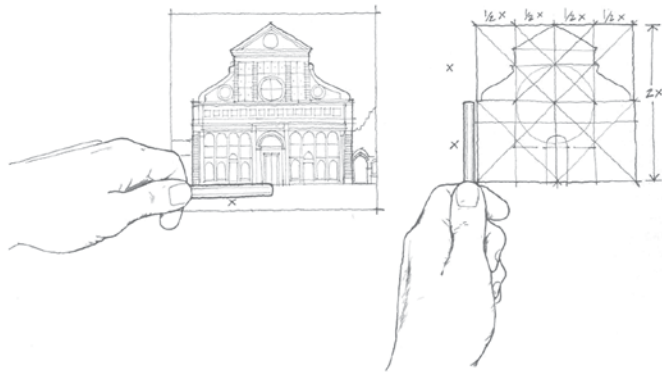
Readings:

1. Jenkins, Eric J. 2012. “Sketching as a Bodily Skill.” In *Drawn to Design*.

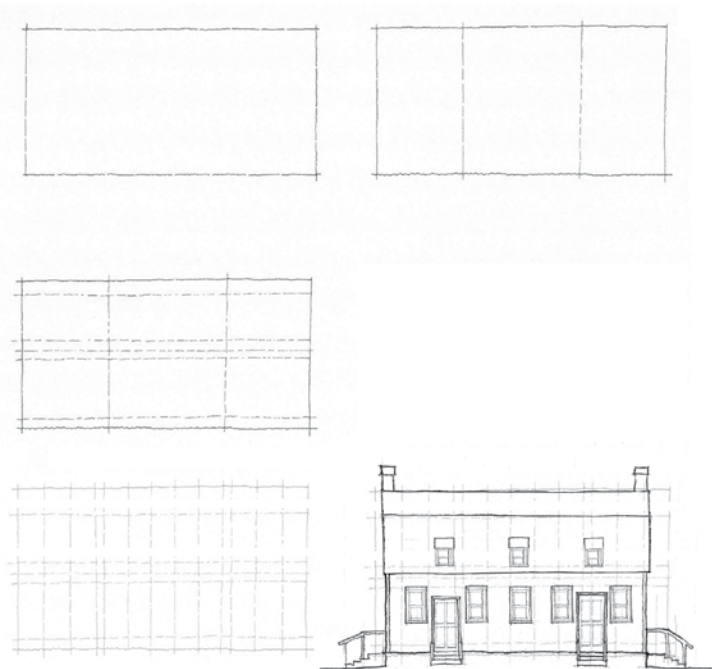
Submission:

3 jpg images on Brightspace.

Format: kamelevation1.jpg



Using a pencil to find proportions



Drawing of Palazzo Chiericati, Vicenza, Italy, scanned at six different stages from guidelines to finished drawing

How to build a drawing

A building is an assemblage of elements layered one on another. Upon conceptual and physical foundations rest more complex frames that, in turn, support increasingly detailed elements and ideas. The building materializes as a whole so that, in the end, the overall and the detail interlink as a totality.

Likewise, when drawing at a site, it is helpful to start with the framework and then allow the drawing to grow into a complete entity. Developing out of a process, the drawing in turn reinforces the process of seeing layers and hierarchies and of seeing the comprehensive interrelationship of detail and whole.

For more practical reasons, beginning with the overall proportions and then adding increasingly detailed information helps ensure that the sketch fits on the page. Beginning a drawing in an upper corner and working at all levels simultaneously toward a lower corner may result in a drawing that, if finished, is off the page's edge. Additionally, a correctly proportioned façade is more likely to support

correctly proportioned bays, which in turn fit correctly proportioned windows. If the overall form is out of proportion, each subsequent element necessarily will also be out of proportion to make it fit.

Two ways to establish a framework and mapping the proportions are using either a length of a pencil or pacing out dimensions of a façade, an interior volume or an object. For the pencil technique, while holding a pencil between your forefinger and thumb, fully extend your arm so that the distance from your nose to the pencil remains constant. Look down your arm at your subject with your pencil in the foreground. Adjust your pencil's length as needed to match an element on the façade, such as a bay or floor height and let the pencil-to-thumb length be a standard unit of measurement.

Count the number of units for verticals and horizontals and then convert and transfer those units and their multiples to a unit on your page. Continue to adjust your pencil-to-thumb length for smaller elements as needed. You can also

establish overall proportions by pacing off a room's width and length or a building's length. Make normal steps and count them out. Note the overall number and, most importantly, the number at significant moments, for example the column bays or changes in material. Transfer the number of steps to units on your page as in the pencil technique. For example, a courtyard may be 30 steps by 45 steps, with colonnades five steps on all sides. Those units, 35x45 with five on each side, can then be drawn to a scale so that the drawing fits on the page.

Draw the larger framework to its complete extent, using only guidelines while noting significant subdivisions. With these guidelines in place, begin to slowly but steadily overlay increasingly detailed information. Even if you do not complete all of the detail, you will have the overall idea of the building firmly established.



students' work (Arch 2000, 2013), elevation on Barrington Street



Perspectives

1.2

Description:

Investigation how to create perspective diagrams by using *perspective* camera in Blender: concepts of vanishing points, picture plane, eye level, shifting Y axis, and the difference between one-point and two-point perspective.

Exercise 1.2: **one point perspective**

You are to create 3 - one and/or two point perspective drawings/diagrams

General process (more details are presented during class):

1. Understanding perspective drawing.
2. Knowing the terms.
3. Understanding the relationship between plan and perspective drawings.
4. Practice, practice, practice - creating the diagram.

Digital editing your Freehand sketch

Goal:

Using drawing as a mean of **observation**. Through the act of creating perspective drawings, you will learn how to analyze/study volumetric fluctuations, textures, choose what details to omit, and the scale of buildings.

What you need:

- Wood graphite pencils (4H - 8B)
- Sketchbooks
- laptop with Blender and photoshop

Readings:

1. Gill, W. Robert, 2006 "Introduction to Basic Perspective". In *Perspective From Basic to Creative*.
2. Bergerijk, Herman van, and Deborah Haupmann. 1998. "Introduction." In *Notation of Herman Hertzberger*.

Submission:

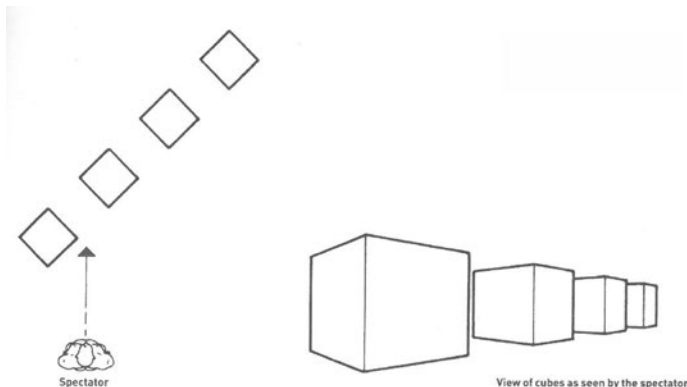
3 jpg images on Brightspace.

Format: kamperspective1.jpg

Video Tips:

https://www.youtube.com/watch?v=hjYDw7jNWK-B4&ab_channel=Linescapes

https://www.youtube.com/watch?v=AMxgVB4fw-JM&ab_channel=Linescapes

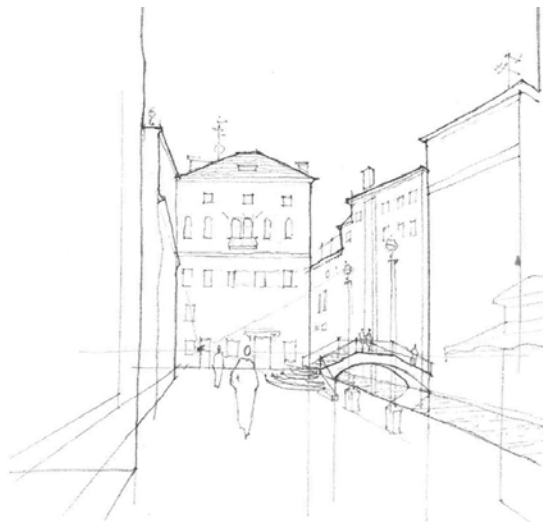
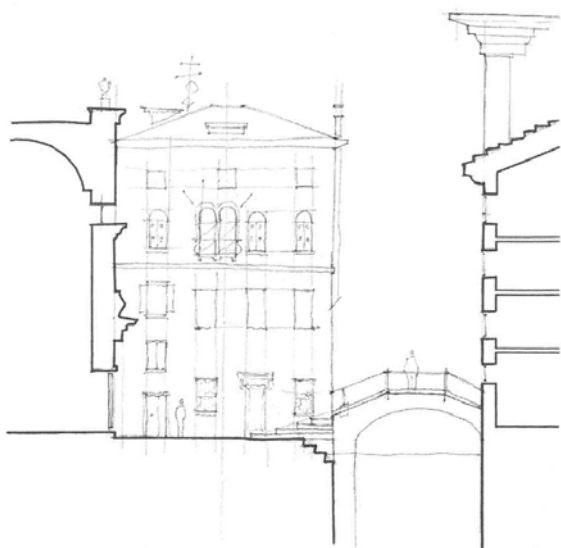


References:

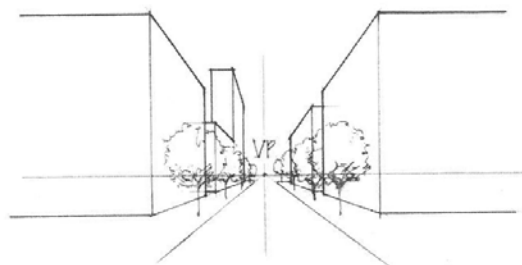
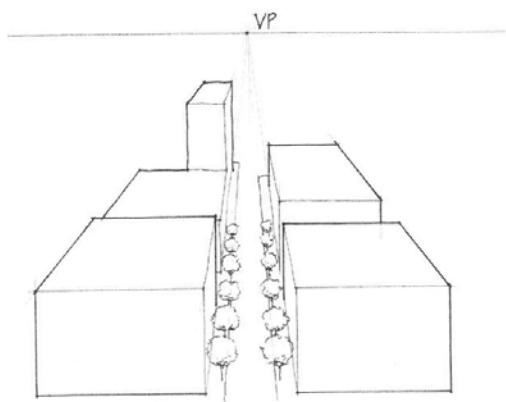
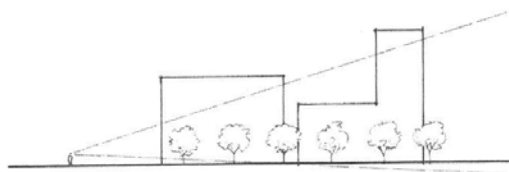
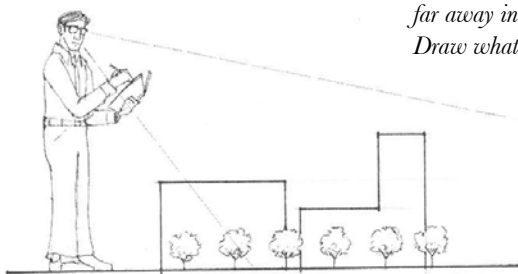
- Gill, W. Robert 2006, *Perspective, From Basic to Creative*. Thames & Hudson.
- Montague, John 2013, *Basic perspective drawing: a visual approach*. Hoboken, N.J.

One & two pt. perspective drawing

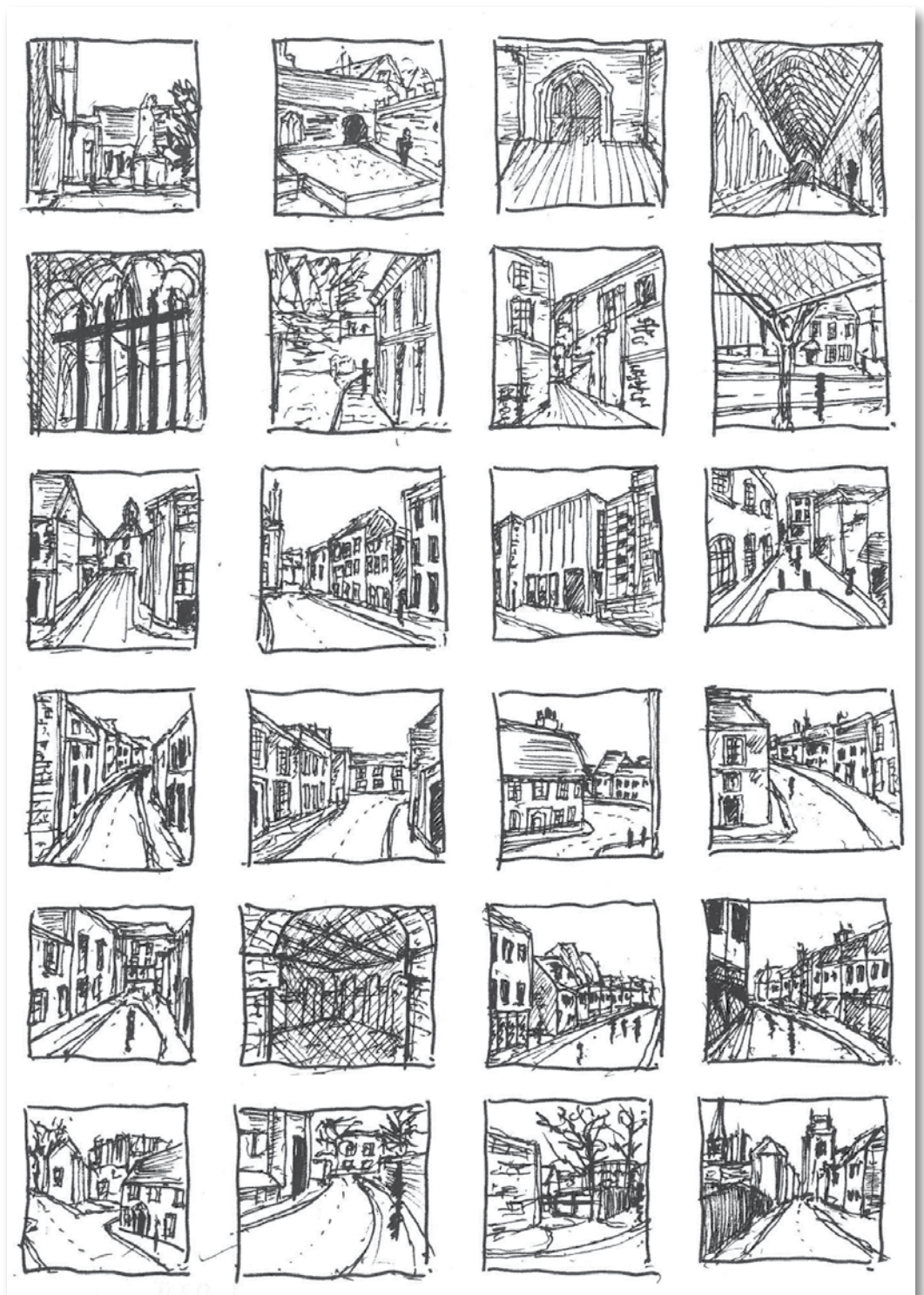
A perspective drawing describes an optical viewpoint of a place or object transferred onto paper. These drawings illustrate the aesthetic quality, function, and form of a subject as perceived by the eye, the three dimensions, and capture our experience. Perspectives, unlike technical drawings, are not drawn from an objective viewpoint.



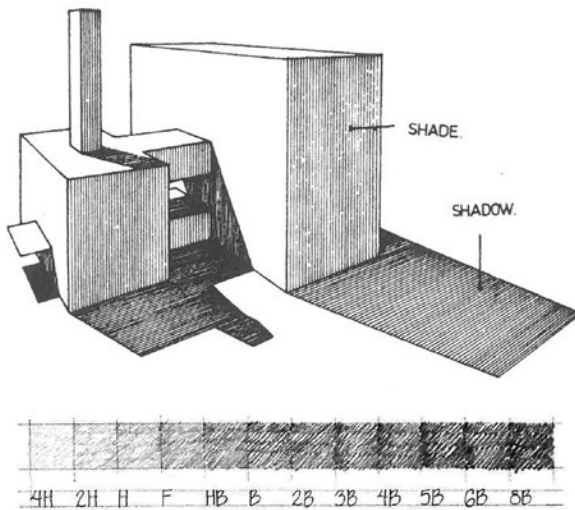
Creating perspective drawings require a different set of techniques than those used to generate technical drawings. To accurately draw a perspective, the focus point must be level with the eyes of the viewer. Objectives far away in the distance appear smaller than those closer to the viewer. Draw what you see, and not what you think you are seeing.



Michael C. Abrams, *The Art of City Sketching: A Field Guide*,
pg 128, 129, 131.



Niall Bird, University of Portsmouth
A series of small sketches through an urban route serve as snapshots of a city.



Tone

1.3

Description:

Investigation through Tone, Shade and Shadow | Urban Moods: modeling common objects in tonal media, attention to light and shadow, object and background, drawing by implication, thumbnail sketches, and positive shape and negative space.

Exercise 1.3 Representation of private, semi-private, and public space.

You will be assigned to 3 different Halifax downtown locations to sketch a series of tonal drawings to represent private, semi-private, and public space.

Digital editing your drawings

General process (more details are presented during class):

1. Understanding variations in shades and tones.
2. Understanding diminution of details, texture, and pattern as distance increases.
3. Understanding the use of texture and pattern to represent different atmosphere and space.
4. Practice, practice, practice - creating the drawings.

Goal:

Using drawing as a mean of **learning**. Through the act of creating tonal drawings, you will learn how to describe (using tone) the overall layout/plan of a “place” and how is the building interwoven with the public.

What you need:

- Wood graphite pencils (4H - 8B)
- Sketchbooks
- laptop with Blender and photoshop

Readings:

Farrelly L. 2011, *Drawing for Urban Design*, pg. 14-27.

Submission:

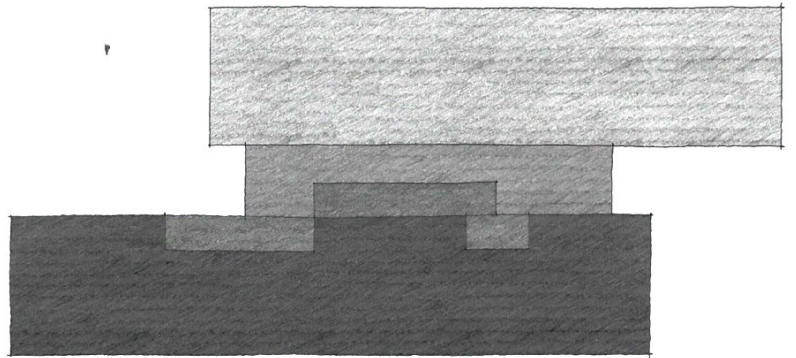
3 jpg images on Brightspace.

Format: kamtone1.jpg

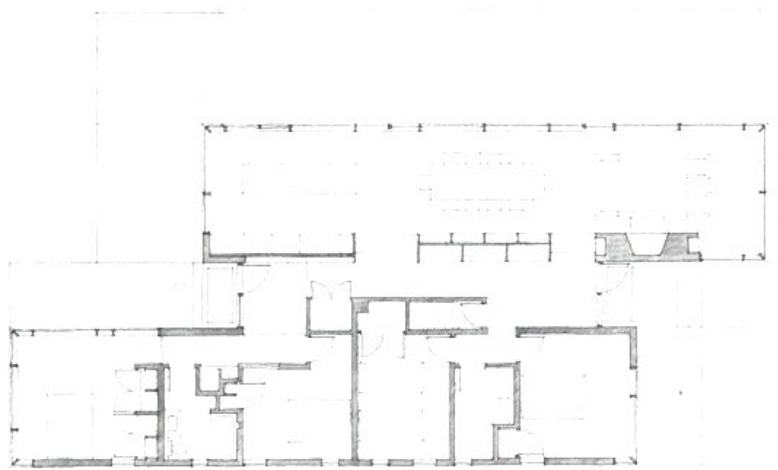
References:

- Sullivan, C. 2004, *Drawing the Landscape*, John Wiley & Son, Inc.
- Ching, F.D.K. 2015. *Architectural graphics*, Hoboken, N.J.

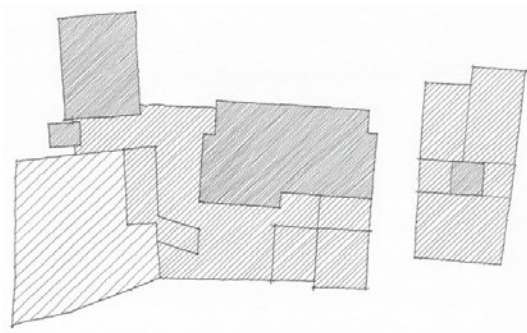
public and private gradations



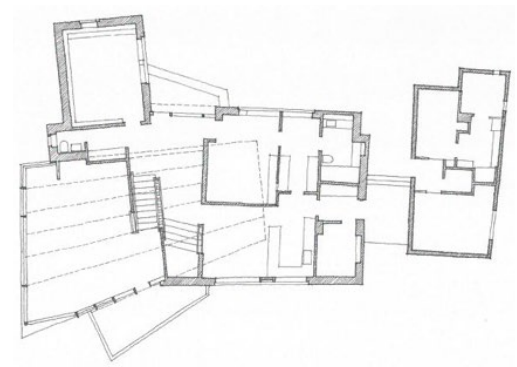
ground level floor plan



*House in Maine II
Penobscot Bay, Maine, 2004
Toshiko Mori House*

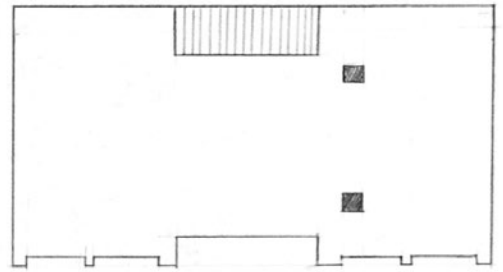
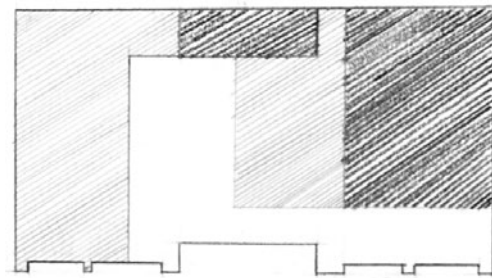


private and public areas intermixed



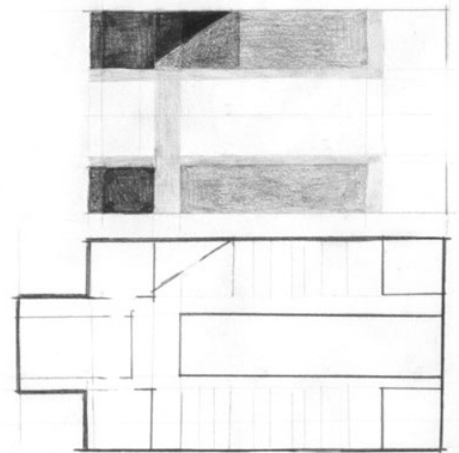
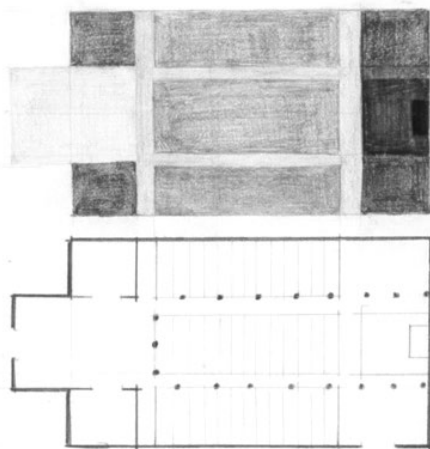
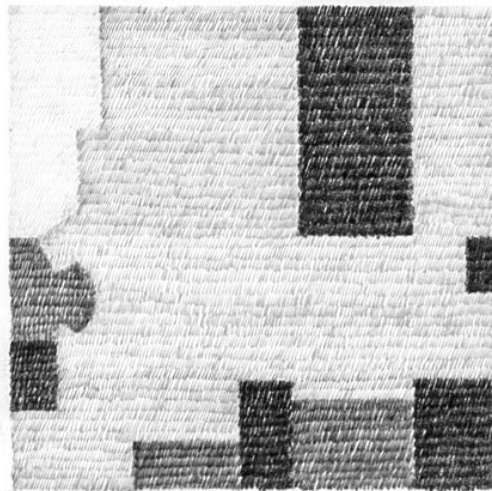
ground level floor plan

*Skeppet House
Tammisaari, Finland, 1970
Alvar Aalto*



bottom left: private &
public space, level 1

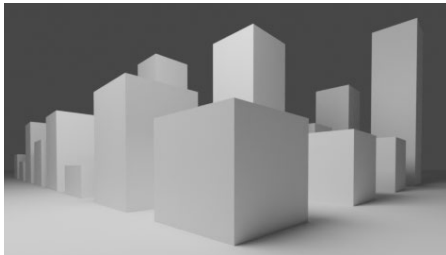
below: floor plan,
level 1



*students' work (Arch 2000, 2016)
private, semi-private, and public tonal
drawings*

Lights/Camera

1.4



Description:

Using Blender's virtual environment to understand camera's focal length, lighting (contrast), and perspective vs orthographic views.

Exercise 1.4: Create and render out three images using Blender

Using simple geometry to create a simple city block.

Post production in Photoshop

General process (more details during class):

1. Create ground plain
2. Add geometries to plain.
3. Arrange and manipulate geometries on plain to create a city block.
4. Position different lighting (sunlight and artificial).
5. Place virtual camera and capture scenes.

Goal:

Through the act of creating digital 3D geometry in Blender, you will learn the difference between one and two point perspective and how to create them.

What you need:

- *laptop with Blender and photoshop*
- *Computer with Internet access*

Submission (Brightspace):

- 3 jpg images
- 1 Blender file

Format: kamlightcamera1.jpg and kamlightcamera.blend

Exercise 2 *building a digital 3D model*

Description:

Using the knowledge you've acquired for the past 4 weeks - Create a digital 3D model in Blender.

You will be assigned to a small city block in _____ and create a digital 3D model in Blender.

General process (more details during class):

1. Create ground plain
2. Add geometries to plain.
3. Arrange and manipulate geometries on plain to create a city block.
4. Position different lighting (sunlight and artificial).
5. Place virtual camera and capture scenes.

Goal:

A digital 3D model of _____ with pencil details.

What you need:

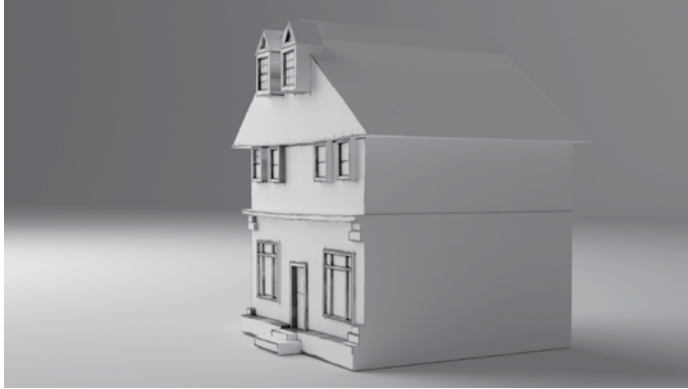
- *Wood graphite pencils (4H - 3B)*
- *Sketchbooks*
- *laptop with Blender and photoshop*



Push & Pull

UV unwrap

2.1



Description:

Translating 2D drawings into digital 3D model.
Understand basic principal in UV unwrap.

Exercise 2.1: Creating three digital 3D models from three different 2D images/drawing. Blender refer this as a process called “image-based modeling”.

General process (more details are presented during class):

1. Draw an elevation.
2. Scan or photograph the drawing.
3. Edit in Photoshop.
4. Import into Blender
5. Use Push & Pull technique to create the 3D geometry.

Goal:

Understand how to translate 2D drawings into 3D model using Blender. A basic understanding of UV unwrap.

What you need:

- Wood graphite pencils (4H - 8B)
- Sketchbooks
- Computer with Blender and Photoshop

Reference Video:

- Please refer to BrightSpace for detail

Submission (Brightspace):

- 3 jpg images
- 1 Blender file

Format: kampushpull1.jpg and kampushpull.blend

Camera Focal Length:

Wide-Angle Lens (Short Focal Length):

Focal Length: 20mm to 35mm (or lower)

Effect: Wide-angle lenses capture a broader field of view, making objects appear smaller and emphasizing depth. They exaggerate perspective, resulting in a sense of spaciousness.

Use Cases: Wide-angle lenses are often used for architectural visualization, landscape photography, and capturing vast scenes.

Normal Lens (Medium Focal Length):

Focal Length: 35mm to 70mm (approximately)

Effect: Normal lenses replicate the human eye's perspective, producing images with natural proportions and minimal distortion. They are versatile for various types of scenes.

Use Cases: Normal lenses are suitable for most everyday photography and general 3D scenes.

Telephoto Lens (Long Focal Length):

Focal Length: 85mm and above

Effect: Telephoto lenses compress perspective, making distant objects appear larger and closer together. They can isolate subjects from the background and create a sense of intimacy.

Use Cases: Telephoto lenses are commonly used for portrait photography, wildlife photography, and scenes where you want to emphasize a specific subject.

Camera Position:

Eye Level (Normal Position):

Position: The camera is placed at the subject's eye level.

Effect: This viewpoint is often used for a natural, observer-like perspective. It's commonly used for character dialogues and scenes that aim to depict the world as we typically see it.

Low-Angle Shot:

Position: The camera is positioned lower than the subject, looking up.

Effect: Low-angle shots create a sense of dominance and power for the subject. They can make characters or objects appear larger and more imposing.

High-Angle Shot:

Position: The camera is positioned higher than the subject, looking down.

Effect: High-angle shots can convey vulnerability or inferiority for the subject. They make characters or objects appear smaller and less significant.

Bird's Eye View:

Position: The camera is placed directly overhead, looking straight down.

Effect: This viewpoint provides an overall view of the scene, making it suitable for top-down maps, architectural plans, or surveillance-style shots.

Dutch Angle (Tilted Camera):

Position: The camera is tilted at an angle.

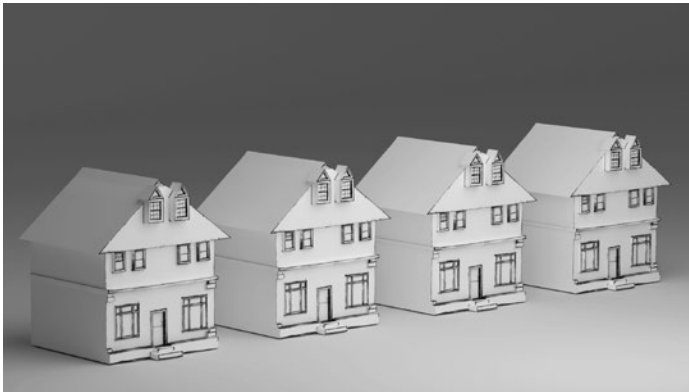
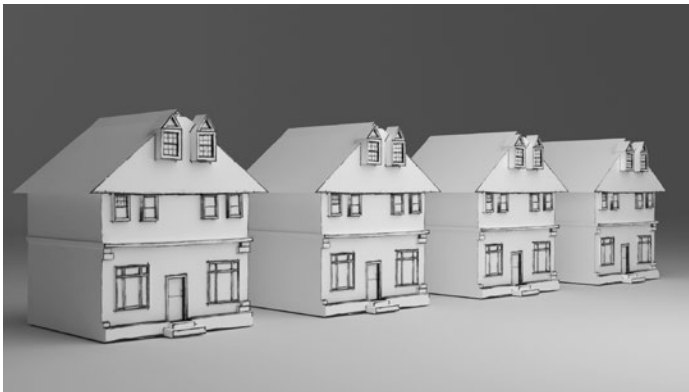
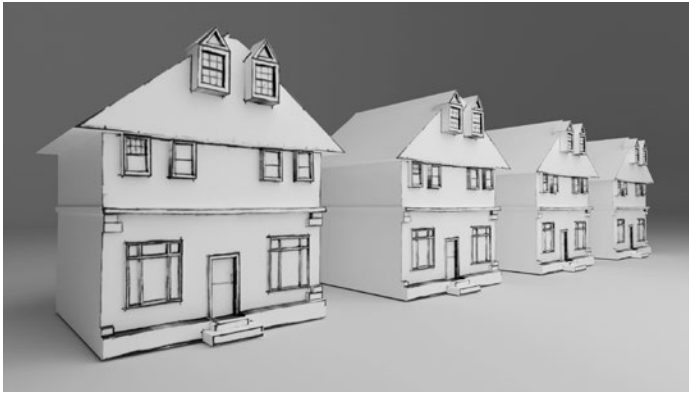
Effect: Dutch angles are used for dramatic effect and can create a sense of disorientation or tension in a scene. They are common in horror and thriller genres.

The choice of focal length and camera position should align with your creative goals for a particular scene or project. Experimenting with different combinations of these settings can help you convey specific emotions, emphasize subject matter, and create visually engaging compositions in Blender renders.

Submission (Brightspace):

- 8 jpg images
- 1 Blender file

Format: kamcameralight1.jpg and kamcameralight.blend



Camera and Lighting 2.2

Description:

Lighting plays a crucial role in the overall look and feel of your 3D scenes and renders. Different lighting setups can have a significant impact on the final result, affecting the mood, realism, and emphasis of your scene.

Adjusting the camera's focal length and position has a significant impact on the composition and visual aesthetics of your image.

Exercise 2.2: Experiment with Blender's different lighting setup: Directional, Point, Spot, Area, and Skytexture lighting. Experiment with Blender's virtual camera position and focal length.

General process (more details are presented during class):

1. Setup your 3D model from previous exercise.
2. Place lighting within 3D space and adjust.
3. Place camera within 3D space and adjust.
4. Render out images
5. Edit image in Photoshop.

Goal:

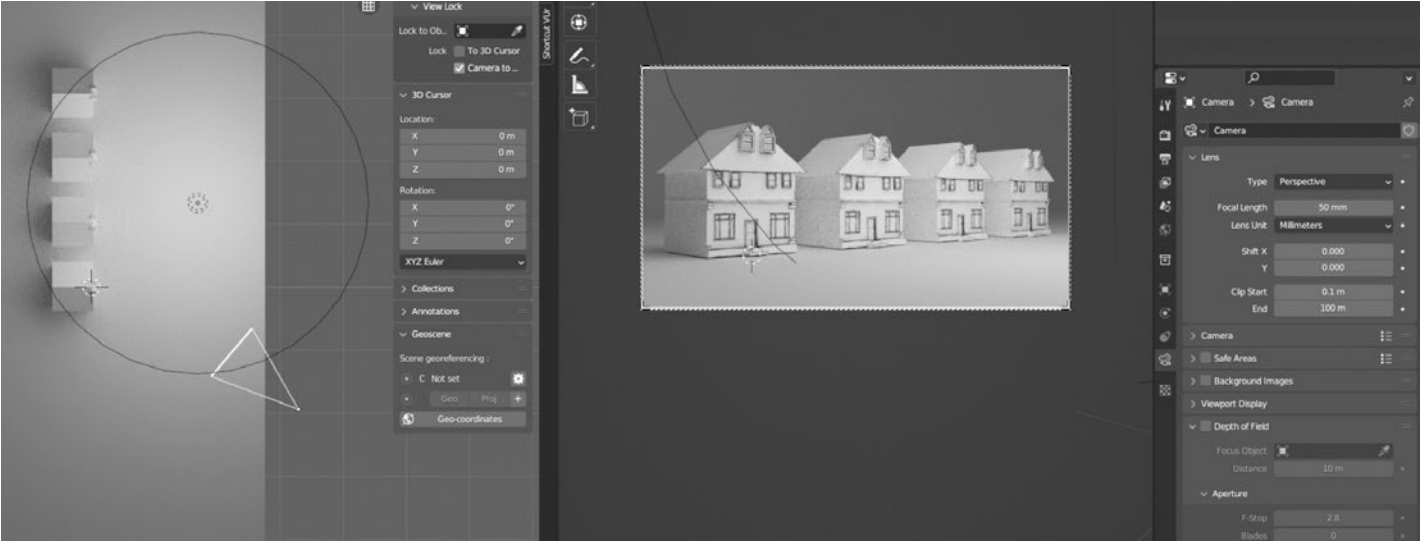
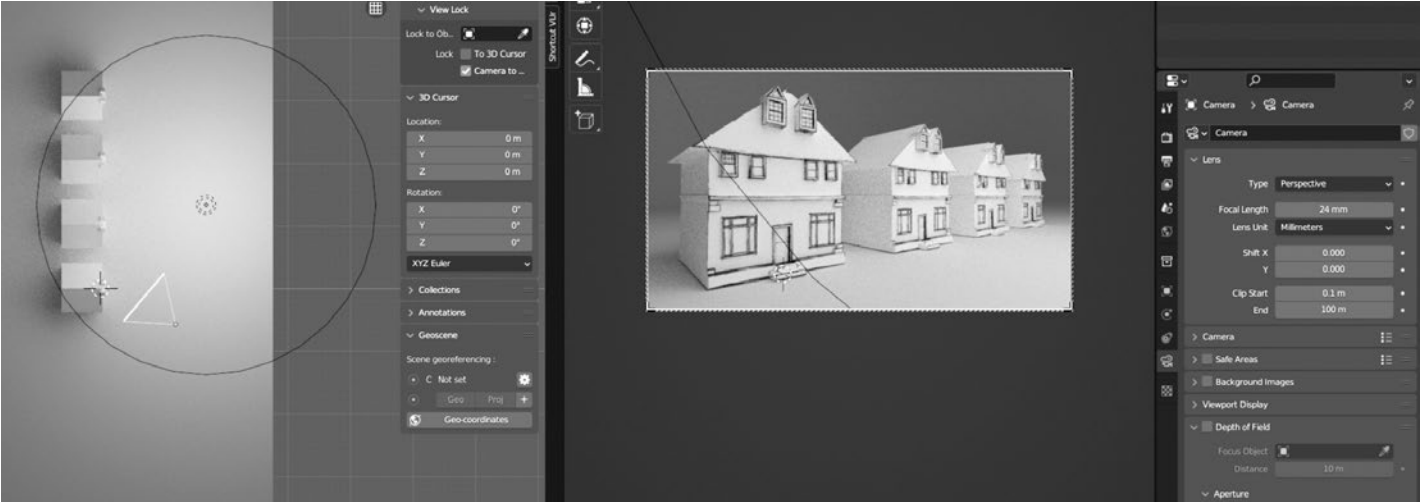
To learn and be familiar with using different lighting and focal length on camera to create the desired outcome/image.

What you need:

- Wood graphite pencils (4H - 8B)
- Sketchbooks
- Computer with Blender and Photoshop

Reference Video:

- Please refer to BrightSpace for detail





A city block 2.3, 2.4

Exercise 2.3 and 2.4

1. Create a small digital 3D model of a small city block.
2. Place Virtual Cameras and render out images.

General process (more details during class):

Creating a city block in Blender involves modeling various buildings, streets, and other urban elements to form a cohesive urban environment. Here's a step-by-step guide to help you create a basic city block in Blender:

Note: This is a simplified guide, and creating a detailed city block can be a complex and time-consuming process. It's recommended to start with a simple block and then add more details and complexity as needed.

Set Up Blender:

Open Blender and set up your workspace. Ensure you have an appropriate scale (e.g., meters) and units for architectural modeling

Create the Ground Plane:

- *Add a large plane (Shift + A > Mesh > Plane) to represent the ground of your city block. Scale it to the desired size.*

Model Streets:

- *Use the Knife tool (K) or the Loop Cut tool (Ctrl + R) to create streets within the ground plane. Plan the street layout and adjust the width and shapes as needed.*

Model Buildings:

- *Start creating individual buildings using basic geometric shapes like cubes. These cubes will serve as the building's footprint.*
- *Extrude and scale the cubes to create the building's basic shape. Adjust the heights and sizes to create variations in the buildings.*
- *Use the Edge Loop tool (Ctrl + R) to add details like windows and doors to the buildings.*

Texture Buildings:

- *Create or find textures for building facades. UV unwrap the buildings and apply the textures to add realistic details to each building*

Lighting:

- *Add appropriate lighting to your scene. Street lamps, sunlight, and ambient lighting can contribute to the atmosphere of your city block.*

Camera Placement:

- *Position the camera to frame your city block from the desired angle. Experiment with camera settings to achieve the composition you want.*

Rendering:

- *Configure the rendering settings in Blender (e.g., using the Cycles or Eevee render engine) and render your city block scene. Ensure you have good lighting and camera settings for the final render.*

Post-Processing:

- *After rendering, you can further enhance the image using image editing software like Photoshop or GIMP. Adjust colors, contrast, and add any necessary post-processing effects.*

Goal:

Create a digital small city block 3D model.

What you need:

- *laptop with Blender and photoshop*
- *Computer with Internet access*

Photographic Narrative

Description:

The city streets we inhabit consist of different layers of architectural details: signage, statues, gates, the texture of a particular wall, etc...Each street tells a story. Photographs are good at showing evidence of existing conditions. The act of photography is not only a practice of recording images but also a sociological one. By recording a series of photographs at a particular area, observers can understand, in part, what are the visual contents of the area. The challenge lies in the rigor of the process.

Exercise 3.1: Create a series of photographs to show the “character” of a street. Include a 100-words companion text to describe the area.

General process (more details are presented during class):

1. Choose a street in downtown Halifax.
2. Walk the street several times and observe without a camera.
3. Take notes and do sketches on subjects that reflect the condition and character of the street. For now concentrate on objects not people.
4. Study the notes/sketches, revisit the area and capture with your camera.
5. Layout/Compose your photographs on a page.
6. Present your work in class.

Goal:

The goal of this assignment is to encourage you to be clear and use consistent photographic composition techniques to heighten the understanding of your study area.

What you need:

- *Digital Camera*
- *A computer*
- *Multiple sheets of drawing paper (11x17)*
- *Wood graphite pencils (4H - 8B)*
- *Sketchbook*
- *access to a printer*

References:

- Mora G., Hill J. 2004 *Walker Evans: The Hungry Eye*, Harry N. Abrams Inc.
- Robinson, M. 2013, *Urban Impressions Thee Changing Face of New York in the 1970s* by Marianne Robinson. Regent Press.



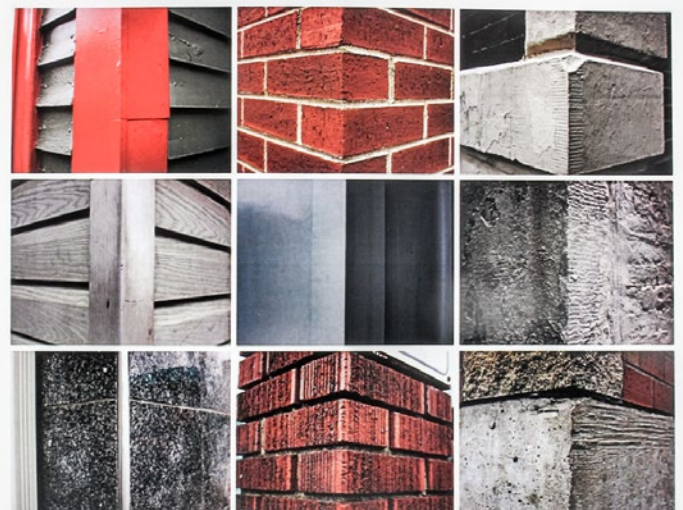
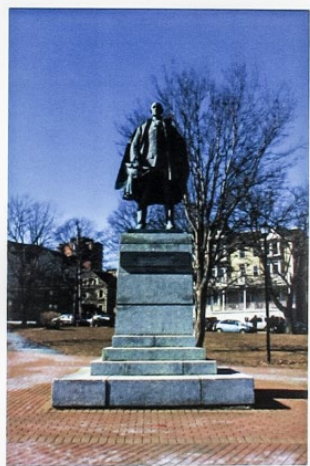
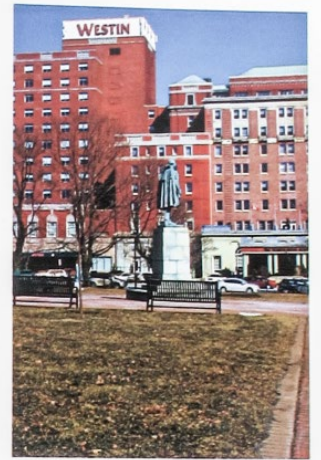
abandon motel, photo: Ken Kam



Street in Paris, Ken Kam



Street in Paris, Ken Kam



students' work (Arch 2000, 2013)

Photomontage/collage

Description:

Photomontage is the process of cutting and joining two or more photographs into an illusion to describe and/or to convey an idea. During the early part of the 20th century, photomontage is often used as a means of expressing political dissent.

Exercise 3.2: In this final assignment you are to create a series of 3 photomontages for local places you've visited. A place can be a park, city centre, walking trail, your neighbourhood etc. Include a 100-word companion text to describe the area.

General process (more details are presented during class):

1. Choose areas with a significant amount of monument types or recognizable objects. Walk the street several times and observe without a camera.
2. Visit the website suggested for this week and research additional ideas for your photomontages.
3. Develop a list of images that you will be using in the photomontage.
4. Develop a plan: draw and sketch several ideas of your photomontage.
5. Perform post-production on the image.
6. Layout/Compose your image in PHOTOSHOP to create the photomontage illustrations.

Goal:

The goal of this assignment is to:

- compose and create a photomontage to convey an idea and/or a message.
- PHOTOSHOP: layers, using mask, and image adjustment skills.

What you need:

- Digital Camera
- A computer
- Multiple sheets of drawing paper (11x17)
- Wood graphite pencils (4H - 8B)
- Sketchbook
- magazine, old newspaper...etc....



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