# **122 SYLLABUS**



Design & Drawing 1.2



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Architecture Depart. Cal Poly 11/2008

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# **QUARTER SCHEDULE**

	Monday	Wednesday	Friday
Week 1 January 5	Class 1 Introduction Assign Project 1 Assign Project 2	Class 2 Preliminary Due	Class 3 Preliminary Due
Week 2 January 12	Class 4 Phase I Project 1 Due Phase I Project 2 Due	Class 5 Drawing 1 Due	Class 6 Preliminary Due
Week 3 January 19	Holiday	Class 7 Phase II Project 1 Due Phase I Project 2 Due	Class 8 Preliminary Due
Week 4 January 26	Class 9 Phase II Project 2 Due	Class 10 Drawing 2 Due	Class 11 Preliminary Due
Week 5 February 2	Class 12 Preliminary Due	Class 13 Drawing 3 Due	Class 14 Preliminary Due
Week 6 February 10	Class 15 Preliminary	Class 16 Drawing 4 Due Teacher Evaluation	Class 17 Phase III Project 1 Preliminary Due
Week 7 February 16	Holiday	Class 18 Phase III Project 2 Due Assign Project 3	Class 19 Preliminary Due
Week 8 February 23	Class 20 Preliminary Due	Class 21 Drawing 5 Due	Class 22 Project 3 Due Assign Project 4
Week 9 March 1	Class 23 Project 3 Due	Class 24 Drawing Final Due	Class 25 Preliminary Due
Week 10 March 8	Class 26 Preliminary Due	Class 27 Teacher Evaluation	Class 28 Project 4 Due Final Review
Week 11 March 15	Finals Resubmittals Due		







# **CONTENT & OBJECTIVES**



### **Design & Drawing 1.2**

Continuation of Arch 121 plus the issues, concepts, processes and skills pertaining to color theory and the design and visual communication of architectural space.

### **Course Content**

The course has two primary content areas. The first is two- and three-dimensional visual design and the second is visual communication. The course is responsible for both extending and adding to the content introduced in 121 and introducing new content in the areas of visual and experiential complexity, spatial definition, structural stability, color theory, digital and physical model building, shadow casting and the representation of materials, transparency and reflection.

Content areas are simultaneously explored through a variety of media so that students can learn related concepts, methods and skills in an environment that fosters critical evaluation of the media and their impact on the design process.

The content will build on that of Arch 121 with the following additions for Arch 122.

### **Content Sequence**

Color theory principles, concepts and application.

- Principles and techniques of mixing multiple hues to achieve final values and colors.
- Skills and techniques for developing effective teams and being a positive team member.
- Basic physical model building concepts and skills.
- Developing a design concept through the building of a physical model.
- Concepts and techniques for representing materials, transparency and reflection in architectural drawings.

Exploration of the concept of spatial complexity.

The development of a continuum of spaces of varying complexity. Basic shadow casting principles, conventions and techniques. Development of freehand renderings.

### Learning Objectives

The following objectives build on those defined in the 121 Syllabus for the first year design sequence of courses. Additional specific objectives are defined at the beginning of each project statement.

#### The student completing this course will be aware of:

- 1. A greater range of the interrelationships between the principles, concepts, methods and skills introduced and developed in 121.
- A range of concepts associated with color theory and its application.
- 3. A range of basic concepts and techniques employed in physical model building.
- 4. A range of concepts and techniques for casting shadows in multiview, paraline and perspective representational systems.
- 5. A range of concepts and techniques for representing materials, transparency and reflection in drawings.

#### The student completing this course will understand:

- 1. At greater depth the implications of the principles, concepts, methods and skills introduced and developed in 121.
- 2. The fundamental concepts and theories underlying color classification (i.e. value, hue, chroma, color wheel, compliments, warm, cool, etc.).

- 3. The implications of hue, value and chroma decisions on the representation of three-dimensional objects and environments on two-dimensional surfaces.
- 4. Basic physical model building concepts, techniques and processes.
- 5. The fundamental principles, concepts and techniques for casting shadows in multiview, paraline and perspective representational systems.
- 6. The fundamental principles and techniques for representing a range of materials (i.e. wood, brick, glass, stone, concrete, shingles, etc.), transparency and reflection in architectural drawings.

#### The student completing this course will be able to:

- 1. Meet the objectives of Arch 121 with greater competency and understanding and employ the concepts, methods and skills with greater effectiveness and subtlety.
- Make decisions concerning color dimensions (value, hue and chroma) and relationships (analogous, complementary, triadic, warm/cool) to achieve desired ends using both traditional and digital media.
- 3. Utilize a range of color media (i.e. pencils, pens, markers) in the creation of drawings.
- 4. Employ color to enhance the illusion of three-dimensional form and space..
- 5. Develop and communicate a design concept through the construction of a simple physical model that is durable and appropriately clean and accurate.
- 6. Work as a positive member of a team.
- Develop a rational for and design a sequence of spaces that create an experiential continuum from simpler to more complex.
- 8. Develop a set of multiview drawings that refine a design developed through a mass model.
- 9. Construct a 3D digital model from a set of multiview drawings and use it to evaluate, revise and present a final solution.
- Establish the sun's location and create corresponding shadows within multiview, paraline and perspective pictorial systems using freehand and/or digital media.
- 11. Construct the reflections of objects within paraline and perspective pictorial systems.
- 12. Represent materials and transparency within multiview, paraline and perspective pictorial systems.
- 13. Create the illustrations for a final presentation by using images generated from a 3D digital model that are enhanced through hand techniques.

### Applicable NAAB Criteria Defined

#### Verbal & Writing Skills

Ability to speak and write effectively on subject matter contained in the professional curriculum.

#### Graphic Skills

Ability to employ appropriate representational media, including computer technology, to convey essential formal elements at each stage of the programming and design process.

#### Fundamental Design Skills

Ability to apply basic organizational, spatial, structural, and constructional principles to the conception and development of interior and exterior spaces, building elements, and components.

#### **Collaborative Skills**

Ability to identify and assume diverse roles that maximize individual talents, and to cooperate with other students when working as members of a design team or in other settings.

#### Formal Ordering Systems

Understanding of the fundamentals of visual perception and the principles and systems of order that inform two- and three-dimensional design, architectural composition, and urban design.



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			Arch 122 & 132	
Awareness	Understan	Ability	NAAB CRITERIA	Evidence
			1. Verbal & Writing Skills (Ability)	Present, Critique & Reflect
			2. Graphic Skills (Ability)	Drawings & Presentations
			3. Research Skills (Ability)	
			4. Critical Thinking Skills (Ability)	
			5. Fundamental Design Skills (Ability)	Design Process & Solutions
			6. Collaborative Skill (Ability)	Group Project
			7. Human Behavior (Awareness)	
			8. Human Diversity (Awareness)	
			9. Use of Precedent (Ability)	
			10. Western Traditions (Understanding)	
			11. Non-Western Traditions (Awareness)	
			12. National & Regional Traditions (Understanding)	
			13. Environmental Conservation (Understanding)	
			14. Accessibility (Ability)	
			15. Site Conditions (Ability)	
			16. Formal Ordering Systems (Understanding)	Design, Presentation & Critique
			17. Structural Systems (Understanding)	
			18. Environmental Systems (Understanding)	
			19. Life-Safety Systems (Understanding)	
			20. Building Envelope Systems (Understanding)	
			21. Building Service Systems (Understanding)	
			22. Building Systems Integration (Ability)	
			23. Legal Responsibilities (Understanding)	
			24. Building Code Compliance (Understanding)	
			25. Building Materials & Assemblies (Understanding)	
			26. Building Economics & Cost Control (Understanding)	
			27. Detailed Design Development (Ability)	
			28. Technical Documentation (Ability)	
			29. Comprehensive Design (Ability)	
			30. Program Preparation (Ability)	
			31. Legal Context of Arch Practice (Understanding)	
			32. Practice Organization & Management (Awareness)	
			33. Contracts & Documentation (Awareness)	
			34. Protessional Internship (Understanding)	
			35. Architect's Leadership Roles (Awareness)	
			36. The Context of Architecture (Understanding)	
			37. Ethics & Professional Judgement (Understanding)	









# TEXTS, SOFTWARE & MATERIALS

This section identifies the texts, software, equipment and materials that you will need for this studio. The texts, software and equipment are long term investments—they will be used and referred to in future courses and constitute the beginning of your professional library and work environment respectively. In addition, they should be a source of enjoyment for your eyes, mind and hands.

### **Texts & Software**

The Required Texts provide the basic references for this course and are available in the text book section of El Corral Book Store.

### **Required Texts**

Benedict, William R. *122 Syllabus* El Corral Publication

- Benedict, William R. *Base Syllabus* El Corral Publication Used for Arch 121/131, 122/132 & 123/133
- Benedict, William R. *Drawing Form* El Corral Publication Used for Arch 121/131, 122/132 & 123/133

Benedict, William R. *Creating Relationships* El Corral Publication Used for Arch 121/131, 122/132 & 123/133.

- Ching, Francis D. K. with Steven P. Juroszek. 1998. Design Drawing. New York: Van Nostrand Reinhold Co. Used for Arch 121/131, 122/132 & 123/133
- Doyle, Michael E. 1999. *Color Drawing.* Second Edition, New York: John Wiley & Sons, Inc. ISBN: 0-471-29245-1 Used for Arch 122/132 & 123/133.

### **Recommended Software**

Adobe Creative Suite: Illustrator Photoshop InDesign SketchUp Microsoft: Office Web Browser: Safari or Explorer Anti-virus & Disk Repair

### **Equipment & Materials**

The following lists identify equipment and materials that you may need during the quarter. Purchase those that you do not own on an as needed basis. The drawing instruments should last you for years and be used in many of your courses at Cal Poly. Purchase ones that feel good to you and are of the best quality that you can reasonably afford. The brands identified are provided as references. Any comparable brand that does the job and is satisfactory to you is acceptable.

### In-Class Equipment & Materials

You must have the following materials and colored media with you at all times—class activities will assume there presence.

- Rolling Straight Edge: 12" long (Alvin, Rollo Ruler No. 298, \$21.00).
- Compass: Bow compass (Alvin, 508, 6 Bow Compass W/ADJ Adapter).
- Dividers: (Alvin 660, Divider, \$8.00).
- Architectural Scale: Triangular, 12" long (Staedtler Mars 987 18-31, \$8.00)
- Circle Template: 1/16" to 3" diameter circles (Picket, Circle Master 1204i, \$5.50).
- Drafting Pencils: Graphite drafting pencils grades 4H, 2H, F, H, HB, 3B and 6B (Staedtler, Mars Lumograph 100, \$1.00 each).
- Pencil Sharpener: For wood pencils (Sterling #605 or Staedtler 511-63, \$2.00).
- Sand Paper Block:
- Erasers (pencil): Pink Pearl & Kneaded Rubber.

Fiber Tip Pens: Black. Sakura, Pigma, Micron Pens 005, 01, 02, 03, and 08 (\$2.25 each). Pentel, Sign Pen, S520-12 (\$2) Pentel, Super-Fine Pen, SF70 (\$2) Pilot, Razor Point (\$1)

- Drafting Dots: For securing drawings to drawing board (Alvin #DM123, \$4.50).
- Three Ring Binder: 1" to 1.5" to hold the syllabus (\$4.00).
- Sketchbook: Cachet, Classic, 9" x 12", Wire-Bound, medium surface (\$14.00).
- Sketch Pad: 300 Series, Strathmore, Newsprint, Rough, 18 x 24, 50 Sheets, 35 lb. (\$5)
- Grid Paper: 40 sheets, 8.5" x 11" pad (Morilla, Cross Section, 8/8, \$4.00).
- Typing Paper: 100 sheets, 8.5" x 11", heavy weight, 25% cotton (Southworth Paper, Four Star, 20 lb, 403C, \$4.25)

- Sketch Tracing Paper: Roll of lightweight white tracing paper (Seth Cole, 50 yd. x 12", \$7.00).
- Equipment Box: Min. 14" interior dimension. A portable container such as a tackle or art box to organize and transport your equipment. You will also need to carry your drawings back and forth while protecting them from dirt, wrinkling and the whether.
- Sheet Protectors: 8.5" x 11" nonglare plastic protectors for three ring binders. (K&M Division, Poly-VU #PV119G).
- Green & Red Plexiglass: 2" by 6" pieces available in the bookstore. (\$4.00)



### **Color Media**

The following colored pencils, markers and crayons constitute a basic color palette. The required colors must be brought to class. Buying them individually is the most cost effective approach.

### **Colored Pencils**

#### Prismacolor, \$1.00 each

Required Pencils. Add other pencils to meet your specific needs.

#### Values

938 White 1072 French G. 40% 1076 French G. 90% 1054 Warm Gray 40% 935 Black

#### Greens

907 Peacock Green 909 Grass Green 911 Olive Green 912 Apple Green 913 Spring Green 1005 Limepeel 1006 Parrot Green 1020 Celadon Green

#### Blues

901 Indigo Blue
903 True Blue
904 Light Cerulean Blue
905 Aquamarine
906 Copenhagen Blue
919 Non-Photo Blue
933 Violet Blue
1015 Deco Blue
1016 Deco Aqua
1023 Cloud Blue

#### Purples

931 Dark Purple932 Violet995 Mulberry996 Black Grape

#### Reds

921 Pale Vermilion922 Poppy Red923 Scarlet Lake924 Crimson Red930 Magenta994 Process Red

#### Orange

918 Orange 921 Pale Vermilion

#### Yellow

914 Cream 916 Canary Yellow 1003 Spanish Orange 1034 Goldenrod

#### Browns

937 Tuscan Red 943 Burnt Ochre 944 Terra Cotta 948 Sepia

#### Other

927 Light Peach 929 Pink 939 Peach 1017 Clay Rose 1026 Greyed Lavender

#### Crayons

Art Stix, Set of 12, \$14.00

#### Required Crayons. Add other crayons to meet your specific needs.

1924 Crimson Red
1918 Orange
1916 Canary Yellow
Apple Green
1090 Grass Green
Light Blue
1903 True Blue
1932 Violet
1935 Black
1938 White
1948 Sepia
Brown

#### Markers

Art Marker, \$2.50 each

#### **Required Markers.**

98 Black 102 Warm Gray 40% Blender

#### **Optional Markers.**

Add other markers to meet your specific needs. The following light value markers work well with colored pencils. 12 Light Peach

23 Cream
48 Light Cerulean Blue
70 Sand
72 Eggshell
131 Deco Yellow
132 Jasmine
133 Deco Pink
136 Deco Aqua
137 Clay Rose
141 Jade Green

### Additional Equipment & Materials

The following materials may be used during the quarter or be necessary for you to complete assignments at home. Purchase them as they are needed.

Drawing Board: 23" x 31" (Alvin, AB616/4, Tilt-Angle White Dwg Bd 23x31, \$60.00)

Parallel Bar: (Alvin, 1101-30, Parallel Straight Edge 30in, \$84.00)

- Note: The drawing board and parallel bar will be required in class as specified by the teacher.
- Board Cover: Hot press white illustration board #201, Chip board or vinyl board cover (Borco, 37.5" wide \$6.00/ft).
- 45° Adjustable Triangle: Plastic, 8", 10" or 12" (\$20.00).
- 30/60° Triangle: Plastic, 12" (\$5.00).
- Erasing Shield: Stainless Steel (\$1.00).
- Metal Straight Edge: Used for constructing perspectives, long lines and as a cutting edge (Metal Ruler, Fairgate 20-137, 36" \$9.00).
- Grid Paper: As needed, 11" x 17" pad (Morilla, Cross Section, 8/8, \$5.25).
- Drafting Vellum: As needed, 11 x 17" (Clearprint, Fadeout, 1000HP-8, \$0.30 per sheet).
- Knife: X-Acto #5 (\$3.00) with #24 blades.
- Saw: X-Acto 1 1/4" deep fine tooth razor saw.
- Cutting Surface: Cuts will be cleaner and blades will last longer if you cut on a soft surface. Illustration board will work and there are also self-healing plastic cutting surfaces available (18" x 24", green or gray).
- Printer Ink Cartridges: Always have a spare set of ink cartridges for your inkjet printer. You will always run out at the wrong time.
- Coated Inkjet Paper: For presentation prints:

Hewlett Packard, Premium Inkjet Paper, Matte Coated, 26 lb, HP 51634Y

OR

Great White, Imaging & Photo Paper, Matte Finish, 37 lb, 86010

### Your Work Space

You will need a place to work outside of class that is supportive of accurate drawing. The following items would constitute desirable components of that work space. The important thing is to create a comfortable and functional place to do your work.

- Work Table: A surface larger that your drawing board to provide layoff surface.
- Light: Adjustable counterpoise light with arms that permit it to be positioned over the specific area of work.
- Comfortable Chair or Stool: Do not underestimate the value of a chair the properly supports your back.
- Push pins and tack surface: This allows you to pin up your work for display, reference or examination.
- Desk or Dusting Brush: Various sizes and shapes (Staedtler 5391, \$3.00).

### **Computer Station**

Be sure that there is no glare on the computer screen. This can be best accomplished by facing the screen toward a dimly lit and/ or darker surface. The screen should be placed at arms length with its angle and height set so that your head is at a comfortable angle. Working at the computer requires a comfortable chair that provides good lower back support.



# **MARKER NAME CARDS**



The use of markers as a way of generating titles is a valuable freehand technique. The use of a visual name card as useful a way of learning names. Put these two together and you have the beginning assignment for the quarter.



- 1. USE SKETCH BOOK MORE OFTEN
- 2. IMPROVE WEEKLY PRAWINGS
- 3. IMPROVE CRAFT



### **Requirements**

- The name card must be drawn on a white index card or heavy paper that measures 5" x 8" oriented horizontally.
- A minimum 1/4" white border must be left on all sides.
- The card must feature your first name—the name by which you want to be addressed.
- Your last name must be included in much smaller type.
- Three personal goals for the quarter must be lettered in pen in your best architectural lettering (1/8" all caps).
- All text must be clearly legible.
- Your name must be created with a marker and enhanced with colored pencil and pen.
- Other graphic elements may be included.

### Due Dates

- Prelim. 1: Demonstration and work in class. Due: Wednesday, Class #2.
- Final: Finished Name Card. Due: Friday, Class #3.

### In Class

Experiment with creating letters with markers and then enhancing the letters with colored pencils and pens.







# **INSPIRING ARCHITECTURE**



At this point in the beginning of your education it is important that you start to make yourself aware of contemporary architects and their work. The goal of this activity is to identify an architect or firm whose work interests you and research published sources of their completed projects. The resources and information gathered for this activity will form the basis for several projects next quarter.

### **Instructional Objectives**

To be able to undertake web and library research.

### Architect/Firm

Each person must choose an architect or firm to study for the quarter that meets the following requirements;

Must be currently practicing;

Published work must include three houses;

Must have at least one book published on their work that can purchased; and

Must be approved by the teacher.

There may be no duplicates within the class. Architects are approved on a first come basis.

Note: You may not choose Frank Gehry or Peter Eisenman.

#### Architects

The following list is provided as a starting point. Ralph Allen Tadao Ando Mario Botta Campo Breza **Turner Brooks** Enrique Browne James Cutler Alfredo De Vido Assoc. Steven Ehrlich Peter Forbes & Assoc. Peter Gluck **Gwathmey Siegel** Hariri & Hariri Hodgetts + Fung Craig Hodgetts Hsin-Ming Fung Steven Holl Koning-Eizenberg Julie Eizenberg Lake/Flato **Rick Joy** John Lautner Ricardo Legorreta

Mark Mack Richard Meier Morphosis Thom Mayne Eric Owen Moss Souto Moura Glenn Murcutt Edward R. Niles Olson, Sundberg, Kundig, Allen Antoine Predock Lacroze Miguens Prati Bart Prince A. M. Stern Rob Wellington Quigley Carlos Zapata

### Sources

William Stout Architectural Books 804 Montgomery St. San Francisco, CA www.stoutbooks.com

Hennessey + Ingalls Books 1254 Third Street Promenade Santa Monica, CA www.hennesseyingalls.com

Prairie Avenue Bookshop 418 S. Wabash Chicago, IL www.pabook.com

### Library Research

Research books and periodicals using the Cal Poly library. Look for sources that support the house that you want to analyze for the second project.

Cal Poly home page. Select A Link: Library Click on All Databases & Resources

Click on Architectural Index Click on URL Click on I Accept Enter the architect's name Click on Start Search Print results.

Click on Avery Index To Architectural Periodicals Click on URL Click on Simple Search Choose Title or another category. Enter search data e.g., Architect's name. Start Search Select desired display e.g., Full Display. Check desired resource. Click on Send.

### Web Research

Use your favorite search engine and search for the architect's name.

### **Final Submittal**

You must provide a 3 x 5 card with your name, the architect's name and the complete reference for the book you are going to purchase.

Due as announced in class.



# **1: COLOR EXPLORATIONS**



Color affects our perception of things and our responses to them. It can enhance or disguise form. It can cause an emotional response in the viewer that over rides other aspects of the perceived subject. This project is intended to introduce you to the fundamental concepts associated with color and provide experiences in their impact on a design.

### **Instructional Objectives**

To understand the following basic color concepts and their relationships:

Additive, Analogous, Chroma, Color Wheel/Color Solid, Complement, Dimensions, Harmonies, Hue, Monochromatic, Primary, Secondary Shade, Split Compliment, Subtractive Temperature (Warm/Cool), Tertiary Tint, Tone, Triad, Value

- To understand the differences and relationships between and be able to work with either Red/Yellow/Blue, Red/Green/Blue or Cyan/Magenta/Yellow as the primaries of a color system.
- To be able to specify and choose colors relative to different color models.
- To be able to design a two-dimensional composition that responds to a set of design goals.
- To be able to design and consistently employ a page layout that exhibits a clear typographic hierarchy and whose typography and any graphic elements are visually secondary to the illustrations.

### Introduction

The fundamental dimensions of color are value, hue and chroma. This project will require you to manipulate these dimensions in order to explore basic color concepts. The exploration for both Arch 121 and 131 will include traditional media. Arch 131 will also explore color through digital media.

Many of the illustrations used in this project statement are based on the work of Frans Gerritsen who proposed a color model with six primaries (Red, Yellow, Green, Cyan, Blue, Magenta). This is an important model because it brings together the Red, Green and Blue of computer displays and the Cyan, Magenta and Yellow of inkjet printers.

#### References

- Gerritsen, Frans. 1988. *Evolution in Color*. West Chester: Schiffer Publishing Ltd.
- Küppers, Harald. 1973. *Theory and Practice of Color: A Theory Based on Laws of Perception*. Translated by F. Bradley, London: Van Nostrand Reinhold Ltd.
- Norman, Richard B. 1990. *Electronic Color*. New York: Van Nostrand Reinhold.
- Swirnoff, Lois. 1992. *Dimensional Color*. New York: Van Nostrand Reinhold.

### **RYB: Traditional Media**

### **Color Wheel: Hue**

The color wheel provides a systematic organization of hues and a means of identifying their relationships. Hue is the dimension of color that we usually mean when we say a color is red. The traditional color wheel uses Red, Yellow and Blue as its primaries. These are the subtractive primaries that when mixed create the secondary colors of Orange, Green and Violet.

Trace the color wheel provided on a sheet of typing paper and color it using the corresponding Prismacolor pencils. Trace the wheel lightly in pencil. Lettering should be in ink.

The numbers within the color wheel reference Prismacolor pencils that can be used to create the wheel. When more than one color is specified for some portion of the color wheel, you are to choose the one that you think visually works best.

All hues must be illustrated at the same densely and strength. This means that you must use the same pressure in the application of each hue. Do this by pressing hard so that the hue completely covers the paper.

### **Presentation Requirements**

Prismacolor Pencils: Color Wheel Colors

909 Grass Green
912 Apple Green
913 Spring Green
1006 Parrot Green
903 True Blue
906 Copenhagen Blue
931 Dark Purple
932 Violet
921 Pale Vermilion
922 Poppy Red
930 Magenta
918 Orange
916 Canary Yellow
1003 Spanish Orange

Material: Typing paper.

- Format: 8.5" x 11"
- Layout: As shown. Trace the layout provided. Trace the wheel lightly in pencil.
- Typography: Trace the title and letter the color names, your name and the standard course information in ink in standard architectural lettering using 1/8" all caps as shown. Do not include the lettering in the wheel.

# BECKY DAY, BENEDICT, ARCH 132, WINTER 99





### Hue & Value

Each Hue has an inherent value. When you compare a Hue to a value scale it will match some value between black and white. In this exercise you are to rank the three primary and three secondary hues of the color wheel from lightest in value to darkest. Use the green and red plastic filters to aid you in the ranking.

Copy the squares on the page provided onto a sheet of typing paper. Trace the squares lightly in pencil. Lettering should be in ink.

Place the six primary and secondary hues in order from the lightest on top to the darkest on the bottom. Make your best judgement using the plastic filters. All primary colors should be created at full strength—they should match those in the color wheel.

Next, using a black prismacolor pencil, create a value in the square to the right of each hue that matches the value of the hue.

#### Presentation

Material: Typing paper.

- Format: 8.5" x 11"
- Layout: As shown. Trace the layout provided onto typing paper. Trace the squares lightly in pencil.
- Typography: Trace the title and letter your name and the standard course information in ink in standard architectural lettering using 1/8" all caps as shown. Do not include the lettering in the squares.





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HUE & VALUE BECKY DAY, BENEDICT, ARCH 132, WINTER 99

### Value & Chroma

Each hue has an inherent value. The dimension of value addresses the relative lightness or darkness of a color in relationship to a scale from white to black. Each hue on the color wheel is at its highest chroma. The dimension of chroma addresses the purity or saturation of the color—the relative dominance of a specific wavelength of light. The next exploration will look at ways that the value and chroma of a hue can be altered.

Copy the squares on the page provided onto a sheet of typing paper. Trace the squares lightly with a red Prismacolor pencil. Lettering should be in ink.

From top to bottom, the rows of squares should illustrate a Tine, Tone, Shade, Complementary and Analogous gradations.

The technique for creating the colors in the exercise should always let some of the paper show through. Create a chisel point on your pencil and shade with a medium pressure. Shading at 45° will create a consistency throughout the set. Build up the colors using several layers.

All hues should be from the color wheel. Consider using the same hue for all the left hand squares.

#### Tint

A tint is a hue mixed with white. In the top row create a tint scale. Choose a hue and gradually let more and more of the paper show through to create three intermediate steps between the hue and white. The hue's chroma will decrease and its value will increase from left to right.

#### Tone

A tone is a hue mixed with gray. In the second row create a tone scale. Choose a hue and a gray pencil and create three intermediate tones. The hue's chroma will decrease and its value should remain relatively constant from left to right.

#### Shade

A shade is a hue mixed with black. In the third row create a shade scale. Choose a hue and the black pencil and create three intermediate shades. The hue's chroma will decrease and its value will decrease from left to right.

### Compliment

Complementary colors are hues that are opposite from each other on the color wheel as illustrated below. Choose a set of complimentary hues and mix them in row four. The hues' chroma will decrease toward the center of the series—the center square will tend to be a gray. Using a hue's complement is an excellent way to reduce its chroma. The inherent value of the opposing hues will affect the value of the middle gray.

#### Analogous

Analogous means similar. Analogous colors are three adjacent hues on the color wheel as illustrated below. The number of steps in the color wheel will dramatically alter this color scheme. Adjacent hues on a wheel of twelve steps or less will produce a broader range while adjacent hues on a twenty four step wheel produces a narrow range. Choose a primary and an adjacent secondary color and mix them to create a set analogous colors in the fifth row. These colors are theoretically at full chroma.

### Presentation

Material: Typing paper.

Format: 8.5" x 11"

- Layout: As shown. Trace the layout provided onto typing paper. Trace the squares lightly in pencil.
- Typography: Trace the title and letter your name and the standard course information in ink in standard architectural lettering using 1/8" all caps as shown. Do not include the lettering in the squares.









### Slice

You are to color the half slice through a color solid as illustrated on the facing page. The slice includes tints, tones and shades of a hue. A tint is a hue mixed with white, a tone is a hue mixed with gray and a shade is a hue mixed with black.

The illustrations below show three slices through the Gerritsen color solid with its six primary colors of Yellow, Red, Magenta, Blue, Cyan and Green. The Gerritsen color solid is asymmetrical based on locating hues vertically to correspond to their inherent value.

### Presentation

Material: Typing paper.

Format: 8.5" x 11"

- Layout: As shown. Trace the layout provided onto typing paper. Trace the squares lightly in pencil.
- Typography: Trace the title and letter your name and the standard course information in ink in standard architectural lettering using 1/8" all caps as shown. Replace the word Hue with the name of the Hue you are using.

### **RYB Final Submittal**

Original drawings.

Print your name on the project grade sheet and hand it in with your drawings.











COLOR SLICE BECKY DAY, BENEDICT, ARCH 132, WINTER 99

### CMY: Digital Media

The teacher may choose to have you further explore color concepts through digital color specification using the Gerritsen color wheel consisting of six primaries that include the three subtractive primaries (Cyan, Magenta and Yellow) and the three additive primaries (Red, Green and Blue).

### **General Constraints**

Media: Color prints on heavy weight coated paper.

Program: Illustrator

Format: 8.5" x 11" oriented vertically

Layout: Open. Must be the same for all pages.

- Margins: There must be a minimum .5" margin top and sides and .75" bottom. Nothing may exist within the margins.
- Typography: Only legal fonts may be used.
- Each page must include the project title (Color Explorations), content title (e.g., Color Wheel), your name and the standard course information.
- The Illustrator files must be named with your alias as follows: wbenedic\_Wheel.ai, wbenedic\_Cyan.ai, wbenedic\_Magenta.ai, wbenedic\_Yelllow.ai)
- Text styles must be created for all text.
- Files must include the guidelines needed to define margins and locate all graphic elements.
- Layers must be created for text and graphics at a minimum. There should be no unused layers.

### Page Design Goals

- The design must create a clear typographic hierarchy with three levels (content title, project title and standard course information).
- The typography and any graphic elements must be visually secondary to the illustrations.

### **Color Wheel**

You must create the standard 24 step color wheel shown using the Cyan, Magenta, Yellow, Black (CMYK) color specification system in the Color Mixer.

### Constraints

- Illustrator file named with your alias plus Wheel (e.g., wbenedic\_Wheel.ai)
- The color wheel must be constructed with a 6" outside diameter and interior diameters of 2", 3" and 4".
- The 24 colors of the wheel must be named, organized and recorded in the Color List as illustrated below.
- The six primary colors must be identified within the color wheel using black and/or white type.
- Colors must be bounded by and seen against a white background.



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### Slices

You must create three slices through the Gerritsen color solid (Yellow/Blue, Magenta/Green, Cyan/Red) as illustrated. These slices define tints, tones and shades of a hue. A tint is a hue mixed with white, a tone is a hue mixed with gray and a shade is a hue mixed with black.

### Constraints

Illustrator files named with your alias as follows:

- wbenedic\_Cyan.ai, wbenedic\_Magenta.ai, wbenedic\_Yelllow.ai)
- The slices must match those illustrated.
- The slices must be composed of 3 by 3 Pica squares with 0p6 between the squares resulting in an area measuring 34P6 on a side.
- Black, white and the two primaries contained in each slice must be named.

Specify black as 90c, 90m, 90y.

- Intermediate colors are created by blends.
- Colors must be bounded by and seen against a white background. White must be bounded by a fine black line.
- Illustration titles: Yellow/Blue Slice, Cyan/Red Slice, Magenta/ Green Slice.

### **CMY Final Submittal**

Color prints on heavy weight coated paper.

- A CD with your name neatly lettered on the disk (e.g., Will Benedict), the disk named with your Cal Poly alias (e.g., wbenedic) and a custom designed CD cover. Refer to the chapter titled "CD Covers."
- The CD must contain a project folder named 01\_Color that includes only the following files:
- Illustrator files named with your alias as follows: wbenedic\_Wheel.ai, wbenedic\_Cyan.ai, wbenedic\_Magenta.ai, wbenedic\_Yelllow.ai)

Evaluation sheet with your name printed at the top.









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### **Design Exploration**

The task is to design a two-dimensional composition and use it to demonstrate the color contrasts and explore the effects of color choices on the appearance and expression of a design.

### **Design Constraints**

- The areas of the composition must completely fill and define a 6" square.
- The composition must contain a minimum of 16 areas that are filled with uniform colors (no gradations).
- Only the colors of the color wheel may be used. The colors may be mixed with percentages of white (tints) and black (tones) as specified.



- The design must be bounded by and seen against a white background.
- The distribution of colors must always retain the perception of all areas.
- The original drawings or prints will be used to judge the appropriateness of color choices.

### **Design Goals**

- The composition should exhibit a visual hierarchy of implied shapes and/or patterns that support multiple readings.
- The four contrasts should exhibit significantly different visual hierarchies—they should look like different designs.
- Typography should exhibit a clear hierarchy that differentiates content title, project title and standard course information.
- The typography and any graphic elements should relate to, enhance and be visually secondary to the composition.

### **Contrast Constraints**

The two-dimensional composition will be used to illustrate the fundamental color contrasts and employ basic color harmonies (strategies for choosing hue combinations). The goals are to build an understanding of color contrasts and harmonies and explore the potential for color choices to transform a design.

### Value Contrast

Contrast (differentiation) between the areas of the composition is to be achieved by varying the value of an analogous set of hues through the use of Tints, Tones and Shades.

Analogous means similar. An analogous color scheme uses three adjacent hues on a color wheel. The number of steps in the color wheel will alter this color scheme. Adjacent hues on a wheel of twelve steps or less will produce a broader range of hues while the adjacent hues on a twenty four step wheel produces a narrower range.



Use three adjacent colors on the color wheel.

The analogous colors must be used at full chroma at least once. The choice of colors must exhibit a strong value contrast.

The hues found within a vertical column of a slice are all of the same Chroma but of different Values.



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### **Hue Contrast**

Contrast (differentiation) between the areas of the composition is achieved by varying the hue while chroma stays at full strength. Three or more hues must be used. Only the hues of the color wheel may be used.



A triadic color scheme uses three hues that are equally spaced around the color wheel as illustrated below. The color scheme you choose must include a triadic set.



All Hues must be used at full chroma-no tints, tones or shades.

### **Chroma Contrast**

Contrast (differentiation) between the areas of the composition is achieved by varying the chroma of the hue while value remains constant. This can be achieved by choosing a primary hue and using a horizontal row of its slice because the hues found within a horizontal row of a slice are all of the same Value but of different Chromas.



- A monochromatic color scheme uses the tints, tones and shades of a single hue.
- The colors used in the contrast of chroma must come from a single Hue and its Tones.

All colors should be the same value.

The chosen hue must be used at full chroma at least once.

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#### **Cold–Warm Contrast**

Contrast (differentiation) is created by the juxtaposition of warm and cool colors. The color wheel can be divided into warm and cool hues as illustrated below. Warm hues are between Magenta and Yellow with cool hues falling between Green and Blue. The hues between Magenta and Blue and between Yellow and Green are ambiguous and will not be used for this experiment.





A complementary color scheme uses two hues that are opposite from each other on the color wheel as illustrated below.



- Choose either the warm or cold hue to dominate the color scheme with the other as an accent or contrasting hue. For example, you may choose to use Greens for the majority of the composition with Magenta as the contrast.
- You may use the two complements and their tints, tones and shades as illustrated above.
- The choice of colors should not exhibit a strong value contrast.
- The complementary hues must be used at full chroma at least once.
# **Presentation (Hand)**

Material: Typing paper.

Media: Colored pencil. Ink for lettering.

- Format: 8.5" x 11" oriented vertically
- Layout: Open. Must be consistent for all pages.
- Margins: There must be a minimum .5" margin top and sides and .75" bottom. Nothing may exist within the margins.
- Typography: Architectural lettering using 1/8" all caps for the standard course information. Other text may be hand lettered or traced.
- Each page must include the project title (Color Explorations), content title (Composition, Value Contrast, etc.), and your name and the standard course information.

# **Design Final Submittal (Hand)**

#### Original drawings.

Evaluation sheet with your name printed at the top.

# **Presentation (Digital)**

Media: Color prints on heavy weight coated paper.

Program: Illustrator

Format: 8.5" x 11" oriented vertically

Layout: Open. Must be consistent for all pages.

- Margins: There must be a minimum .5" margin top and sides and .75" bottom. Nothing may exist within the margins.
- Typography: Open. All fonts must be converted to paths.

The Illustrator files must be named with your alias as follows: wbenedic\_Composition.ai, wbenedic\_Hue.ai, wbenedic\_Value.ai, wbenedic\_Chroma.ai, wbenedic\_Warm.ai)

There should be no gaps between color areas.

Each page must include the project title (Color Explorations), content title (Composition, Value Contrast, etc.), and your name and the standard course information.

# **Design Final Submittal (Digital)**

Color prints on heavy weight coated paper.

- A CD with your name neatly lettered on the disk (e.g., Will Benedict), the disk named with your Cal Poly alias (e.g., wbenedic)
- The CD must contain a project folder named 01\_Color that contains the specified Illustrator files.
- No other files may be within this folder except those generated for CMY: Digital Media.

Evaluation sheet with your name printed at the top.



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122 Syllabus







# 1: Color Exploration

### Name:

Evaluation is based on the standard project grading criteria described in the syllabus with the following specific issues emphasized. Project Weight: 2 Due dates as defined in class.

# RYB: Traditional Media (20%)

### On Time

### **Craft & Understanding**

- A B CDF Quality and consistency of freehand lines, shading and lettering.
- A B CDF Correct use of color in exercises.

### **RYB Grade**

### Design

### On Time

### Craft (30%)

#### A B C D F Shading

All/Most/Some/None Shading technique appropriate in scale Shading technique consistent within and between pages Shading density consistent within and between pages

#### A B C D F Precision

All/Most/Some/None Elements constructed as specified Faces, edges and points align as intended Faces, edges and points coincide as intended

Edges of shaded areas precisely created Shaded areas fit against each other precisely There are no lines or gaps between shaded areas Hand lettering exhibits good form, consistency and alignment

Spacing and dimensions are consistent Elements kept within page and/or margins Extraneous elements removed

#### A B C D F Digital File Preparation & Output

All/Most/Some/None Files and folders provided as specified Files and folders logically and systematically named and organized to support recognition by others Files saved in appropriate format, resolution and dimensions Files use appropriate fonts Extraneous files removed Output exhibits high quality and craft

#### A B C D F Hierarchy

Typography and graphic elements create a clear hierarchy of more important to less important elements that are visually secondary to the illustrations.

### Craft Grade

### Design (50%)

#### A B C D F Meets Problem Constraints

All/Most/Some/None

A 6" square defined by a minimum of 16 areas filled with uniform colors. The composition and all contrasts retain

the definition of all areas.

Value contrast uses analogous colors and must exhibit a strong value contrast.

Hue contrast uses the hues of the color wheel including three in triadic relation ship—no tints, tones or shades.

Chroma contrast uses a single hue and its tones (monochromatic) that are all the same value.

Cold–Warm contrast uses complementary colors to create the contrast and does not exhibit a strong value contrast.

#### A B C D F Responds to Program Goals

The Composition exhibits a visual hierarchy of implied shapes and/or patterns that support multiple readings.

The four Contrasts exhibit significantly different visual hierarchies—they look like different designs.

Typography and graphic elements create a clear hierarchy of more important to less important elements that are visually secondary to the designs.

#### A B C D F Achieves Design Excellence

- The design exhibits element attributes and patterns, hierarchies, contrasts and balances that relate all elements.
- The design exhibits a clear concept that affects the relationships between and development of all elements.
- The design exhibits a clear experientially pleasing quality that communicates on a poetic level.

### **Design Grade**

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# 2: A FOLLY



A Folly is a structure that is functionally useless. Historically it has sometimes been built in a landscaped park to highlight a view, be a visual focus and/or provide a spatial experience. The basic elements of architecture are floors, walls and roofs. With these elements we define space for human activity that supports or affords various spatial experiences. The project works with a kit of parts containing points, lines and planes that represent floors, walls and roofs. The goal is to design a folly that would provide a continuum of spatial experiences.

### **Instructional Objectives**

- To be able to work with others to design in model form a threedimensional spatial experience from a specified kit of parts.
- To create a work that responds to a set of design constraints and goals.
- To be able to abstractly diagram the concept for a design.
- To be able to abstractly diagram the means being employed to meet design goals.
- To be able to define a series of spaces that create an experiential continuum of spatial complexity.
- To be able to make decisions in terms of the number, variety and relationship of elements to support desired communications.
- To be able to work with others to develop two-dimensional documentation of a three-dimensional model.
- To be able to accurately and consistently represent a three-dimensional model using orthographic and axonometric drawings.
- To be able to develop and clearly communicate the size, organization, fit and specifications for elements as they come together in a small portion of a design.
- To be able to develop and consistently employ a graphic language that communicates the three-dimensional form and spatial qualities of a design.
- To be able to establish a sheet layout a consistently use it throughout a presentation.

# **Making Parts**

There are many ways to develop designs. Last quarter our designs were developed exclusively on paper. This quarter we will begin with a physical model.

Design often involves the ordering of predefined elements. At the smallest scale this involves material elements such as 2 x 4 members, 4 x 8 sheets of plywood, concrete blocks, etc. At an intermediate scale it may include prefabricated trusses, windows and doors. At the largest scale it might include prefabricated walls, floors and roofs or even whole spatial units. The creativity comes not in designing the elements but in their use.

As a beginning activity each student will make some parts and gather some materials. The parts are to be constructed with care and should represent your best effort. This is an individual part of this project—each person is to make their own parts. How-ever, use your class mates as resources for construction tips and techniques.

### Materials & Parts

The teacher will define the materials that will be used for this project and some typical elements that each student is to build. In addition, all students are construct the following.

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#### Site/Base

Everyone is to construct one base from 3/16" foamcore as described and illustrated below.

Site/Base: 56' x 96' (14" x 24").

Buildable Area: 36' x 84' centered within the Site.

Draft the 6' square grid illustrated using fine ink lines.

An existing 6' wide North and South walk is centered on the buildable area.

				_

#### **Plant Materials**

The plant materials include trees and hedges.

- Hedges are three feet wide and can be any length or height in one foot increments. Build one that is 3 x 4 x 8 feet from a 3/4" sheet of styrofoam.
- Trees have twelve inch diameter trunks and a eighteen foot diameter canopy. It is eight feet from the ground to the underside of the canopy and twenty four feet from the ground to the top of the tree. Make one tree from a 4" diameter styrofoam ball and a 1/4" diameter dowel.

Slice off the ball to define the underside of the canopy. Sharpen the dowel before pushing it into the ball.

#### Scale Figure

Create a 1/4" scale figure on a small thin base that can be placed and moved within the final model. This may be drawn on or scanned and attached to a stiff materials. Cut the figure out—do not leave it on a rectangle.

# **Construction Tips**

- Plan your task. Do you have all required materials. Measure twice and cut once.
- Lay out the surfaces that are to be the same size adjacent to each other so that two of their dimensions can be cut at the same time.
- Before beginning to cut make sure that you have a fresh blade (#24) in your knife (#5), a metal straight edge to cut against, an appropriate surface to cut on and that all ink lines are completely dry. A fresh blade is especially important in cut-ting foam core. If the blade is even a little dull it will ball up the foam.
- Make each cut with a series of strokes. The first cut should only strive to establish a clear track for the subsequent cuts. Stand up while cutting, lock your wrist and use your whole arm and body to make the cut. The blade should be held at the same angle (90° to the board) throughout the length of each cut. Make each cut longer than necessary whenever possible.
- You will need to hold your metal straight edge very firmly to ensure that it does not move during the cut. Do not move the straight edge between cuts. Make each cut with a steady motion. Do not rush.
- Visualize the cut before you make it. Be sure your fingers are out of the way and you know where the knife will stop at the end of the cut.
- Be sure that you have cut all the way through the board before you try to separate the pieces or you will tear the board and create ragged edges.
- Use a razor saw (X-acto #239) and miter box (X-acto #75330) to get the best wood cuts. A knife will tend to crush the balsa wood and will not cut the bass wood. Setup a guide to insure that all pieces are the same length.
- Cut to an appropriate length and sharpen both ends of dowels that will be used as tree trunks. Push one end into the site. Pull the dowel out of the site, put some glue into the hole and reinsert the dowel. Let the glue dry before attaching the top of the tree.

Push the styrofoam ball onto the dowel leaving 2" between the site and the underside of the tree. Pull the ball off the dowel, put a little glue in the hole and replace the place the tree back on its trunk.

### **Model Assembly**

- If you use white glue for assemble, use it sparingly. Do not put a bead of glue directly from the bottle on the edge of the board—it will be to much. Make a puddle of glue on a scrap piece of board and use an applicator or your finger to spread a thin film of glue on the edge of the board. Let the glue day just a little then align and press the pieces together.
- Let each glue joint dry before you do the next. You can use a hair dryer to assist the process.

Consider using a Cyanoacrylate Glue. El Corral Bookstore has a house brand of the glue plus an accelerator and a remover. "Maxi-Cure"

Extra Thick 10-25 Sec. "Insta-Set" Accelerator "Un-Cure" Remover, 30-120 Sec.

# **Problem Statement**

The design of the Sequential Folly must respond to the following constraints, requirements and design goals.

### **Constraints & Requirements**

You may create and use any number and combination of lineal and planeal elements to create your designs.

The overall shape of any element must be composed of straight lines and arcs.

Planes may be curved along one axis.

All curves must be defined by radii and tangent points.

- All curved planes must be oriented vertically or horizontally.
- Linear elements may be any length and their ends may be cut to fit against other elements.
- Architectural elements may not extend higher than 24' above existing grade.
- All elements should be connected and supported in a structurally reasonable fashion. Point or edge connections are not considered structurally reasonable.
- All planes must be supported at a minimum of three points.
- The model must be structurally stable. The model may not deform when given the "Crescent Finger" test in any direction. Ask for this to be described in class. Free standing columns will not be subjected to the "Crescent Finger" test but must be securely attached to the base.

#### Spaces

There must be three major spaces that are approximately equal in floor area.

Major spaces must each fit within a 24' square area.

Major spaces must be easily identifiable figures—they must be rectangles, triangles, circles, etc.

Major spaces may not be physically subdivided.

### Site

The site is located in a public park along a North/South walk. The site is flat and centered on the existing paved walk. The park surrounds the site providing a context of grass and trees.

The simple end of the continuum is at the South end of the site.

- Architectural elements (e.g., walls, columns, roofs, etc.) may not be placed or extend outside the buildable area (the grid) of the site.
- A least three trees must be located within the site. The circumference of the trees must stay entirely within the site. The diameter of a tree is 18'.
- You may pave and plant under trees but you may not locate walls or columns under trees.

Hedges and additional trees may be located anywhere on the site.

You may change the site's contours a maximum of 4' above or below grade in one foot increments.

Site contour changes must be resolved within the site.

- The maximum slope created by site contouring is one foot of rise for each two feet of run.
- Vertical site changes to create raised planting beds or reflecting pools are assumed to be supported by one foot wide retaining walls that extend a minimum of 1" above the site or their fill.

#### Paving

The walk and floor areas of the three major spaces must be paved.

All pavement must be level and extend 1" above site grade.

- The alignment and width of the walk may be modified only within the buildable area of the site.
- The minimum width of the walk at any point within the buildable area of the site is six feet.

# **Design Issues**

The problem is to design a folly (a functionless structure) that historically often took the form of a fake ruin in a landscape that was designed to create a destination and enhance a view. Our folly will be a one story structure that people will see and experience as they walk through a park.

Last quarter we explored the creation of transitional and arrival spaces. The larger issue being that architecture is experienced as a sequence of spaces. This quarter the idea of a sequence of spaces will be explored to investigate spatial definition, complexity and experiential quality.

### **Continuum Investigation**

The relationships between spatial definition, complexity and experiential quality will be explored through the design of a series of spaces using a kit of parts to create floors, walls and roofs. The series of spaces should support the experience of increasing or decreasing complexity as a person moves through them.

The team is to define a set of means that will be manipulated to create the continuum. The task is not to create the most or least complex spaces but to create a continuum that is clear. In the process you should learn something about the relationship between spatial definition and spatial perception.

The question is: What configurations of floors, walls and roofs produce the perception of what levels of complexity in architectural space? The goal is to define those means that will remain constant and those that will vary to produce a continuum.

The process for the investigation should include the definition of an hypothesis. An hypothesis is an unproven theory—a guess or conjecture—as to what, how and why certain phenomena will produce certain results. The hypothesis may include theories that encompass the experiment as a whole as well as how individual factors that will affect complexity.

The factors or means (size, shape, surface, substance, site, number, variety, relationship, etc.) that you are manipulating (changing or holding constant) to create the continua must be identified in words and diagrams. You must identify what you think each factor will contribute to the continua.

### **Openness & Complexity**

The central issue to be explored in creating the spaces is the relationship between openness and complexity. The elements of spatial delimitation (Thiis-Evensen 1987) are the floor, the walls and the roof. The principle role of these elements is to protect an interior space from an exterior space—"they balance the forces of inside and outside." (Thiis-Evensen 1987, 19) This delimitation or protection establishes a continuum from open to closed. The definition of each space must find its appropriate expression between complete closure and complete openness. Consider how the concepts of Open versus Closed and Explicit versus Implied that were discussed last quarter can support the creation of the complexity continuum.

The pull between the explicit and the ambiguous, unity and diversity, boredom and tension have been part of compositional decisions throughout history. In the simplest terms complexity can be seen as a function of number, variety and relationship: the number of elements and concepts: the variety of means: and the strength of relationships that exist between elements within a composition.

Implicit in and fundamental to the problem is the making of conscious choices concerning the means employed to communicate the desired level of complexity. This conscious manipulation of means is fundamental to the process of learning how to control the design of space and form to communicate your intentions.

### **Spaces & Circulation**

When a circulation path passes through a space it affords several readings of the space. You can simultaneously perceive the space as a whole, the space defined by the implied or explicit circulation route and the spaces defined by subtracting the circulation space from the overall space. If each of these readings/spaces has a clear figure of appropriate scale the design is more successful.

Does the circulation path dominate or serve the space? Can you be in a space or are you always in the circulation? Do the spaces defined by the circulation path have clear figures and provide sufficient space for people to occupy comfortably? Can you step out of the circulation path into a major space to pause and enjoy the space?

### **Exterior Spaces**

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The design should not only be about things but also about what is created by the things—it should also be about the space between things. Every time we locate something it has the potential to relate to other elements and define new spaces and patterns. Do not just consider the major spaces you are creating but also those that are being created between the spaces and the spaces and the larger site.

The major spaces must be entered and exited. The experience of moving from outside to inside or from one space to another can greatly enhance the experience of the spaces themselves and the overall sequence. Draw upon what you learned last quarter in creating the major spaces and the transitional spaces. What you see as you approach the folly from either end should be considered. Entry experiences and transitions between spaces in the continua should be created as part of the design of the folly.

### **Design Goals**

- A continuum of changing experience is afforded by the three major spaces.
- The continuum provides a smooth, logical and evenly changing set of experiences.
- Circulation should serve and not dominate the three major spaces.
- Transitional and exterior spaces should be developed to relate the major spaces to each other and the site.

#### References

Benedict, William R. 2001. *Means To Ends*. El Corral Publication.

Ching, Frank. 1979. Architecture: Form, Space & Order. New York: Van Nostrand Reinhold.
Horizontal Elements, pages 115-129.
Overhead Plane, pages 130-135.
Vertical Elements, pages 136-175.

von Meiss, Pierre. 1990. *Elements of Architecture: From Form to Place.* London: Van Nostrand Reinhold (International) Co. Ltd Space, pages 101 - 120.

Thiis-Evensen, Thomas. 1987. Archetypes in Architecture. New York: Oxford University Press.The Floor, pages 36-87.The Wall, pages 116-166.The Roof, pages 300-380.

# Phase I: Design & Construction

The second phase involves designing the Sequential Folly with your team members. To begin this process, the class will be divided into cooperative learning groups of three or four people that will function as design teams. Refer to section entitled "Cooperative Learning" in the "Base Syllabus" for a complete discussion of the team structure and rules. The team will be working together throughout this project.

### Team Name

As part of the process each team is to develop a team name and logo that will appear on all elements of the presentation. This should be fun, short and communicate something unique about the team and/or your design. Have fun developing the name and logo as you develop your design and work together. It should be completed for use in the presentation of your design.

### **Problem Statement Diagramming**

The problem constraints, requirements and design goals are provided in written form. The first task is to translate the written information into visual form. You are to work with your team members to create diagrams that when supported by written notes communicate the goals and requirements of the problem.

# Continuum Concepts Diagram

The continuum of spaces must address complexity and openness. A good way to articulate the concepts that will be explored in the continuum is to abstractly diagram the means that will be manipulated to create the continuum. Refer to the Means To Ends for a description of the means at your disposal.

- Everyone in the group should diagram a minimum of three alternative complexity continua.
- The diagrams should reflect and be accompanied by notes that identify what is being held constant and what is changing the create the continuum.
- How are the issues of number, variety and relationship being manipulated to create the continuum?

The team must produce a continuum concepts diagram that will guide the development of the design. Design decisions can be tested against the diagram to see if they are moving the design in the desired direction.

The diagram must abstractly communicate the means being manipulated and the nature of their manipulation.

Notes must support and clarify the diagram.

They must describe the means (size, shape, number, variety and relationship) that will be held constant or changed to create the continuum. Simple: Few, Rectangular, Single Organization,

Closed/Explicit, etc.

Complex: Many, Rectangular, Multiple Organizations, Open/Implied, etc.

### **Diagram Requirements**

Material: Typing paper.

Media: Pen, markers and/or colored pencils.

Format: 8.5" x 11"

The team name, member names and the standard course information must be designed into the layout.

# **Model Requirements**

- The model must be sturdy to withstand use and being hung on the wall for long periods of time.
- Small problems in alignment and cleanliness are expected because of changes during the design process—it is a working model.
- The base must be at lease three layers thick or one layer more than the deepest hole.
- No color may be used in the model.
- Do not model furniture.
- Do not model railings.
- One or more scale figures must be permanently placed within one or more of the major spaces of the model. The figures must be visible and serve to give scale to the model. Cut out around the figures.
- Model Name Plate

The name plate must be designed and glued to the model. It must include a North arrow, graphic scale, team name and the names of the team members. The name plate must measure 1.5" by 6' and use only black and white and shades of gray.

# Phase 1 Final Submittal

Physical model.

Continuum diagram.

Evaluation sheet with your name lettered at the top.

This phase of the project cannot be resubmitted.



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# Phase 2: Refinement & Documentation

Phase III of the project will include the refinement and documentation of the design represented in the model. The drawings will be done individually but the group must work together to refine the design, establish relationships between elements, resolve dimensional issues and help each other with drawing problems.

### Goals

To refine the design to better meet project requirements and goals.

- To resolve and define element relationships, dimensions and connections.
- To refine the design to better reflect material thickness, constuction and structure.

To document the refined design using Plans, Elevations, Sections.

### Refinement

The refinement of the design will include an examination of the spaces of the existing design and the establishment of key reference points and alignments within the design. The refinement drawings will be done as a team.

As you work with your team to refine and document the design, you should make drawings and notes to generate and communicate your ideas and record decisions. Anytime your are talking or thinking, you should be drawing in your sketchbook.

#### As Is Floor Plan

The team is to draw a floor plan of the design as it appears in the model. Do not change the design—record the model. Include the site and buildable area in the drawing.

Format: 11" x 17" oriented vertically Material: 8x8 Cross Section paper Media: Ink Scale: 1/8" = 1'-0" Letter the group name on the sheet Letter team member names on the sheet Include a north arrow

All lettering except for the team name must use standard architectural lettering (1/8" high all caps).

All elements cut through must be shaded in black.

#### As Is Plan Diagrams

The design employes some combination of floor, wall/column, roof, hedge, tree, berm and/or pool elements to define spaces. Reading these in the as is floor plan, create the following diagrams.

- Overlay the as is floor plan with tracing paper and trace and shade the major spaces in black.
- Overlay the as is floor plan and trace and shade the exterior and transition spaces in black.

Overlay the as is floor plan and the two previous diagrams and trace and shade everything that is not a major, exterior or transition space in black.

Format: 11" x 17" oriented vertically

Material: White tracing paper.

Media: Ink and marker

- Letter the team name on each sheet
- All lettering except for the team name must use standard architectural lettering (1/8" high all caps).
- Make notes on the diagrams that record what they teach you about the design's response to the project's design goals.

### Relationships

The process of refining the design should include establishing element relationships/alignments. The six foot square grid provides a reference system that can be used to locate elements and establish their relationships.

You may also establish regulating lines specific to your design that do not fall on the grid. The regulating lines may be straight lines and/or arcs that relate elements within a design.

The boundary of the site and the six foot gird must be drawn in ink.

Key elements (walls, columns, etc.) should be included to indicate their relationship to the grid, regulating lines and/or each other. Key elements are those that define the limits or anchor points of spaces and other elements.

- A 0,0 coordinate reference point must be established at the southwest corner of the site.
- Coordinates should be included to locate key elements and regulating lines.
- Coordinates and angles should included to define arcs and elements.

Format: 11" x 17" oriented vertically Material: 8x8 Fadeout Velum

Media: Ink

Scale: 1/8" = 1'-0"

Letter the team name on the sheet

Letter team member names on the sheet

Include a north arrow

- All lettering except for the team name must use standard architectural lettering (1/8" high all caps).
- Use the grid to assist in accuracy. Carefully construct elements that do not fall on the grid.

11/2008

# **Documentation**

Each member must draw a set of orthographic drawings to record the refined spaces. Team members should help each other solve drawing problems and understand the use of the orthographic drawing system.

The drawings must be accurately constructed and the drawings of each team member should match those of the other members. Coordinate the drawings.

### Simple, Intermediate, Complex Spaces

A set of drawings must be constructed for each of the three spaces. Each set must include a Roof Plan, Floor Plan, South Elevation and an East-West Section. Other auxiliary drawings may be needed to make the required drawings. Auxiliary drawings must be on individual

8.5" x 11' sheets of paper.

Format: 11" x 17" oriented vertically Layout: As specified in class Material: 8x8 Fadeout Velum Media: Pencil and Ink Scale: 1/4" = 1'-0" Include a north arrow with each plan Letter the team name on each sheet Letter your name on each sheet

- All lettering except for the team name must use standard architectural lettering (1/8" high all caps).
- Construct drawings in pencil and finalize them with ink. Pencil construction lines must be drawn with accuracy. Use the grid to assist in maintaining accuracy.
- Roof Plan and Elevation and Floor Plan and Section drawings must be in orthographic relationship.
- Coordinates from the relationships drawing should be recorded on the Floor Plan drawings.
- The orthographic drawings should include all design elements that fall within the drawing area as defined by the plans (e.g., trees, hedges, pools, paving, etc.).
- Overhead elements must be represented with dashed lines in the Floor Plans.
- Pools must be represented with dashed lines in the Elevations.
- All final ink lines go on the front of the velum and may be traced by hand or drafted.
- The buildable area gird must be represented in pencil on all plans.
- Include people in each elevation and section.
- Orthographic drawings must be named according to the space (Simple, Intermediate, Complex) (e.g., Simple Roof Plan, Simple Floor Plan, Simple South Elevation, Simple Section AA).

Reference Sections with a section line in Roof and Floor Plans.

- All elements cut through must be shaded in black ink. Hedges cut through should be hatched in ink.
- Building edges covered by trees should be drawn as if the tree were transparent.

#### Graphic Language

Line weight and color should be consistently used throughout the set of drawings to enhance the communication of three-dimensional form and spatial layers.

- Clearly differentiate between primary (heaviest), secondary (medium) and tertiary (lightest) contour lines.
- Clearly differentiate between lines defining near (widest), middle (medium) and far (thinnest) surfaces.

The visible edges of paving, hedges, trees, and people should be drawn with thin lines.

- Color should use aerial perspective cues and orientation to the assumed light source to communicate form, depth and spatial layers.
- Clearly differentiate between near surfaces (darkest, warmest and highest in chroma) (on the front of the velum), middle surfaces (lighter, cooler and lower in chroma) and far surfaces (lightest, coolest and lowest in chroma) (on the back of the velum).

Paving, hedges, trees, people, and water should be lightly colored on the back of the velum.

Building surfaces covered by trees should not be colored.



### Site/Floor Plan

The Site/Floor Plan drawing relates the Floor Plans of the three spaces to the site. Reduce the floor plans of the three spaces by 50% and use them as underlays to construct the Site/Floor Plan.

- The boundary of the site and six foot gird must be drawn in ink on the back of the sheet.
- The three Floor Plan drawings must be traced in ink onto the front of the sheet.
- Any elements of the design not shown or partially shown on the Floor Plans must be drawn in ink on the front of the sheet. This includes pools, site contours, trees, hedges, and paving.
- A 0,0 coordinate reference point must be shown in the middle of the grid. Coordinates must be included to locate key elements that relate the three spaces to the site.

Format: 11" x 17" oriented vertically Material: 8x8 Fadeout Velum Media: Ink Scale: 1/8" = 1'-0" Letter the team name on the sheet Letter your name on the sheet Include a north arrow

- All lettering except for the team name must use standard architectural lettering (1/8" high all caps).
- Use the grid to assist in accuracy. Construct elements that do not fall on the grid in pencil prior to inking.

Final link lines may be traced by hand or drafted.

# Phase 2 Final Submittal

Original drawings including any required auxiliary drawings

Two photocopies of each drawing

Evaluation sheet with your name lettered at the top.

Team Model



Drawing by Brandon Richard



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08











# 2: A Folly

### Name:

Evaluation is based on the standard project grading criteria described in the syllabus with the following specific issues emphasized. Project Weight: 3 Due dates as defined in class.

# Phase 1: (Group) (40%)

### On Time

### Craft & Design

#### A B C D F Craft

All/Most/Some/None Model is sturdy & can be hung on the wall Model elements are precisely cut Construction exhibits appropriate care for a working model Model exhibits high quality lettering and drawing

#### A B C D F Meets Program Constraints

All/Most/Some/None

Defines and uses specified kit of parts. Follows problem requirements. Passes the crescent finger test. Major spaces each stay within 24' square. Major spaces have clear figures. Diagram and notes communicate the means being manipulated and the nature of their manipulation.

#### A B C D F Meets Program Design Goals

All/Most/Some/None

- A continuum of changing experience is afforded by the three major spaces.
- The continuum provides a smooth, logical
- and evenly changing set of experiences. Circulation serves and does not dominate the three major spaces.
- Transitional and exterior spaces are developed to relate the major spaces to each other and the site.

#### A B C D F Achieves Design Excellence

- The design exhibits a clear concept that affects the relationships between and development of all elements. Communicates a strong expressive mood or feeling.
- The design exhibits a clear experientially pleasing quality that communicates on a poetic level.

### Phase 1 Grade

No Resubmittal

## Phase 2: (Individual) (60%)

### On Time

60

### Craft (30%)

- A B C D F Uses specified format, media and materials.
  A B C D F Completeness: Drawings have specified information and elements.
  A B C D F Lettering quality and consistency.
  A B C D F Line quality and consistency.
- A B CDF Shading quality, consistency and layered use of multiple colors.

### **Craft Grade**

### Understanding (60%)

- A B CDF Correct usage of orthographic drawing system and conventions as specified. Spaces correctly represented.
- A B CDF Correct usage of specified graphic language to communicate three-dimensional form and spatial layers. Line Weight Value, Hue & Chroma
- A B CDF Drawings coordinated between team members.

### **Understanding Grade**

### Design (10%)

- A B CDF Meets Program Constraints & Goals All/Most/Some/None Element dimensions, locations and relationships are defined and refined. Major spaces each stay within 24' square. Major spaces have clear figures. Circulation serves and does not dominate the three major spaces. Transitional and exterior spaces are developed to relate the major spaces to each other and the site.
   A B CDF Achieves Design Excellence The design exhibits a clear concept that affects the relationships between and development of all elements.
  - Communicates a strong expressive mood or feeling.
  - The design exhibits a clear experientially pleasing quality that communicates on a poetic level.

### **Design Grade**

# **Appendix: Team Projects**

The Folly project will be a team project will include three types of activities. There will be team activities, individual activities and evaluation activities.

### **Forming Teams**

The teams will consist of no less than two or more than four people. They will be formed to create as diverse a mix of people and experience as possible. Your work and participation in class will be used to assist the teacher in forming the teams. The teacher reserves the right to adjusted the membership of the teams at any time to improve the diversity.

### **Rules of Cooperative Learning Teams**

- 1. Everyone must contribute—no sandbaggers or dominators allowed.
- 2. You are responsible for one another-help each other out.
- 3. You can criticize an idea, but not the person. Disagreements with specific solutions or opinions are fine, but disparaging the person or his/her ancestry is not.
- 4. Attendance and participation are important. Be there and do your part to make the experience as valuable as possible.
- 5. The primary purpose of team exercises is not to finish first, but to allow everyone to acquire mastery of the concepts. The quality of the experience for each member is important. It is the responsibility of every member to make the experience as valuable as possible for every other member.

### **Roles of Each Team Member**

The teacher may designate the team leader and ask that the remaining roles be determined by the team. Sometimes the teacher will designate all team roles and sometimes none. Roles will usually remain constant for the life of the team but may be changed if the team remains together for a longer time or chooses to rotate them on some regular basis.

#### Member A—Facilitator

- 1. Makes sure all understand the task.
- 2. Gets the team quickly involved in the task.
- 3. Gets the team back on task as needed.
- 4. Makes sure that all members participate.
- 5. Resolves conflicts or problems with input from the other members.

#### Member B—Recorder

1. Assumes the functions of Member A if A is absent.

2. Records in writing the group's responses to team learning exercises if required.

- 3. Requests input from all members.
- 4. Reviews the written responses for team member approval.
- 5. Hands in the written responses to the teacher.

#### Member C—Time Keeper

- 1. Keeps track of the time while the team is completing the task.
- 2. Keeps the team appraised of the time remaining.
- 3. Advises the team about using time wisely.

#### Member D—Knowledge Builder

- 1. Assumes the roles of Member C if C is absent.
- 2. Checks that each team member understands
- the solutions, concepts and procedures associated with each task.
- 3. Checks that each team member can verbalize the reasoning behind each solution or team

response.

4. Contacts absent team members and informs them of the studio's content, activities and signments.

as-

Note: It is more important that each person understand the concepts behind a solution and why a given solution is correct than it is to solve any specific problem perfectly. This is critical because understanding the concepts allows their use in new situations.

#### Presenter

Taken on by different members at different times.

- 1. Makes team report using the recorder's work.
- 2. Discusses with the team what to report.

#### All Members

All the members of each team are responsible for making the team a productive and meaningful experience. Carry out your role and make it easier for the others to carry out theirs. Be both a good follower and a good leader as the situation warrants.

#### **Other Roles**

The following roles may assist the quality of the team's interaction and products. They might be assigned to a particular member or assumed by different members as seems appropriate.

**Harmonizer**: One who works to improve the relationships between members.

**Devils Advocate**: One who takes the other side to strengthen and clarify ideas.

**Quality Control**: One who checks the overall and detail quality of the team's products.

### **Team Management**

You are responsible for managing your team. This means you must resolve conflicts and address attendance or participation issues as they arise. Do this together with a spirit of mutual support and the goal helping each other to be better group participants.

A problem that occasionally occurs is that of a lack of attendance and/or participation. If this occurs it is the groups decision as to whether the individual will be allowed to continue as a team member. If you choose to exclude the member from the team you must make sure that it is a group decision, provide documentation demonstrating the student's negligence of duties, and inform the student of your decision.

### Peer & Self Evaluation

Part of your responsibility as a team member is to reflect on your own contributions and provide feedback to the other members as to their group participation strengths and weaknesses. Copies of the forms are provided on following pages for use in evaluating yourself and your team members.

### **Teacher's Role**

The teacher's role during team activities is to monitor team interaction and progress and make any adjustments to the assignment or provide any information that seems to appropriate or needed. To accomplish this the teacher will watch and listen to how the teams are progressing and at times sit in with a group. The teacher will minimize participation in the groups so as not to interfere with your interaction with each other.

### Teamwork

- Reference: *The Teaching Professor*, Volume 12, Number 3, March 1998. Drawn from: Panitz, Beth (December 1997). Team Players. ASEE Prism, p. 9.
- The following is a description of eight behaviors associated with effective teamwork.

#### **Collective Decision Making**

In effective teams, decisions are discussed and agreed to by all. In less effective teams, one person strongly asserts a position and others do not object verbally, even though their opinions differ.

#### Collaboration/Interchangeability

On effective teams, members do what ever is needed to get the job done. They are not afraid to tackle unfamiliar tasks in areas outside their expertise. On less effective teams, members work independently and do not do work outside their area.

#### Appreciation of Conflicts/Differences

Productive teams expect conflict and disagreement. They openly discuss their differences and see them as means to improved decision making. Less productive teams work to avoid conflict, preferring instead a superficial kind of agreement that results when issues haven't been tackled substantively.

#### **Balance of Participation**

Effective teams do recognize that people do have other demand on their time, and as a group they are willing to help a member who may for a time need to decrease the amount of effort devoted to the team. This is different than what happens on ineffective teams, in which one or two members do more than their fare share of the work, resent it, but never confront members who do not contribute what they should to the group.

#### Focus

Good teams keep their ultimate objectives and goals in mind. If they fall behind, everyone pitches in to help the group get back on schedule. Teams run into trouble when they do not partition their time well and, having spent way too much time on early tasks, have no time left for the final push. In those teams, everyone notices the group's error, but no one is willing to raise the issue or offer helpful solutions.

#### **Open Communication**

Members on effective teams keep each other informed. They discuss individual work in progress. They let others know when they may be late or missing. Lack of communication hampers the effectiveness of teams. They work too much on their own and do not share progress or collaborate on how their individual work relates to and fits with what others are doing.

#### **Mutual Support**

On good teams, members support each other and verbally let that support be known. They compliment one another an work well done and publicly thank others who have contributed to the group's success. On poor teams, the focus is on individual work, with little awareness, interest, or appreciation of what others in the group are doing.

#### Team Spirit

Effective teams develop pride and loyalty in their group. They stand up for the group and speak positively about it. When teams aren't working well, members feel no commitment to the team and may even see the group as an impediment to accomplishment of individual goals.

# Working As A Team

Daniel Levi, 1997

#### Team Stages

When students are given a team project, they often struggle through the start-up activities. Research on professional teams shows that the start-up activities take longer than anticipated. For many professional design projects, 80% of the design work occurs in the last 20% of the allotted time.

The main reasons for this slow start is that it takes time to (1) decide on the definition and goals of the project, and (2) develop the social relationships and procedures for effective team work. Teams need time to develop social cohesion and functioning group norms, and defining the project is the hardest part of the task.

How can you improve this process? Partially, you need to understand the dynamics of team development so that you do not get frustrated with a slow start. Team work is not a smooth activity; teams go through stages and have their ups and downs. What is important is to be building your team as the project progresses.

#### Team Leader

Team activities are composed of both task and social behaviors. A common error teams make is focusing on the task and ignoring the social aspects of teams. The team leader is responsible for both task and relationship activities.

The team leader is not the boss who controls the team. Instead, the team leader's role is to manage the group process. The team leader helps to set up the agenda and manages the decision making process to make sure it is fair. They manage the team's interactions to create a supportive environment and insure every-one has the opportunity to participate.

#### Value of Teams

Teams encourage cooperation rather than competition. The value of teams occurs when members work collaboratively instead of individually. Team work improves communications within a project and makes for better problem solving and decision making than individual efforts. In addition, team decisions are more likely to be supported and implemented by the team members.

#### Managing Responsibility

Working on a team project requires an organizational structure to operate within. Early on in a team project, the team needs to outline or diagram the major tasks it has to perform. Under each of these major tasks, the team should try to identify as many subtasks as possible. The team may want to use some techniques such as Brainstorming to help identify all of the tasks. Outlining these tasks helps to make them easier to visualize. For example, the following diagram outlines the steps in a simple student project.

#### **Project Planning**

#### Step 1: Plan for the Project

- 1. Clarify purpose, objectives, and parameters.
- 2. Identify the needed elements of the project.
- 3. Determine task roles.

#### Step 2: Data Collection

- 1. Collect all necessary information.
- 2. Organize the information.

#### Step 3: Write the Report

- 1. Write report.
- 2. Edit for flow and completeness.
- 3. Refine text.
- 4. Copy edit (typos).

#### Step 4: Produce the Report

- 1. Design layout.
- 2. Proofread and correct.
- 3. Photocopy.

After all of the tasks have been identified, the next step is to assign tasks to team members. List the activities or tasks, then have the team members go through one item at a time and determine who is responsible. You may have to go back through one item at a time and determine who is responsible. You may have to go back through the list to decide whether the distribution is equitable after a group discussion. Some tasks may not be the sole responsibility of one team member, and some tasks may be rotated among members during the project. When doing these assignments, consider the following issues:

#### Can the project be broken up into various tasks?

- a. If so, members should list and agree on the breakdown;
- b. Assess the difficulty of each task relative to one another; and
- c. Establish deadlines for the completion of the tasks.

Remember: every member should be given and equal amount and/or difficulty of work to be completed. If there are fewer tasks than members, assign members with nonconflicting schedules to work together on the most complicated or lengthy task. If there are more tasks than members, combine two or more simpler/less lengthy tasks so that it will equal one difficult task.

- a. If the tasks are sequential, each member is responsible for handing off the information to the other member.
- b. If the tasks overlap, members responsible for the overlapping tasks can meet together on their own time— full team meetings are not necessary.

In order to better manage your project, you may want to develop an Action Plan. The action plan divides the major tasks in a project into specific actions or tasks. These actions are assigned to team members along with expected results and completion dates.

### **Decision Making**

The style of leadership affects how teams operate. Teams work best when the leader serves primarily the role of facilitator. When the leader tries to control the team's operation, then the resources of all of the team members is often under utilized. There are three main approaches to team decision making.

#### 1. Consultative

One person has authority to make the decision, but may elicit advice and comments from team members. This style of decision making is often used when a project is divided into parts and one person has responsibility to do a part. They may ask for advice and need to coordinate with others, but if it is an internal issue, then they should get to decide.

#### 2. Democratic

This is the most popular decision making style in the U.S., but it is not really a good team approach. The problem with a democratic decision is that almost half of the people could disagree, and they may be unwilling to support and implement the decision after it has been made. Voting may be quicker than consensus, but it should be avoided unless the team is stuck and time pressures mean there is no alternative.

#### Are the tasks sequential or overlapping?

#### 3. Consensus:

This approach should be used for most major team decisions. It requires discussion of an issue until all agree to accept it. By acceptance, it does not mean that the decision is your favorite alternative. It means that you are willing to accept and support the decision.

Consensus decision making may be time consuming, but it is the best way to fully utilize the resources of the team. In addition, consensus decision have a greater likelihood of being implemented by the team.

### Guidelines To Use for Reaching Consensus:

- 1. Avoid arguing blindly for your own opinion.
- 2. Avoid changing your mind just to reach agreement and avoid conflict.
- 3. Avoid conflict reducing procedures such as voting or tossing a coin.
- 4. Seek out differences of opinion.
- 5. Do not assume that someone must win and someone must lose when the decision reaches a roadblock.
- 6. Discuss the underlying assumptions, listen carefully to one another, and encourage the participation of all members.

### Creativity

#### **Steps to Creativity**

- 1: Build an Open Climate,
- 2: Conduct Research,
- 3: Brainstorm Ideas,
- 4: Sort Ideas and Select,
- 5: Do Some Refining, and
- 6: Repeat Process if Needed.

Coming up with creative ideas is an important part of student team work. In addition, the tools used by teams to promote creativity can also be used for other team issues. Brainstorming is one of the most common team creativity techniques. It is also a team process which can be used frequently for other issues.

The biggest problem limiting team creativity is premature evaluation. Often team members want to try out new ideas, but critical comments from other team members prevent trying out ideas. The weak point that team members have is in supporting each others ideas. Teams need to designate times when they are not being critical. They need rules for openness and safety in presenting ideas. People need to practice the technique of supporting or building on an idea rather than criticizing it. If you do not like an idea, try going with it by trying to suggest other related ideas which do not have your objection. Learning this skill is very helpful. A team member often does not have to decide on an outcome right now. Sometimes is better to run a brainstorming session, eliminate some of the options, and then wait until the next meeting before selecting an alternative. Waiting can allow members to come up with fresh ideas on their own. Team creativity needs to capture both individual creativity (often done alone) and the synergistic creativity which comes from group interaction.

### **Brainstorming Alternatives**

To start a brainstorming session, the team facilitator needs to clearly state the purpose or issue and review the guidelines for brainstorming. A distinct period of time should be set aside for the brainstorming session. During the actual brainstorming, the facilitator acts primarily as the recorder. After the ideas have been generated, the facilitator helps the group to reduce the list into a manageable size.

#### **Guidelines for Brainstorming:**

Question- announce the question or issue to be addressed.

- Toss Out- all team members toss out as many ideas as they can.
- Accept- all ideas are accepted, regardless of how practical they are.
- Record all of the ideas are listed for everyone to see.
- **Prompt** the facilitator re-asks the main question to help keep people on track.
- **No Editing** the facilitator reminds the team that no one is allowed to criticize or evaluate until the process is done.
- **Build** everyone should build on each others' ideas , using the ideas to go off in new directions.

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### Selecting a Solution

One of the problems with activities such as brainstorming is that you are left with a lot of possible options, and no clear or easy way to select which one to go with. One approach to this is multivoting.

#### Rules for multi-voting:

- 1. Review the alternatives generated by the Brainstorming session.
  - Combine items which seem similar;
  - Number each item.
- 2. Have each team member select 2-5 alternatives they would like to support by writing down these alternatives on a sheet of paper.
- After all team members have completed their selections, tally the votes. Remove items which received no votes (or only one vote).
- 4. Discuss the alternatives which have been selected. Look for ways to combine or synthesize alternatives.
- 5. Repeat steps 2-4 until the team has narrowed the list down to a limited set of alternatives (around 5), then select the team's preferred alternative.

### **Team Building**

Team building refers to activities designed to develop social relations in the team and improve team process skills. Team building is an ongoing activity designed to improve the long term performance of the team. There are two main team building activities: team warm-ups and group process evaluations. Team warm-ups are social activities designed to help team members get to know each other. Group process evaluations are used to evaluate the team's activities and discuss how to improve them.

### Team Warm-ups

A team warm-up should take about 5 minutes and be performed at the beginning of a team meeting for the first 3 or 4 meetings. It consists of any social activity which gets team members to talk about themselves with each other. The following are some sample warm-up activities.

#### Meeting 1

Team members should tell where they are from, why they are here (How did you select your major?), and something entertaining about themselves (What is your favorite joke?).

#### Meeting 2

Team members should say what they like and dislike about team projects, the kinds of activities they like and do not like to do, and something entertaining about themselves (What is your favorite movie? Why?).

#### Meeting 3

The team should select a name for itself. The name should reflect both their project and the way they interact as a team. You might want to practice your brainstorming skills.

### **Group process Evaluations**

Group process evaluations take five to ten minutes and are typically performed at the end of team meetings. The simplest approach is for the team members to answer the following two questions individually, and then discuss their answers with each other.

What things did we do well as a team?

What areas do we need improvement as a team?

When discussing the answers to these questions, the team should focus on how to improve the way it operates, not on who is causing problems within the team.

An alternative approach is to use the Peer Evaluation form provided earlier in this section to rate the performance of the team as a whole along a number of dimensions. This may help the team better identify the sources of its problems. The evaluation you are providing to your peers addresses their relative success in meeting the team participation criteria. First, rank order the criteria from the one they met most effectively (1) to the one they met least effectively (13). Second, write brief observations concerning their participation as described below.

The evaluation is not a judgement as to the intellectual or creative capabilities of the members. It is a judgement as to their relative success in meeting the team participation criteria.

The Peer Evaluations will be seen by the teacher and the Written Observations will be provided to the student.

### Peer's Name:

Criteria	Ranking (1 to 13)
Contributed ideas	
Listened to the ideas of others	
Encouraged others to contribute	
Asked for help when it was needed	
Offered help when asked	
Carried out roles/responsibilities	
Came prepared	
Understood the ideas and solutions	
Encouraged and supported others	
Helped the group stay on task	
Helped the group work cooperatively	
Participated in group tasks	
Was present at agreed to group meetings	

### Written Observations

Provide observations concerning the member's participation in the group for the three items ranked highest and lowest. Word process your observations and print them on a separate sheet of paper. The student's name should be at the top of the sheet. Staple the sheet to the student's Peer Evaluation form.





# **Peer Evaluation**

The evaluation you are providing to your peers addresses their relative success in meeting the team participation criteria. First, rank order the criteria from the one they met most effectively (1) to the one they met least effectively (13). Second, write brief observations concerning their participation as described below.

The evaluation is not a judgement as to the intellectual or creative capabilities of the members. It is a judgement as to their relative success in meeting the team participation criteria.

The Peer Evaluations will be seen by the teacher and the Written Observations will be provided to the student.

### Peer's Name:

Criteria	Ranking (1 to 13)
Contributed ideas	
Listened to the ideas of others	
Encouraged others to contribute	
Asked for help when it was needed	
Offered help when asked	
Carried out roles/responsibilities	
Came prepared	
Understood the ideas and solutions	
Encouraged and supported others	
Helped the group stay on task	
Helped the group work cooperatively	
Participated in group tasks	
Was present at agreed to group meetings	

### Written Observations

Provide observations concerning the member's participation in the group for the three items ranked highest and lowest. Word process your observations and print them on a separate sheet of paper. The student's name should be at the top of the sheet. Staple the sheet to the student's Peer Evaluation form.





The evaluation you are providing to your peers addresses their relative success in meeting the team participation criteria. First, rank order the criteria from the one they met most effectively (1) to the one they met least effectively (13). Second, write brief observations concerning their participation as described below.

The evaluation is not a judgement as to the intellectual or creative capabilities of the members. It is a judgement as to their relative success in meeting the team participation criteria.

The Peer Evaluations will be seen by the teacher and the Written Observations will be provided to the student.

### Peer's Name:

Criteria	Ranking (1 to 13)
Contributed ideas	
Listened to the ideas of others	
Encouraged others to contribute	
Asked for help when it was needed	
Offered help when asked	
Carried out roles/responsibilities	
Came prepared	
Understood the ideas and solutions	
Encouraged and supported others	
Helped the group stay on task	
Helped the group work cooperatively	
Participated in group tasks	
Was present at agreed to group meetings	

### Written Observations

Provide observations concerning the member's participation in the group for the three items ranked highest and lowest. Word process your observations and print them on a separate sheet of paper. The student's name should be at the top of the sheet. Staple the sheet to the student's Peer Evaluation form.




## **Self Evaluation**

You are to evaluate your performance for each of the team participation criteria based on a scale of one to five with five being the highest.

The Self Evaluations will be seen only by the teacher and returned to you.

### Your Name:

Criteria	1	2	3	4	5
Contributed ideas					
Listened to the ideas of others					
Encouraged others to contribute					
Asked for help when it was needed					
Offered help when asked					
Carried out roles/responsibilities					
Came prepared					
Understood the ideas and solutions					
Encouraged and supported others					
Helped the group stay on task					
Helped the group work cooperatively					
Participated in group tasks					
Was present at agreed to group meetings					

## Written Observations

Provide observations concerning your participation in the group for the three items that you feel you did most and least successful. Word process your observations and print them on a separate sheet of paper. Your name should be at the top of the sheet. Staple the sheet to this form.









# **3: BEING INSIDE**

As you designed the folly spaces with the model and refined them with the orthographic drawings you imagined what it would be like to be inside the spaces. We will now focus on the experiential qualities of the spaces created in the Folly project. You will individually create a perspective of each of the three major spaces. This will build traditional drawing skills and your understanding of perspective construction supported by digital tools.

## **Instructional Objectives**

To be able to create eye-level views that communicate the experience of being within a space.

## Introduction

The task is to construct an eye-level perspective of each of the major spaces in the Folly project as represented in the set of orthographic drawings. The issue is how to construct the perspectives. In today's world with 3-D digital modeling programs such as SketchUp and Form-Z it makes little sense to hand construct perspectives from scratch. It also makes little sense to take the time to precisely create a digital model during the design process. The most efficient and effective approach is to build a simplified digital model and use it as the framework for completing the perspective by hand.

The teacher will define how this process is to be achieved in this class. You have been provided digital skills in ARCH 160 and perspective drawing skills in 121 and this class. The texts provide additional information on perspective setups and construction.

The goal is to arrive at eye-level perspective views of the three spaces that have been designed. The eye-height for these views should be at 5 to 6 feet as described in class.

### Requirements

Format: As specified in class.

Media: Ink.

Material: Velum or tracing paper.

Differentiate between primary, secondary and tertiary lines with line weights.

Letter the name of the space (e.g., Simple, Intermediate or Complex), your name and the standard course information on each sheet.

## **Final Submittal**

Original drawings.

Photocopy of each drawing.

Evaluation sheet with your name printed at the top.







## 3: Being Inside

## Name:

Evaluation is based on the standard project grading criteria described in the syllabus with the following specific issues emphasized. Project Weight: 3 Due dates as defined in class.

## On Time

## **Craft & Understanding**

- $\label{eq:absolution} \textbf{A} \quad \textbf{B} \quad \textbf{C} \ \textbf{D} \ \textbf{F} \quad \text{Quality of lettering line work.}$
- A B CDF Accurate use of perspective drawing system.
- A B CDF Design correctly represented.
- A B CDF Line weight differentiates between primary, secondary and tertiary edges.
- **A B C D F** Point of view communicates being within the spaces.

## Craft & Understanding Grade











Design is a continuing process of adjustment, refinement and visualization. We will now focus on the experiential qualities of the spaces created in the Folly project. You will individually evaluate the spaces of the complexity continuum and propose changes. The presentation of your proposals will build traditional and digital rendering skills and provide another opportunity to create a formal presentation.

### **Instructional Objectives**

- To be able to analyze images to better understand an existing design.
- To be able to draw conclusions based on an analysis and make recommendations for improving a design.
- To be able to refine a design using freehand sketches and computer modeling.
- To be able to select a series of views that communicate the qualitative experience of a sequence of spaces in a design.
- To be able to render views generated from a computer model to more clearly communicate the experience and context of spaces.
- To be able to employ graphic techniques to create a clear illusion of three-dimensional form and space on a two-dimensional surface.
- To be able to add people, trees and other elements to perspective drawings to clearly communicate scale, spatial depth and establish foreground, middleground and background spatial zones.
- To be able to employ a combination of digital and hand techniques to create a design presentation.

## Phase 1: Analysis

The analysis will examine the existing design and propose changes to improve the experiential continuum.

## **Visual Limits**

Opaque vertical surfaces are the most powerful definers of space. By blocking our vision they explicitly set the limits of the spaces we occupy. Occluding edge diagrams represent the limits of our vision radiating in all directions from a specific location in space.

Create occluding edge diagrams that describe the experience of standing about in the middle of each of the three major spaces of the existing design.

Make three copies or prints of the Folly floor plan on typing paper. Tape the three sheets together. All elements cut through should be black.

Only wall/vertical elements (walls, volumes, columns, hedges, etc.) are to be considered in developing the diagrams.

Locate a person in about the center of the space and draw radiating lines from the reference position through all vertical occluding edges of solid walls. Shade the pie shaped pieces to reflect the degree of enclosure based on the following scale.

Full height solid surfaces: Dark

Low walls or window type openings: Medium No vertical boundary: White.

Distance should modify the above base values. Elements that define the major space being occupied that are at a normal/average distance from the viewer relative to the space should be shaded medium. Close elements should be darker. Further elements should be lighter.

- Compare and contrast the diagrams and their meaning and implications based on the following questions. Neatly letter your responses on the prints.
- How are the three spaces similar or different based on what you see in the diagrams?
- How does the nature of the visual fields as shown in the diagrams support or not support the creation of the complexity continuum?
- Media: Pen & Colored Pencil.
- Title: "Analysis", your name and the standard course information on the taped set.



### Views

The experience of being in the three major spaces as described by the eye-level perspective views you have created will be used to analyze the experiential success of the complexity continuum.

- Print two copies of an eye-level view of each of the three major spaces on typing paper in vertical orientation.
- Views must communicate a sense of being in the spaces and should support comparison of the spaces.
- Tape the prints together on their backs to create two horizontal sets.
- Media: Pen & Colored Pencil.
- Title: "Analysis", your name and the standard course information on the taped set.

### What You See

You are to examine the views and describe the qualities that you see in the eye-level views.

- Ink over edges of elements that define the space being examined. Use a primary and secondary line hierarchy.
- Shade the surfaces of elements that define the space being examined for orientation to a light source.
- Neatly letter notes on each view that describes the qualities you see.
- Neatly letter notes that critique the success of the continuum based on the views.

### **Proposed Changes**

You are to propose changes that would enhance the experiential clarity of the complexity continuum created by the three major spaces.

- Draw changes that you think would improve the experience of the complexity continuum on the second set of views.
- You may eliminate or modify existing elements.
- Ink over edges of elements that define the space being examined. Use a primary and secondary line hierarchy.
- Shade the surfaces of elements that define the space being examined for orientation to a light source.
- Neatly letter notes on the drawings that describe the changes and their implications for improving the continuum.

Media: Pen & Colored Pencil.

Title: "Analysis", your name and the standard course information on the taped set.

### Phase 1 Final Submittal

Three original taped sets .

Evaluation sheet with your name printed at the top.

## **Phase 2: Presentation**

The final presentation of your changes will be communicated through a floor plan, three perspectives and a description of the continuum.

## **Continuum Description**

The presentation must include text that describes the means (size, shape, number, variety and relationship of elements) that are being held constant and/or changed to create the continuum.

What are the key attributes that support the experience of increasing complexity?

## Floor/Site Plan

The presentation must include a floor plan that includes all elements within the site (e.g., walls, floors, trees, hedges, pools, paving, etc.).

- The drawing must be accompanied by a North arrow and a graphic scale.
- All architectural elements cut through must be shaded in black on the original drawing.
- Hedges cut through must be shaded in a value lighter/darker than the architectural elements.
- The paving must be differentiated in some manner.
- Roof elements must be indicated in the floor plan. This may be communicated with dashed lines or by combining Roof and Floor Plan views from form-Z in a way that makes the roof plan information secondary.
- Note the location of the viewer and direction of sight for each perspective.
- Do not draw site or buildable area boundaries on the floor plan.

### Perspectives

- There must be one eye-level perspective of each of the major spaces.
- The perspectives must be fully rendered in color.
- Perspectives may not be wider that 6" or taller than 8".
- The perspectives must include a minimum of three people or groups of people at different depths in space.
- The perspectives must employ line weight and value to create a clear illusion of three-dimensional form and depth.
- The perspectives must employ a clear value differentiation between sun, shade and shadow surfaces and changes in surface orientation must produce changes in value.
- Trees, and other contextual elements must be appropriately represented to enhance the illusion of three-dimensional form and depth.
- Trees and sky must be added as appropriate in the background to define the park context.

## Hand Rendering

Trace all edges of both the structure and entourage elements onto a sheet of trash, velum or white paper in black ink. Velum is more stable and less opaque than trash and you can use ideas developed for the Folly presentation. White paper will allow you to use techniques you have been exploring in the weekly drawings.

- Clearly differentiate between primary, secondary and tertiary edges with line weight.
- Use a consistent shading and line style.
- Media: Colored pencils, pen and markers.
- Letter your name neatly on each original drawing.

### An Approach

- Put a medium to light layer of Black Prismacolor pencil within all shadow areas on the front of the paper—the same side as the ink lines.
- Put a light layer of Prismacolor hue on the back of the paper to establish the base color of all forms and/or planes.
- Put a heavier layer of the hue, an analogous hue or its complement on the back of the velum to coincide with all shade and shadow surfaces.
- Turn the paper to the front. There should be three values established.
- Place a light coat of Prismacolor on sunlit and shade surfaces on the front of the velum.
- Put a light coat of the hue and its complement on shade surfaces on the front of the velum.
- Continue to mix colors to enhance value change and build richness.
- Refer to *Color Drawing* by Doyle (Chapter 7) for additional rendering techniques that you can add to the above description.

## **Presentation Requirements**

The presentation design must relate the Floor Plan, three rendered perspectives, graphics and text.

Format: 11"h x 34"w or smaller

(10"h x 32"w if printed on personal printer based on an assumed maximum printable area of 8" x 10" per 8.5 x 11" sheet)

Material: High quality color print on coated paper. (Use InDesign's tile function with overlap set to 0. Trim, butt and tape the sheets on the back if printed on personal printer)

Typography: The title of your choosing, your name and the standard course information should be designed into the presentation.

All views should be labeled/named to designate their location in the continuum (e.g., Floor Plan, Simple, Intermediate, Complex).

The Floor Plan must be accompanied by a North arrow and graphic scale.

The InDesign file must be named "\_layout" preceded by your Cal Poly alias (e.g., wbenedic\_layout).

Use only legal fonts.

Do not imbed Photoshop files in InDesign.

### **Scanning Renderings**

Scan the finished the drawings at 300 spi.

Open the files in Photoshop and save them in Photoshop format with the suffix "R" for Rendering (e.g., Simple\_R.psd, Intermediate\_R.psd, Complex\_R.psd).

Make any other adjustments as desired.

Choose the Crop tool, enter the desired dimensions (6"w x 6"h to " 6"w x 8"h) and set the resolution to 150.

Crop the image to work with the final layout.

Save the files in Photoshop format.

## Phase 2: Final Submittal

- Three original rendered perspective drawings with your name lettered on each.
- Color print of the presentation on coated paper trimmed to the final size.
- A CD with your name neatly lettered on the disk (e.g., Will Benedict), the disk named with your Cal Poly alias (e.g., wbenedic)
- The CD must contain a project folder named 04\_Experience. The following files must be within the project folder.

Photoshop files of the scanned renderings. The files must be cropped to their final size, at 150 dpi, and named for the view (e.g., Simple\_R.psd, Intermediate\_R.psd, Complex\_R.psd).

One Photoshop file named Plan\_R.tif.

A InDesign file named "\_Layout" preceded by your Cal Poly alias (e.g., wbenedic\_Layout).

No other files or folders may be present within the project folder. Evaluation sheet with your name printed at the top.



## THE EXPERIENCE Stephanie Simonds, Benedict



Design & Presentation by Stephanie Simonds



Design & Presentation by Sylas McFarland



Design & Presentation by Melissa Beth Houston





## Name:

Evaluation is based on the standard project grading criteria described in the syllabus with the following specific issues emphasized. Project Weight: 3 Due dates as defined in class.

## Phase 1

## On Time

## Analysis (30%)

- A B CDF Lettering and drawing craft is neat.
- A B CDF Analysis addresses all questions.
- A B CDF Analysis is based on what is visible in the views.
- A B CDF Analysis is thoughtful and complete.

## Analysis Grade

No Resubmittal

## Phase 2

## On Time

## Drawing (based on perspectives) (40%)

### A B C D F Craft

All/Most/Some/None Lines are consistent in weight and style Lines are appropriately precise Shading is consistent in style and appropriately scaled Surface colors exhibit a mixture of hues Surface values range from very light to very dark.

### A B C D F Three-dimensionality

All/Most/Some/None Line weight differentiates between primary, secondary and tertiary edges Surface values change consistently and clearly with a change of orientation Entourage elements follow perspective structure of the view and enhance the sense of depth

### A B C D F Expression

All/Most/Some/None Perspectives communicate a sense of being within the spaces Perspectives exhibit a strong and consistent mood or feeling.

## **Drawing Grade**

#### 85

### Craft (10%)

86

### A B C D F File Preparation & Output

All/Most/Some/None
Files and folders provided as specified
Files and folders logically and systematically named and organized to support recognition by others
Files saved in appropriate format, resolution and dimensions
Files use appropriate fonts
Extraneous files removed
Output exhibits high quality and craft

### A B C D F Precision

All/Most/Some/None Elements align as intended Spacing and dimensions are consistent Elements kept within page and/or margins Extraneous elements removed Page trimmed precisely and cleanly Output color rich and exhibiting a full value range

### **Digital Grade**

### Design (based on the presentation) (20%)

### A B C D F Meets Presentation Requirements

All/Most/Some/None Presentation is clean, sharp and precisely assembled and trimmed Contains specified elements

The text is clearly legible when read form a distance of 18".

Graphic decisions create a clear visual hierarchy (perspectives, title, plan, text, other elements)

The text clearly describes the means being held constant and/or manipulated to create the continuum as seen in the three views.

### A B C D F Achieves Design Excellence

Perspectives indicate support of the complexity continuum
Presentation exhibits a clear concept that affects the relationships between and development of all elements.
Presentation exhibits a clear experientially pleasing quality that communicates on a poetic level.

### **Design Grade**



## **5: DRAWING**



The drawing project includes a series of weekly drawings, compositional alternatives, backing sheets whose role is to develop freehand lettering skills, a sketchbook containing drawing exercises and a series of big gesture drawings. Together they introduce a range of drawing concepts and support the development of freehand drawing process, knowledge, skills and techniques.

### **Instructional Objectives**

- To be able to construct accurate one- and two-point perspective grids and use them to represent architectural form and space.
- To be able to describe in words the essential qualities of a subject that you want to communicate in a drawing.
- To be able to execute architectural lettering that is well formed and consistent.
- To be able to draw small quick sketches that explore compositional alternatives for a proposed drawing.
- To be able to construct freehand drawings of things that appear accurate in terms of linear perspective and proportions.
- To be able to employ the visual cues in a drawing to create a clear illusion of three-dimensional form, depth and space.
- To be able to communicate through a drawing, the selected or identified form, light and material qualities of a subject.
- To be able to make choices as to media and technique to support an intended communication.
- To be able to create values, colors and textures that are distinct and consistent in technique.

- To be able to represent the qualitative feel of a subject as exhibited by its surface qualities and, illumination.
- To be able to represent the color, texture, reflectance and transparency of materials.
- To be able to communicate the illusion of architectural space in a drawing.

## **Weekly Drawings**

Each quarter there will be a series of drawing assignments that are intended to enhance visual acuity and awareness, develop basic freehand drawing skills and provide life drawing experiences.

The drawing assignments require careful observation in order to interpret and communicate specific subject qualities. Each assignment will define a subject and constraints. Within the constraints of the particular assignment you must choose a subject and point of view and decide what it is that you want to express. In the process, make choices that challenge your skills and make the assignment an enjoyable learning experience.

### Time

Efficiency is of value—the less time it takes you to accomplish your drawing goals the better. Work smart and keep you effort focused on what you are intending to communicate. Look, think, plan and organize before you start. Think about the qualities you want to communicate. Organize your materials and get comfortable. Once you are ready, go for it.

### Interpretation

Part of making any drawing is deciding what to include and what to leave out—what to enhance and what to play down. To communicate is to make decisions about the content of your communication. Each drawing you make is a communication of some defined aspects of what you are seeing. Do not be timid in terms of identifying your goals for the communication.

### **Drawing Requirements**

- Format: 8.5 x 11" Drawings should be no smaller than about 4" square or bigger than about 6" x 9".
- All drawings should be from life—they should be of something that exists in front of you as you make the drawing.
- The drawings should represent what you see from where you are drawing—they should be eye-level perspectives.
- All drawings must be freehand—they must be constructed without the aid of drawing instruments other than pens, pencils, etc.
- The rectangular frame-of-reference must be made visible in all drawings by an explicit or implied edge.
- The drawings should employ the appropriate visual cues to create as clear an illusion of three-dimensional form and space as possible given the subject, technique and point of view.
- The drawings should capture the unique shape, proportions and detail of the thing being drawn given the assignment and point of view.
- Graphic decisions, point of view and composition should support the intended communication/expression.

## **Compositional Alternatives**

The preparation for making a drawing includes choosing a subject, establishing a point of view, determining what is to be included and establishing a frame-of-reference and capturing the essential proportions and relationships of the elements within the frame-ofreference.

Compositional alternatives establish what you are going to draw by recording decisions about point-of-view, drawing proportions and the location of key elements within the frame-of-reference.

Each weekly drawing must be accompanied by a set of compositional sketches. The set should not take over twenty minutes to complete and should take the form of proportionally accurate gesture drawings. Refer to the examples.

### **Compositional Alternative Requirements**

- A minimum of three compositional alternatives must accompany each weekly drawing.
- Compositional alternatives must be executed in your sketchbook. Stay a minimum of 3/4" in from the edge of the sketchbook's pages.
- The largest dimension for any compositional alternative should not exceed four inches and may be smaller.
- The frame-of-reference for each compositional alternative must be clearly defined by a rectangle.
- The value range of each compositional alternative must include black and white.
- The drawing quality of each compositional alternative should be appropriate for a gesture drawing.

122 Syllabus









Alternatives by: Meg Cunningham







## **Backing Sheets**

Each contour drawing must be accompanied by a backing sheet. The role of the backing sheet is to record drawing information, identify the focus of the drawing and provide a vehicle for developing freehand lettering.

### Content

Refer to the example shown below.

Drawing Number: e.g., 3

Series Title: e.g., Light & Value

Drawing Title: e.g., Sun, Shade, Shadow

Subject & Location: Identification of the subject you are drawing and its location.

Description: A one or two sentence description of the subject's key visual attributes or qualities that you want to communicate through the drawing.

Drawing Time: e.g., One and One-Half Hours.

Your Name: e.g., Will Benedict

Course Information: e.g., Benedict, Arch 131, Fall 01.

### Requirements

Format: 8.5" x 11"

Material: 8 x 8 Cross Section grid paper.

Media: Pen or Pencil.

Margins: 1" minimum on all sides.

Typography: 1/4" Titles and 1/8" Text. All printing is in all caps. Refer to the information on hand lettering that follows.

# D LIGHT & VALUE SUN, SHADE, SHADOW

ARCHITECTURE BUILDING STAIR COURT

A TRIANGLE OF SUN IN THE SHADOWS. A DELICATE RAIL CONTRASTS BANDS OF SUN AND SHADOW.

TWO HOURS

BECKY DAY BENEDICT, ARCH 131, FALL 97

## Hand Lettering

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The ability to hand letter will be needed to support freehand presentations and work in personal sketchbooks in school and the profession. All freehand lettering employed in exercises and projects is expected to be of a quality that supports the overall quality of the presentation.

The standard hand lettered text will be 1/8" all caps. The vertical space between lines (leading) must be at least 1/16" and not more than 1/8". Your specific style may vary but it must be readable, well formed and consistent in shape, size, alignment and spacing.

### Hand Lettering Recommendations

Use guidelines to keep height consistent.

- Draw guidelines with a hard lead (e.g., 2H, 3H).
- Letter with a medium lead pencil (e.g., F, H, HB) or pen.
- Make all letters reach from guideline to guideline—make horizontal lines lay directly on the guidelines and vertical and sloped lines start and/or stop over the guidelines.
- Make round letters such as "C" or "O" reach slightly above and below the guidelines.
- Think of and execute each letter as a series of separate movements. Each movement corresponds to one part of the letter.

For example, the "H" takes two vertical and one horizontal strokes. It is important that the series of strokes for a given letter do not blend together but are kept as separate and distinct.

Keep the overall proportions of each letter about square.

- E Yes
- E No
- Pay attention to the line quality of each stroke. They should start and stop with a slightly greater pressure to anchor the ends of the stroke. The middle part of the stroke may use a slightly lighter pressure. This will compensate for the optical illusion which makes a line of constant weight seem lighter at its ends.

Good lettering is the product of thoughtful practice.

## Hand Lettering Example

The following example exhibits the desired quality for all standard 1/8" hand lettering.

## ABCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890

I LIKE COMPLEXITY AND CONTRADICTION IN ARCHITECTURE. ... I PREFER "BOTH-AND" TO "EITHER-OR," BLACK AND WHITE, AND SOMETIMES GRAY, TO BLACK OR WHITE. A VALID ARCHITECTURE EVOKES MANY LEVELS OF MEANING AND COMBINATIONS OF FOCUS; ITS SPACE AND ITS ELEMENTS BECOME READABLE AND WORKABLE IN SEVERAL WAYS AT ONCE. BUT AN ARCHITECTURE OF COMPLEXITY AND CONTRADICTION HAS A SPECIAL OBLIGATION TOWARD THE WHOLE. IT MUST EMBODY THE DIFFICULT UNITY OF INCLUSION RATHER THAN THE EASY UNITY OF EXCLUSION. MORE IS NOT LESS.

(ROBERT VENTURI 1966)

## Weekly Drawings: Materiality

The following describes the requirements for the weekly drawings for the quarter. Light and the concepts of value and contrast were the focus of the first series of weekly drawings. This series will continue to address these concepts through a focus on materiality. All things are made of some material possessing some set of surface properties. The properties of color, texture, reflectance and transparency will be addressed in representing the materiality of the world. The goals are to build an awareness of the surface qualities of things, develop freehand drawing skills and provide life drawing experiences.

## **Due Dates**

As assigned in class

## Weekly Submittals

Weekly drawings and their accompanying compositional alternatives are due as specified in class. Refer to the project grade sheet.

- The drawing and backing sheet must be placed back-to-back in a clear plastic sheet protector. Non-glare sheet protectors are required.
- A photocopy of the compositional alternatives with your name neatly lettered on each copy must be handed in with each weekly drawing.

## **Final Submittal**

All weekly drawings and their backing sheets in sheet protectors will be submitted as a set near the end of the class as specified in class.

Drawings may be resubmitted at this time along with new compositional alternatives for any new drawings.

Drawings that are new or improved must be identified.

Do not hand in compositional alternatives for drawings that are not new.

## Drawing Scans (Required for Arch 132)

Scan all drawings as 8.5" x 11", 300 spi, 24 bit RGB files and save them in TIFF format.

Name the files alias\_132\_01/2/3/4/5 (e.g., wbenedic\_132\_01, wbenedic\_132\_02, etc.)

Put them in a folder named alias\_132Draw (e.g., wbenedic\_132Draw)

Provide the files on a CD with your name neatly lettered on the disk (e.g., Will Benedict), the disk named with your Cal Poly alias (e.g., wbenedic) and a custom designed CD cover. Refer to the chapter titled "CD Covers."

Drawing: Timothy Alatorre



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## Drawing 1: Color of Many Colors

Although we call a surface red it is in reality composed of all colors. It is called red because that color dominates. A colorist approach to drawing acknowledges the richness of the color we see by creating it with multiple layers of many colors. The goal of this drawing is to capture the many colors that contribute the richness of the surfaces we perceive.

Subject: An object or architectural detail.

Sketchbook: Three compositional alternatives..

Media: Prismacolor pencils and/or Art Stix.

Material: White paper.

Graphic Language: The drawing should use only continuous tones. There should be no lines—edges are defined by changes in value. The brightest surfaces should be left very light.

Value Patterns: Full Range (white to black).

Drawings: Left to Right Jennifer Millsaps, Sara Ulius







## Drawing 2: Organic Things

The hard surfaces that typify architecture are balanced by the soft surfaces that plants possess. Leaves and flowers have unique forms and color that vary drastically with the lighting conditions. Direct versus diffuse, front lit versus back lit and strong versus weak light each can affect our perception of a plant's color, transparency and texture. The goal of this drawing capture some unique quality that a plant possesses.

Subject: Plants.

Sketchbook: Three compositional alternatives.

Material: White Paper.

Media: Colored Pencil (Pen optional).

Graphic Language: The drawing should use only continuous tones. There should be no lines—edges are defined by changes in value. The brightest surfaces should be left very light.

Value Patterns: Full Range (white to black).

Composition: All drawings must contain a frame that is different from the limits of the subject or dramatically edits the subject.



Drawings: Left to Right & Top to Bottom Ellen Adamson, Melissa Beall Jill Landgraf

11/2

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11/2008





## Drawing 3: Joining Materials

Architecture is enriched by the quality of materials. The nature of the materials provide color, texture and pattern to architectural surfaces. The coming together of several surfaces composed of different materials is a common occurrence in architecture. How these surfaces and their properties connect, contrast and complement each other enhances the visual and tactile richness of our experience. The subject of this drawing is the coming together of several materials and planes. The goal is to capture the coming together of materials and their expressive impact.

Subject: Architectural detail.

Sketchbook: Three compositional alternatives.

Material: White paper.

- Media: Prismacolor Pencil, Marker, Art Stix & Pen.
- Graphic Language: The drawing should use only continuous tones. There should be no lines—edges are defined by changes in value. The brightest surfaces should be left very light.

Value Patterns: Full Range (white to black).



Drawings: Left to Right & Top to Bottom Nick Arambarri, Mark Fairman Eric Pan



11/2008



## Drawing 4: Reflection/Transparency

Smooth and lustrous surfaces reflect their surroundings. These reflections add to the visual richness of the surface. Transparent material allows spaces to flow through it and provides views to others worlds. Transparent and reflective surfaces often mediate our visual experience of the world. The goal of this drawing is to communicate the presence of reflective and/or transparent material. The drawing should include both things mediated and unmediated buy the reflective and/or transparent material. There should be a clear difference between the two conditions. Finally, there should be a sense of space that is enhanced by the reflective and/or transparent material.

Subject: Window in a Building.

Sketchbook: Three compositional alternatives.

Media: Prismacolor pencils and/or Art Stix.

Material: White paper.

Graphic Language: The drawing should use only continuous tones. There should be no lines—edges are defined by changes in value. The brightest surfaces should be left very light.

Value Patterns: Full Range (white to black).





Drawings: Left to Right & Top to Bottom Sara Ulius, Mark Fairman J Ambert

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## Drawing 5: Architecture

Architecture is about material, surface and light. Surfaces are created by material and made visible in light. The qualities of the surfaces enrich the experience of form and space. The goal of the drawing is to capture the material qualities of a work of architecture as they come alive in light.

Subject: Architecture.

Material: White paper.

Media: Open

Graphic Language: The drawing should use only continuous tones. There should be no lines—edges are defined by changes in value. The brightest surfaces should be left very light.

Value Patterns: Full Range (white to black).

Drawings: Left to Right & Top to Bottom Eric Pan, Dallas Montoya

## Sketchbook/ Drawing Exercises

Keeping a centralized record of ideas and explorations is a habit that many designers and others find useful. It can include both written and drawn information that is either quickly recorded or more carefully developed. The sketchbook is intended to be a repository of your process for the quarter and should be kept with you at all times — you should feel naked without it at your side.

The sketchbook will be used both in and out of class as the place for recording experiences, exercises, ideas, etc. Most work will be done directly in the sketchbook but some will be inserted.

### **Instructional Objectives**

To be able to employ a sketchbook as a centralized record of class related experiences, exercises and processes.

To develop freehand sketching, lettering and diagramming skills.

### **Materials**

Cachet, Classic, 9" x 12", Wire-Bound, medium surface. You must start a new sketchbook each quarter.

Ink pens, Art Stix, markers and colored pencils. Do not use pencils. Use a pen or black Prismacolor pencil as your base drawing implement. Feel free to experiment with other media.

### **Title Page**

The first page of the sketchbook must contain your name and some graphic elements. The page should be designed to identify the owner of the sketchbook in terms of both information and feel. Keep a few pages blank at the beginning of the sketchbook so that you can generate alternatives and eliminate those you do not like.

### **Project Process**

You are expected to draw and write in your sketchbook as you work to solve a each project. These drawings and writings should include facts, goals and concepts associated with a project, exploration of alternatives and the development of solutions.

### **Project Reflections**

The sketchbook will be used to record observations and reflect on what you have learned from class projects.

### Weekly Drawings

You are expected to explore each weekly drawing assignment in your sketchbook. This should include a minimum of three compositional alternatives as previously described.

The sketchbook can also be used to produce your weekly drawings. The pages can then be removed and trimmed for placement in sheet protectors as required.

## **Drawing Exercises**

Drawing techniques and systems (e.g., orthographic, axonometric and perspective) will be introduced and practiced in class. These exercises will be done directly in or taped into your sketchbook.

Completion of these exercises is the basis for the grade that you will receive for the sketchbook. Therefore, it is important that you complete these assignments and have them in your sketchbook when it is submitted.

### Due Date

The sketchbook must be handed in on the last class day of the quarter.

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## **Gesture Drawings**

Gesture drawing uses a free hand and seeks the essence of things. Gesture drawings are aimed at what the subject is doing more that what it is. It seeks empathy with the subject and the essential underlying structure of the whole. Doing big gesture drawings provides an opportunity to involve your whole body in the process of drawing.

About once a week we will do a series of big gesture drawings from projected images. These are timed drawings that will be done in class.

### **Instructional Objectives**

- To be able to capture the essence of a subject in a limited period of time.
- To be able to make media, value and color decisions to support an expressive interpretation of a subject.
- To be able to amplify selected subject qualities.
- To be able to quickly represent a subject's proportions.
- To be able to quickly represent a subject's underlying perspective structure.
- To be able to use quick gesture drawings to represent a design idea.

### Time

Gesture drawings will be completed in a short specified period of time. The time will vary from one to ten minutes.

### Materials

300 Series, Strathmore, Newsprint, Rough, 18 x 24, 50 Sheets, 35 lb. This pad must be stored in class for access at any time.

Art Stix, markers and colored pencils.

### **Due Date**

The gesture drawing newsprint pad must remain in class throughout the quarter. It will be evaluated at the competition of all gesture drawings.

### Process Notes

### Time

Open sessions with 1 to 3 minute warm-up drawings. Use longer times 6 to 8 minutes after warm-ups.

### Subject

Repeat subjects within a session or between sessions at times to allow students to be more successful and see growth.

Repeat subjects within a session with different drawing media, times and/or language requirements.

### Media

Specify the media and usage for some drawings. Only Black marker. Only Markers Only Art Stix used on their sides. Surface/Value first then line for emphasis.

### Language

Specify the drawing language for some drawings. Continuous Line Scribble Line. Value with no line. Value first then line. Fewest lines/marks.

### Emphasis

Emphasis on architectural form and space.

### **Design Ideation**

To provide experience with the use of gesture drawings in the design process, do a series of design sketches. These sketches should take about eight minutes. Project works of art by Kandinsky.

Design Dinner Plates: Reference is a circle.

Design Masks: Reference two eyes.

Design Chairs: Reference stick chair.

## Name:

Evaluation is based on the standard project grading criteria described in the Base Syllabus with the following specific issues emphasized. Project Weight: 3 Due dates as defined in class.

## **Weekly Drawings**

## **On Time**

On time points are earned with each drawing. The on time points are averaged and subtracted from the average of the drawing grades.

## Drawings (50%)

- A B C D F Meets Requirements Subject, Media, Materials, Graphic Language, Values
- A B C D F Craft

Drawing techniques and scale appropriate and exhibit control of the media. Subject proportions and perspective

look correct.

Page precisely trimmed to appropriate size. Drawing matted as specified if required. Drawing without unintended marks.

### A B C D F Value & Color

**Drawing Grade** 

Values range from very light to very dark. Strong value changes communicate sun, shade and shadow conditions.

Clear value changes communicate surface change and orientation. Colors composed of a rich mixture of many colors.

### A B C D F Composition & Expression

Choice of subject, point of view and compositional decisions enhance the visual impact of the drawing.

- The drawing interprets, amplifies and communicates selected subject qualities.
- Drawing communicates a strong expressive mood or quality.

**Compositional Alternatives (10%)** 

Compositional alternatives are due with each weekly drawing and may not be handed in alone. They may be resubmitted if the drawing is resubmitted.

### A B C D F Meets Requirements

All/Most/Some/None Meets specified requirements Alternatives are significantly different Alternatives include a frame-of-reference Alternatives include all major elements Alternatives are proportionally accurate Alternative values include black and white

### A B C D F Drawing Quality

Drawing quality is appropriate for a gesture drawing Drawing is expressive/poetic

## **Compositional Alternative Grade**

## **Backing Sheets/Lettering (10%)**

Backing sheets must contain all required information to be evaluated for a lettering grade.

### A B C D F Hand Lettering

All/Most/Some/None Letters have good form Letters are consistent in form Verticals are vertical or consistent Horizontals are horizontal or consistent Letters are consistent in size Letters are the same height Letters are aligned horizontally Letters are consistently spaced visually Letter strokes are consistent in weight and have strong ends.

5: Drawing

## **Gesture Drawings (10%)**

Gesture drawings will be done in class on large drawing pads that will be stored in the classroom.

The gesture drawing grade is based on the number of drawings completed during the quarter. A gesture drawing is considered complete if it:

Meets specified requirements Includes a frame-of-reference Includes all major elements Is proportionally reasonable Includes the values of black and white Includes initials and number

A B C D F Completed \_\_\_\_\_ out of \_\_\_\_\_

No Resubmittal

## Sketchbook/Drawing Exercises (20%)

Drawing exercises will be done in class on in your sketchbook or on sheets of paper you will tape into your sketchbook.

The sketchbook/drawing exercise grade is based on the number of drawing exercises completed during the quarter. A drawing exercise is considered complete if it: Contains all specified elements Process lines are clearly visible Edges are inked and surfaces shaded as specified Figures are included as specified Notes are included as specified

A B C D F Completed \_\_\_\_\_ out of \_\_\_\_\_

No Resubmittal