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Plan and section drafting in Orthographic view (parallel projection).
H, F, and HB pencils on Velum paper.
Original size: 11” by 17”
Constructing Shadows

Technical constructing shades and shadows in Axonometric drawing. H pencil and India ink-wash on watercolor paper. Original size: 12” by 16”
Plan Oblique Illustration

Plan Oblique drawing of Farsworth House.
H, F, HB, and B pencils on Bristol paper.
Original size: 12" by 16"
Color Composition

Abstract Isometric composition. Study of color theory. Watercolor washes on watercolor paper. Original size: 12” by 16”

Tonal Illustration

Study of light, shadow, and space. India ink-wash on watercolor paper. Original Size: 12” by 16”
Color Illustration

Study of architectural illustration.
Two-point perspective color illustration.
Watercolor washes and color pencils on watercolor paper.
Original size: 12" by 16"
Monochromatic Illustration

Study of architectural illustration. Two-point perspective ink drawing. India ink line drawing on Bristol paper. Original size: 18” by 24”
The summer solstice occurs when the tilt of a planet's semi-axis, in either the northern or the southern hemisphere, is most inclined toward the sun that it orbits.

The winter solstice occurs when the tilt of a planet's semi-axis, in either the northern or the southern hemisphere, is most declined toward the sun that it orbits.

The Entity of Light is a study/research project about the history, function, and design of light breakers, also known as Brise Soleil. The assignment was to design a light breaker for a 10" by 10" space that was facing towards the south. Objectives for this exercise were to control the light during Equinox, diffuse the light during summer solstice, let the light in during winter solstice, and create a three dimensional composition that has hierarchy and center of composition.

An equinox occurs when the plane of Earth's Equator passes the center of the Sun. At that instant, the tilt of Earth's axis neither inclines away from nor towards the Sun.

Digital Illustration

The summer solstice occurs when the tilt of a planet’s semi-axis, in either the northern or southern hemisphere, is most inclined toward the sun that it orbits.

The winter solstice occurs when the tilt of a planet’s semi-axis, in either the northern or southern hemisphere, is most declined toward the sun that it orbits.

An equinox occurs when the plane of Earth’s Equator passes the center of the Sun. At that instant, the tilt of Earth’s axis neither inclines away from nor towards the Sun.

Study of sunlight.
Study the methods for controlling daylight.
4 Ply Bristol museum boards.
Original size: 14” by 14” by 18”
Process and Progress in design. Exploration of design methods and principles: form, space, rhythm, hierarchy, and structure.
4 ply Bristol museum boards and corrugated cardboard.
Original size: 5" by 6" by 9"
Design an art pavilion based on the early Modernism and International style Architectural theories. Design and practice; application of structure, vertical and horizontal circulation, natural light control, and natural ventilation.

Model scale: 3/16" = 1' - 0"

Public Art Pavilion
Continuation of design studies.
Programing, diagraming, and massing.
Design with context.
Consideration of landscape, local climate, efficient design, structure, circulation, and public access code requirements.
Watercolor and pencil.
Illustrations scale: 3/16" = 1' - 0'
Continuation of design studies. Design in urban context, study the importance of in depth site analysis and methods of research. Ink-wash and pencil. Original size: 12” by 16”
Elevations: relationship with surrounding, street edge and neighboring buildings.

Section: exposing the horizontal and vertical circulation.

Cross corner section: analytical visualization of space.

Elevations illustration: 3/16"=1'-0"

Perspective illustration: 12" by 16"
Research and study of efficient design. Use of climate conditions and local materials as design strategies to maximize the overall energy efficacy of the building.

Notes / drawings on sketchbook.

Case study: The Sea Ranch
Case study: Zion Canyon Visitor Center

Study of energy efficient design methods. Orientation of building to maximize the use of sunlight, Trombe wall, natural ventilation, proper insulation, and photovoltaic panels. Notes / drawings on sketchbook.

Environmental Control System
Passive Down-draft Cool Towers

When natural ventilation is not adequate, cool towers help bring the indoor temperature down. Water sprayed on pads at the top of the towers evaporates, cooling the air.

The cool, dense air "falls" through the towers and exits through the large openings at the bottom of the towers. The building's energy management computer controls the size of the openings at the bottom of the tower and can direct the cool air into the building, onto the patio, or both.

Study of energy efficient design methods. Analyzing the function of passive cooling towers and evaporative cooling effect.

Notes / drawings on sketchbook.

Case study: Zion Canyon Visitor Center
Materials of Construction

Detailing and Fabrication

Study of performance characteristics of construction materials and methods of fabrication and assemblies.
Drafting on Velum paper: 11” by 17”
Study of the architectural detailing and production of architectural working drawings.
Drafting on Velum paper: 11” by 17”

Detailing and Fabrication

Materials of Construction
Residential Design-Section

Site plans, foundations, framing systems, structural systems, electrical and mechanical systems, as well as detailing.
Digital drafting with Autodesk AutoCAD.
Digital Scale: 1:1
Printed Scale: 3/16" = 1'-0"
Methods and process for the creation of architectural working drawing and construction documents.

Digital drafting with Autodesk AutoCAD.

Digital Scale: 1:1
Printed Scale: 1"=1'-0"