

**101 Things I Learned**

**in Architecture School**

**Matthew Frederick**

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◎ 2007 Matthew Frederick

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To Sorche,for making this and much more possible

**Author's Note**

Certainties for architecture students are few.The architecture curriculum is a per- plexing and unruly beast,involving long hours,dense texts,and frequently obtuse instruction.If the lessons of architecture are fascinating (and they are),they are also fraught with so many exceptions and caveats that students can easily wonder if there is anything concrete to learn about architecture at all.

The nebulousness of architectural instruction is largely necessary.Architecture is, after all,a creative field,and it is understandably difficult for instructors of design to concretize lesson plans out of fear of imposing unnecessary limits on the creative process.The resulting open-endedness provides students a ride down many fasci- nating new avenues,but often with a feeling that architecture is built on quicksand rather than on solid earth.

This book aims to firm up the foundation of the architecture studio by providing rallying points upon which the design process may thrive.The following lessons in design,drawing,creative process,and presentation first came to me as barely

discernible glimmers through the fog of my own education.But in the years I have spent since as a practitioner and educator,they have become surely brighter and clearer.And the questions they address have remained the central questions of architectural education:my own students show me again and again that the ques- tions and confusions of architecture school are near universal.

l invite you to leave this book open on the desktop as you work in the studio,to keep in your coat pocket to read on public transit,and to peruse randomly when in need of a jump-start in solving an architectural design problem.Whatever you do with the lessons that follow,be that grateful l am not around to point out the innu- merable exceptions and caveats to each of them.

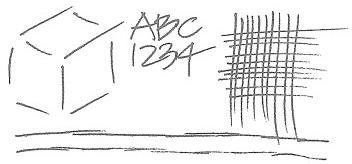
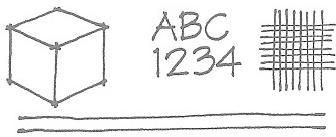
Matthew Frederick,Architect

August 2007

**Acknowledgments**

Many thanks to Deborah Cantor-Adams;Julian Chang;Roger Conover;Derek George; Yasuyo lguchi;Terry Lamoureux;Jim Lard;Susan Lewis;Marc Lowenthal;Tom Parks; those among my architecture instructors who valued plain English;my students who have asked and answered so many of the questions that led to this book;and most of all my partner and agent,Sorche Fairbank.

**101 Things I Learned in Architecture School**



YES

NO



**How to draw a line**

1 Architects use diferent lines for different purposes,but the line type most spe- cific to architecture is drawn with an emphasis at the beginning and at the end. This practice anchors a line to the page and gives a drawing conviction and punch.If your lines trail off at the ends,your drawings will tend to look wimpy and vague.To train yourself to make strong lines,practice making a small blob or kickback at the beginning and end of every stroke.

2 Overlap lines slightly where they meet.This will keep corners from looking inap- propriately rounded.

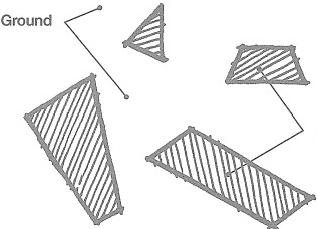
3 When sketching,don't "feather and fuzz"your way across the page-that is,don't

make a vague-looking line out of many short,overlapping segments.Instead,

move your pencil from start to end in a controlled,fluid motion.You might find it

helpful to draw a light guide line before drawing your final line.Don't erase your

guide lines when the drawing is complete-they will lend it character and life.



Figures



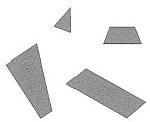
**A figure is an element or shape placed**

**on a page,canvas,or other background.**

**Ground is the space of the page.**

A figure is also called object,form,element,or positive shape.Ground is alternately

called space,residual space,white space,or field.





4 figures arranged

randomly with negative

space resulting

The same 4 figures

arranged to create

positive space

(a triangle)

The same 4 figures

arranged to create positive

space (the letter A)



**Figure-ground theory states that the**

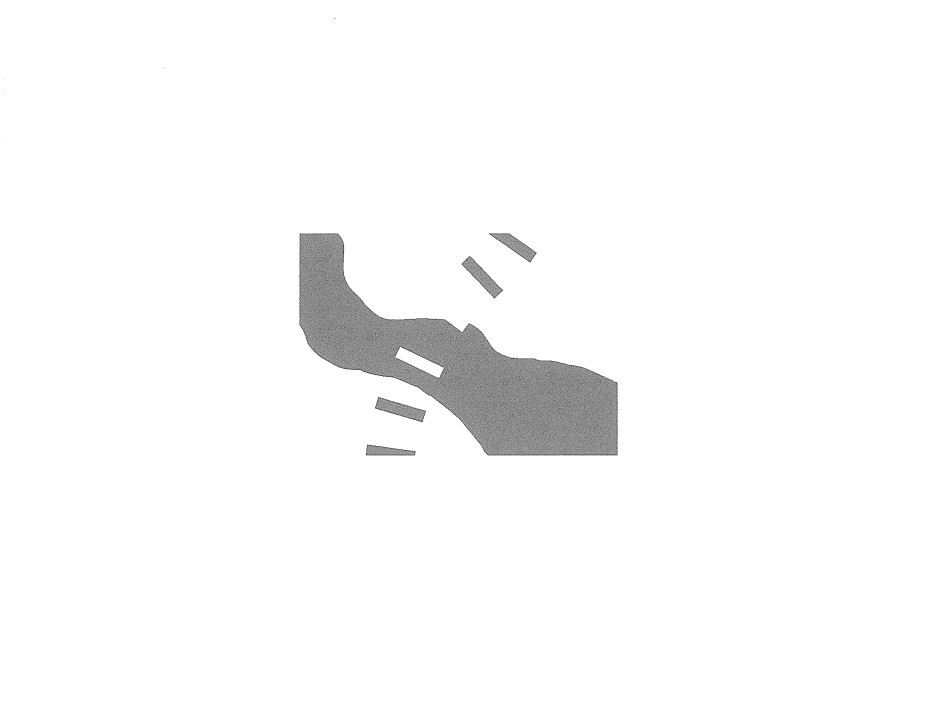
**space that results from placing figures**

**should be considered as carefully as the**

**figures themselves.**

Space is called negative space if it is unshaped after the placement of figures.It is

positive space if it has a shape.



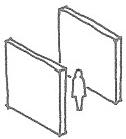
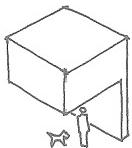


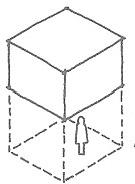
**When elements or spaces are not explic**it

**but are nonetheless apparent-we can**

**see them even though we can't see**

**them-they are said to be implied.**



8





5

**Solid-void theory is the three-dimensiona**l

**counterpart to figure-ground theory.It**

**holds that the volumetric spaces shap**ed

or implied by the placement of solid

objects are as important as,or more

**important than,the objects themselves**.

A three-dimensional space is considered a positive space if it has a defined shape

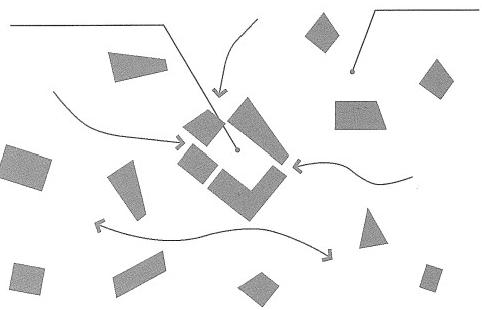
and a sense of boundary or threshold between in and out.Positive spaces can be

defined in an infinite number of ways by points,lines,planes,solid volumes,trees,

building edges,columns,walls,sloped earth,and innumerable other elements.

Positive

space (dwelling)



Negative

space

(movement)

A college“quad”is usually the preferred space on a

campus for social interaction and hanging out.



**We move through negative spaces and**

**dwell in positive spaces.**

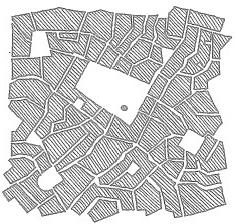
The shapes and qualties of architectural spaces greatly influence human experi-

ence and behavior,for we inhabit the spaces of our built environment and not the

solid walls,roofs,and columns that shape it.Positive spaces are almost always

preferred by people for lingering and social interaction.Negative spaces tend to

promote movement rather than dwelling in place.

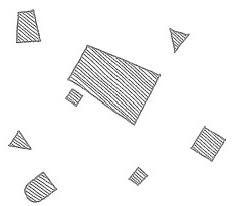


**uejd punou6-ain6y**

**qunqns Aueioduetuoo**

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**Aq!o reʌelpeN**





**Suburban buildings are freestanding**

**objects in space.Urban buildings are**

**often shapers of space.**

When we create buildings today,we frequently focus our efforts on their shapes,

with the shape of outdoor space a rather accidental leftover.These outdoor spaces,

such as those typically found in suburbs,are negative spaces because the buildings

aren't arranged to lend shape to the spaces in between.

Urban buldings,however,are often designed under the opposite assumptions:

building shapes can be secondary to the shape of public space,to the extent that

some urban buildings are almost literally "deformed"so that the plazas,courtyards,

and squares that abut them may be given positive shape.





**“Architecture is the thoughtful making of**

”

**space.**

**-LOUIS KAHN**



Vietnam Veterans War Memorial,Washington,D.C.,1982

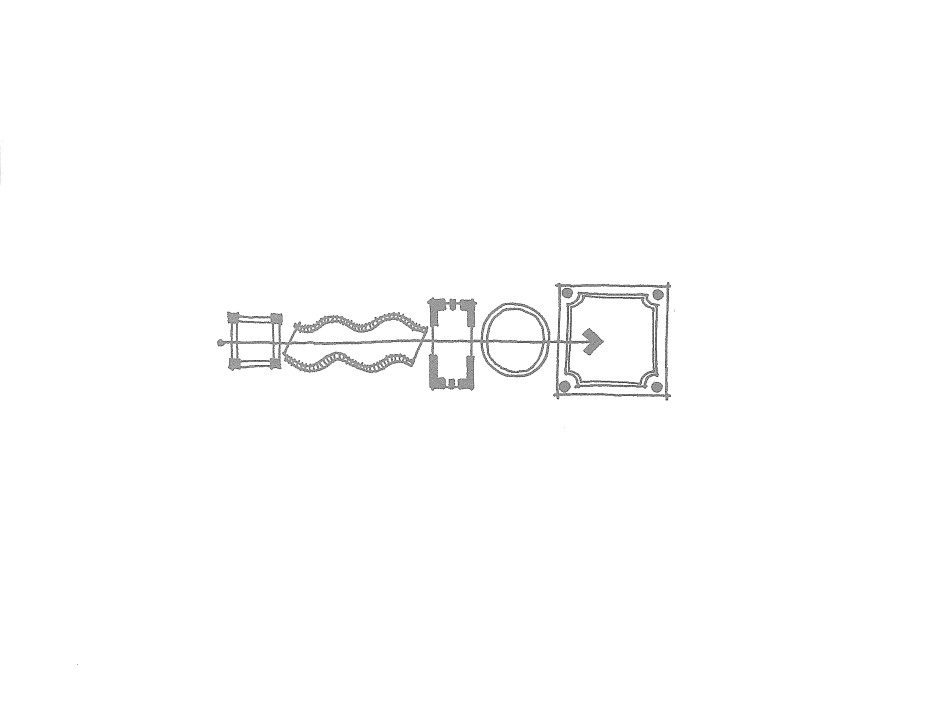
Maya Lin,designer



**Sense of place**

Genius loci literally means genius of place.It is used to describe places that are

deeply memorable for their architectural and experiential qualities.





**Our experience of an architectural**

**space is strongly influenced by how**

**we arrive in it.**

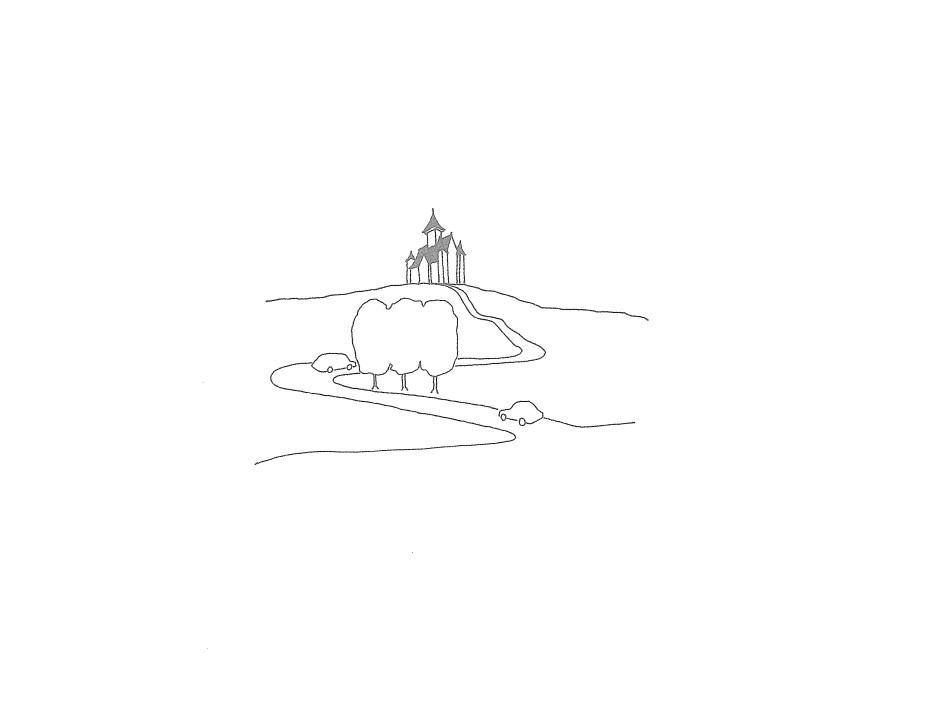
A tall,bright space will feel taller and brighter if counterpointed by a low-ceilinged,

softly lit space.A monumental or sacred space will feel more significant when placed

at the end of a sequence of lesser spaces.A room with south-facing windows will

be more strongly experienced after one passes through a series of north-facing

spaces.







h

**Use"denial and reward"to enrich**

**passage through the built environment.**

As we move through buildings,towns,and cities,we mentally connect visual cues

from our surroundings to our needs and expectations.The satisfaction and richness

of our experiences are largely the result of the ways in which these connections

are made.

Denial and reward can encourage the formulation of a rich experience.In design-

ing paths of travel,try presenting users a view of their target-a staircase,building

entrance,monument,or other element-then momentarily screen it from view as

they continue their approach.Reveal the target a second time from a different angle

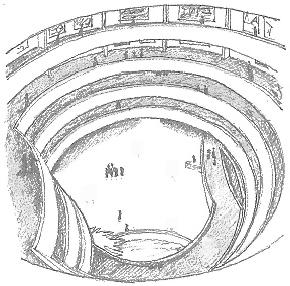
or with an interesting new detail.Divert users onto an unexpected path to create

additional intrigue or even momentary lostness;then reward them with other inter-

esting experiences or other views of their target.This additional"work"will make the

journey more interesting,the arrival more rewarding.



弯



**Guggenheim Museum,New York,1959**

**Frank Lloyd Wright,architect**



**12**

**Design an architectural space to**

**accommodate a specific program,**

**experience,or intent.**

Do not draw a rectangle-or any other arbitrary shape-on a floor plan,label it,and

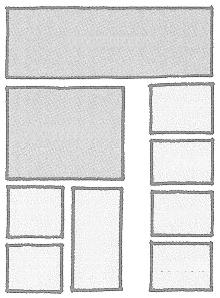
assume it will be suited to its intended use.Rather,investigate the program require-

ments in detail to determine the specifics of the activities that will take place there.

Envision actual situations or experiences that will happen in those spaces,and

design an architecture that accommodates and enhances them.

RECEPTION

WAREHOUSE

OFFICE

PRODUCTION

OFFICE

MAIL

OFFICE

WAIT-

NG

OFFICE



***Space planning is the organizing or***

**arranging of spaces to accommodate**

**functional needs.**

Space planning is a crucial skill for an architect,but arranging spaces to meet func-

tional requirements explains only a little of what architects do.A space planner

addresses the functional problem of fitting a building on its site;an architect is also

concerned with the meaning of a site and its buildings.A space planner creates

functional square footage for office workers;an architect considers the nature of

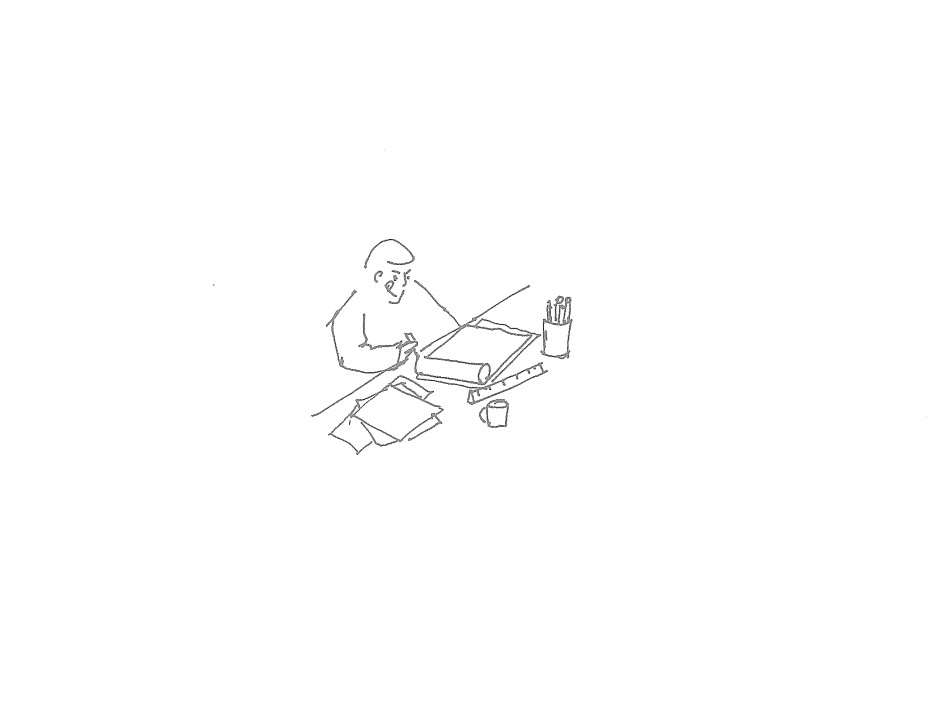
the work performed in the ofice environment,its meaning to the workers,and its

value to society.A space planner provides spaces for playing basketball,performing

laboratory experiments,manufacturing widgets,or staging theatrical productions;

an architect imbues the experience of these places with poignancy,richness,fun,

beauty,and irony.





**14**

**Architecture begins with an idea.**

Good design solutions are not merely physically interesting but are driven by under-

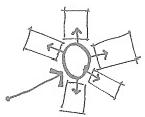
ying ideas.An idea is a specific mental structure by which we organize,understand,

and give meaning to external experiences and information.Without underlying ideas

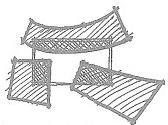
informing their buildings,architects are merely space planners.Space planning with

decoration applied to "dress it up"is not architecture;architecture resides in the

DNA of a building,in an embedded sensibility that infuses its whole.

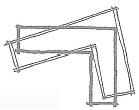


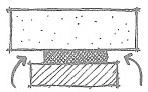
Finger poking into the woods

Odd shapes intrude on“pure”space



Box subtracted

Ls in conflict



**Radial scheme**

**with missing spoke**

Core segregates

public-private



**15**

**A parti is the central idea or concept of**

**a building.**

A pari [par-TEE]can be expressed several ways but is most often expressed by a

diagram depicting the general floor plan organization of a building and,by implica-

tion,its experiential and aesthetic sensibility.A parti diagram can describe massing,

entrance,spatial hierarchy,site relationship,core location,interior circulation,pub-

lic/private zoning,solidity/transparency,and many other concerns.The proportion of

attention given to each factor varies from project to project.

The partis shown here are from previously conceived projects;it is unlikely,if not

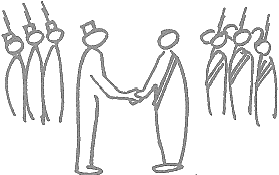
mpossible,to successfully carry a parti from an old project to a new project.The

design process is the struggle to create a uniquely appropriate parti for a project.

Some will argue that an ideal parti is wholly inclusive-that it informs every aspect

of a building from its overall configuration and structural system to the shape of the

doorknobs.Others believe that a perfect parti is neither attainable nor desirable.





**Parti derives from understandings that are**

**nonarchitectural and must be cultivated**

**before architectural form can be born.**

At its most ambitious,parti derives from matters more transcendent than mere

architecture.“L's in conflict,”for example,might be a suitable parti for a new govern-

ment building for two once-warring factions that have forged a new nation.“Finger

poking into the woods"might derive from an ecological belief about the relationship

between field and forest.“Missing spoke”might suggest a philosophy that loss

invites opportunity.





**17**

**The more specific a design idea is,the**

**greater its appeal is likely to be.**

Being nonspecific in an effort to appeal to everyone usually results in reaching no

one.But drawing upon a specific observation,poignant statement,ironic point,witty

reflection,intellectual connection,political argument,or idiosyncratic belief in a cre-

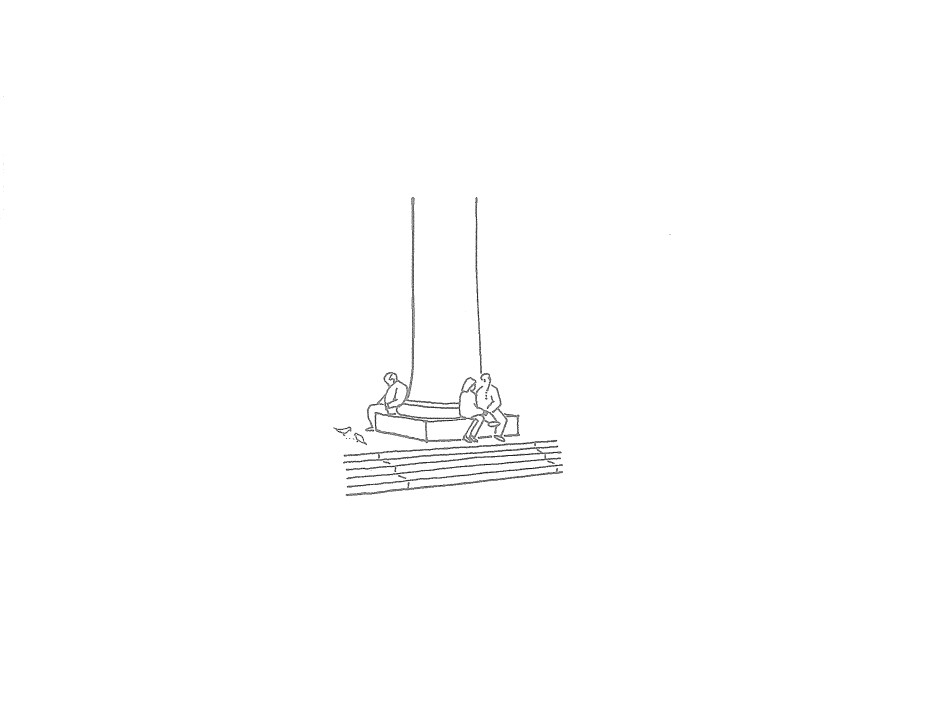
ative work can help you create environments others will identify with in their own way.

Design a flight of stairs for the day a nervous bride descends them.Shape a win- dow to frame a view of a specific tree on a perfect day in autumn.Make a balcony for the worst dictator in the world to dress down his subjects.Create a seating area for a group of surly teenagers to complain about their parents and teachers.

Designing in idea-specific ways will not limit the ways in which people use and

understand your buildings;it will give them license to bring their own interpretations

and idiosyncrasies to them.





**18**

**Any design decision should be justified in**

**at least two ways.**

A stair's primary purpose is to permit passage from floor to floor,but if well designed

t can also serve as a congregation space,a sculptural element,and an orienting

device in the building interior.A window can frame a view,bathe a wall with light,

orient a bullding user to the exterior landscape,express the thickness of the wall,

describe the structural system of the building,and acknowledge an axial relation-

ship with another architectural element.A row of columns can provide structural

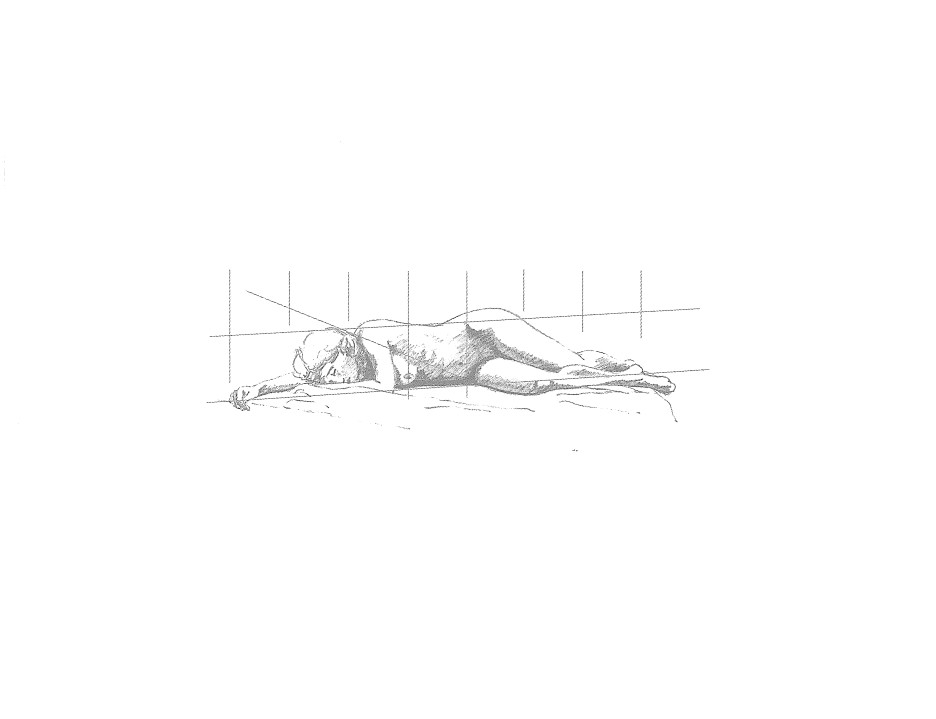
support,define a circulation pathway,act as a“wayfinding”device,and serve as a

rhythmic counterpoint to more irregularly placed architectural elements.

Opportunities for multiple design justifications can be found in almost every ele-

ment of a building.The more justifications you can find or create for any element,

the better.



**Draw hierarchically.**



**19**

When drawing in any medium,never work at a“100%level of detail”from one end

of the sheet toward the other,blank end of the sheet.Instead,start with the most

general elements of the composition and work gradually toward the more specific

aspects of it.Begin by laying out the entire sheet.Use light guide lines,geometric

alignments,visual gut-checks,and other methods to cross-check the proportions,

relationships,and placement of the elements you are drawing.When you achieve

some success at this schematic level,move to the next level of detail.If you find

yourself focusing on details in a specific area of the drawing,indulge briefly,then

move to other areas of the drawing.Evaluate your success continually,making local

adjustments in the context of the entire sheet.





**Engineers tend to be concerned with**

**physical things in and of themselves.**

**Architects are more directly concerned**

**with the human interface with physical**

**things.**





**21**

**An architect knows something about**

**everything.An engineer knows everything**

**about one thing.**

An architect is a generalist,not a specialist-the conductor of a symphony,not a

virtuoso who plays every instrument perfectly.As a practitioner,an architect coor-

dinates a team of professionals that include structural and mechanical engineers,

interior designers,building-code consultants,landscape architects,specifications

writers,contractors,and specialists from other disciplines.Typically,the interests of

some team members will compete with the interests of others.An architect must

know enough about each discipline to negotiate and synthesize competing demands

while honoring the needs of the client and the integrity of the entire project.





Stylus

ABCDEFGHIJKLMNOPQRSTUVWXYZ

1234567890 abcdefghyklmnopgrstuwxyz

**City Blueprint**

ABCDEFGHIJKLMNOPQRSTUVWXYZ

123456789O abcdefghiklmnoparstuvwxyz

**Bernhard Fashion**

ABCDEFGHIUKLMNOPQRSTUVWXYZ 1234567890 abcdefghillmnoparstuvwxyz



**How to make architectural hand-lettering**

Good architectural lettering adheres to several principles and techniques:

1 Honor legibilty and consistency above all else.

2 Use guide lines (actual or imagined)to ensure uniformity.

3 Emphasize the beginning and end of all strokes,and overlap them slightly where

they meet-just as in drawing lines.

4 Give your horizontal strokes a slight upward tilt.If they slope downward,your

letters will look tired.

5 Give curved strokes a balloon-like fullness.

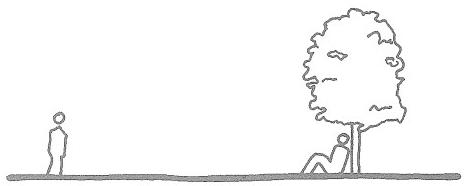
6 Give careful attention to the amount of white space between letters.An E,for

example,will need more space when following an I than when coming after an

S or T.

Several standard computer fonts are similar to architectural lettering and can serve

as guides until you develop your manual lettering skills.



Objective engagement of reality Detached observation

Subjective engagement of Direct immersion

reality



**Reality may be engaged subjectively,by**

**which one presumes a oneness with the**

**objects of his concern,or objectively,**

**by which a detachment is presumed.**

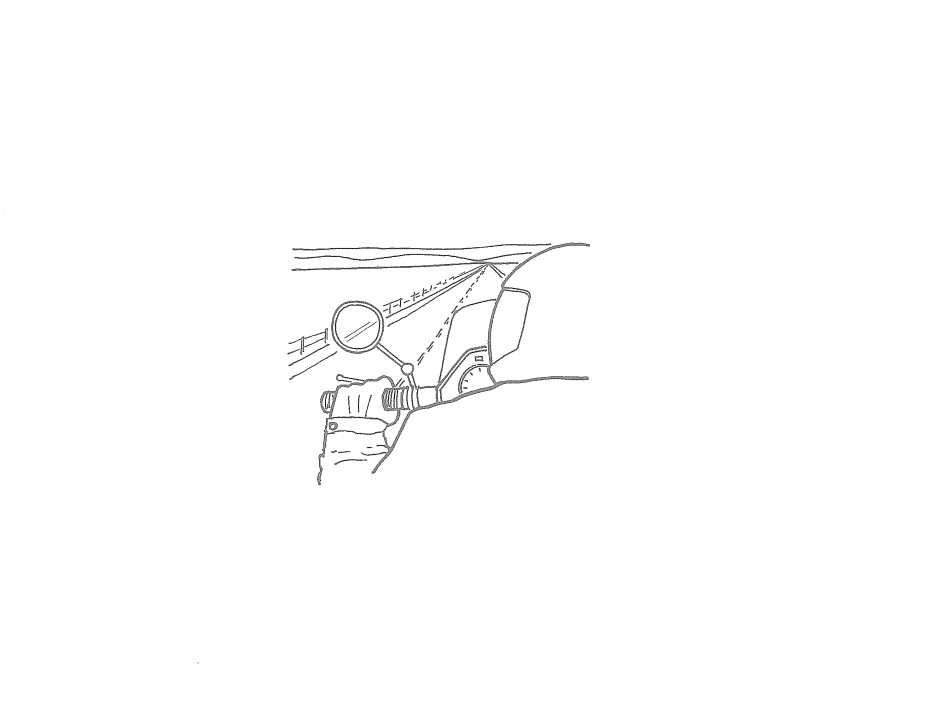
Objectivity is the province of the scientist,technician,mechanic,logician,and math-

ematician.Subjectivity is the milieu of the artist,musician,mystic,and free spirit.

Citizens of modern cultures are inclined to value the objective view-and hence

t may tend to be your worldview-but both modes of engagement are crucial to

understanding and creating architecture.





**“Science works with chunks and bits**

**and pieces of things with the continuity**

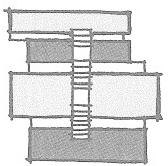
**presumed,and [the artist]works only**

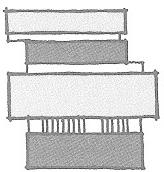
**with the continuities of things with the**

**chunks and bits and pieces presumed.”**

-ROBERT PIRSIG,ZEN AND THE ART

*OF MOTORCYCLE MAINTENANCE*





**Stair across layers** Stair parallel to layers



**Use your parti as a guidepost in**

**designing the many aspects of a building**.

When designing a stair,window,column,roof,lobby,elevator core,or any other

aspect of a building,always consider how its design can express and reinforce the

essential idea of the building.

Imagine,for example,a parti that is intended to express a layered organization, with each layer having unique architectural qualities.A central stair within this build- ing could be:

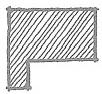
1 oriented across the layers,so that one traverses the layers in traveling the stair;

2 parallel to the other layers,that is,a layer in and of itself;

3 left outside the layer system in order to preserve its purity;

4 anything else that helps say,“This building is about layers”(and nothing that

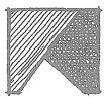
says something contradictory).



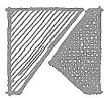
Week 1



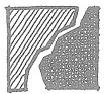
Week 2



Week 4



Week 7



**Week 8**



Week 10



**Good designers are fast on their feet.**

As the design process advances,complications inevitably arise-structural prob-

lems,fluctuating client requests,difficulties in resolving fire egress,pieces of the

program forgotten and rediscovered,new understandings of old information,and

much more.Your parti-once a wondrous prodigy-will suddenly face failure.

A poor designer will attempt to hold onto a failed parti and patch local fixes onto

the problem areas,thus losing the integrity of the whole.Others may feel defeated

and abandon the pursuit of an integrated whole.But a good designer understands

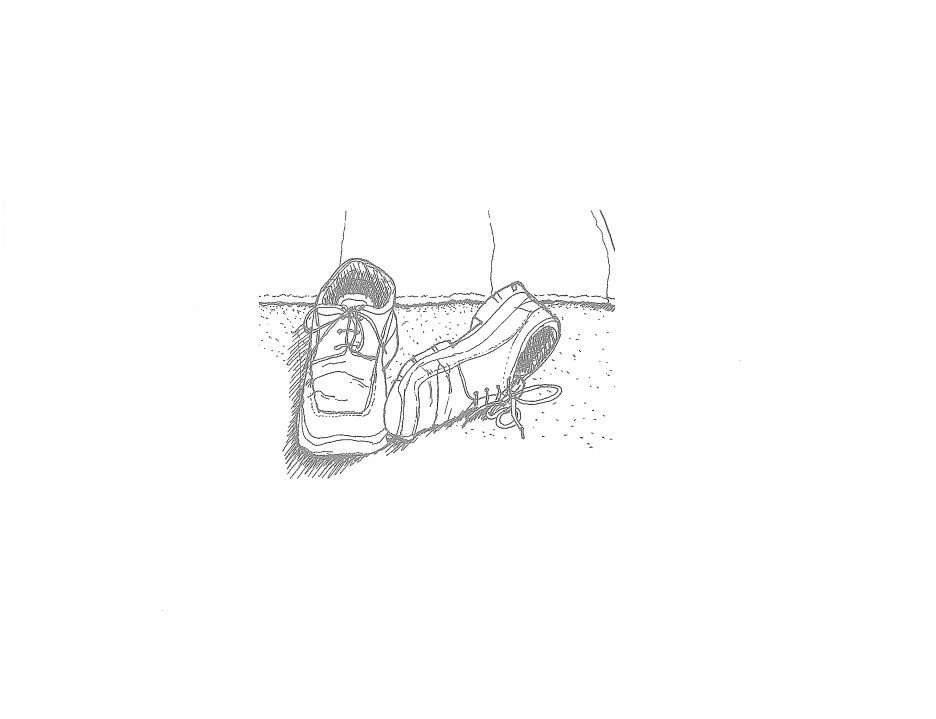
the erosion of a parti as a helpful indication of where a project needs to go next.

When complications in the design process ruin your scheme,change-or if nec-

essary,abandon-your parti.But don't abandon having a parti,and don't dig in

tenaciously in defense of a scheme that no longer works.Create another parti that

holistically incorporates all that you now know about the building.





**Soft ideas,soft lines;hard ideas,**

**hard lines**

Fat markers,charcoal,pastels,crayons,paint,soft pencils,and other loose or soft

implements are valuable tools for exploring conceptual ideas early in the design

process,as by their nature they tend to encourage broad thinking and deny fine-

grained decisions.Fine-point markers and sharp pencils become more useful as the

design process moves closer to a more highly resolved plan.Value drawings can

help express nuances and subtleties.

Hard-line drawings-drawings drafted to scale with a straightedge or computer

program-are best for conveying information that is decisive,specific,and quanti-

tative,such as final floor plans or detailed wall sections.They can be occasionally

useful in schematic design,such as when you need to test out the dimensional

workability of a design concept.When overused as a design tool,however,com-

puter drafting programs can encourage the endless generation of options rather

than foster a deepening understanding of the design problem you wish to solve.





**A good designer isn't afraid to throw**

**away a good idea.**

Just because an interesting idea occurs to you doesn't mean it belongs in the build-

ing you are designing.Subject every idea,brainstorm,random musing,and helpful

suggestion to careful,critical consideration.Your goal as a designer should be to

create an integrated whole,not to incorporate all the best features in your building

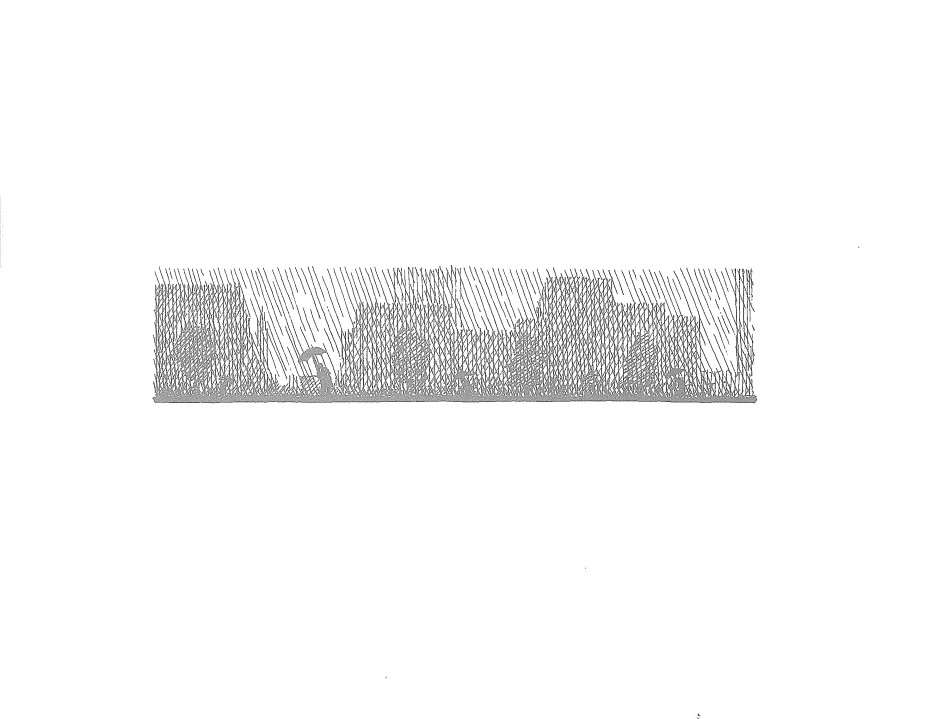
whether or not they work together.

Think of a parti as an author employs a thesis,or as a composer employs a musi-

cal theme:not every idea a creator conjures up belongs in the work at hand!Save

your good but ill-fitting ideas for another time and project-and with the knowledge

that they might not work then,either.



**Being process-oriented,not product-**

**driven,is the most important and difficult**

**skill for a designer to develop**.

Being process-oriented means:

1 seeking to understand a design problem before chasing after solutions;

2 not force-fiting solutions to old problems onto new problems;

3 removing yourself from prideful investment in your projects and being slow to fall

in love with your ideas;

4 making design investigations and decisions hollistically(that address several

aspects of a design problem at once)rather than sequentially (that finalize one

aspect of a solution before investigating the next);

5 making design decisions conditionally-that is,with the awareness that they may

or may not work out as you continue toward a final solution;

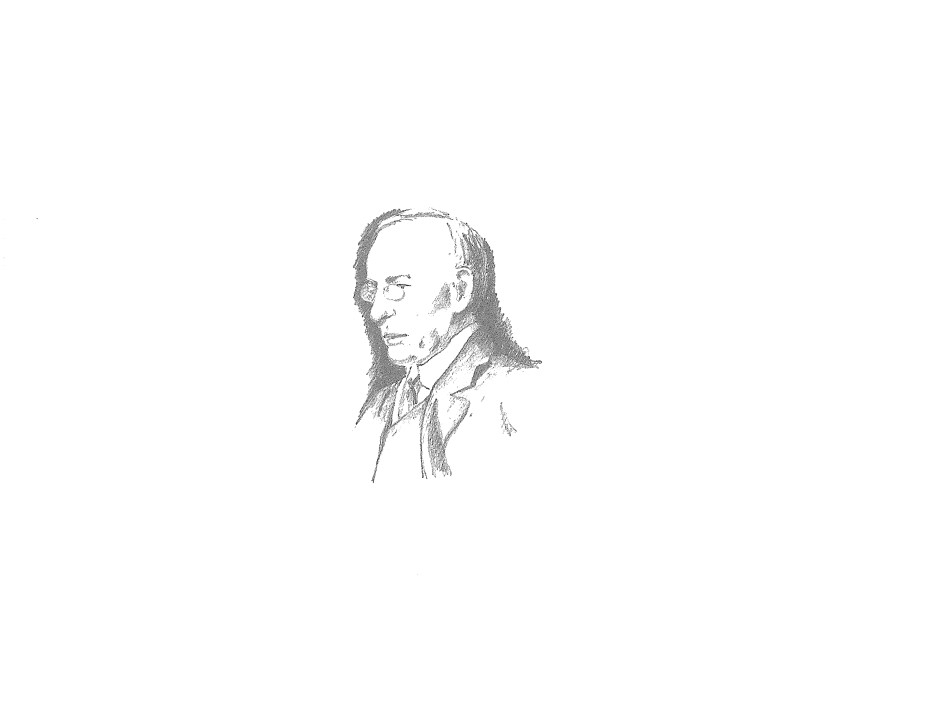
6 knowing when to change and when to stick with previous decisions;

7 accepting as normal the anxiety that comes from not knowing what to do;

8 working fluidly between concept-scale and detail-scale to see how each informs

the other:

9 always asking “What if ...?”regardless of how satisfied you are with your solution.





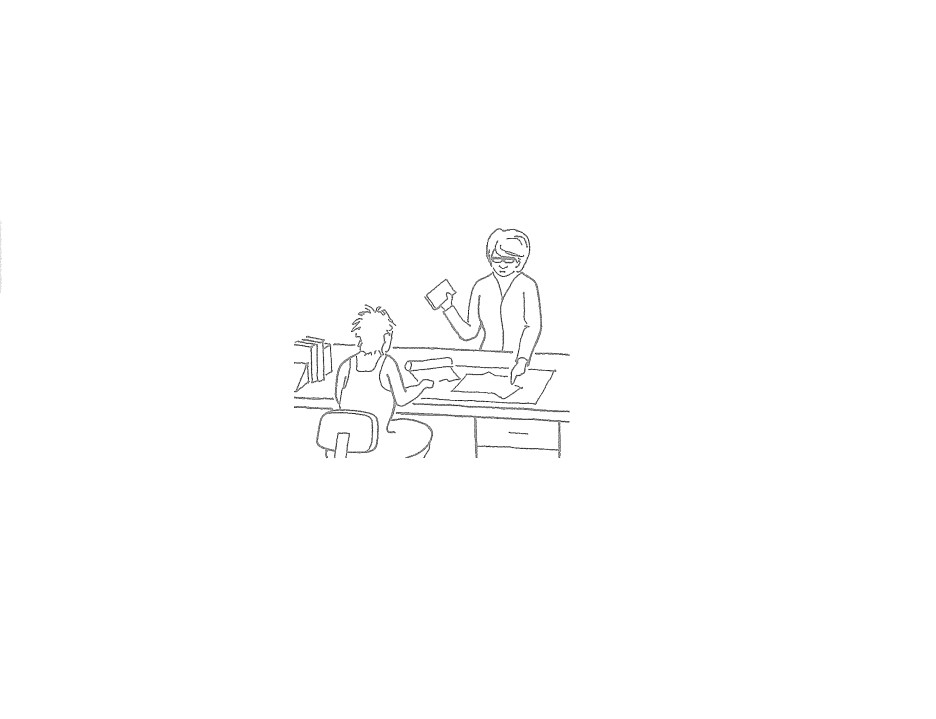
**“A proper building grows naturally,**

**logically,and poetically out of all its**

**conditions.”**

一LOUIS SULLIVAN,KINDERGARTEN

CHATS [PARAPHRASE]





**Improved design process,not a perfectly**

**realized building,is the most valuable**

**thing you gain from one design studio**

**and take with you to the next.**

Design studio instructors,above all else,want their students to develop good

process.If an instructor gives a good grade to what appears to you to be a poor

project,it is probably because the student has demonstrated good process.Like-

wise,you may see an apparently good project receive a mediocre grade.Why?

Because a project doesn't deserve a good grade if the process that led to it was

sloppy,ill-structured,or the result of hit-and-miss good luck.





**The most effective,most creative problem**

**solvers engage in a process of meta-**

**thinking,or “thinking about the thinking.”**

Meta-thinking means that you are aware of how you are thinking as you are doing

the thinking.Meta-thinkers engage in continual internal dialogue of testing,stretch-

ing,criticizing,and redirecting their thought processes.





**If you wish to imbue an architectural**

**space or element with a particular quallity,**

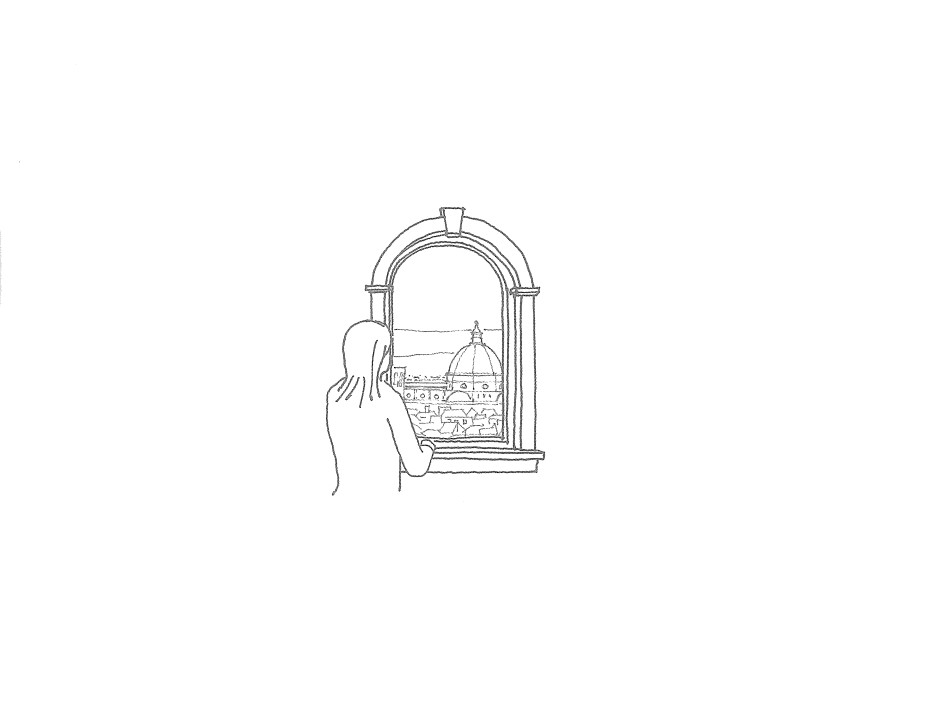
**make sure that quality is really there.**

lf you want a wall to feel thick,make sure it is THICK.

lf a space is to feel tall,make sure it really is TALL.

The clear demonstration of design intent is crucial for beginning designers.Experi-

enced designers often know how to give great impact to subtle differentiations.





**34**

**Frame a view,don't merely exhibit it**.

Although a“wall of windows”might seem the best treatment for a dramatic view,

richer experiences are often found in views that are discreetly selected,framed,

screened,or even denied.As a designer,work to carefully shape,size,and place

windows such that they are specific to the views and experiences they address.



**“I like a view but l like to sit with**

**my**

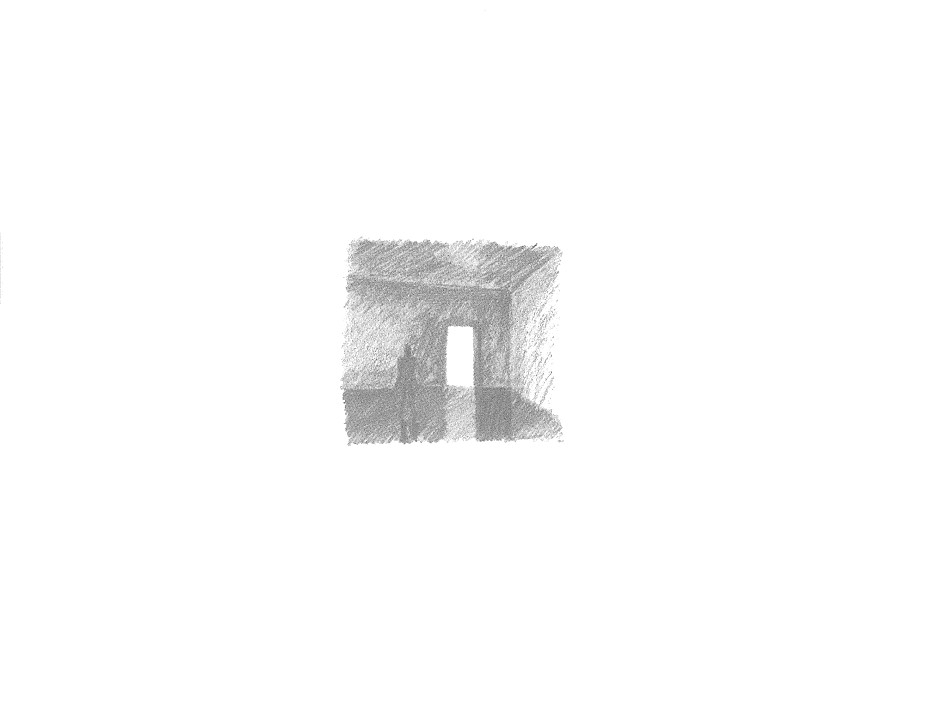
**turned to it."**

**back**



*-GERTRUDE STEIN,THE AUTOBIOGRAPHY*

*OF ALICE B. TOKLAS*

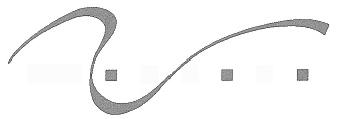




**Value drawings (rendered in shade and**

**shadow)tend to convey emotions better**

**than line drawings.**



■ ■ ■ ■ ■



**Any aesthetic quality is usually enhanced**

**by the presence of a counterpoint.**

When seeking to bring a particular aesthetic quality(bright,dark,tall,smooth,

straight,wiggly,proud,and the like)to a space,element,or buiiding,try including

an opposite or counterposing quality for maximum impact.If you want a room to

feel tall and bright,try designing an approach through a low,dark space.If you want

an atrium to feel like a geometrically pure,highly organized center of a building,sur-

round it with spaces that are more organically or randomly organized.If you want

to emphasize the richness of a material,counterpose it with a humble,less refined

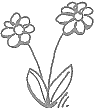
product.Every aspect of a building offers such opportunities:rough surfaces coun-

terposed with smooth surfaces,horizontal masses with vertical masses,repetitive

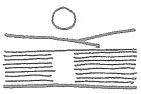
columns with continuous walls,linear arrangements with curves,large windows with

small ones,top-lit spaces with side-lit spaces,flowing spaces with compartmental-

ized rooms,and so on.







O



**The cardinal points of the compass**

**offer associations of meaning that can**

**enhance architectural experience.**

EAST:youthfulness,innocence,freshness

SOUTH:activity,clarity,simplicity

WEST:aging,questioning,wisdom

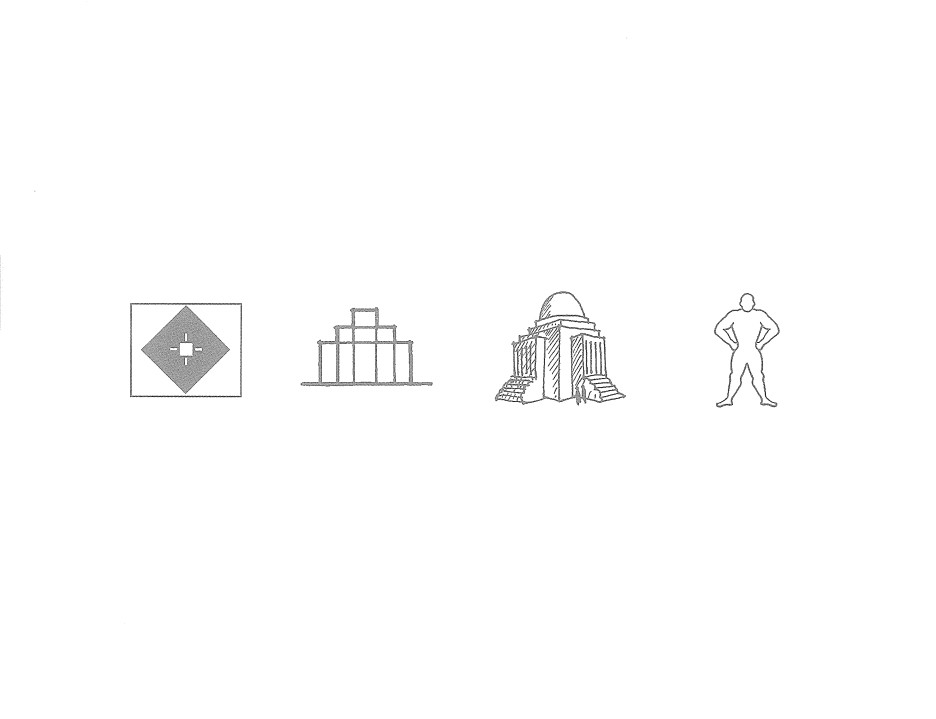
NORTH:maturity,acceptance,death

Such associations,while not absolute,can help you decide where to locate various

spaces and activities on a site or within a building:What might compass orientation

suggest about the placement of a mortuary,a worship space,an adult education

lecture hall,or an infant nursery?



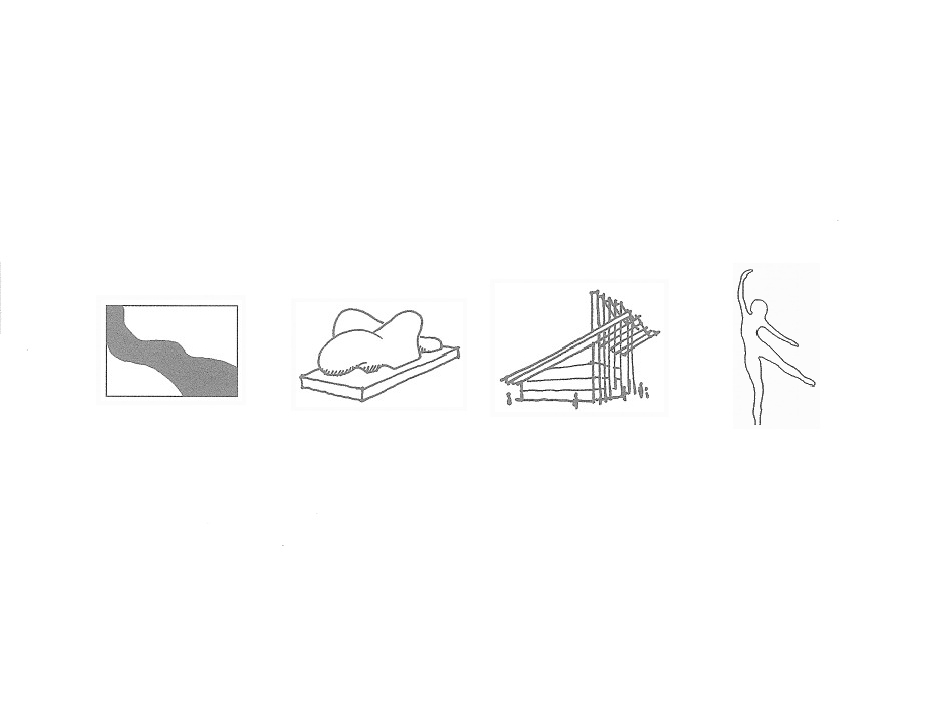


**A static composition appears to be at rest**.

Static compositions are usually symmetrical.At their most successful,they suggest

power,firmness,conviction,certainty,authority,and permanence.Less successful

examples can be unengaging and boring.





**A dynamic composition encourages the**

**eye to explore.**

Dynamic compositions are almost always asymmetrical.They can suggest activity,

excitement,fun,movement,flow,aggression,and conflict.Less successful exam-

ples can be jarring or disorienting.





**Moves and counterpoints**

To create a dynamic,balanced composition in either 2D or 3D,make a strong initial

design decision that is dynamic and unbalanced;then follow it with a secondary

dynamic move that counterpoints the first move.Think of a counterpoint as a sort of

aesthetic rebuttal:it is similar to but not quite the same as an opposite,as an infinite

number of counterpoints can theoretically be made to a given move.A single,large

swirl,for example,can be counterpointed by several small squares because “sev-

eral"opposes“single"and“small”opposes “large.”But that same swirl can also

be counterpointed by choppy zigzag,by an emphatically regular grid,by a series of

floating circles,and so on,because each countering move has qualities that are in

some way opposite the qualities of the swirl.

In the composition at left,there are at least four different moves,each counter-

pointing all the other moves. 





**Those tedious first-year studio exercises**

**in“spots and dots”and “lumps and**

**bumps”really do have something to do**

**with architecture.**

Many beginning architecture students grow bored and impatient with the two-and

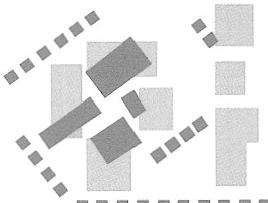
three-dimensional design exercises commonly assigned in beginning design stu-

dios.And upper-level students,grateful to have survived beginning design,often fail

to look back to their early design lessons to see how they can provide a foundation

for solving complex architectural problems.

If your instructor isn't making clear the connection of 2D and 3D design to “real” architecture,ask for examples.Or ask an instructor in an upper level studio.A thor- ough grounding in the rudiments of 2D and 3D design will take you farthest in the long run through the complex field of architecture.



**Site plan study for a college campus**



**43**

**When having difficulty resolving a floor**

**plan,site plan,building elevation,section**,

**or building shape,consider it as a 2D or**

**3D composition.**

This will encourage you to give balanced attention to form and space,help you inte-

grate disparate aspects of the scheme,and discourage you from focusing exces-

sively on your pet features.Questions you can ask in 2D or 3D include:

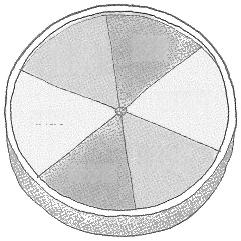
· Does the composition have an overall balance?

·Is there a mixture of elements of different sizes and textures to attract the eye in

different ways and from different distances?

· Is there a major “move”and one or more counterpoints?

。 Do any areas of the composition appear to have been ignored?

Purple

Blue

Green

Red

Orange

Yellow



**44**

**Color theory provides a framework for**

**understanding the behavior and meaning**

**of colors.**

Colors may be associated with the seasons:

· WINTER:gray,white,ice blue,and similar colors

·AUTUMN:gold,russet,olive,brownish purple,muted or muddy tones

· SUMMER:primary or bright colors

。 SPRING:pastel tones

Colors may be categorized as warm or cool.Cool colors tend to recede from the

viewer-that is,they appear to be farther away,while warm colors advance.

· WARM:reds,browns,yellows,yellow-or

olive-greens

。 COOL:blues,grays,true-or blue-greens

A color wheel,on which colors located opposite are complementary,may be used to

organize colors.Using complements together-for example,blue with orange-can

help create a balanced color scheme.





**Three levels of knowing**

SIMPLICITY is the world view of the child or uninformed adult,fully engaged in his

own experience and happily unaware of what lies beneath the surface of immedi-

ate reality

COMPLEXITY characterizes the ordinary adult world view.It is characterized by an

awareness of complex systems in nature and society but an inability to discern clari-

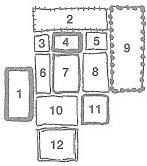
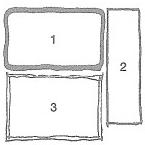
fying patterns and connections.

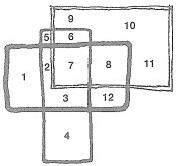
INFORMED SIMPLICITY is an enlightened view of reality.It is founded upon an abil-

ity to discern or create clarifying patterns within complex mixtures.Patterm recogni-

tion is a crucial skil for an architect,who must create a highly ordered building amid

many competing and frequently nebulous design considerations.





Simplicity

3 elements used to

create 3 spaces

Complexity created through excessive agglomeration

12 elements required to

create 12 spaces

Complexity created through informed simplicity

3 elements combined to create 12 spaces



**Create architectural richness through**

***informed simplicity or an interaction of***

**simples rather than through unnecessarily**

**busy agglomerations.**

Whether an architectural aesthetic is intended to be minimalist or complex,its expe-

rience mysterious or clear,its spaces Spartan or richly layered,a building must be

a highly ordered thing.Creating simplifying patterns in a building plan is a way of

lending order while allowing multiple readings and experiences.

Some examples of unnecessary complexity:

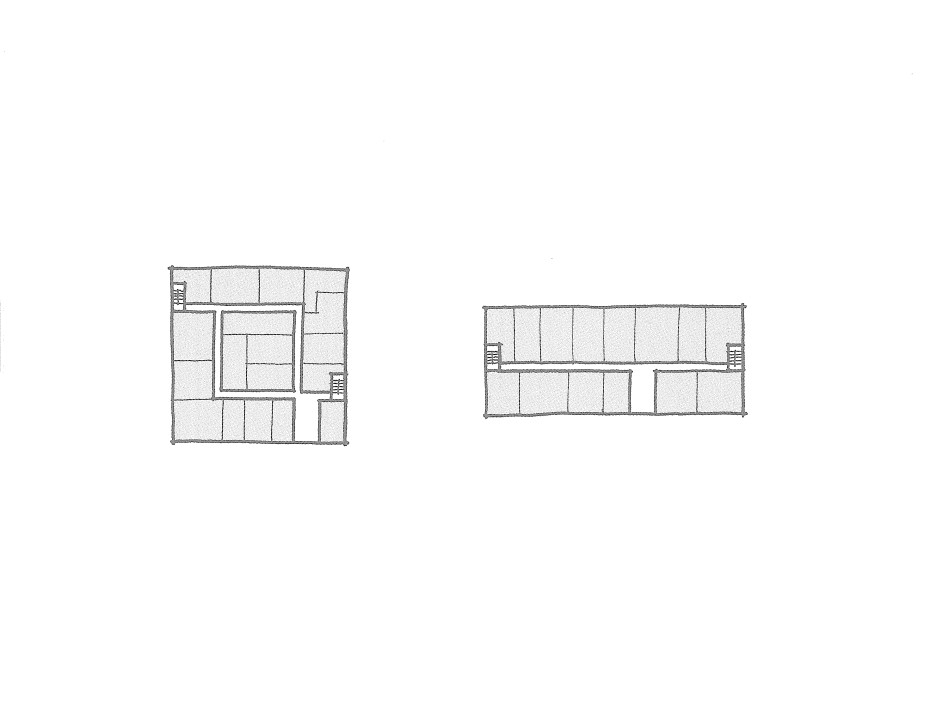
· making a dozen separate design moves when three well-informed moves can

accomplish as much;

。 busying up a project with doodads because it is boring without them;

。 agglomerating many unrelated elements without concern for their unity because

they are interesting in themselves.





**Square buildings,building wings,and**

**rooms can be difficult to organize.**

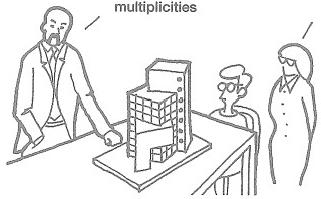
Because a square is inherently nondynamic,it doesn't naturally suggest movement. This can make it difficult to establish appropriate circulation pathways in a square floor plan.Further,interior rooms in square buildings can be far removed from natural light and air.Nonsquare shapes-rectangles,crescents,wedges,ells,and so on- more naturally accommodate patterns of movement,congregation,and habitation.

This project

wants to be

about a

complexity of



But certainly

a multiplicity of

similars would

better reflect the

perturbance of

the modularity

given the

particularity

of the language

established

by the axial

relationships



**If you can't explain your ideas to your**

**grandmother in terms that she understands**, **you don't know your subject well enough.**

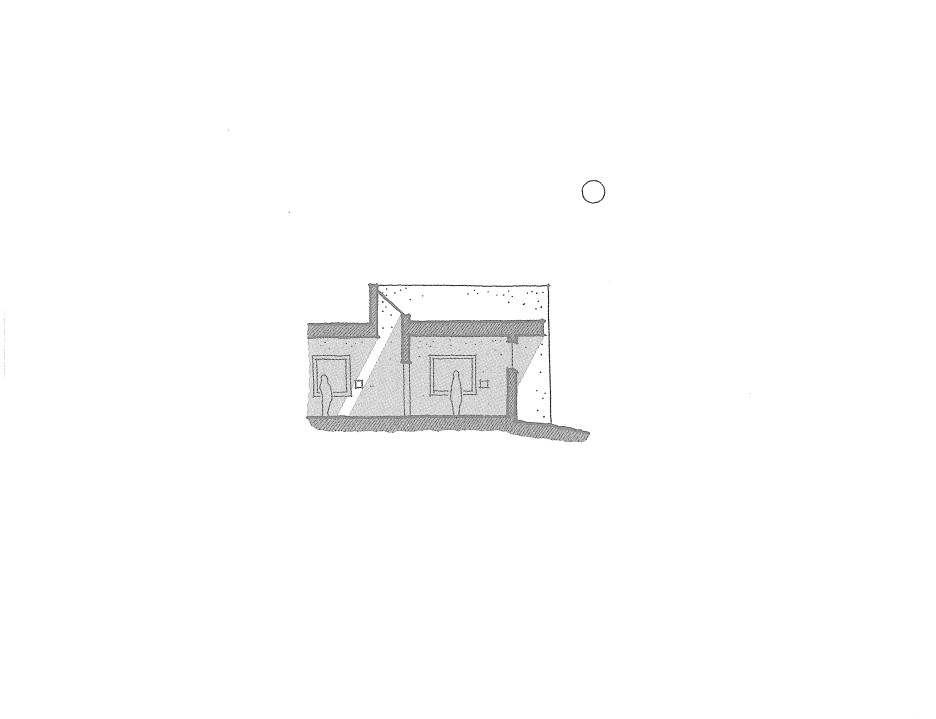
Some architects,instructors,and students use overly complex (and often meaning-

less!)language in an attempt to gain recognition and respect.You might have to let

some of them get away with it,but don't imitate them.Professionals who know their

subject area well knowhow to communicate their knowledge to others in everyday

language.





**The altitude,angle,and color of daylighting**

**varies with compass orientation and time**

**of day.In the northern hemisphere:**

Daylight from NORTH-facing windows tends to be shadowless,diffuse,and neutral

or slightly grayish most of the day and year.

Daylight from the EAST is strongest in the morning.It tends to be of low altitude,

with soft,long shadows,and gray-yellow in color.

Daylight from the SOUTH is dominant from late morning to mid-afternoon.It tends

to render colors accurately and cast strong,crisp shadows.

Daylight from the WEST is strongest in the late afternoon and early evening and has

a rich gold-orange cast.It can penetrate deeply into buildings and occasionally be

overbearing.



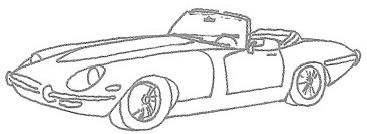


**Windows look dark in the daytime**.

When rendering an exterior building view,making the windows dark (except when

the glass is reflective or a light-colored blind or curtain is behind the glass)will add

depth and realism.



**Jaguar E-type**



**Beauty is due more to harmonious**

**relationships among the elements of**

**a composition than to the elements**

**themselves.**

Put on your favorite pants,sharpest shirt,and coolest jacket without regard for their

coordination.Then walk down the street and try not to get laughed at.

Build a car out of the most beautiful features of the most stunning cars ever

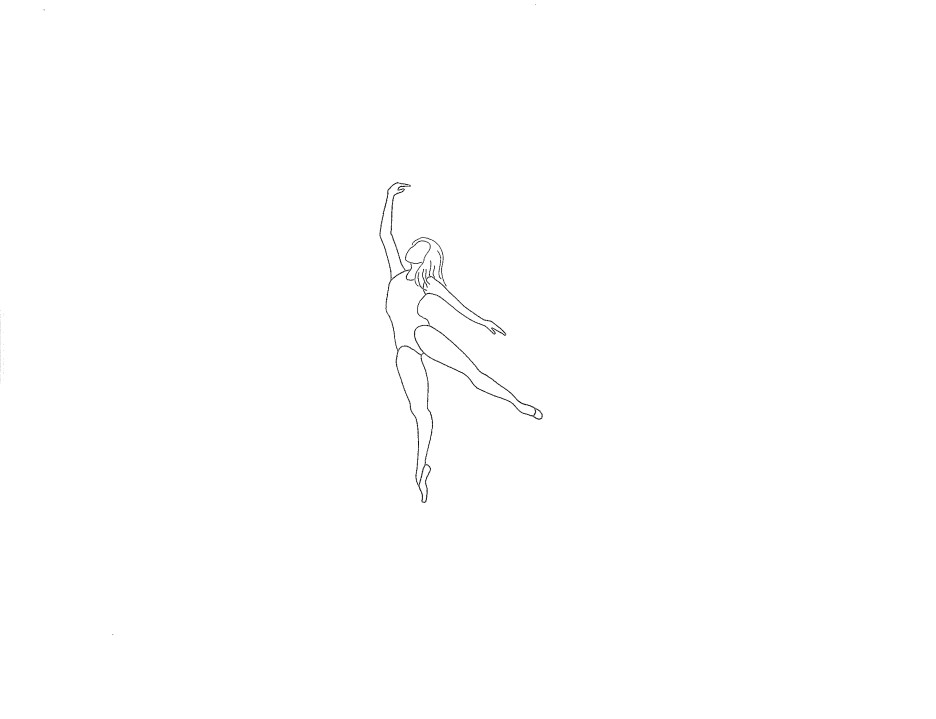
made.See if your friends will be seen in it with you.

Create a dream lover out of body parts from your favorite Hollywood hotties.See

if you're as turned on by the sum of the parts as you were by the previous wholes.

lt's the dialogue of the pieces,not the pieces themselves,that creates aesthetic

success.





**An appreciation for asymmetrical balance**

**is considered by many to demonstrate a**

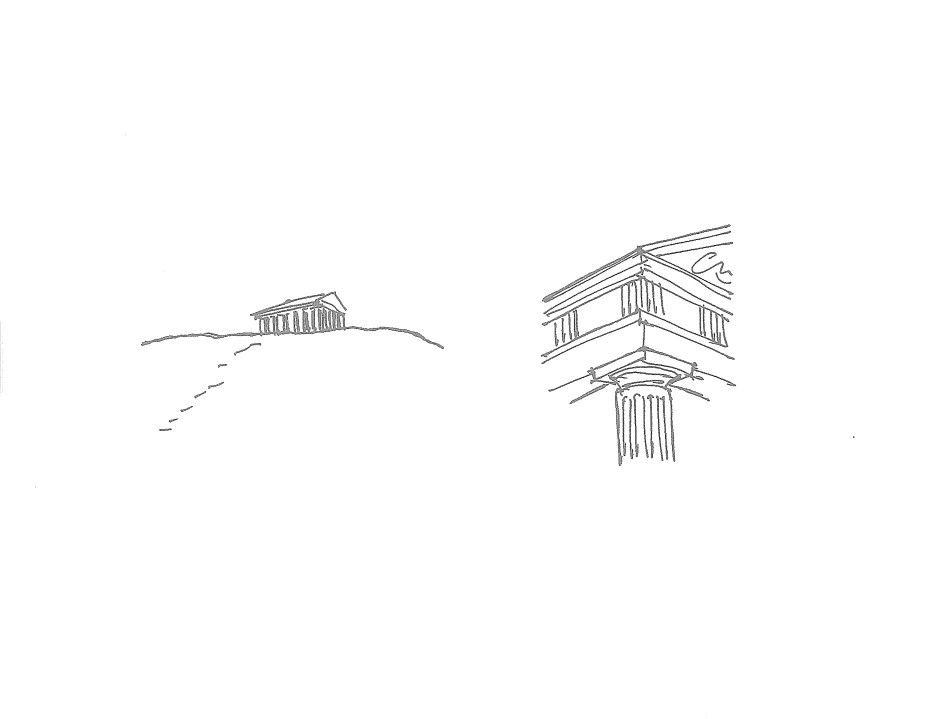
**capacity for higher-order thinking.**

Whether creating a static or dynamic composition,an artist usually seeks to achieve

balance.Balance is inherent in a symmetrical composition,but asymmetrical com-

positions can be either balanced or unbalanced.Consequently,asymmetry tends to

require a more complex and sophisticated understanding of wholeness.

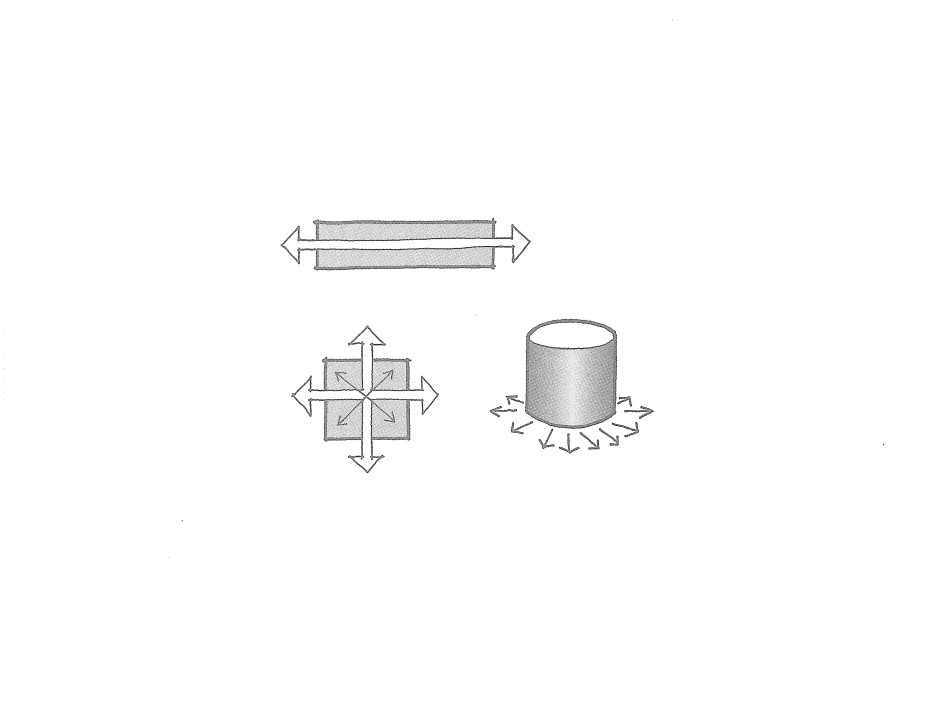




**A good building reveals different things**

**about itself when viewed from different**

**distances.**





**Geometric shapes have inherent dynamic**

**qualities that influence our perception**

**and experience of the built environment.**

A square,for example,is inherently static and nondirectional.Consequently,a room

of square or cubic proportions may feel restful,although if not carefully designed it

can feel dull or vacuous.A rectangle,because it has two long sides and two shorter

sides,is inherently directional.The longer a rectangular room is,the more it will

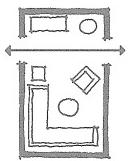
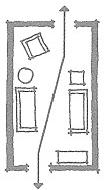
encourage visual and physical movement parallel to its long axis.

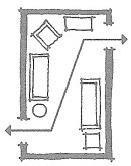
A circle has an infinite number of radii and is therefore both omnidirectional and

nondirectional:a round or cylindrical building addresses every surrounding point

equally and therefore can be an effective focal point on the landscape.At the same

time,no aspect of a circular building is inherently the front,side,or rear.





Undesirable circulation

Through-traffic bisects

seating area

Good circulation

Primary seating area is

protected from traffic

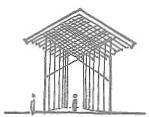
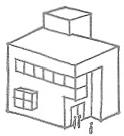


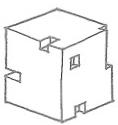
**The best placement of a circulation path**

**through a small room is usually straight**

**through,a few feet from one wall.**

This allows the primary users of the room to be uninterrupted by through-traffic.The worst circulation through a small room is usually a path running diagonally through it or parallel to its long axis.Comfortable furniture arrangements are difficult to achieve under such circumstances,as persons dwelling in the space will tend to feel-if not in fact be-in the way of those passing through.





Subtractive



**Fallingwater**

**Additive,asymmetrical**

Abstract/mixed

Thorncrown Chapel Additive,symmetrical



Guggenheim Bilbao

Addition of shaped/molded forms

ipolded forms;

windows subtracted or “punched”



**Most architectural forms can be**

**classified as additive,subtractive,**

**shaped,or abstract.**

ADDITIVE FORMS appear to have been assembled from individual pieces.

SUBTRACTIVE FORMS appear to have been carved or cut from a previously

“whole”form.

SHAPED OR MOLDED FORMS appear to have been formed from a plastic material

through directly applied force.

ABSTRACT FORMS are of uncertain origin.





**An effective oral presentation of a studio**

**project begins with the general and**

**proceeds toward the specific.**

1 State the design problem assigned.

2 Discuss the values,attitude,and approach you brought to the design problem.

3 Describe your design process and the major discoveries and ideas you encoun-

tered along the way.

4 State the parti,or unifying concept,that emerged from your process.Illustrate

this with a simple diagram.

5 Present your drawings (plans,sections,elevations,and vignettes)and models,

always describing them in relationship to the parti.

6 Perform a modest and confident self-critique.

Never begin a presentation by saying,"Well,you go in the front door here"unless

your goal is to put your audience to sleep.





**The proportions of a building are an**

**aesthetic statement of how it was built.**

Traditional architecture (built prior to the advent of modern construction methods in

the late 1800s)tends to have short structural spans and vertical window proportions.

Modern buildings more often have long spans and horizontal window proportions.

The vertical proportions of traditional buildings were due to the length of a stone

or wood lintel (the supporting beam over an opening)being limited to what could

be found,fabricated,and lifted into place by hand.The only way to make a large

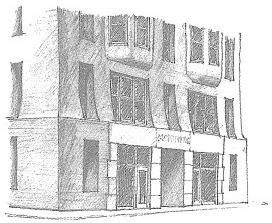
window when its width is limited is to make it tall.

Contemporary steel and concrete construction methods allow long structural

spans,so windows in contemporary buildings can have any proportion.Often they

are given horizontal proportions,however,at least in part because this distinguishes

them aesthetically from traditional windows.



Monadnock Building,Chicago,1891

Burnham and Root,architects



**Traditional buildings have thick exterior**

**walls.Modern buildings have thin walls.**

Traditional architecture uses the exterior walls to support the weight of the building.

The walls must be thick because they receive heavy loads from the floors,roof,and

walls above them,which they then transfer to the earth.The exterior walls of the

twelve-story Monadnock Building,for example,are six feet thick at the base.

Most modern buildings employ a frame of steel or concrete columns and beams

to support structural loads and transfer the building's weight to the earth.The exte-

rior walls are attached to and supported by this frame,and therefore serve as a

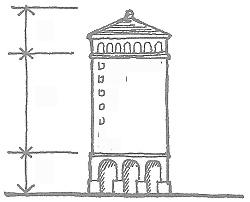
barrier against the weather only.Thus,the walls can be much thinner than those of

traditional buildings,and-despite appearances-they usually do not rest on the

ground.When brick or stone is used to clad a skyscraper,for example,the masonry

walls are not piled up on the ground for forty stories,but are supported by the super-

structure every story or two.

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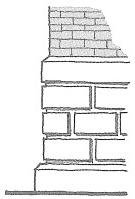
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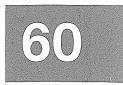
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**Traditional architecture employs a**

**tripartite,or base-middle-top,format.**

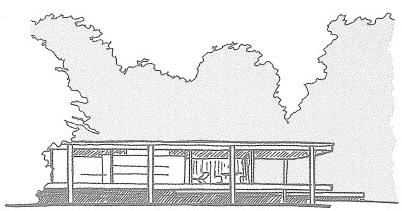
The base of a traditional building is usually designed to express its structural support

of the upper stories and the transfer of those loads to the ground.A masonry base is

typically rusticated-the stones and mortar joints are shaped in a way that suggests

the base is quite heavy and thick.The top of a traditional building is symbolically a

crown or hat that announces on the skyline the building's purpose or spirit.



**Farnsworth House,Plano,lllinois,1951**

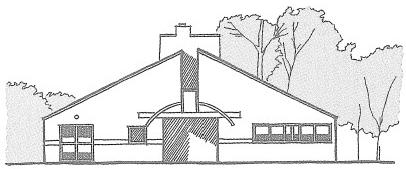
Mies van der Rohe,architect

**“Less is more.**”

**一LUDWIG MIES VAN DER ROHE**



**61**



Vanna Venturi House,Philadelphia,Pennsylvania,1962

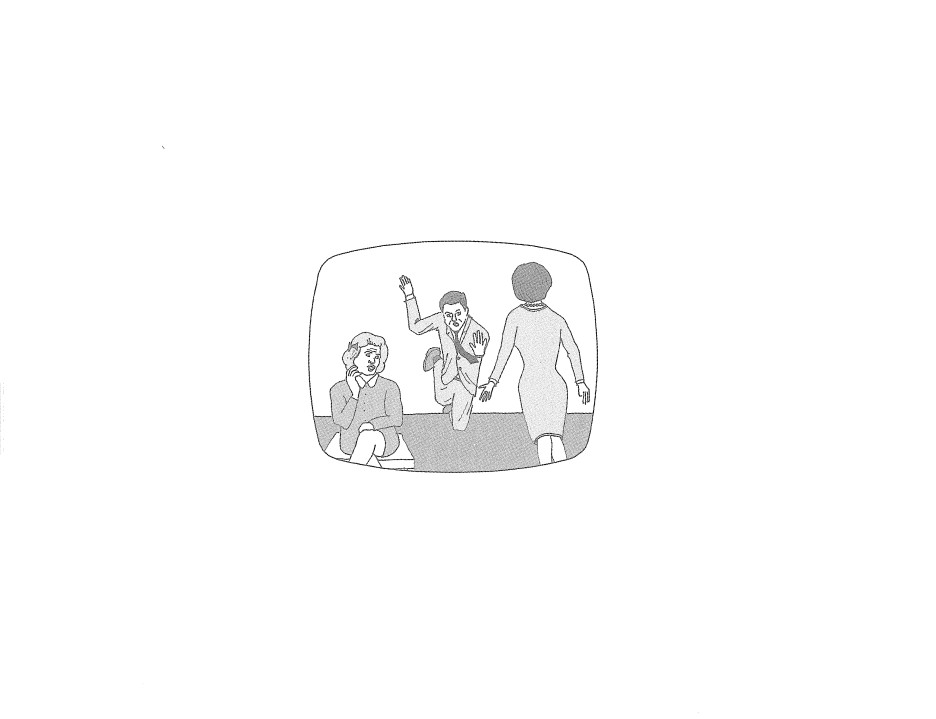
Robert Venturi,architect



**“Less is a bore.**”

**-ROBERT VENTURI,**

***LEARNING FROM LAS VEGAS***



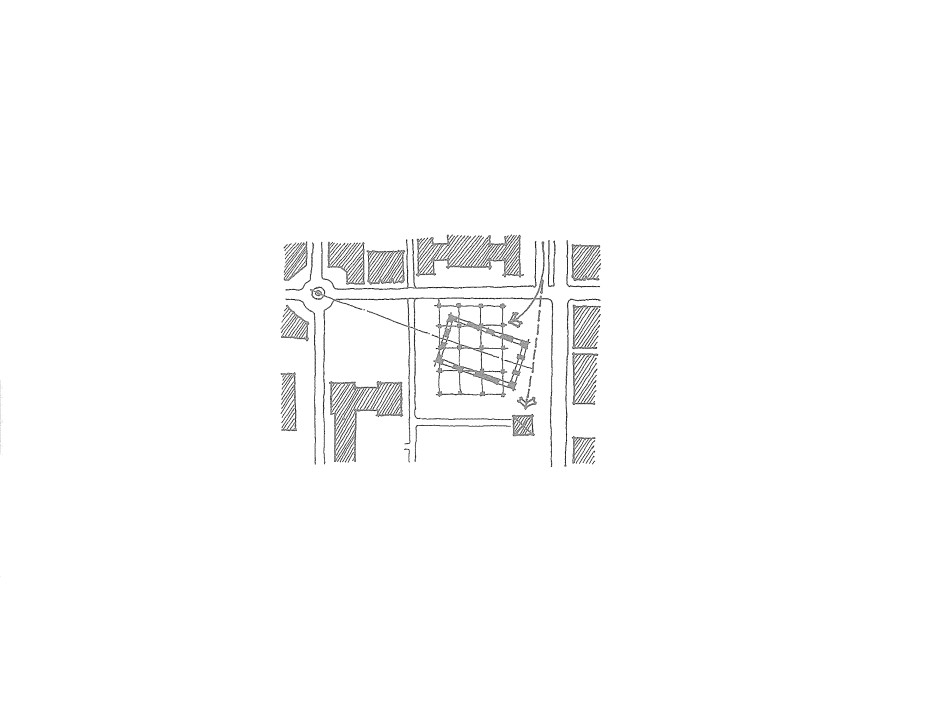


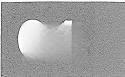
**When introducing floor level changes,**

**avoid the “Dick Van Dyke step.”**

One step between floor levels is rarely sufficient to create a meaningful differentia- tion of space.Often,it is an inconvenient people-tripper that can result in lawsuits. A three-step differentiation is usually the minimum that feels right.

NOTE:Dick Van Dyke is a comedic television actor known for awkward pratfalls.





**If you rotate or skew a floor plan,column**

**grid,or other aspect of a building,make it**

**mean something.**

Placing columns,spaces,walls,or other architectural elements off-geometry because

A O

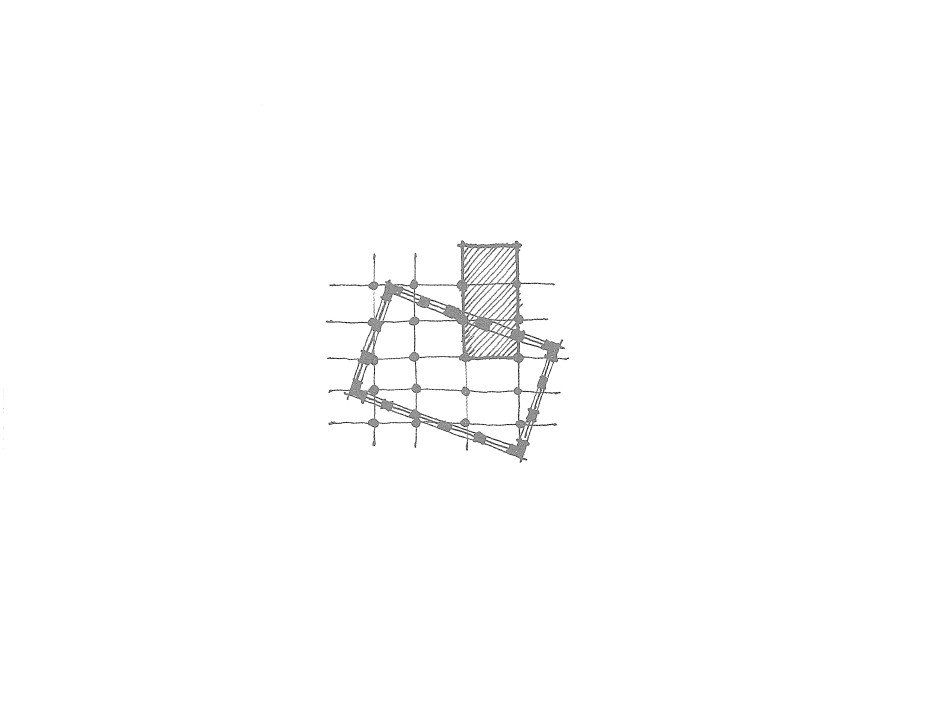
**△L**

you have seen it done in fashionable architecture magazines is a poor design justiff-

cation.Doing so to create a gathering place,direct a circulation path,focus an entry,

open a vista,acknowledge a monument,accommodate a street geometry,address

the sun,or point the way to Mecca are better reasons.





**Always show structural columns on your**

**floor plans-even very early in the design**

**process.**

Showing a structural system on your floor plans throughout the design process-

even if nothing more than a few dots or blobs-will help you organize the program,

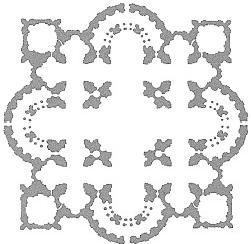
encourage you to think of your creation as a real building,and help you control the

eventual structural resolution.Indeed,an architect who doesn't adequately consider

structure may have an undesirable structural system imposed on the building by a

structural engineer.

The placement and spacing of columns are usually regularized for visual unity and construction efficiency.Ordinary wood frame buildings typically have a col- umn line or bearing wall every 10 to 18 feet;commercial-scale buildings of steel or concrete,every 25 to 50 feet.Structural systems for exhibit halls,arenas,and other such spaces can have spans of 90 feet or more.



**Saint Peter's Basilica,Rome,built 1506-1615**

**Donato Bramante,architect**



**Columns are not merely structural**

**elements;they are tools for organizing**

**and shaping space.**

Although their primary purpose is of course structural,columns are invaluable in

other ways:a row of columns can define the spaces on one side as different from

those on the other side;distinguish circulation pathways from gathering spaces;act

as a“wayfinding”element in a building interior;or serve as a rhythmic element on

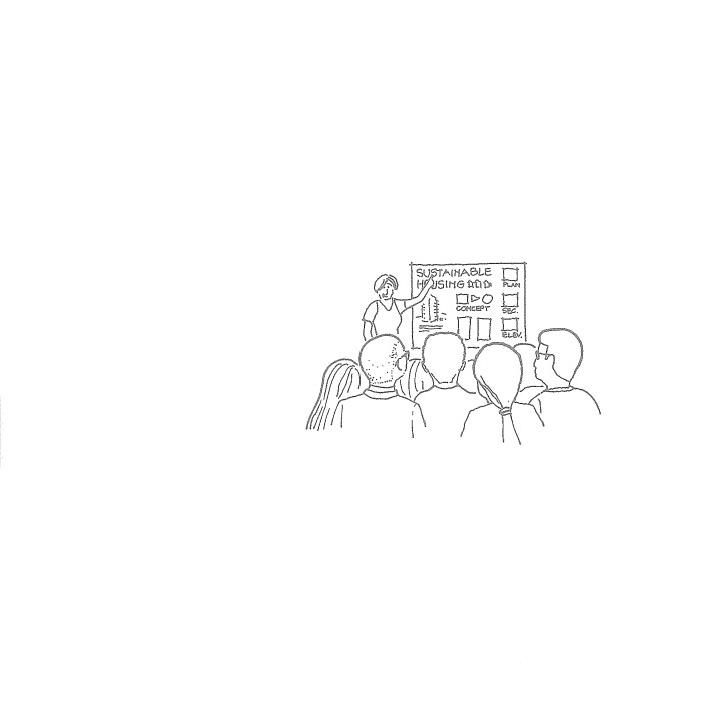
a building exterior.

Diferent column shapes have dlfferent spatial effects:square columns are direc-

tionally neutral;rectangular columns establish“grain”or directionality;and round

columns contribute to a flowing sense of space.Complex column shapes were often

employed in traditional masonry architecture to create richly interwoven spaces.



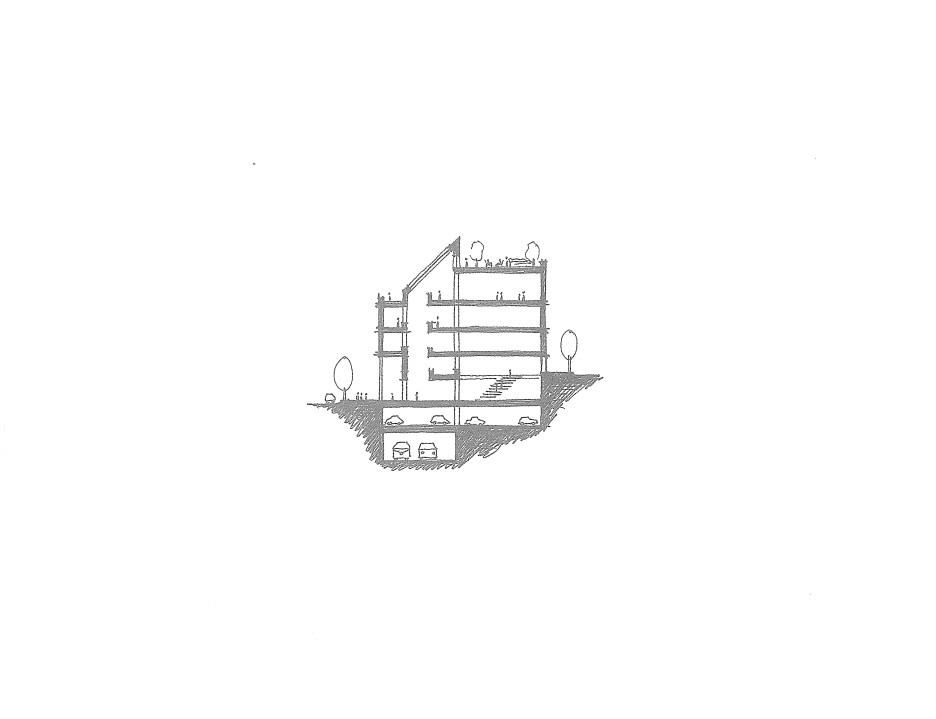


**A good graphic presentation meets the**

**Ten-Foot Test.**

The essential elements of the drawings you pin up for a design studio presentation-

in particular,labels and titles-should be legible from 10 feet away.





**Design in section!**

Good designers work back and forth between plans and sections,allowing each

to inform the other.Poor designers fixate on floor plans and draw building sections

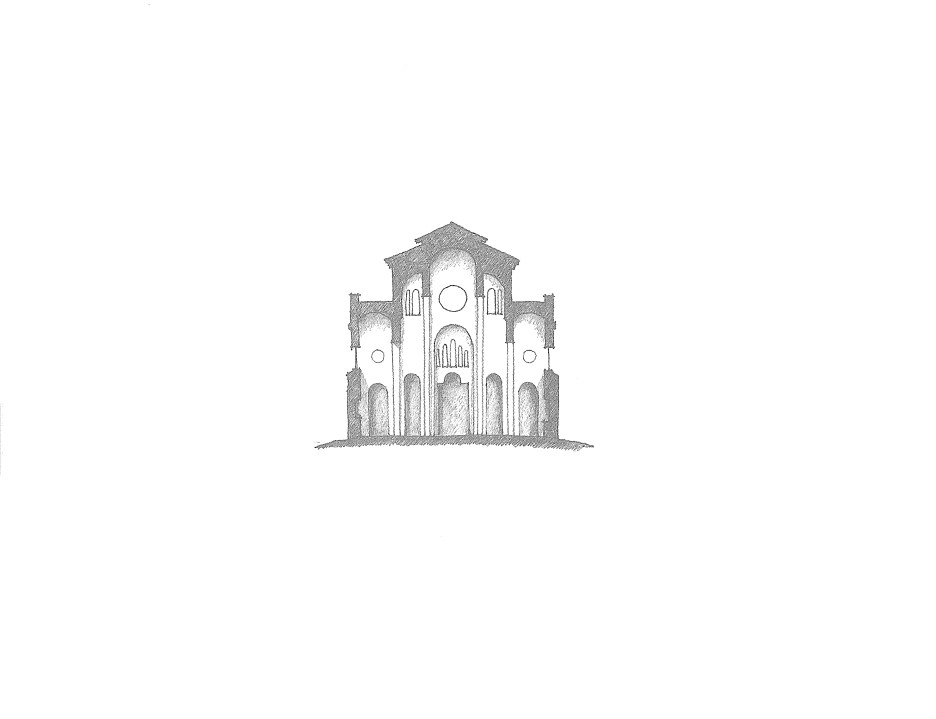
afterward as a record of decisions already made in plan.But sections,it could be

said,represent 50 percent of the experience of a building.In fact,some sites(such

as those with steep slopes)and building types (those requiring tall interior spaces,

careful management of connections between floors,or unusual attention to day-

lighting)require that you design in section before you think about floor plans.



**Random Unsubstantiated Hypothesis**

A floor plan demonstrates the organizational logic of a building;a section embodies

ts emotional experience.

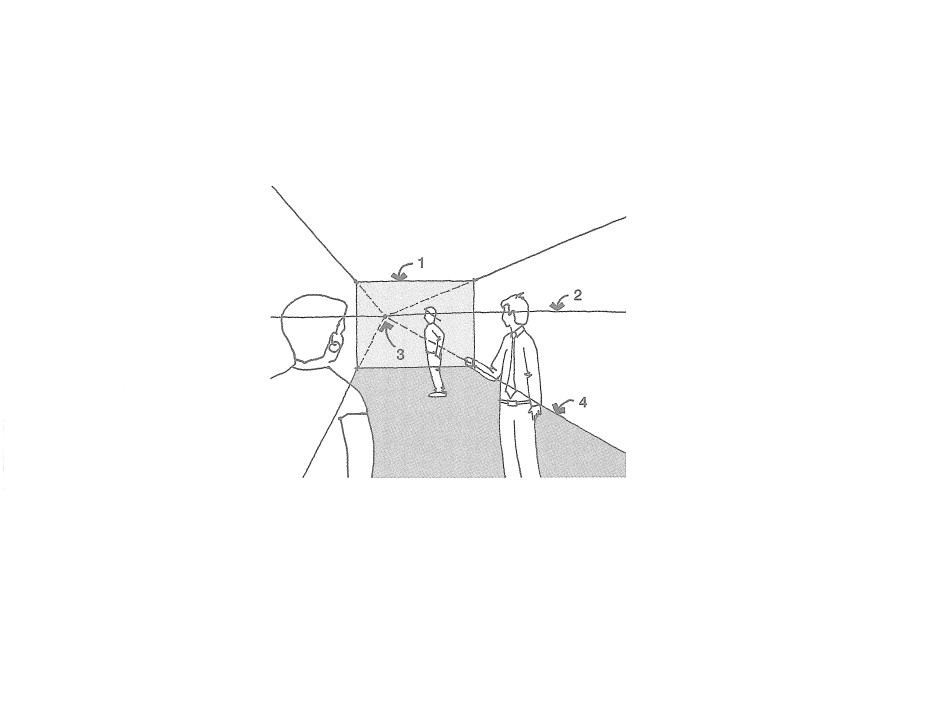






**Design in perspective!**

Architects are expert at reading and interpreting orthographic(plan,section,and elevation)drawings,but even the best cannot understand everything about a build- ing this way.Sketching accurate one-and two-point perspectives of your build- ings and building interiors throughout the design process will allow you to test your expectations of how your building will look,work,and feel in actual experience and to visualize design opportunities not evident in two-dimensional drawings.





**71**

**How to sketch a one-point perspective of**

**a rectangular interior space:**

1 Draw the end wall of the room in correct proportion.In the example,the end wall

is 8 feet wide by 12 feet high,so its width is one and a halftimes its height.

2 Lightly draw a horizon line (HL)across the page.The HL is the height of your eye above the floor.If you are 5 feet 6 inches tall,the HL will be about 5 feet (five- eighths of the way)up the wall.

3 Mark a vanishing point (VP)on the horizon line.The VP represents your location, as the viewer of the scene,relative to the side walls.Here,the viewer/VP has been established 3 feet from the left-hand wall.

4 Lightly draw lines from the VP through the four comers of the end wall,then extend them more heavily toward the edges of the paper.The heavier portions of these lines depict the outer limits of the space.

5 To include a person of similar height to the viewer,place the center of his or her head on the horizon line,then increase or decrease the size of the person for foreground or background placement.





**72**

**Design with models!**

Three-dimensional models-both material and electronic-can help you understand

your project in new ways.The most useful model for designing is the building mass-

ing model-a quick material (clay,cardboard,foam,plastic,sheet metal,found

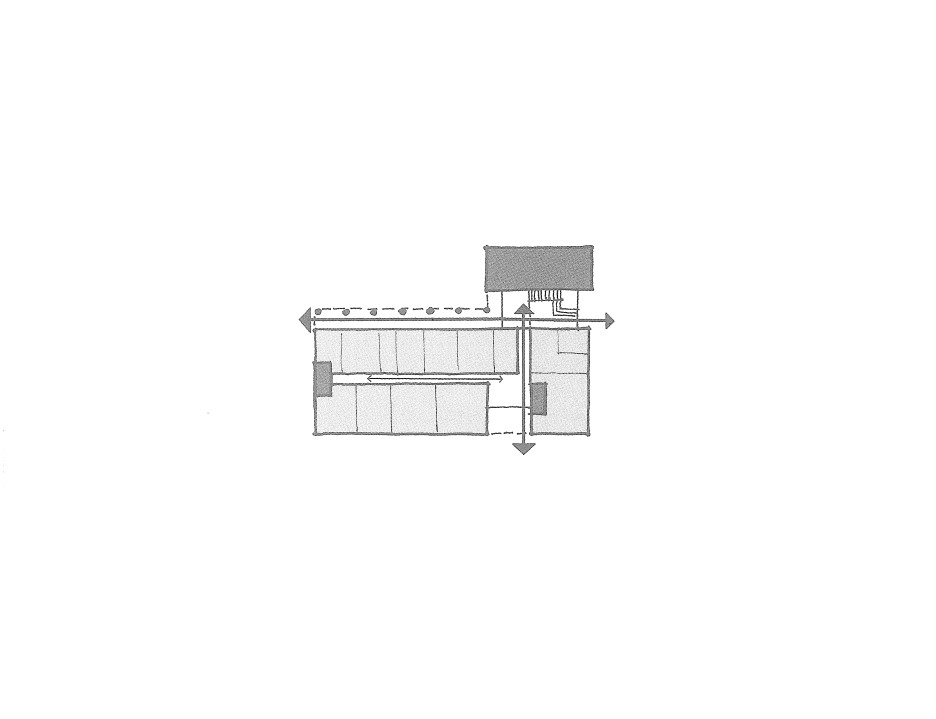
objects,and so on)study by which you can easily compare and test design options

under consideration.

Carefully crafted,highly detailed finish models are not useful as design tools,as

their purpose is to document design decisions already made rather than help evalu-

ate ideas under consideration.





**The two most important keys to**

**effectively organizing a floor plan are**

**managing solid-void relationships and**

**resolving circulation.**

For conceptual design purposes,consider the core functions of a building-its toilet

rooms,storage rooms,mechanical spaces,elevator shafts,fire stairs,and the like-

to be solids.Core spaces are usually grouped together or located near each other.

Voids are the larger,primary program spaces of a building-its lobbies,laboratories,

worship spaces,exhibit galleries,library reading rooms,assembly halls,gymnasiums,

living rooms,offices,manufacturing spaces,and so on.Solving a floor plan means

creating practical and pleasing relationships between core spaces and primary pro-

gram spaces.

A building's circulation-where people walk-should interconnect the program

spaces with the stairs and elevator lobbies in a way that is both logical and interest-

ng:the circulation system has to work both efficiently (particularly in event of fire)

and aesthetically,offering pleasant surprises,unexpected vistas,intriguing nooks,

agreeable lighting variations,and other interesting experiences along the way.



|  |  |  |
| --- | --- | --- |
| Servant zone  air handling  system) | Served space  (gallery) | Sarvant zone  air handling  system) |
|  |  |  |

Kimbell Art Museum,Fort Worth,Texas,1972

Louis Kahn,architect



**74**

**Many of the building types assigned in**

**architectural design studios,such as**

**museums,libraries,and assembly**

**buildings,can be effectively organized**

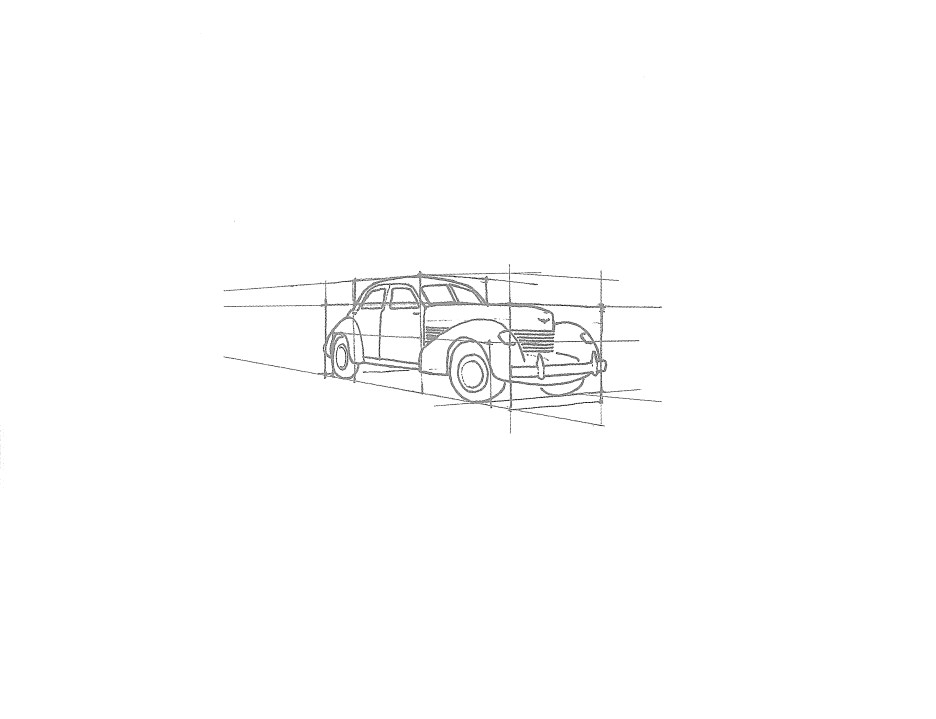
**by Louis Kahn's notion of “served"and**

**“servant”spaces.**

Served/servant spaces are analogous to program/core spaces.Kahn expertly

grouped servant spaces in a way that met the functional needs of the building while

lending quietly poetic rhythms to the whole.



**Draw the box it came in**.

Buildings,because they have hard edges and are frequenty rectilinear,lend them-

selves to simple line drawings.However,many of the things that architects draw-

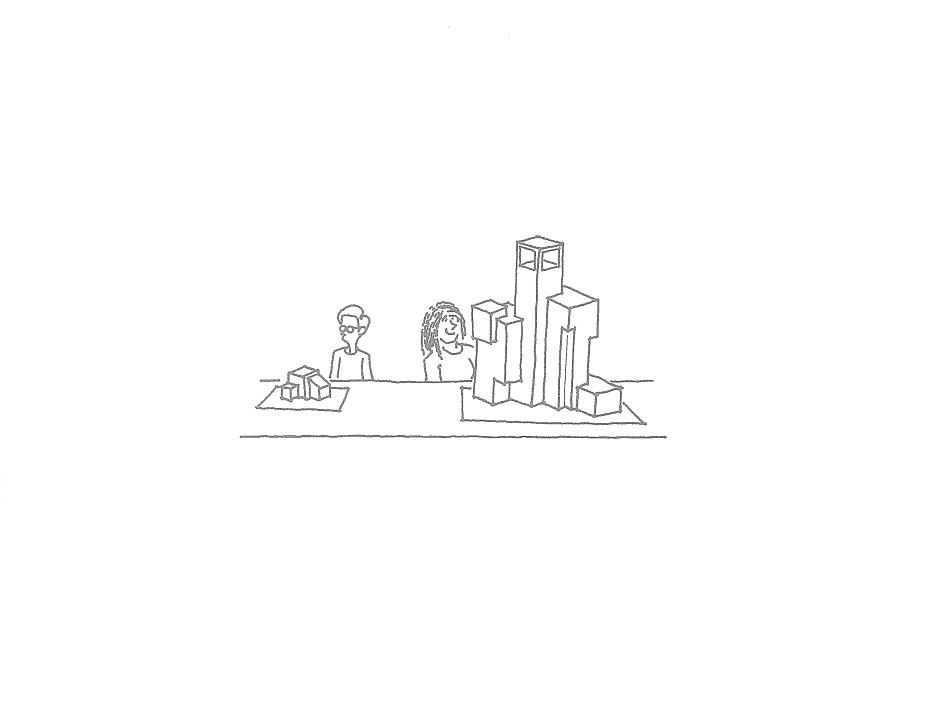
cars,furniture,trees,people-are nonrectilinear.When an object seems too com-

plex to draw,first draw the box you imagine it came in.Then draw the object within

that simplified container.



**75**





**Overdesign.**

At the outset of the design process,make your spaces about 10 percent larger than

they need to be to meet the assigned program.During the design process,additional

spatial requirements will arise-for mechanical rooms,structural columns,storage,

circulation space,wall thicknesses,and a hundred other things not anticipated

when the building program was created.

The point of overdesigning is not to design a larger building than is necessary but

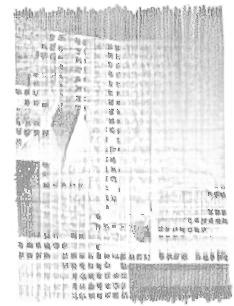
to design one that is ultimately the right size.In the unlikely event the extra space

turns out to be unnecessary,you will find it easier to shrink an overlarge building

than to create more space where it doesn't already exist.

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Facade detail,Simmons Hall,Massachusetts Institute of Technology,2002 Steven Holl,architect

**No design system is or should be perfect.**

Designers are often hampered by a well-intentioned but erroneous belief that a good

design solution is perfectly systematic and encompasses all aspects of a design

problem without exception.But nonconforming oddities can be enriching,humaniz-

ing aspects of your project.Indeed,exceptions to the rule are often more interesting

than the rules themselves.



**77**





**“The success of the masterpieces seems**

**to lie not so much in their freedom from**

**faults-indeed we tolerate the grosses**t

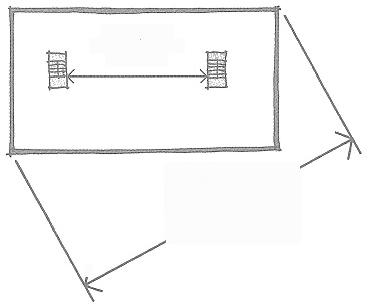
**errors in them all-but in the immense**

**persuasiveness of a mind which has**

**completely mastered its perspective."**

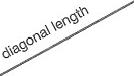
-VIRGINIA WOOLF,

“THE DEATH OF THE MOTH”

Ve diagonal

recommended

minimum



1.



**Always place fire stairs at opposite ends**

**of the buildings you design,even in the**

**earliest stages of the design process.**

t is easy to think that a designer has more glamorous concerns than fire stairs,but emergency egress has everything to do with the more general workings of a build- ing.If you don't ingrain such safety considerations into your design process,you can expect to defend your disinterest before a judge and jury one day.

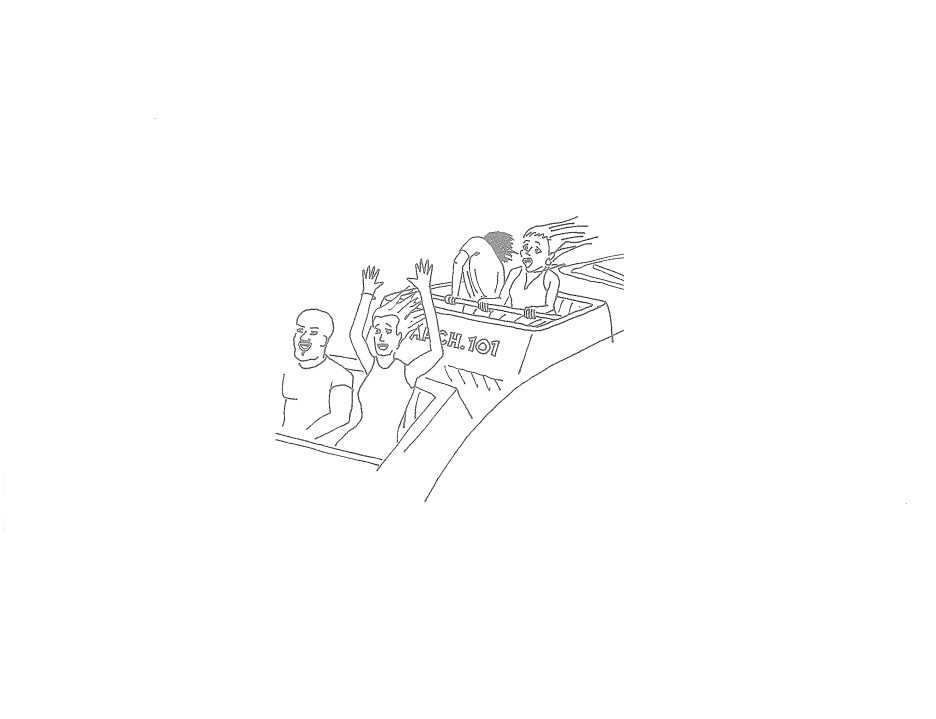


**Cool drawing titles for schematic design**

Use a light-colored marker with a big chisel point to form lowercase architectural

letters;then trace around the resulting shapes with a thin black pen.







**Properly gaining control of the design**

**process tends to feel like one is losing**

**control of the design process.**

The design process is often structured and methodical,but it is not a mechanical

process.Mechanical processes have predetermined outcomes,but the creative

process strives to produce something that has not existed before.Being genuinely

creative means that you don't know where you are going,even though you are

responsible for shepherding the process.This requires something different from

conventional,authoritarian control;a loose velvet tether is more likely to help.

Engage the design process with patience.Don't imitate popular portrayals of

the creative process as depending on a singular,pell-mell rush of inspiration.Don't

try to solve a complex building in one sitting or one week.Accept uncertainty.Rec-

ognize as normal the feeling of lostness that attends to much of the process.Don't

seek to relieve your anxiety by marrying yourself prematurely to a design solution;

design divorces are never pretty.





**True architectural style does not come**

**from a conscious effort to create a**

**particular look.It results obliquely-even**

**accidentally-out of a holistic process.**

The builder of an American colonial house in 1740 did not think,as we often do

today,"I really like colonials,I think Ill build one."Rather,houses were built sensi-

bly with the materials and technology available,and with an eye sensitively attuned

to proportion,scale,and harmony.Colonial windows had small,multiple panes of

glass not because of a desire to make a colonial-looking window,but because the

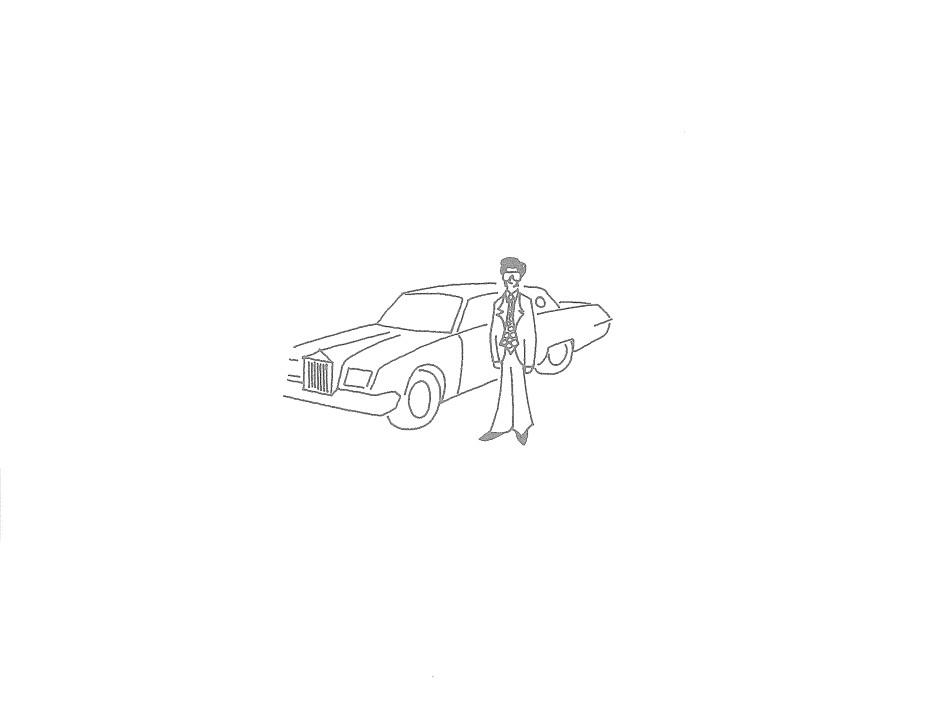
technology of the day could produce and transport only small sheets of glass with

consistency.Shutters were functional,not decorative;they were closed over win-

dows when needed to provide shade from the sun.The colonial architecture that

resulted from these considerations was uncalculated:Early American houses were

colonial because the colonists were colonial.





**All design endeavors express the zeitgeist**.

Zeitgeist is a German word meaning,roughly,the spirit of an age.The zeitgeist is the

prevailing ethos or sensibility of an era,the general mood of its people,the tenor of

public discourse,the flavor of daily life,the intellectual inclinations and biases that

underlie human endeavor.Because of the zeitgeist,parallel (although not identical)

trends tend to occur in literature,religion,science,architecture,art,and other cre-

ative enterprises.

It is impossible to rigidly define the eras of human history;however,we can sum-

marize the primary intellectual trends in the West as follows:

· ANCIENT ERA:a tendency to accept myth-based truths;

· CLASSICAL (GREEK)ERA:a valuing of order,rationality,and democracy;

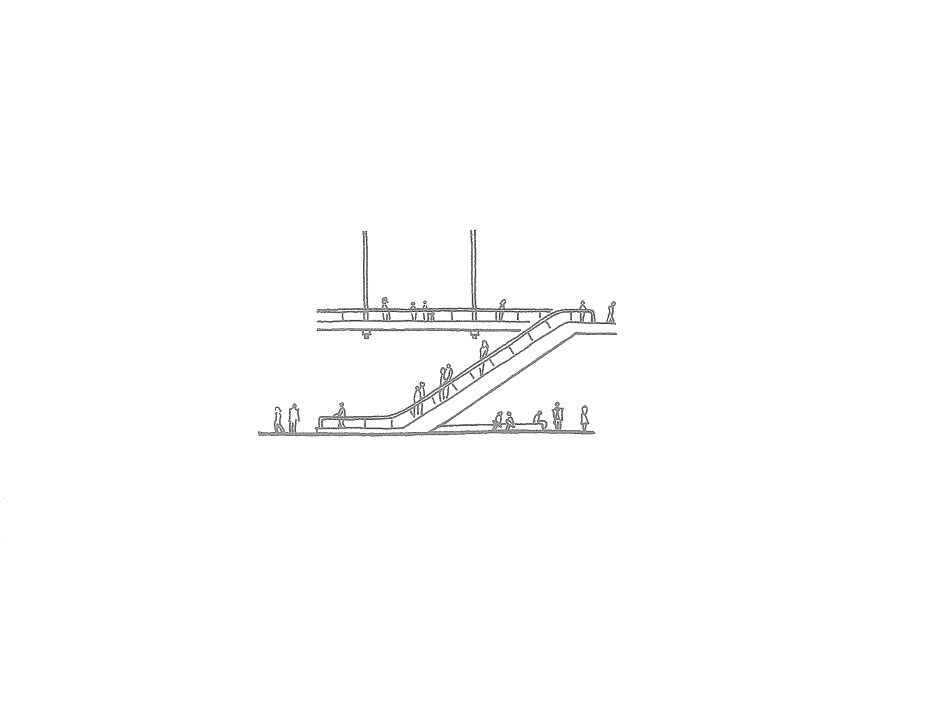
· MEDIEVAL ERA:a dominance of the truths of organized religion;

· RENAISSANCE:holistic embracings of science and art;

· MODERN ERA:a favoring of truths revealed by the scientific method;

· POSTMODERN (CURRENT)ERA:an inclination to hold that truth is relative or

impossible to know.



**Two points of view on architecture**

ARCHITECTURE IS AN EXERCISE IN TRUTH.A proper building is responsible to

universal knowledge and is wholly honest in the expression of its functions and

materials.

ARCHITECTURE IS AN EXERCISE IN NARRATIVE.Architecture is a vehicle for the

telling of stories,a canvas for relaying societal myths,a stage for the theater of

everyday life.



**84**



**Balcony**

**Antibes,France**

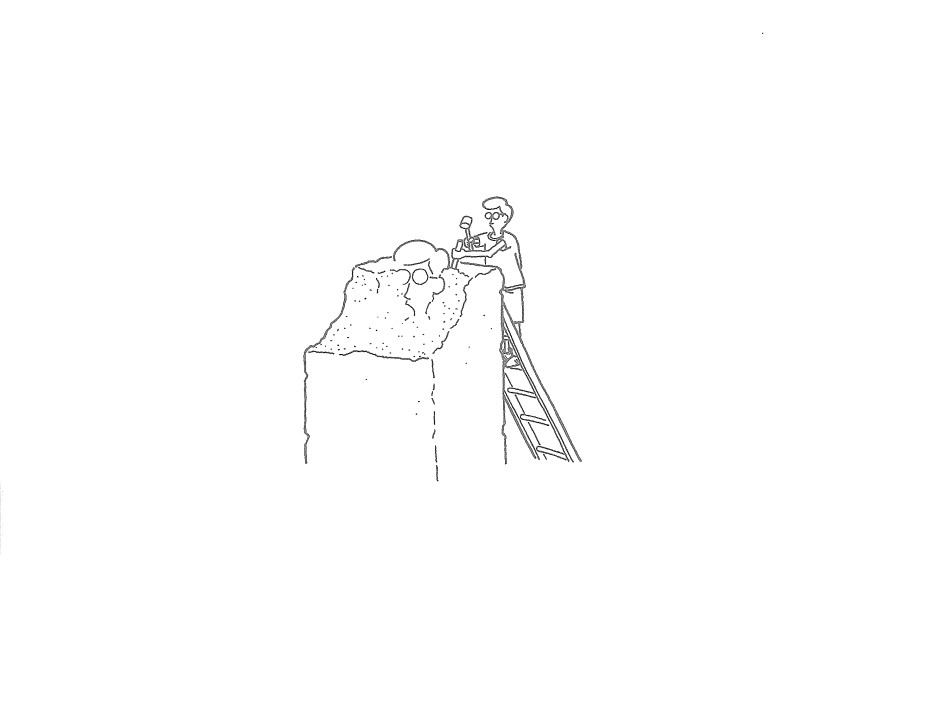
**Gently suggest material qualities rather**

**than draw them in a literal manner**.

Architectural drawings,whether hand-or computer-generated,will look cartoonish if you make bricks “Brick Red”and roofs “Asphalt Black.”Try using washed out or dulled-down colors that are more suggestive than literal.Likewise,don't draw every brick in a brick wall,every shingle on a shingled roof,or every tile in a tile floor. Selectively hint at material qualities.



**85**





**86**

**Manage your ego.**

If you want to be recognized for designing a good or even great building,forget

about what you want the building to be;instead ask,"What does the bullding want

to be?”A design problem has to be addressed on its own terms:the needs of the

client,the nature of the site,the realities of the building program,and many others.

These factors point toward an inherent order that must be acknowledged before self-

expression can enter the design process.

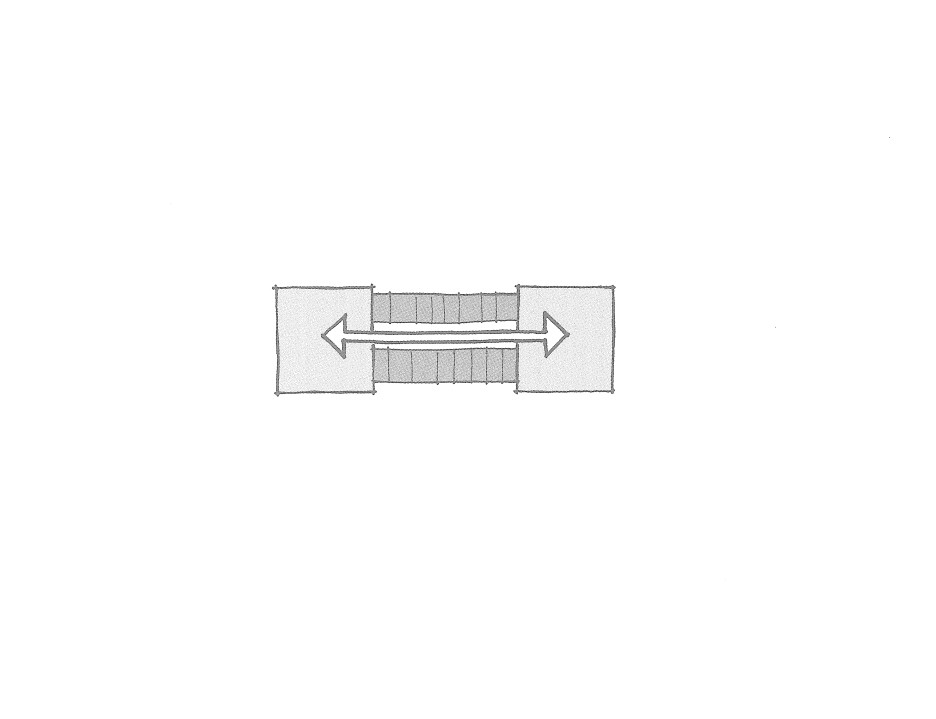
Strive to accommodate and express universal concerns in your work-the

human quest for meaning and purpose,the variegated play of light and shadow on

a textured wall,the interweaving of public and private relationships,the structural

and aesthetic opportunities inherent in building materials-and you will find an inter-

ested audience.





**87**

**Careful anchor placement can generate**

**an active building interior.**

Anchors are program elements that inherently draw people to them.Department stores,for example,are located at opposite ends of a shopping mall because they draw many visitors.People walking between these large stores become window shoppers of the smaller stores in between.In this way,a seemingly inefficient rela- tionship between the anchor stores fosters economic activity and interior street life.

Are there any anchor opportunities in your project?Try locating the entrance and

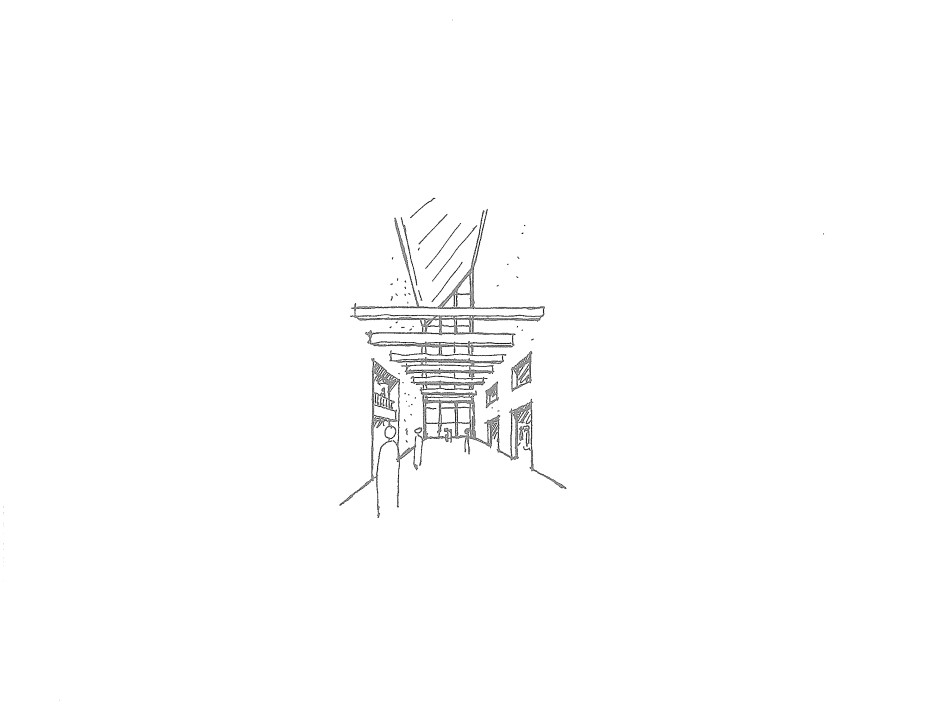
locker rooms of a gymnasium at opposite ends of a recreation center.Place the

registration desk and elevators in a hotel a little farther apart than is most efficient.

Locate the access points for a parking garage and office lobby at a greater distance

than might otherwise be considered ideal.In the spaces between,create interesting

architectural experiences for your captive audience!



**An object,surface,or space usually will**

**feel more balanced or whole when its**

**secondary articulation runs counter to its**

**primary geometry.**

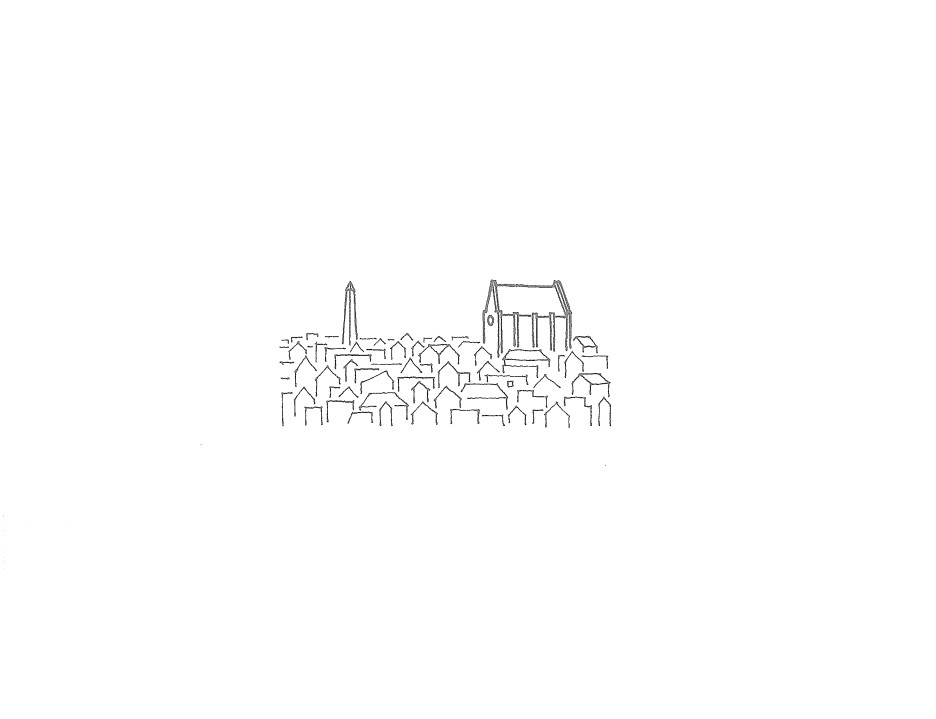
Try striating a rectangular surface across its short dimension rather than parallel to

ts primary axis.Break down a long hallway with crossing elements.Try articulating

a curved space radially rather than concentrically.When laying out floor tiles,see if

orienting their long axis to the short axis of the room feels best.





**Fabric buildings,or background buildings,**

**are the more numerous buildings of a**

**city.Object or foreground buildings are**

**buildings of unusual importance.**

Fabric buildings are buildings used for ordinary residences and commerce.In suc-

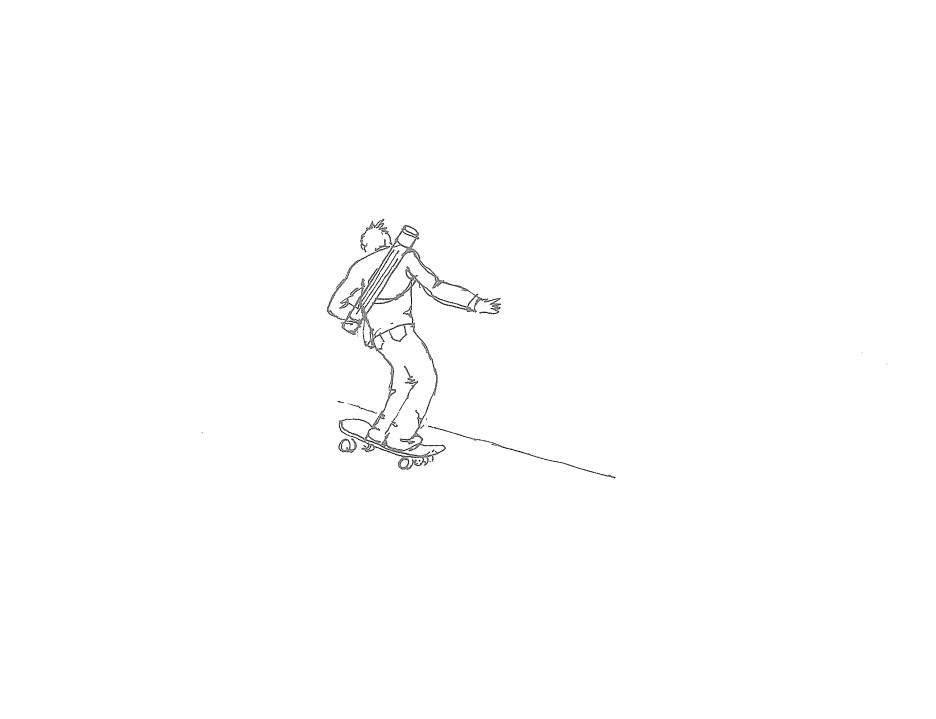
cessful cities,fabric buildings form a physically cohesive texture that is indicative

of an underlying social fabric.Object buildings are churches,mosques,government

buildings,prominent residences,civic monuments,and similar structures.They

tend to stand slightly or even dramatically apart from their context.





**Roll your drawings for transport or**

**storage with the image side facing out.**

**This will help them stay flat when you lay them on a table or pin them to a wa**ll

for display.





**Build to the street wall.**

When designing an urban infill building,place the front of it at the prevailing build-

ing line of the street unless there is a compelling reason to do otherwise.Indeed,it

can be tempting,as it was for many modernist architects,to distinguish an urban

building by pulling it back from the street,but urban life is predicated on proximity,

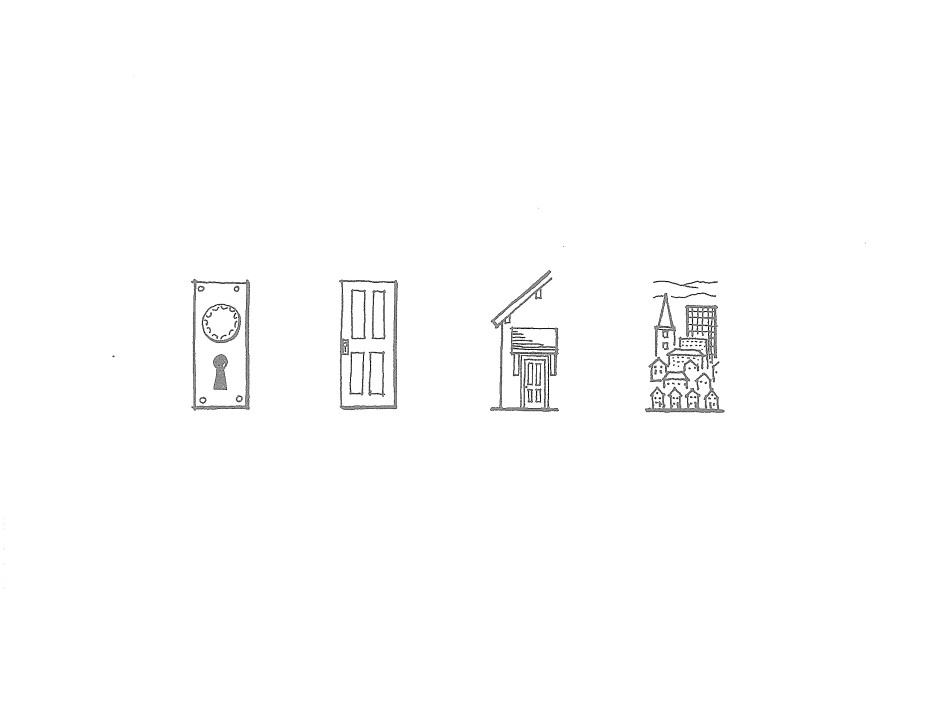
walkability,and immediacy.Setting buildings back from the sidewalk makes them

less accessible to passersby,reduces the economic viability of first floor businesses,

and weakens the spatial definition of the street.



**91**



**“Always design a thing by considering**

**it in its next larger context-a chair in**

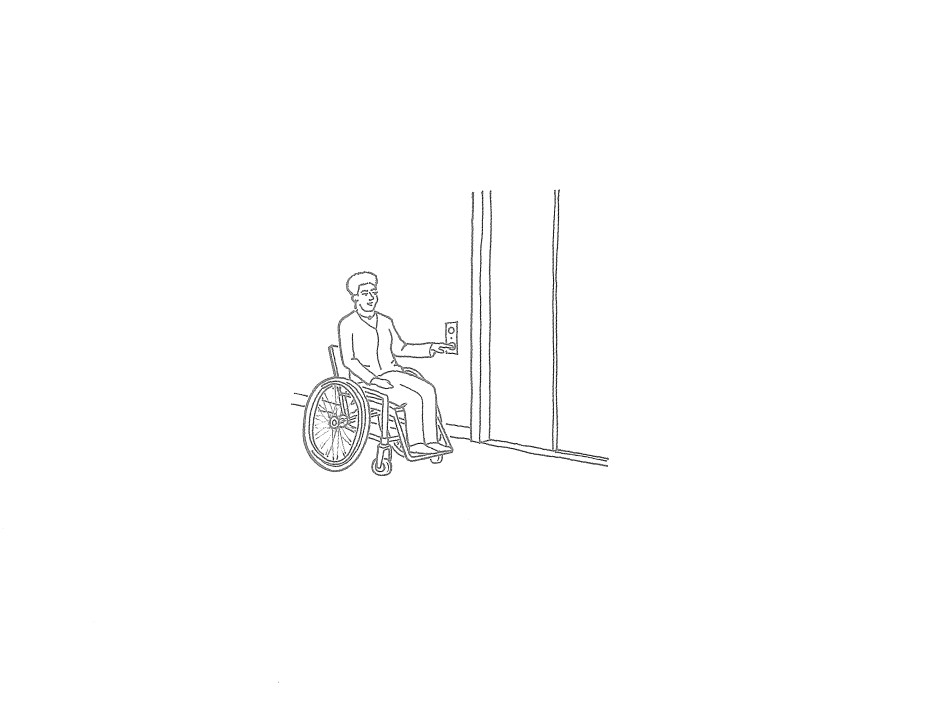
a room,a room in a house,a house

**in an environment,an environment in**

**a city plan.”**

**-ELIEL SAARINEN**







**The primary mechanisms by which the**

**government regulates the design of**

**buildings are zoning laws,building codes**,

**and accessibility codes.**

ZONING CODES are generally concerned with how a building relates to its sur-

roundings.They typically regulate use(residential,commercial,industrial,and so

on),height,density,lot size,setbacks from property lines,and parking.

BUILDING CODES are primarily concerned with how a building works in and of itself.

They regulate such features as building materials,floor area (larger for less flamma-

ble building materials),height (taller for less flammable materials),energy usage,fire

protection systems,natural lighting,ventilation,and other such concerns.

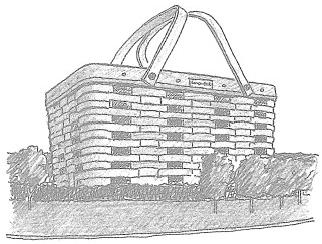
ACCESSIBILITY CODES provide for the use of buildings by persons with physical

challenges.They regulate ramps,stairs,handrails,toilet facilities,signage,heights

of countertops and switches,and other such features.The national accessibility

code is the ADA(Americans with Disabilities Act)Code.Most of the individual fifty

states also have their own accessibility codes.



**Longaberger Basket Building,Newark,Ohio,1997**

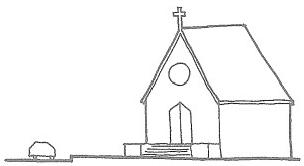
NBBJ Architects

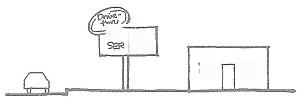
**A duck is a building that projects its**

**meaning in a literal way.**



**94**



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Meaning conveyed by signage

Meaning conveyed by

architectural symbol

**With regards to Robert Venturi**

***A decorated shed is a conventional***

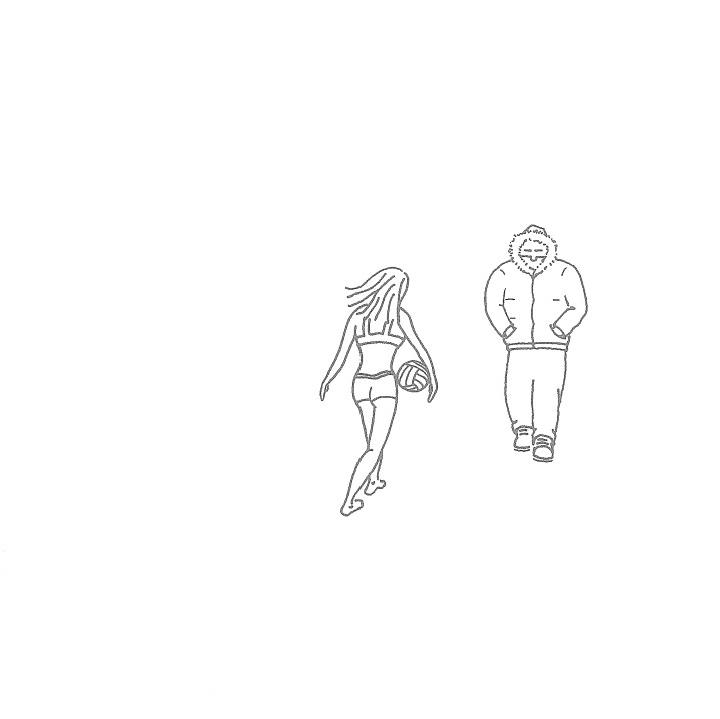
**building form that conveys meaning**

**through signage or architectural**

**ornament.**



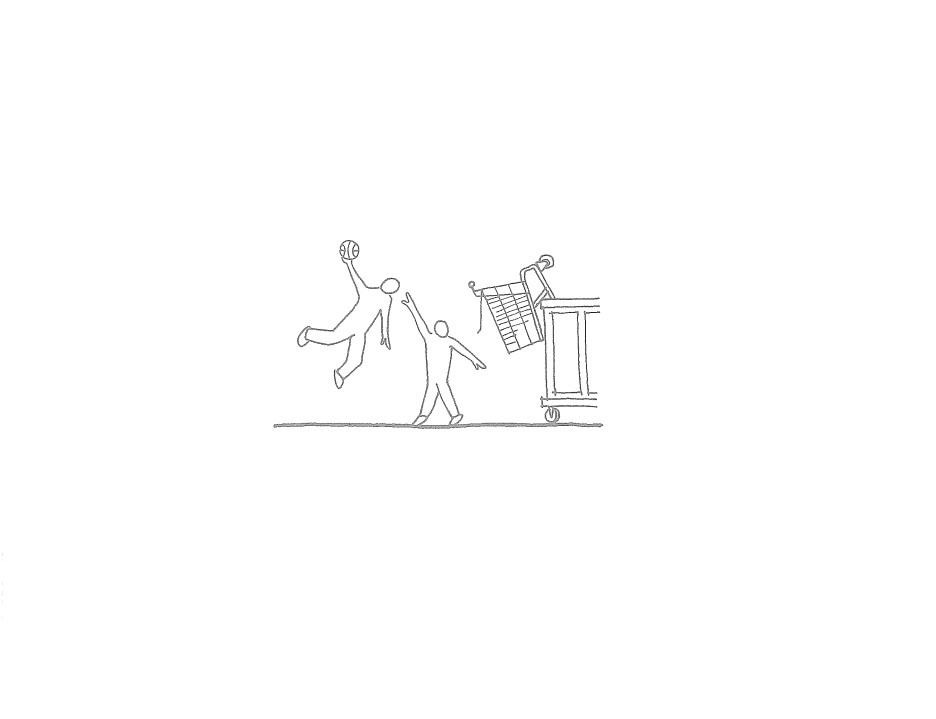
**95**



**Summer people are 22 inches wide.**

**Winter people are 24 inches wide.**





**Limitations encourage creativity.**

Never rue the limitations of a design problem-a too-small site,an inconvenient topography,an overlong space,an unfamiliar palate of materials,contradictory requests from the client …Within those limitations lies the solution to the problem!

Does a steeply sloping site make it difficult to create a conventional building? Then celebrate the vertical relationships of spaces with a fascinating stair,ramp,or atrium.Does an ugly old wall face your building?Find ways to frame views of it so it becomes interesting and memorable.Have you been asked to design within a site, building,or room that is narrow and overlong?Turn those proportions into an inter- esting journey with a great payoff at the end.





**The Chinese symbol for crisis is comprised of two characters:one indicating“danger,” the other,"opportunity.**"

A design problem is not something to be overcome,but an opportunity to be

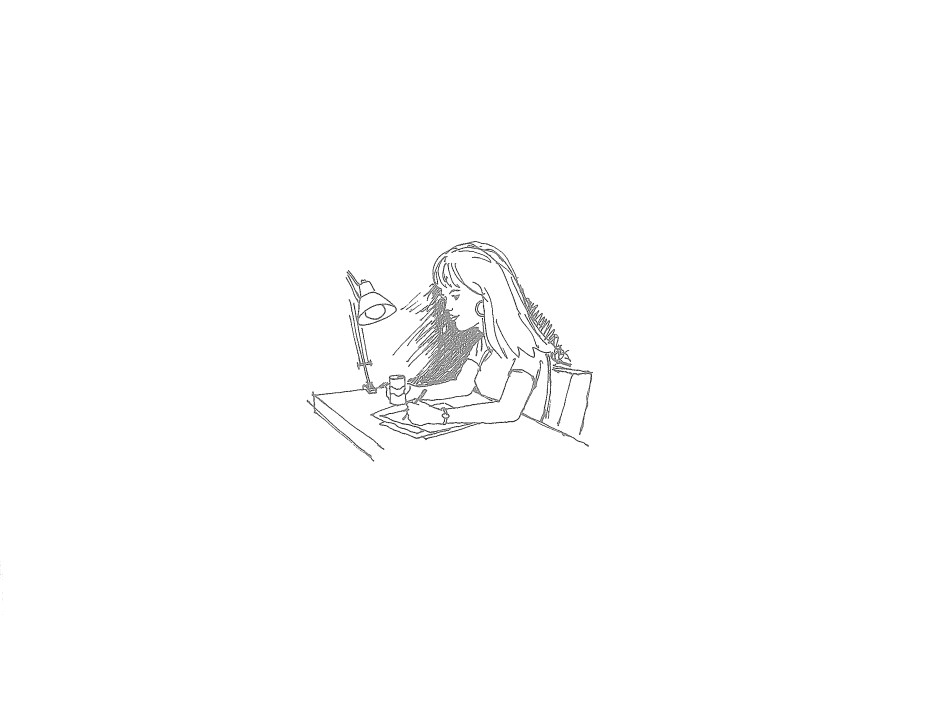
embraced.The best design solutions do not make a problem go away,but accept

the problem as a necessary state of the world.Frequently they are little more than

an eloquent restatement of the problem.



**98**



***Just do something.***

When a design problem is so overwhelming as to be nearly paralyzing,don't wait

for clarity to arrive before beginning to draw.Drawing is not simply a way of depict-

ing a design solution;it is itself a way of learning about the problem you are trying

to solve.





**Give it a name.**

When you come up with a concept,parti,or stray idea,give it a name.“Half-eaten

donut,”“eroded cube,”“cleaved mass,”“meeting of strangers,”and other such

monikers will help you explain to yourself what you have created.As the design pro-

cess evolves and stronger concepts surface,allow new pet names to emerge and

your old pet names to grow obsolete.





**Zaha Hadid**

**b.1950**

**Architects are late bloomers.**

Most architects do not hit their professional stride until around age 50!

There is perhaps no other profession that requires one to integrate such a broad

range of knowledge into something so specific and concrete.An architect must be

knowledgeable in history,art,sociology,physics,psychology,materiality,symbol-

ogy,political process,and innumerable other fields,and must create a building that

meets regulatory codes,keeps out the weather,withstands earthquakes,has func-

tioning elevators and mechanical systems,and meets the complex functional and

emotional needs of its users.Learning to integrate so many concerns into a cohe-

sive product takes a long time,with lots of trial and error along the way.

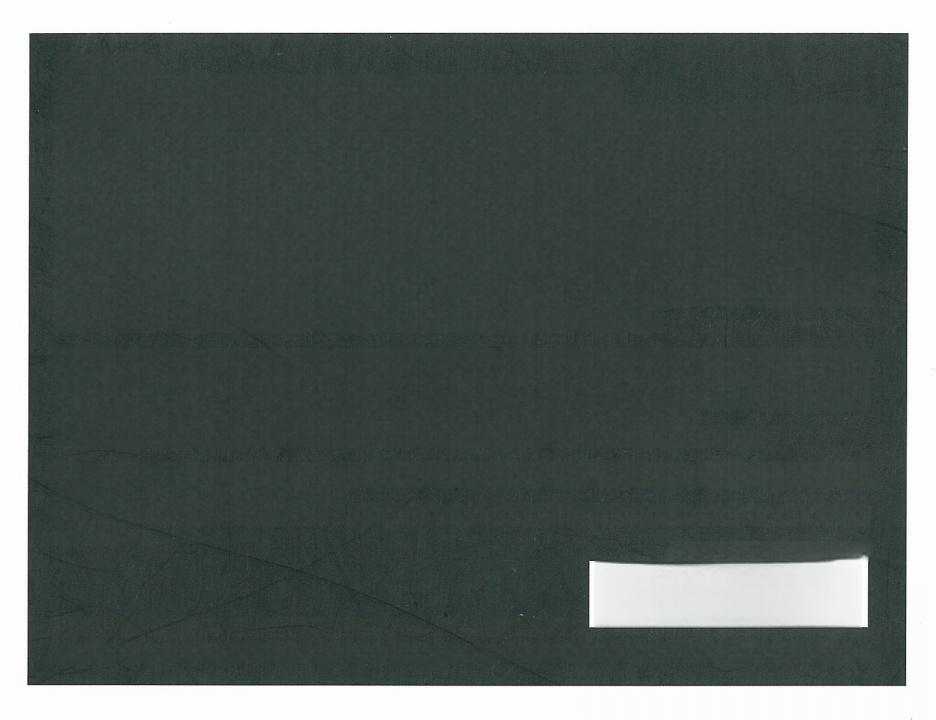
f you're going to be in the field of architecture,be in it for the long haul.It's

worth it



**101**

Matthew Frederick is an architect and urban designer who lives in Cambridge, Massachusetts.He has taught at a number of colleges and universities,including Boston Architectural College and Wentworth Institute of Technology.

**ARCHITECTURE**

**101 Things I Learned in Architecture School** Matthew Frederick

This is a book that students of architecture will want to keep in the studio and in their backpacks.It is also a book they may want to keep out of view of their professors,for it expresses in clear and simple language things that tend to be mystified in the classroom.These 101 concise lessons in design,drawing,and presen- tation-from the basics of "How to Draw a Line"to the complexities of color theory-provide a much-needed primer in architectural literacy,making concrete what often is left nebulous or open-ended in the architecture curriculum.Written by an architect and instructor who wished such a book existed when he was a student,

*101 Things 1 Leamed in Architecture School provides valuable guideposts for navigating the design studio.*

Architecture graduates-from young designers to experienced practitioners-will turn to the book as well,for this is also a guide back to basics for anyone facing a complex design problem.

"Matthew Frederick offers architectural pearils of wisdom that every architecture student should understand,consider,and embrace- or perhaps reject-when first leaming the daunting process of design.Encompassing both theory and prectice,and ilustraited with **often wity drawings,101 Things is an eclectic itemization of architectural philosophies,compositional stra**tegies and tactics,design **conventions,drawing and presentation techniques,and even tips about how to behave as an architect."**

Roger K.Lewis,Professor Emeritus,University of Maryland,author of Architect?A Candid Guide to the Profession

"101 Things de-mythologizesthe jargon that cbscures the real meanings of whet is taught in design schools.Anyone interesied in

**design will learn much from this terrific book."**

Theodore C.Landsmark,President,Boston Architectural College;and President (2006-07),the Association of Collegiate Schools of Architecture

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