

VULNERABLE TO DISCOVERY:
TOOLS AND METHODOLOGIES IN DESIGN EDUCATION

By

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A THESIS PRESENTED TO THE GRADUATE SCHOOL
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To Fernando Pessoa and
the horizontal wrinkle marring a trouser's crease

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Abstract of Thesis Presented to the Graduate School
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Cochair: Martin Gundersen
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This work represents an integration of two techniques employed to examine the design studio as the core of architectural pedagogy. Passive research techniques were applied to study contemporary priorities in architectural pedagogy, and how the hierarchy of those priorities is contingent on the mutable values of a specific design philosophy and its frame of reference. Active research techniques were applied, as a graduate teaching assistant, to document design pedagogy in real time: *Three Constructions* documents the unfolding of ARC 2304, a Design IV studio during the spring semester of 2009. This portion of the research provided insight into the creative obstacles frequently encountered by students engaged in the parallel tasks of learning a design process while performing a design assignment. The idea of a set of cognitive, physical, and digital tools was developed as a methodological resource to assist in developing confidence in the process of thinking while making. The documentary chapters 2, 4, and 6 exploit text as a graphic device to better convey the nature of pedagogical communication in the architectural design studio. Because such

manipulation falls outside the required format guidelines, the author wishes to thank the Graduate School Editorial Office Coordinator for her understanding in this specific case.

As a discipline formed dominantly by history, architectural pedagogy is increasingly being reshaped by the influence of new technologies, an expanding range of available tools, and emerging models of professional practice. The academic relationship between history, theory, and practice has become animated by debate surrounding the physical and philosophical dynamics of integrating digital tools into the curriculum. The philosophical questions are more important as they bear critically on how the basic template of skills is defined and on the issues of authorship, originality, and aesthetic judgment in the creative process. The integration of manual and digital tools must not, however, be a question of either or, because devotion to one or the other abbreviates the spectrum of skills and limits creative resources. Threatened attitudes about tradition can be mitigated by an inclusive approach which sees the hand and the computer in mutually reinforcing terms. In support of this view, a program is proposed which seeks to integrate digital techniques to augment the constellation of early studio core tools. The implementation of an inclusive methodology (vis-a-vis manual and digital tools), offers an increased range of opportunities for expression, invention, exploration and play, thus animating a proposed entry level design studio focused on transition into the curriculum, development of a skilled graphic hand, exposure to digital techniques, and an appreciation for craftsmanship...a portal to architectural education.

CHAPTER 1 THE BI-POLAR CURRICULUM

A Unity of Opposites

Unlike other programs of study, the architectural curriculum must acknowledge and balance the academic and practical as twin educational objectives. In the United States, roughly ninety six schools of architecture must maintain accredited status, provide skilled graduates to the profession, and produce meaningful works of scholarship to augment the academic discourse.

In exploring its unique combination of art and science, Donald Schon refers to architecture as a “bimodal profession¹”.

The relationship between education and practice has historically been a focal point of discourse within the discipline, encompassing validity and meaning, content and method, and priority and purpose. This is clearly evidenced by the rate at which academic and professional journals publish contributions by educators and practitioners on aspects of the subject.² Thus, the unique blend of academic and practical ideals comprising architectural education, affords examination on two operative levels and within two contextual frames of reference.³

¹SCHÖN, D.A. and RIBA BUILDING INDUSTRY TRUST, 1985. *The design studio: an exploration of its traditions and potentials*. London: RIBA Publications for RIBA Building Industry Trust. p.3. “As “artist”, the architect is seen as a giver of form...As a functional specialist, the architect is seen as bringing his design competence and special knowledge to the fulfillment of individual and social needs. In the world of contemporary architectural practice and education, the two views of the profession tend to polarize, each view suggesting a very different answer to the questions posed by the shifts of architectural practice.”

² For example: Bob Burnham, C. Greig Crysler, Adil Sharag-Eldin, David Fleming, Alain Findeli, Douglas Jones, Attila Lawrence, Duncan Philip. Donald A. Schon, Robert Slutzky, R.E.Somol, Garry Stevens and Kazys Varnelis.

³ CRYSLER, C.G., 1995. *Critical Pedagogy and Architectural Education*. *Journal of Architectural Education* (1984-), **48**(4), 208-217.

Let him be skillful with the pencil, instructed in geometry, know much history, have followed philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory of the heavens.

-Vitruvius

In his essay, "Operation Architecture," R.E.Somol⁴ suggested Vitruvius (80BC-15BC) represents the beginning of the institution of architectural pedagogy; the point from which a historical genealogy of architecture has accrued, forming the canonical foundation upon which all speculation regarding both the theoretical what and the practical how must be based.

In his commentary on the education of architects, Vitruvius, after including drawing, mathematics, medicine, astronomy, history, law and philosophy in the scope of architectural education, offers a core principle that, with minor updating, provides a theoretical framework for the early integration of manual and digital tools. A conjectural modernization of his second point in chapter one of the Ten Books⁵, suggests a technically heterogeneous, sequential methodology, "architects who aim at acquiring drawing skill without knowledge of digital tools will not produce a document with sufficient authority to correspond to their pains, while those who fail to acquire drawing skill and rely only on digital tools will produce the shadow not the substance." In other words, the tools and skills of the architect are interdependent. A pedagogically inclusive methodology would introduce tools proportionally and sequentially, focusing first on mastery of traditional core skills in anticipation of their subsequent computer assisted translations.

⁴ ANGELIL, M.M., EIDGENÖSSISCHE TECHNISCHE HOCHSCHULE ZÜRICH DEPARTEMENT ARCHITEKTUR and UZIYEL, L., 2003. Inchoate: an experiment in architectural education. Zürich: Swiss Federal Institute of Technology ETHZ. p.11.

⁵ MORGAN, M. H., 1960. Vitruvius, The Ten Books on Architecture. Dover Publications, N.Y., NY. p.5.



Figure 1-1. Engraved depiction of Vitruvius presenting De Architectura to Augustus.

Bernard Tschumi has produced a tangent theory to the above approach. In his essay, *One, Two, Three: Jump*⁶, Tschumi views the present relationship between architecture and education as an artifact of history, created by, “the three great dissociations which occurred during the past two or three thousand years.”⁷ The dissociations represent transitional eras within which certain previously typical expectations of architectural practice and education were tacitly modified by technological and social forces outside the discipline. These forces, according to Tschumi, have precipitated a gradually increasing separation between theory and practice, signified by the emergence of new and distinct models of professional practice. Some models with emphasis on publishing, others with emphasis on building.

First Dissociation

From the Pyramids to the end of the middle ages there were no schools of architecture other than the construction site. In 1670, under the sanction of Louis XIV, and heavily influenced by antiquity as the source of positive beauty, Colbert founded the Academie Royale d'Architecture (which separated architecture from construction), and commissioned Claude Perrault's translation of Vitruvius. Theory became a subject

⁶ PEARCE, M. and TOY, M., 1995. *Educating architects*. London; New York: Academy Editions; Distributed in the United States by St Martin's Press. p.24.

⁷ Ibid.

distinct from practice and the Academie replaced the construction site as the primary venue of architectural pedagogy.

Second Dissociation

In 1870 the Ecole was regarded as the world's premiere institution of architectural education. Academic success bluntly favored those able to develop mastery of two dimensional tectonic compositions. These were evaluated based on artistic technique and representational drama rather than programmatic or functional criteria.

A Lighthouse on the Seashore was one such required composition as students traversed the atelier system of the Ecole. It exemplified the focus of a curriculum designed to perpetuate a set of stylistic values within assignments which were subjectively considered on the aforementioned merit of their artistic execution and technique. That this focus was maintained increasingly at the expense of contemporary functional meaning and social relevance arose later within the student population of the 1960's as the core criticism of the atelier system and justification for a complete revision of the curriculum.

The Lighthouse assignment epitomized the need to restore validity to a program that grounded its continuing academic authority on having achieved its greatest eminence during the last half of the 19th century.

The notion of structural expression, which dawned in 1851 with the erection of Paxton's Crystal Palace, was to be avoided, based on the precedent provided by Viollet-le-Duc, wherein iron structure was clad with stone. (Later, le-Duc would be hailed by Wright as a harbinger of modernism, credited having been among the earliest to consider structure and cladding as separate systems).



Figure 1-2. Harry Viehman, A Lighthouse on the Seashore, Ecole des Beaux-Arts, 1910.

During this period, Industry developed construction methods independent of architects' input. The second dissociation is the resultant loss of control over the building process. Architects became construction administrators instead of construction supervisors.

Third Dissociation

In the late 1960's many schools were disrupted by student demonstrations in favor of greater social relevance in the architectural curriculum, and against autocratic forms of urban redevelopment⁸. The role of architecture was examined and questioned through experimental projects, and architectural practice became tempered by social consciousness. Over the following twenty years, art, architecture, film, and literature

⁸ PAWLEY, M. and TSCHUMI, B., 1971. "The Beaux-Arts Since '68," *Architectural Design, Vol.XLI, September, 1971*: 533. The article documented the academic and civic unrest which provoked the students' revolt against the academic system of *Unites des Valeur* (Mentions), while they voiced support of public opposition to the *Schema Directeur* redevelopment plan for the city of Paris. Under the politically tinged system of Mentions, "one could remain at any particular stage in perpetuity." Adding to this was the argument that the social relevance of the exercises upon which advancement depended was severely eroded. The programme "A Lighthouse on the Seashore", set by Blondel in 1750 at the Academy of Architecture, continued to be assigned at the Beaux-Arts as late as 1967.

became intermingled. The notion of the theoretical practice emerged to explore ideas independent of the forces governing building construction.

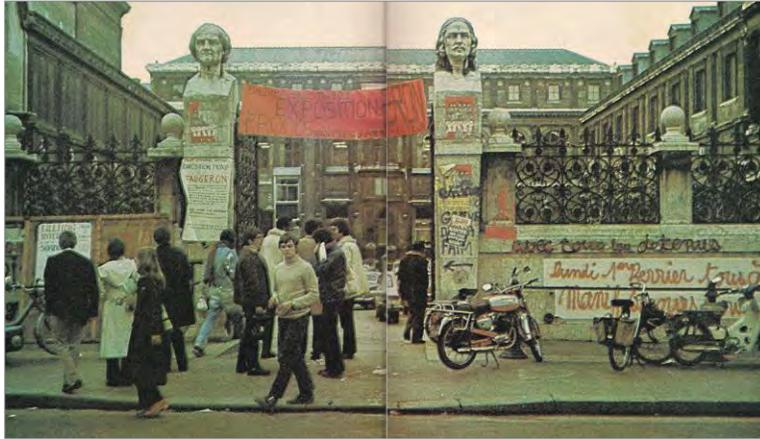


Figure 1-3. Entrance to the Ecole des Beaux-Arts, Rue Bonaparte, Paris, May, 1968. “the disintegration of a system of architectural education that once led the world and then came within fifty years to represent all that was archaic, corrupt and obscure about architecture.” (Pawley and Tschumi, *Architectural Design*, Volume XLI, September, 1971)

CHAPTER 2
ARC 2304 PROJECT ONE: A VERTICAL CONSTRUCTION

The studio is a hypothetical practice in which theoretical projects are produced in response to the assigned program in conformance with a specific schedule.

Issues critical to this studio are:

The idea of context- not as a given, but as a system of possibilities open to discovery and interpretation....a place may become established by a construction.

The idea of process- the continuous application of speculative thinking which transcends different scales and ways of making.

The idea of program- the life within architectural space which suggests variable scales and degrees of enclosure within a hierarchy of volumes and frames.

ARC 2304:

Monday 1.12.09

A Vertical Construction

The program as sectional map. . .

- Applying a system of measure that describes the components of the program
– *a proportional ordering system*
- Expressing hierarchy graphically
- Suggesting an interval of scale and its relationship to proportion
- The measure/proportioning system should be in evidence as a compositional element.

Having defined a spatial program verbally, the student created a sectional drawing or, **vertical program map** to express the program in graphic terms. Using hand drawing, collage, color, digital methods individually or in combination, the map was to indicate the principal programmatic spaces including a system of proportional measure as an element of the composition.

The work presented was 'thin' in terms of drawing density, complexity of composition, and range of media employed.

Multiple works were 'working drawing' sections, requiring further reinforcement in the concept of abstraction.

Graphic systems of measure, scale, and proportion were mostly absent.

Draw small scale revised maps in studio for individual review as basis for **sectional program map** [version 2] due next meeting – a redo opportunity.

The sectional map is composed as an abstraction of program which both communicates possibilities of the design and speculates on ways of modifying the a priori grid.

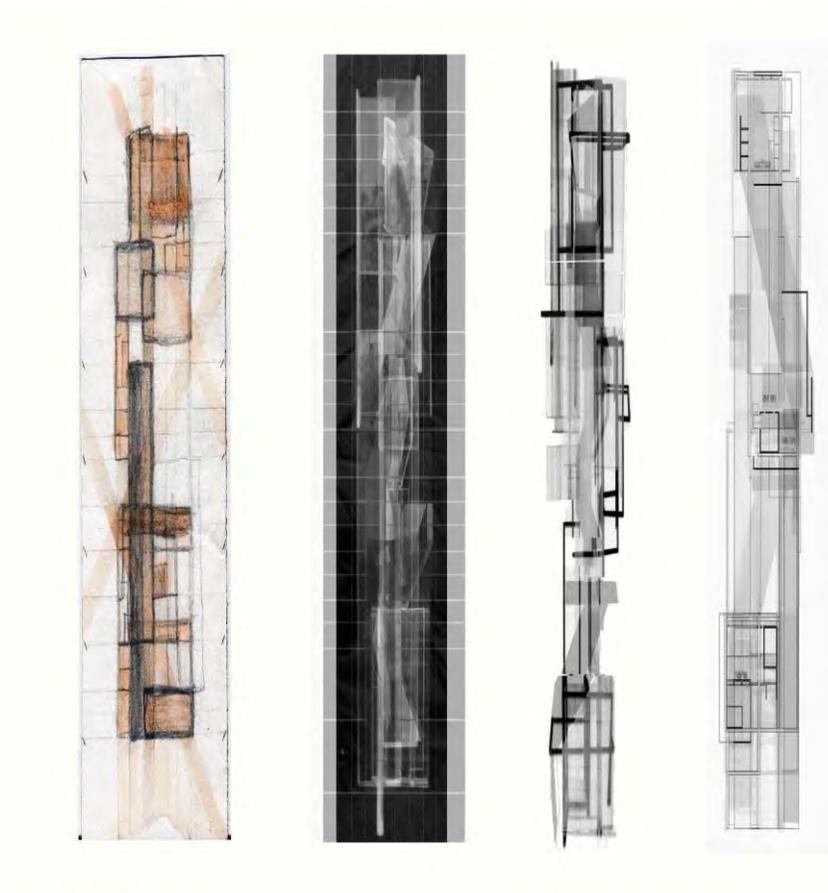


Figure 2-1. Mapping the program in section.

Wednesday 1.14.09 Sectional Program Map

(version 2)

Fundamental Issues
Peripheral Issues
Design Issues

How is the program expressed?
A hierarchy of language conveys concepts
and orders composition. . .

solid
void
transparent
opaque
spatial components
performance spaces
circulation spaces
performance-audience relationships
dynamic space
static space
interwoven space
housing space
formal space
public space
promenade space

Purposes of being in public. . .
Self policing
Attitudes about gathering
Audience performance
Ways of occupying volumes
Ways of organizing volumes

The issue of scale-
At this point the maps don't communicate scale
Scale of a house plan - scale of a mega structure. . .
Scales must be visually distinguishable

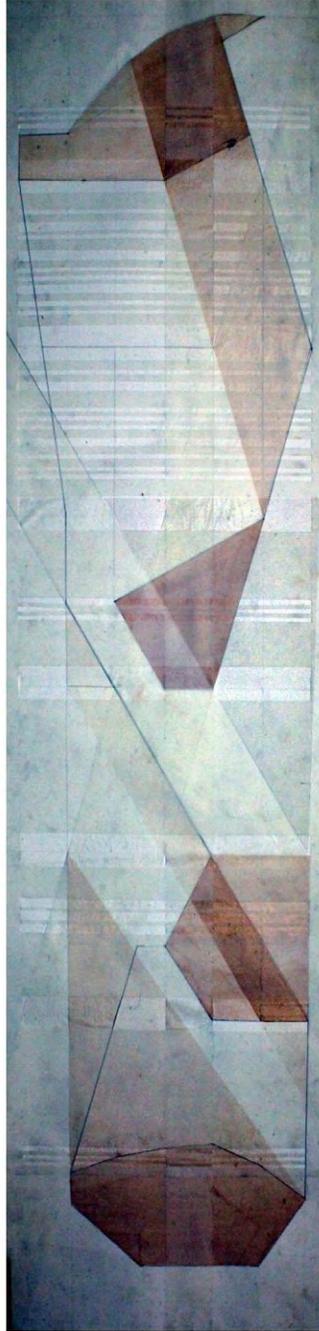


Figure 2.2. Early attempt at programmatic abstraction, incorporating lines of measure.

*When speculating we know this is very large.
How do you begin to communicate scale?.*

In an earlier studio you took something large and made it small.

A small thing inside a larger thing – different systems combine to express scale.

Develop a consistent attitude about principal spaces and activities. . .show transitions and edges.

Raise questions without revealing immediate form. . .
How to deal with the ground, the base?
How is space controlled in section?
How are spaces connected?
How to terminate against the sky?

Look at inversions to determine spatial completeness.

Time specific metaphors

repose - motion

temporary - permanent

full - empty

Response of space to time context

Degrees of spatial transparency

Spatial confusion

Armatures and pods

The sectional program map is about. . .

action/movement

activity without materiality or gravity

communicating enclosed space

communicating interstitial space

and it will be translated into model form. . .

An atrium is an exterior space linking enclosed spaces to the sky and gives a sense of the structure.

Lobby spaces are often larger than the audience or performance spaces. . .the Paris opera house, for example. . .

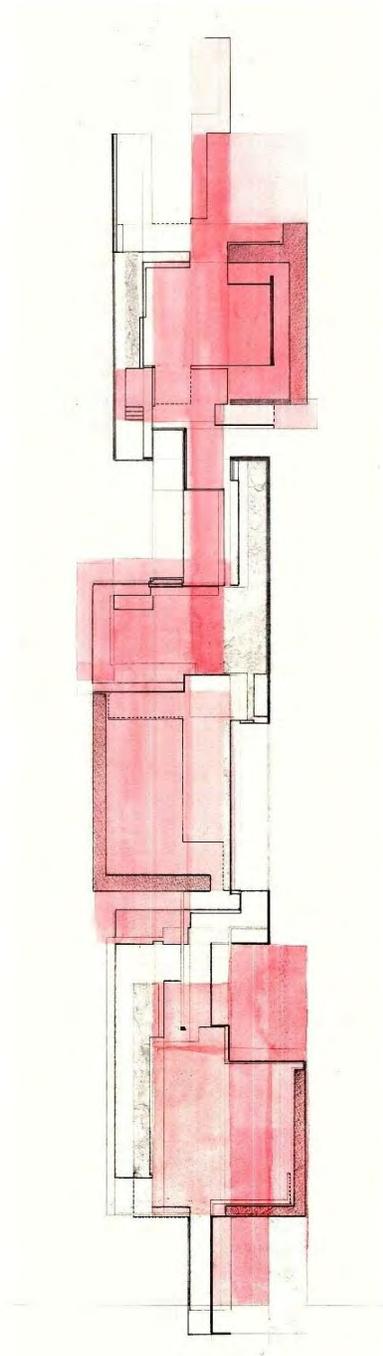


Figure 2-3. Sectional program map employing intensity of hue to as conceptual element.

. . .big enough for the phantom of the opera to occupy the spaces between interior and exterior walls. . .

Program is located in the spaces between public and private. . .between the interior and exterior skins and surfaces. . .

Apply this generic test. . . .

Do these look like maps delineating a territory?

Which are more map-like and less building-like?

Which have a sense of measure and clarity?

Thus is his cheek the map of days outworn.

(Shakespeare)

Emphasize layering and line to enhance the sense of mapping. . .

"I'm establishing four dominant spaces. . .

Using Mozart as a metaphor. . .

The armature is a melody to shape spaces, edges and independent elements. . .

The circulation is seen as a melody, connecting acts of socialization. . ."

The diagram as simply a series of connected forms is weak. . . take away the severely specific shapes.

More ideas and concepts are contained in your explanation than in your diagram.

Functional relationships aren't expressed with bubbles.

The map communicates a system of measure and dimension which offers possibilities for speculation about scale, spatial relationships, and layering of space.

"I see a school of music.. .

the itinerary of the tower suggests the variable routes embedded in the program map. . .

ideas of musical variations. . ."

A composition puts things in clear relationships.

A section composes the program in clear relationships and shows how the subdivision of elements. . .such as tone and measure. . .work.

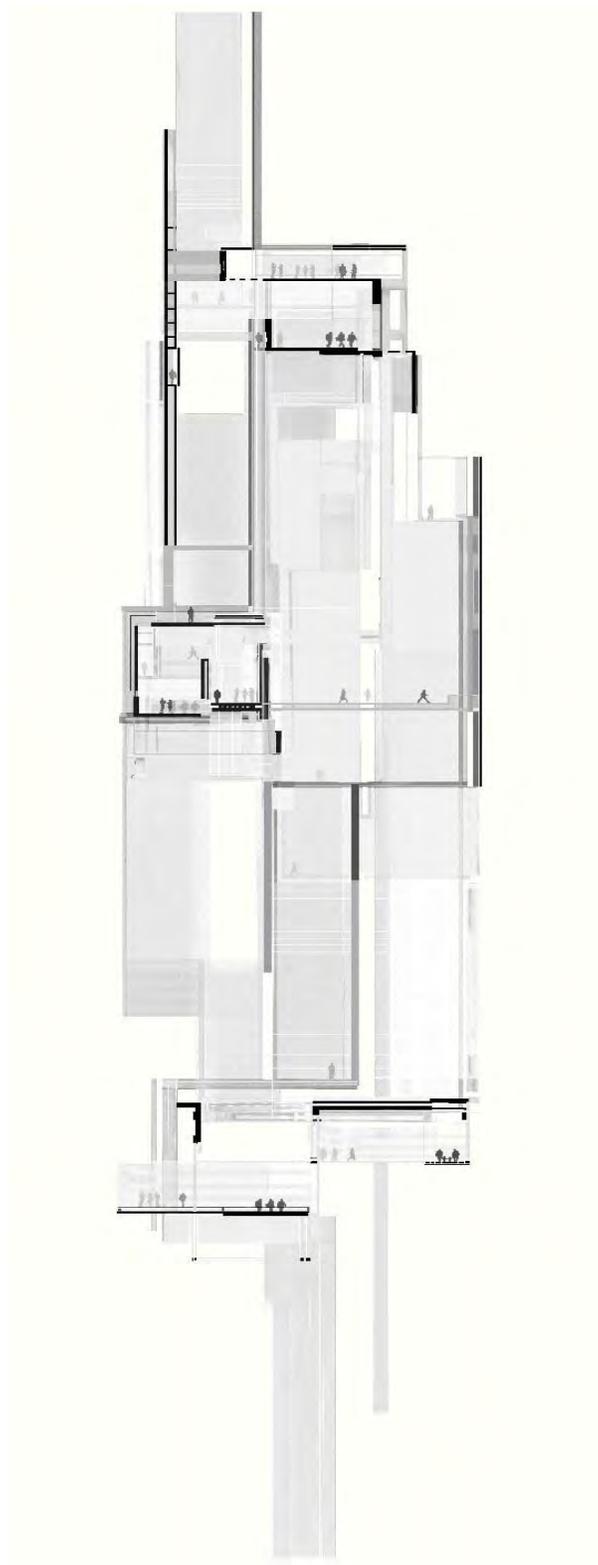


Figure 2-4. Sectional program map with layering gestures, scale references, and tonal intensity as conceptual elements.

The projects must have a clearly expressed system of measure.

The act of questioning yourself is causing de-evolution in the work.

Maintain clarity of program and complexity will naturally increase as the project advances both in technique and content.

*“My metaphor is an armature of light. . .
light well / eyeball / cornea. . .a section of the eye as
metaphor. . an oculus . . .
right / left brain as analogy for right / left spatial
organization . . .”*

The number of analogies may be constricting. . . .

The scale of openings may range from the microscopic up. There are multiple conditions of light. Is this a map of light?

What are some techniques to provide scale in drawings? - module, repetition, subdivision....

Generative Ideas

-inventing a relatively simple program

-map the program

 some lines are about measurements

 some lines are about hints

 some lines are not defined

-spaces of odd relationships

-making something visually engaging

It's important to understand what you're doing enough to explain it.

The document has to pass conceptual testing.

It is a thinking device. . .a map. . . not a building.

“I'm using the heartbeat as a metaphor. . .”

What do 10,000 heartbeats look like?

Express pulse of spaces as a level of density of movement/activity.

Determine primary and secondary elements.

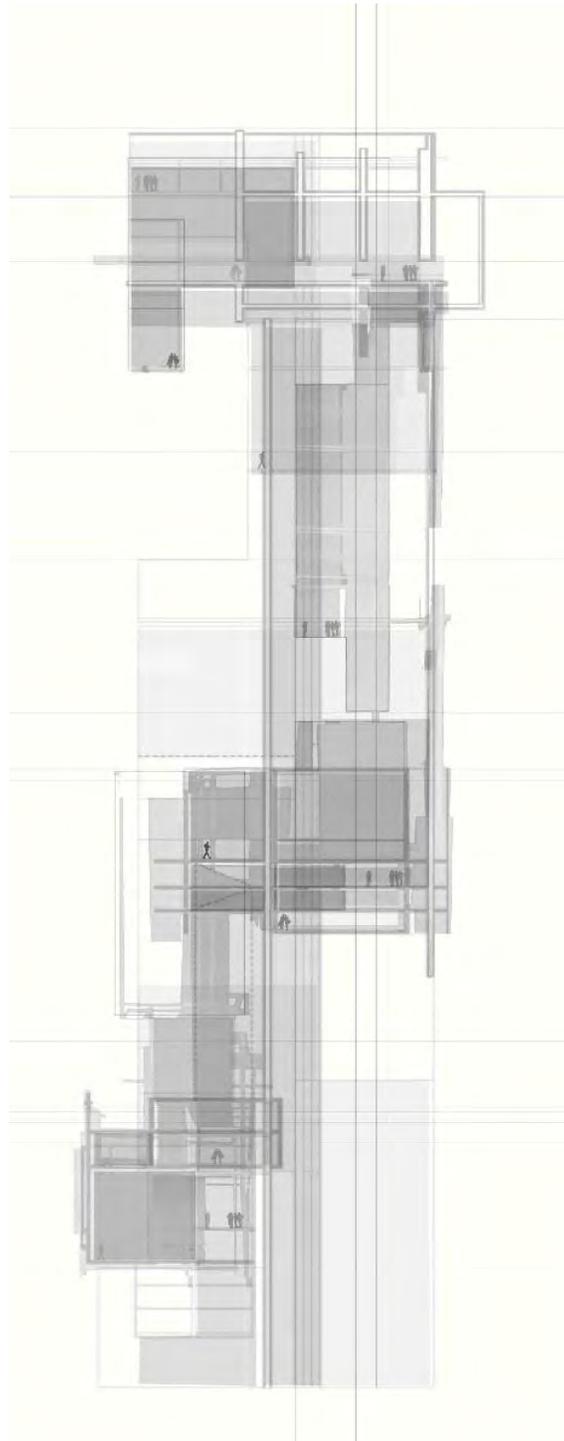


Figure 2-5. Sectional program map with continuous lines of measure, suggestions of layering, and tonal values applied to imply spatial depth.

How do you illustrate the thing you're controlling without showing it?

There should be complex layering and systems of enclosure.

Things aren't so transcendently similar.

There should be layering and complexity at the edges. When 1000 people have to get into a space, the drawing must tell the story.

Mapping is used as a start to express space within space.

Rotate the composition to identify multiple patterns.

"I'm using tonal values as hierarchy."

Tell us something we don't know.

How do you map the rhythm?

The system of measure is the most important component of the composition.

Lines are architectural things which need control.

Don't use a language of clipped images to which you must subordinate your ideas. This an orthographic language trap imposed by the choice of media and technique.

What are the sources of measured spacing and variations in rhythms and tempos that give you possibilities for invention and discovery. .?

How do you prioritize densities, overlaps and transitions. .?

Survival can be contingent on cartography. . .

There is consistency in vocabulary and expression. .

Spaces overlap. . .

Sounds overlap. . .

Voices. . .ambient sounds. . .

"I'm using a chandelier metaphor. . ."

"De-materialization....variable axis. . ?"

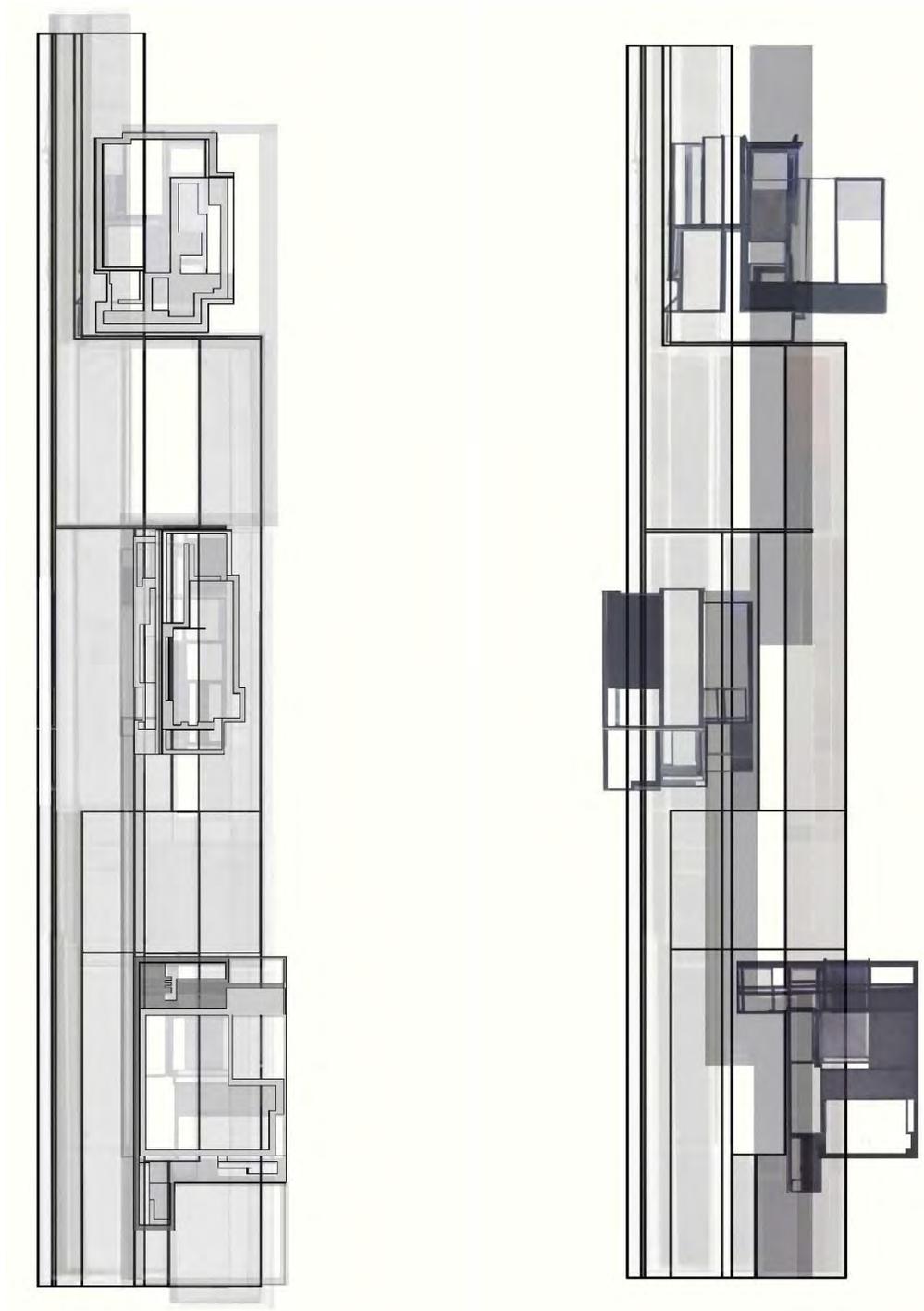


Figure 2-6. Sectional program maps with limited ranges of line weight and scale. Variations of tonal intensity read two dimensionally and fail to evoke spatial depth.

*"I'm using a three act play metaphor. . .
making an interlocking whole. . ."*

David Ives wrote a play titled, "All in the Timing"
Be conscious of the architectural implications.

"I'm using integral ratios as metaphor. . ."

To imply rhythmic subdivision. . . dominant ratios. . .
sub dominant ratios. . . ?

For Friday, 1.16.09

Beginning study model: several bug models and one about
12" high.

Maintain system of measure and they must stand
placed on either end.

Friday **1.16.09**

Now, refine the organizational clarity contained in
the models. Show three major, spatially related,
enclosed volumes with articulated webbing and joining
connections (the spaces between are controlled).

The relationship of the three volumes to each other is a
function of their interaction.

Lack of definition will dilute the composition.

The model will be 28" tall at 1/16" scale.

Use wood, wire, white board and Plexiglas.

Plexiglas components imply ambiguity of surface as
they may or may not be structure - allowing you to
suspend things and create volumes which are variable
in terms of open or closed.

Model the coordination of systems- core, three main
spaces, circulation, and connections.

Social circulation in lieu of a structural core.

Spatial core.

Don't code materials too literally.

Frames/panels

Extension of "cube" skills.

Investigate spaces of circulation and varieties of
circulation.

Experiment with composing a program, not a building.

Ground plane manipulation- create a spatial connection
with the ground.

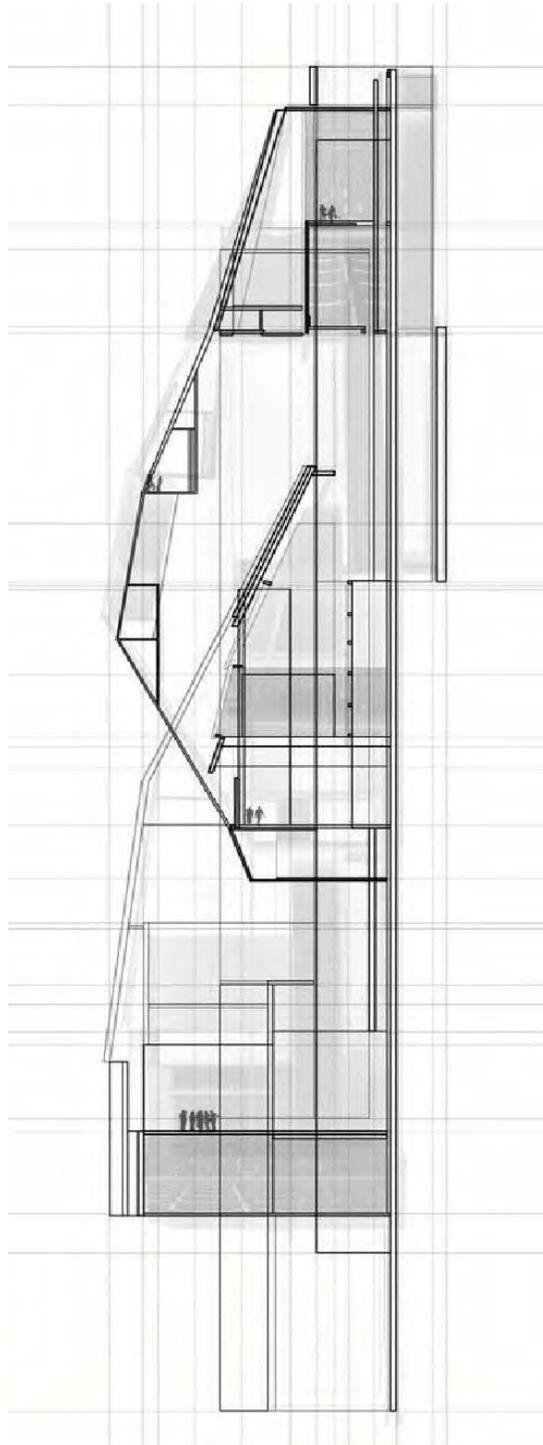


Figure 2-7. Sectional program map with continuous lines of measure, experimentation with variable x-axis dimensions and gestures suggesting interstitial vertical and horizontal spaces.

Looking for scale changes and scale ranges.
Looking for compositional patterns.
Looking for sequences of programmatic organization and orientation.
The structural challenge of balance is magnified.
Shifting planes?
Role of intuition?
Pencil lines are the clues/traces of measure.
Continuation of order.
Expressing scale range by contrast.
Comparative sizes and volumes of spaces.
Comparative degrees and levels of complexity.
The idea of scale relative to activity.
Impose control and sense of measure.
As scale increases, complexity emerges in elements and subdivision of elements.

Experiment with spatial sequences.
Preconceived, discreet spaces or elements become constricting and make continuing discovery of speculative possibilities difficult.

Variable perception levels- seeing, feeling, hearing.

Defining systems – expressing systems

1. Three dominant spaces
2. Surfaces and transitions
3. Spatial connections to ground and sky
4. Circulation suggestive of performance

To model means anticipating something at another scale.

As scales change, details emerge and information is added.

You will add and remove things in the process of fitting and joining components.

Working systematically allows you to manipulate and evaluate.

Re-examine your existing models, determine what is useful and remove what is not.

Engage in process.

Photos, bugs, sketches and studies are a process trail.

MLK Holiday 1.19.09

Next class 1.21.09

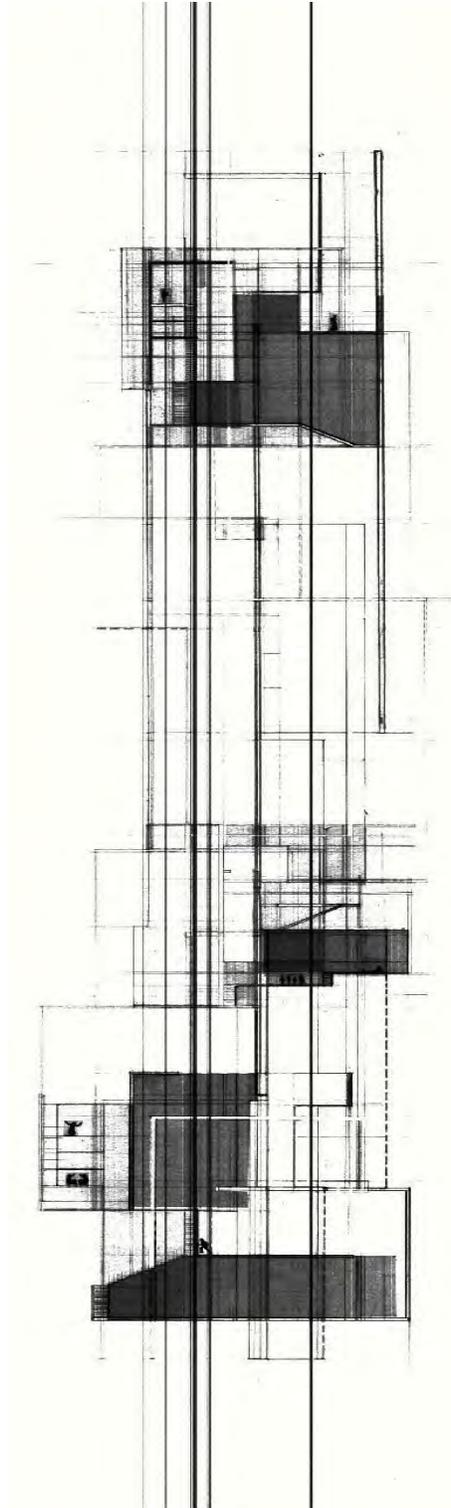


Figure 2-8. Graphic representation of sectional program map dominated by visual character of wire model.

Wednesday 1.21.09
Down the bumpy road. . .

How are different scales of space enclosed?
This project is about three spaces, the interaction of spaces, and the interaction of parts.

These models have to come up.
BUILD FRAMES AND ELEMENTS

Have the models standing in space by the end of class.

A good drawing shows anticipation of construction.

Create structural conditions at different scales.

Re-orient: What if the orientation changes?

Context of support.

A vertical construction.

Deal skillfully with structure- balance lightness and economy with stability and elegance.

Explore the event of the frame supporting the elements.

Establish trust.

De laminate your thinking.

Represent the things you can't name with abstraction.

Outline a space- establish a ghost, a hint.

Suggest without commitment.

More ghosts are needed by most of these.

Balance detail.

TIME'S A WASTIN'
BUILD IT!

Make sure you're giving yourself the structural problem, addressing balance and support.

Articulate the juncture.

Make a few clear moves.

. . .call 40 minutes

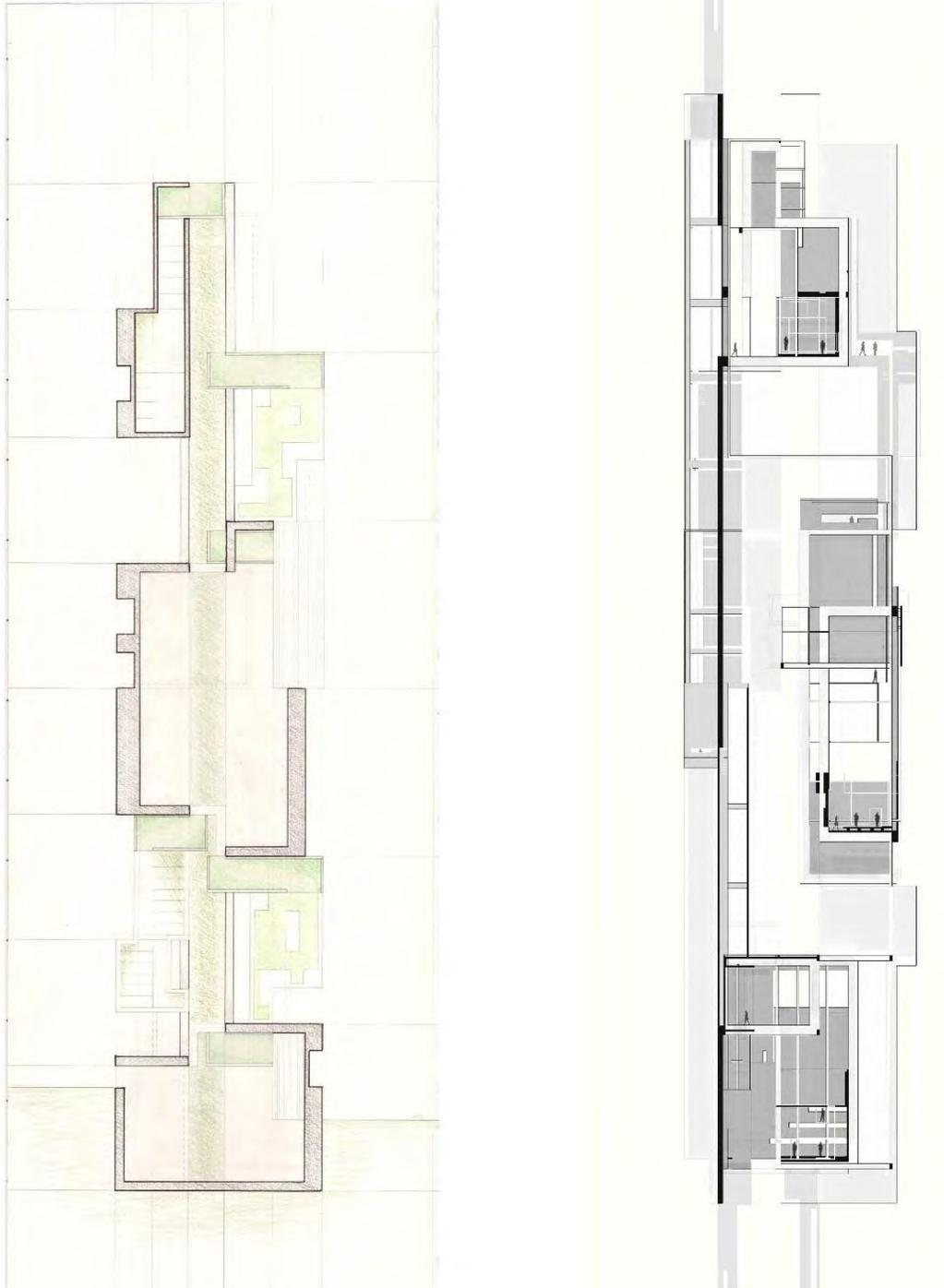


Figure 2-9. Left: Suggestions of graphic ambiguity between planar and sectional representation. Right: An attempt to delaminate thinking suffering from repetition of scale and graphic gestures.

Suggest possibilities to yourself through experiment.
Can this connect with that?
How would you do it?

*Project extended through weekend.
Final Models due Wednesday, 2.4.09*

Making the drawing relevant to construction.
What happens when a model photo is superimposed
over the drawing?
A 'cat-scan' section.
Print study views of orthographic model photographs.
Employ the camera as a design tool.
Study variations, options, decisions. . .
discover shadows and conditions of light.

*You may not want to commit to what you've done
rapidly today....I wanted you to see framework and
structure and their relation to the ordering of
components.*

A day of discovery / relationships

Look for discoveries
Look for possibilities

Don't elaborate any one major space before the other
two appear.
Focus on the ghosted spaces of suggestion and
speculation.
Build in a way that allows disassembly.
Consider interlocking pieces – temporary pieces.
Use layering as a technique to discover and relate
how pieces pass through each other.

The reality of L over R

Orient materials in the appropriate direction at the
appropriate dimension.

Layers create spaces for things to move through.
What parts have the most tectonic possibilities?
How do you use space to turn a corner?

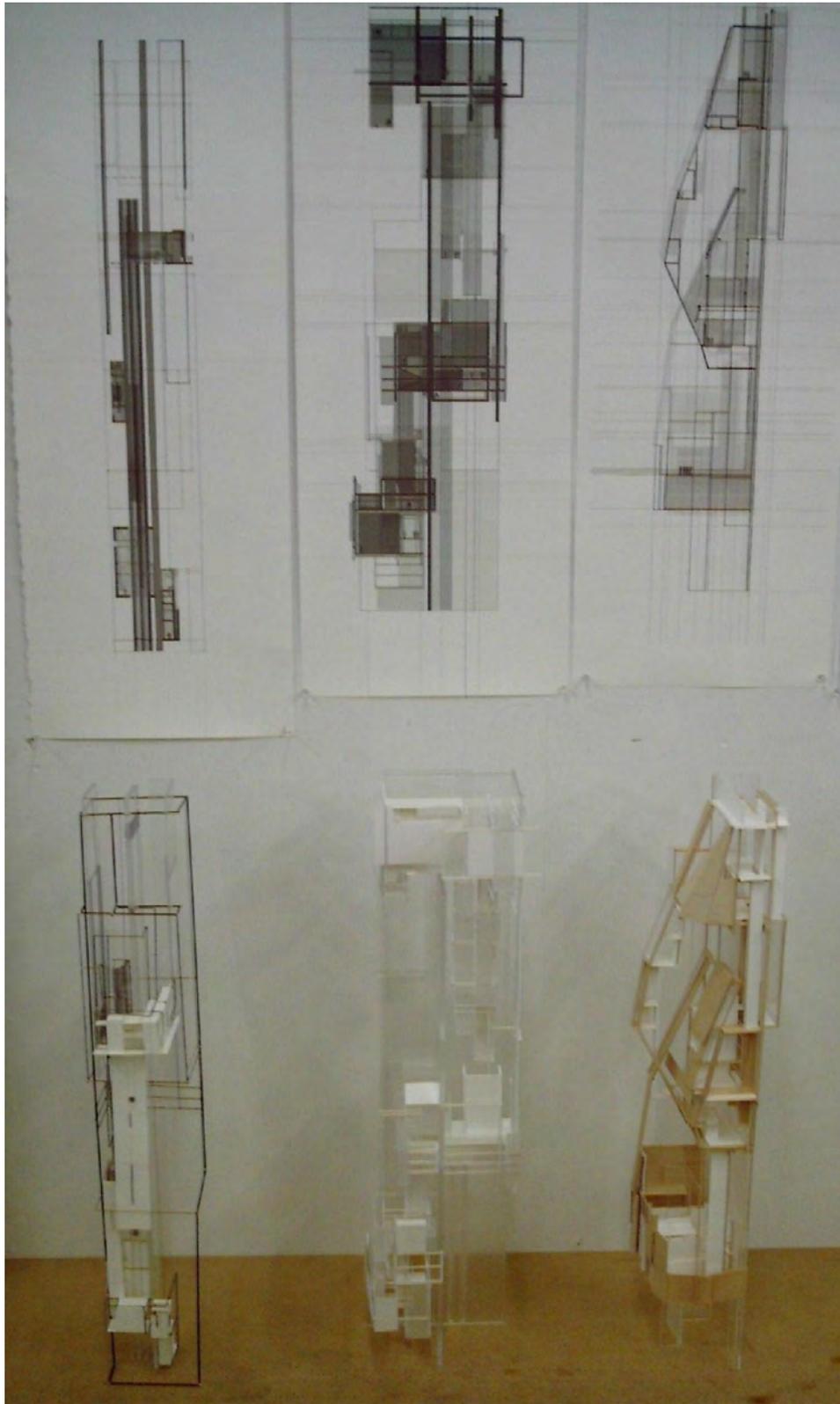


Figure 2-10. Vertical constructions and sectional maps.

What is the evident scale?

What scale is suggested in the model assembly by its range of relative scales?

For most, an appropriate range of relative scale is still not enough in evidence.

Marks, scores, holes, cut-ins, and cut-outs suggest spatial occupancy.

Establish the three major volumes simultaneously
(without reference to architectural history).

Complexity, scale, and enclosure are variable.
Ghosted areas, zones, volumes, spaces and frames.

**Take
the
Paper
off of the
Plexi**

[Models without the paper are manifestly more 'clear']

Refer back to your sectional maps to evaluate where you are.

Pull things apart and enhance the sectional interaction.

Avoid the tendency to fill up too many volumes too soon.

build and remove
Build And Remove

If you're adding parts and wondering, take them off.

Work with the whole at once, as a stable work.

Give yourself the problem of stability and solve it.

Planes and frames work together.

(That's why you turn it upside down)

Focus energy on the tectonic patterns.

(There are still two major spaces feeling neglected)



Figure 2-11. Tape and protective paper betray a lack of confidence and a reluctance to commit to decisions.

Avoid minutiae.

(programmatic elements / tectonic language = model)

Clarity of Frame

Create spaces for things to occur instead of articulating the things.

There are thousands of occupants.
Consider the scale of thousands of occupants against the scale of two occupants.

Spaces not things.
Occupancy of edges.

At this scale, the layers contain occupancy.

Repetition of planes doesn't make space.

No 'T' word (tower)
No 'B' word (building)

You are not constructing symbols of buildings.

You are constructing measured fields.
You are constructing connecting frames.
You are speculating about occupancy.

It is Plexiglas
It is not Plexipaper

Show what you are thinking.
You think and make at the same time.
What you are doing shows what you are thinking.

Suggest by ghosting
Keep things thin and light
Keep the structure sound
Avoid growing things on top of each other
Three volumes emerge and are integrated

Unify the model heights.



Figure 2-12. The default lesson of length over radius of gyration.

Friday 1.23.09
What's here? What's missing?

Ground and sky relationships require a consistent language.

Address the space at the ground and at the sky.
Where are the (three main) performance spaces?

Replace your references to materials with references to spatial elements.

Find a language relevant to the project.

Some are beginning to show how performance spaces are connected spatially and tectonically by fields of events.

Need to see more programming of the interstitial spaces.

Idea of utilizing frames at differing scales worth reaching into.

Avoid enclosure so complete as to deny access to legible space.

Find ways of making things less than solid and thus more accessible

The modeled spaces are becoming invisible.

Volume frames.

Structure frames.

Interaction of frame and context.

Balance and structural logic.

How do you look through the edges and achieve transparency without resorting to an all plexi model?
(Some are still all plexi)

On what levels do performances occur and how are they connected?



Figure 2-13. Volume frames; structure frames; interaction of frame and context; balance and structural logic.

Look through the vertical.

Make non-documentary model photographs (min. 3)
in black and white.

Use the images to give scale to surface.

We are employing frames as a means of spatial
outline.

Between surface and frame, which are most
systematic?

The interesting moments must have connections and
relationships.

Volumes of space
+ Variable degrees of measure
= A visual language

Well thought out

Well organized

Well made

All projects won't be of the same look.

The programs are different, unique, and emanate
from the individual.

Frames and enclosure are combined.

Types are suggested.

Can we visualize moving through a sequence of
spaces in these models?

Can we read a series of events?

Some are becoming too fragmented.

A systematic series of enclosures defined by a frame.
Scales change, corners are turned and there is a
balance between frame and enclosure.

Frame and enclosure interact.

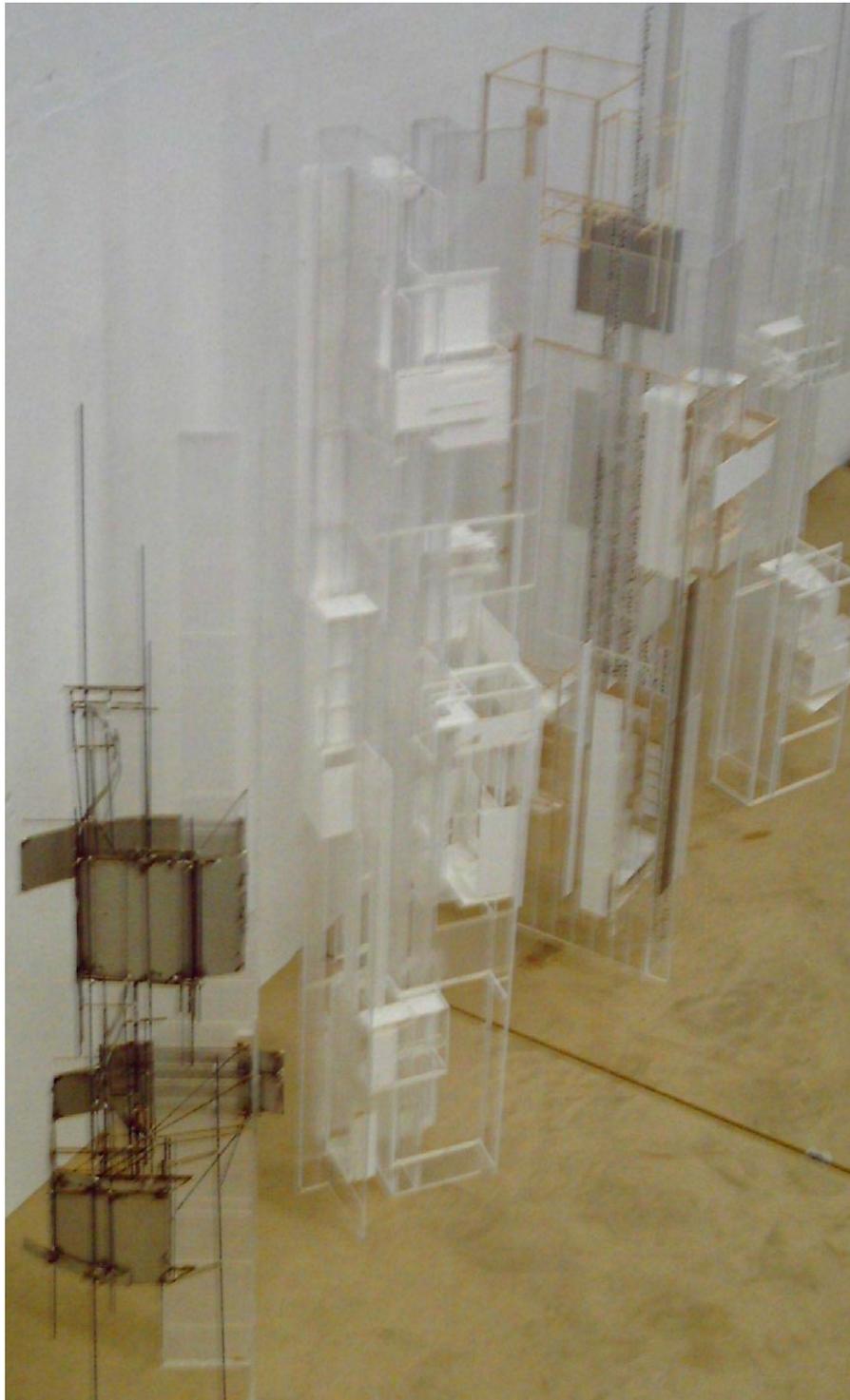


Figure 2-14. Interaction of frame and enclosure.

Photograph each model side.
Black background.
Rotate....test turning corners, creating different scales while maintaining a consistent language.
Work with photographic assistance in the process of moving forward.
Use photography as a tool, as a precursor to how the final drawing will be made.
This will help you make decisions and illuminate possibilities regarding enclosure relative to program.

Circulation spaces: recall the motivations of the "Door, Window, Stair" problem.

Consider performance spaces as motivation.

There should be a way in which connections and relationships are fostered and invited between systems.

Measured elements fit together.
Consider the parts as a family of related systems fitting together in space.

Design doesn't make pieces.
Design makes a whole.

Look for connections of -

- frame
- space
- structure
- circulation
- program
- tectonic logic

Make connections by -

- extension
- reaching
- gesture

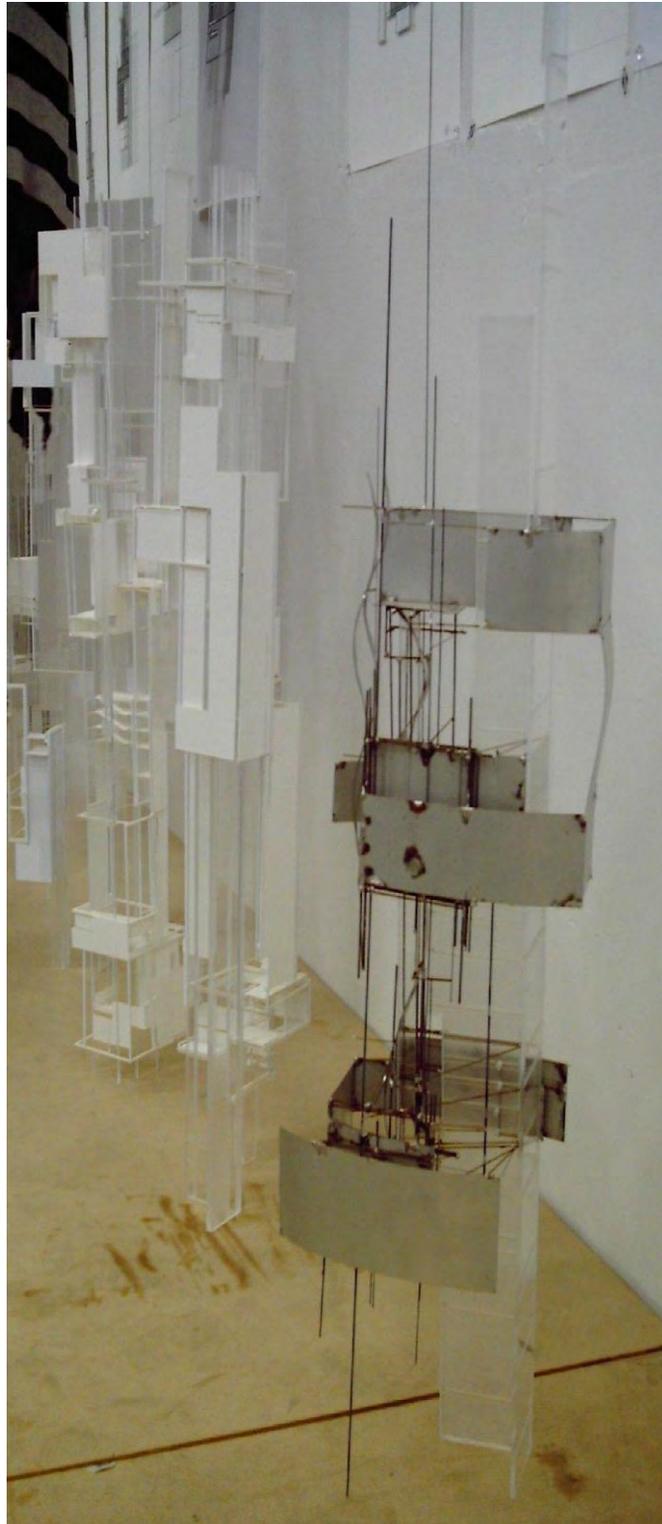


Figure 2-15. Where are the connections of frame, space, structure, circulation, program, and tectonic logic?

Monday 1.26.09
Build the Drawing

Model photos / drawing on 12x36 sheet.
Build the drawing- present it in a way you feel best describes your project.

The model photographs evidence better control of scale than the models themselves.

The photos suggest more complex layers of space.

Turn the models upside down and explore.

Extend certain found lines to discover how to connect and integrate the details to the whole.

Construct surfaces which envelop space.

Explore notions of materiality.

All decisions are interactive. The three systems must grow together and evolve in a unified way.

Things that are interwoven must be built together.

Think of the frame as the context for connecting the spatial layers.

Stand them up!

Make the map happen:

Translate circulation, frame, space, layers, connections, details, multiple dimensions, and systems of scale.

Regarding craftsmanship: Keep track of alignments - maintain formal control over the work.

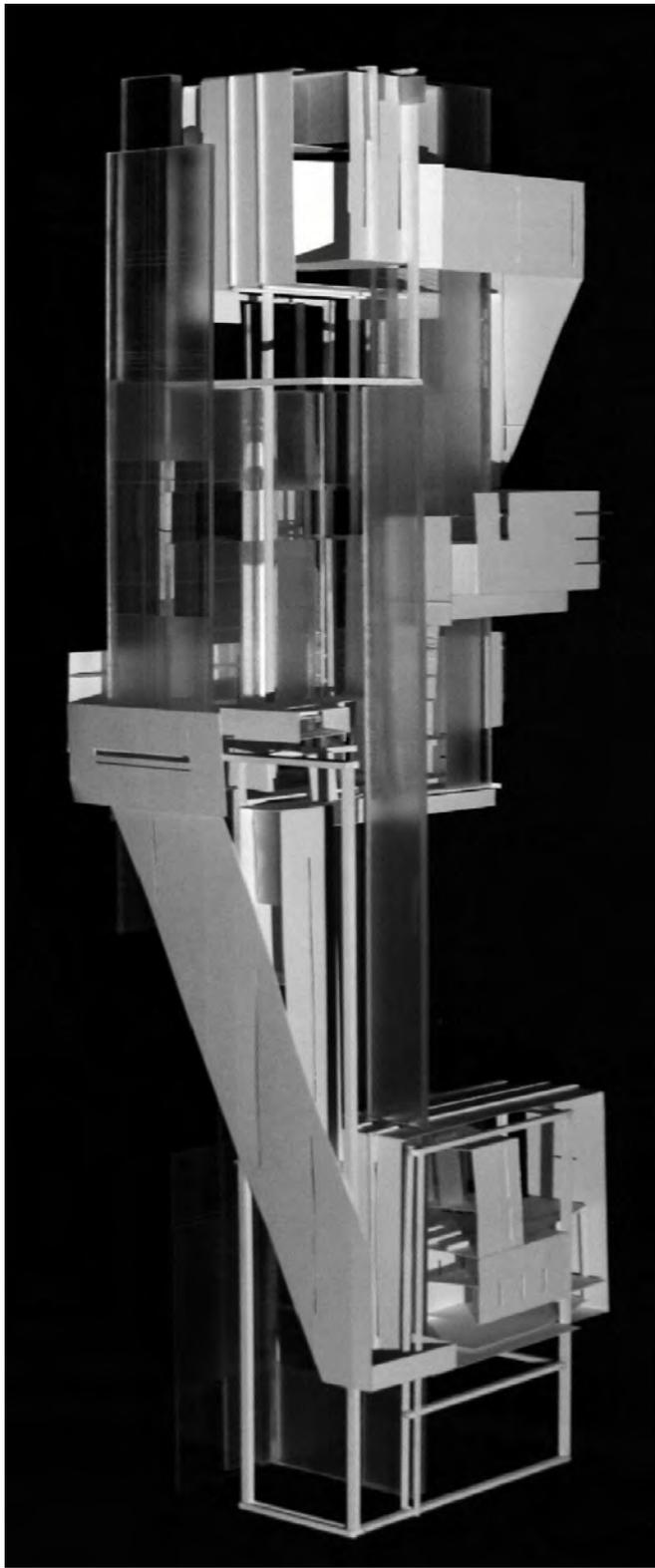


Figure 2-16. Things that are interwoven must be built together.

Program element reminder-
Refer to the program in performance terms.
(atmosphere, sound, sight, etc.)

What is the nature of occupancy as defined by the
edges and layers?

Where are the people?
Where are the volumes?

Examine the components for ideas and variations.

The clarity of occupancy unifies implied spaces and
subdivides large moves.

Express scale relationships – smallest to largest.

There is a language of lines and surfaces.

The constructed surface relies on the localized frame.

Establish links between implied enclosure, volume
and corners.

The gestures must have a range of scale.

The frame is only a part, keep up with the balance of
elements. . . we need surfaces.
The surfaces interact with the frame.

Invention

Density

Feel the vertical relationship between sky and
ground.

Connect AROUND things, not just out into space.
The interlocking systems give the work scale and
strength.

IT'S TIME TO MAKE DECISIONS AND ACT!

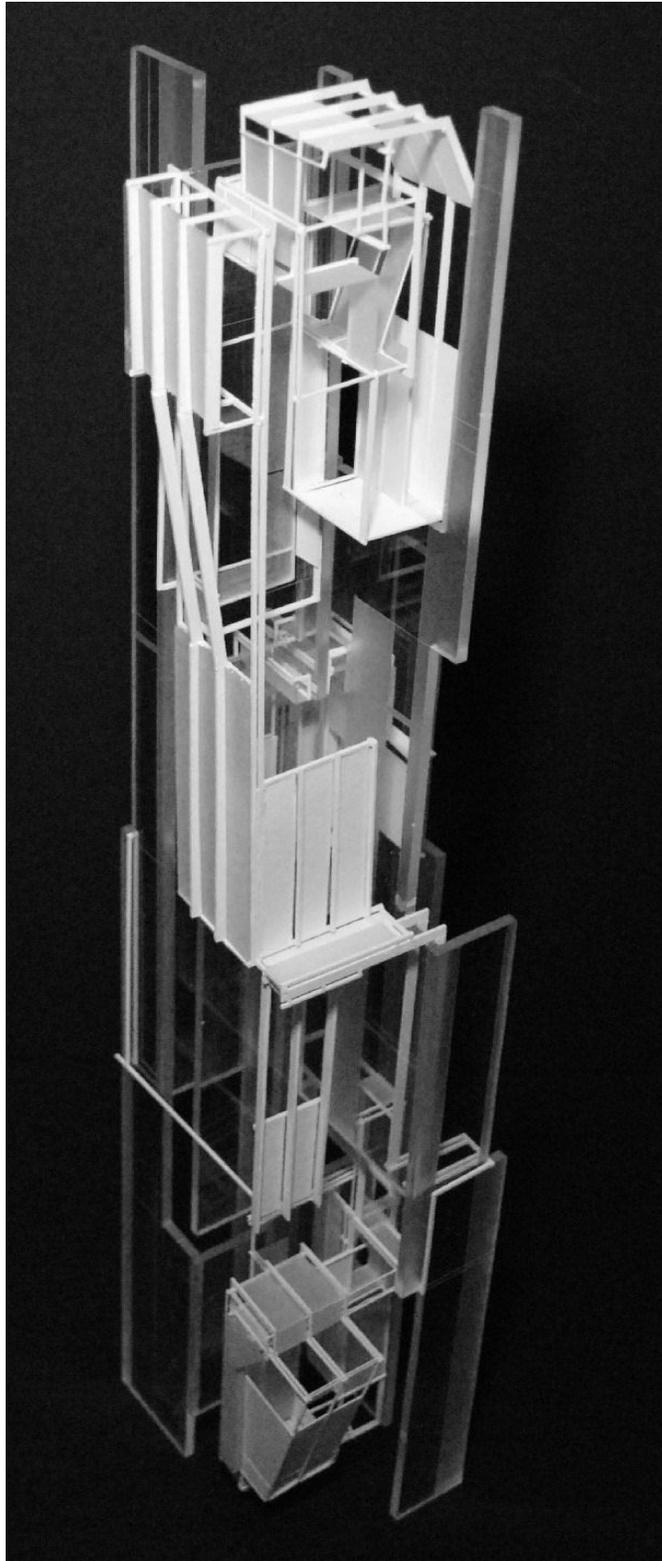


Figure 2-17. Establish links between implied enclosures, volumes, and corners. How do the edges and layers define the nature of occupancy?

Decisions are interactive-put things together!

The syntax of elements (applied to many situations) forms a consistent language.

Occupy the boundaries.

Move from the event spaces toward the edges to move up and down.

Consider occupancy and circulation.

Geometric relationships and alignments afford continuity – layer thin things together to create space and structure. Find a systemic language.

Do more with it:

movement spaces
arrival spaces

These are strategic moments in the section.

Vertical rotation as concept.

What are techniques for changing scales and densities – from micro to massive?

Leave space in the layers – you are modeling tectonics. You want structure and strength. Things work together to achieve stability.

Some are beginning to make useful, large, connective gestures – physically connecting volumes and augmenting the frame with planes to make another set of spaces.

For a space to be read, it has to be cornered.

As you're making final decisions, consider how spaces are occupied.

Ramps and stairs are SPACES.

Consider circulation for its performance qualities,
instead of its technological qualities.

Construction is the performance – a spatial, tectonic
performance – and you are the occupant.

BUILD THINGS – CONSTRUCT SURFACES

Balance your gestures.

The larger and smaller express the three principal
spaces.

Overlap and Intersection.

Final model Wednesday, 1.28.09

The drawing: 12 x 36

Photography as design tool

Surface / Space / Occupancy

Line / Photo / Collage

Media is open-ended

The drawing will serve to advance the model.

“I prefer drawing to talking. Drawing is faster, and
leaves less room for lies.”

(Le Corbusier)

A space can tie other spaces together.

Interconnect the gestures with the frame.

It is possible to over-analyze.

To analyze is to break something into its constituent
parts.

Wednesday 1.28.09

Final Models

Scale range of gestures.

All frame, no surface?

Deciding where to cut the section.

Single view, multiple overlaid views or variable cut?

How to best express the spatial range and relationships of core, performance, circulation, structure, frame, surface, layers and corners?

SINGLE VIEW, STRAIGHT CUT

Begin the drawing.

Begin to construct the sectional drawing.

This will help to suggest (as may be required) how to finish the model.

Read the photographs.

Examine the model in plan view to maximize the logic, lucidity and value of the chosen sectional view.

You may manipulate or remove certain surfaces to enhance views of volumes.

The sectional drawing is a programmatic narrative.

Some need more control over the language (additional vocabulary).

Sectional shifts are still allowed in the interest of best representation.

12" x 36"

Open choice of media:

- build up in collage
- build up in photoshop
- Corel
- by hand
- auto cad
- other

(drawing must have line drawing character)

Choose media based on what gives you maximum control.

The drawing will incorporate elements of scale suggesting qualities of performance.

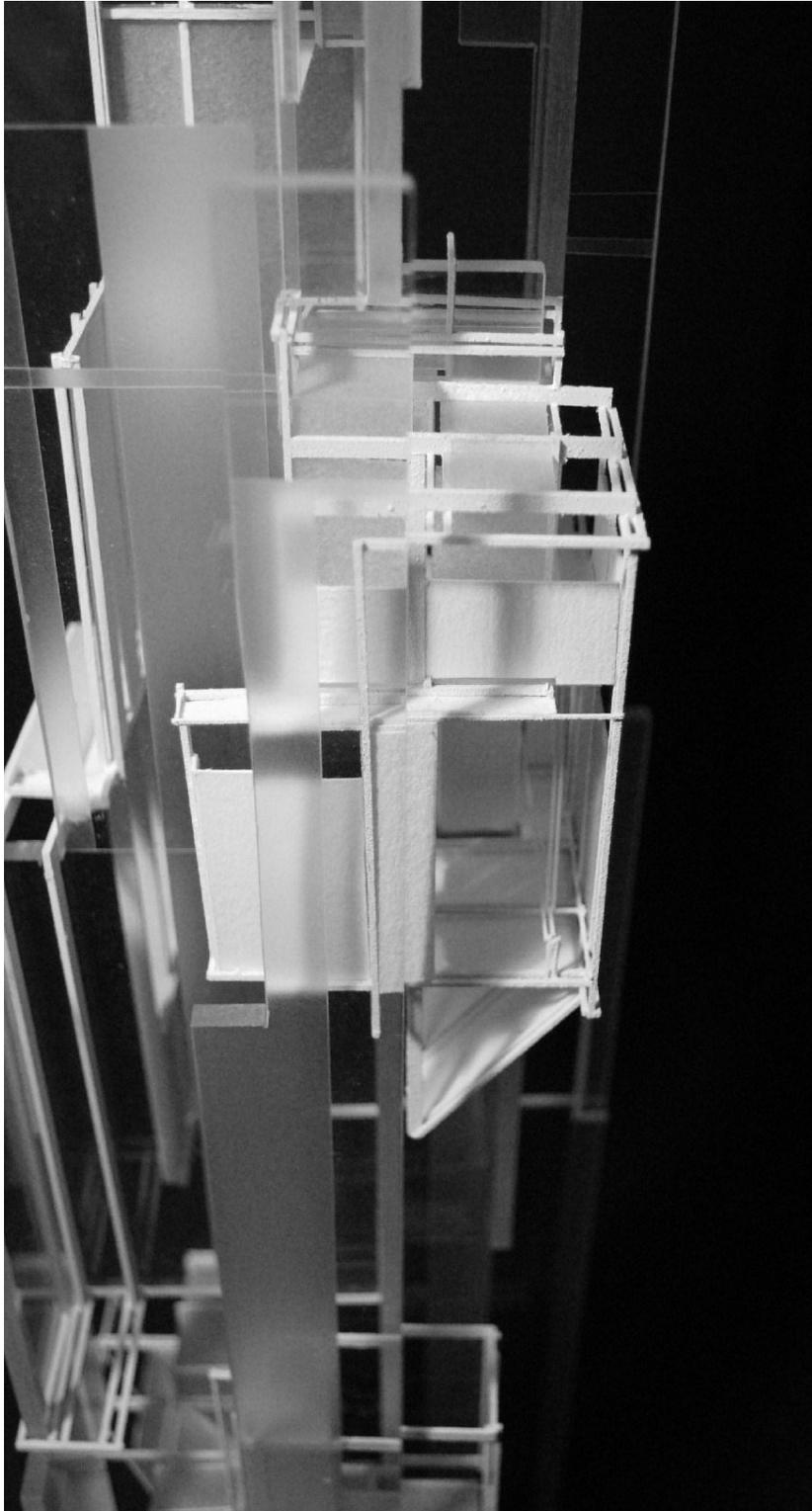


Figure 2-18. Where are the geometric relationships and alignments that afford continuity and reinforce the clarity of your systemic language?

Photograph all four elevations.
Photograph top and bottom views.

Examine the overlapping grids.
Identify the visible systems of measurement.

Initially, the drawing develops as an analytical tool:
Tectonics, frame, and system of measure.

For those with less finished models, the tasks of
model completion and sectional drawing now overlap.
You should shoot photos now, begin the drawing to
create a working document to expedite completion of
the model.

Some models are in need of analysis and the drawing
will help.

The scale of the model is the scale of the drawing.
(Half size tests are useful for study)

Create a series of layers.
Embrace the process of 'making.'

Choices in execution of the drawing are more
important than choices in media for the drawing.

*What are you being told by the wobbly parts of your
model?*

Enhance and develop scale changes in your model
by allowing (adding) larger and smaller elements (and
fewer medium sized parts).

Continue to define areas of occupancy.

MOVE AHEAD!

Examine the interesting moments revealed by
photography and develop them.

Make us understand how we move around the
corners.

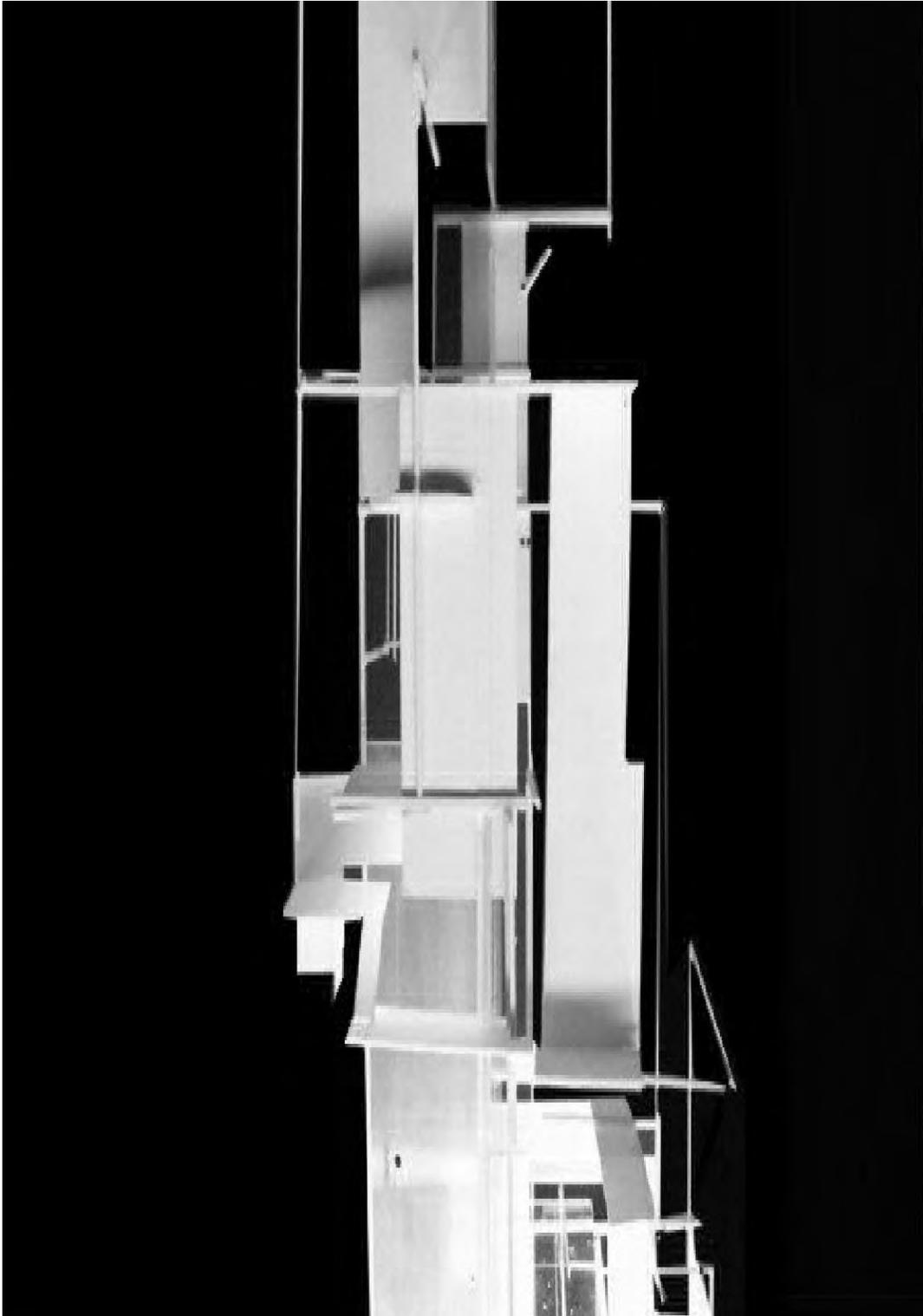


Figure 2-19. What are the wobbly parts of your model telling you? Maintain precision in making while you focus on fully developing relationships of core, circulation, structure, frame, surface, layers, volumes and corners.

What is the value of the performance spaces?
What do they demonstrate?

Some models are still too scale neutral.
Adding smaller gestures lends definition to spaces,
frames, layers and surfaces.

Recognize and focus on areas where components
are showing fuller integration.

Let space move through and exist between layers.

*The components contain subsets of scale,
composition, layers and spaces. They are sources of
compositional strength and organizational clarity.*

The model isn't a tripod

MAKE IT GO
MAKE IT INTEGRATE

Some are making orphans of their component parts.
These parts want to form a family.
Select and exploit the orphan pieces.
These pieces are the DNA of your project.

Objects begin to model the way things are built.

The frame has clarity and geometric relationships.

Expand the range of gestures by tying the systems
together.

Bring all elements to a consistent level of spatial
enclosure and development.

The primary performance components should visually
relate – in language, integration, wrapping, scales of
frames and surfaces. These need to be expressed
more systematically.

How is circulation contained in space?

What are those floppy surfaces trying to tell you?

How are your spaces consistent or inconsistent?
scales
systems
pieces

With no regard to function, is a consistent tectonic system invented which recognizes the creation and application of a three dimensional dialogue?

[Artaud's Theater of Cruelty: physically determined to shatter false reality]

Are the layers assembled three-dimensionally?
Is enclosure applied to make views possible?
Is there a level of design that mediates equally across all parts?
Is there a relation of frame size (scale) to the gestures framed?

Let's overcome the awkward sense of separateness of systems and resolve the situations where systems assert uncooperative influences.

System Dominance

Apply surface to break up dominant frames.
Exploit and expand the moments of clarity and coherence.

Volumes within volumes represent contexts of space.

What does it tell you when your planes slip out?

Can you hear what the model is trying to tell you?

Are the subdivisions of your system of measure under control?

Need to see greater volumetric enveloping / integration.

Things don't just stop, they interconnect and turn corners to establish systems.

IT'S NOT A BILLBOARD

Systems without context don't integrate and interrupted contexts weaken systems.

The articulation of mutually designed elements within a unified composition yields consistent contexts at different scales.

How do the individual systems work at either descending or increasing scales?

(The concept of axial distribution of space.)

Apply Plexiglas in the service of context not surface.

Translucency is a variable.

The plexi, upon being shaped, can begin to represent a function or a space. It can represent mass or program.

*Where is the evidence of structure?
Can you recognize where the object needs resolution?*

Issues of dislocation and isolation are expressions of spatial hierarchies. They embody priorities of position, sequence and distance.

Engage frames and surfaces at edges.

Opaquing the plexi creates (implied spaces) a level of information that requires acknowledgement. Implied gestures become explicit.

A system of measure could be based on multiplying and/or dividing cubes.



Figure 2-20. Elements continue around corners

Create atmospheric zones of interlocking spaces and pieces.

“That stuff,” is not a tectonic reference.

Talk about space.

Talk to yourself in spatial, tectonic terms.

Remain in control of your gestures.

Recognize integration of structure, frame and surface to create spatial systems.

DON'T PILE UP THREE BIRD HOUSES.

Things facing each other create a space.

Things facing away from each other don't.

There is no way to engage with an object if you can't see it.

Create shafts of space at different densities.

Apply a measured grid.

Devise a language that is transportable, spanning project to project.

Friday 1.30.09

Models and drawings

50/50 watercolor paper to plot paper

B+W or subtle colors?

Color not a part of model. . .

Value range in drawings probably more useful than color.

Close one eye and squint to determine value range – lightest to solid black.

Depth and layering of space.

Cuts are through major spaces and include interstitial spaces: value is critical as a source of measurable depth.

Tonal value creates a sense of being drawn into the space.

Value is also an element of control.

There is an absence of dashed lines (lines beyond).

Should we use perspective?

Perspective involves:

- accuracy
- horizon line
- vanishing points
- spatial projections

Perspective multiplies complexity and takes more time.

Fire away.

Drawing allows multiple experiments. Drawing allows you to take risks in working out the final presentation.

Sectional drawings that use collage are not just big photographs.

All drawings here construct and inhabit the vertical context

The drawing will:

- Include how space is being created with the sky and the ground.
- Expand / bleed the system of measurement to mark the overall sheet.
- Evidence a system of measure as an element of composition.
- Manipulate a designed grid.

Have you named your digital layers in terms other than 1,2,or 3?

Are they possibly named, frame, surface, circulation, etc.?

Your language must be applied to the machine to keep track of your own analysis.

The digital layers are elements of the tectonic family.

The layer list is a design tool, allowing you to examine each individually and in concert.

Allow layers to become a design tool and not just a drawing tool.

Monday 2.2.09

Final vertical model and drawing

[The next project will involve performance spaces in the horizontal section, as a program layer added to the west face of the Norman Hall Parking Garage. You will split into documentation teams of three and produce a measured drawing of the Norman Hall garage plan, including the accompanying structural grid, and the plan of the athletic field which adjoins the west elevation of the garage. By means of your field measurements you will produce an overall context drawing (Task 1). Looking for connections between program and ways of making things, you will design performance spaces which support the areas existing activities (Task 2). By defining links between program and space, you will experiment with changes to the plane of the athletic field as you generate an abstract model of an architectural linkage between the garage and the field (task 3).]

“What's going on with the drawings?”

What ideal characteristics should the drawing embody?

- a range of tonal values representing layers of space
- a range of line weights
 - which make a measurement system visible
 - which reveal scale through comparative size
 - via small gestures
 - via large gestures
- a clear spatial hierarchy
 - in both performance and connecting spaces
- a sense of circulation
 - through itinerary, path, sense of direction, types and performance aspects
- an understanding of layers with differing qualities
 - families of systems
 - linear systems
 - spatial systems
 - circulation systems
 - repetitive elements

The drawings don't communicate the complexities reflected in the models. . .

The three spatial moments drawn in connection to a vertical system aren't connecting to a larger whole.

Run test prints against the screen image to avoid hard copy disappointments.

The drawing is the artifact that must reflect the best graphic qualities in terms of depth, layering and color.

Is the drawing recognizable as a section?

Do any sections give strong hints about the program?

Is the section valid compared to the model?

Are the drawing and the model saying the same things?

The section and model should correspond within the range of representational techniques.

Expression of confusion.

Is there clarity and definition in coding the drawing?

Is there graphic logic or graphic ambiguity?

Is there a sense of openness?

Is there a sense that things change?

(line weights / densities)

Collage undermines easel painting.

It wouldn't be inappropriate to pressure you to advance the drawing in a way that explores the model more fully and in more detail.....particularly the idea of volumes within volumes.

Ctl Alt Z

These drawings should also be treated as an analysis of the model- as a sectional analysis.

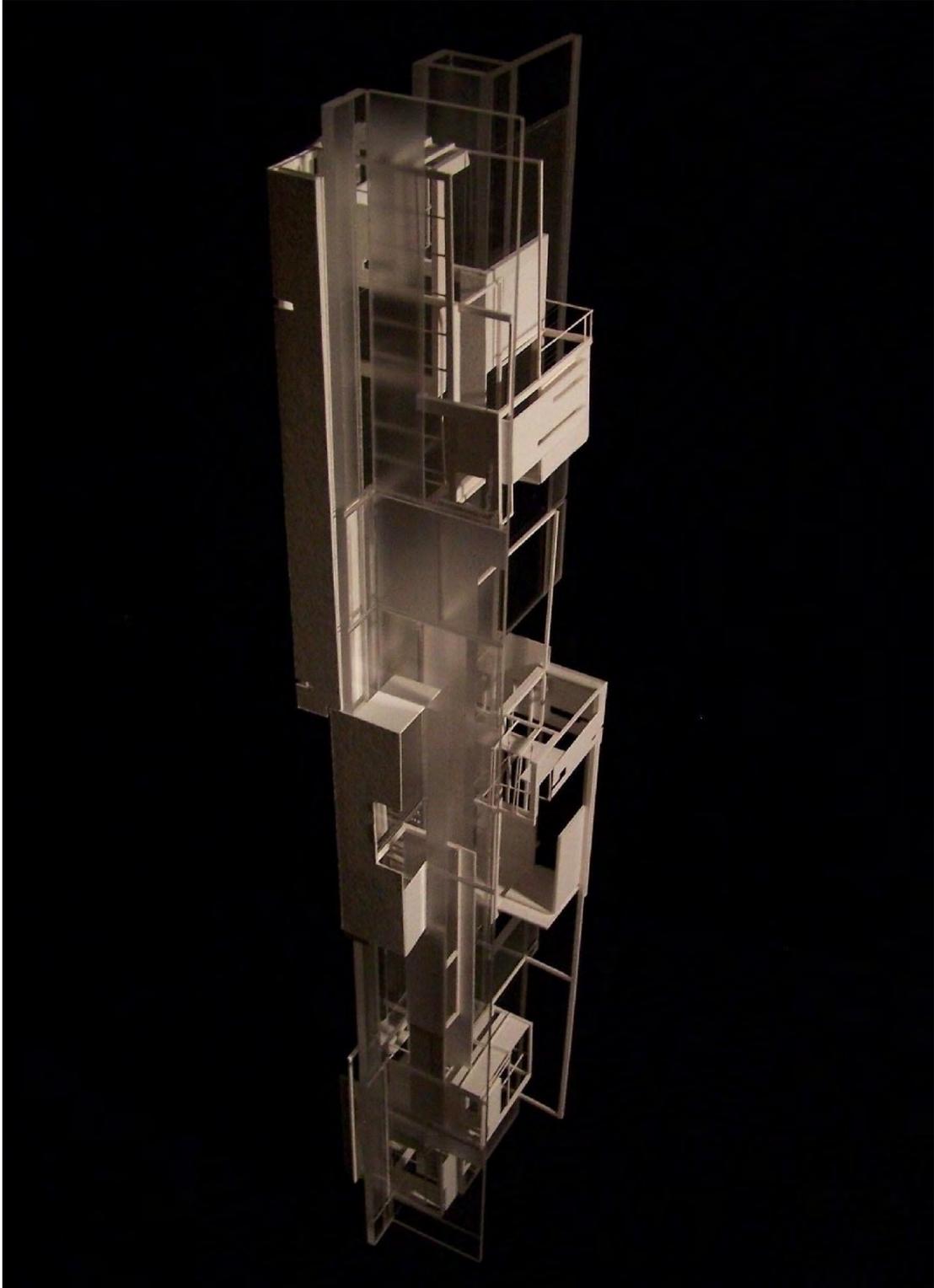


Figure 2-21. Spatial hierarchy, sense of circulation, understanding of layers with differing qualities, range of scale revealed through relative size, sense of underlying structure, precision in making, and systemic consistency in material coding.

You should see the space through the cut and thus see its tectonic makeup.

Distinguish between expressing in analytical and actual terms.

Establish the rules by which you make your decisions- they can be changed but must first be established,

Draw over the areas of the plot, print or drawing that aren't satisfactory.

If the work isn't doing what you want, move to correct or manipulate it.....**express evidence of your intent!**

CHAPTER 3 INTERSECTING IDEOLOGIES

Epochal Gathering

In May of 1940, eight months after the German invasion of Poland and twenty seven months prior to the declaration of war against Japan by the United States, the American Institute of Architects held its seventy-second convention in Louisville, Kentucky.

Here, the Deans, Directors and Heads of twelve American schools of architecture were invited to present summaries of their respective pedagogical philosophies regarding the education of architects. These short speeches were compiled in a pamphlet and published by the AIA in 1940.⁹ They reflect a range of priorities, reveal remarkable ideological differences, and clearly mark a transition of theoretical values in architectural education.

Two speakers who emerged from this historical record to embody the philosophical confrontation then underway bear comparison here: George S. Koyl, Dean of the University of Pennsylvania School of Architecture and Mies van der Rohe, Director of the Armour Institute (IIT) in Chicago. By default, their views reflect differing personal pedagogical agendas and values. They represented, in a mid-twentieth century context, a seminal confrontation of ideologies regarding the fundamental nature of architectural practice and architectural education.

⁹ AMERICAN INSTITUTE OF ARCHITECTS, 1940. *Philosophies Underlying the Teaching of Architecture*. Louisville, KY. This pamphlet documents lectures presented by selected deans and directors of prominent schools of architecture during that year's national convention of the AIA. Quotes are from the speeches delivered by Dean Koyl and Director van der Rohe respectively.

Dean Koyl

George S. Koyl (1885-1975) was trained in architecture at the University of Pennsylvania and at the American Academy in Rome (1911-1914). Returning to the United States, he taught in Pittsburgh at the Carnegie Institute, worked in the offices of Cass Gilbert and McKim Mead and White, and later began his independent practice. He became Dean of the School of Fine Arts of the University of Pennsylvania in 1932, retired in 1950, and continued to serve as Professor of Architecture until 1955. The University of Pennsylvania archive contains a collection of Koyl's watercolor renderings and travel drawings executed during his period of study at the American Academy in Rome. Their beauty and attention to detail reflect the Beaux-Arts style of architectural rendering Koyl learned as a student of Paul Cret at the University of Pennsylvania.



Figure 3-1. George Simpson Koyl (1885 – 1975), Dean, School of Fine Arts, University of Pennsylvania, 1932-1950.

Koyl began by clearly connecting pedagogy to practice, noting that his Department of Architecture provided, “courses of study...which are deemed essential as basic preparation for the practice of this profession.”

The curriculum was a five year program and somewhat epic in scope. Koyl's description

evokes notions of the architect as an Homeric hero: “The practice of Architecture prescribes that, besides having a cultural education, the architect shall have among several capacities including those of Master of Construction and Business executive, the training of the Art sense; and the fundamental discipline for such training in Design.” The reference to 'a cultural education' was made in passing, but is significant as the need for cultural education is specifically mentioned by both speakers as an important component of architectural education. The idea of a cultural component transcended their divergent educational philosophies.

Koyl's methodology prescribed that, “the student should have positive guidance towards discrimination in matters of composition, rhythm and proportion; and that an effective vehicle for that guidance is to be found in a careful analysis of the Classical Traditions.” The study of the structural and aesthetic expressions of the classical traditions was undertaken in the first year Elements of Architecture course and continued in Elementary Design in the form of problems, “appropriate to such study.” In other words, the classical traditions and values defined by the Academie in 1670, continued, in 1940, to provide the foundation of Koyl's architectural pedagogy.

The Beaux-Arts genealogy of Koyl's educational program is evidenced both by the template it provides for coursework and by an overlaid system of advancement through examination: “At the end of the second year the student is given the opportunity take an examination to test his sensitivity to Architectural form and expression, which he must pass before advancing to Intermediate Design.”

In the final year of study, “The Design programs of the fifth year are a challenge to the student's imagination, powers of conception and of expression. They are for the

most part the five or six week Class “A” problems of the Beaux-Arts Institute of Design, typical of work with which architects hope to have the opportunity of dealing...in their more mature years of practice.”

Criticism of Koyl and a Beaux-Arts pedagogy that is arguably tautological and possibly somewhat unresponsive to social reality, is mitigated by the ambition, scope and comprehensiveness of the overall program. It was a program of Byzantine proportions and ambitions, centered on art and science, while touching on law and economics. The development of the humanistic skills of logical thinking, freehand drawing, modeling, water color, and interpretation of line, form and color (lingering evidence of the battle between Rubens and Poussin), was formally complemented by instruction in the scientific aspects of structures, material mechanics, graphic analysis of stresses, the nature of building materials, methods of construction, computations in steel and reinforced concrete, and specification writing. In addition, the curriculum covered ethical, legal, and business aspects of practice, as well as, a survey of accounting, zoning ordinances, building codes, and financial arrangements. There was an option for a seven year program which permitted, “a wider program of courses in the humanities, social and applied sciences.” A graduate year leading to the Master of Architecture degree was offered in the areas of Design, City and Regional Planning, and History.

In acknowledgment of the necessary differences between architectural education and architectural practice, Koyl concluded, stating that his program, “attempted to give a fundamental training in all aspects of the profession so that our students will be qualified after the minimum number of years of experience in offices of practicing architects to

pass their examinations.....and enter confidently, as opportunity affords, into the practice of their responsible calling.”

Director van der Rohe

Ludwig Mies (1886 – 1969) moved to Berlin after working in Aachen in his father's stone-carving shop and joined the office of Peter Behrens as an apprentice in 1908, working there with Walter Gropius and Le Corbusier until 1912 when he began his independent career designing traditional homes for the upper classes.

World War I (1914-1918) brought disaster to Europe. In Germany, the resultant loss of property, social disruption and economic chaos fostered resentment toward a political system based on imperial leadership and aristocratic privilege.



Figure 3-2. Ludwig Mies van der Rohe (1886-1969), Chair, School of Architecture, Illinois Institute of Technology (Armour Institute of Technology), 1938-1958.

Within the emerging German social and architectural theories of the early twentieth century, the neoclassicism associated with the failed imperial system lost all objective stylistic credibility and succumbed to ridicule as excessively ornamental and cluttered. It is worth noting that this was the same classical tradition Dean Koyl

continued to advocate twenty years later as the source of, “positive guidance toward discrimination in matters of composition, rhythm and proportion.”

Mies became a representative of the developing notion that the expression of a modern structure's underlying construction should be a significant and sufficient source of ornament in itself. Mies' architectural principles were expressed as an ideal by his drawing of a glass skinned “skyscraper” submitted to the Friedrich Strasse office building competition in 1921 and revised in 1922.

He became famous, and changed his name by adding his mother's maiden name, van der Rohe. He then became a legend as his designs of the German Pavilion for the Barcelona Exposition (1929) and the Villa Tugendhat in Brno, Czechoslovakia (1930) received wide public acclaim.

Philip Johnson met Mies in 1930 and keenly included him in his 1932 exhibition of modern architecture at the Museum of Modern Art in New York. In 1930, Mies replaced Walter Gropius as the director of the Bauhaus in Weimar, serving until the school, pressured by National Socialist politics, was forced to close in 1933.

Established as a pioneer of modern architecture, Mies immigrated to the United States in 1937 and was appointed Director of the Armour Institute of Technology in 1938. Like Koyl, his speech to the assembly in 1940 began with the clear connection between pedagogy and practice, “The curriculum of the Architectural Department of Armour Institute of Technology is designed not only to equip the student with the knowledge and ability required for the professional practice of architecture but also to give him a cultural education to enable him to make the right use of this knowledge and ability.”

Although they represent theoretical opposites, Mies (teaching a language of modernism) and Kohl (teaching a language of classicism) both refer to the idea of cultural education as being necessary to compliment the general curriculum of architecture. A curriculum which, may be said, is focused primarily on the development of manual skills and artistic judgment within an applied and variable theoretical context.

In his speech, Mies declared that there is a range in architecture from the low which is purely practical to the high which is pure art. This relationship formed the basis of his, “curriculum which makes clear, step by step, what is possible in construction, what is necessary for use, and what is significant as art.”

For Koyl, architecture was a formalized idiom. Thus, his curriculum emulated the historical model of the academy: A linear series of perfunctory exercises and problems of increasing complexity, with progress measured by intermediate examination, and accomplishment subject to judgment according to conformance with interpretations of classical ideals. Mies was a man more familiar with classicism as a political tool, “The curriculum leads...from the study of the means with which one builds and the analysis of the purpose for which one builds, into the sphere of architecture as an art.” Mies retained the classical elements of architecture in his curriculum, having removed them from their classical contexts. Differing from Koyl, he recognized the importance of historiographical reality in the curriculum, “In conjunction with the curriculum there is a clarification of the central situation today so that the student may learn to recognize the sustaining and compelling forces of his times, and to comprehend the intellectual and spiritual environment in which he lives.” In other words, architecture is not an adapted continuum of antique paradigms. It is the result and expression of its specific time.

Mies recognized context as a variable to be taught, not as a framework within which to teach, “The material, intellectual and cultural aspects of our era are explored to see wherein they are similar to those of former epochs and wherein they differ from them.” Thus, contemporary meaning is to be found in the principles embodied by history, not in its products: “The buildings of the past are studied so that the student will acquire from their significance and greatness a sense for genuine architectural values, and because their dependence upon a specific historical situation must awaken in him an understanding for the necessity of his own architectural achievement.”

Epochal Transition

As contemporaries occupying the same lectern in 1940, Koyl (age 55) and Mies (age 54), metaphorically embodied the moment of intersection between two rigorous educational philosophies. As architects, Koyl and Mies respective philosophies shared a belief in composition, order, hierarchy, and proportion as cardinal design elements. As educators, however, the authority and relevance of Koyl's classicist curriculum were declining, while Mies' modernism was becoming embraced as appropriate for the age. The former had been a pedagogy of prescriptions. The latter was emerging as a pedagogy of possibilities. To paraphrase Tschumi, this can be seen as the point of disassociation between a nascent educational philosophy based on a distillation of history's principles, and an educational philosophy of a status quo, based on an inventory of history's products. The pedagogical objective was transformed from exercises in emulation into opportunities for invention.

Koyl and Mies were united in their view that professional practice was the ultimate pedagogical mission of their respective programs. Koyl's curriculum provided, “courses of study...which are deemed essential as the basic preparation for the practice

of this profession,” while that of Mies was, “designed...to equip the student with the knowledge and ability required for the practice of architecture.”

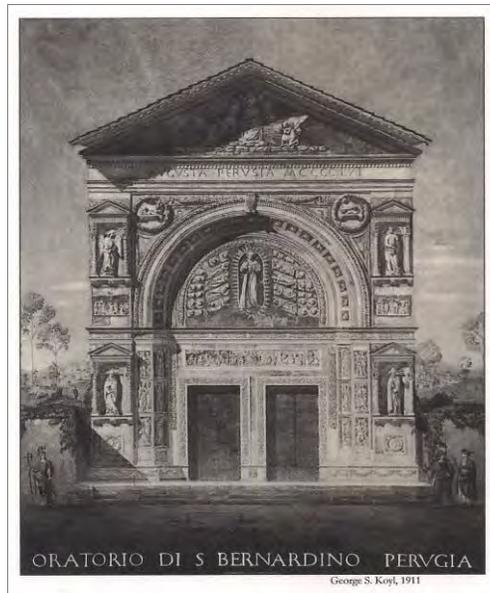


Figure 3-3. George S. Koyl, watercolor rendering. 1911.

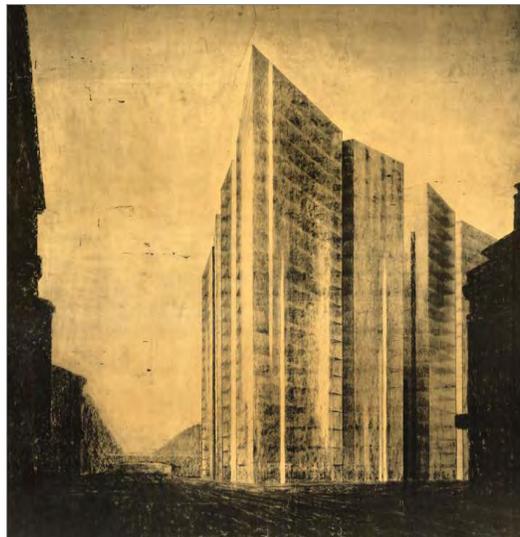


Figure 3-4. Ludwig Mies van der Rohe, Friedrich Strasse Project, 1921.

Wednesday 2.4.09
A Horizontal Construction

“Are all drawings pinned up?”

It's a lovely day for measuring a parking garage.

Do all teams' measurements agree? Of course not.

They'll need to. The grid system applies and it requires precision.

It is a system of measure.

A column grid yields a measured space; a unit of measure that can be abstracted and extended.

Which cut yields the most information;
transverse (EW) or longitudinal (NS)?

The transverse extends into the athletic field.

Motivation and starting, the programmatic map;

Now you have techniques to figure out a rap.

Examining context via the sectional map.

(phase 1: Vertical Section / phase 2: Horizontal Section / phase 3: Flat Section)

With tectonic qualities, construct a performance space by enveloping and connecting.

Multiply a coherent component.

A Sectional map / Programmatic map incorporating tectonic qualities.

Activities, relationships, scale.....

Construct a horizontal sectional program map for a project on the east edge of the Norman Hall garage.

You develop the program instead of being given a list.

The last exercise identified three performance spaces and developed the interstitial spaces.

Parameters for this exercise:

- Scale: 1/16" = 1'-0" (Model and Drawing)

- Site: East elevation of Norman Hall garage.

- Cover +/- 50% of the east elevation of the garage.

- Include one corner of the east elevation.

- Extend no more than 30' into the adjacent athletic field.

- No higher than existing stair towers.

- Can integrate with existing floor slabs.

- Can carve into grade within the 30' project width.

- The garage remains a garage.

- The athletic field continues to accommodate multiple functions.

- Support performance activities.

- Include one multipurpose space to accommodate 50 people.

Explore relationships between performance and audience.

Develop program map for Friday 2.06.09

How do ideas about tectonics evolve from one context to the next?

Will begin to see familiar relationships between projects generated in this Studio.

You control and manipulate the design process.

You are conscious of how you cut into things.
Things are taken away and replaced with other things.

The garage is a logical structure.

Your project will maintain logic.

The garage represents a pre-engineered, pre-fabricated architectural system.

We are applying another layer while allowing the context (of grids and dimensions) to read through.

We are mapping our programs onto the edge to explore the support and connections of activities in space.

This is an *abstraction* of performance related spaces and how they may be integrated into an existing grid.

Generate a program map that includes the program of the open field.

The program determines limits.

Things have boundaries.

The grid is a Cartesian network that extends by implication.

The field is a surface. Explore how to work with a surface: Overlaid activities, varying texts.

Start the grid/ overlay/ delineate the limits and develop the project from there.

Provide a construction that gives architecture an organization of performance.

Develop your project with a sense of adventure.

Start this project on the shoulders of the last.

The drawing encompasses a 24" x 36" sheet and delineates the necessary portion of the garage, your intervention in plan, your intervention in section, and the entire field.

Other areas may be included, as your discoveries dictate.

Draw using digital, manual or combined techniques.

Be quick and accurate.

Discover how things are constructed.
Develop ideas about enclosing space.

Initial map due Friday, 02.06.09

Abstraction allows you to transport ideas from one exercise to the next.

Two main spaces are interconnected:

- to the ground
- to each other
- to the edges
- to the sky

Apply the ideas developed in your last work in a horizontal context.

- Build on your previous work
- Have confidence in your abilities
- Develop speed in making things

Friday 2.6.09

What scale is it?

Let's get the technical things straight.

(formatting)

Your constructions are the **joint** between the **edge** of the garage and the **field**

*making, causing, facilitating a transition
from physical structure to ordered space*

No, it's not necessary to show the entire garage.

*rebuilding the garage is time and effort devoted to
avoiding the problem. . . putting off the act of design*

The blank space (of the open field) seems to be difficult to deal with.

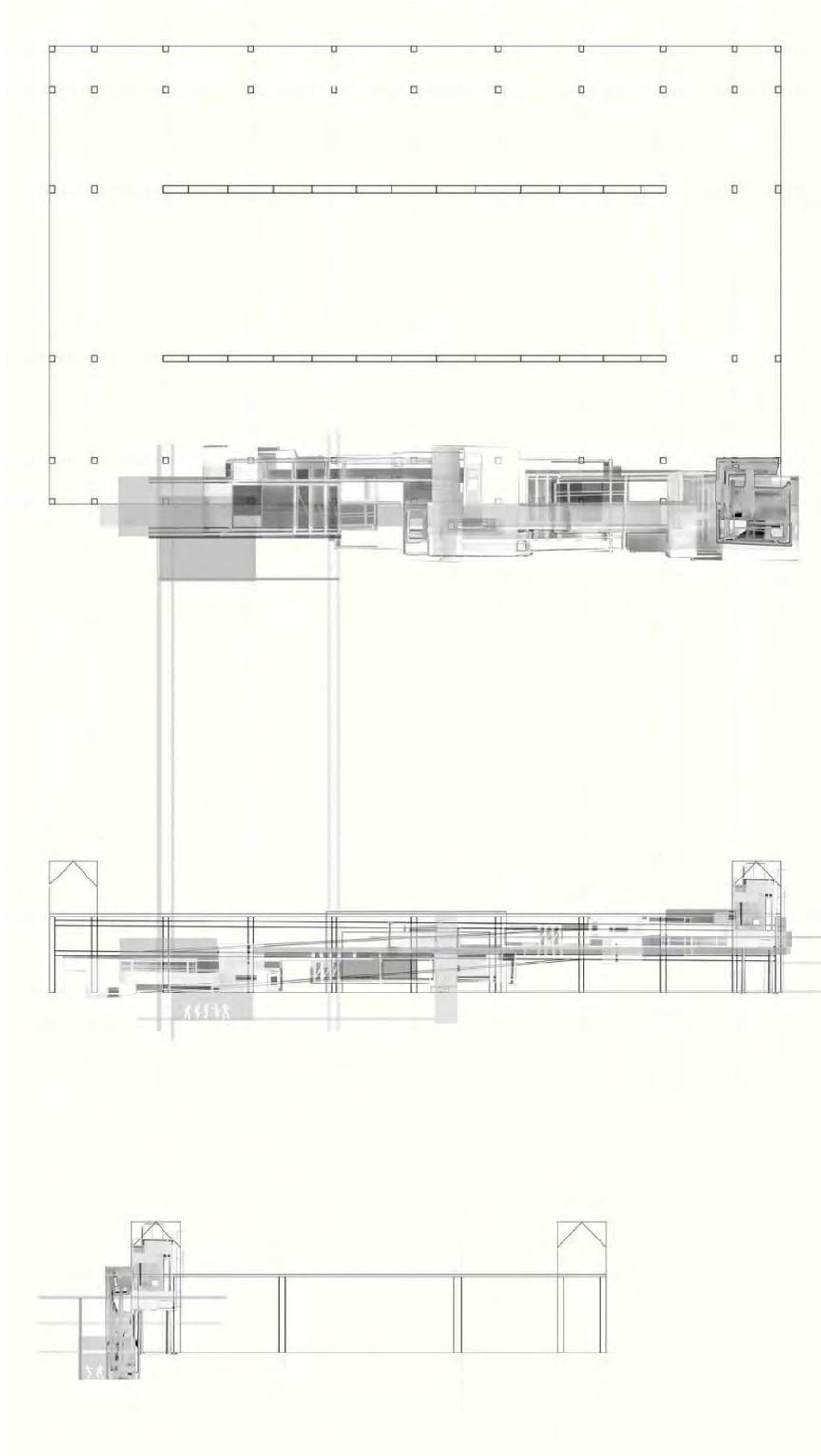


Figure 4-1. Horizontal sectional map: building on the language of previous work.

. . .not happy with how the field is being described, . . .
we're interested in how you control a horizontal
territory. . .in contrasting architectural gestures
connecting to space. . .*a range of architectural
gestures.* . .

You need to be able to communicate possibilities and
uses of space – one use is to register the order of the
new construction: with sets of lines-
 measuring
 delineating

 integrating

Use (*invent and apply*) a system of organized lines
that give order to the surface-
that inscribe the surface with meaning.

This is not the time to attempt perspective in the
section – find other ways to suggest depth.

It is time to remember your program descriptions.
(such as - 3 levels. . .
top- viewing area for 30 people
middle- circulation, interstitial areas
bottom- bays for band members, team
players, resting spaces)

Create a system of measure that organizes the
program, organizes the activities.

Look at strategy maps, military maps – diagrams of
possibilities, contingencies, *intent.* . .
bubble chamber maps

Lines are extended into the field in a way that gives
order to actions . . . a system of order is introduced.

What are the measurements emanating from the
existing structure?

What are the things that can order an otherwise blank
surface – organizing it into: Areas of rest
 Areas of action
 Areas of movement
 Areas of assembly

Enrich your palette of words.

The entire program is of a performance space and your descriptions need to be in tune with that.

. . . principal spaces, interstitial spaces, active, passive, light, dark, open, closed, vertical, horizontal, linear, serial. . .

CONSUME THE GARAGE AND RECONSTRUCT IT

Separateness creates problems with the connection of pieces, *the integration of components*. . .

Treating the ground level as an eastward extension of the field is a useful integrative move, allowing a flow of public space at the base of the construction.

Look for interrelationships (in the drawing) between plan and section to develop a build able graphic construction.

Think about the drawing as a construction in lines. . .
Imagine your lines and planes as materials. . .

The procession of circulation from pianissimo to fortissimo . .

. . .an organization of overlaid crossing patterns, transitions, peripheral views, peripheral spaces, constructed circulation. . .

NOW. . . Revise the drawing to produce the Version 2 map with the technical corrections incorporated.

“ . . .do you want us to. . . ?”

“What?”

“No, you're the *designer*, you're not simply *following directions*.”

Elaborate the spatial sensibilities of connections by mapping a hybrid of plan and section.

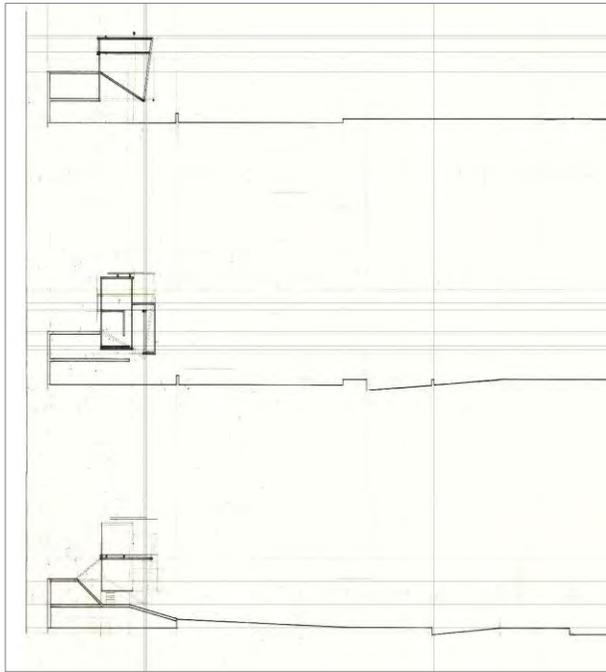


Figure 4-2. Following along tentatively.

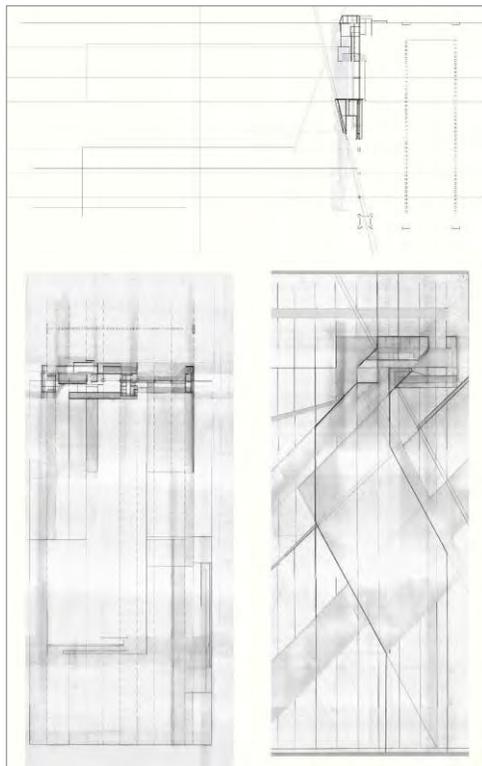


Figure 4-3. Early plan / section hybrid.

This requires one to look with imagination in order to read what is drawn – what is being explored.

“ Without an understanding of the relationships between the concepts of 'real and 'unreal,' 'imagination' and 'fantasy,' it is impossible to have a clear understanding of the prerequisites for the creative process, or to embark on the task of cultivating or developing them. It is my belief that both imagination and fantasy, these two prerequisites for architectural creativity, can be cultivated and enhanced by the good will, the application, the training, and the discipline of the architect, even more than his or her inherent talent. The architect will become good or excellent in the real or in the theoretical arena only insofar as these two aspects of his or her work are developed.”

*(Anthony C. Antoniades)
Poetics of Architecture*

The gridded field
A plan/section sensibility
To design, you have to extend lines

Monday 2.9.09
Plan and section mapping
Version 2.

Were you holding back? Should these have been the drawings you did in the first place?

We'll switch to models today.

How would you start to construct this drawing as a model?

Thinking and actions
Thinking and actions

Translating ideas through quick studies. . .

Increasing speed
Decreasing hesitation
Decreasing time between thought and action

You have a construction in the form of a drawing that begins to tie the elements together (garage-field).

You have techniques to achieve scale changes within gestures, particularly on surfaces.

How would you build the *flat plane* on the *open field*?

. . .overlapping plates?

...events, games, fairs, markets. . .

How do you suggest places of organization without excluding anything (*and possibly allowing for the unforeseen*). . .?

How is a large space subdivided by implied areas of gathering?

How do you engage the *imagination* of surface as a painter?

A support system is derived from a set of lines, interlocking ribs, and overlapping plates.

Be able to quickly deal with differing degrees of transparency and enclosure.

Emphasize the continuity between the field, your intervention and the garage.

There are no *blank fields*.

Set up lines of construction

line weight

object lines

view lines

lines of enclosure

orienting lines

organizing lines

some lines connect

some lines separate

Construction lines are speculative and become translated into other things.

The first drawings are filled with lines.

What starts to happen when you send lines into space?

Surface / Frame

Opacity / Transparency

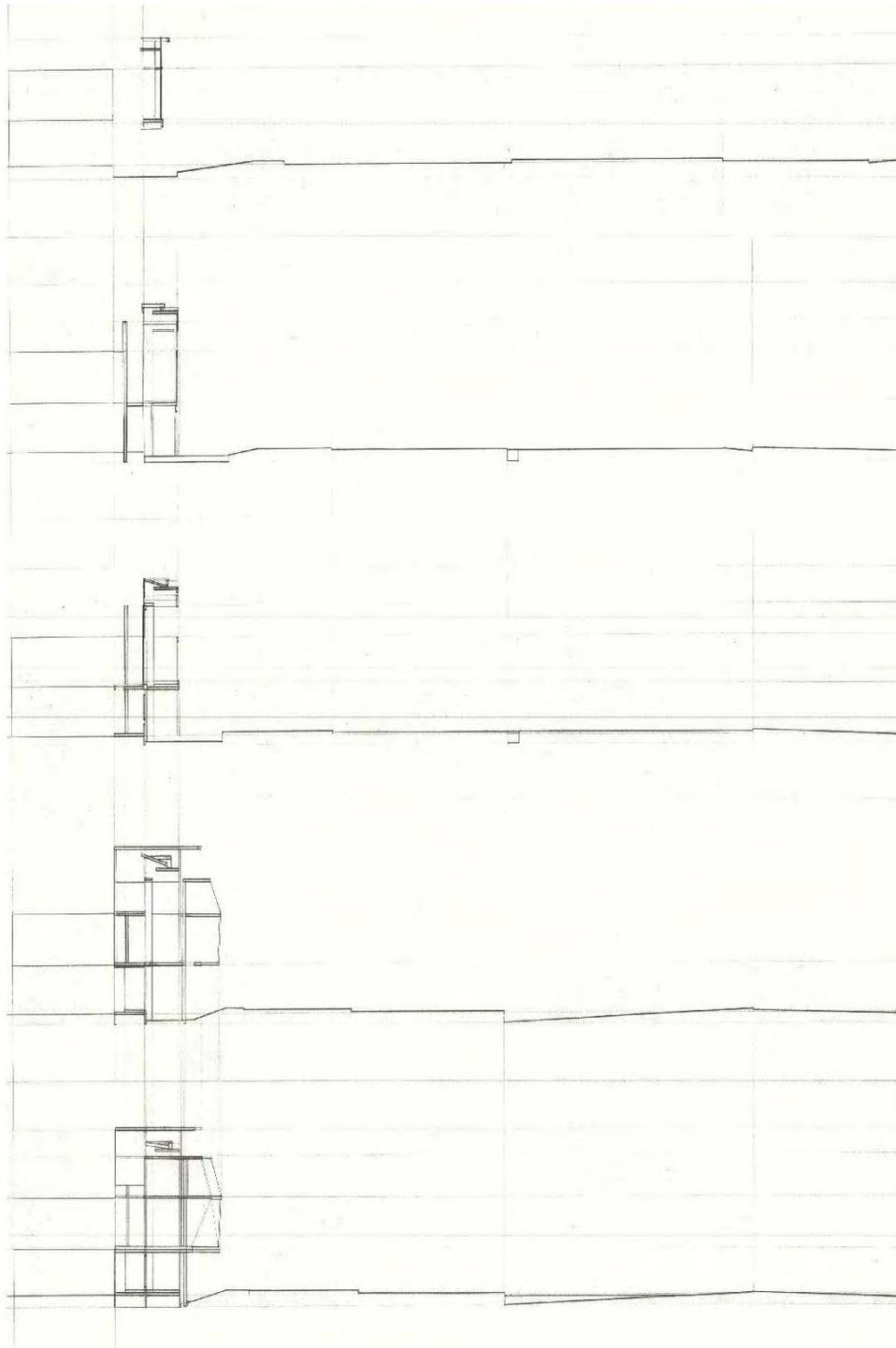


Figure 4-4. Sequential speculation in section.

Explore programmatic metaphors. . .

*“We perform metaphoric acts whenever we
-Attempt to transfer references from
one subject (concept or object) to
another.
-Attempt to 'see' a subject (concept
or object) as if it were something
else.
Displace the focus of our scrutiny
from one area of concentration or
from one inquiry into another (in the
hope that by comparison or through
extension we can illuminate our
contemplated subject in a new way).”*

(A.C.Antoniades)

Extruded
Overlapping
Interlocking
Solid
Void

The intervention contains (at least two) three main
programmatic spaces. . . hierarchically ordered
volumes which hold larger groups of people. . .
The program is intentionally open-ended. . .
Able to be specific or general. . .but not completely
generic.

Lines suggest the envelopment of volumes and
become increasingly specific *as the flat plane
becomes integrated with the layered intervention.*

Are shadows and/or their arcs functional components
of the field?

. . .merging two dimensional and three dimensional
spaces

. . .sense of depth in layers and volumes

and

YOU'LL HAVE TO BUILD THOSE GRAY AREAS
YOU'VE DRAWN. . .

It's *three* things. . .

garage
intervention
field

But *one* project.

Avoid becoming fascinated with one aspect of the project.

A three dimensional spatial joint shares characteristics across each side.

A context exists / therefore it can't be invented

An abstract model has its own properties within it:

- vertical and horizontal correlation
- differing lines expressing differing systems
- overlapping networks

The field and the intervention share lines and characteristics.

Visualize how you move through the project.

A diagram needs mental flexibility, agility and the ability to adapt as the project evolves.

Lines gather to indicate areas of intensity.

Think about the relationship between the edges.
Edges contain differing scale cuts.

Don't wait for the computer, draw now.

We can't talk about things if they're not in the drawing. . . *More often than not, this is when the student expresses a 'new thought' in an effort to solicit criticism in advance of the contemplated action. Discuss the implications (not the merit) of the notion in question. Ask / allow him or her to reflect on the value (fecundity) of the new idea relative to the forward motion the project. Ask / allow him or her to determine its logical kinship with the set*

*of decisions thus far underlying the work. Ask questions and allow him or her to thus **determine the merit of the 'new thought'** as a (guided) individual decision. . . **teach reflection by example.** . .*

. . . the need for *evidence* of your thinking.

The drawing is the evidence. . . embed what you're talking about into the drawing. . . your constructed system. . . which contains a pattern of consistency in work and language. In architecture, things happen systematically.

The system contains sets of steps, relationships, scales, components. . .

What happens when plan and section are overlayed?

Models Wednesday

Wednesday 2.11.09

Work day

“ . . . Professor Tilson is available throughout this session to profess to you on an individual consulting basis. . . ”

We have a lot of model bases. . .

The bases are fields. . . the fields lack complexity.

The project is not about tunnels. . . mark the surface.

Concentrate on structure vs. surface and how the two relate.

Marking the surface implies places for events.

You're scoring lines on a field, ordering a horizontal surface. . . experimenting with how to deal with a landscape plane. . .

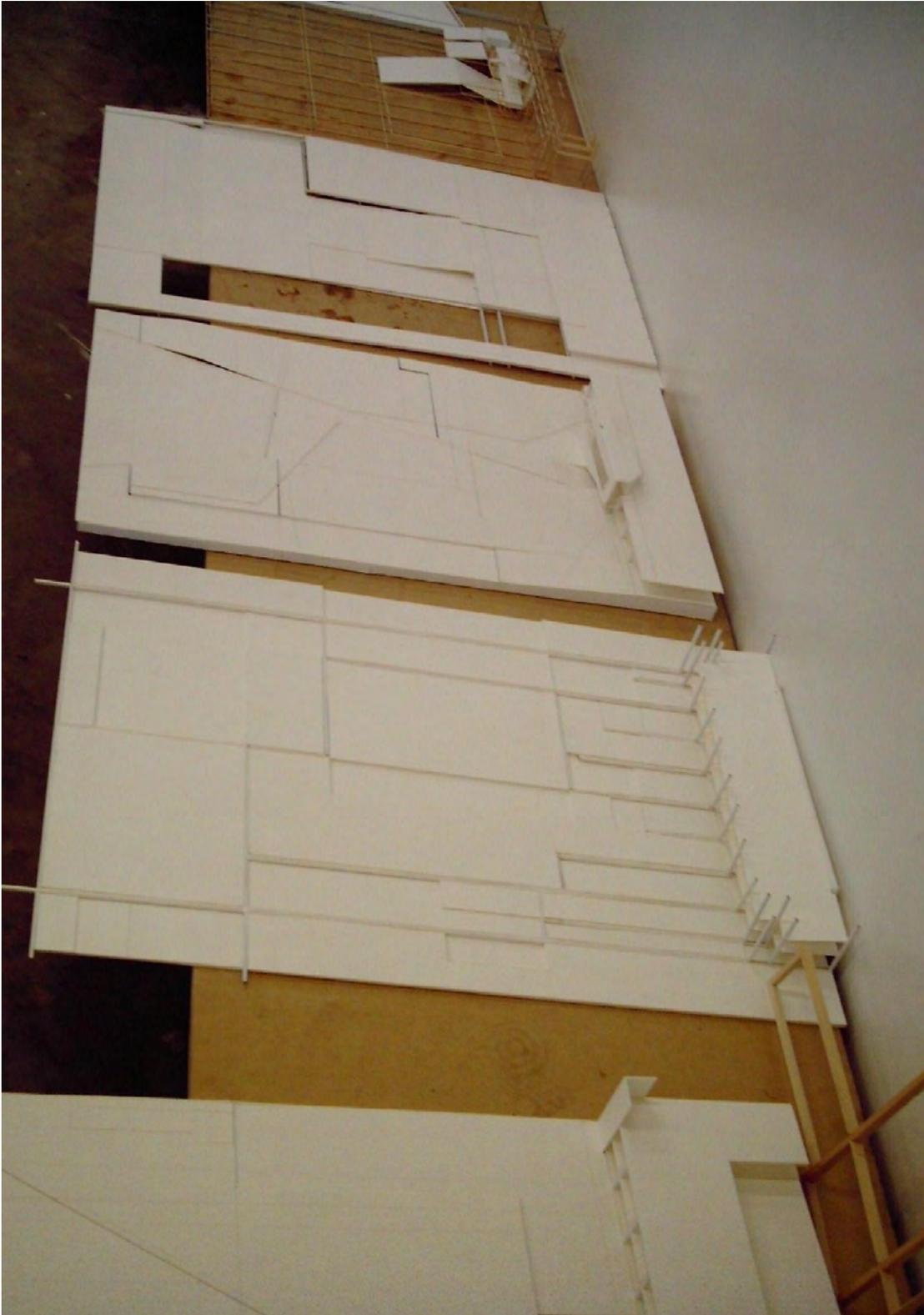


Figure 4-5. How will you build those flat planes you've drawn? How do you engage the imagination of surface?

think like a painter,
a musician. . .to source patterns

Find variations of spatial marking in. . .
scale ranges of planar subdivisions
scale ranges of constructed spaces

scale ranges of components

Construct a system you can put in play to define
space, surface and edge and **a project will emerge.**

Use what you have already done and already know.

Space, Surface and Edge...

GET GOING

If nothing else, **DRAW LINES**

we're somewhat slow today. . .

You're saying literal things when you need a design
based narrative. . . explain *why* you're interested in
what you're interested in. . .

Do what it is you're talking about. . .

(NINE – Tim Burton
The Trailer
9.9.09
shaneacker.com)

Begin to imply space in three dimensions that
connects the garage to the field.
Employ a conceptual framework. . .
This project requires a strong narrative.
...creating topographic landscapes. . .
topographic lines generate space and layers of
systems among components that are modular and
transformable. . .art exhibit – archery range. . .
rugby match – marching band

MIRAILLES/TAGLIABUE-EMBT
Emblematic characteristics of different zones

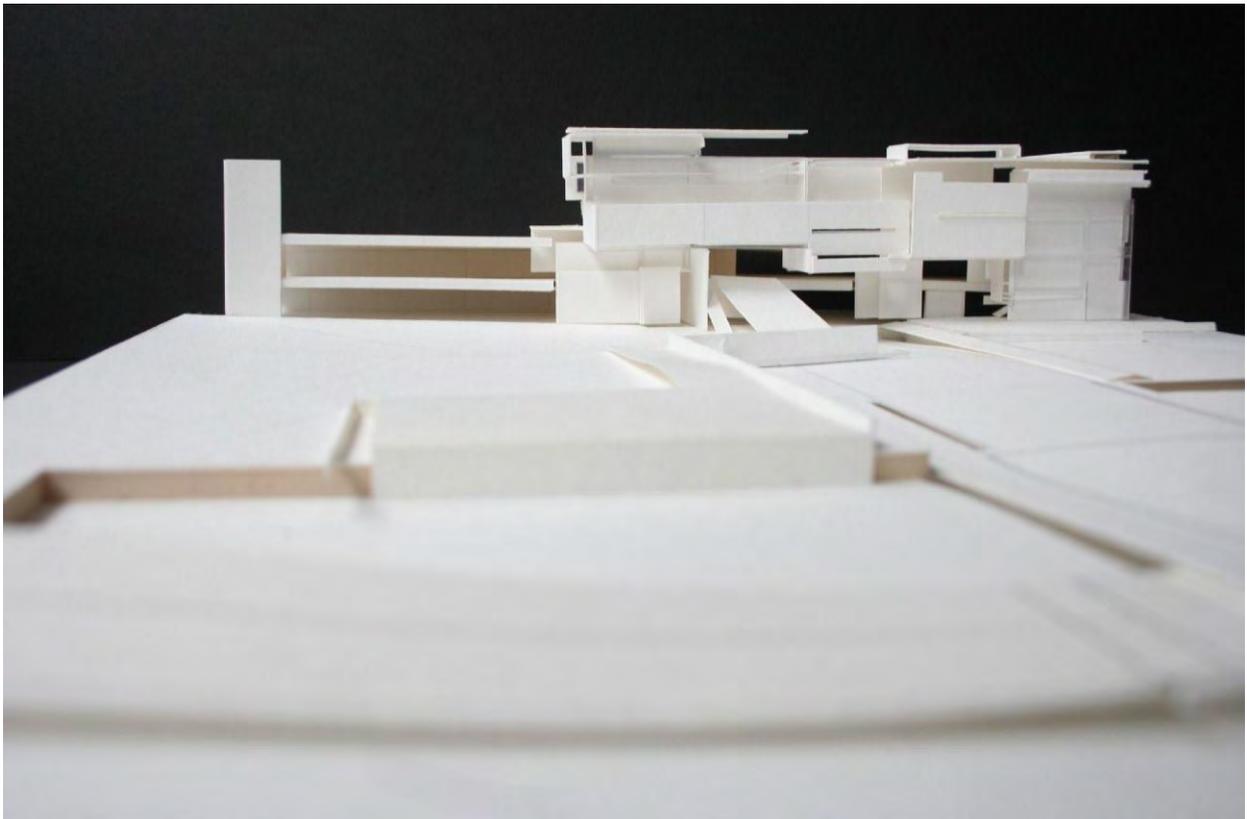


Figure 4-6. The ordering system governing your field should be something other than a series of random cuts. How can you create relationships with your intervention?

Occupying an edge – inserting program
places at the edge
between inside and outside
unnamed spaces
topographic breaks
creating topography
reconstructing topography

The studio is working, working, working away

Friday 2.13.09

Work day

quick reviews and comments. . .

Building the entire garage is completely superfluous. . .
Be careful how you spend your time. . .
Work on what you don't know, not what you know. . .

Those rising and falling planes are curious. . .

“I'm defining activities and resting spaces. . .”
What's beginning to happen. . . you're moving away
from things that are flat – away from the scored and
folded. . . you're creating spatially specific areas which
are literally separated and obstructing movement
paths. . . forcing choreographed pathways. . . (shifts
can happen but you need to imagine the possibilities
of free movement). I have questions about how this
field is occupied. You're creating territories, zones,
and areas so the idea of a continuous surface has
been altered. We need to find out what's going on
where you create these abrupt five or six foot
changes of plane.

Problems with meaning and gestures. . .

What are you thinking regarding this field? How does
it function?

“I just wanted to change it from a flat surface
and create areas where you might not be seen
from the garage. . . a notion about appearing
and disappearing, either in the garage or in
the field.”

What's happening in that corner?

“. . . areas of pause. . . I was, I did what you said, I drew lots of lines to form specific movements on the field.”

How am I supposed to respond to that? I see a flat landscape that's obstructed.

“I have different areas for entering or exiting the garage and for activities to happen.”

You might think about dealing with that specifically, in one area. . .

*

“A plane covers part of the garage, folds down and forms the pattern of the field. . .”

Or you could follow the plane up the edge of the garage from the field to a platform. There are suggested trajectories.

It's still surprising to have so little intervention and so much plane. . .

Trouble with systems and simple gestures. . .

The simple things are the hardest. . . for the versions of the Brno chair, Mies made three or five thousand sketches in the design process. . .

You have to build up complexity over time.

What does this mean?

Creating territories and gestures to see how the garage, intervention and field will interact together. If we called this a garden, what would it be a garden of. . . ? A garden of boundaries?

A Persian carpet takes an idealized garden as its pattern.

Some gardens are made to be seen and some are made to become lost in. . . by the nature of the edge. The landscape architect uses spray paint to mark and delineate planted areas.

So what do we have now? Formal issues.

Now I'm asking you for your stories. The minute you make marks, you change the space. How do those marks act to transform the occupation of space?

One sixteenth inch scale is at the edge of tectonic representation. This scale allows sets of gestures to be *implied*.

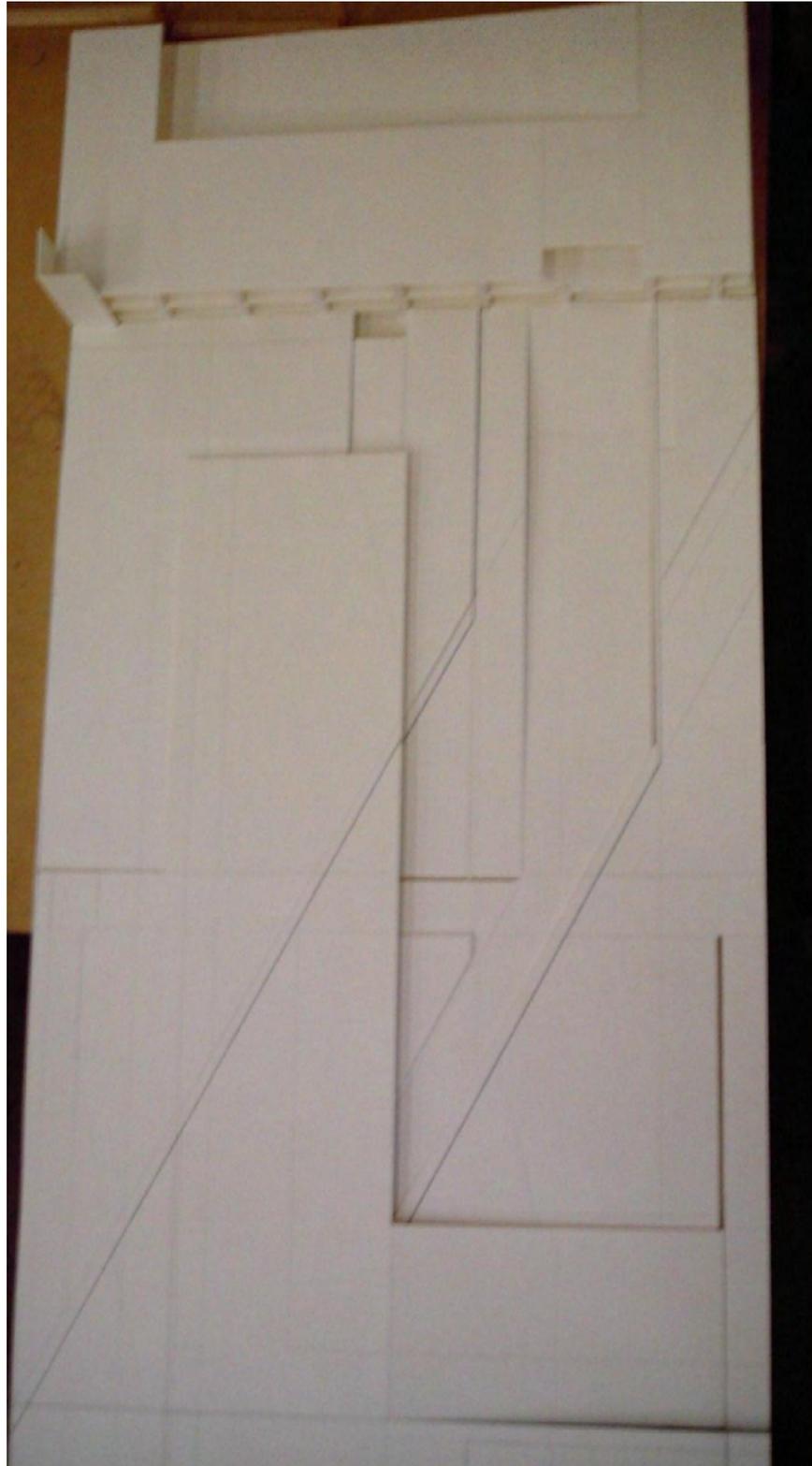


Figure 4-7. So little intervention and so much plane.

This work is too far along for the interventions not to be there.

Find the gestures that connect the field to the intervention in a way that the garage remains neutral (only lending support). . .gestures create tectonic links.

Cuts are gestures.

When you cut, what does that little gap suggest?

What is the narrative underlying your gestures?

What are these ribs intervening between the garage and the ground?

An inventive mediation between garage and ground is missing.

I'm not suggesting a different language, I'm asking you to do more with it.

There is movement between field and intervention. . . .

How do groups move. . .vertically. . .horizontally. . . and through intermediate spaces. . . ?

The garage is getting in the way. . .maybe we need more self-sufficiency. . .a folded plane could constitute a core structure. . .we need more delicacy and you'll find this by applying a greater range of scale in the components.

We have garages (to varying degrees) and fields and no constructed interventions.

We need to find more inventive ways of making gestures. . .

Build on the last exercise. All exercises here deal with performance and systematic application. Only the contexts, programs and responses differ.

Experimentation is necessary and critical. . .it's not goofing. . .it's carefully thinking through ways of making things based on past work and **not starting from zero.**

Language is manifested in speech, poetry, essays, novels. . .each form with its own ideas about control. Consider being able to remove the garage. Because the garage is there, some of these interventions lack certain aspects of structural integrity which were necessary in the last, freestanding, exercise and remain necessary here. In the last exercise the context was vacant, there was none. . .here, you need to be able to remove the intervention

from the garage so we can see its clarity and integrity.

“Do we have to?”

I strongly recommend you make it removable.

I also need you to work faster so we can see results faster. Extend the gestures to relate to the development of the field by 1:00 pm.

. . .should have first assigned a half inch scale intervention model interpreting the drawings instead of going directly from the drawings to the full *garage / intervention / field model*. This would have focused primary attention on the intervention as object and avoided 'bog-down' time devoted to garage and base (background) construction. In the absence of a constructed intervention (or at least a preliminary model), the field designs became an exercise in a kind of arbitrary formalism. The idea of making the intervention removable is a way to stop, refocus, and concentrate on exploring the mediative ideas necessary to transform the field in a meaningful way. We'll call this, **“Decouverte en route.”**

Make the garage, intervention and field separable. Focus on enhancing the structural integrity and clarity of the intervention as a joint. . .the intervention is a mediative and transformative gesture between the garage and the field.

Concentrate on getting the intervention up to speed as a source for new decisions about articulation of the field. **The intervention is seventy percent of this exercise.**

You'll start making programmatic changes to the field based on the development of the intervention.

'How it is occupied,' doesn't mean you need a laundry list of named spaces. Instead it holds implications about using, traversing through, moving within, occupying and connecting spaces.

Concentrate on making the intervention join the field. The garage is simply a Cartesian conceit of three dimensional, measured space.

Don't think in terms of the instructor.

The separability of elements allows you to consider three different things, as well as, the whole.
The thing has a given coherence.

The model should be far enough along by Monday to start a final drawing.

Experiment – work through a series of ideas. This project is to help improve and expand our thinking and making. It is about planning while doing.

You have the tools at your disposal and worrying about being 'neat' disrupts the enterprise.
Layering your ideas and developing your directions allows the cohesive work to emerge gradually and consistently.

Keep track of where you've been.

“The hidden harmony is stronger than the visible.”
(Heraclitus)

—
—

Monday 2.16.09
Where's the work?

Is it flagging desire. . .lack of inspiration?
Sparks are flying few and far between. . .we're either not thinking while doing or not doing while thinking. Maybe even not doing and not thinking . What do you think?

. . .expected to see study bugs, sketches, interventions, fields, process. . .
No marks, no attachments, no actions. . .

Put away the sticks.

Start today with the big gestures, seeing the field start to connect. . .your marks tell you what to do. . .without marks, you're lost.

What is that there for? What does it do?
envelop / planes / structure / space

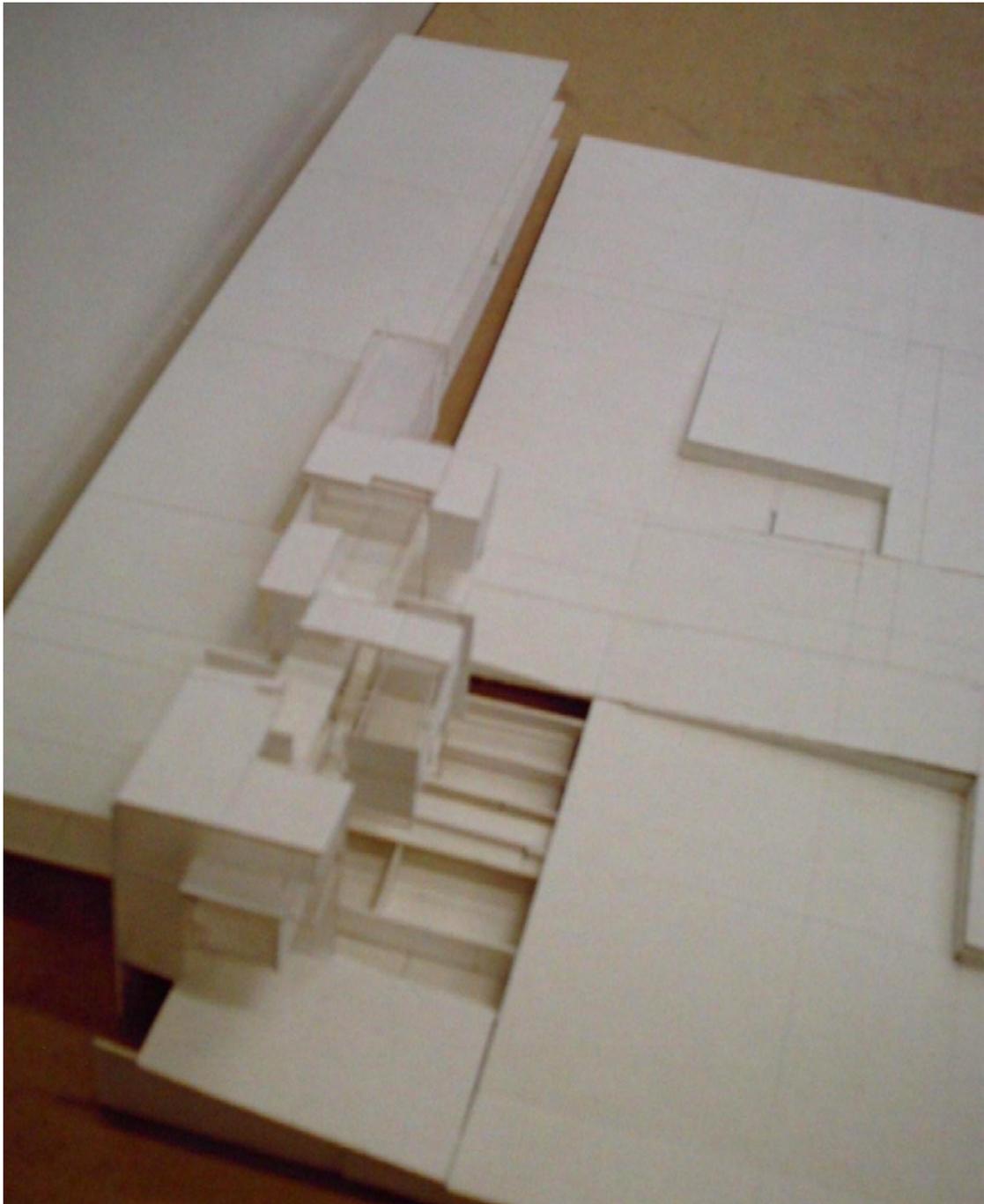


Figure 4-8. Keep the intervention separable.

LET'S GO!

It needs energy!

It finishes Friday!

Don't you like the project?

These things need to become lighter. . .
they need depth, lightness and air. . .
the model has complexity with a sense of
construction and support. . . explore ways of letting
light in. . .

Don't make volumes out of sheetrock.

Build up your ideas through experiment. . . look at how
spaces are enclosed by ribs or planes. . .

How do people look at each other?

How are scale and interest created at this size. . .

- through program
- edges of space
- sense of being in the edge
- construction / building up gestures

This is one-sided. . . it needs to enclose. . . the space
feels like it's missing the back half. . . integrate the
third dimension. . . it's not a stage set.

We need a language of enclosure and variable
context. . . from the garage outward and from the
intervention inward.

Has anyone used photography to examine scale?

HINT: We do these things because they work.

Anyone have a camera?

I am a camera

-C. Isherwood

Work more with the surfaces that enclose – not just
floor plates. . . think and work sectionally, doing that
disposes of floor plate *fixation*.

We're interested in how the section is explored at this
small scale. . . how are you able to enclose volumes. . .
I need to see you experimenting with that. . . trying to
work in section: working and visualizing in a linear
way. . . How do you create program and house

functions and cure the **back of house syndrome**.

*Enjoy abstraction! It is free of potties, equipment, storage and all the other things the some of you are trying to incorporate. . . .
...at the expense of invention. . . don't look for handcuffs. . .*

This might be a good moment to explore *rotation*
exploration of vertical space
suggestive of program
changes of scale
event spaces

The small components are pieces of the project's DNA

What are the relationships suggested between the field and the intervention?

How do the marks / scored lines create opportunities for reading and attachment?

To connect, you look for **congruent gestures**.

Find possibilities for connections, even if they change later.

Create explanations for your experiments. . .make your own.

What is that about on the ground?

What does it mean?

A material change. . .a pattern change?

What is your motivation?

Is it an idea about trying to imply depth?

Are there other instances where that gesture might apply?

Are there other situations where lines of movement are gathered?

Where is the gesture of the whole idea?

Show us that before you become preoccupied with specific areas.

Intentional misalignment. . . ?

Unintentional dissonance. . . ?

Start looking for the lines, cuts, openings that

organize the system. . .the modules, marks,
geometric logic and applied measure. . .
each can have their own rules. . .
and their own performative aspects.

Where's Version 2? Build Version 2!

How does that connect. . .?
Integrate parts A and B. When one is removed, its
marks remain evident.
Integrate the intervention with the field.
Get the construction up and going!
Have confidence in what you're doing!

Apply ideas of structure. . .the components are built in
similar ways at different scales.

How can I get excited about your project if I can't see
it?
The sticks you have there have to do something. . are
they frames pulling away. . .are they starting to make
space? Draw on and score pieces to indicate and
express scale.
How are you turning the corner by pushing out and
away from the edge? Really? Could you possibly
have it backwards?

What is that?

“What you're met with when you come this
way.”

And that is. . . ?

“A decision.”

Okay, a marker – something that allows you to
visualize an axis. Why do they slip past each
other? Are there any other similar gestures at
different scales? If a thing isn't named or identified as
a condition, it can't become something more.

Views of the landscape can be framed horizontally or
vertically.

What is useful to you from the last exercise that you
can build on here?

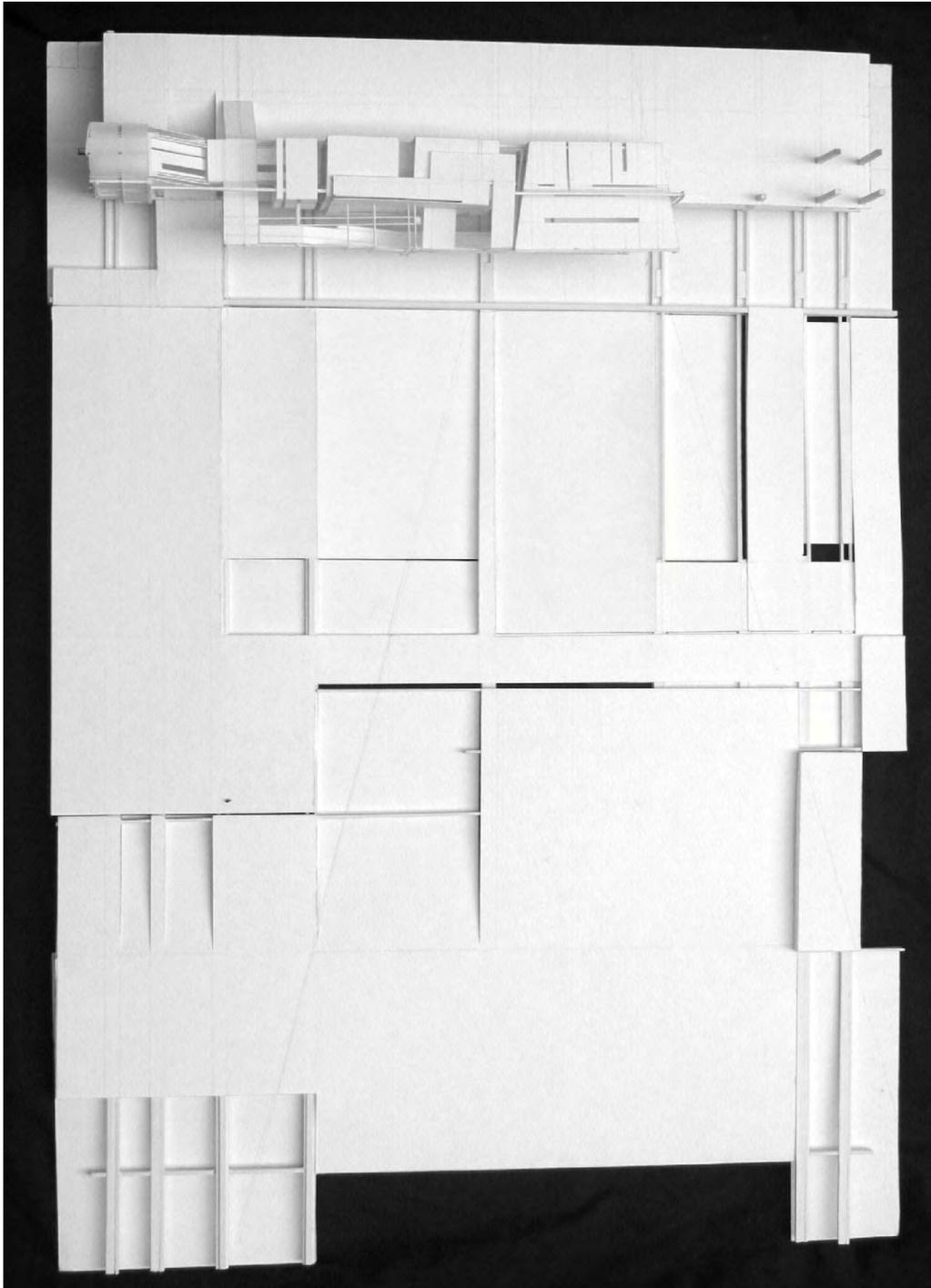


Figure 4-9. Exploration of congruent gestures.

Let's look for a more interesting and complex way for this to touch the ground.

Is it a bridge metaphor? Something that projects beyond its support?

A tapering projection suggests a kind of spatial experience.

Architects and sculptors share the ability of being able to be moved around in space.

Think of the garage as a series of implied mathematical lines – not necessarily shown. There are intellectual constructions. . .as such they have to have meaning, reasons, explanations, and names. They have to embody ideas.

“It's a bridge.”

Okay.

We know where the garage is. It's getting in the way of your ideas.

Where would we be if you had invested the time in your intervention that you've spent on the garage? Particularly if your garage shows neither evidence of how the intervention is connected nor specificity of place. Or, worse yet, isn't really complete in and of itself.

Be less focused on the flat surfaces (the horizontal planes) and more focused on the vertical sections. Think elastically in new creative situations – get in and around the physical, spatial exploration of architecture- suggest depth of layered spaces in all directions.

Use transparency.

Turn your models vertically, look at them in one eighth scale and build that horizontally at one sixteenth.

We need a way to energize this.

ATTACK ALL FEARS MERCILESSLY WITH THE SWORD OF RELENTLESS INVENTION!

Interest is created in your fields by the way you mark, scribe, and puncture the two dimensional plane.

Any studies of how to work with your field? Take a

sheet of bond paper, draw, score, and fold: work with the surface and do several quick studies.

Move from the embedded to the floating. . .avoid homogeneous spaces.

This project is about discovering vertical circulation as a public event. . .exploring the characteristics of performative space.

Working through ideas. . .start by asking what is that thing I just did? Does it mark a corner, begin a relationship with the field. . .? Work intuitively and reflect on what you make.

What happens when two thin planes are separated by a gap equal to their thicknesses. . .the gap sets off a line. . .explore the idea of a reveal being utilized at different scales.

What you're doing should be demonstrable:

The spatial experience vs, the object. . .

You could say, 'My bridge is a spanning element that is divided into three sections.'

Reflecting in action is reflecting on what you're making as you advance the project.

Embedded and floating / being in the earth and in the sky. . .

Recognize the joints as significant spaces. . .give features to the 'white board' by marking alignments and scales to show it's transformation from the literal.

A system of marks and lines becomes the implication of a system of frames.

Impart scale without having to build the micro component. Marks, lines and technique can relate both spatial configurations and scale.

The Drawing:

How you start a drawing determines how it will be useful. It is gestural. Concentrate on making the drawing quickly. The drawing will help in figuring out the field.

What about photography...what about lines and measurements?

Do you have an idea what it will look like?

Does it have mediative qualities?
All sections are transverse, end of discussion.

You have a model and a drawing to finish by Friday.

By thinking while you're drawing, you'll finish the drawing in two hours at the most
What is the drawing going to say beyond what is evident in the model?

Real TRUTHS:

- Now is not the time to experiment with technique: go with what you know best. This will allow you to concentrate on content and ideas: The what instead of the how.
- Answer 'what if' questions through process (building and drawing).
- Remain open to speculation. . .

Wednesday 2.18.09

Projects in progress. . .

Sections. . .ground planes merge into constructed space. . .
Extensions of planes and elements which hold space: wrapping, turning corners. . .
The analytical aspect of drawings recognizes different systems and motivations. . .
What is ground?
What is overhead?
The drawings are about ideas and exhibit varying scales of constructions. . .
Look at the coherence of your construction. . .
Bridge the frames. . .without something moving across them, they remain unincorporated little swing sets. . .they need a connecting gesture. . .
This frame is always one scale. . .decide. . .
-integrate context
-integrate structure

Use the drawing to explore how surfaces are made and marked.

Who has begun the drawing. . . ?

Don't let the lines emanating from the garage dominate the field. . .there are many MORE lines. . .overlaid gray tones aren't serving you in your efforts. . .line density creates context while certain lines extend beyond the drawing. . .interpret the field more completely.

You're totally attracted to the little dentures. Cover this up. Why is the garage exercising so much dominance when there are so many other sources of lines to apply to the field?

How and why did you decide where to put so many slots?

“To create space on the inside and be able to see the sky.”

They seem to all be the same dimensionally – it's hard to identify a pattern – where they stop and start or how they define space. . .you'd expect them to have differing dimensions, as a part of a system that acknowledges varying conditions and varying spaces. What are they related to?

“A typical residential window.”

Is this a house? Have you undertaken a survey of all typical residential windows? Light is controlled by an overhang, a slot of space, a frame that turns the corner. . .you make opportunities. . .windows allow you to measure things. . .It's the Corbu-Perret window argument. . .

either

the fenestrated facade represents an organization of human bodies. . .

or

the facade is a light envelope held in a frame. . .

Find a way to express patterns of measure with your openings. Cut it, change it, do whatever you have to do, this is a working model.

Express the transitions from space to space. . .
.define the major spaces. . .

Have something to terminate the procession. . .
Better to have the clear idea. . .

Recommendation: Rather than gluing this down,
allow it to float over the occupied space and become
a source of unity and measurement. . .the volumes
could have more visibly separate relationships to the
roof plan. . .the idea of datums. . .focused not
fragmented. . .

How would you hold that up? Things need to evolve
from sources of support. . .what's supporting the
whole thing? Then, your frame and skin only happen
in one direction. . .make your joints spatially evident
in three dimensions. . .think about your roof system,
how it both covers and defines spaces and shadows:

How it projects shade and extends space. . .think
about the systematic placement of openings in the
envelope.

Let's think in general about degree and quality of
integration: of space
 of ideas
 of components
 of elements
 of frame

. . .looking for how the frame is connected and moves
around as a system. . .

You still have the opportunity to cut things away and
see the space in these models. . .rather than
continuing to build up layers and just cover everything
up. . .you have to remain open to the idea of change
up until the last minute.

I'm making reasonable suggestions to you to help
your projects become more clear.

Isamu Noguchi first treated the earth as an object for
sculpture. . .use a series of folds that move in and out
but maintain surface continuity. . .instead of a series
of 'strips.'

What does it need?

“Height differences?”

Aspire to the language: . 'vertical contrast. . .'

There's a problem with how the ground plane moves into the project. . .the connection is being rejected. . . things need to acknowledge each other and form linkages. . .circulation is being invited in a specific direction only to meet a wall. . .specifically, the project needs to accept the field as it moves down and up and in and out. Your main entry spaces are completely solid. Here, you'd expect to see a substantial volume. Projections of planes are good but they need organization to define key moments. Where does the vertical circulation happen? We should be able to see vertically to give both orientation and organization to the construction. Make more vertical connections through your spaces.

In general:

This project is intended to help you work on your design process.

Marks of intuition. . .lines and marks represent thoughts. . .think through the project right up to the end.

If all openings are the same size, then every window risks being a 'picture window.'

Openings have relative scale and represent opportunities to create different spatial qualities.

WHAT IS THE FORMAL CONCEPT?

WHAT IS DRIVING THE PROJECT?

For example:

“Three envelopes with layered skins filled with light and air that encompass a performative spine, each with its own relationship to the circulation space.”

This is not a world of low expectations.

Why don't you make it less coincidental and more intentional. I need to see the basic idea about moving from the ground to the sky. . .through a sequence of spatial events and controlled scales.

You need to be more inventive with your surfaces and you need to use thinner paper.

NEXT

“I would have had more but it broke last night and I had to redo the garage.”

(the garage has become obsession obstacle)

“It broke last night. . .” The design curriculum presents the student with more than a fair share of mental obstacles, occasions for subconscious diversion, and psychological wheel ruts. The ability to diagnose and treat a myriad of stumbling blocks is fundamental to the skill set necessary to teach a design studio. The day to day interactions with the student affords opportunities to deftly inoculate against the intangibles that can infect the creative process. The student is assumed, ipso facto, to possess high intelligence and predisposed talent. Therefore, the student, given a guileless academic commitment, is ultimately dependent on the success of the instructor..

*When things 'break,' bring them in
and we'll fix them here.*

They'll probably be better for it.

What are those two sticks laying on the garage?
Raise them to match the height of the columns and they'll create space instead of barriers. This seems to be a lightweight, translucent thing...why don't we go with that?

Your projects have to have to solve a problem. . .
an intellectual, conceptual problem.

How'd the roller coaster get in there?

Frames with lightweight, thin materials have to be
connected to develop structural integrity. . .

translucent materials . .
smaller cuts

Looking for patterns. . .

[Primary
Secondary
Tertiary]

. . .and consistency as evidence of applied systems.
We're working in an abstract world that can be
applied to many variable situations.

Our students are (in plan, looking north):

Donald Low	Cory Thomas	Kyle Altman	Cybrina Ascanio
Nicole <u>Semenova</u>	Dustin King	Philip Rhea	Vibha <u>Agarwala</u>
Darren Hargove	Mary Frisbee	Steph Salvo	Joshua Fisher
Nicola Cowap	Dan Tynes	Carolina Llana	Mike Woodcock

Friday 2.20.09
I, the jury. . .

Today, divide yourselves into four groups of three
and one group of four jurors. . .the jurors will review
four groups of three and one group of four projects.
Yes, it does come to sixteen. . .

Reviews:

I don't see a relationship between the context and
the intervention.

I'm confused about what's going on inside. . .the
field doesn't give me a clear indication.

The exterior grid (surface) doesn't seem to relate to
the volume.

[HINT: See if you can characterize the formal properties of the project. . .i.e.: 'a floating roof with three distinct volumes, given the range of openings, the project may be about light. . .']

This one has a good relationship between dimension and context.

One long itinerary in the middle that grows up.
Don't see a hierarchy of layers in the drawing.
Like how the field lines are dominant but it's also confusing about what's field and what's intervention.
The drawing could use added tones for definition because the dominant gesture doesn't read.
This one is a lot about itinerary – there's a continuous path through the structure.
There's separation between occupiable volumes and the paths.
Three ideas are expressed and linked clearly by seeming to have the same manner of construction.
Does 'Family Guy' live there?
The third piece brings a new scale into the project.
The drawing gives a good sense of a project presented in three sections.

[Did they recognize things important to your work. . . did they miss anything?]

Too many comments were positive.

[So these are good projects but they have flaws? Identify the flaws.]

How could that third volume have been handled better?

[Can you characterize the diagram and the things that make it up?]

[Can you identify the formal properties?]

Looking at this diagram, we see two rectilinear volumes, one on the bottom, one on the top.

The lower one isn't subdivided.
The intervention is like an extrusion of the garage.
The entry isn't very clear.
It kind of pushes you away.
The drawing could show more control and organization.
The line weights are confusing.

[Why are they confusing, specifically?]

The layering isn't really controlled.

[What about the sectional relationship of spaces?
Can you visualize different volumes of spaces?
Are there spatial connections?]

Is there a three dimensional connection of volumes?
I can't see an enveloping gesture.
The field and intervention aren't connected.

[When you identify things that are arbitrary, are you saying you can't see spatial connections?]

Because of the scale of construction and the degree of enclosure, you'd expect the entry to occur on the left.
The facade has concealing and revealing qualities.
Does the structure work?
The drawing doesn't reflect the complexity of the field model.
There's no betweenness.

[Questions?]

How is the joint expressed between the garage and the field?

*Forgive me for loving this. The garage is connected to the field **through** the intervention. The 'joint' is the project.*

[Or between the intervention and the garage or the field and the intervention]

To ghost the garage is interesting.
But the intervention just abuts the garage without an integrated relationship.
The section has good spatial progression and compliments the model.

[A series of multiple sections is the way you study the sausage, although the models are more interesting]

[The project is part A and part C joined by part B and that determines the choice of section cuts]

[I'm more interested in THE WAY you talk about these:

- How are the joints expressed?
- How is the diagram of the intervention formally controlled?
- The relationship of the drawing and model.
- How is the view changed through construction?
- Are there program issues?]

[Can gestures, joints and circulation be too specific?]

[Could you characterize the model as a diagram?]

[A heads/tails situation?. . .a clear core from which things emanate?]

There's a sense of gear teeth in the connection between the field and the intervention..
The field and the intervention share characteristics at different scales.
You can recognize different spaces and scales and three different activities.

[What rating would you give the joints between the field, the intervention and the garage?]

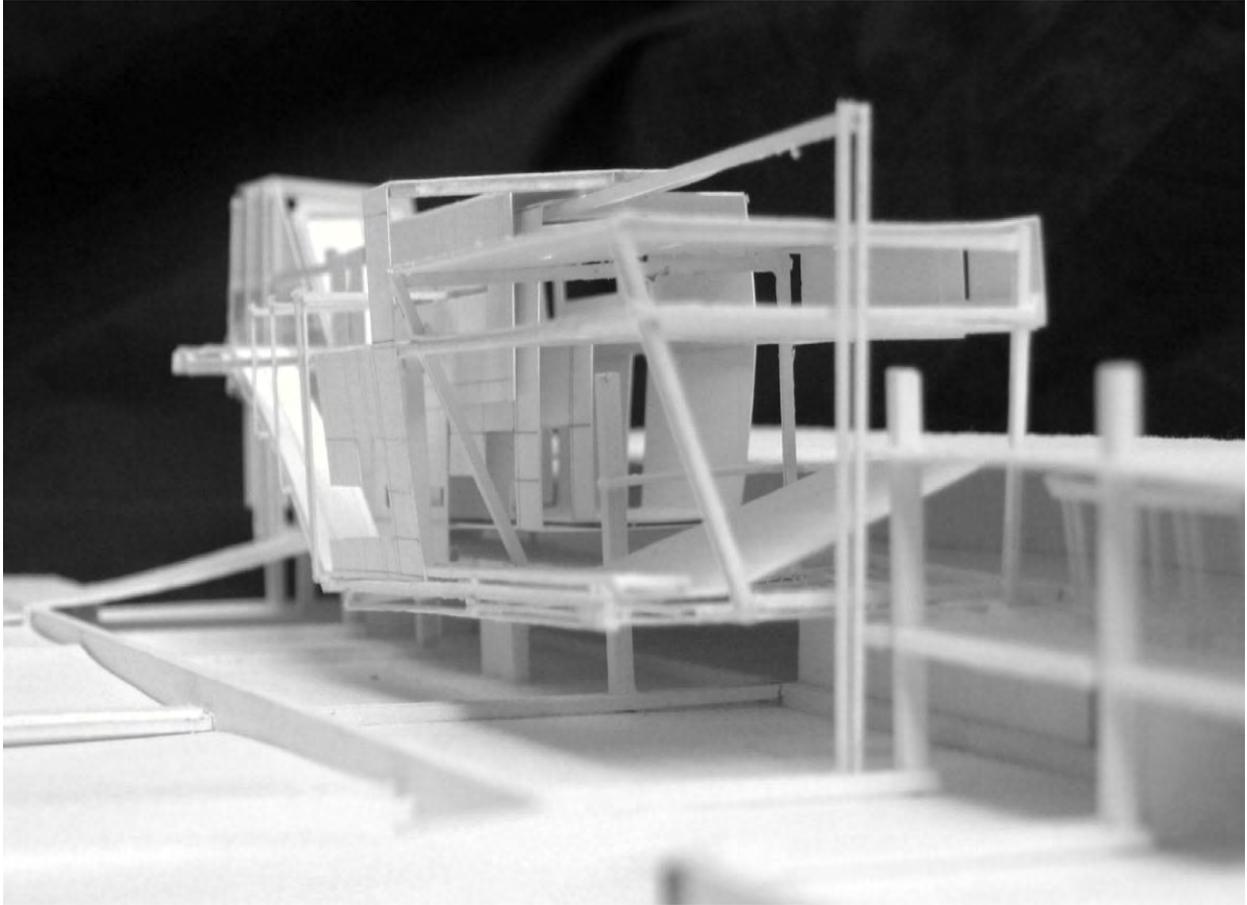


Figure 4-10. How are the joints expressed; how is the diagram of the intervention formally controlled; can gestures, joints, and circulation be too specific?

{How would you improve it?}

Its relation to the ground.

The scale of gestures at the ground is similar in geometry but smaller in scale to express a system. I can read a sense of program and occupancy.

[Is there an identifiable diagram?]

A railroad engine with wheel arms.

Tripartite construction.

A linear bar divided into three parts.

[It's Palladian?]

There's a main central pavilion with two extensions. The central section is the entry and it connects to upper, aerial wings.

[There are questions of clarity and emphasis. . .but the degree of articulation is improved and shows greater evidence of thinking.]

[I'd reemphasize the idea of diagrammatic clarity. It suggests the order of the whole.]

[The large move that organizes the details must be utterly clear.]

[If we went back and did this project again as a five minute model, how would you see *clarity of purpose* strengthened?]

[Your ideas have to be evident.]

[Always spend time reflecting back on the project: Both on where things went right and where things went wrong.]

[There are things embedded in treatises.]

(Treatise: a systematic exposition or argument in writing including a methodological discussion of the

facts and principles involved and conclusions reached)

We have an existing building and an existing field with an intervention as a connection.
It's not a literal construction. . . it's an ordered tectonic abstraction.

Pattern

The Labyrinth: a spatial riddle
a torturous structure

Daedalus, etc.

The field has a sense of continuity as opposed to the embedded and hidden.

Monday 2.23.09

**Gallery:
Combined D4 Exhibition**

Vertical Model

Vertical Diagram

Garage / Intervention / Field Model

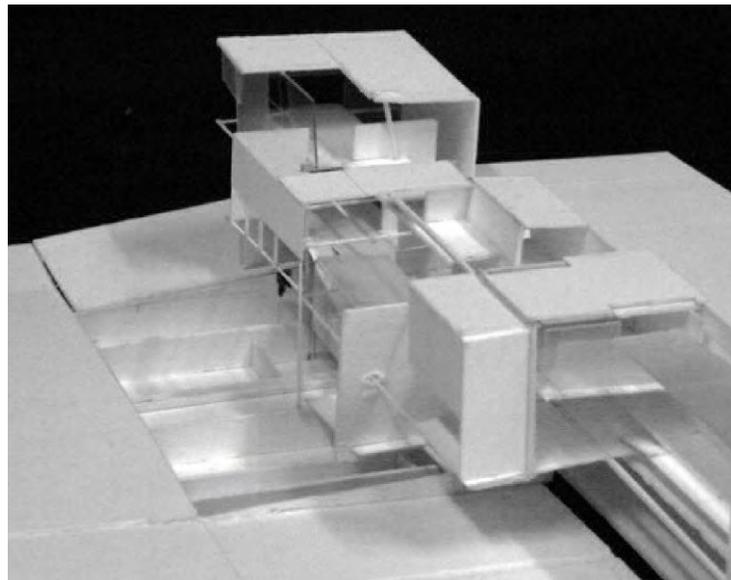


Figure 4-11. An existing building and an existing field with an intervention acting as connection...an ordered tectonic abstraction.

CHAPTER 5 EDUCATION AND PRACTICE

Alignments and Discontinuities

To what degree is architectural education obligated to reflect the professional ideal? Members of the profession frequently feel obliged to offer commentary on the academy. It is often favorable and positive, sometimes critically judgmental, but always at a steady flow. Architecture, like all disciplines formed largely by the exercise of artistic skill within a specific technical framework, whether in the design studio, workshop, atelier, conservatory, or professional office, is learned primarily through an interactive process of discussion, suggestion and demonstration. Knowledge is transferred as the learner's engagement with a specific problem or activity finds convergence with the instructor's insight and reciprocal reflection. This process is not complete upon transition from the milieu of the academic to the practical. Nor is it expected to be as eligibility to receive a license to practice is contingent on completing a documented period of professional internship. Architectural education, in reality, consists of two contextual phases, each with specific spheres of inquiry, priorities and responsibilities, but firmly united by an empirical overlap within the parameters of purposive architectural thinking. Lawrence and Sharag-Eldin are among educators who have raised the issue of, "discontinuity between education and practice models."¹⁰ Discontinuity is typically understood as a function of the academy's failure to incorporate, "concerns for a strategic management paradigm informed by new and

¹⁰LAWRENCE, A. and SHARAG-ELDIN, A., 2000. Reconstructing Models of Studio Pedagogy in Response to Models of Emerging Professional Practice. *Presented to the Association of Collegiate Schools of Architecture National Conference*, Los Angeles, CA.

emerging theologies in professional practice.”¹¹ As presented, the argument remains dominantly substantiated by anecdotal evidence and founded on a wobbly syllogism: Models of architectural practice change / Architectural education serves as preparation for practice / Therefore, models of architectural education must change. To achieve even partial validity, this reasoning depends on a universally homogenous template of structure and priority which standardizes all practice within a consistent model. Empirical evidence contradicts the existence of such uniformity. In fact, as Tschumi has pointed out, the third dissociation has resulted in an expansion of practice forms. Education and practice, when seen as overlapping but distinct phases, are characterized by their individual spheres of inquiry, priorities and responsibilities. Within the academic sphere, these may be seen as the wider constants of ethical values, scholarly knowledge and acquisition of skill. Within the practical sphere, these are the narrower variables of applied technology, commercial reality and market dynamics. Architectural education serves as the gateway to the intellectual realm of the profession and professional life. “Architecture is not knowledge of form but a form of knowledge.”¹²

Invented Conflict

Certainly, the curriculum must respond to significant transformational advances as they occur in practice such as, the adoption and integration of digital drafting tools. However, advocates of, “alternative models that can effectively prepare students and address change in professional practice,”¹³ view the curriculum, and thus the academy, in terms subordinate to reigning market and industry trends. This view suggests a preference for

¹¹ Ibid.

¹² TSCHUMI, B. and WALKER, E., 2004. Avant-Propos: Bernard Tschumi in Conversation with Enrique Walker. *Grey Room*, (17), 118-126.

¹³ op. cit., Lawrence, A., and Sharag-Eldin, A

the delivery of short term technicians over long term architects. It erroneously favors the mutable priorities of the practice over the constant values of the academic counterpart, favoring the executive over the formative. The educational model specifically designed to transmit basic practical skills is available through vocational school. This is not the form of architectural education necessary to the profession. Reconfiguring the curriculum is not the best solution to the problem of discontinuity. It conveys the hint of confrontation that will, in lieu of agreement, inevitably produce boundary skirmishes between two friendly battalions. There is an implicitly more cooperative and thus, more productive approach to discontinuity and attendant issues related to the transition into practice which will be discussed in a moment.

Sustaining Transition

In the general circumstances of practice, as Bob Burnham has acknowledged, the act of design often receives only cursory attention in relation to the overall volume of office time. Similarly, the unyielding realities of rigid schedules frequently prevent modifications once the object is in play, "Design has always been a relatively small part of the professional service, at least in terms of the time devoted to it. Technical development, construction documents, bidding and supervision require more time and hence greater portions of the fee dollar."¹⁴

The day to day constraints of practice, contrasted with the freedoms of academic inquiry, argue more for professionally driven, practice-specific, entry level tutorials centered on knowledge areas deemed critical in the transition from the academy to the profession, than for the curriculum to become subordinate to, determined by, or

¹⁴ BURNHAM, B., 1988. Specialized Knowledge, Professionalism and the Discipline of Architecture. *Journal of Architectural Education (1984-)*, 41(2), 53-55

reconfigured to reflect the transitory issues of practice. Instead, based on the premises that an architectural education spans from the academic phase into the early professional phase; that discontinuity and alignment between these phases is a subject worthy of ongoing concern; and that continuing education has become a mandatory component of practice, it would be more productive to address issues of practice-specific education through a structured program within the first year of professional activity. Such a program would be designed to be flexible, responsive and topically relevant. Lawrence and Sharag-Eldin¹⁵ have proposed management, project development, delivery processes, emerging technology and material innovations as contemporary subject areas worthy of inclusion. This proto-professional program of courses would be accessible via the internet. The progress of candidates would be administered, ideally, by either the AIA or the NCARB. It would improve the present system under which candidates for professional registration must accumulate value units in specific areas to become eligible for licensing by enabling access to certain categories which is frequently complicated or delayed by the realities of practice. This scenario would allow the profession to take active responsibility for issues of discontinuity, alignment and transition, establish a platform for cooperative engagement between educators and practitioners, augment office experience as the sole resource for the early accumulation of professional knowledge and refocus pressures to dilute or compromise the scope and orientation of the academic curriculum.

¹⁵ op. cit., Lawrence, A., and Sharag-Eldin, A.

Place and Priority

If design is the recipient of the smallest portion of time in professional practice, then its central role in the academic scaffold is, indeed, appropriate. Design is the learned ability to think critically and act on perception. The academic design studio is the place where critical thinking is integrated with action. It functions as the link between theory and practice. It is the path to practice, not practice itself. It is the place where architects themselves are designed. To pretend it is the place to simulate practice abrogates the responsibilities that belong in the second phase of architectural education at the expense of those that belong to the first. The academic phase of architectural education is distinguished by its central discourse on meaning and understanding its deployment in the action of design. "In all matters, but particularly in architecture there are these two points: The thing signified and that which gives it its significance."¹⁶

The design studio, "enables the means to signify to be exercised within a context that provides the opportunity to learn what gives architecture its significance."¹⁷ This is the central purpose of the academy.

The core products of the architectural office are not buildings per se, but ideas and their representative documentation as drawings. The economic cycle of practice is ultimately based on the delivery of documents through which the idea of the building is translated into reality as an object. A project may remain unrealized in built form after the time for design, technical development, coordination and preparation of necessary documents has been invested. The decision not to proceed with a project after the

¹⁶ op. cit., Morgan, p.5.

¹⁷BRADY, D.A., 1996. The Education of an Architect: Continuity and Change. *Journal of Architectural Education* (1984-), **50**(1), 32-49. p. 40

pertinent documents (drawings) have been completed rarely, if ever, absolves the Owner of his remunerative liability for their preparation. Thus, the documents which are produced in anticipation of construction represent the building in draft form.

The drawing work, once performed by artists on whom the office depended for skillful, nuanced, drawing production (the draftsman), is now accomplished at great speed by the digital robotics of CAD machinery. CAD offers the means to accurately delineate concepts of form and structural complexity beyond the feasible limits of hand drawing. The implementation of this geometrically powerful machinery, however, has removed the immediacy of the relationship between the artist and the drawing.

Mind and Hand

The relationship between mind and hand that is marked by challenge, risk and anticipation when engaged in drawing, becomes neutralized in the medium of CAD. Trust in the tool displaces the knowledge and confidence of the operator, effectively diminishing, “the mental understanding of the user.”¹⁸ Separating the mind and the hand removes their creative linkage, mutes the imagination and inhibits development of drawing skill.

“Skill is a trained practice. Modern technology is abused when it deprives its users precisely of that repetitive, concrete, hands-on training. When the head and the hand are separated, the result is mental impairment – an outcome particularly evident when a technology like CAD is used to efface the learning that occurs when drawing by hand.”¹⁹

In terms of architectural education, the reason for this objection is, because most computer applications intended to support architectural design involve a sophisticated

¹⁸ SENNETT, R., 2008. *The Craftsman*. New Haven: Yale University Press. p.81

¹⁹ *Ibid.* p.52

abstraction of the graphic process as a series of digital commands interpreted by software as images on a monitor. The consequent absence of immediacy in the relationship between the artist and the work renders the machine inappropriate as a tool to teach drawing. Because the machine effaces the learning that occurs when drawing by hand, it is a tool reserved for users with substantial, manually acquired graphic knowledge. This should be seen in context as an objection to the notion that it is productive to introduce digital tools such as Auto CAD prior to, or in the place of, instruction in the core manual skills of drawing and making.

Connecting the hand and mind is to say drawing while thinking; to form a creative linkage of perception and expression. Practice and repetition through a series of exercises strengthen this linkage and conquer initial fears. The student acquires a basis of confidence and command to manage the risk and anticipation inherent in the process of marking and gains early experience with exploration and experimentation. “Drawing and sketching – pencil to paper – is still a first means of developing...ideas and designs.”²⁰ The relationship between mind and hand permits avenues of discovery in a way that is immediate and open to generating a cycle of design information. This cycle of thought merges with the medium of formulation. “Like other architects, he drew – he could only have drawn – as much as he knew at the moment, constructing the drawing one step at a time, with his own response to each drawing stroke calling up the next stroke. The sequence of stroke/response/stroke constitutes an iterative drawing cycle, not just from one drawing to another, but stroke by stroke anywhere within any

²⁰ RISKIN, N., 2008. Class Syllabus: Drawing as Thinking for 2.007: Linking Eye and Hand for Better Design, MIT School of Architecture.

drawing.”²¹ Thus, in early design education, the student must become inured to holding a conversation with the drawing.²² Drawing becomes an active agent in the design process and the means to work abstractly in the design task. Initial drawing exercises immerse the beginning student in a process of stroke/response/stroke, generate a practiced confidence in the hand, and a sense of individual authenticity. “It is in the process of drawing that functional concerns are first overtaken by the desire to express emotion.”²³

Establishing the connection of mind and hand is the initial portal to an academic process which must include the gradual incorporation of multiple digital tools.

There are digital opportunities beyond the idea of CAD that can be exploited in the early design studio to develop core skills through exercises in drawing and modeling in tandem with the notebook computer as a fundamental studio tool.

²¹ HERBERT, D.M., 1992. Graphic Processes in Architectural Study Drawings. *Journal of Architectural Education* (1984-), **46**(1), 28-39. p.30

²² SCHON, D., 1983. *The Reflective Practitioner: How Professionals Think in Action*. Basic Books, New York.

²³ ZAMBONINI, G., 1988. Notes for a Theory of Making in a Time of Necessity. *Perspecta* (1988), 24. 3-23. p.10

CHAPTER 6
ARC 2304 – A CONSTRUCTION IN THE DESERT

Imagining The Horizon
A Construction for Land Artists
Synthesis of D4 concepts and methodologies

speculative inquiry
systems of scale and measure
transportable language
conditions of corner and edge
layering
occupancy and circulation
interlocking space

Context: **Black Rock Desert, Nevada**

An endorheic basin. . .
ecological diversity of deserts. . .
a dry lake bed. . . .

recreational activities
scientific activities
artistic activities

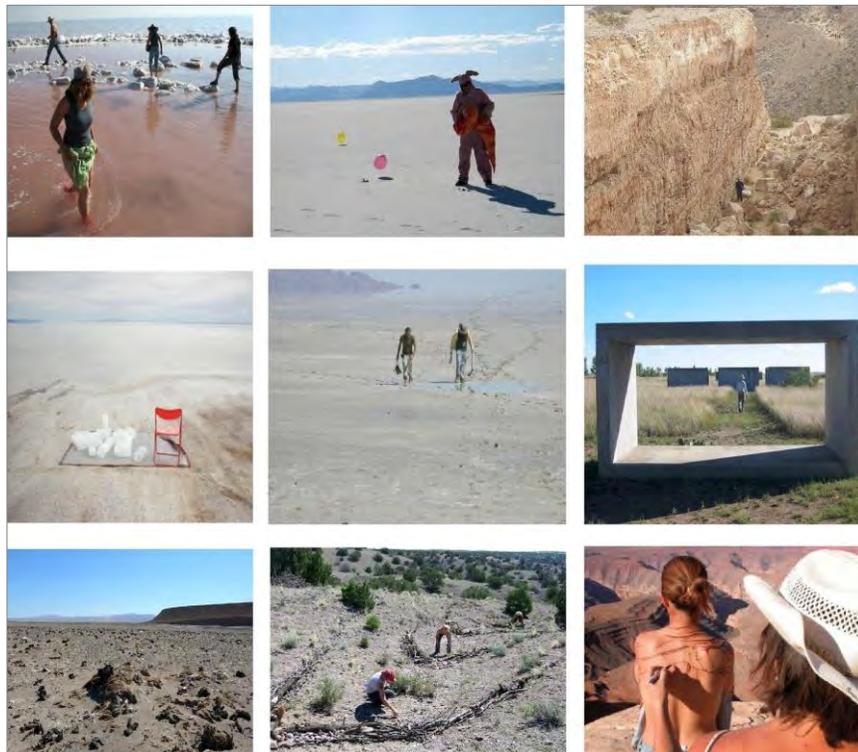


Figure 6-1. Propose an intervention for recreational, scientific, and artistic activities.

record breaking activities
amateur rocketry
absolutely flat, level, and smooth. . .
climate and temperature considerations. . .
geological history. . .
Here the prehistoric *Lake Lahontan* existed
between 18,000 and 7,000 BC. . .
a plane immense enough to visually manifest the
curvature of the earth
a featureless earth scape bounded by mountain
ranges
Impart scale and measure. . .
The disorienting vastness of the landscape
eliminates the sense of scale, no reference exists
for tacit measurement of the body relative to the
environment. . .
A flat plane large enough to accommodate vehicles
moving beyond the speed of sound. . . (766 mph,
1997)
Tracks still exist from journeys made centuries ago-
branches of the California and Oregon Trails. . .
Packed earth, dense and stable. . .
The intermittent Quinn River. . .
Moisture seeps up from the ground, there is
geothermal water (Fly Geyser) and occasional rain.
Atmospheric illusions: Mirages- separation of
ground and horizon. . objects appear to hover. .
Site for Burning Man. . .
Black Rock City . . . (415)-TO-FLAME
(08.31.09 – 09.07.09). . .
five levels of tickets \$210 - \$300
Bring your dust proof matches and personal lubricants
GERLACH LIVE WEBCAM

LAND ART. . .

creating a territory through gestures
Program based on performance

Land Arts of the American West

<http://landarts.arch.ttu.edu/>

Chris Taylor

Bill Gilbert

To understand social ecological history

Projects dealing with scale

Establishing a sense of scale where no apparent scale exists. . .

Dealing with a scaleless context. . .

Spewing rocks and erupting waters

Landscape as cinematic context:

Bad Day at Black Rock

The Four Feathers

Gunga Din

The Little Prince

Lawrence of Arabia

Saint Anthony of the Desert

Dune

Stargate

Sahara

The Road Warrior, etc.

Idea of sacrifice. . .

A demanding and deadly environment. .

What's required for civilization to survive in the
desert?

How is isolation a way to gain understanding of
self?

Program Guidelines:

Imagine trying to position the land artist into this
ecological context. . . into this (physical, spiritual,
and psychological) scale of environment. . .

Two days to two weeks spent on location, bringing
all supplies in two vans. . . sixteen people. . .

working, eating, gathering, sleeping. . .

The landscape is an art field. . . a place to make
things. . .

Suggest areas of shade, shelter, water, and
community with a system of measures and marks/
considering sun angles, distances, directions. . .

How does this project emerge. . . ?

-Systems of marks create systems of measure

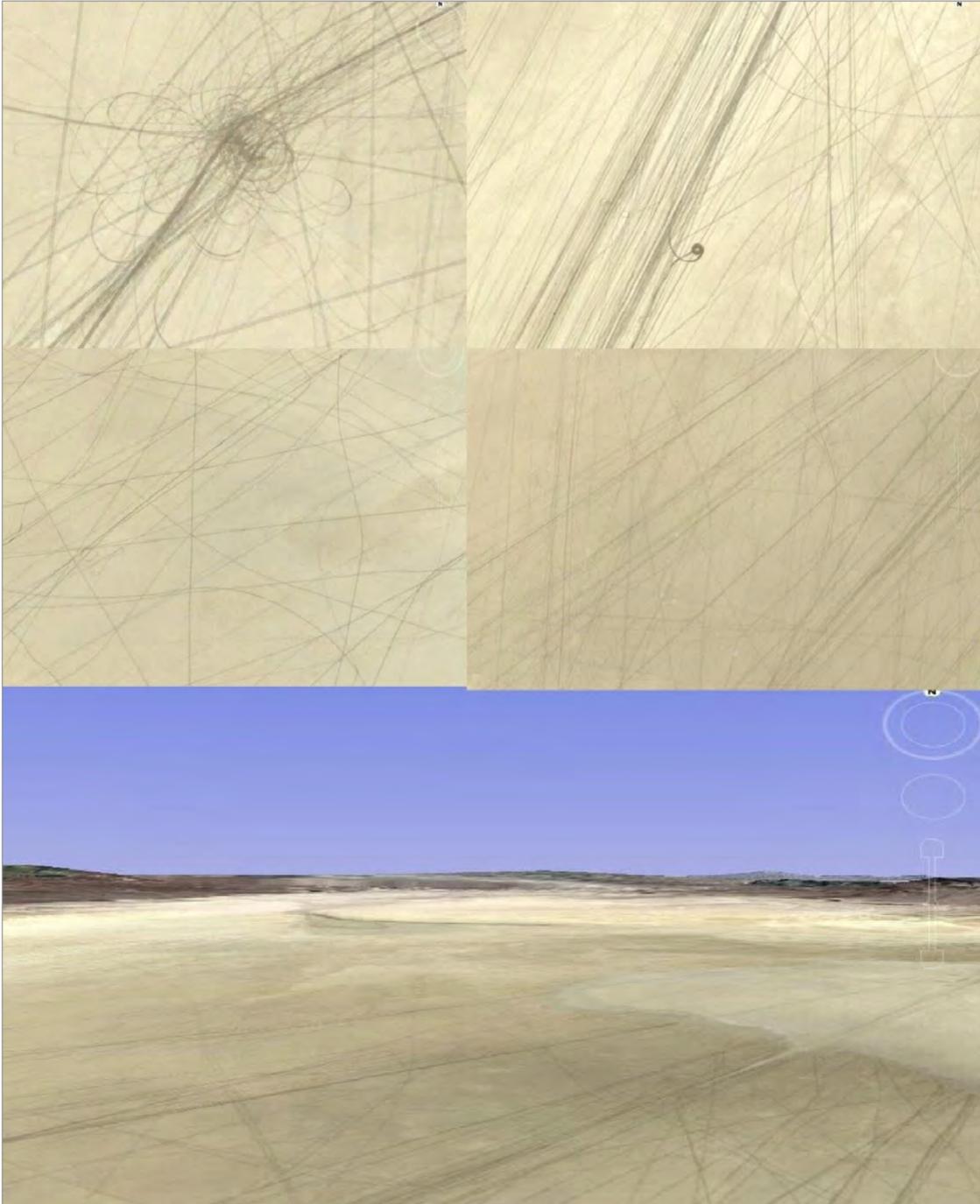


Figure 6-2. Aerial images of surface markings.

- Shade creates spaces
- Places that contain water

MARK SCRIBE PUNCTURE FOLD

For Wednesday. . . .
three alternative ideas as 18x18 low relief study
models, experimenting with enclosure by cutting
and folding single sheets of paper. . . 1" = 50' . . .
with accompanying texts. . .

one B/W 8 1/2" square photo of each alternative
taken in raking light. . .

. . . **E x P e R I M E n t.**

Wednesday 2.25.09 **Image the horizon. . .**

Low relief models / drawing investigations

Sets of markings rather than objects in space

Acting to project rather than acting to gather

These studies are within your repertoires. . .
they allow you to quickly investigate and idea
and move the process forward

The studies, drawings and texts need to have a
cohesive quality. . .

You're thinking through and examining ideas as you
put tools and techniques to use. . .

How were theses photos approached?

“. . .laid a flashlight flat on the table. . .
thinking about how to show context
and how scale changes in the photos. . .
tried to get inside the construction. . .”

Recognize the horizon.
Of your three models, two appear to explore curved

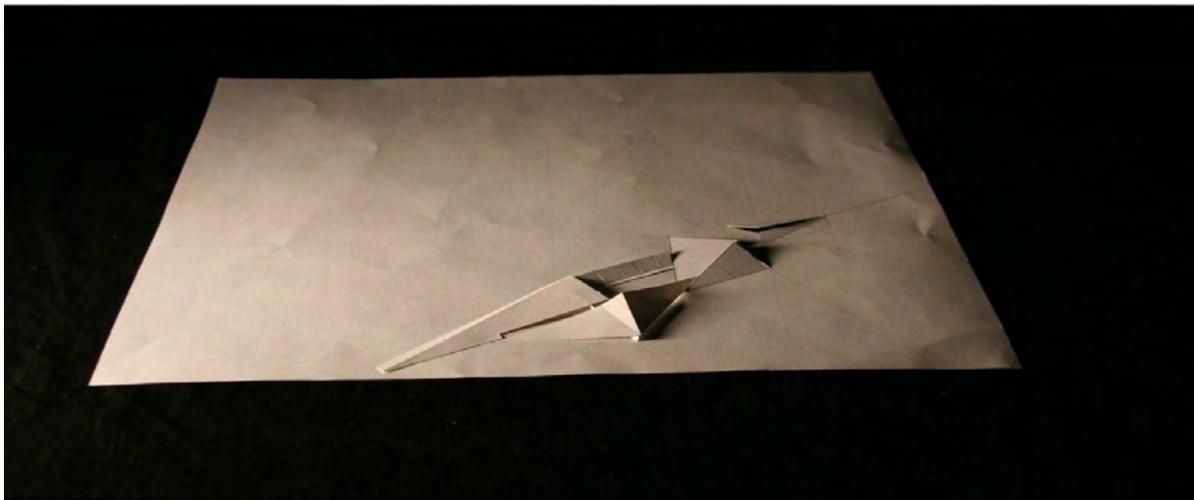
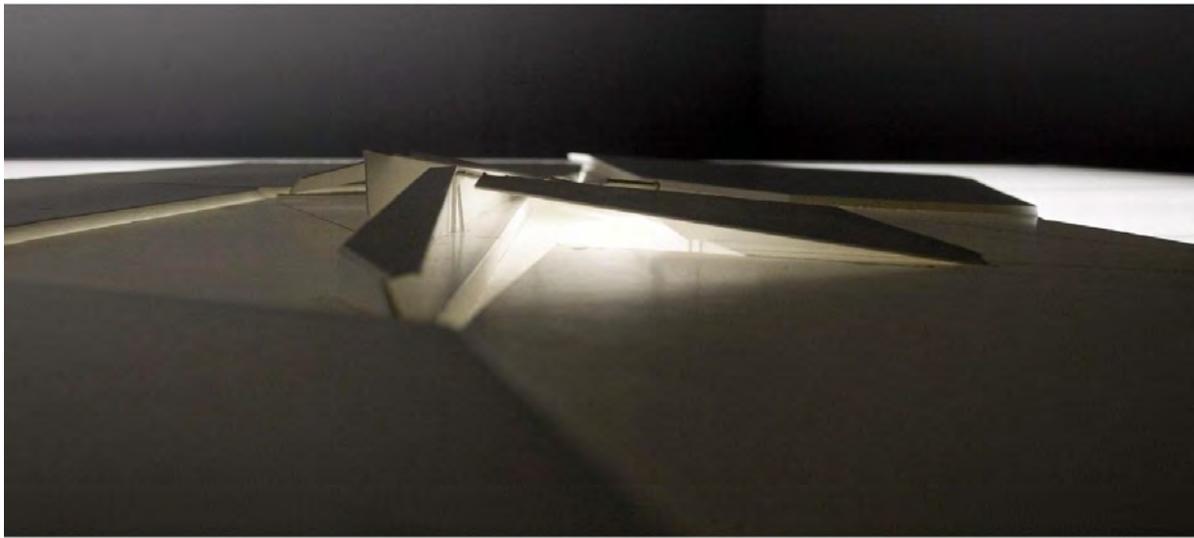
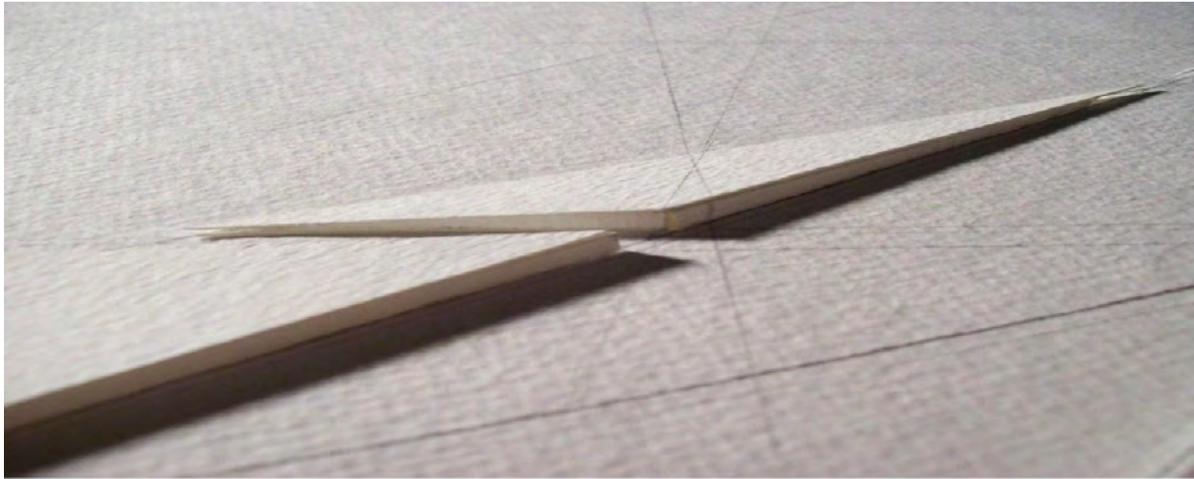


Figure 6-3. Three low-relief study models.

gestures and radiating lines, and one seems almost urban in pattern and density. . .

“ . . .I explored circular geometries (Vitruvius' Tower of the Winds and the woman as a geometric figure) to create relationships to wind and types of wind. . .”

The winds are prevailing from the SW in Summer and from the NW in Winter. . .

There are sandstorms. . .

What about the need to create shade. . .the opportunity to develop an organizing roof, structuring sun and shade. . .

The 'shade' versus the 'out there' gestures that distinguish or create a dialog between the practical aspects and the ideal aspects of a construction. . .

This is an operation in two radically different scales. . .one is measured by miles, the other is measured by man. . .

Context-----Event

The roof is scaled to the context. . .it makes sense of the landscape. . .it can point ways. . .

There are two important components of this project. . .

- how to mark the field
- how to house (contain) the group in shade

Scale is demonstrated through construction. . . connecting the dimensions of the body with the dimensions of the context. . .

Explore how to become more a part of the landscape. . .more about making and extending out from a place and less about an object in the landscape. . .

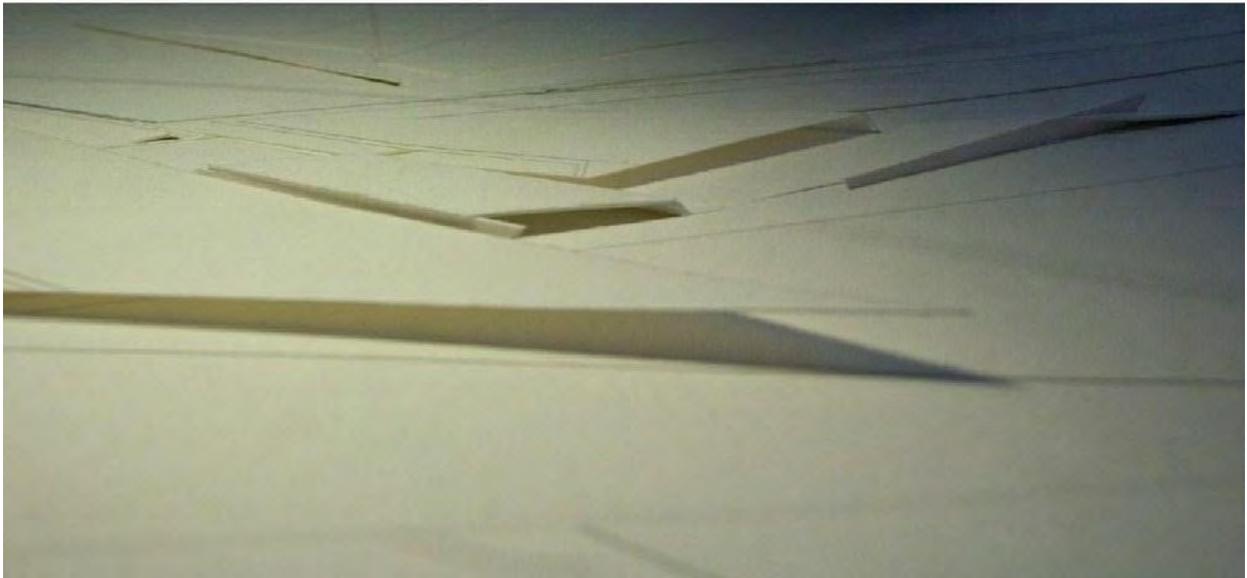
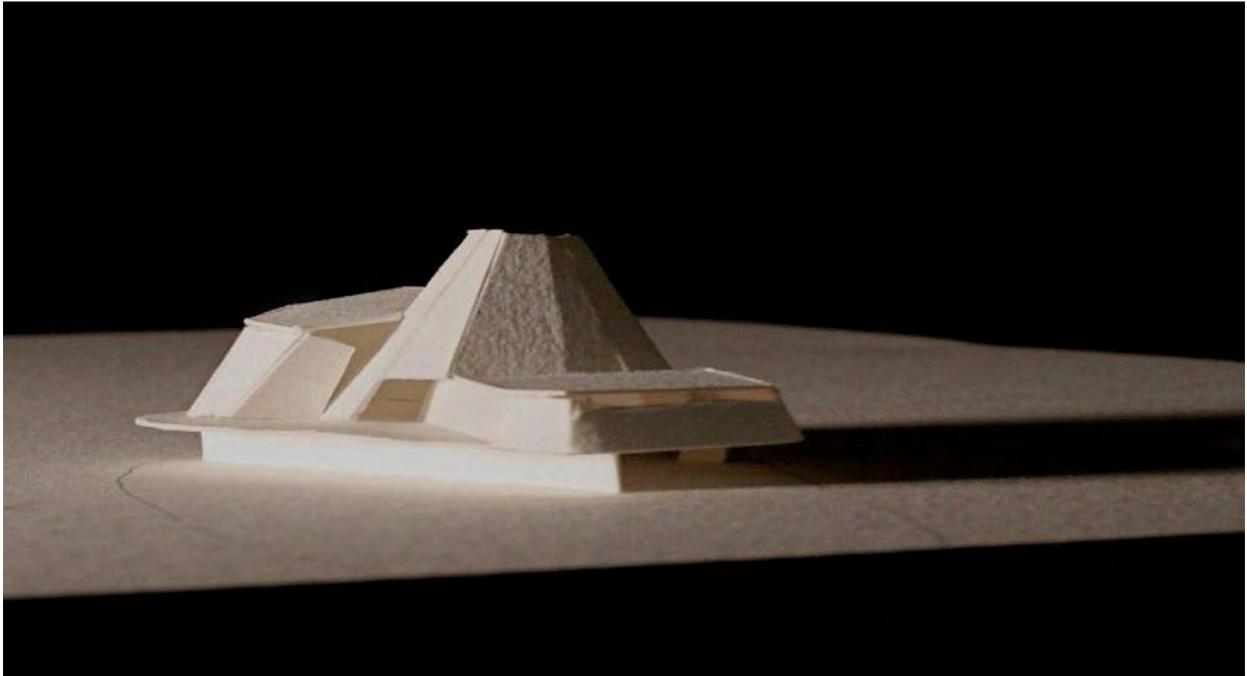


Figure 6-4. Explore more about making and extending out from a place and less about an object in the landscape.

Look at Michael Heizer's *Double Negative*

Mormon Mesa / Overton, Nevada

a chasm split by a chasm. . .

A work about what's not there. . about what's
been displaced. . .

. . .scale cuts for this flat landscape

There is no 'sneaking up' on this place. . .

approaching things become visible hours before
they arrive. . .all surrounding activities are
apparent / visible / overt – presented by context. . .

We're not seeing any vertical markings of place. . .

Acromancy. . .

acro = height

mansy (manteia) = divination

height not necessary to survey surroundings. . .the
horizon is a virtual reality..

a vertical mark would be a reference for the inbound

The Alhambra is a rugged fortress without. .

A voluptuous place within. . .

Externally fighting for existence. . .

*Internally a realm devoted to literature, science and
the arts. . .*

The horizon is curved. . .the distinction between
ground and sky is blurred

From where are these constructions approached?

Survival is a real consideration. . .

time is spent moving around in vehicles and
conducting activities. . .

groups of people range through the
landscape. . .

Indian trails, borax wagons, routes to the west and
speed trials are marks of use. .

Most are rifle-shot straight. . .

How are those that aren't different?



Figure 6-5. Generative diagrams exploring marks of use, topography and hydrological patterns.

A road is a specific thing and easy to follow. . .
either leading to or leading away. . .

Directions of approach reveal differing scales. . .
a low side
a high side

The direction of approach initiates the project and
offers an opportunity to create anticipation. . .

Any works of art, poetry, cinema, literature in mind
as catalyst. . ?
Generative ideas. . ?
What about perception, cubism. . ?

This site is generally free of issues about ecological
sensitivity. . leaving open an option to create your
own ecology. . .

Deal with analytic and syntactic principles. . .
break down form. . .
use abstraction as a generative tool
be conscious of shifting perspectives

Consider expanding points of view and multiple
vantage points. . incorporate motion. . .

In his cubist incarnation Picasso kept to traditional
subjects but depicted all surfaces of an object on
the picture plane. . exploring the analytical
dimension. . .

*"I begin with an idea and then it
becomes something else."*

(Pablo Picasso)

Barnett Newman - abstract expressionism and color
fields. . .

*". . . Man's hand traced the stick through the
mud to make a line before the learned to
throw the stick."*

(Barnett Newman)

Jackson Pollock- abstract expressionism, drip painting. . .

The term 'action painting was coined by Harold Rosenberg. . ."the painting is an event. . ."

"When I am in my painting, I'm not aware of what I'm doing. It is only after a sort of 'get acquainted period' that I see what I have been about. I have no fear of making changes, destroying the image, etc., because the painting has a life of its own."

(Jackson Pollock)

Acknowledge nuance and intensity of light in your model photographs. . . don't use colored light. . .

Experiment with the idea of using photography to visually expand beyond the physical reality of the model. . .

How did you do that?

"I used the light table to illuminate it from below. . ."

Creating a nice sense of being illuminated from the interior. . .

Transmit aspects of occupation. . .the specifics of occupation. . .in a way consistent with the clarity of the idea. . .

Illuminating the model from below exposes the boundary shift between night and day. . .more complete aspects about the nature of light are revealed. . .light from above, light from below. . .

(looking ahead to Friday)

What would you do next?

What would you tell me to tell you to do next?

We're probing. . .

We'll change the scale by enlarging the landscape and the structure. . .

We'll incorporate the idea of shade as space. . .

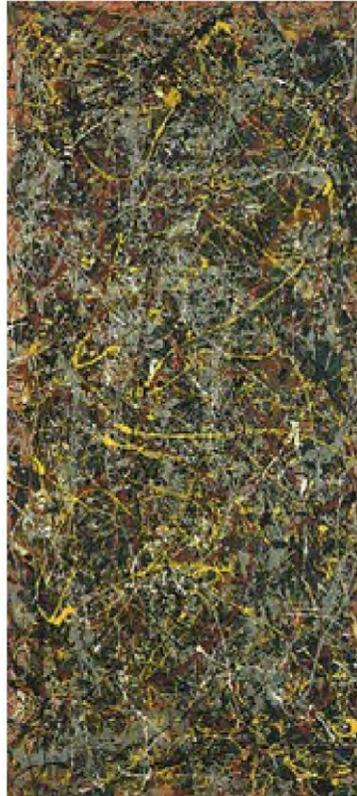


Figure 6-6. The collateral arts expand boundaries of creative thinking. Clockwise from top left: Newman, Picasso, Pollock, and Duchamp.

Merging tectonic modality with context modality. . .

Speculate gradually and avoid focusing too quickly on your initial gestures. . .

Use your drawings to create and explore the narrative more fully. . .

For Friday:

-Write your own assignment on 8 1/2 x 11:

PART ONE

State goals and objectives /

List methodologies and anticipated results /

Expand on the didactic /

Bring a copy for the class

PART TWO

Do the assignment

[Hint: reveal evidence of your approach as the author. . .]

We'll judge your execution. . .

Friday 2.27.09

Risk, experiment, and speculate

. . .while remaining cautious not to outrun yourself.

.

There's a tendency among a few of you to make premature decisions. . .to settle. .

Are you sure it's time to make decisions about final form. . ?

Trust your intuition and skill, thinking while making.

The program is occupied by people doing things . .

Be second year students learning about design through abstraction, not pretending to be

architects. . .thinking **literally** limits your range of risk, experiment and speculation. . .

*. . imposing limitations subconsciously
succumbing to the temptation of the*

”conventional” restricts the range of formal and spatial invention. . .enthusiastic exploration becomes sublimated by a predisposition to 'settle'. . .cognitive restraint in response to the threat of “too many options”. . .risk avoidance is an obstacle.. .

Don't be a beaver over-thinking his dam.

Today we're not making a critique so much as looking for ways of thinking and working that will benefit your projects. . .

Why do we want make and look at sections. . ?
They reveal how we're dealing with heat, light, space, and enclosure. . .

Which of these give you the most in terms of possibilities for acting, moving forward. . ?

(discussing hard line translations of freehand sectional studies)

Are the cuts all oriented in the same direction. . ?

Explore the continuity of surfaces and planes. . the idea of a vessel that contains a construction. . .

Rather than redrawing and formalizing, it may be more useful to continue with investigative sketches

Why aren't some of these sketches six feet long?

(in allusion to context)

Exploring the ambitions in height and depth. .

technique as generative tool -engaging a process of serial inquiry on a roll of cash register paper. . .i.e.:

Looking for ways of study that help you know what a place is about. . .

a contour drawing – a figure study of a subject's geometry and form. . .

topographical study. . .

Think about and determine what questions are posed by your sections. . .what are they asking?

How is the intervention located. . ? If you're truly building up an idea, I'm not sure we'd see lines like that. . .

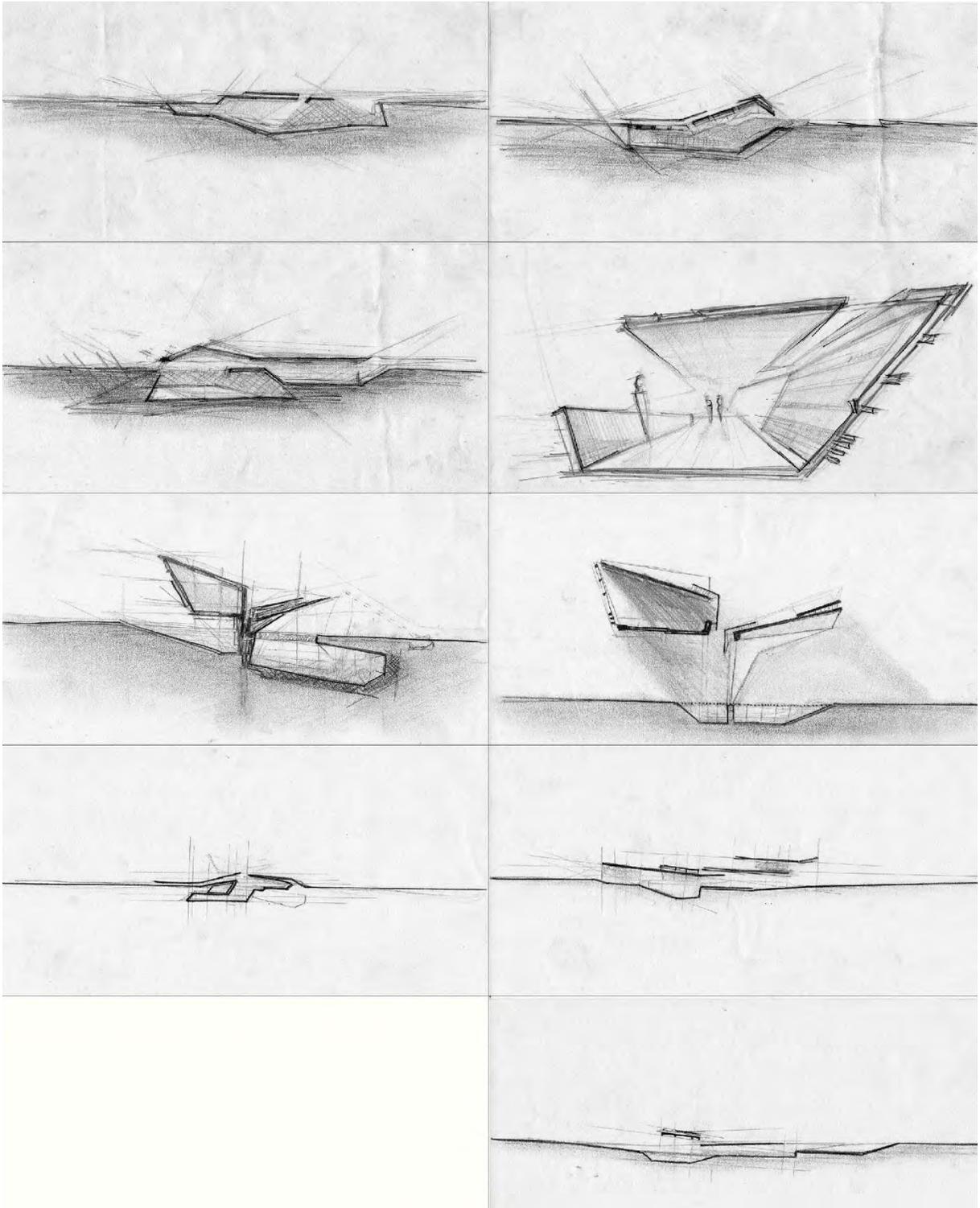


Figure 6-7. Determine the questions posed by your sections. This isn't about constructing a gorge or a mesa.

This isn't about constructing a gorge or a mesa. . .
refocusing away from diversionary pursuits. .
.The value of this work lies in the process of thinking
through the project. . .making decisions about what
you're doing - what direction to take. . .

You construct with your imagination. . .

What can you tell me about your assignment by
looking at the product. . ?

“ . . .to create three study sections, exploring
the character of spaces between the ground
and roof planes. . .”

. . .concentrate on techniques that involve cutting,
carving, inserting and creating labyrinths, while
avoiding building up plates and layering over
volumes. . .

. . .what happens in the relationship between the
overhead and the ground. . ? Revisit the ideas
covered in the plenum project. . .

A drawn thing or a shape is never a single line, it is
a constructed element with surfaces in three
dimensions. . .it has space and thicknesses. . .

You're working to organize systems of light,
shadow, air, space, scale, and measure. . .

Do your sections and models help to understand
scale in the context of 'measureless infinity?'

What is this. . ?

“I'm using Duchamp's *Nude Descending a
Staircase [No.2]* as a generative image. . .
an aerial view. . .”

“ . . .**an explosion in a shingle factory.** “
(NYTimes art critic Julian Street, 1913)

There can be problems when you use a famous or
very famous image in juxtaposition. . .What does
this really allow you to explore. . .? This is an image
composed of a series of superimposed images. .of a
subject in motion. . .there are implications of stop-
motion photography. . .

How is it generative in terms of the internal program. . . ?

tacit suggestion that the exercise is not principally about form. . .

Think about other ways of imagining the idea of correspondence. . . *so above : so below, a heaven, an earth, ideal borders, the physicality of ideal borders. . . the earth as a magnificent composition*

Is it possible to reverse engineer any of these projects. . . can you interpret the assignment by looking only at the resulting product. . . ?

i.e.: here's the artifact, what thinking created it. . . how do the physical facts of the thing express the intentions of the builder. . . ?

. . . the two part assignment in question (p.69), begged to be undertaken in reverse order. . .

How do you inhabit the desert. . . ?

Water moving down, earth moving up. . .

You may have too many assignments in your assignment. . . a cascade of ideas presents problems on multiple levels. . . it's better to distill them down to a manageable set. . .

The object here is to more fully explore an idea you attach yourself to. . .

What were some of the ideas. . . ?

. . . movement of water

How are water or erosion expressed tectonically?
As a vessel or vessels, the construction of channels.
. . . things that hold water but can also be empty. . .
. . . containers. . .

Water becomes the narrative through its presence or absence. . . tectonic devices for containing water. . . **containing people. . .**

Three thousand gallons. . . what quantities. . . ?

Quantity can become a significant issue. . .



In Australia, **Glenn Murcutt** incorporates cisterns, gutters, and spouts. . .tectonic expressions of the active relationships between natural systems and architecture. . .You can appreciate the scale of the event even when it's not raining. . .

This axonometric projection is interesting. . . a cross between drawing and model. . . it's beginning to extend the program into the site-clustering versus axial, linear organization-creating territory with a meandering line.is there a contradiction between the grid-like elements and the folded shapes. . .maybe it's too early to say. . .it does enable a kind of simultaneous reflection on a variety of things. . .

What does the square represent in the middle. . .it's a different geometry within a drawing more or less based on folding lines. . .

Architects that have been inspired by nature. . ?
. . .that's a long list. . . **(every single one, possibly, in one way or another. .from Imhotep on down. . .)**
Wright's work was consistently rooted in the notion of the 'organic'. . .his 'tree' columns don't literally look like trees but are structural metaphors. . .an idea about grounding. . .anchoring in and coming out of the earth. . .reaching out into the landscape. . .
Late in his career his experimented with spiral forms. . .

The notion of organic is not: "It looks like. . ."
The 'it looks like' approach will lead you to a dead end. . .**it's about capturing the principle of a thing,** being inspired by the organic in a metaphorical sense. . .

Can something be a building and a landscape at the same time. . .embodying the qualities of both things in a construction. . ?

Thinking forward to 3.2.09. . .

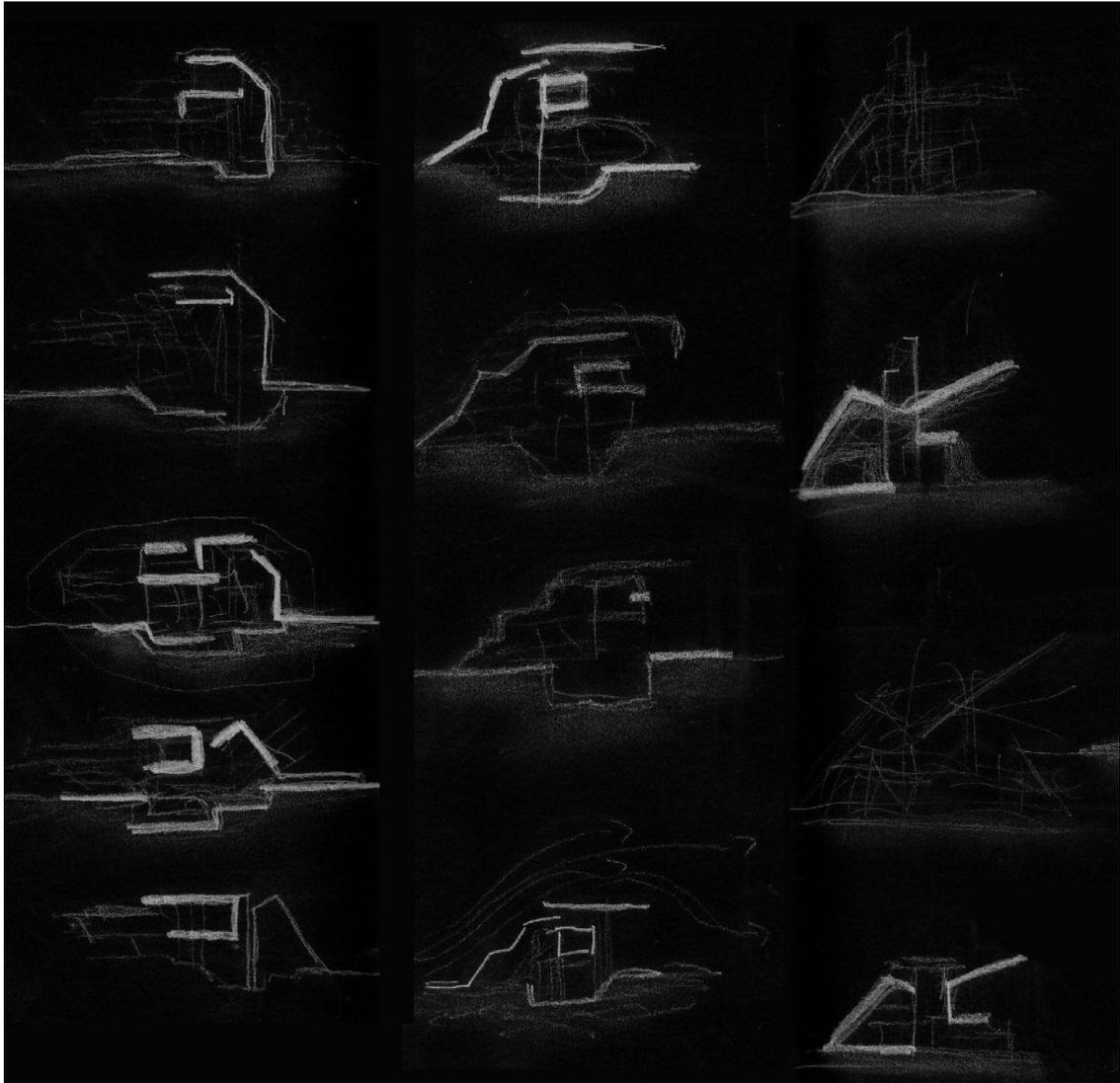


Figure 6-8. A thing could be both a building and a landscape.

We need more analytical sketches and diagrams. . .
. . .don't wait to be told how to make a drawing. . .
The process of constructing your own assignments
requires thinking about ways of making something.

By implication, this project includes large territories.
It's an oasis of light, visible at a very long range. . .

CONTEXT

The field must be present in the construction. . .
We're making an intervention *in the landscape*. . .

For **3.6.09**. . .
Three components. . .

-intervention study model (1:20)
-a site diagram (1:500)
-4-6 b/w model photos with text

advance the work of the initial studies. . .
the existing field is integral to the project. . .
what is the moment at which the desert becomes
part of your project. . ?
photos are not just to document but also convey a
way of looking at the work. . .they have an analytical
aspect. . .
be conscious of varying light values.
. . .the model is monochromatic. . .white. . .this
minimizes certain ancillary issues, and concentrates
the focus on tectonic decisions. . .while you enjoy
the formal properties, as well. . .
You impart clarity in the way you build. . .
And, ultimately, you have to establish the territory of
the project, its limits and its boundaries. . .
Constructing a field outside an object.

Monday 3.2.09
Work in progress. . .

Positioning a vertical marker as a response to the
horizontal distortion of the mirage. . ? Yes.
Couple that with the idea of setting up the an

approach sequence. . .**a system of arrival. . .**
orchestrating movement from miles away. . .

A large, visually powerful, orienting gesture about
which the remainder of the project would organize. . .

Don't see many major roof / shade gestures. . .

Orientation relative to the cardinal points would be a
strong device. . .

We're anticipating finishing up on Friday, right?

Three Components. . .

Which ones are working and why. . . ?

(open discussion of models and sections)

. . .stick models feel like a series of channels
moving horizontally. . .and this isn't about water...?

. . .the attached verticals are by default all a part of
the one thing. . .

There needs to be an apparent reciprocity between
the construction of the intervention and the
construction of the land. . .the exercise is to look at
an idea about how a construction and the ground
are connected. . .the *construction* touches the
ground in a way that establishes dialogue between
the two. . .

. . .visual continuity between construction and
landscape is enhanced by subordination to the
monochromatic. . .

The work has to reflect *evidence* of your
thinking. . .**discussion of your intentions is simply**
evidence of underdeveloped work. . .

The degree and scale of cuts – fractions of inches-
suggest the beginning of tectonics. . .

. . .**the context offers a formidable range of scale to**
animate and amplify the project. . .from the cosmic
to the micro. . .

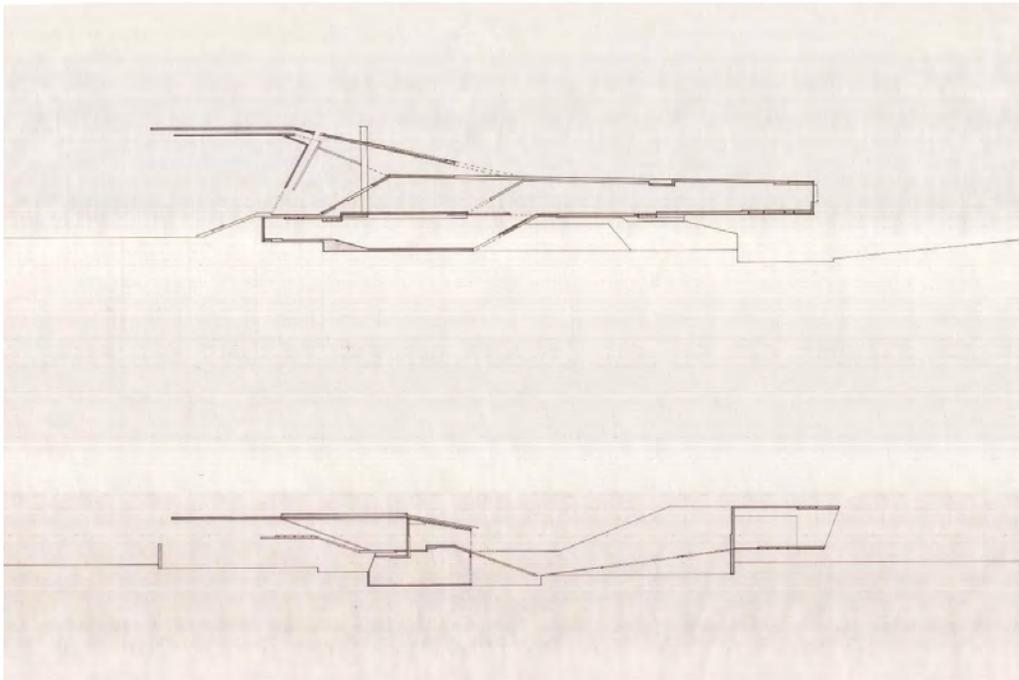
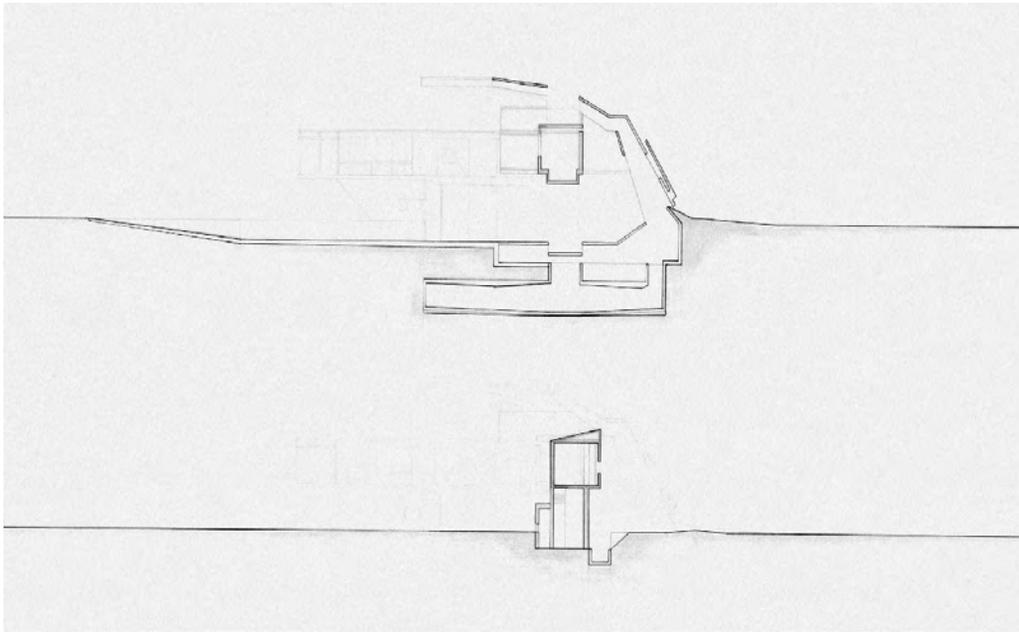


Figure 6-9. Position vertical markers as elements of an approach sequence. Understand the ambition of your sections. How does a system of linear elements create space, provide scale, and connect to the ground?

How does a system of linear elements create space, provide scale and connect to the ground. . ?

What is the ambition of the section. . ?

. . .engaging in discourse on the concept of **stochastic thinking** (the idea of being skillful at aiming, targeting, or guessing) could augment the methodological set of *cognitive path-clearing tools*. .

Thus far this is the smallest program, yet it has the widest area of influence. . .this should be evidenced in the section. . .

Use height. . .heat is a core consideration. . .

hot climates generate exaggerated vertical sections-

vertical frame systems are also sets of lines in the ground. . .they read the same. . .if one is a given scale, the other should be different within an established hierarchy. . .create primary, secondary, tertiary, etc., systems. . .

think about the relative scale of the representational materials. . .thin paper is sufficient. . .**and will more clearly reveal the need for structure**. . .

Develop evidence of support- long spans require proportional depth of structure. . .planes need to double up, be of variable thicknesses and some system of supporting frame. . .these gestures suggest possibilities, functions, ideas of use, elements, components (groups of elements), marks and cuts. . .

Are those slits about a moving subject. .gun ports- ornament. .sources of light? Gestures imply meaning and constitute language. . .

. . .translate intensities of line into three dimensions
. . .create integrated spaces and define things
These frames should begin to suggest structure beyond the diagrammatic. . .

Widening and narrowing cuts should suggest program or have programmatic context. . .
Clearly define where the site starts and stops. . .free floating constructions make that more difficult. . .
The limits of the project have to be defined – gestures that extend by implication beyond the model field suggest something infinite and escape control. . .
The intervention is ordered by a boundary suggested by its influence on and the formality of its integration with the ground. . .
 look at the ground tectonically
 look at the enveloping space

Work to address these four imperatives:

- ◆ Distinguish the site as the place of the design. . .the desert is the context and the site is a defined territory within the context. . .
- ◆ How to enclose while allowing things to remain visible. . .(roof / cloud / shadow)
- ◆ The construction emanates from its connection (anchorage) in the ground and creates space within a given system of measure. . .
- ◆ There is a system of relative scales apparent both on the ground and in the vertical dimension. . .

[Remove your previous project from the Gallery, photograph it and upload your work to date to the server]

Wednesday 3.4.09

Working Day

Friday 3.6.09

Study Model Intermediate Review

*general discussion in the courtyard
new deadline is 3.16.09*

3.7.09 to 3.15.09

Spring Break

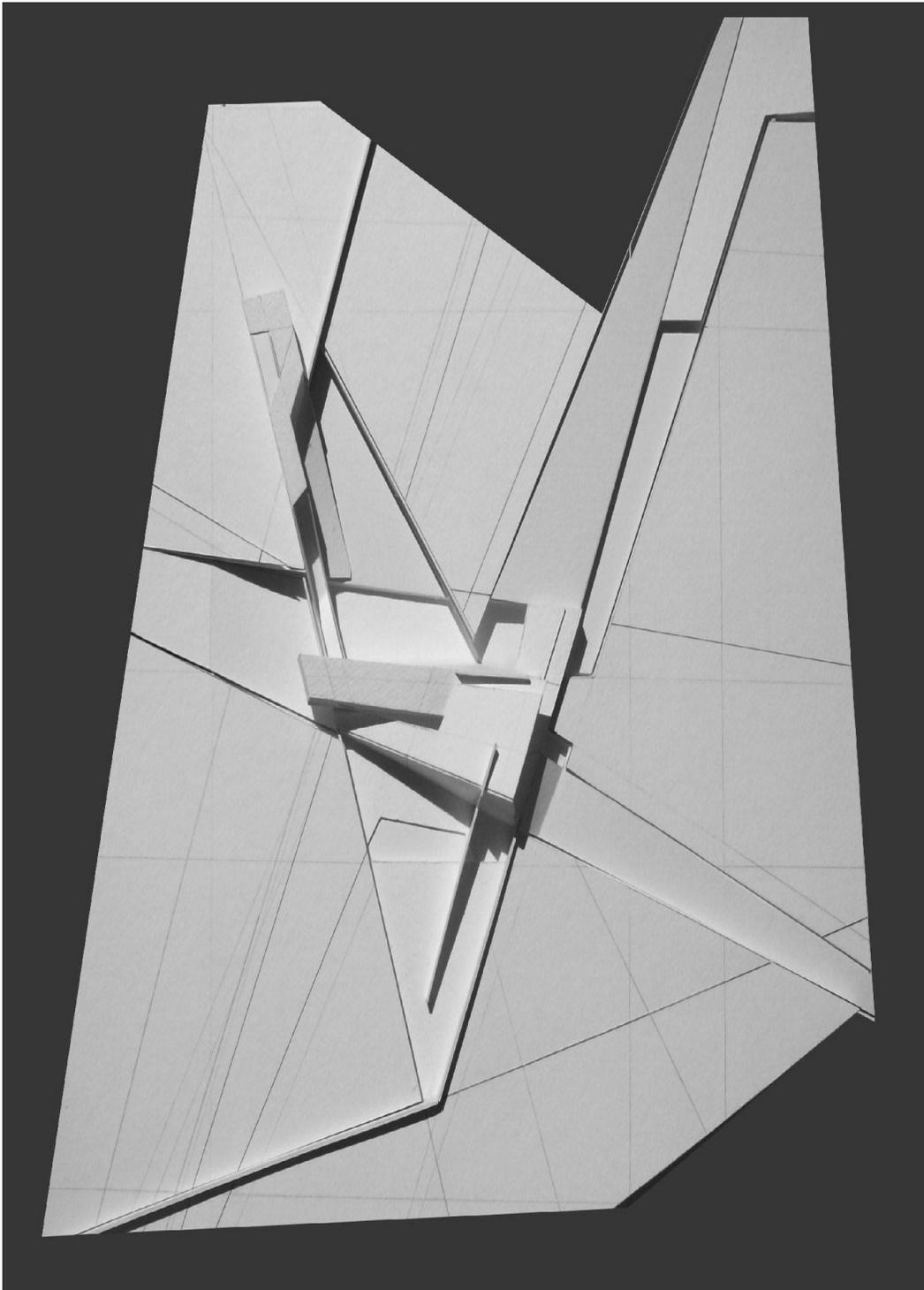


Figure 6-10. Widening and narrowing cuts should suggest program or have programmatic context...their points of origin and termination define the boundaries of the construction and the limits of the site.

Monday 3.16.00 Review Study Models and Diagrams

There seem to be some scale variations among the models. . .

. . .I thought your narrative included a linear organization along the dry river bed so that water when present (or absent) participated in a generative way. . .when you start with a gesture like that, it should be worked and developed to move the project forward. . .making this ninety degree angle turned you away from the initial source of meaning. . .and a consistent reference point for your decisions. . .

You're a context within the context. . .an abstract construction in the desert. . .

What is the geometric or spatial relationship between the shadows cast and the ribbon wall. . what are these projections. . ? Can you tell a story about these simply from the structure of the shadows?

Kiva.. .Pueblo. . ceremonial hole in the ground. . ? A place to become separate from the world and meditate with a view only of the sky. . ?

Tell us about your glass roof in the desert. . It's a plenum. . ?

To light the interior. . ?

You have to have a strong idea about controlling your conditions. . .light / dark, warm / cool, direct / indirect. . .

Why the jog in orientation. . ? Numerous models have multiple axes and changes in direction . . .Why not just one running N/S or E/W. . a gesture at the scale of the landscape. . .

Some areas are covered specifically, others generally. . .areas have functional specificity. .

shadows should be treated the same way. . .control light penetration together with shadows. . .use overhangs. . .easier in the north and south than in the east and west. . .

A physically readable entry is different from an “explained entry.”

Take more responsibility for the ground plane. . .

Dealing with water requires a construction that does something with the water. . .a hold, channel, basin, vessel, cistern. . . **all these offered terrific tectonic possibilities for weaving systems of forms and order from the idea of water . . .degrees of presence or absence. . .contradiction. . .duality of context. . .ultimately, few, if any, projects fully exploited water as a source of form or generative concept. . .the primordial nature of the place. . .detached from time. . .an abstract mandate. . .there is a mythological dimension hiding here, offering to enrich the operative methodologies with a greater creative sense of play, while reinforcing the pedagogical objectives.**

Augmenting the objectives with additional discourse on the poetic would clarify and thus accelerate assimilation of the creative context while implicitly derogating the literal. The abstract aspect of this studio. . .a vertical construction. . .marking a surface. . .thinking and making. . .required valuable time devoted to the process of inculcation at the expense of production.

Anthony Antoniades is a useful reference on both 'poetics' and 'sense of play:'

“ . . .this word (poetics) has been employed to address the aesthetics of genesis, the qualitative ingredients of space, the making of music. Poetics comes from a Greek verb that simply means “to make.”

(A.C.Antoniades)

Expectations are likely to be more rapidly deduced when the idea of making is transmitted in a context

that is more solicitous of the artistic than the literal. .
.the expectation of abstraction is perceived and
embraced.. . ambivalence is displaced by adventure
and the anticipation of 'play'. . .studio harmony is
established from day one, and the time available to
fully imprint critical pedagogic methodologies and
objectives is maximized.

“Good and creative architecture comes
from a balance between carefree, 'fun,'
'play,' on one hand, and 'serious' on the
other. . . .Plato. .introduced into his
argument a concern for building structures
that were not strictly utilitarian. His means
for doing it were the dream, the fantasy, the
visionary proposal, the unreal world where
[even construction could become a
wonderful game, just to please the eye].. .
It would be a blessing to be able to treat
architecture as play; to derive personal joy
by doing it. . .”

(A.C.Antoniades)

Take care not to be counter intuitive. . .spatial
reading needs to agree with program definition. . .

The idea of tent-like folds . . large spaces moving in
and out of shadows. . .

What's that 'digging out around platforms' about. . ?
The structure still seems absent. . .no thicknesses
are implied. . .

. . .the idea of creating the approach by following
along a natural path (riverbed). . .

No one has incorporated the scale of time. . .

Wednesday 3.18.09
Drawings, *not* conclusions. . .

There's a difference between a rough drawing that's

full of information and a technical drawing that's precise and empty. . .

starting sectional diagrams. . .

. . .let's switch from modeling to drawing and avoid the risk of just building bigger versions of the study model. . .

The 1:20 study models of the intervention are complete. . .the ideas explored in the models are to be expanded and refined through sectional study . . .the change of technique supports advancement of the design process before contemplating a final model. . .

Revisit your vertical model and section. . .compare the scale references. . .what information were you thinking about in that series of drawings. . . ?

Diagrams have an inherent elasticity. . .allow elasticity between relationships. . .

. . .space, scale, measure, intuition. . .

Think intuitively about what you're making. . .a habitation for twenty or so people. . .don't let the drawing get complicated. . .distill things to their essences. . .

This should show how light is being concentrated within a range of light to dark. . .this requires tectonic choices that both allow and give expression to that control. . .the devices that control and direct light. . .

Control involves a device, element, or thing, it's not just a hole **or an unarticulated opening**. . .

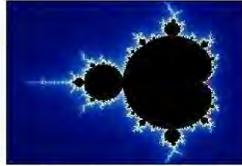
Layers need to be exposed that the drawings have yet to reveal. . .

Recognize the need for dimensional change in relationships between thick and thin, high and low, wide and narrow. . . components are composed and form families of forms and shapes. . .

Fractals (Mandelbrot set, Benoit Mandelbrot). . .trying to describe the patterns that seem random, modeling

irregular shapes. . .parts become manifested in the whole, creating order through the relationship of pieces. . .a family of decisions. . .

A Mandelbrot set (1980) is a set (computed by algorithm) of points in the complex plane the boundary of which forms a fractal.



We need to see what you're saying in the legibility of the things you make. . .how your decisions are assembled. . .find the words that help you control what you're doing. . .

How much time was spent on this drawing. . .?Is this the first. . .?Are there other studies or preliminary drawings. . .?

Shells. . .metaphors for spatial enclosure. . .a complete form. . .

Draw what you're thinking and continue to expand the gestures as they grow together. . .

Plate tectonics. . .different thicknesses, subduction zones, things happening at the joints. . .

More sketches generate more information. . .clear out the literal. . .

A series of vessels, volumes of air, volumes of light. . .connected to the ground and sky. . .

Recognize if you're cutting into the ground plane, angles of repose, how you work with earth. . .putting something in the ground. . .caissons. . .the idea of placing a tectonic thing in the earth. . .communicate the contrast between something heavy in the earth and something light and floating in the air. . .

Do these drawings look conceptual or exploratory? *They should.*

You shouldn't be coming to conclusions in the first

drawing. . . ***the first drawing is not the final.*** . . .

Your descriptive hand gestures as you explain should match should agree with your drawing gestures. . . work the drawing until the gestures agree. . .

oil pastel- scratch board. . . is there a technique of particular importance to the exploration. . . ?

We're exploring the project through drawings. . . they comprise a series of quick studies. . . a good drawing has to have time to evolve as ideas are built up, leaving a record of materials following a process. . .

Heaven is just like earth. . . just a little different?

Articulate projects evolve in small increments, quickly executed. . .
Work with the basic fears. . .

of repeating yourself. . .
of not being in control. . .

There are embedded vessels and floating vessels in relationships involving the ground surface. . .

Think about building, constructing the drawing. . .
. . . generating a set of drawings in the process. . .
. show the lines that represent your initial intuition. . .

Raphael Moneo's light scoops at the Museum of Fine Arts in Houston have depth and dimension as significant components. . . your scoop structure could constitute a series of study drawings. . . thing in terms of components. . .

Plates. . . ribs. . . systems are organized sets of components. . . make that visible. . . show how lines and themes combine to form components and sets of components. . .

Without a structure of components you don't have

space and ultimately no architecture. . .
The drawing is about specific issues, ideas and
systems. . .

Your drawing experiment will run today and Friday-
Design your work as something that can and will be
completed. . .
A good drawing has parameters, a methodology,
tools and rules. . .

Friday 3.20.09
Take the day to get caught up. . .

“ I put all my genius into my life; I only put
my talent into my works.”
(Oscar Wilde)

Monday 3.23.09
Aspicio atrum pugnaculum. . .

Review of sectional diagrams. . .
Anyone use a scale. . ?

KNOLL?. . scrap that ad text. . .
“It made it to the collage but it wasn't
supposed to. . .”

Careful. . .your forms and systems need to allow
you to to retain geometric control. . .not simply
represent. . .

Need to show a lineage of thinking. . .
a building of ideas. . .the body of work should have
an intellectual similarity. . .projects are related by-
program
context
scale
tectonics

Look for threads of thinking that are transportable
from one project to the next. . .
You're pushing ideas forward while speculating. . .

Renzo Piano's methodology is effective as an underlying strategy for the studio. . .

Il Strategia di Renzo Piano. . .

piccole e grandi

cresce fuori dalla terra

tetti che consentono alla luce

non pesanti

Again, address two fears. . .

of repeating yourself

(invent)

of losing control

Take risks and manage the seemingly competing issues of intuition and control. . .

Plans and sections are simultaneous. . .

Suggest. . .materiality. . .hint at tectonics by the way you handle the material palette. . .variations of color, material are confined to the drawing. . .

Models deal with the relationship of structure to land. . .

Small scale studies develop into major sectional drawings. . .

Your drawings take on different qualities based on what you're investigating. . .

Articulate the purpose of the drawing. . .

1/16" is the final model scale giving us three models at the same scale for the studio record. . .

I'm pushing you to experiment while pushing you to finish. . .keep pushing the limits of things while retaining control. . .

Keep making things even while you're standing in them. . .

Use your techniques to find out more. . .and more

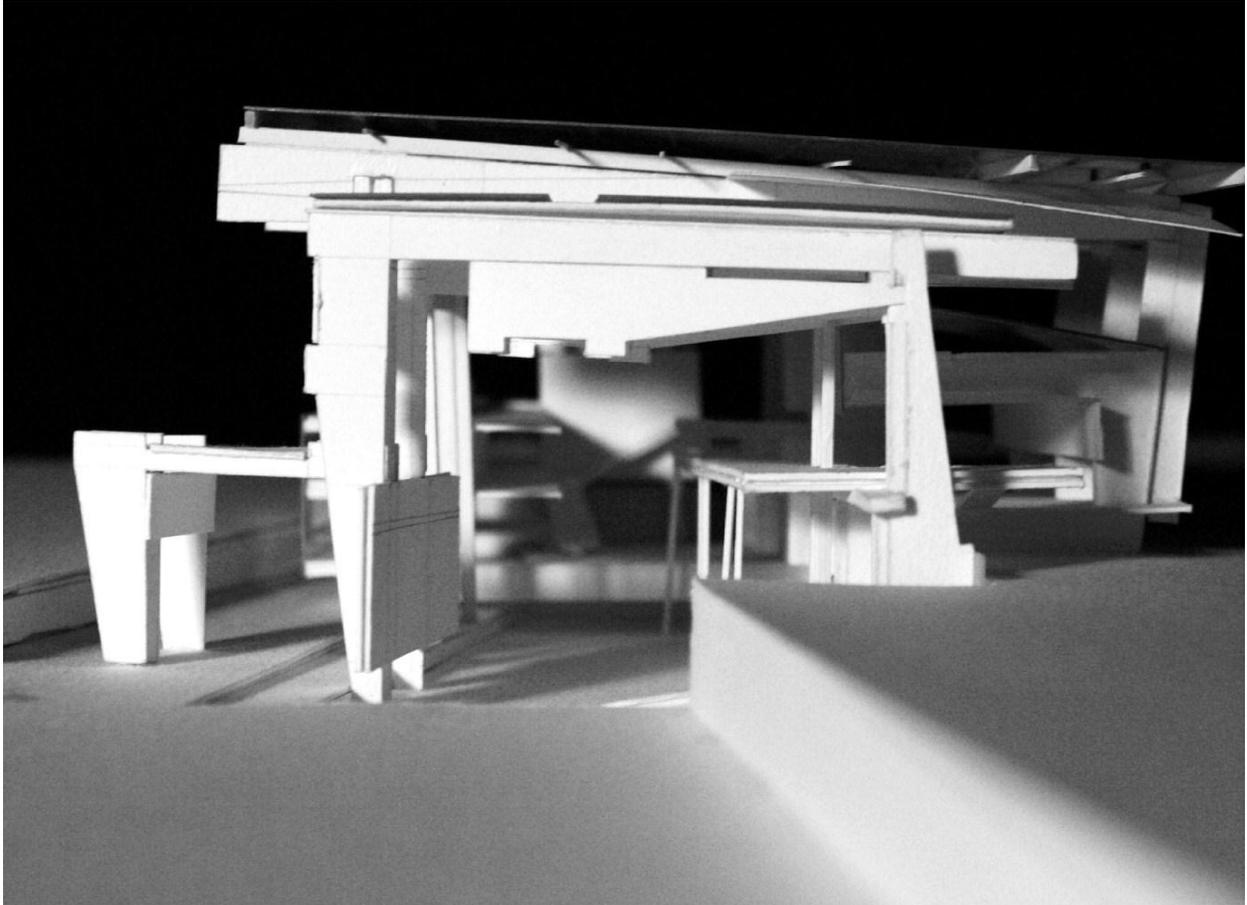


Figure 6-11. Recognize the need for dimensional change in relationships between thick and thin, high and low, wide and narrow...components are composed and form families of shapes.

You're experimenting while making at the same time and we'll keep working up to the last minute. . .

Focus on the most productive things and keep control. . .

We'll present the final model with examples from the previous two exercises to illustrate the continuity of the work. . .

Relationships, scale, proportion, systems, component of systems and context. . .

Separable models can be effective but there are drawbacks. . .may not show much sectional information relative to the drawing. . .may not fit together or reconnect that well. . .

It's an additional technical problem you accept with the choice. . .

A removable construction, however, allows inspection of the constructed ground, the archeology of the site. . .a plan drawing serves the same purpose. . .

Doubling the scale doubles the information content. . .therefore we'll remain at 1/16"

Regarding the site. . .work with the things you have control over. . .

The large drawing incorporates the the larger landscape. . .larger context. . .

Google image import is your option. . .

> A plan drawing has roller skate tracks . .there are no single lines. . .

A set of lines outlining a diagram is not a plan. . .

The diagram becomes a plan through a *consistency* of translation. . .and an *inconsistency* would represent the evolutionary aspect. . .

You need more graphic information to reflect your verbal description. . .

“Maybe I'll use X instead of Y. . .”

It's not a question of technique. . .it's degree of application. . .more depth. . .more layers. . .more ways of controlling light. . .more constructions. . . more features. . .it's a landscape and landscapes have features. . .a narrative about the way it's constructed. . .a roof is a landscape. . .it has extents, features, boundaries. . .things that make it believable.

> You need right now to process while doing. . .your previous sketches are your tools. . .all this in front of you has to be synthesized into something. . .to be processed into a project. . .it's critical here to be able to absorb. . .take five minutes to think. . .

> What are the names of these *ports*. . .a series of geologic or geometric fractals. . .? Why the choice of plates in such a geologically smooth area. . .?

This drawing has a positive material quality and a negative sense of disorganized lines. . .it seems to be seeking to define a richness of spatial qualities but it isn't reinforcing or augmenting the concepts embodied in the model. . .or how the model meets the ground. . .you're drawing things that don't follow the geometry of the model. . .the edges aren't simply lines.

Don't allow programmatic issues to retard formal thought. This isn't a plan about room names. The occupants are artists. Artists will use the space. You're contributing a construction for their use. . .not controlling how they use it.

The Palladian villa is a flexible set of ordered spaces. . .seasonally variable and implying multiple types of occupancy.

Keep work you've done previously in view to recall things you've been doing and thinking which are relevant here.

> Try an axonometric to resolve the planes. . .

concentrate on scale, proportion, and continuity. . .
develop the drawing, think it through and get it to
the final stage. . .as certain dimensions and
relationships become more defined, the drawing
becomes more focused and deliberate.

> Allow things to echo each other. . .section, plan,
model. . .make cuts and remove sections in
response to circulation..views..places...you're
drifting. . .resolve your scale problem. . .use simple
gestures that enclose.

> The scale of your central spaces is difficult to
understand. . .I feel like I need more air. . .what's the
benefit of having this structure rotate ninety
degrees if it only becomes a 'beautiful' wall. . .?
What if it changed. . .study it axonometrically or
through photographs and look for families of
decisions. . .skin – no skin. . .frame – no frame. . .
reinforce the idea of a linear merging with the
landscape.

> You have to make one of two decisions. . .start
modeling the construction or start modeling the
ground. Start modeling the ground.

> Let that rendered component be a wall. . .let it be
this wall. . .remember the idea of project DNA. . .
push things. . .change scale. . .make things
consistent.

> What would you start the model with. . .?
“The ground plane. . .it's about holding water,
holding light, gathering air, light and
containing space. . .”

Establish a clear distinction of tectonic construction
between ground and sky. . .What's the narrative
about water. . .?

“ . . .channels, directions, and constructing a
basin.”

Somehow it doesn't feel like that's been set into the
work. . .draw it.

> Put the paper in front of you and draw on it. Do not return to square one. . .trust your intuition. . . Take this diagram, copy it, draw on it. . .stay focused on what's working and build on that. . . blend the products of your process. . .

> Your constructions have been light, using volume to your advantage. . .now things are getting too thick and solid. . .work thinking about structural and tectonic conformity. . .make things out of fragments but not fragmented, as in not of a whole. . .

> We need a breakthrough here. . .you've done it before. . .find a faster way of making. . .it's faster to work with drawings and photo manipulations. . .study relationships between the body and the surface. . .a lightweight thing changing into a more substantial construction. . .a contrast.

> Floating rock. . .resist the tendency to become documentary with the sections. . .that's looking backward not forward. . .experiment with rotating the shape in space to explore changing relationships between the parts and components.

> Recognize what works the best and allow what hasn't become important to clear out. . .too much program gets in the way of the hierarchy of the composition. . .too many things are the same size.

Wednesday 3.25.09

> desk crits and discussion. . .

“Indecision may or may not be a problem.”

(Jimmy Buffett)

> Even ziggurats wear out. . . **(consult Heraclites)**

> A series of interlocking planes and frames is not an extrusion. . .an extrusion has no internal structure or variation along its length. . .

Take the image of this section, rotate it ninety degrees and discover it as a volume. . .take advantage of what it suggests in terms of scale change. . .as a large or small component.

> A *module* imparts a sense of measure. . .think about transitions. . .there's a public, communal side where the space suggests gathering. . .and a side that suggests separation. . .The larger your drawing, the more decisions required. . .your section is suggesting limits that aren't apparent in the plan. . .joints require acknowledgement. . .**they are events and opportunities for articulation.** . .the program gives you something to work with and doesn't have to be overly complicated. . .it could be symbolic. . . as in “. . .*a place that demands use, misuse, or alternate use.*” Don't fill the project with things that obstruct by their specificity. . .**This is about abstraction in an abstract landscape.** . .apply a graphic language to make the plan read and develop complexity in the drawing and evoke the properties of the components. . .shadows occur in plan too. . .you're free to create your own narrative. . .and you must.

> Give the frame **purpose** as a spanning device. . .develop the connections and transitions above and below as devices for spatial containment.

> **Sketches** and diagrams give you suggestions how to build. . .try to find the limits. . .a river bed has contour lines that would change as they become part of the geometry of your construction. . .as abstractions of slope, they may become something else. . .start the base using what you already know the most about. . .it can change and respond as you experiment with the intervention and how it relates to the base.

> A watercolor as a generative image.....*

Don't see the development in the work. . .the construction of a thing that makes shadows and is **three dimensional.**



Figure 6-12. Don't fill the project with things that obstruct by their specificity...this is about abstraction in an abstract landscape.

> Floating boxes and embedded wings. . ? You've been staring, but now you really have been staring too long.

> What's this. . ?

“The protective shell.”

Preoccupation with the literal can get in the way of experimentation. . .exploration. . .it can get in the way of finding spatial opportunities. . .ideas about language. . .**the literal displaces possibility. . . the literal is *microwave ready*. . .preprepared. . . fast, hot, with an attractive aroma. . .no need to assemble ingredients, think about process, work through the preparation, intermittently taste. . adjust the seasoning. . *risk the effort*. . .**as studies, these drawings take too long. . .when you're looking for variations or limits, sketches are faster and closer to your thinking and avoid preoccupation with the *final product*. Allow yourself to keep traveling. . .don't try to arrive too soon. . use these drawings as underlays for rapid overlay studies. . .allow yourself to experiment. . .to modify the organization of components and to make new decisions.

“This project can only be completed through a process of gradual development. . .by working things out individually and collectively. . .any final product, therefore, is an object with evidence of that process, not something that is suddenly made.”

Friday 3.27.09

> desk crits and discussion. . .

We're identifying a network of lines which converge and enlarge toward the surface, to become frames and folds. . .

> Distinguish the built from the unbuilt. . .the distinction between what is earth and what is constructed. . .in particular. . .terracing, earthwork, surfaces, walls, and edge elements. . .draw with a knife or pencil to score and give the ground scale.

recognize 'misplaced' dramatic cuts. . .orphaned ideas. . **unproductive experiments.** . .
construction starts and continues in a consistent way. . .dramatic cuts contribute to a family of gestures, which form components, which form the body of a constructed system.
Lines give the model dimension and scale. . .
How does the project engage the site (what is the cut)? . . .either with a large organizing gesture (from the top down), or with a series of contributing, integrated, smaller gestures (from the bottom up).

> Use devices of marking, measure, shadow, spatial definition. . .the 'out there' and the 'in here'
Define the edges you build. . .sand has no tensile strength, no starring role in the vertical. . .
Don't dismiss or sacrifice the clarity of thought embodied in the study models. . .don't succumb to concept creep. . .ignore any thoughts that would deliquesce the stability of your intellectual framework. . .use them to advance your working ideas. . .not to add new ones. . .employ conceptual economy. . .avoid the veering narrative. . formulate succinctly, i.e.:

A permanent, man made intervention is constructed in contrast to a changing natural system. One edge is permanent, the other erodes. . .their intersection is the site.

The intuitive designer, acting impulsively on ideas is likely to become trapped or confused. . .

The constructive designer works on ideas and allows them to evolve through a process of experimentation, comparison, evaluation and development.

Evolve the project by building the project.

Ideas and gestures build on each other. **Design progresses through the artifacts of process.**

Guard each other against the temptation to "rebuild things to make them better."

You'll finish your work by continuing to build. . .
not by starting over.

The methodology should be consistent, model to
model. . .a certain methodology produced the study
model. . .that methodology should remain
consistent. . .the way the model is made relates to
what the model is and what it represents.

> Why the insistence on that shape. . .? There are
things that may only become visible in the section. .
Represent this floating object abstractly in your
model and articulate it further in your sectional
drawing.

Land artist project inventory. . .

field surface studies 1:500
field surface photographs
field surface narratives

site diagram 1:500

part one / part two exercise
methodologies and objectives self assignment

study model 1:20
plan studies
sectional studies
text statements

plan drawing refined
section drawing(s) refined

principal model 1/16"

Start thinking about what you'll have to say during
your presentation. . .

narrative logic based on physical evidence
a formal description of context and concept

The verbal explanation is also a construction.

Continue with project evolution at least until Monday

Don't turn your brain off. . .stay alert for

opportunities to find the best project you can,
building on what has been done so far. .

Layer over. .add to. .develop further. . .but avoid
going backwards, rebuilding things that don't need
rebuilding. . .

These are working models. . .made carefully, well crafted and well thought out. . .but not too precious to continue to be worked.

Keep progress consistent and take ongoing photographs. . .document your process and ideas. Use a light source to maintain solar awareness. . . Know the coordinates of the site. . .the latitude and longitude. . .working in this environment requires that you know your position. . .

Be prepared to speak intelligently about the site character. . .

The final review is an introduction to the level of discussion you'll encounter in upper division.

Don't lose momentum. . .redoing will lead to incompleteness.

Building and making should be full of intentions. . . with a consistent methodology. . .don't make things in a way counter to your thinking.

Employ methodologies to your advantage.

The final review will include:

- the principal model
- plan and section drawings
- the site diagrammatic
- at least one photograph suggesting materiality

Monday 3.30.09

Individual inventories

Wednesday 4.1.09

> Desk crits. . .

> The objective is learning how to design surfaces that do things with light and shadow. . .thus, things shouldn't be completely open. It's not a question of finding a different language. . .it's about saying more with the one you have. Work with primary and secondary gestures. . .apply technique, scale changes, work with the ground plane, covered areas. . .deal with vertical edges, surfaces and

enclosure.
Have I said too much? You're not listening anymore.

> You're modeling a wall with thickness, layers. .
surfaces that control wind, heat, sand, light, rain. . .

don't lose the logic of your concept, construct with
your ideas, let them lend direction to your
experiments.

> Decide what are and aren't the big ideas. . stop
with the anyplace but the not there or the not here. .
You're in control of the planes, layers, orientations,
spaces, circulation. . .the application of significance,
the withdrawal of significance. . .subtlety, control. . .
Things constructed by man. . .the additive, the put
together. . .things constructed by time. . .the
subtracted, eroded, the taken apart.

**Pragmatics, as such, are not
dominant in this exploration. . .**

> Step one, then two. . .not step one then eight. .
Chose to build attached to the base or separately,
but what you build should conform to and elaborate
on your diagram. . .there's porosity, lightness, ability
to accommodate program. . .

> We need to see evidence of your thought and
consideration. . .your reasons for doing. Are you
framing the mirage, compressing space, framing the
horizon. . .creating a floating object. . ? Shift from
the unfocused to the focused. Your explanations
need to be evidenced what and how things are
made.

**We should begin to see the bones
of a complete project today. . .**

Don't get preoccupied with uncertain decisions at
the expense of the big gesture. . .the idea of a
continuous fold. . .the whole.

False starts can be very time consuming. . .so can wrong turns. . .

Suggesting that the surface is constructed of parts imparts a tectonic quality to the assembly.

> If it's a quarry, you have to have steps at a variety of scales. . .cuts and marks at human scale. . .evidence mining and shoring. . .certain systems have their own validity and don't share qualities with other systems. They don't mix geometrically, structurally or systematically.

Friday 4.03.09

Degrees of completion. . .

are related to the pace of decisions. . .

decisions are manifested as gestures. . .

You have to go through a thinking process to make progress. . .gestures at smaller scales become increasingly refined and detailed. . .

Pace of decisions retains concern for value. . .

Searching longer is not searching deeper. . .

Be disposed to experiment. . .

Make experimental gestures, assess their value, incorporate the gesture within the hierarchy of construction. . .form a hierarchy of gestures. . .

Apply logic: programmatic
 spatial
 structural
 compositional

Logic generates tectonic meaning at a level above abstraction. . .

There is no joy in the unfinished. . .

Drawing allows you to quickly evaluate speculative

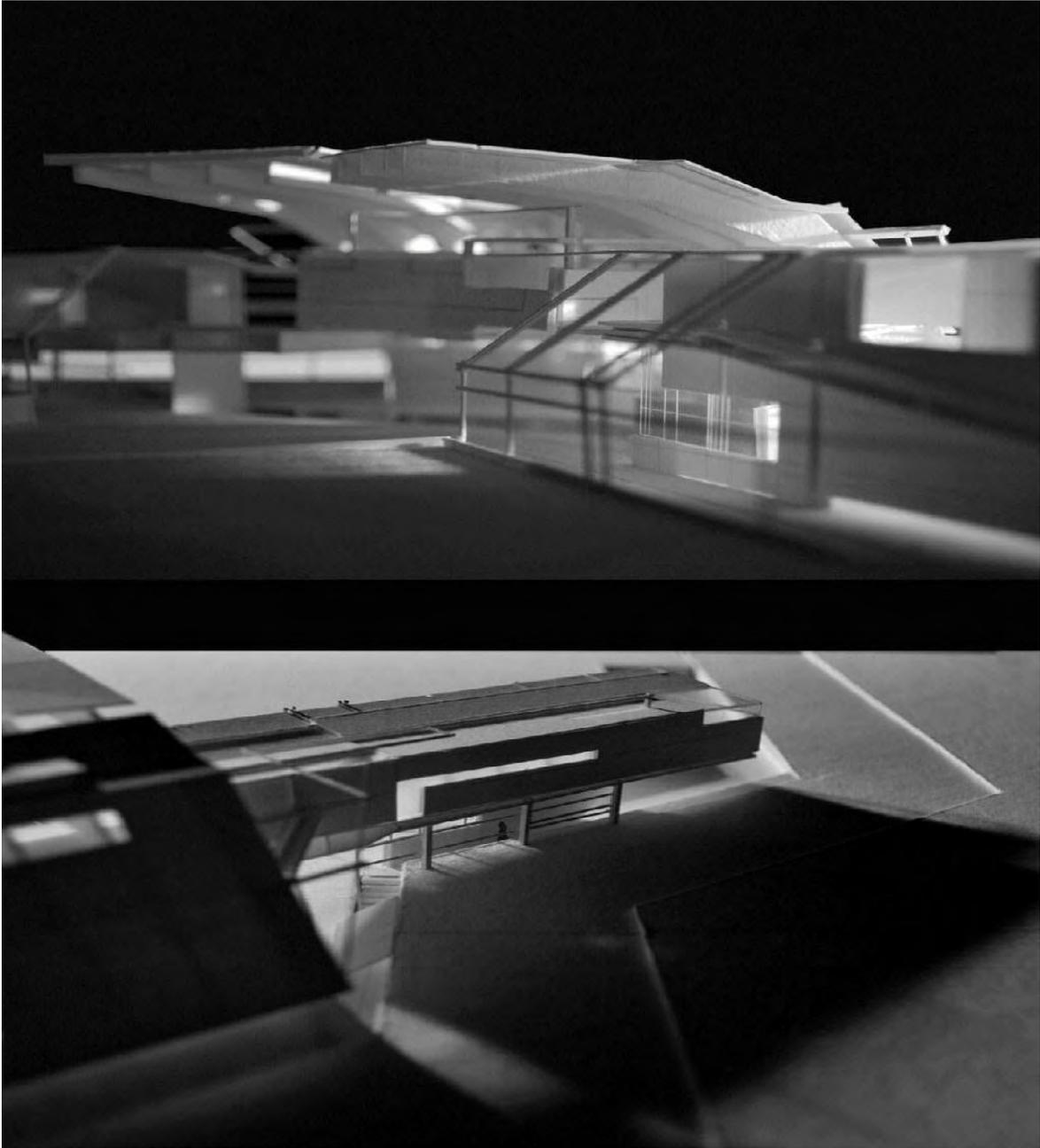


Figure 6-13. Gestures at smaller scales become increasingly refined and detailed.

ideas and deal with patterns, layers and systems that may usefully translate into tectonic expression. Deal with materiality and color through drawing.

Monday 4.6.09
Site plans, aerials and drawings. . .

Take care to position the project in a way that works and makes sense.

Register the scale of the aerial image with the scale of the model image. . .

Translate your ancillary lines and cuts, as well as, the structure accurately from the model to the plan.

There are a lot of apparent interstate type lines in the diagrams. . .respect the meaning (intentional or by default) of your graphic constructions. . .

A bold, hard line may not be the best way to represent wind. . .something with implied directional changes, that is variable. . .not fixed in place like a road or geological feature.

We need to be able to read the drawings. . .a drawing communicates meaning independently.

The photos need manipulation to tell a more precise story. . .the aerials need more manipulation. . .

This is a construction but not a documentary. . .you're creating an image beyond the received satellite photograph.

Take control to make it reveal what you want it to say, whether or not it's clear. . .you're making the site read. . .you're showing how the construction completes and edge, establishes a field, or separates areas. . .

. who *hasn't* started their drawing. . ?
just checking. . .

Be pragmatic with your words. . . .
They are an explanatory construction.
Talk about what the drawing is. . .the story
underlying positioning and the logic. . .the 'why it's
there.' The words must say what the drawing is
saying.
Let's review and make some general comments
about the drawings that we see and talk about what
will be most successful for you. . .

Take time to look back on **previous drawings** that
have **worked** for you. . .think about what you know
how to do. . .**within a familiar technique**, you're
free to concentrate on the information in the
drawing. . **more what and less how.** . .

Less self conscious work is sometimes better. . .

A drawing is useful to resolve and clarify issues,
to illustrate things that aren't apparent in the model.
Be clear about the nature of lines. . .their value and
weight within a graphic hierarchy. . .

Be specific with lines. . .use *construction* and *plastic*
lines appropriately. . .

The section needs to deal with specific themes and
ideas central to the construction. . .vessel, air,
floating, starting and stopping, extensions,
enclosure, water, light. . .a set of limited ideas that
organize the concept and program in relation to
context.

Similar programs are driven by the ideas and
relationships you establish individually.

Drawings are opportunities to investigate and
define the nature of components, edges, barriers,
and volumes. . .to resolve and work things out.

A good drawing is a quick drawing. . .**a creative
act for its own sake, unobstructed by ambition.**

Line weights convey information.

Use photographs to show aspects of the project not
obvious in the model. . .suggestions of materiality.

Risks are still available to be taken. . .experiments
are still an option.

A single, complete drawing is better than an assembly of overlays. . .overlays constitute an analytic methodology, implying separation and fragmentation. . .more process than product, thus, awkward in the front line of presentation.

Delineating what can already be seen by looking at the model in plan is not productive.

Dotted and dashed lines provide immense detail, adding information from above and below to the plane of the drawing. . .expanding the space of the drawing.

Allowing line ends to overlap is a faster technique and emphasizes the point of intersection.

Write a meaningful narrative for your presentation that quickly communicates the major ideas.

Include reasonable and important elements of process and project development in the presentation.

The review is an interrogation about your ideas and how they were developed.

The following two verbal devices are forbidden. . .

“I wanted to.”

and. . .

“I liked. . . . so I. . . .”

Qualify yourself and your ideas with language that succinctly describes your project. . .clearly relate the themes of the work and focus on areas of specific importance.

Wednesday 4.8.09

Studio presentations. . .

Introduction to the review. . .

The project is a construction in the Black Rock Desert to support groups of visiting artists from the University of Texas based Land Arts of the American West. Black Rock, an endorheic basin, is possibly the flattest, most abstract landscape on earth.

Altman

rock climbing metaphor. . .attachment

> what is the programmatic organization of your structure. . .how are the events organized?

(discussion of plan)

how were the scales of the different components determined. . .you don't necessarily need to assign everything to a box. . .

organizational poetics. . .quality of habitation. .

integrated with the landscape. . .open quality. .

expressive plan

Ascanio

study of folding and light

> walls are created by light or the absence of light. .

organization of itinerary. . .sense of time. . .noting

changes from study to final model. . .landmarks and

spatial references. . .a crashed spaceship. .

particular in its construction. . .if every moment

competes with every other moment. . .inventory of

elements. . .hierarchical competition. . .

Fisher

dematerialization and filtering

> could be a question of too many good ideas. . .the

equal billing of sun, wind and water lacks

hierarchy. . .internal subdivisions. . .how water

measures elevations by varying depth. . .awe of

volume. . .oasis, quarry, volumetrics. . .

Frisbee

the scale of a group in the desert

> making space for the wandering artist. . .anatomy

of tectonics. . .three sides closed, one side open. .

framing views, boundaries and connections. . .plan

begins to express volumetrics and structure and

extends into the landscape in an interesting way. . .

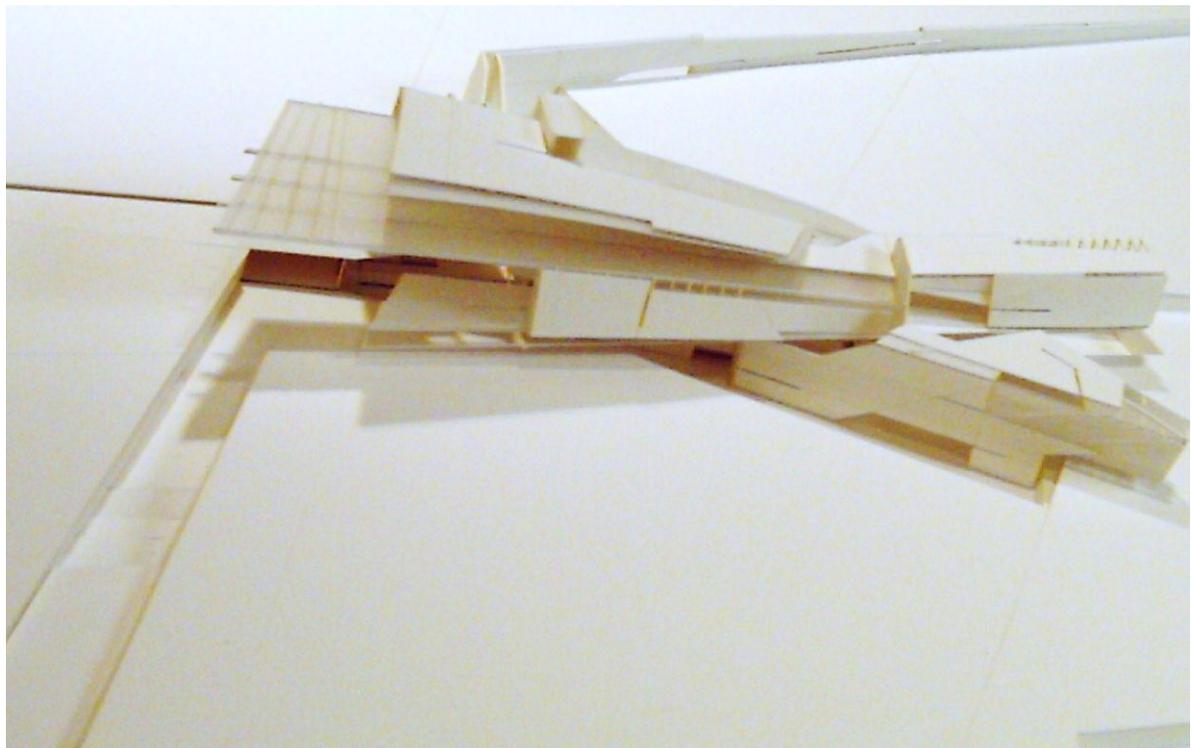
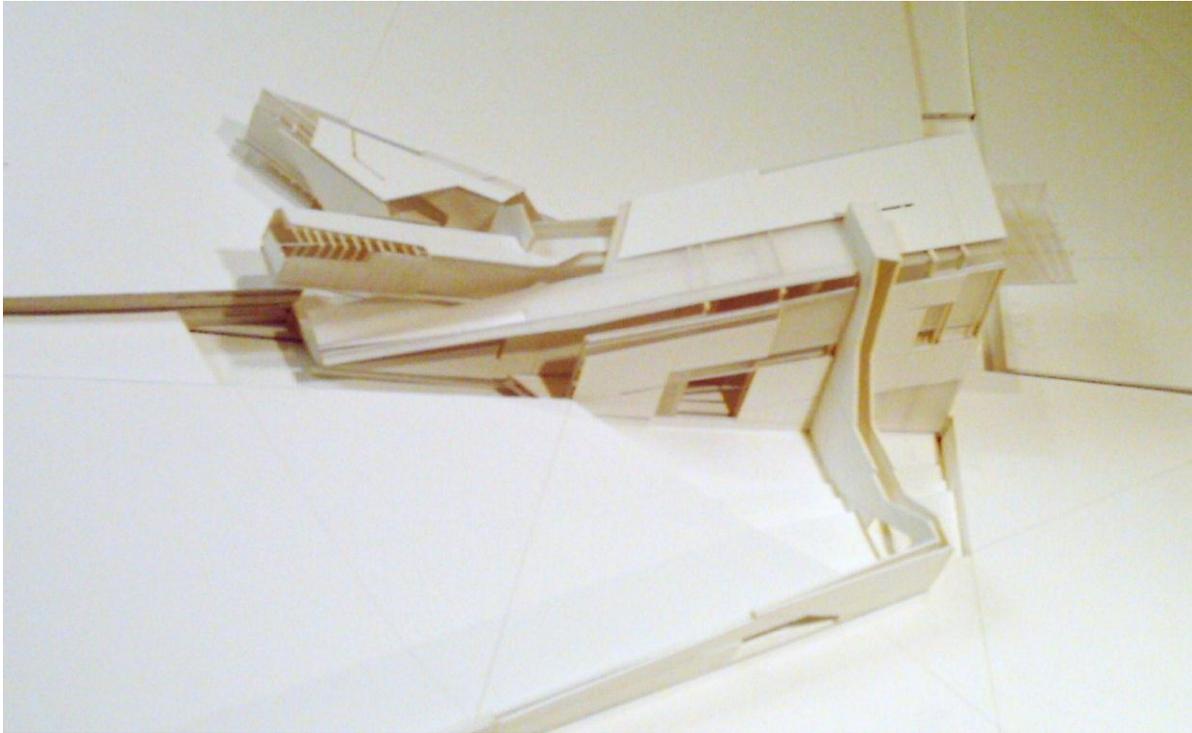


Figure 6-14. Presentation model: north elevation above, south elevation below.

the section is more confusing. . . maybe trying to show too much. . . what determined the size of the courtyard. . . "enough to allow for land art". . . that sets up a series of studies to determine the territory required for the artists' pursuits. . . the project contains a central space which may or may not be useful to the artists by virtue of its limits. . . there's a lack of organizational permeability with regard to accessing the enclosures. . . the plan suggests something simpler in terms of enclosure than the model. . . the plan suggests openness, the model suggests obstruction. . . like the gesture of opening to the landscape. . .

Salvo

extensions to natural features

constructed shadow

storage of cimatizing water

< the wrapping rib structure contains vessels of occupancy. . . volumetric organization. . . a path for water. . . relationship of cavity to mass. . . overnight temperatures below freezing. . . fifty percent of precipitation would be snow. . . is the scale change in the system of ribs a learner's fear of repetition or an interesting intentional expression of structure. . . the depth and scale of structure is dramatic. . . the elements are in scale. . . handsomely constructed object. . . there's a difference between rhythm and repetition. . .

King

wind and a lightweight canopy structure

a system to collect water

not finished

> but it's an earth infill idea. . . why didn't you investigate tented or tensile structures then. . . seem to see flat massed roofs that are unlike the idea of light canopies. . . seeing evidence of process but it's difficult to link your model to the process. . . assume you'll finish this before pinup. . .

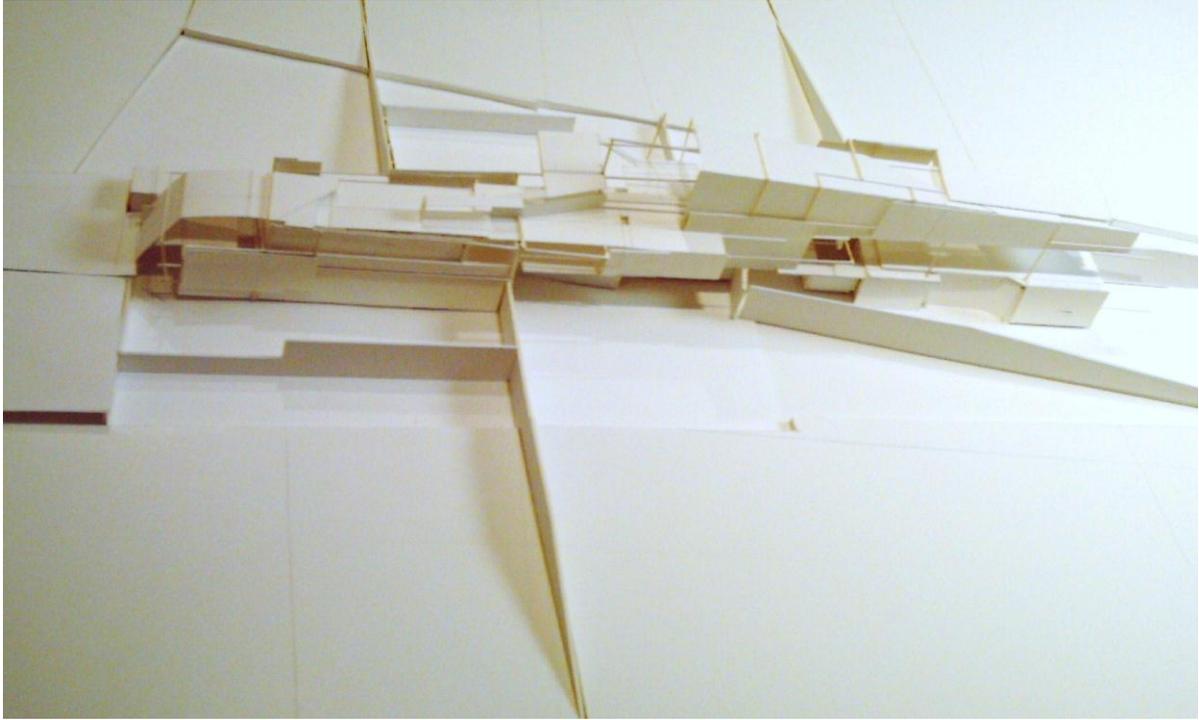


Figure 6-15. Presentation model

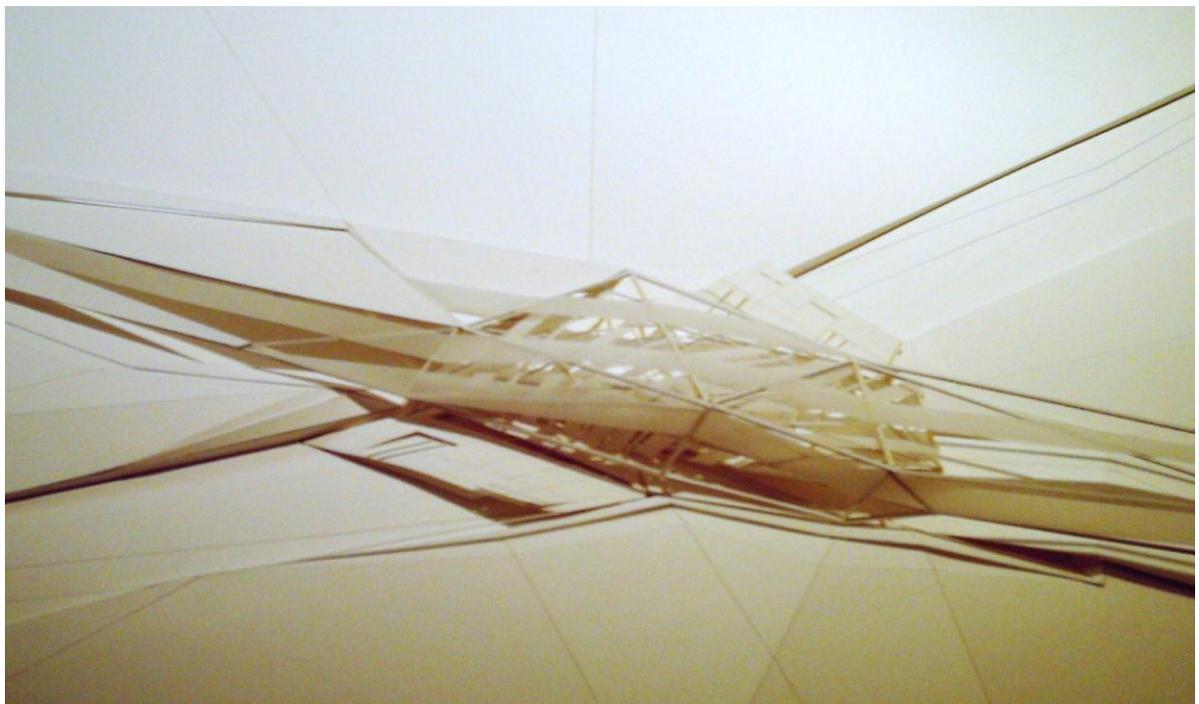


Figure 6-16. Presentation Model

Thomas

time and surface marking

harvesting lines

> how do the lines change as they become roof or layer. . .something to think about. . .noticing structural continuity. . .very nice plan drawing with clear logic of lines. . .less of this could touch the ground. . .the drawing begin to suggest further evolution. . .

Woodcock

lightweight structure for shade and space

> the high volume would help disperse heat. . .the scale of space changes in response to the slope of the overhead planes. . .but that becomes obscured by the unnecessary number of planes. . .

Rhea

the cultural landscape of the desert

the genealogy of lines

mining and searching for things in the ground

land speed record attempts on the ground

> talk specifically about your project. . .what you've built. . .an extreme concern for utility is getting in the way. . .too many practical concerns are masking the poetic ideas. . .they're not appropriate at this point. . .forcing in unrelated practicalities dilutes the intrigue.

Gujranwala

scale and changing elevations

incorporation of a deflected road

> the road dominates discussion revolving around speed of travel, turning lanes, gas, beer water, pickled eggs, and hot dogs. . .is the road unidirectional or bidirectional. . .the intervention only orients one way. . .awkward on the 'lee' side. . .a Kansas grain elevator will loom for miles and miles as approached then disappear in an instant. . .it's carefully integrated and embedded into the landscape. . .when 'a' happens then 'b' happens, they need to be manipulated to correlate. . .

Semenova

*projecting planes and overlapping layers
water basin and gravity aqueduct*

> I'm seeing the intersection of a summer house and a winter house. . .some spaces will work seasonally.

One can't sunbathe under glass. . .wavelength penetration issue. . .maybe the glass could be re-imagined as a sort of fabric. . .it has a beautiful form. . .engaged in the landscape. . .good scale. . .

time is dwindling

Cowap

use lines in the landscape to make a shape system of canopies over volumes

> the roof system is confusing. . .would suggest reexamination of scale. . .things are marked on the top but not underneath. . .the undersides are experienced from the interior. . .the east and west suns are the same intensities. . .the tectonic response is unbalanced. . .there's an issue of relative size. . .still need to find the right proportions...

Hargrove

Tyner

Low

Ilana

> form, mastery and craft. . .sense of structural unity. .daring in form, daring in landscape. . .unity of language. . . rational ideas about assemblage. . .rigorous and systematic, yielding a variety of spatial conditions. . .

Here the D4 studio term ends and 'pin-up' becomes the focal point of student attentions: Each is allotted a sequentially numbered space to accommodate the anonymous four by eight panel on which their best work of the last two years is anonymously presented for faculty evaluation. Advancement to upper division is contingent on a positive review.

Studio Summary. . .

The beginning designer is in many ways like the beginning language student. They both find themselves standing at the foot of a mountain of knowledge that is as enticing as it is daunting to scale and, as beginners, neither have resources to call upon as they begin their climbs. This analogy is appropriate because we agree that there is a language of architecture and that fluency therein is the fundamental basis of successful study and practical development.

Yet, where beginning foreign language texts are copiously augmented with pictures and visual associations serving in the place of resources unavailable to the beginner, the general 'problem statements' encountered in the lower division design studios frequently fail to include references to the cross-pollinating resources of poetry, literature, film and art which can serve to enhance creativity by association. In other words, 'creative association' takes the place of the background knowledge that has only begun to gestate in the cognition of the beginning designer.

A problem statement is becomes more comprehensible when accompanied by a sodalistic literary, artistic or poetic reference. . .a form of cognitive prosthetic to assist project visioning. Expectations may become clarified as the purpose and context of the exercise are more fully communicated.

In the 2304 studio there was frequent confusion regarding the expectations and purpose of the work. This resulted in 'second guessing' on the part of the students. . .forgivable in light of their lack of internal reference. This confusion was the cause of frequent false starts that may have been avoided by enlisting certain associative references to augment the problem statements.

-The beginning designer requires more associative problem statements (mediative training wheels), while the repertoire of experience compounds and working confidence gestates. . .creative association is a kind of reverse prosthetic in that its functional role declines in proportion to the development of skills.

Creative association is the equivalent of a set of intellectual training wheels.

-For the beginning designer, the more creatively associative the problem statement, the more creative the solution will be. . .complex problem statements run the risk of becoming misunderstood canards which are soon fed back to the instructor in an effort to succeed without the benefit of an invitation to play. . .a tacit visioning methodology.

The beginning designer may become able to go further faster with the benefit of an enhanced frame of reference (inspirational allusions) afforded by creative association (multidisciplinary sodality) within the problem statement. . .to clarify context, establish project expectations, lend speed to the pace of inquiry, amplify the sense of purpose, and reinforce the intellectual connections between problem, process, tools and product.

CHAPTER 7 A BEGINNING STUDIO

People should talk less and draw more. Personally, I would like to renounce speech altogether and, like organic nature, communicate everything I have to say visually.

- Johann Wolfgang von Goethe

Design One: Diagramming, Making, and Processing

Course description. The first in a required program of eight design studios, this course introduces students to the principal skills of drawing and making. Through a series of exercises and assignments employing a range of media, diagrams, maps, sequential drawings, stop motion animation, model and object work, photography, and digital scanning the students develop manual skills in graphic delineation and object fabrication, the concept of abstraction, detail awareness, and the translation of material and spatial ideas to scale. Emphasis is placed on instilling an ethic of the hand, appreciation for precise making as a product of inquiry, digital literacy and initiating instincts for Design Two.

Pedagogic Objectives

This course is an introduction to architectural design for students without prior experience. It imparts core skills in critical thinking, drawing, making with the objective of establishing a path between the mind and the hand. It builds competence with the kit of studio tools necessary for drawing and fabricating. The course incorporates the laptop computer as a tool to manipulate, process, and document work; to communicate and discover ideas; and develop digital literacy as a basis for continued advancement in digital design. The projects incorporate the collateral arts to generate creative thinking and expand artistic literacy. The course acquaints the students with the tectonic

concepts of space, order, occupancy, scale, volume, plane, edge, layer, skin, cut and fold. The course acquaints the students with axis, symmetry, hierarchy, datum, rhythm, repetition and transformation as ordering principles. The course promotes invention as a resource and encourages strategies of risk, exploration, and experimentation as confidence building design methodologies.

Pedagogic Methods

The beginning design student enters the unknown armed only with an intuitive sense of possible belonging and the fluctuating level of self-confidence sufficient to have made an academic commitment. The beginning design student will arrive with preconceptions that are best erased (as they must be) through substitution with an immediate issue of new cognitive tools. Design must be discovered as more than solving a problem. It is a *process of optimization which avoids controversial, uncertain of unique situations* as Herbert Simon has written.²⁴ Design is the process of applied intuition, logic and reasoning that results in a new artifact. For the beginning student, it is learning to control the actions through which materials are transformed into representational order by means of applying physical tools governed by creative decisions, critical thinking, and interpretive analysis.

The objective methodology of Design One as outlined here, is to impart techniques for exploration in design by expanding the range of available resources through which the student formulates ideas and to reinforce the confidence required to take occupancy of the speculative – the unknown.

²⁴ SCHON, D.A., 1988. Toward a Marriage of Artistry & Applied Science in the Architectural Design Studio. *Journal of Architectural Education* (1984-), Vol. 41, No. 4 (Summer, 1988), pp. 4-10. p.4.

Cognitive Tools

Cognitive tools are offered as resources to replenish creative energy and clear the creative path. They are strategies to foster associative thinking and lend aid in overcoming the inevitable self imposed creative barriers the student will encounter in the process of becoming absorbed in the curriculum.

1. Stochastic thinking is conjectural and speculative. It is the idea of skillfully aiming, targeting or committing to the guess in the creative process.
2. Rhizomatic thinking looks to identify random connections between concepts. It is the idea of one thing leading to another in any linear direction to form a series of linkages.
3. Sodalistic thinking seeks to gather related, mutually reinforcing concepts together to form a brotherhood of complimentary ideas.

Physical Tools

Design 1 must respect the need for a certain period of apprenticeship and allow students to become acquainted with the physical tool kit while engaging in a continuous effort to discover proper usage and application (and become acquainted with their hands). The required inventory of physical tools:

- 7" x 9" Mead Graph Paper Journal / Workbook
- 4 Staedler Pigment Liners 0.1
- 4 Staedler Pigment Liners 0.3
- Small Set Prismacolor Colored Pencils
- Graphite Sketch Pencils (2B)
- 1 Roll Yellow Tracing Paper 18"
- Exacto Knife and #11 Blades
- 12" Metal Ruler
- Elmer's White Glue
- Vinyl Cutting Mat
- 12" Architect's Scale
- 1 Roll ½ " Masking Tape or Dots
- Small First Aid Kit
- 4 Ply White Strathmore Board
- Assorted Basswood Micro Lumber

Digital Tools

Digital tools will be used to expand and develop graphic exercises and constructed objects further in short stop motion animations as experiments with combinations of images, volumes, motion, time, rhythm, and sound. Projects will be posted regularly on a website established by the studio for the purpose of documentation, review and discussion. The websites listed below will serve as resources for research and data acquisition. By means of these resources, the students will develop digital literacy; use the web as an academic tool, and master elementary digital production techniques.

The required inventory of digital tools:

- 1 Notebook Computer: 32 GB RAM / 32 Bit Operating System (as of 2010)
- Windows or QuickTime Movie Maker Program
- Photoshop, Gimp, or Infranview imaging software
- Audacity Audio Editor and Recorder / www.audacity.sourceforge.net
- FreeSound / www.freesound.org
- You Tube / www.youtube.com
- UbuWeb / www.ubu.com
- Noatikl Generative Music System / www.intermorphic.com/tools/noatikl
- Personal email address
- 4 GB flash drive

Graphic Exercises

Borrowing the didactic approach of J. N. L. Durand as an ordering template, the sketch exercises are organized on the grid. This serves the dual purpose of ensuring consistent dimensional uniformity in the work (critical in the digital phase) and provides the student with assistance in developing freehand line control.

A non-figural, geometric sketch exercise is assigned and developed as the initial component of a stop motion construction. The script of sketches must be carefully designed in an ordered sequence to illustrate a given tectonic concept within a cohesive narrative structure

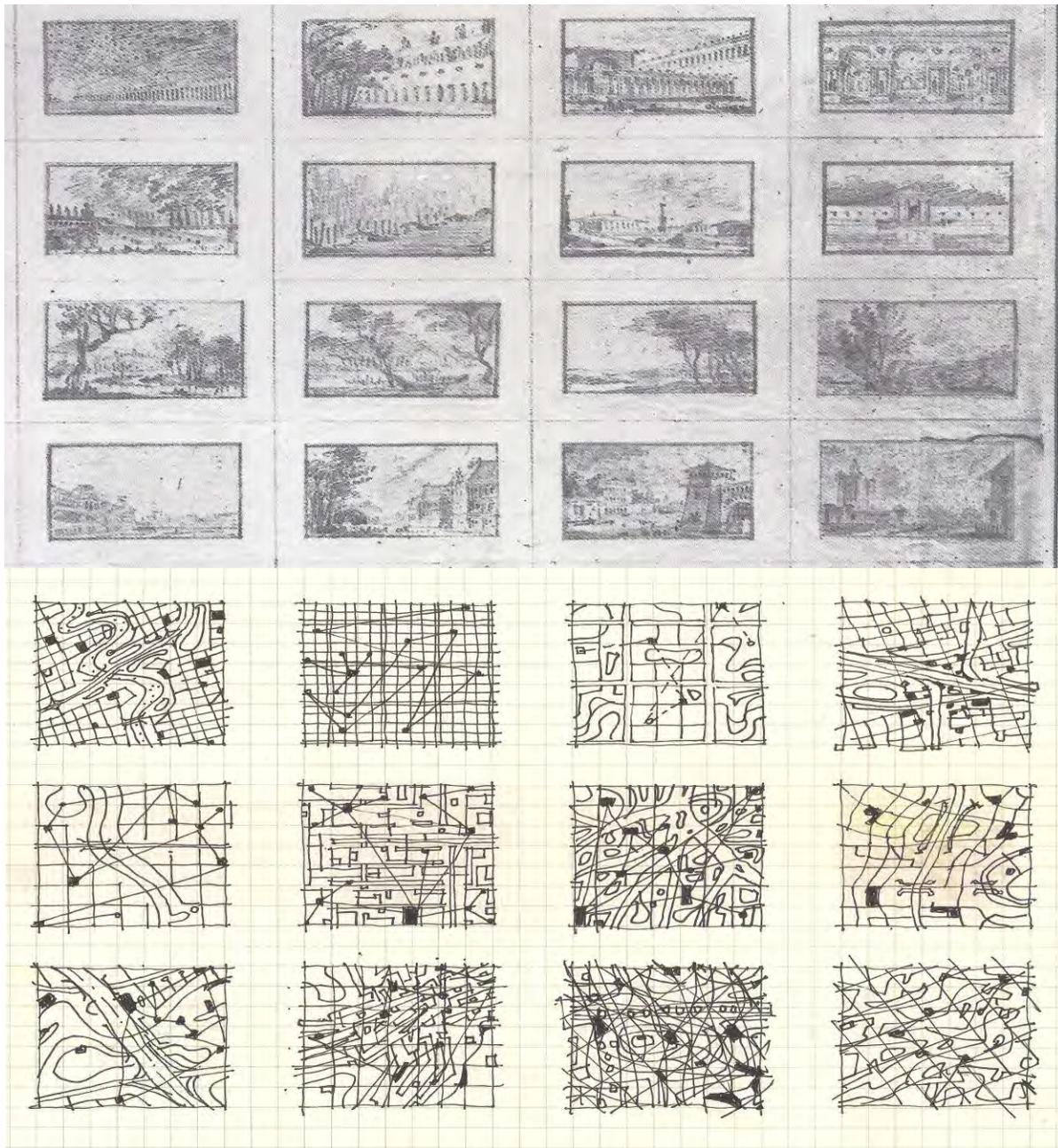


Figure 7-1. Above: Jean-Nicolas-Louis Durand, Detail from *Rudimenta operis magni et disciplinae*, 1790²⁵. Below: Hypothetical planar graphic exercise.

This initial exercise requires organizational self discipline in design and execution.

The student must explore, develop, and execute the core of this exercise by hand.

Graphic skills evolve through revision and repetition as the sketches are produced in the

²⁵ DURAND, J.N.L., 2000. *Precis of the Lectures on Architecture; with Graphic Portion*. Getty Research Institute, Los Angeles. p.9.

context of a larger objective. At least thirty sequential sketches are required for a fifteen second clip.

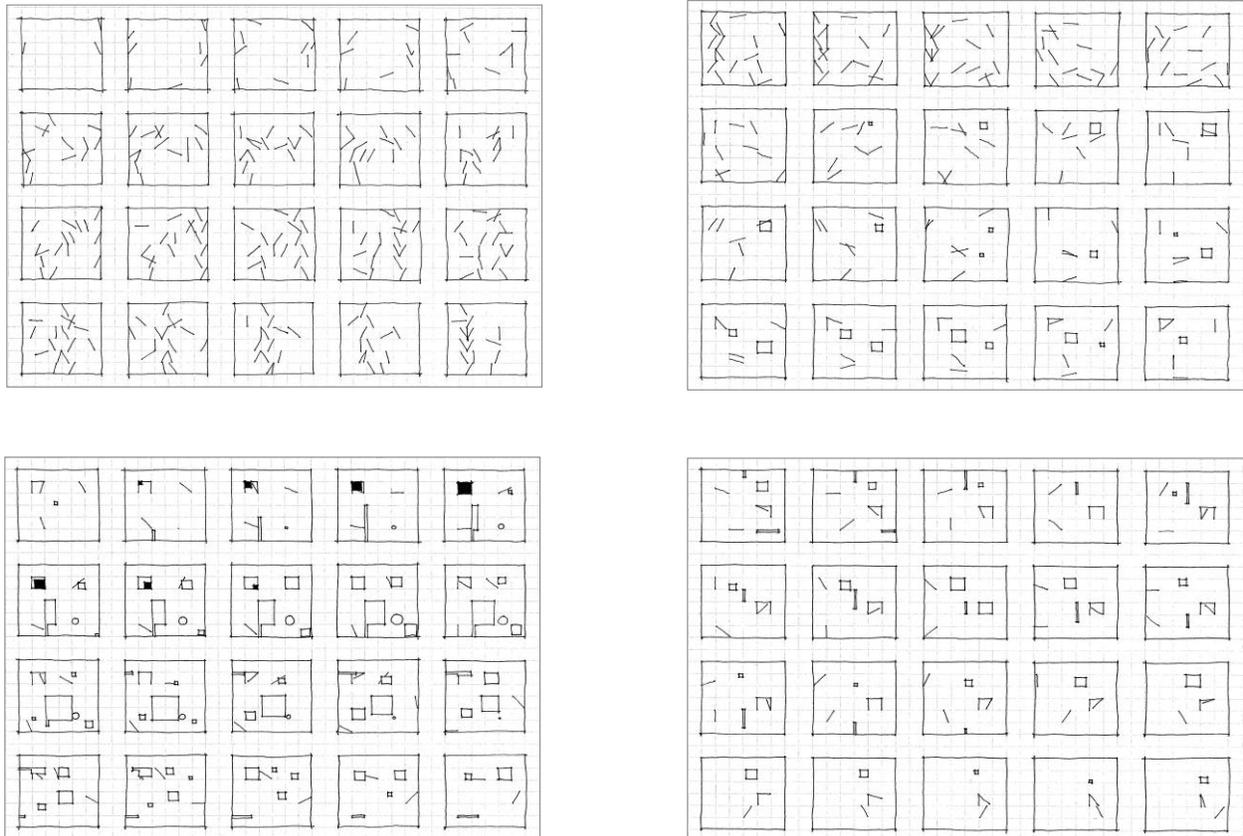


Figure 7-2. Clockwise from top left: Excerpt from a sequential stop motion sketch exercise.

Digital Exercises

A series of sequential sketches is scanned to a digital file and the individual components are arranged on the video program time line. Design decisions include rhythm, text, transitions, effects, credits, and appropriate accompanying audio sample.

As the studio progresses, experiments with inchoate graphic spatial ideas will be translated into three dimensional constructions and receive similar digital documentation. The digital tools used in the assignments to process and assemble the

hand drawn sketches and constructed objects into stop motion tectonic constructions
are:

- Notebook computer
- Digital scanner
- Windows or QuickTime Movie Maker
- Audacity audio editor
- Downloaded audio fragments

Examples of Digital Exercises

Experimental versions of constructions anticipated as the initial product of this proposed studio may be reviewed by visiting the html links listed below as objects 1 through 8:

Object 7-1. The Ruin in Layers (.wav file 15.4 MB):
<http://www.youtube.com/watch?v=eebQsjLq-Wg>

Object 7-2. Nine Square Samba (.wav file 3.19 MB):
<http://www.youtube.com/watch?v=4a9sxZArdxk>

Object 7-3. Wood Stone Sand Air (.wav file 3.6 MB):
http://www.youtube.com/watch?v=9_GZSK7tQBq

Object 7-4. Interference (.wav file 4.82 MB):
<http://www.youtube.com/watch?v=FKFe97BjMM0>

Object 7-5. Order / Disorder (.wav file 3.18 MB):
http://www.youtube.com/watch?v=UN1Gxr_WXxs

Object 7-6. Small Test (.wav file 3.7 MB):
<http://www.youtube.com/watch?v=XOKJl6gkpBQ>

Object 7-7. Transit Across Layers (.wav file 2.8 MB):
<http://www.youtube.com/watch?v=b9GPqfhZF24>

Object 7-8. Large Test (.wav file 8.38 MB):
<http://www.youtube.com/watch?v=wt4s-cC4ldE>

CHAPTER 8 CONCLUSION

The quote, “I begin with an idea and then it becomes something else,” is attributed to Picasso in explaining his experience with artistic creation. It also suggests that the absence of preconception is critical in allowing the creative process to unfold. In terms of architectural pedagogy and the beginning design student, removing preconception as a tool is essential to removing the self-imposed boundary it imposes on creativity, exploration and experimentation. Fear of inadequately representing the preconception becomes the central creative obstacle.

Sylvester and Tripp have responded to counter this fear in their first year drawing class at the Oregon School of Design, “we used a series of exercises that help students to overcome their initial fears about drawing. The intent is to get them to let go of their work, to relinquish ownership, so that the sense of possible failure is minimized.²⁶ Thus, the studio outlined in the previous chapter seeks to replace the student's preconception that drawing is reality with the idea of the drawing as artifice. By incorporating drawings as components within a larger design project, the student becomes engaged in the process of drawing. The exercises focus on the nature of line, geometry and composition in the abstract, in lieu of achieving a satisfactory quality in the representational sense. The habit of drawing and thinking becomes established unconsciously, free of figurative issues. Scale, volume, hierarchy, proportion, composition, contrast, order, layer, transition, rhythm, and circulation are the subjects represented by the drawings: the fundamental concepts of architecture.

²⁶ SYLVESTER, P. and TRIPP, W.C., 1993. The Search for Authenticity in Drawing. *Journal of Architectural Education* (1984-), **46**(4), pp. 239-248.

The concept of a sectional map was introduced in ARC 2304 as a means of abstractly representing a program of occupancy. Beginning design introduces the concept of the diagram as a means for the tacit development of drawing skill and explicit training in core theory. The idea of systems and organization is central to the beginning studio. Diagrams are used here to describe forms of organization according to relationships. They are neither plan nor section but a graphic form of mapping a teleological construction. Because the diagram operates, “between form and word, space and language,”²⁷ it is instrumental as an inherently elastic tool to support transition into the curriculum, a vehicle for graphic skill, and a resource in later coursework.

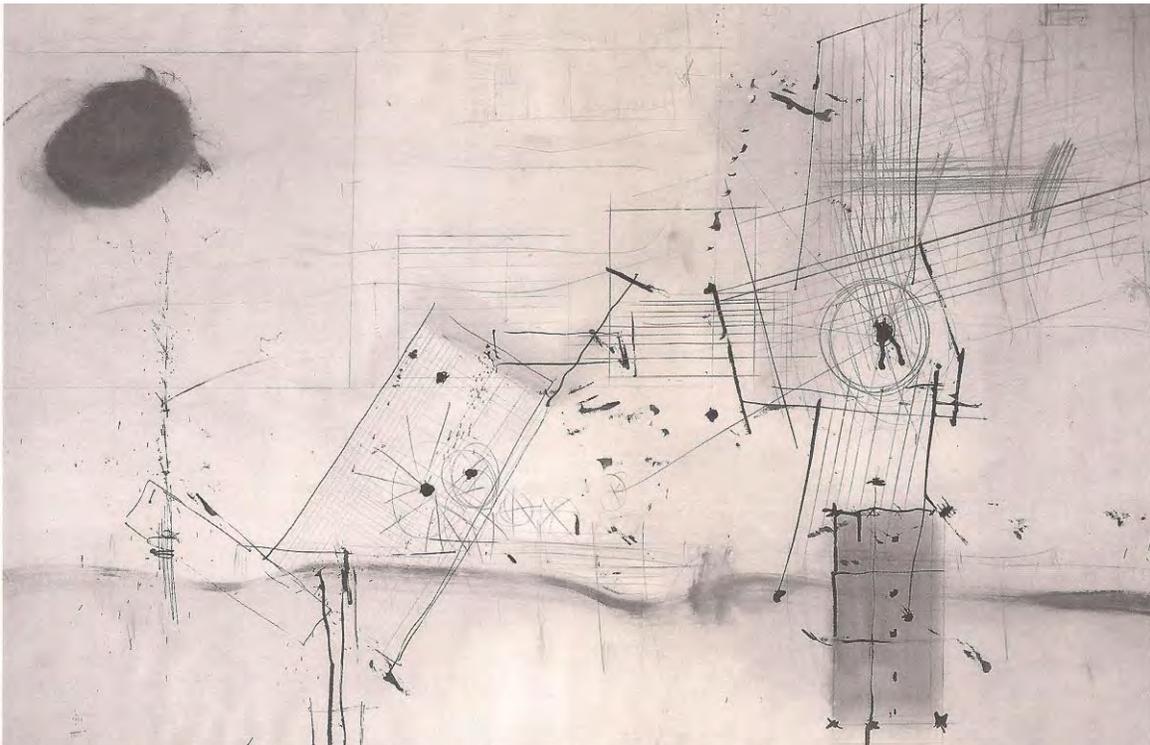


Figure 8-1. Sketch for a Map, Constant Nieuwenhuys, 1962

²⁷ DE ZEGHER, C. and WIGLEY, M., 2001. *The Activist Drawing*. The MIT Press, Cambridge, MA. p.89.

“If we do not know we are acting under the influence of a tradition,” Karl Popper wrote, “then we cannot help accepting the tradition uncritically.”²⁸ The tapestry of architecture's history is densely interwoven with the threads of analysis, embroidered by criticism and patched with both ancient and modern manifestos. Each era of change bears the marks of its proponents and its foes; each side equally committed to the good of the profession. The history of architectural pedagogy is recent by comparison, within the modern era, beginning in the late 17th century during the Age of Reason with the founding in 1648 of the Academie des Beaux Arts by Cardinal Marazin in Paris. The school was granted independence from the government in 1863 by Napoleon III and became the Ecole des Beaux Arts. The Ecole became synonymous with tradition, and tradition's roots grow very deep in architecture. American architectural pedagogy lived in some form of compromise with the Ecole and its dogma until as recently as 1940, evidenced by the Beaux-Arts influenced speech delivered that year by Dean Koyl of the University of Pennsylvania to an annual gathering of the American Institute of Architects. The Ecole itself resisted change until its position became untenable in the face of an historic student rebellion in 1968. By these measures, modern architectural pedagogy has enjoyed freedom only since the last half of the 20th century: Almost enough time for the bonds of new traditions to take hold.

²⁸ POPPER, K. 1968. *Conjectures and Refutations: The Growth of Scientific Knowledge*. Harper and Rowe, New York, N.Y. p.122

APPENDIX: ARC 2304 PROJECT SYLLABUS

ARC 2304_D4_Spring 2009

Professor William Tilson

Project reading: *Pamphlet Architecture 16*

Project 1: Programming Vertical Space

The first project of this semester studies the notion of programming in a vertical structure that anticipates the contemporary and future questions of high-rise dense urban conditions. You will be developing a project within the given structure of a vertical shaft (starting dimensions 12" x 12" x 28") which is measured by a three dimensional grid running throughout the length. This three dimensional grid is only a beginning regulative system that will be modified and changed through the volumetric operations of your design.

Program: An International Performing Arts Center (details developed in teams of four)

Vertical circulation occurs at different scales of movement that range from elevators and escalators to stairs and ramps relative to spatial connections. Also the pace of movement, leisurely or fast, should be considered in circulation decisions.

An appropriate discussion of the following tools is required to establish architectural unity over a variety of programmatic, volumetric and tectonic scales:

surface / thin planes

(fold, bend, cut, weave, layer, wrap, penetrate, punch, repetition, envelope, membrane, etc.)

linear systems

(measure, grid, frame, ribbon, registration, regulation, repetition, infrastructure, armature, weave, intertwine, etc.)

solid / thick planes

(carving, add-in / cut-out, stereotomy, penetrate, punch, relief, infrastructure, layering, armature, etc.)

Products and Method

Section drawings / collages exploring volumetrics and movement in programmatic terms and simultaneously speculating on the possibilities of modifying the a priori grid system. Developing the programmatic 'pods' and placing them in a context relative to each other will be studied to establish a rich experience of sectional space that maintains social connectivity on a vertical datum.

Model that furthers the initial sectional drawing exploration. The model starts to look at planar relationships along the vertical spine that create spatial tensions and vertical richness beyond the possibilities of sectional thinking.

Project 2: Programming Horizontal Space (assigned and discussed in Studio.

Project 3: Imagining the Horizon

“Architecture does not so much intrude on a landscape as it serves to explain it. Illumination of a site is not a simplistic replication of its 'context'; to reveal an aspect of place may not confirm its 'appearance'. Hence the habitual ways of seeing may well be interrupted.”

S. Holl

The last project of this term is an architectural exercise within the idea of desert. As with the second project, we continue to explore the possibility of architecture emerging as a modality of a given context, hence the way an intervention images a context in its own modality (called “unity”). The second project was located within our physical reach and direct daily experience. . . the desert is located within our imagination.

Although the context is an actual desert – Black Rock Desert in Nevada – its pure flatness makes it an abstract and sublime place. . . an ideal landscape to continue our investigation into the role of speculative thinking and imagination in the formation of an architectural idea in a given site, whether a spatial condition (project 1), a structure (project 2), or a landscape (project 3).

Our exploration of the desert begins with a series of low relief constructions the unfold the idea / image of desert and probe into the ways of seeing that will establish the poetic / conceptual grounds for possible architectures.

“The desert. To those of us who live in temperate zones, the word has associations both appealing and sinister. We picture a landscape unobstructed, totally visible and visitable; we feel secure because no person or thing can approach unseen. Like the sea, the desert can feel refreshingly vast, its surface uncluttered by ground cover, its space spared by the busyness of a complex middle distance. Place seems very open, clean, and basic. But the desert can as easily assault as refresh. Its heat and glare can be brutal. Its openness may be read as a lack of spatial definition that starves eye and soul. Ironically, total physical clarity can become perceptual obscurity. Both 'here' and 'there' often fade into anonymity – into

somewhere, then anywhere, then nowhere. A stranger to its cues, the mind unfamiliar with its subtleties identifies the desert with sensory deprivation. But as Saint-Exupery has observed, "If the desert is at first only emptiness and silence, it is because it doesn't offer itself to one-day lovers."

Foreign sensibilities tend to picture the desert not only as a physical landscape, but as a moral one. In contrast to imaginary complement, the jungle, whose principle seems to be excess, fertility run riot, the desert is perceived as a place of absence, of essential simplicity – a setting of either voluntary self-denial and high purpose of involuntary deprivation and despair.

Only two types. . . can inhabit such a landscape: the heroic and the hapless. . ."

Negin Djavaherian

Conceptual / poetic grounding:

low reliefs / drawings

Understanding the 'issues' of desert, for us as architects- not a representation of desert, but the idea of desert as an architectural problem / possibility. Prepare three low reliefs in white paper, 18x18, exploring the following:

- *marking and registering:* an image of place emerges forming the 'horizon of the project'. . . 'enmeshed line': horizon, scale, measure, thresholds - boundaries, marking, vision, orientation, earth/sky, sunrise/set, light, light and time, night/day, wind, materiality . .
- *scalelessness and multiple scales.* . . converging of plans, sections, perspectives, images. . . on the horizon of the project. . . line as memory. . .
- *drawing becomes the desert.* . . imagining the enmeshed experience. . . the idea of horizon in its multiple meanings. . . design thinking as analogue to thinking architecture of / in the desert. . . horizon of the project: process as memory of thinking. . . mapping the thinking, measure, locate the web of lines holding the project. . . multiple scales, scaleless. . . thresholds, boundaries. . .
- *keeping the memory, establishing the memory.* . .

Physical Grounding: Field Studies / Intervention

**marking and registering: place emerges*

imagining the architecture to generate the enmeshed experience. . . defining the armature of spatial possibilities. . . anchoring. . . to locate: the 'embedded line'. . . alignments at a large scale. . . marking to establish scale. . . measuring the boundless scale. . . creating a datum, marking. . . walking / movement as marking. . . horizon, scale, measure, thresholds – boundaries, marking, vision, orientation, earth/sky, sun (rise/set), light, light and time, night/day, wind, materiality, etc.

**sections and plans. . . from sections to plans. . . back to sections. . . multiple scales. . .*

**speculative materiality*

Program: Fire and Earth. . . A Work Station for Land Arts of the American West*

Background

“*LAND ARTS OF THE AMERICAN WEST* is a studio-based, field study program dedicated to the investigation of land arts from pre-contact Native American to contemporary Euro-American cultures. Land Arts practices can include everything from constructing a road, to taking a walk, to building a monument, to leaving a mark in the sand. The program seeks to expand upon connections between typically separate fields.

We learn from the fact that Donald Judd surrounded himself with both contemporary sculpture and Navajo rugs; that Chaco Canyon and Roden Crater function as celestial instruments; and that the Very Large Array is a scientific research center with a powerful aesthetic presence on the land. Fourteen students led by two faculty, spend a semester living and working in the southwestern landscape with guest scholars and artists in disciplines including archeology, art history, architecture, ceramics, criticism, writing, design, and studio art.

In *LAND ARTS* students become cognizant of human interventions in their region across time and cultures. Occupying the land for weeks at a time, living as a nomadic group and working directly in the environment, students navigate issues of culture, site, community, and self. They develop skills of perception and analysis unattainable in a standard classroom setting. *LAND ARTS* is an interdisciplinary model of education for creative engagement with our world,”

B. Gilbert and C. Taylor

*Program is pragmatic and poetic

Program notes:

Create a place to shelter (sleep-eat-rest-work-talk-store) 18 – 20 people. . . 14 students, 2 faculty, and 1-2 occasional visitors in the desert for 10 – 14 days. The group needs a large shaded space to go about their work. Although water is brought with them, a 500 gallon tank provides emergency storage from a deep well and the occasional rain storm.

The group arrives in 2 vans. They bring food, water, supplies, and work material. They live and work on the site during this time, producing site based projects which are documented for later display. Visiting lecturers arrive periodically by car. When the session is complete, sleeping and storage areas may be closed for the season but the basic shelter and water tank remain open and accessible to travelers.

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BIOGRAPHICAL SKETCH

Mr. Dewhirst is a returning graduate to the University of Florida. Having acquired substantial experience as a practicing architect, he has refocused his interest on the tools and methodologies of design education. He looks forward to teaching and pursuing his theory that joy surpasses ambition as a source of creative energy and motivation. He is a registered architect and resides in Gainesville, Florida.

