

# Representational Drawing

<b>BASICS</b> .....	<b>3</b>
<b>BASICS APPLIED</b> .....	<b>16</b>

Sketches of the built environment are analytical drawings that generally convey an overall image. We do these drawings to gain a greater understanding of the nature of the man-made and natural landscape. To capture and convey the essence of a place, such drawings must be executed quickly, accurately, and with confidence. These drawings are our pictorial expressions of the spirit and sense of place as we document what we see.

Geometric shapes are the building blocks for all derived forms. Environmental form and composition are an aggregate of simple and complex forms. Whether you draw from life or from your imagination, these forms must be graphically expressed and communicated in a composition within a two-dimensional surface to convey the perception of a third dimension.

## 2 CHAPTER 1: REPRESENTATIONAL DRAWING

The intent of this chapter is to cover the basic aspects of freehand descriptive sketching and delineating, including the types of tools, line, shape, proportion, and values as well as examining, observing, and depicting encountered environmental elements. Another goal is to hone your ability to sketch by using line, volume, texture, and tone—as well as proportional and perspective relationships—to describe various objects.

The following are some of the important skills, terms, and concepts you will learn:

Types of sketching pencils and the strokes they make

Types of sketching pens and the strokes they make

Sketching and delineating architectural elements like trees, cars, and buildings

Sighting

Blocking out

Construction lines

Vignette

Rendering

Focal point

Vantage point

Value

Background

Foreground

Middle ground

Delineating figures

Entourage

Delineating trees

Scribbling

Stippling

Delineating cars

Hatching

### Representational Drawing

TOPIC: VEGETATION

Wang 2002.

TOPIC: DRAWING METHODS

Crowe and Laseau 1986.

Mendolwitz and Wakeham 1993.

TOPICS: HUMAN FIGURES, SIGHTING

Wang 2002.

TOPIC: SKETCHING WITH MARKERS

Wang 1993.

TOPIC: BUILDINGS/TRAVEL SKETCHES

Ferriss 1986.

Johnson and Lewis 1999.

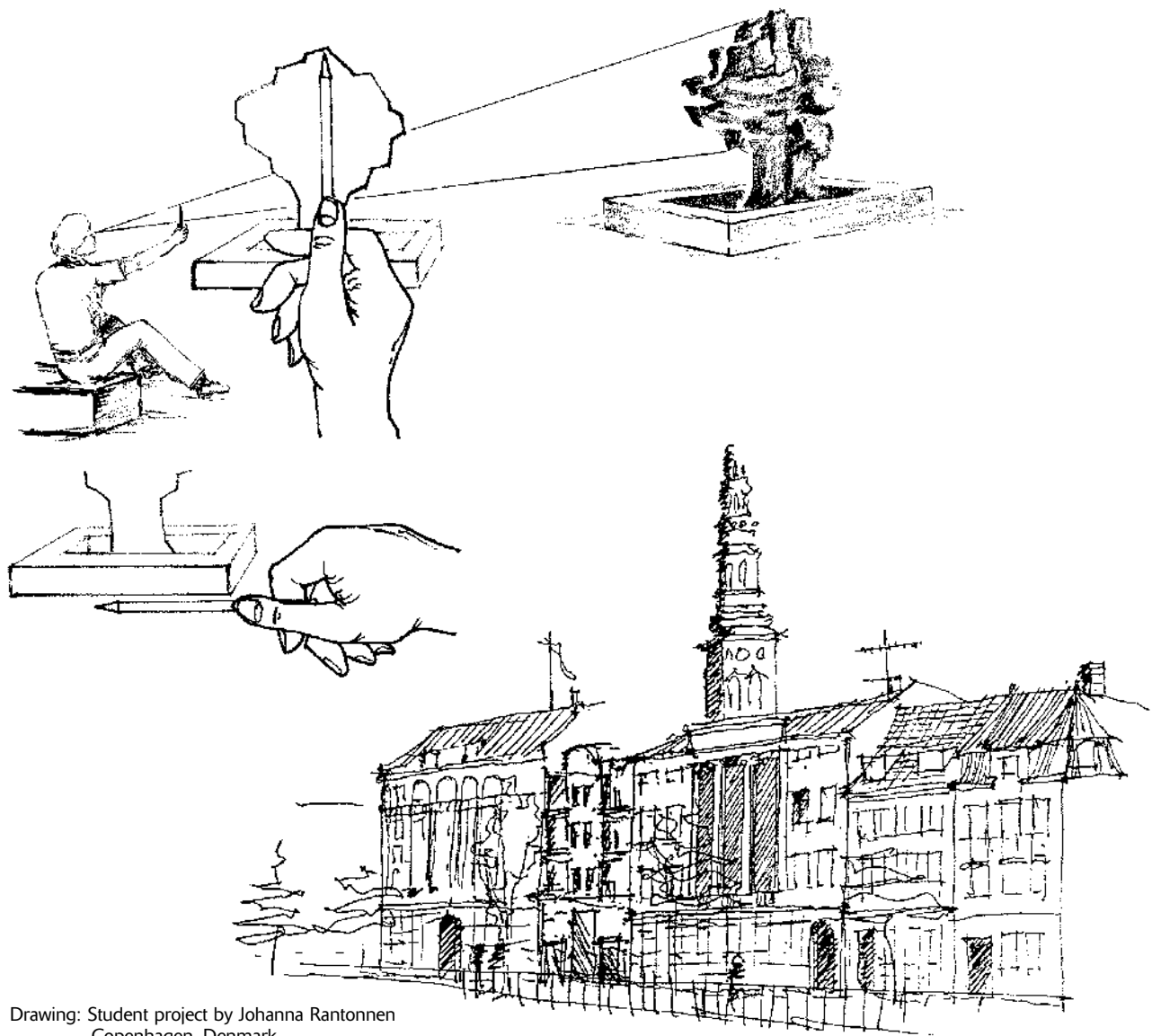
Predock 1995.

### Chapter Overview

In studying this chapter, you will begin to develop skills in hand representational drawing and delineating. For continued study, refer to Ching 1990 and Wang 2002.

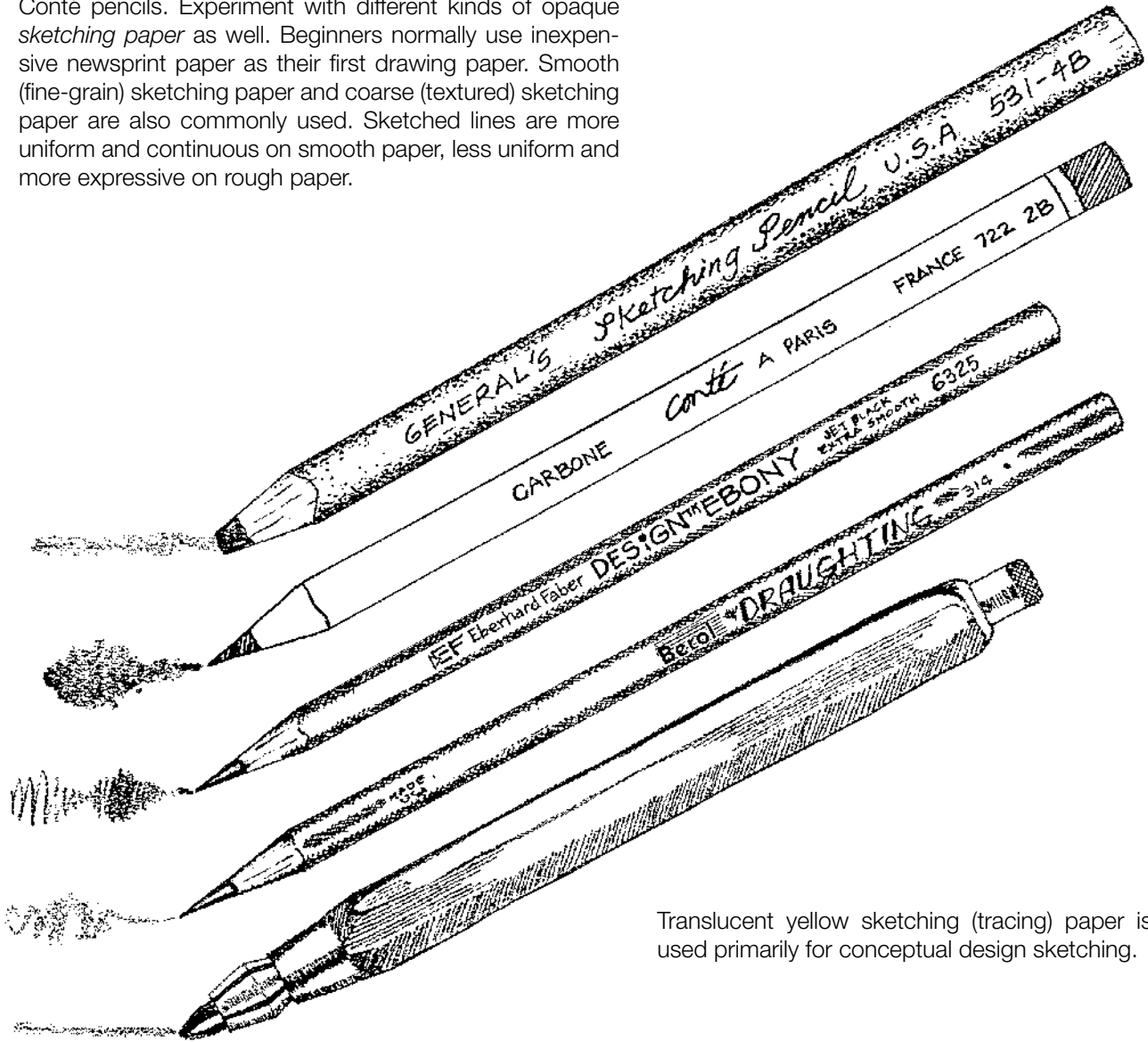
Drawing from life is essential to the development of the hand-eye-brain loop. The more you draw, the more you look at the world around you. As architects, artists, and designers become more aware of their surroundings, their work becomes more formidable. Often, when students begin drawing, their work does not have “the right shape”; in other words, it is not in the correct proportions. One of the most fundamental tools for controlling proportion is called *sighting* (explained on pp. 8 and 9). This method of using a drawing instrument held at arm’s or partial arm’s length as a measuring device (essentially simulating a picture plane) is highly effective in helping the beginner to make objects in the drawing the right shape, as well as controlling distances and relative sizes in general. Looking and recording reality with the aid of sighting strengthens the visual sense and brings confidence to the drawing process.

Drawing is a process that progresses from seeing to visualizing and, finally, to expressing. The ability to see gives us the raw material for our perceptions and, ultimately, for what we draw. Visual information seen by the eye is processed, manipulated, and filtered by the mind in its active search for structure and meaning. The mind’s eye creates the images we see and eventually tries to express them in the form of a drawn image. Our ability to express and communicate relies on our ability to draw.



Drawing: Student project by Johanna Rantonen  
Copenhagen, Denmark  
Medium: Ink sketch  
Courtesy of the University of Virginia School of Architecture

Some of the many quality *sketching pencils* are shown on this page. Other alternatives include charcoal sticks and Conté pencils. Experiment with different kinds of opaque *sketching paper* as well. Beginners normally use inexpensive newsprint paper as their first drawing paper. Smooth (fine-grain) sketching paper and coarse (textured) sketching paper are also commonly used. Sketched lines are more uniform and continuous on smooth paper, less uniform and more expressive on rough paper.



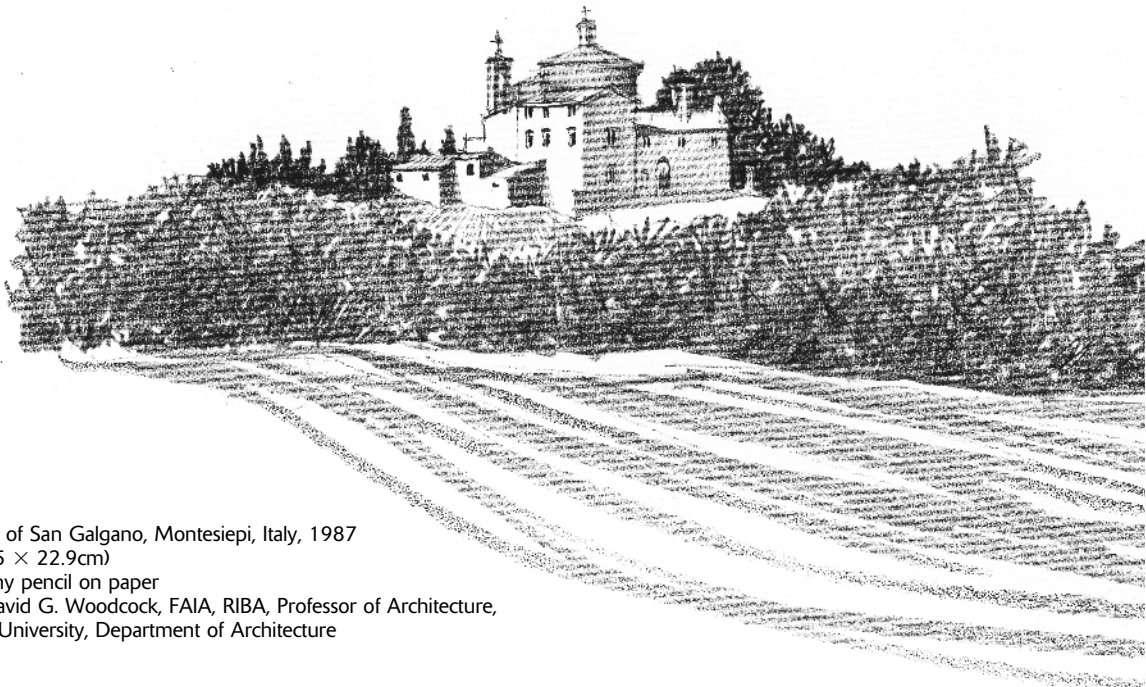
Translucent yellow sketching (tracing) paper is used primarily for conceptual design sketching.

Soft lead sketching pencils can have round or flat leads. A flat sketching pencil can be thick (carpenter's pencil) or medium thick (chisel pencil). Both must be sharpened by hand. Flat sketching pencils are mainly used in three degrees: 2B, 4B, and 6B. They are commonly used for covering large areas quickly, as when creating tonal indications for brick, stone, and wood. Conté pencils or sticks come in three grades of black, in four different colors, and in soft, medium, and hard. Both Conté and Ebony pencils give smooth lines. The Ebony pencil's soft core is slightly wider than that of a typical pencil. Formerly, a good general-purpose sketching pencil with a soft lead was a Berol or Eagle Draughting 314; its successors are Sanford and General's Draughting No. 314. When round leaded pencils become too short from use, add length by using a pencil extender. An all-purpose mechanical leadholder clutch pencil can adapt its lead to almost any shape and is ideal for rapidly sketching over large areas. Excellent brands include Derwent and Mars.

*Drawing on-site is always a challenge for me, and I rarely spend more than twenty minutes on a sketch. As an architect my objective is to learn more about the subject, so I focus a lot of attention on form and materials. Ebony pencil allows me to explore shade and shadow quickly, and by keeping at least two pencils with sharp points I can still pick out critical details.*  
 [ARCHITECT'S STATEMENT]



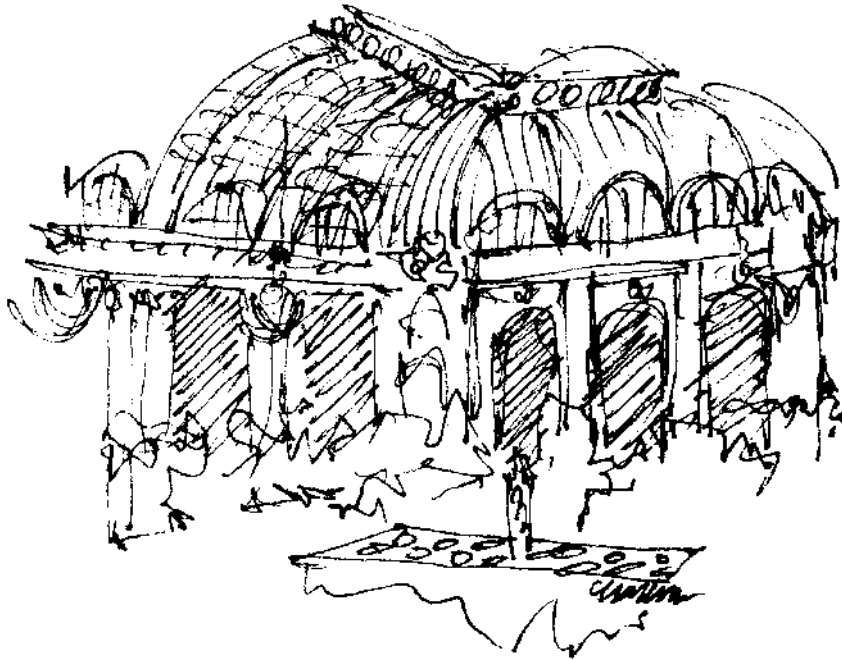
Sketch: Le Jardin Nelson, Montreal, Canada, 1993  
 9" × 12" (22.9 × 30.5 cm)  
 Medium: Ebony pencil on paper  
 Courtesy of David G. Woodcock, FAIA, RIBA,  
 Professor of Architecture, Texas A & M University,



Sketch: Abbey of San Galgano, Montespici, Italy, 1987  
 12" × 9" (30.5 × 22.9 cm)  
 Medium: Ebony pencil on paper  
 Courtesy of David G. Woodcock, FAIA, RIBA, Professor of Architecture,  
 Texas A & M University, Department of Architecture

The quality of a freehand *pencil stroke* is determined by the hardness of the pencil lead, the character of the sharpened point, the amount of pressure applied, and the type of paper used. Softer pencils work better with smoother paper, harder pencils with coarser paper. Architectural pencil sketching is most often done with grades such as HB, B, and 2B, though softer leads are also used. Graphite and charcoal pencils can yield variable line widths and tone. Variable tone and value cannot be achieved when sketching with pens and markers. Lighting conditions resulting in shades and shadows can be most accurately represented by using soft lead pencils, charcoal pencils, square or rectangular graphite sticks, or Conté crayons. To prevent pencil work from smudging, cover completed sections of your drawing with tracing paper or use fixative sprays.

In producing firm, steady strokes, do not rest your hand on the drawing surface as in writing. The pencil should be held in a relaxed position; too tight a grip will cause hand fatigue. A wrist-and-arm movement will produce longer, continuous strokes. Use the wrist, elbow, and shoulders as pivot points. Attempt to master the control of sketching straight lines, curved lines, circular spirals, and circles. When sketching, use the whole page—draw big.

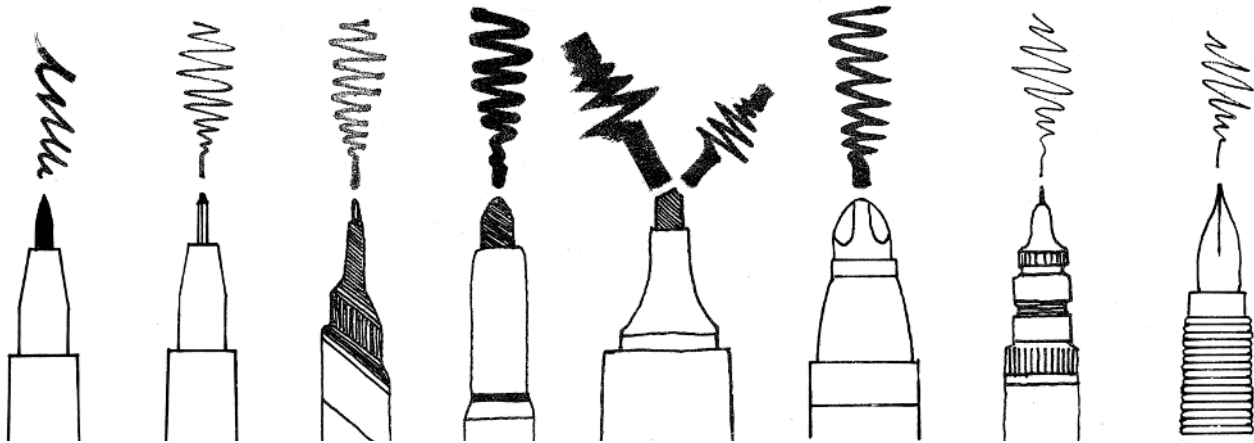


Sketch: The Garden Court of the Palace Hotel  
San Francisco, California

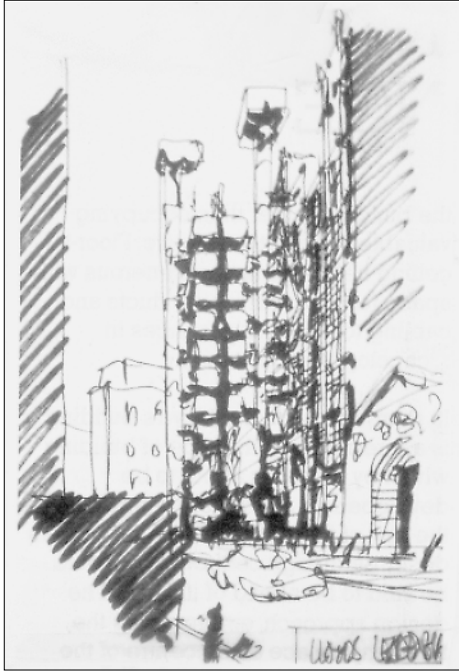
Medium: Ink pen  
Sketch by Charles Moore, Architect  
Courtesy of Saul Weingarten, Executor, Estate of Charles Moore, and  
the Department of Architecture, UCLA School of Art and Architecture

Using *pens* or *markers* as graphic communication tools allows the architect/designer to express a wide range of images, whether they are representational, like the hotel courtyard and the Austrian street scene, or conceptual, as with the Lloyd's of London sketch. The London thumbnail sketch illustrates the loose, expressive quality that can be achieved with flexible felt-tipped markers. Contrast it with the very uniform, contoured lines *delineated* in the street scene with a fine-point, felt-tipped pen.

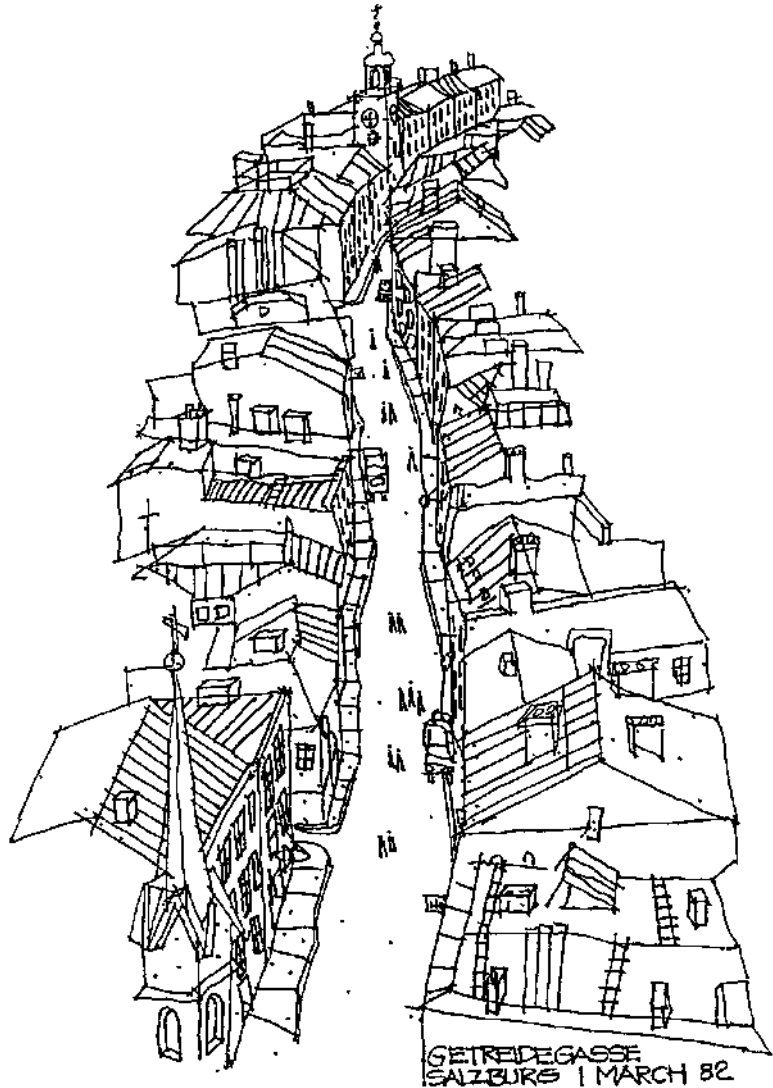
Pens and markers are frequently used to do thumbnail napkin sketches for both conceptual (see p. 68) and representational drawing.



In addition to pencils, line and tone can be produced by a variety of pens and colored markers. Markers are available in a range of halftones, but because they dry quickly, mixing tones is difficult. Marker tips vary in size from fine to broad and in shape from pointed to chisel. Finer tips generate fine lines with more detail, whereas broader tips generate wider lines and solid tones. Technical pens are commonly used for precise mechanical lines. Razor-point pens, cartridge pens, sketch pens, and fountain pens can create loose delineated lines that are permanent. Fountain pens traditionally used for writing become quite versatile in their application of line weight simply by adjusting finger pressure. Excellent for quick sketch studies, fountain pens can also produce much thinner lines when used upside down (i.e., rotated 180°).



Sketch: Lloyd's of London, London, England  
 11.75" × 16.5" (29.8 × 41.9 cm)  
 Medium: Brown felt-tipped marker  
 Sketch by Laurie Abbott  
 Courtesy of Richard Rogers Partnership, Architects



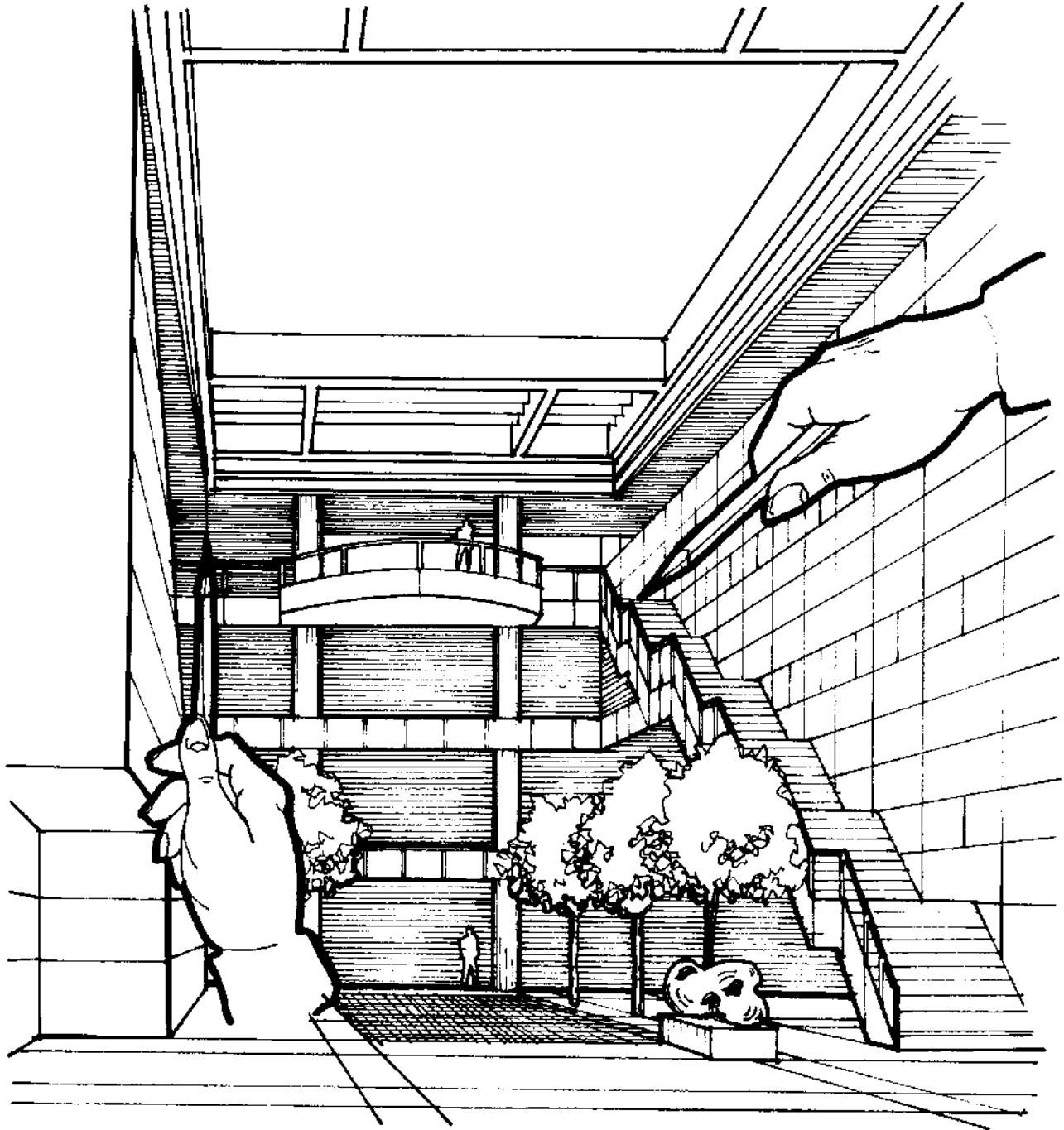
Drawing: Street scene, Salzburg, Austria  
 7" × 10" (17.8 × 25.4 cm)  
 Medium: Felt-tipped pen on paper  
 Courtesy of Steven House, Architect, San Francisco

Ballpoint, felt-tipped, fiber-tipped, and roller-tipped pens can also generate a variety of line widths. In general, all types of pens create steady, fluid, smooth-flowing lines—without the need to apply pressure (unlike pencils). Remember that for architectural sketching, the width and type of the tipped nib are of most concern. Nibs can be made of felt, nylon, plastic, foam, etc. New nibs tend to be hard and become flexible after use (keep old ones for soft tones). Try to keep up with the ever-changing technology of newly developed nibs.

Felt-tipped markers are a quick, loose medium (similar to watercolors) for creating transparent presentations; they are quite effective when time is a critical factor. One of markers' advantages is that they very seldom smudge. They come in a large variety of premixed colors in addition to black and shades of gray. Markers are more suitable for smoother, harder, and heavier grades of paper, whereas pencils and colored pencils work best on medium-weight textured paper.

Pens and markers are perhaps best suited for sketching conceptual ideas. These tools give you the ability to loosen up and avoid inhibitions in the design-drawing process.

SIGHTING

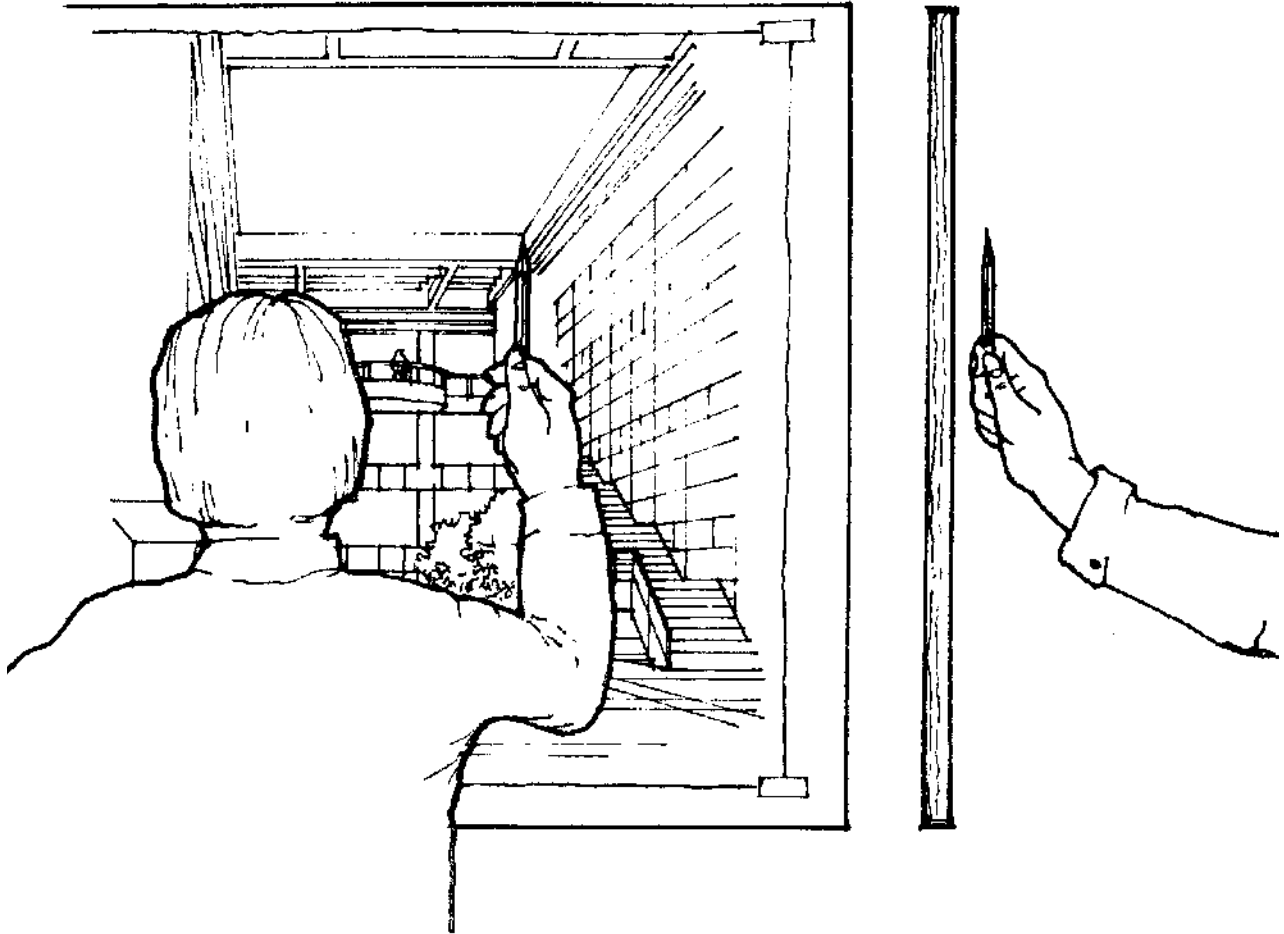


Drawing: Sacramento State Office Building, Sacramento, California  
Fisher-Friedman Associates, San Francisco, California

To properly establish accurate proportions in transferring what you see to your drawing pad, you must accurately compare relative lengths, widths, and angles.

1. Observe the subject/scene that you would like to draw.
2. Close one eye, hold your head still, and extend your arm partially or to arm's length.
3. Holding a pencil or pen, make a basic unit length measurement on any part of the viewed scene, using the distance from your drawing instrument tip to the top of your thumb as a guide to proportion.





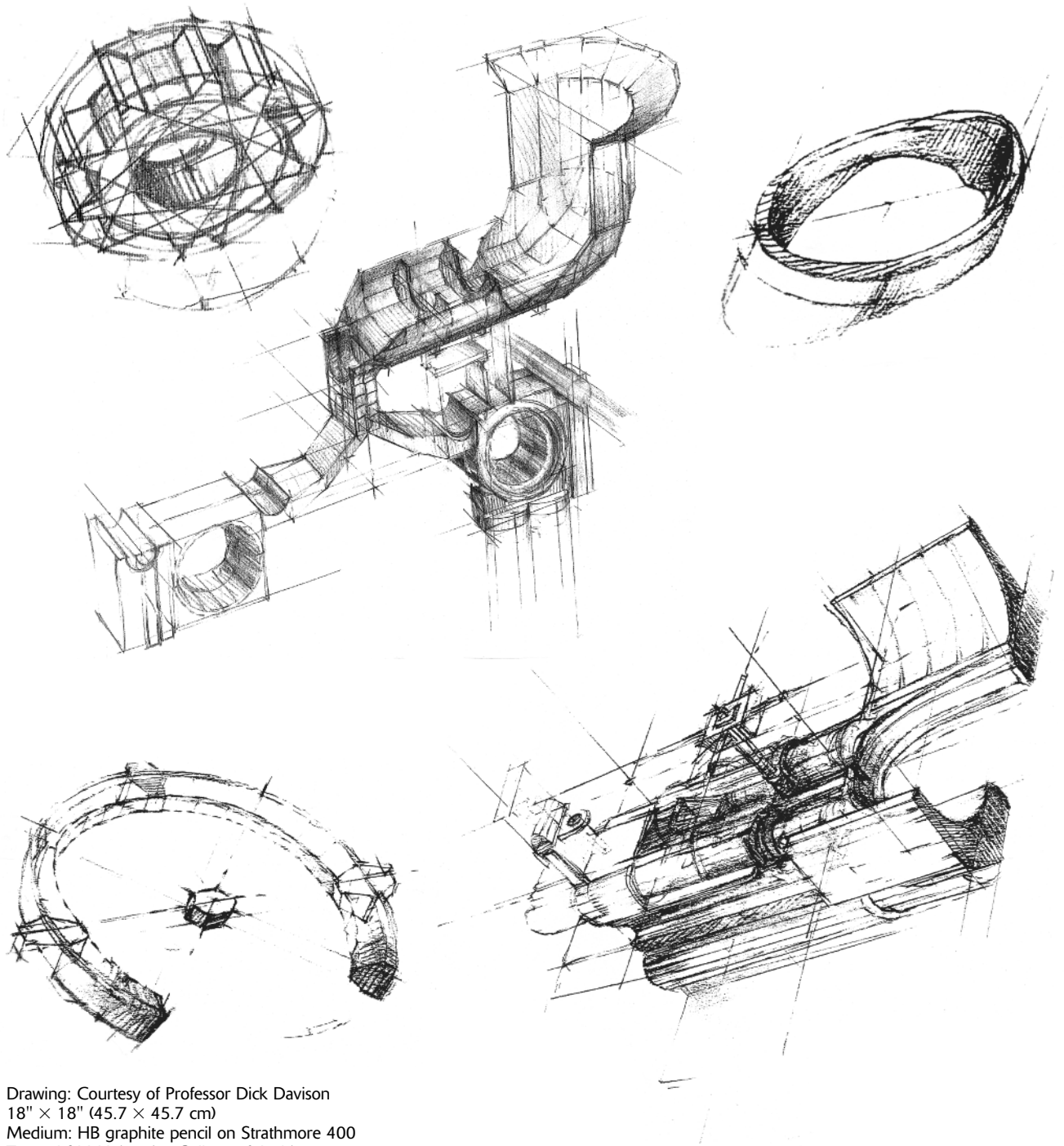
Drawing: Sacramento State Office Building, Sacramento, California  
Fisher–Friedman Associates, San Francisco, California

4. Other lengths and widths can now be measured based on the smaller unit length. All of these distances must reference the basic unit in terms of relative size.
5. The drawing instrument must coincide and align with any angled line to properly transfer the same angle to the drawing pad. Measure the angle with respect to a horizontal and vertical reference that corresponds to the edges of your pad.

Remember:

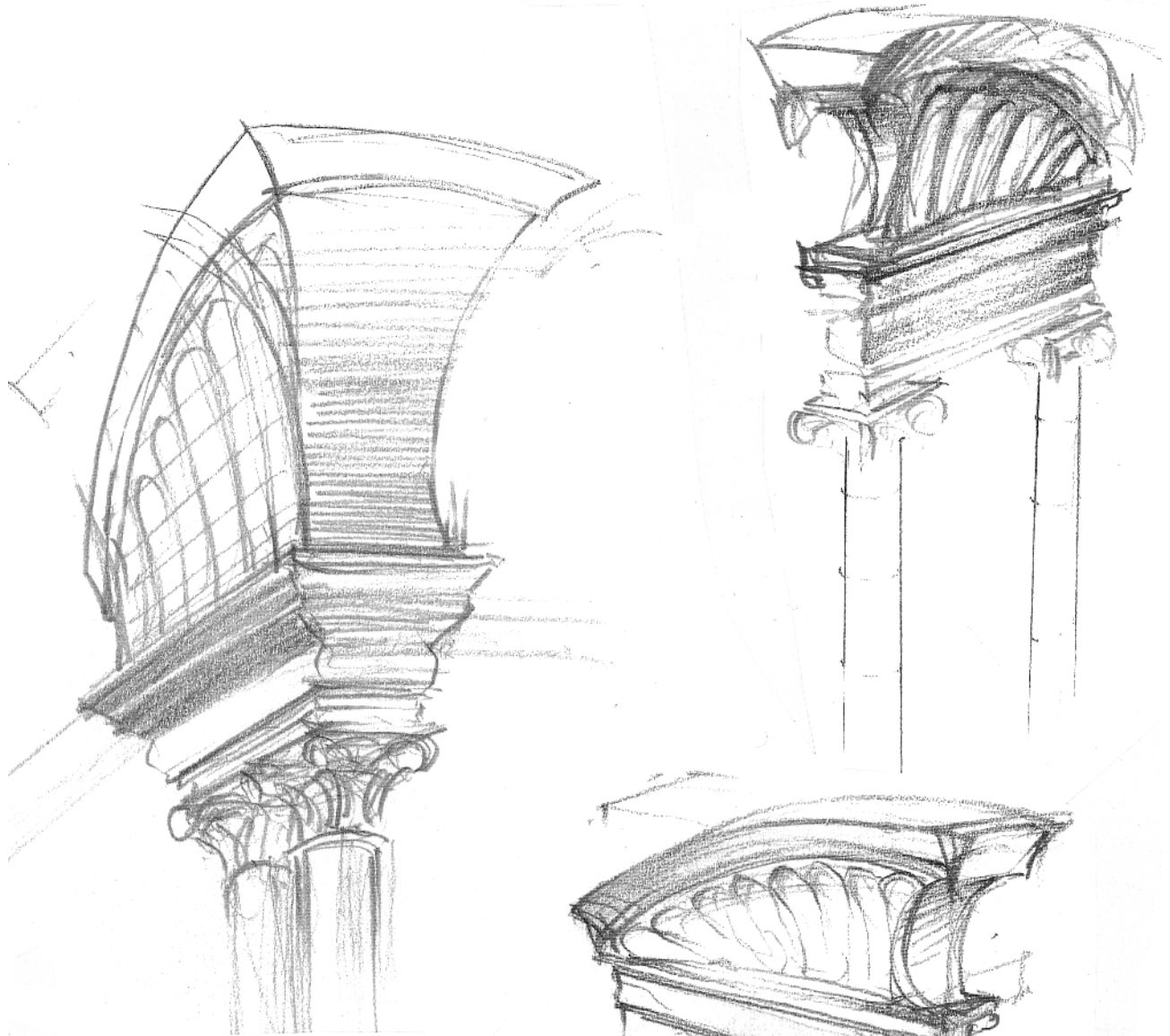
- The plane of your eyes must always be parallel to the plane of your drawing instrument.
- Keep your drawing pad perpendicular to your line of sight so that your drawing instrument can lie in the same plane regardless of its orientation.
- Keep your drawing paper secured to a wood board or hard cardboard pad by using drafting tape, clips, or tacks.

Note: It is best to try to exercise your visualization skills in framing compositions. Various framing devices have been employed over the years, but the most effective, which has been used for centuries, is the use of two small cardboard Ls to frame and crop views. High-tech options are also continually coming out. The ViewCatcher uses a thumb pull to give you an adjustable opening for choice of formats.



Drawing: Courtesy of Professor Dick Davison  
 18" × 18" (45.7 × 45.7 cm)  
 Medium: HB graphite pencil on Strathmore 400  
 Texas A&M University, College of Architecture

Objects in a composition should always be blocked out within a geometrically configured envelope. Block out a form by using lightly drawn *construction lines* that define the shape and size of the subject. Correct proportional relationships can then be regulated. Two-dimensionally, the shape can be a triangle, a circle, a square, or a 2-D polygon. Three-dimensionally, the basic element can be a cube, a sphere, or a 3-D polygon. *Blocking out* helps you compose a drawing and gives you an idea of what the end product will look like. Once an accurately proportioned composition is drawn, line weights can be adjusted or values applied to complete and finalize the drawing. An HB pencil has a lead that is in the transition zone between hard and soft and can create nice, soft tone values halfway between white and black on a value chart (scale), as shown above.



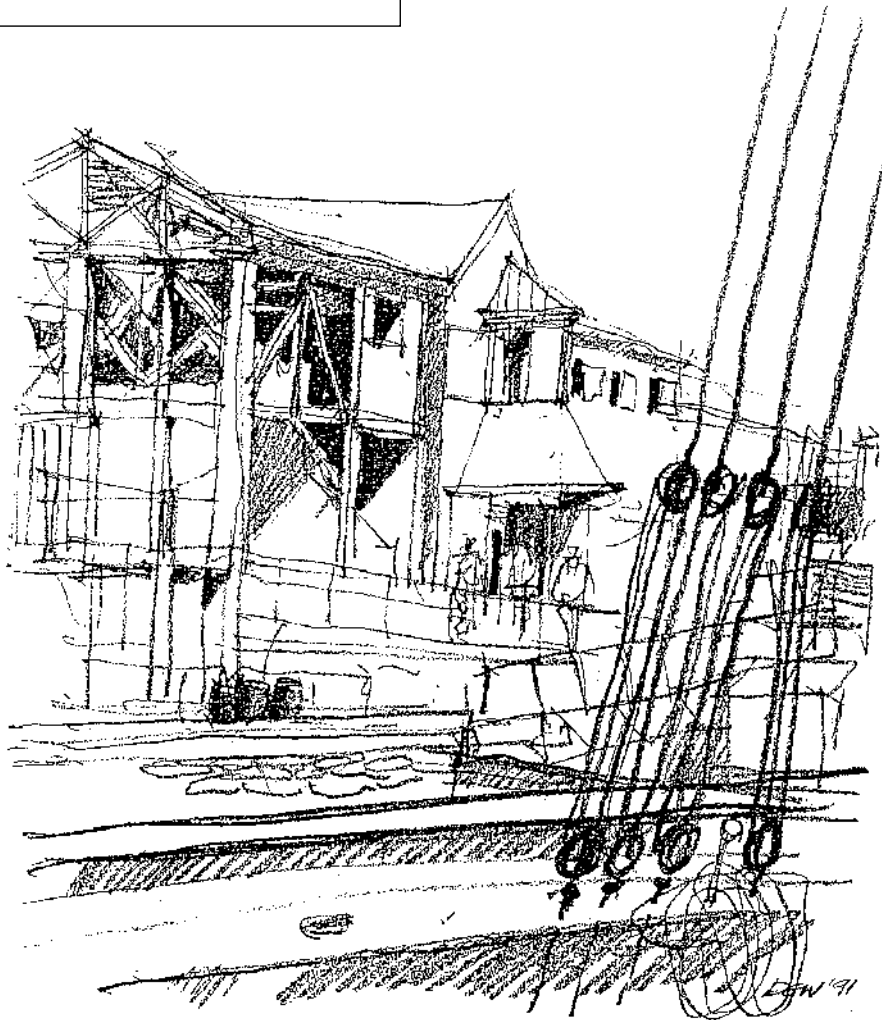
Before attempting to draw an entire building or several buildings in the context of one another, work on particular details of a building or structure. Forcing your mind to isolate interesting building details will improve your focus, concentration, and understanding of architecture. Architectural subjects are treated with the same approach as still lifes. Always set up and regulate proportions using construction lines, which block out and envelop the architectural features of interest.

Drawing: Courtesy of Professor Dick Davison  
 18" × 18" (45.7 × 45.7 cm)  
 Medium: HB graphite pencil on Strathmore 400  
 Texas A&M University, College of Architecture



You can produce a wide variety of stroke widths with graphite pencils: from thin, light lines (H series to HB) to denser lines (B series). *Pencil strokes* can vary in direction (vertical, horizontal, angular) and in pressure intensity. The juxtaposition of closely spaced, toned lines (see close-up) creates the effect of a shaded surface. Ebony, carbon, and carpenter pencils are designed for thicker, softer leads. Soft pencil leads are used to sketch wider lines that, when blended together, produce a tonal effect. The darkness of an Ebony pencil means that less applied pressure is needed when rendering denser lines. You can smoothly render any line width with Ebony's soft graphite; you will find it receptive to most slightly toothed paper surfaces. For all pencils, experiment with stroke results based on applied pressure.

## PENCIL STROKES

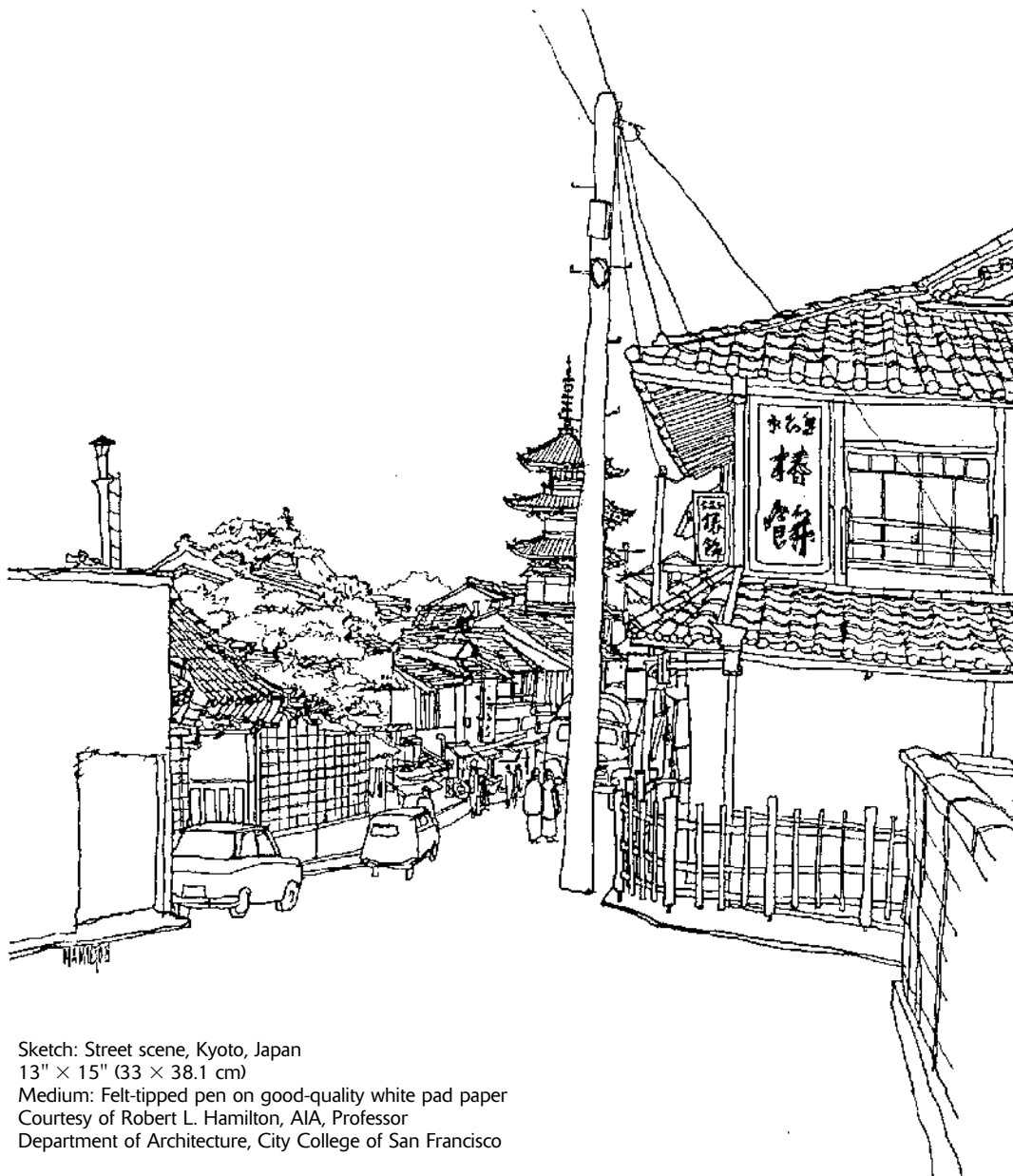
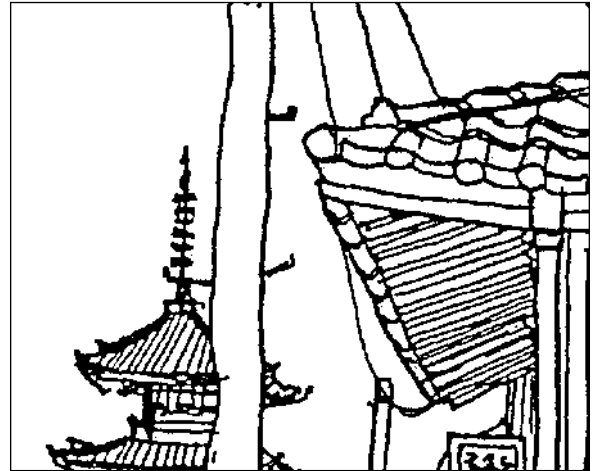


Sketch: Texas Seaport Museum, Galveston, Texas, 1991  
9" × 12" (22.9 × 30.5 cm)

Medium: Ebony pencil on paper

Courtesy of David G. Woodcock, FAIA, RIBA, Professor of Architecture  
Texas A&M University, College of Architecture

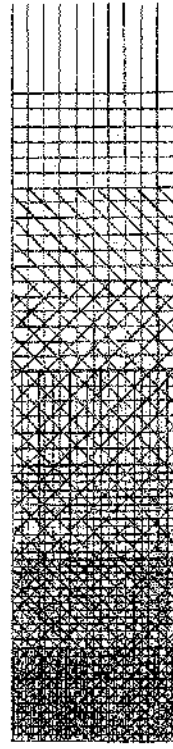
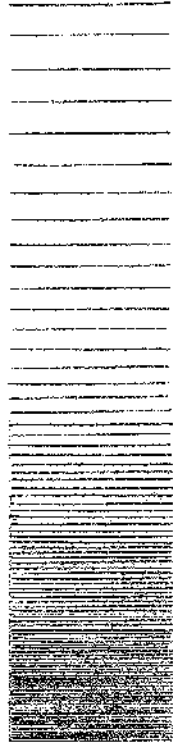
You can produce a clear, dark, fluid line with most pens. Unlike pencils, a pen stroke is permanent and opaque. Like pencils, pens are a convenient tool when you are sketching quickly in an unfamiliar place. They do not require extra setup time, as, for example, with watercolors. Every detailed mark and stroke is critical in the development of any drawing done with a pen. *Pen strokes* emphasize uniform line work and the interrelationship of the compositional shapes. Street scenes in the cityscape are always popular travel sketches. Enliven building sketches by adding visible accessories such as vegetation, people, and vehicular traffic in proper scale. Experiment with the wide range of available pens.



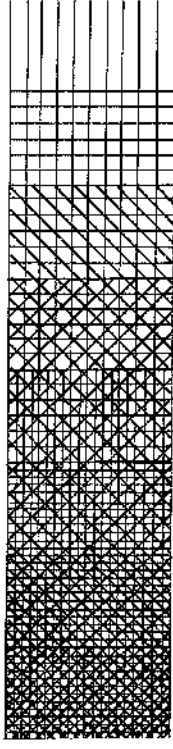
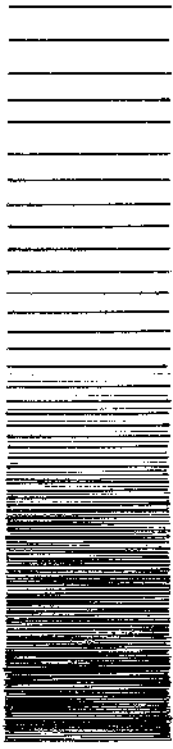
Sketch: Street scene, Kyoto, Japan  
 13" × 15" (33 × 38.1 cm)  
 Medium: Felt-tipped pen on good-quality white pad paper  
 Courtesy of Robert L. Hamilton, AIA, Professor  
 Department of Architecture, City College of San Francisco

VALUE SCALES USING VALUE-GRADING TECHNIQUES

2H, H, HB, and 4B pencils (left to right)



Ink pen on all four scales



vertical lines

horizontal lines

cross-hatching

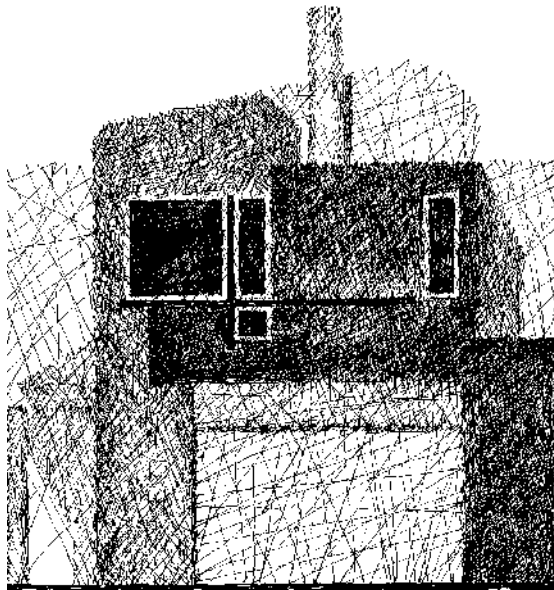
dots

The use of dots is also termed "stippling."

Contrast (playing different shades of dark values against various degrees of light values) in architectural drawings is achieved by *rendering*: the application of artistic delineation to site plans, elevations, paralines, perspectives, and other architectural drawings. The objective of rendering drawings is either to enhance client understanding of the proposed design or for publicity and promotion. The above scales show four methods for rendering value using pencil or ink pen. Other value-producing media are ink wash, watercolor wash, markers, and dry-transfer Zipatone.

*Stippling* is used to build up shade and value. Its objective—to model form—is the same as that of the linear technique of cross-hatching. By varying the size and spacing of dots, tone values and model form can be created. This dot technique is called “pointillism” and originated with French painters—such as Georges Seurat—who experimented with light and vision in their work. Although quite time-consuming, this method provides excellent control over gradations and produces a copylike quality. Note the stippling for the sky area in the villa rendering.

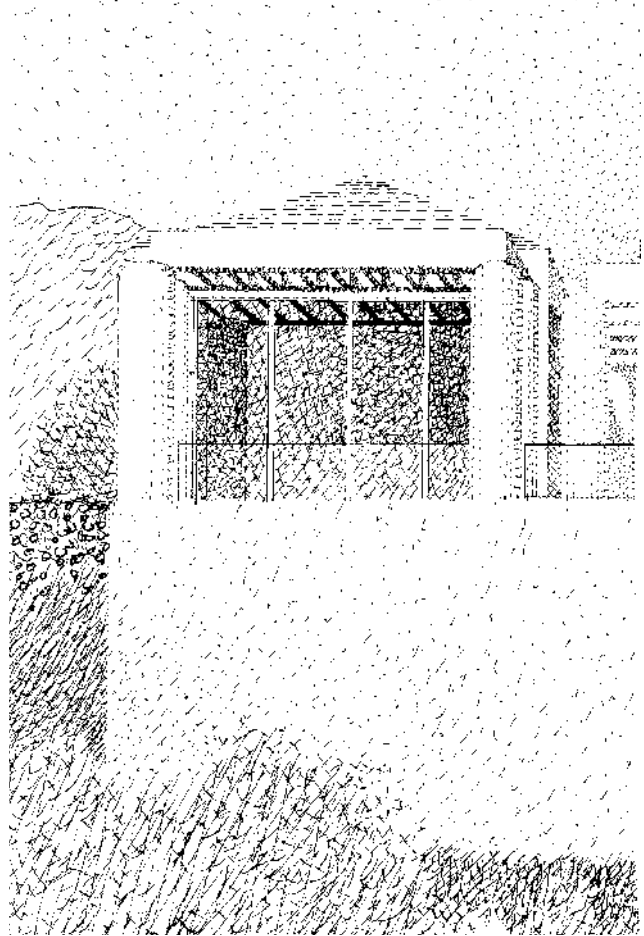
*Hatching* is the use of approximately parallel (short or long) lines in a tonal arrangement in order to portray surface or form. It can describe light, space, and material as an abstraction of reality and glass. Adding layers of hatching increases tone density. This is especially effective for nuances in shadow tones.



Drawing: Van Kirk House, San Francisco, California, 1991  
7.5" × 7.5" (19.1 × 19.1 cm), Scale: 1/4" = 1'0"  
Medium: Pen and ink  
Courtesy of James Shay, FAIA, Architect

*This style of rendering communicates visual tonal values very effectively. The high contrast achieved creates a lot of visual “snap.”*

[ARCHITECT'S STATEMENT]

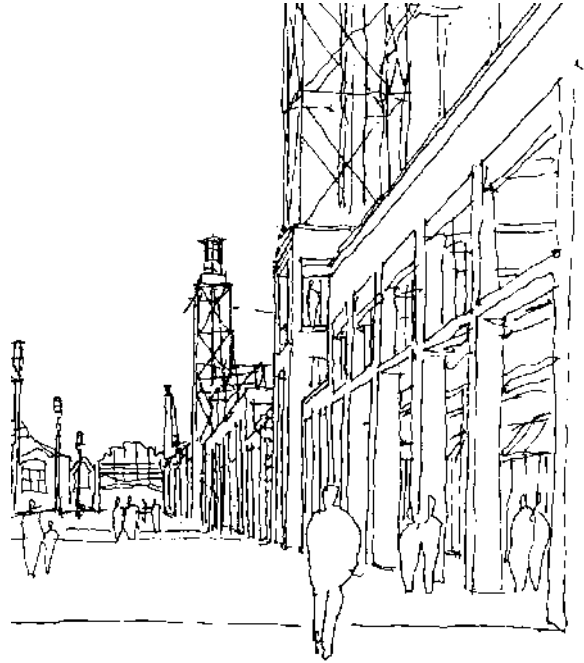


Rendering: Filothei Villa, Greece  
24" × 36" (61 × 91.4 cm), Scale: 1/8" = 1'0"  
Courtesy of Hugh Newell Jacobsen, FAIA, Architect, and  
Stephen S. Evanusa, Architect

*Scribbling* is used to produce a tonal value by applying randomly directed lines that appear haphazard in their arrangement (see foreground, above). Pen and ink is an excellent medium for producing a variety of stroke patterns. These illustrations show the use of straight and curved lines, cross-hatched lines, and dots yielding excellent tonal values. Regardless of the technique, the density of tone produces the needed contrast. Different stroke techniques are often used in combination to depict shape clusters. The number of techniques employed depends on how much detail and precision is desired. Spontaneous loose, imprecise strokes are more suggestive and symbolic. Fine-point felt-tip pens and fountain pens are best suited for hatching and scribbling, whereas pens with a more flexible point are best suited for stippling.

In architectural observation sketching, which activates the hand-eye-brain connection, the first goal is to record exactly what you see. You are sketching for yourself, to understand and analyze what you observed, as well as for your classmates or colleagues, to communicate your observations to them. Be selective in your viewing vantage point, and focus on the architectural features or details that interest you. Describe those elements using what you feel to be an appropriate medium. The sketches on this page consider particular aspects of specific buildings, whereas the sketch on the facing page examines the view from the interior to the exterior.

Drawing (partial): Waterfront Development Plan  
Asbury Park, New Jersey  
Medium: Ink  
Courtesy of Koetter, Kim & Associates, Inc.,  
Architects and Urban Designers



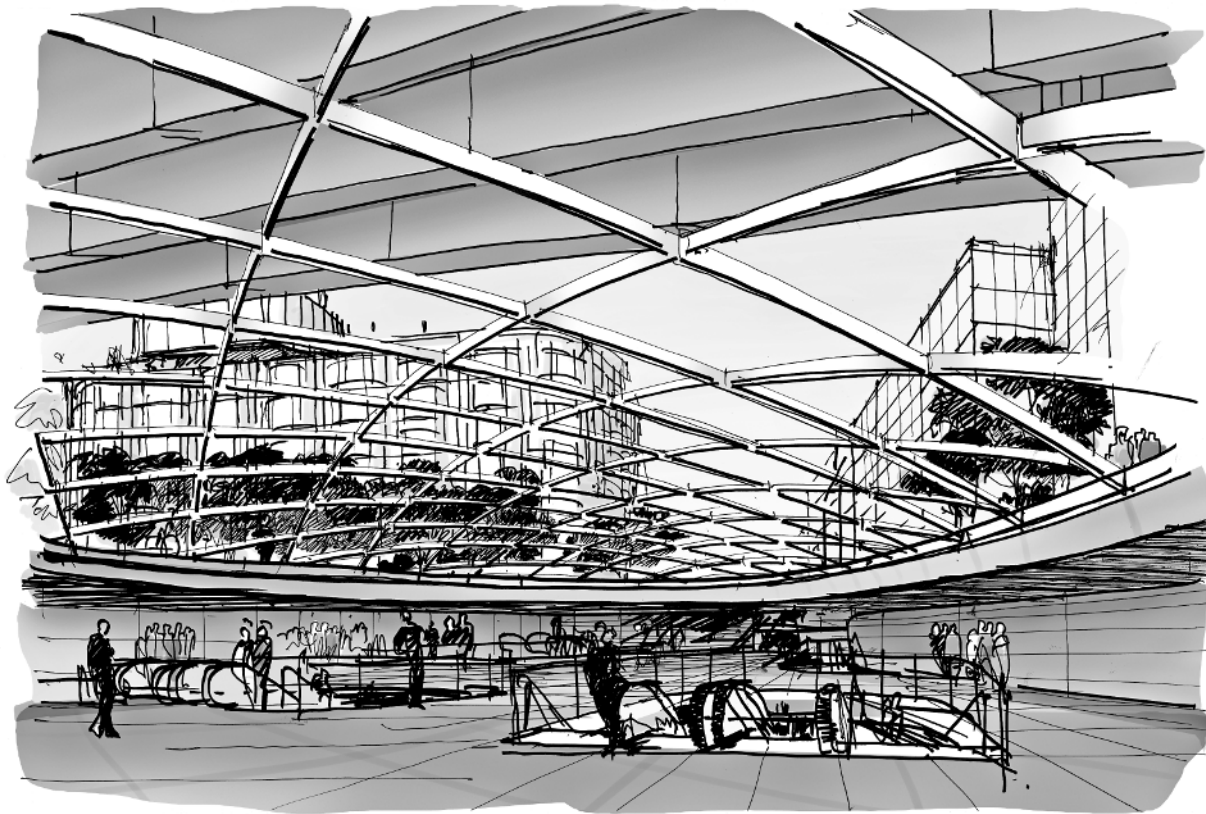
Representational sketching utilizes many basic elements, including line, value, texture, the massing of shapes and volumes, scale, and—sometimes—color. A noncolored pencil or an ink pen will result in a monochromatic sketch. In any medium, you consciously manipulate one or more of these elements. Sketches should exhibit a creative richness regardless of the technique and medium used. Your final composition in representational sketching should go far beyond accurately imitating what you see.

*Drawing is the essence of description.  
Drawing connects the eye and the hand  
to define the world, both seen and unseen.*  
[ARCHITECT'S STATEMENT—HUGH HARDY]

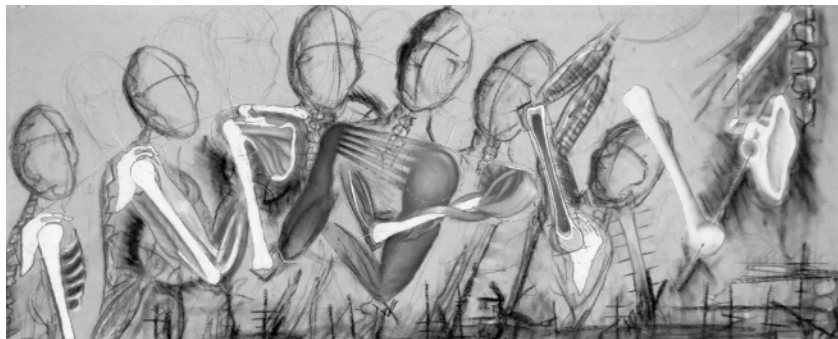


Sketches: Manhattan, function and form  
9" × 10" (22.9 × 25.4 cm)  
Medium: Pen and ink  
Courtesy of Hugh Hardy, FAIA, Hardy Holzman Pfeiffer Associates





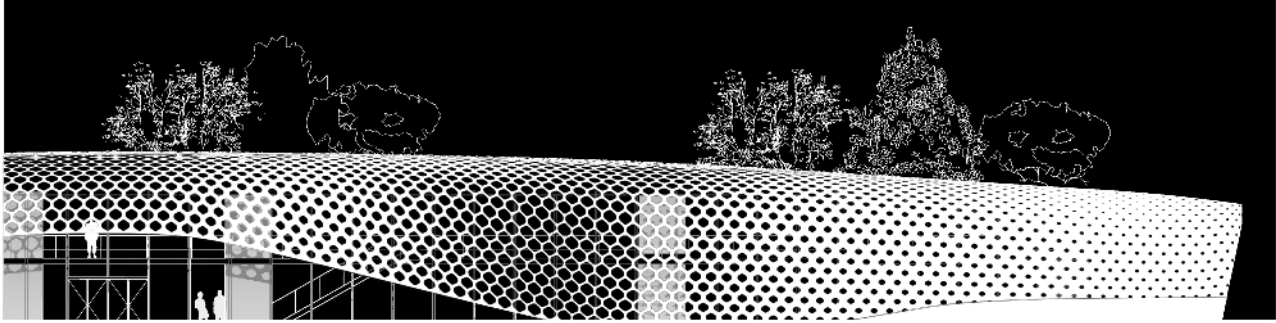
Competition sketch: Rotterdam Central Station  
Cambridge, Massachusetts  
Medium: Ink on paper and Photoshop  
Courtesy of Rafael Vinoly Architects, P.C.



Drawing: Mixed Media Project  
Understanding the Medium of  
Drawing  
Medium: graphite, pastel, and charcoal  
Student project by Erik Larsen  
Course: Design Communication Foundations  
Courtesy of Professor Meg Jackson  
Texas A & M University

*The purpose of this project is media exploration. It is intended to examine a variety of media and methods by exercising their potentials as generative tools for design thinking. The focus is the development of graphic communication, critical drawing skills, and the investigation of mixed media. [PROFESSOR'S STATEMENT]*

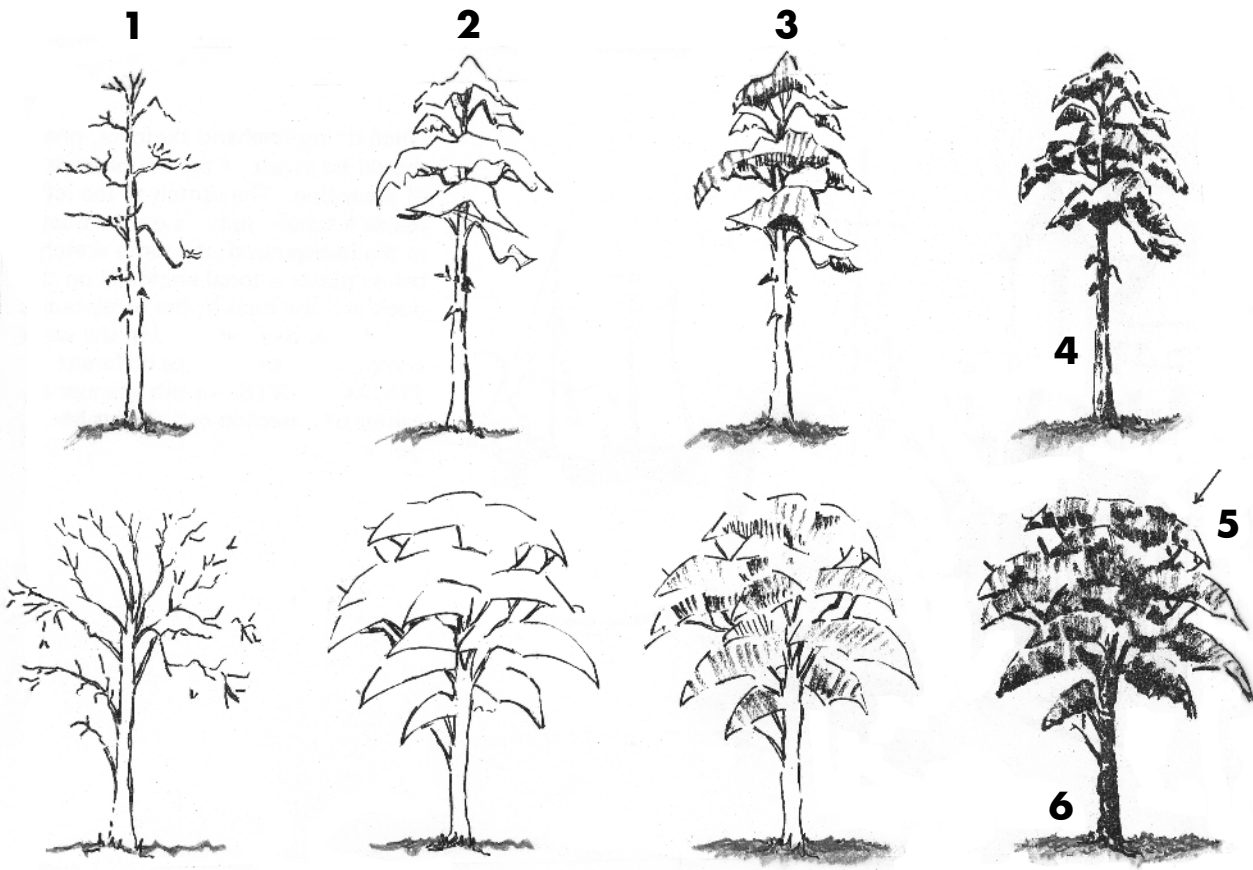
An artist's choice of medium affects a sketch's character the way an author's choice of words affects the way characters are portrayed in his or her book. Before selecting a medium, try to establish the character or feeling of the sketch by deciding which words would best describe your subject or your design. Will the word or feeling be formal or informal, soft or slick? Graphite, ink, and watercolor are just a few of the possible media for architectural sketches. For color, there are many choices in addition to watercolor, such as colored pencils, colored markers, and oil pastels. Work with the medium (dry or wet) with which you feel most at ease. Be alert to others that evolve, such as digital media that interface with manual methods (mixed media). Mixing media can be an inventive challenge.



Drawing: Materials Chemistry Development Center  
 Mourenx, France  
 Medium: 3D graphic software  
 Courtesy of Serero Architects

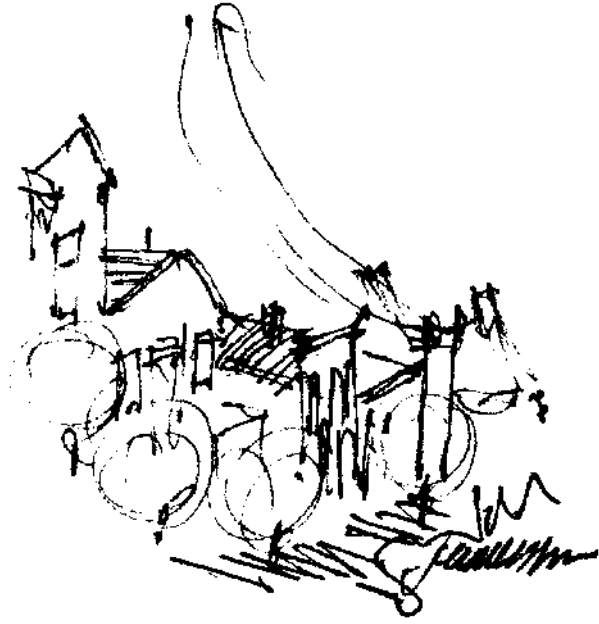
A large massing of trees can be loosely rendered and the foliage made highly suggestive. Groups of trees often create a wall-like effect. Study the foliage's transparency and density. Landscaping vegetation, such as trees, plants, and shrubs, whether hand sketched (below) or digitally drawn (above), should always be complementary and secondary to the architecture to which they are adjacent.

SKETCHING TREES

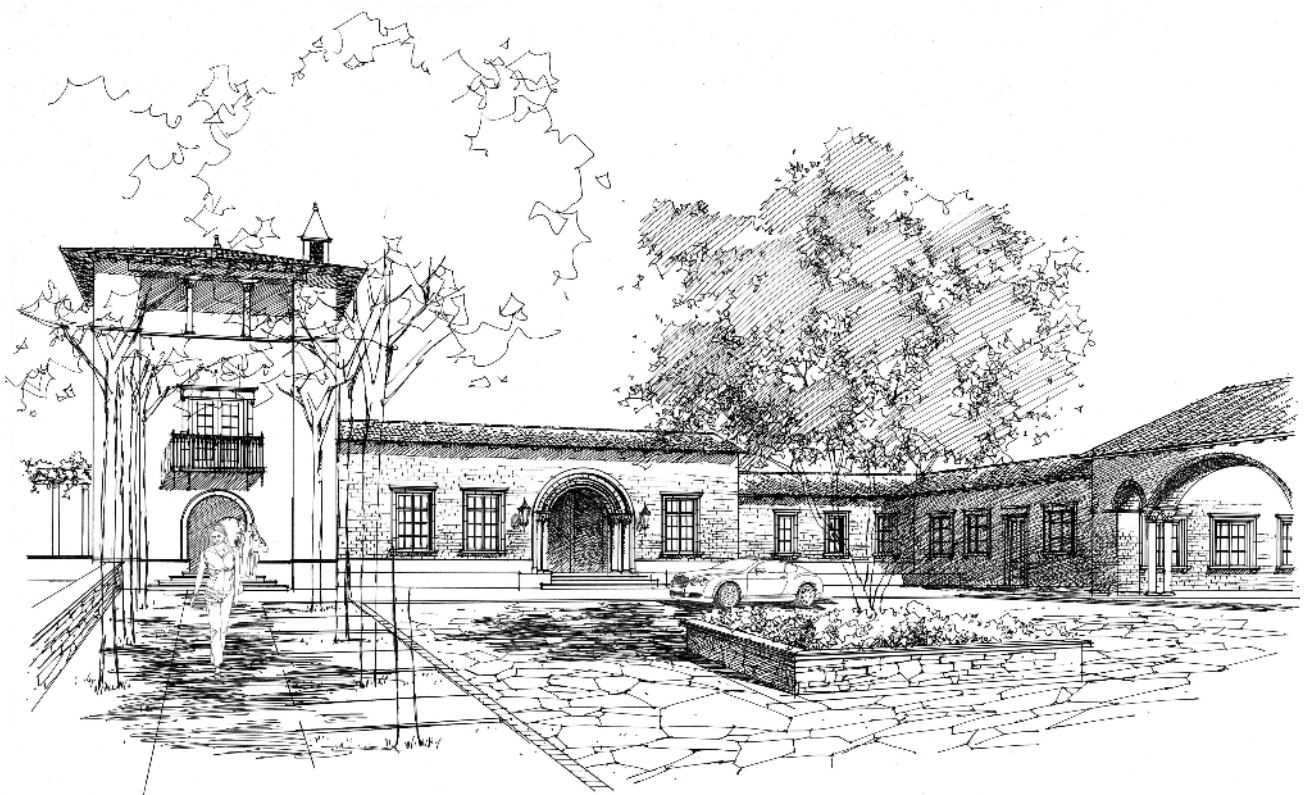


Each tree, with its initial skeletal form, has a character of its own. When sketching or composing trees, one should be aware of (1) the direction and pattern of growth on the branches, which is a clue to the tree's form; (2) the overall silhouette or shape (tall or short, bulky or thin), which is affected by gravity and wind; (3) the massing and pattern of the foliage; (4) the texture of the bark; (5) how the light hits and penetrates various canopy shapes, producing shades and shadows; (6) and the manner in which the trunk flares or tapers off. For pencil work, use 2B and HB for dark values and 2H and 4H for contour lines and light values.

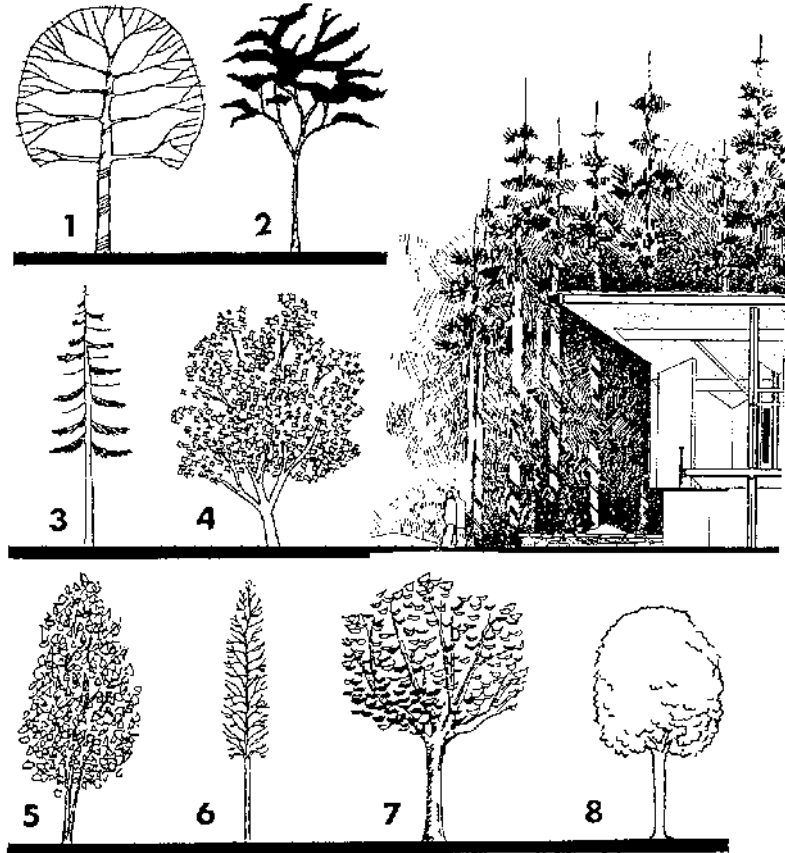
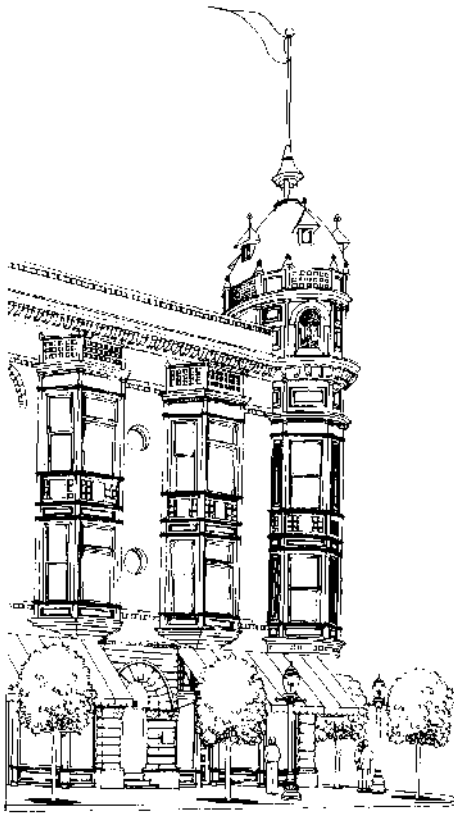
Sketch: Hillside residences, San Francisco, California  
 Sketch by Charles Moore, Architect  
 Courtesy of Saul Weingarten, Executor, Estate of  
 Charles Moore, and the Department of Architecture,  
 UCLA School of Art and Architecture



When you are doing rapid sketch studies at a site, you may not have enough time to draw all the tree details (branches, leaves, etc.). In such situations, your objective should be to create a representational feeling of the essence of a tree or other landscape vegetation. Freehand trees can be simple and abstract. These quick sketches suggestive of trees are very effective. Sometimes it is what we leave out rather than what we put in a sketch that makes it highly expressive.



Conceptual sketch: Wuhan Development  
 Client: Robert Hidey Architects  
 Medium: Pencil  
 Courtesy of Wenjie Studio



Drawing: The Moir Building  
San Jose, California  
36" × 42" (91.4 × 106.7 cm)  
Medium: Pentel on vellum  
Courtesy of Jerome King, AIA  
Renderer: Barney Davidge Associates

Drawing: Rendered trees, Davenport house,  
Evergreen, Colorado  
18" × 24" (45.7 × 61 cm), Scale: ¼" = 1'0"  
Medium: Ink on vellum  
Courtesy of Fay Jones + Maurice Jennings, Architects



Rendered trees can show branching (3 and 6), branching with outline (1), partial texture with outline (8), full texture (2, 4, and 5), or full texture with shade (7). Texture with shade is based on directional sunlight. Trees form a parachute shape as they react to gravity.

Drawing: Foliage texture for foreground trees  
Medium: Ink on vellum  
Herbert Cuevas, AIA, Architect  
Courtesy of Brigitte Nalley

Symbolic trees can be abstract or representational. They should always complement rather than compete with or overpower the human-built environment they are surrounding. Trees can be made darker (top right) or lighter than the building they are behind to give more contrast. Tracing existing high-quality examples will build your graphic vocabulary of these symbols.

Drawing: Meudon-LaForet Cultural Center  
 Meudon-LaForet, France  
 Medium: 3D graphic software  
 Courtesy of Serero Architects



Trees and other vegetation, human figures, furniture, moving vehicles, and ground textures are defined as *entourage* (French for “surroundings”) in an architectural rendering. These supporting elements should always complement the human-built environment, not compete with it. Accurately hand drawn (below) or digitized (above) entourage also helps give scale to the drawing.

The trees in these two illustrations are quite detailed and realistic in appearance. When delineating abstract or realistic trees in perspective, you can create more visual interest by changing the height of the trees; and you can add more depth to the rendering by casting ground shadows.



© McDonough Associates, Inc.



Drawing: Environmental Learning  
 Center at Camp Sagawau  
 Camp Sagawau, Illinois  
 Architect: McDonough Associates, Inc.  
 Medium: Pen and ink  
 Courtesy of Manuel Avila, Architectural  
 Illustrator



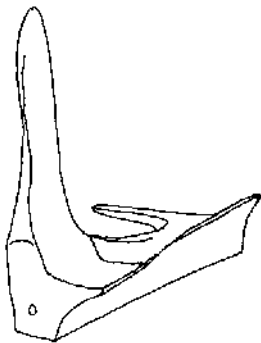
Drawing: Cairo Expo City  
Cairo, Egypt  
Medium: Rhino, Maya, and AutoCAD  
Courtesy of Zaha Hadid Architects

In interior space design, furniture and materiality depiction is the best way to animate a space because these are elements to which users relate. Sofas and chairs are commonly seen in groups of two or more. Become familiar with good furniture design. Outstanding furniture has been designed by many noted architects, including Alvar Aalto, Marcel Breuer, Charles Eames, Frank Gehry, Zaha Hadid, Richard Meier, Eero Saarinen, and Frank Lloyd Wright. As with people and cars, keep a reference photo file.

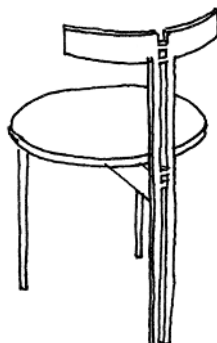


Drawing: Ivo\_03  
Client: Phillips de Pury & Co.  
Medium: Maxwell Render, V-Ray, Maya, Rhino, Photoshop  
Courtesy of Asymptote: Hani Rashid + Lise Anne Couture

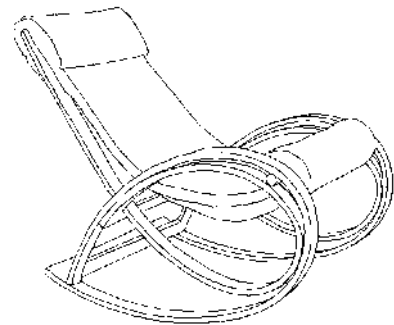
*An elegant and unique table that features slumped glass suspended across a contiguous and abstracted surface of diamond-shaped facets. [ARCHITECT'S STATEMENT]*



Chair by Zaha Hadid



Furniture study by Richard Meier

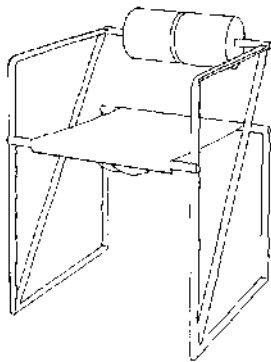


Chair by Gaetana Aulenti



Drawing: Cairo Expo City  
 Cairo, Egypt  
 Medium: Rhino, Maya, and AutoCAD  
 Courtesy of Zaha Hadid Architects

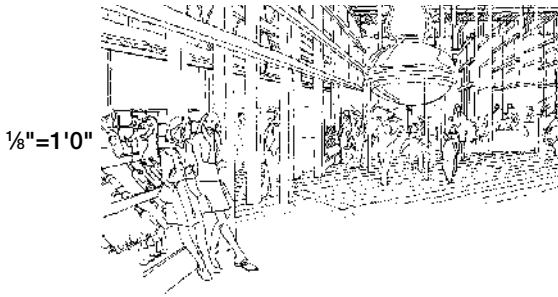
Furniture accessories, such as lighting elements, chairs, sofas, and tables, should complement the interior architecture and show how interior space is used. The size and scale of an interior space can be indicated when human figures are added with the furniture. Drawing properly scaled people in the interior space will help in drawing properly scaled furniture. It is easier to start by drawing a scaled figure, and then drawing the piece of furniture on which the figure is sitting.



Chair by Mario Botta



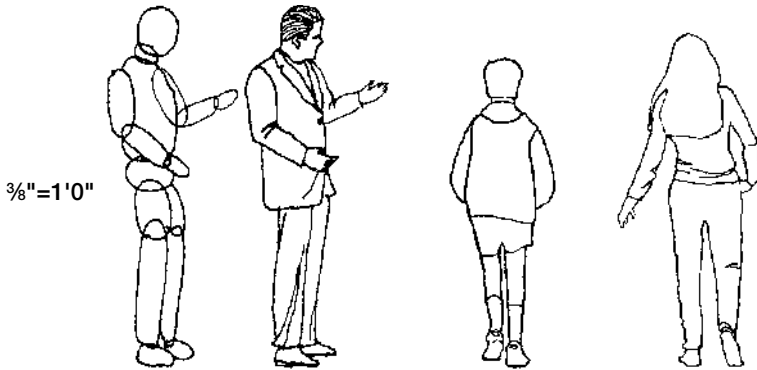
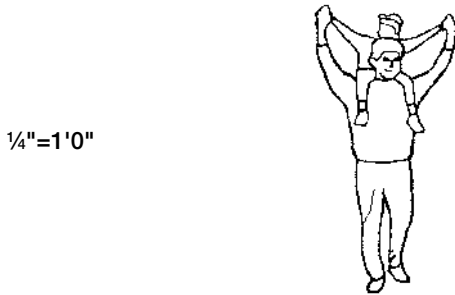
DELINEATING HUMAN FIGURES



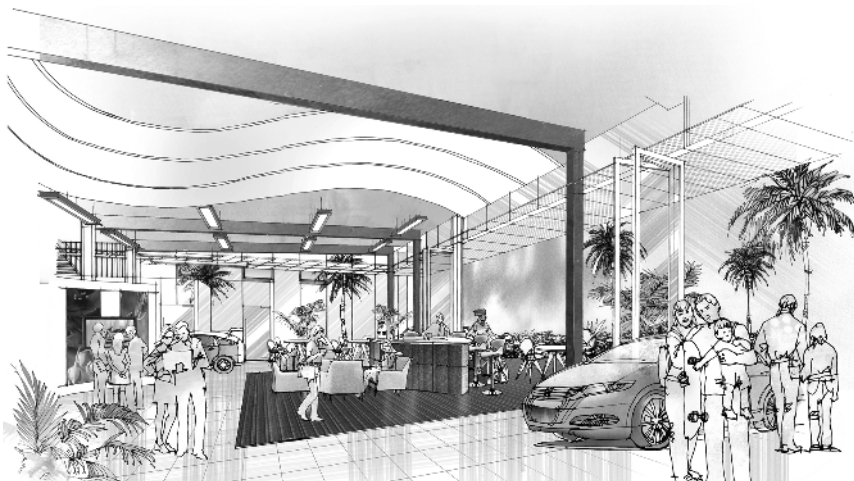
Drawing (partial): Standing figures  
Client: Thomas Schoos Design  
Medium: Markers on ink  
Courtesy of Wenjie Studio

Keep the following in mind when using human figures:

- Figures show the scale of a drawing.
- Figures are secondary to the architecture.
- Figures should not cover space-defining intersections.
- Figures should imply activity yet not be overactive.
- Figures should have simple details for clothes.
- Grouped figures should show overlap.
- Figures should be developed using properly proportioned, contoured bubble forms to depict activity (standing, walking, sitting, etc.).
- Figures should be drawn as an integral part of any rendering (not pasted in, resulting in a cookie-cutter look).

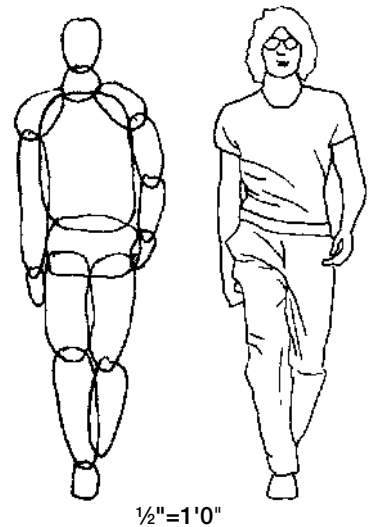


Keep a reference clipping file of photographs and drawings of people in different poses alone as well as in groups. Use a Polaroid camera or a digital camera (with a computer and printer) to freeze figure images for future reference. These photos can be reduced or enlarged to suit the size of your drawing.



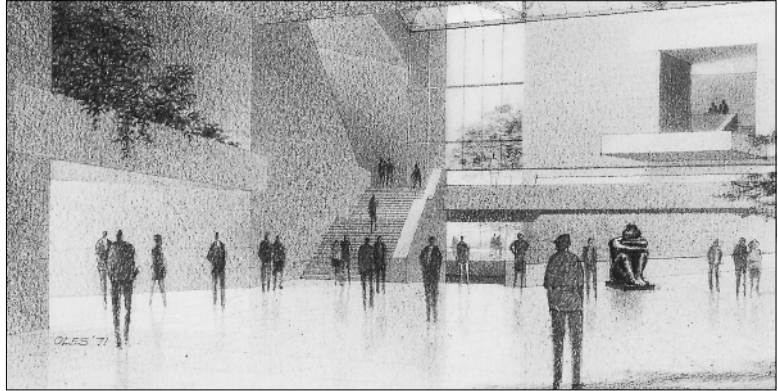
Grouped figures (2nd row left)  
Medium: Ink  
Courtesy of Martin Liefhebber,  
Barton Myers Associates, Architects

Conceptual drawing: Blue Sky  
Client: Whitfield Associates, Inc.  
Medium: Marker on ink  
Courtesy of Wenjie Studio





The people in the drawing at right are abstract, with little or no clothing detail. Abstract figures (either with contour outline or with gray shades) are usually adequate for most drawings. Clothing detail for figures is dependent on the scale, style, and intent of the drawing. As the scale of the human figure increases in size, a simple form without clothing detail is no longer adequate. With clothing detail, keep it minimal to avoid distracting from the architectural subject.



Drawing (partial): East Wing of the National Gallery of Art  
Washington, D.C.  
Entire original: 21" X 14" (53.3 X 35.6 cm)  
Medium: Black Prismacolor on vellum  
Pei, Cobb, Freed, and Partners, Architects  
Courtesy of Paul Stevenson Oles, FAIA,  
Renderer

Drawing: Foyer, Music Theater  
University of the Arts "Mumut"  
Graz, Austria  
Medium: Rhino, Maya, Studio Max, and AutoCAD  
Courtesy of UNStudio



Drawing: Cairo Expo City Entrance  
Cairo, Egypt  
Media: Rhino, Maya, and AutoCAD  
Courtesy of Zaha Hadid Architects

Allow digitally generated people to be transparent so as not to obscure important architectural features.

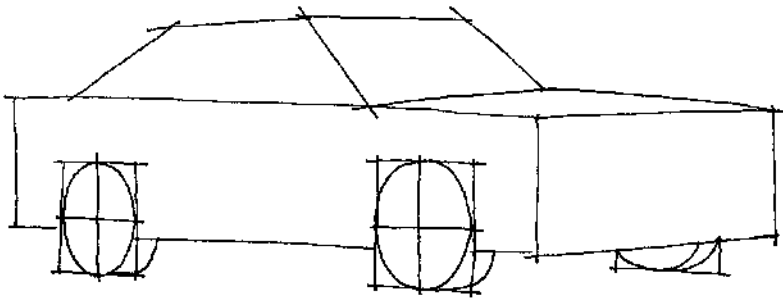
In the interiors above, almost all of the human heads are on the observer's horizon line—it doesn't matter whether the figure is closer to or farther away from the observer. In such instances, the horizon line tends to be read as the eye level of the observer. If the human figure is taller than the observer, or located above the scene, his or her eyes will be above the horizon line. The same is true for a shorter human figure. Figures on higher elevations such as on escalators and stairs are far above the observer's eye level.

Human figures should be well distributed in a perspective drawing in order to create the proper sense of depth. This distribution should be in three zones: the *foreground*, or the area nearest to the observer; the *middle ground*, or the area that has the observer's attention; and the *background*, or the area farthest from the observer (with smallest figures). When possible, carefully insert figures—whether alone or in a group—into these three distinct areas. The gestures made by figures in a drawing can lend the building a sense of use and occupancy.

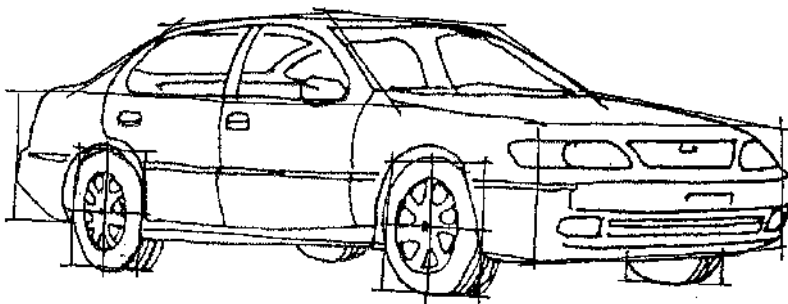


Rapid visualization sketch by Wenjie Chen  
 Medium: Watercolor  
 Architects: Ware Malcomb  
 Courtesy of Wenjie Studio

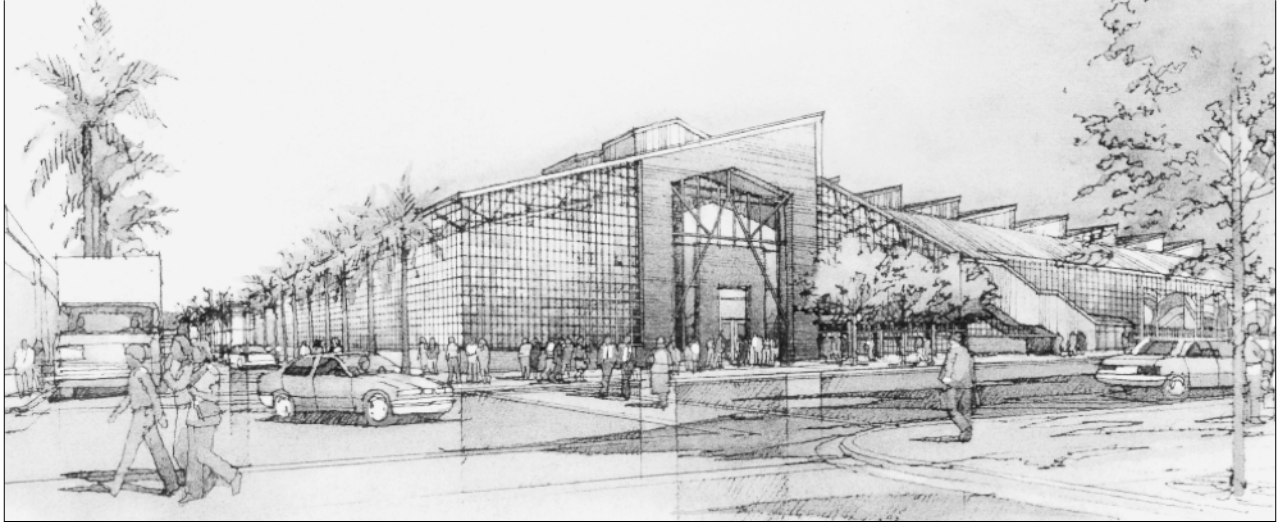
Cars range in length from approximately 14' (4.27 m) to 20' (6.1 m) and in width from 5.8' (1.77 m) to 6.3' (1.92 m). Tires range from 22" (55.9 cm) to 28" (71.12 cm) in diameter.



A car or any type of moving vehicle should be enclosed in an envelope of simple geometric shapes, such as truncated pyramids, rectangular solids, and cylindrical elements. Boats are similar to cars; they can be set up skeletally as a rectilinear box with shaped ends and a specific center line. Graphite is the ideal medium for layout work.



After the basic volume and form are developed with light construction lines, structural details should be sketched with a contour outline technique. To keep it simple, only major details should be added, like headlights and bumpers. The drawing can be finalized with pencil or any other rendering medium.

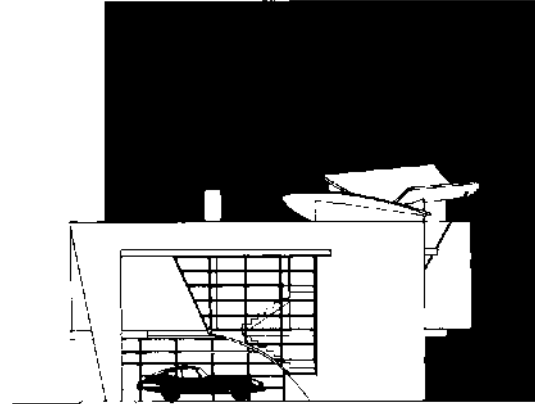
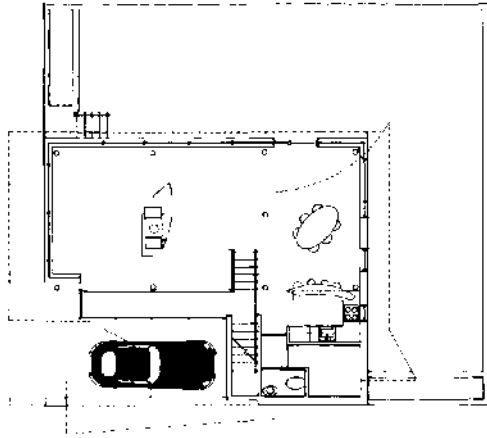


Drawing: Sybase Hollis Street Campus, San Francisco, California  
 18" × 12" (30.5 × 45.7 cm)  
 Medium: Sketch watercolor on mounted presentation blackline print of pencil drawing  
 Robinson Mills & Williams, Architects  
 Courtesy of Al Forster, Architectural Illustrator

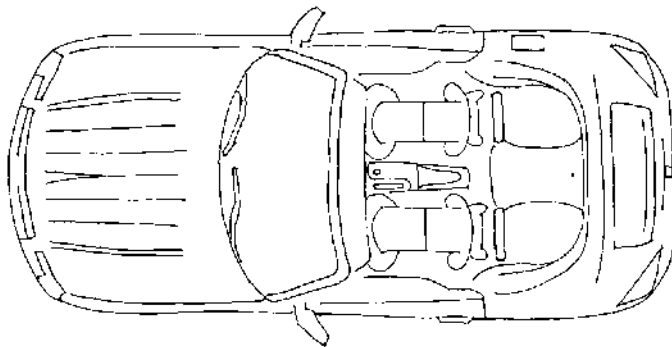
Cars in perspective should always be in scale with the rest of the drawing and secondary to major building elements. Contour outline cars are usually adequate for most architectural drawings. Add details and shaded tones in accordance with the complexity of the rendering. The roofs of cars are slightly below the eye-level line. Add visual interest by showing cars turning as well as moving in both directions.



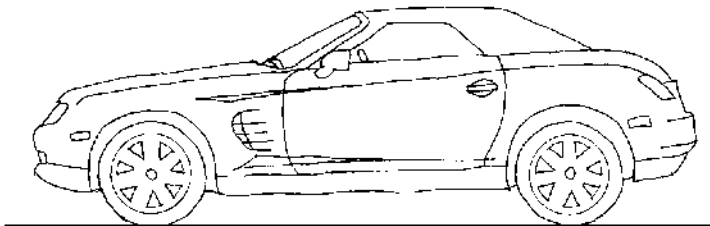
Drawing: Ponte Vista  
 Architects: McLarand Vasquez Emsiek & Partners  
 Medium: Watercolor  
 Sketch by Wenjie Chen  
 Courtesy of Wenjie Studio



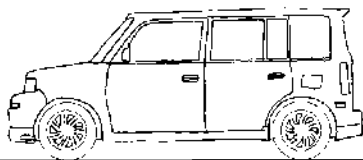
Drawings above: The Hague Villa Project  
The Hague, The Netherlands  
10" × 8" (25.4 × 20.3 cm), Scale: 1/4" = 1'0"  
Medium: Pen and ink  
Courtesy of Hariri & Hariri, Architects



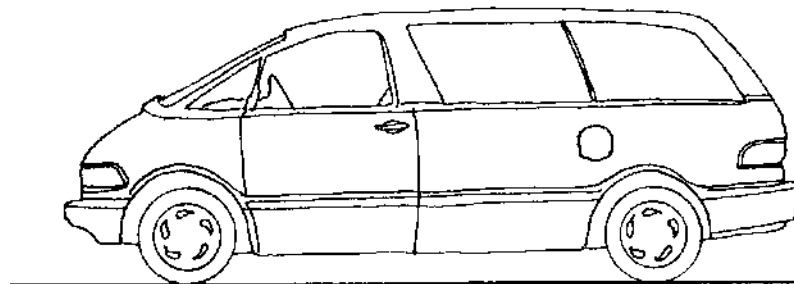
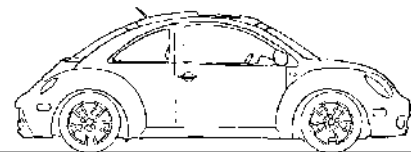
Cars seen in the plan view are good scale indicators when placed on driveways and roadways in site plans. Likewise, cars seen in elevation, as with human figures, are good scale indicators for buildings. They can be symbolic, as shown above, or delineated with more detail.



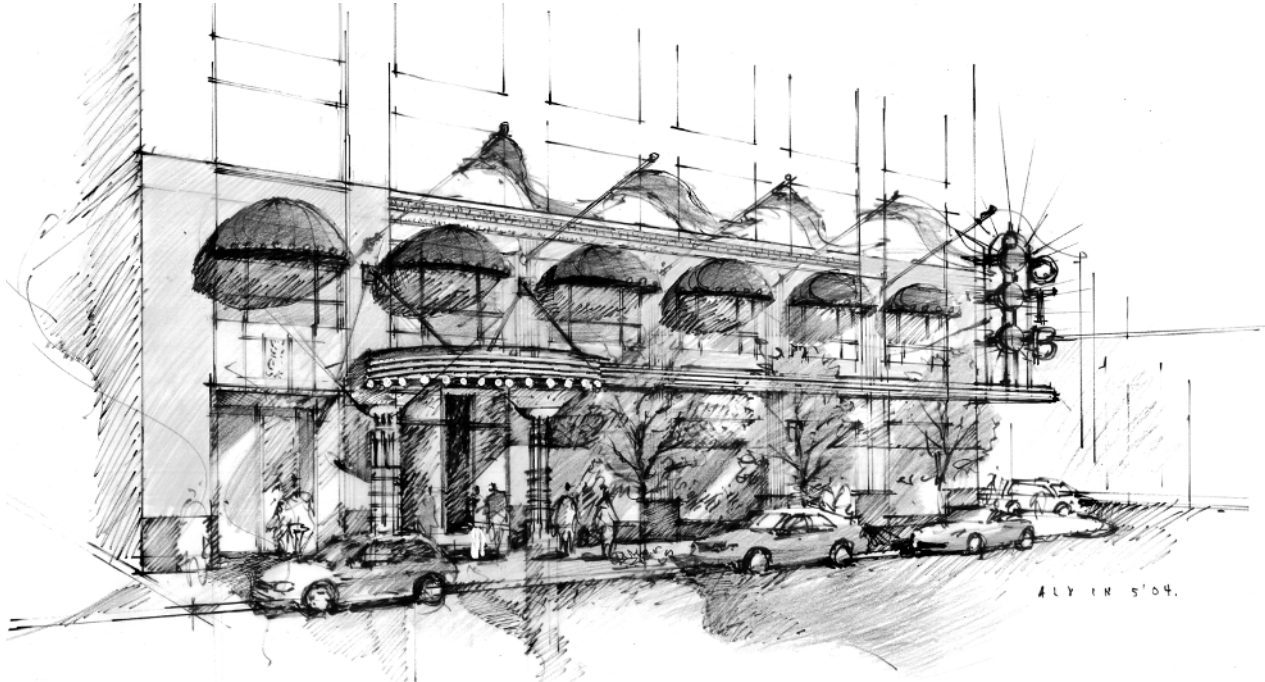
1/4" = 1'0"



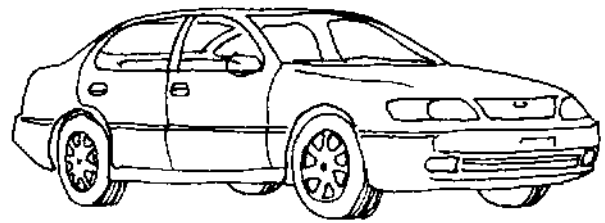
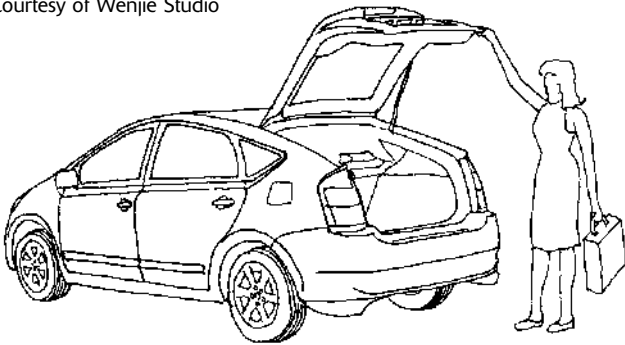
1/8" = 1'0"



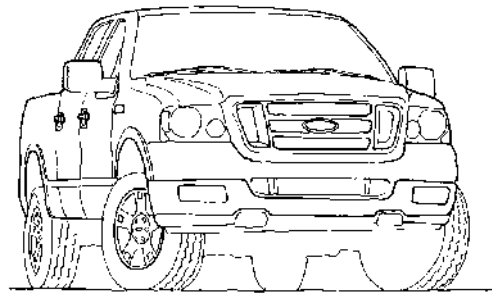
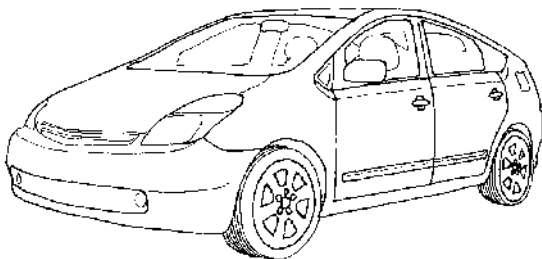
1/4" = 1'0"



Drawing: Off-Track Betting  
Chicago, Illinois  
Architects: Ware Malcomb  
Medium: Watercolor 11" X 17" (27.9 X 42.2 cm)  
Drawing by Wenjie Chen  
Courtesy of Wenjie Studio



Car shapes in plan and in elevation are essentially rectangles. Cars in perspective can be simplified into rectangular boxes. Standing human figures are usually drawn in perspective with cars in order to indicate an appropriate scale.



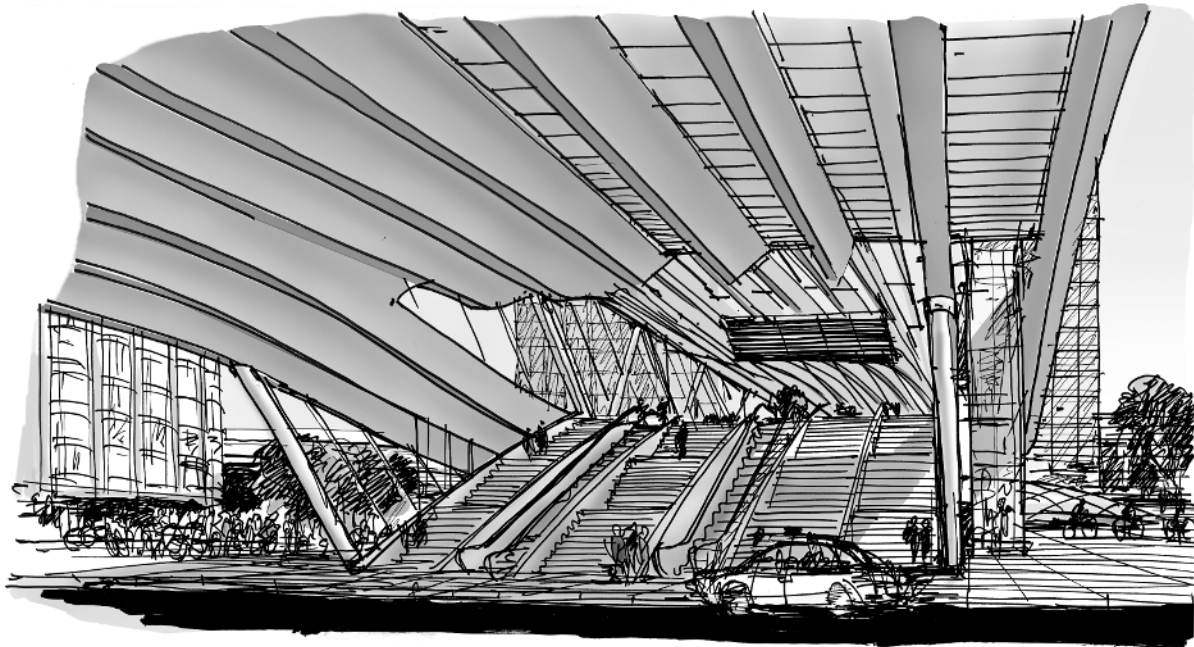
As with people and landscaping entourage, cars should complement the architecture. Keep a reference file of photos and drawings for cars. Periodically update this file with the latest car designs.



Travel sketch: Via Tornabuoni, Firenze, Italy  
Medium: Pencil  
Courtesy of Professor George S. Loli  
University of Louisiana-Lafayette

All objects can be broken down into simple *geometric solids*. For example, trees are basically spheres or cones on cylinders. Buildings are usually a combination of rectangular solids, cylindrical solids, spherical solids, curvilinear elements, and planar elements. In the sketch to the left, the foreground column is defined and created using the background building tone. The column also gives more depth to the perspective view.

*Value* or tone on buildings refers to the lightness or darkness of a surface. Classic examples of value transitions can be seen in the 1920s and 1930s work of Hugh Ferriss.



Competition sketch: Rotterdam Central Station  
Cambridge, Massachusetts  
Media: Ink on paper and Photoshop  
Courtesy of Rafael Viñoly Architects, P.C.

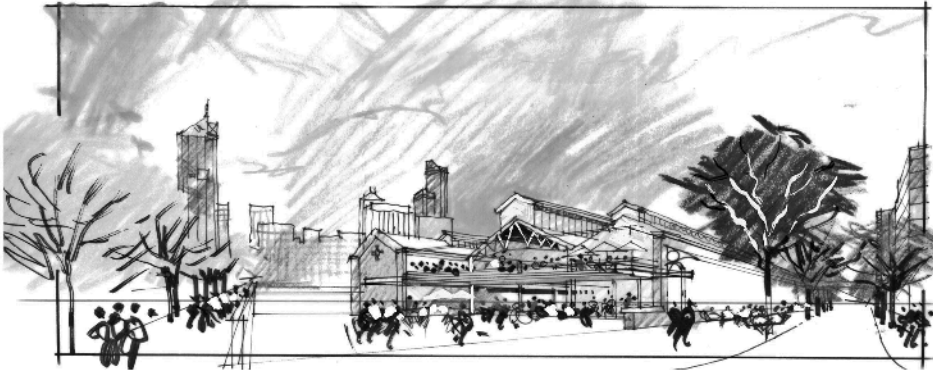
## Vignette

## WORKSHEET No. 89



## Existing site

Uncorrected photograph



## Preliminary sketch

As used during the consultation Process, with client cropping

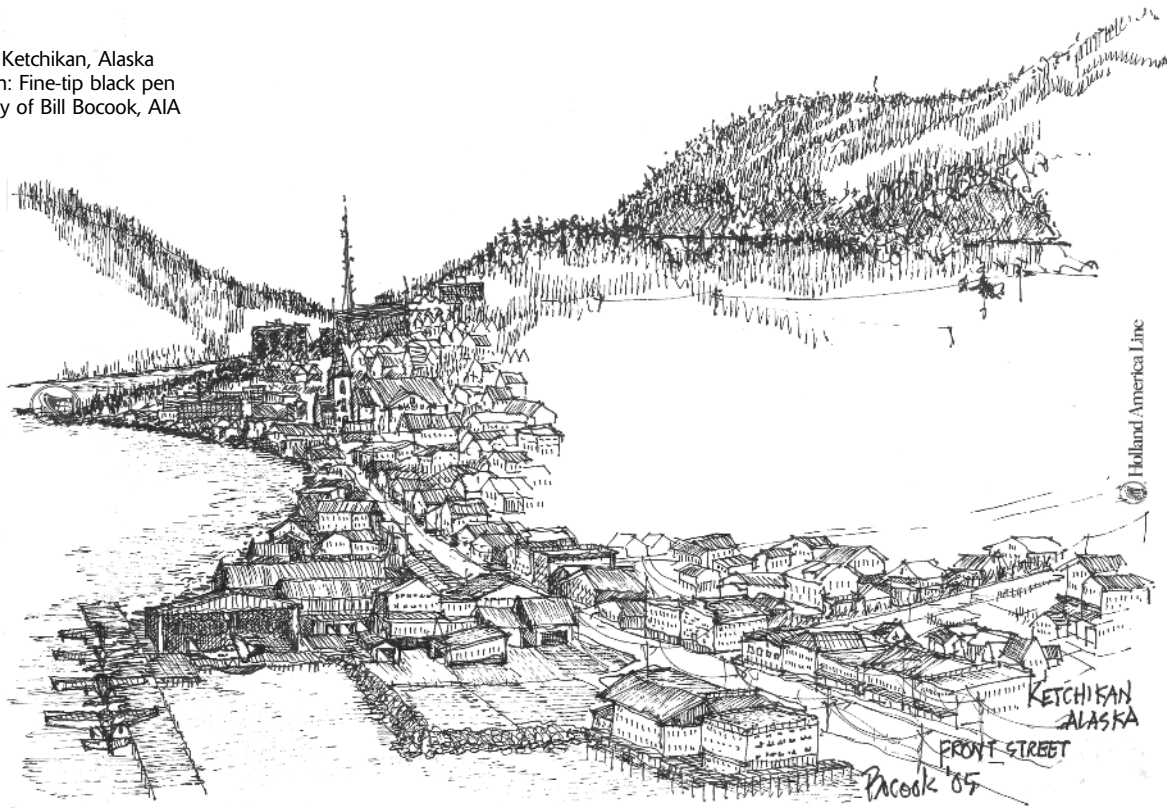


## Finished vignette

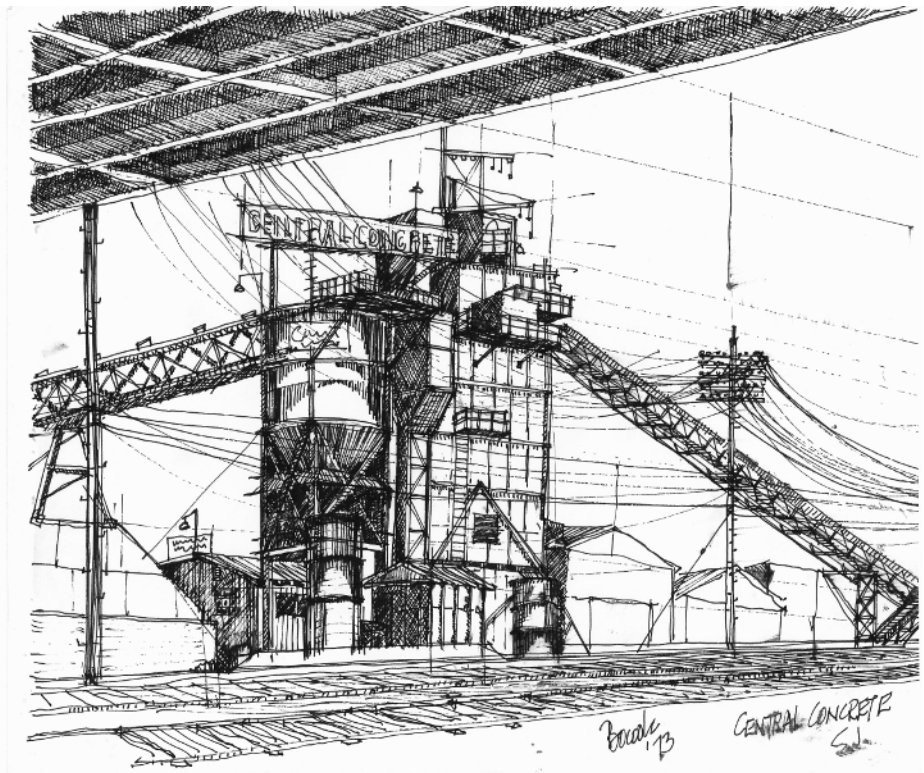
Images: Docklands2 / Vignette  
 Medium: Color Pencil  
 Courtesy of Peter Edgeley, Architectural Illustrator

A study of a drawing technique called “perspective,” in conjunction with this chapter, will help you understand why the lines you draw instinctively in your representational sketches appear the way they do. We have seen that sighting skills give you an understanding of proportions in the viewed space. The theories of perspective will accurately verify these proportions. The sketch to the left is another good example of a *vignette*. The continuation of the buildings is left to your imagination.

Sketch: Ketchikan, Alaska  
 Medium: Fine-tip black pen  
 Courtesy of Bill Bocook, AIA

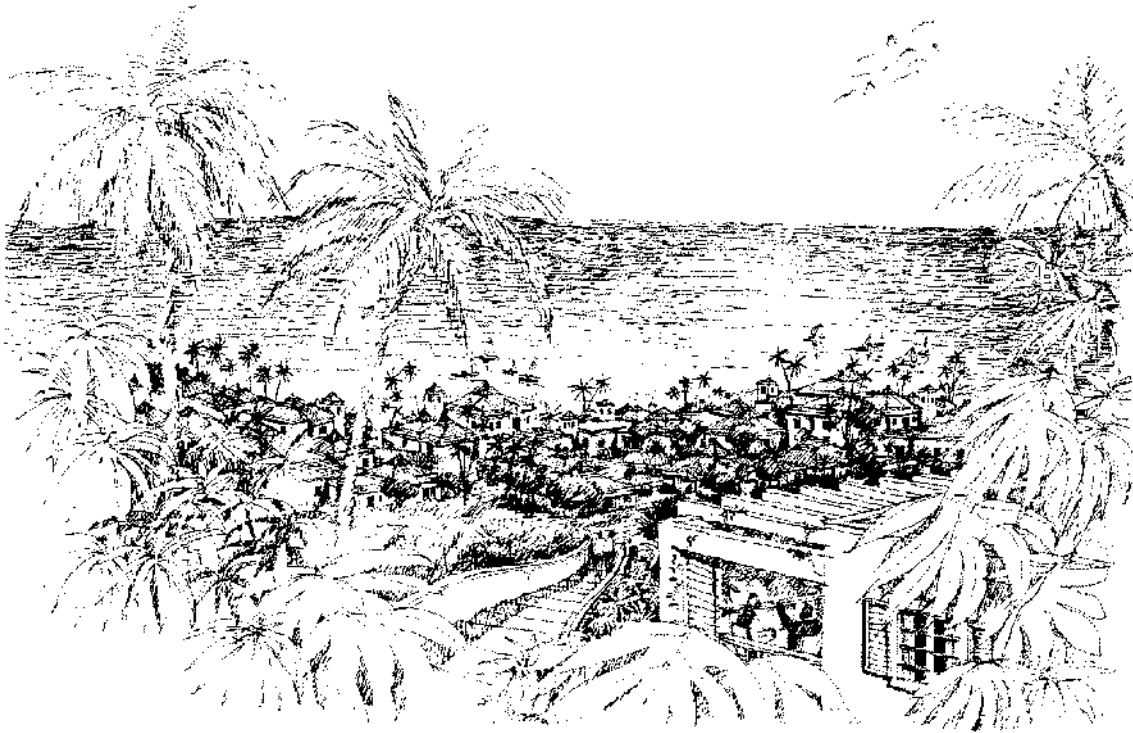


On-the-spot representational sketching done when traveling gives you a chance to fill your sketchbook with interesting subjects. The landscape is filled with exciting visual surprises—street scenes within a cityscape, mountain roads in a rural village, or panoramic beach views along a waterfront. Your goal may be to capture a sense of place and time at special events. Unusual and interesting views should be sought. Perspective angles can vary from traditional ground eye-level views to bird’s-eye and worm’s-eye views. Sketchbooks can range in size from 5" × 7" (12.7 × 17.8 cm) to 11" × 14" (27.9 × 35.5 cm). Those with a double-wire binding allow the book to lie flat.



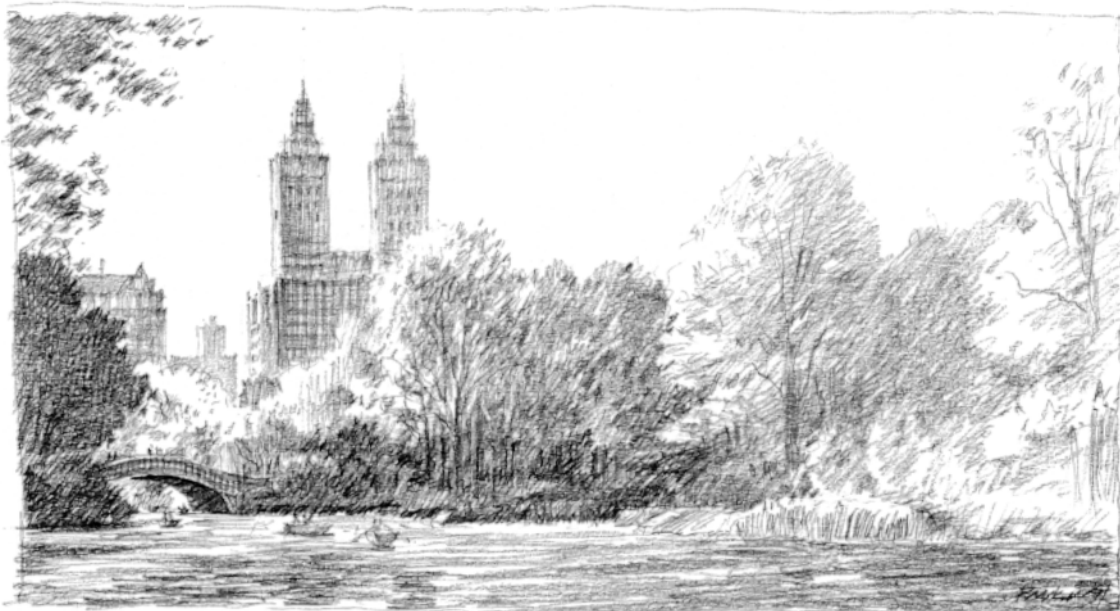
Sketch: Central Concrete, San Jose, California  
 Medium: Fine-tip black pen  
 Courtesy of Bill Bocook, AIA





Sketch: Resort Hotel, Mexico  
 17" × 11" (43.2 × 27.9 cm)  
 Media: Black Prismacolor and thin Pilot razor-point Pentel  
 Shading was built up with a single line thickness  
 Design office: Sandy & Babcock, San Francisco  
 Courtesy of Lawrence Ko Leong, Architectural Illustrator

Travel sketches can trigger memories of a particular location later on. Form the habit of jotting down notes in your sketchbook or journal about the environment and your experience of the locale. Maybe it's a sound, or a smell, or the weather conditions, or chatter from curious onlookers watching you sketch.



CENTRAL PARK BOAT BASIN  
 NEW YORK, NEW YORK

MAY 4, 1991

Sketch: Central Park Boat Basin, New York City, 1991  
 7" × 4" (17.8 × 10.2 cm)  
 Medium: Pencil  
 Courtesy of Stephen W. Parker, Architect

