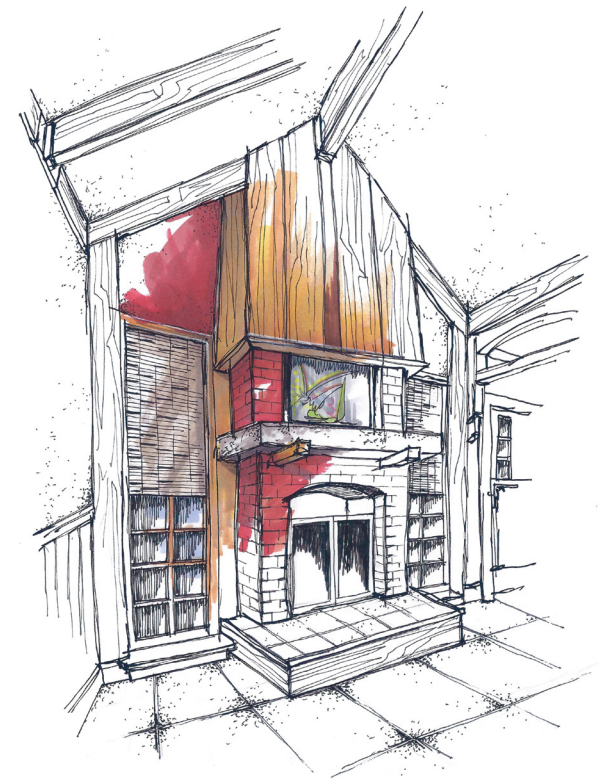
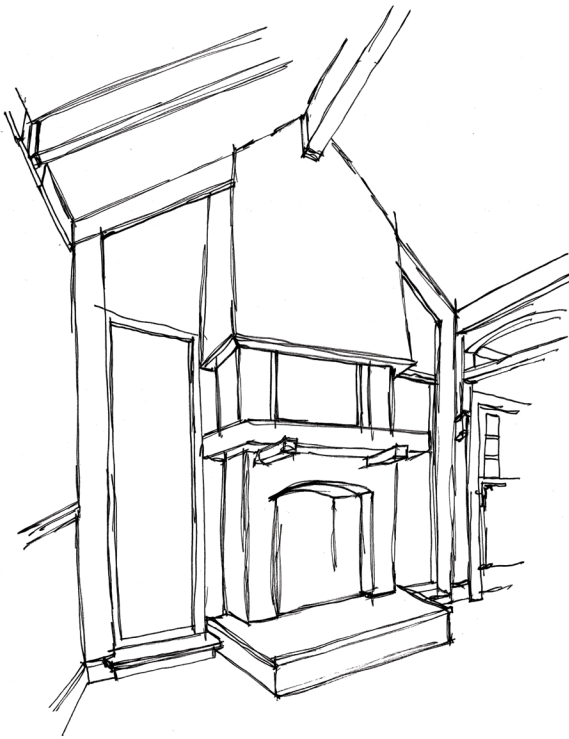


Design Process

Hand Sketching for Interiors

Developing Visual Illustration Techniques



Rick L. Bartholomew, RID

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Topics covered in Ideation Chapter 3

Bubble Diagrams

Diagramming symbol shapes and sizing

Written information

Graphic creativity

Custom lettering techniques

Color and enhancement applications

Grid scaling

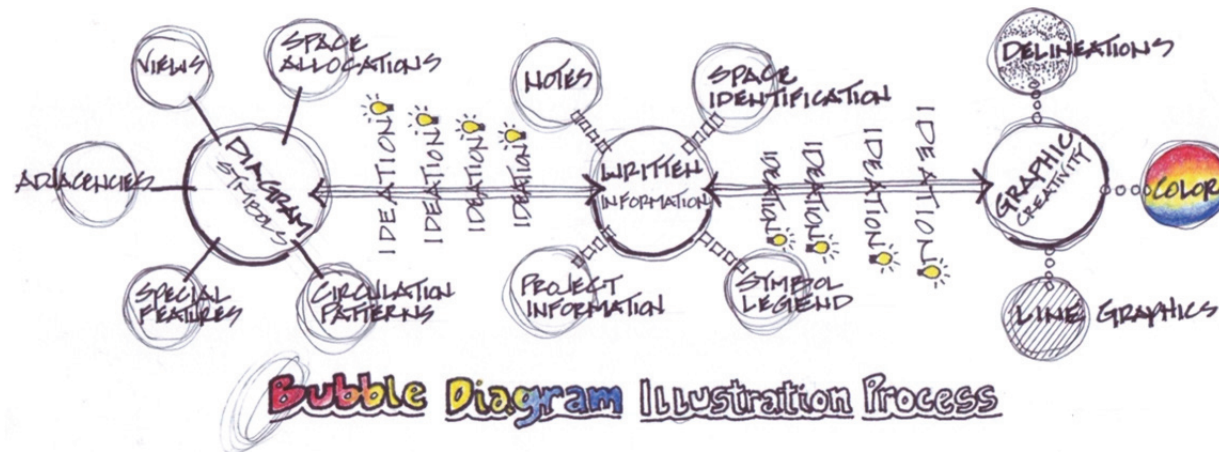
Space block plans

Schematic plans and elevations

Ideation Chapter 3

Bubble diagrams

Bubble diagram illustrations are fundamental to the design process, no matter what phase or type of project undertaken. There are various opinions within the educational communities regarding the diagramming symbol sizes and shapes, the type and amount of visual information depicted, graphic creativity, and color. This chapter will identify and explain these issues in order for one to develop their own system and level of skill in bubble diagramming illustrating.



Any type of illustration, including bubble diagrams, from “rough conceptual thinking” to “portfolio presentation quality” should address visual and written information clarity and readability. Going through the bubble diagramming process will generate *ideation* inspiration for the project concept and design development, and creating several bubble diagram options will help define and determine the best solution(s) for the project. Because, the first concept may not always be the best solution – expand your thinking with diagramming options. Illustration 1, above, is a graphic depiction of the expanded components of bubble diagramming illustration using *the bubble diagram* technique. Now, let’s move onto the mechanics, visual graphics, and written information associated with creating bubble diagrams.

Diagramming symbol shapes and sizing

The educational and professional practice diagramming shape has been the “circle.” Each circle is a representation of a space or area within the design project and should be proportional to the intended size of the space based on square footage allocations. When beginning an illustration, one can use an architectural scale/circle template to determine a bubble shape size as a guide for the rest of the space allocation bubbles. Do not let this simple initial step be a drawing “crutch” because you may not have a building shell floor plan as a visual reference if the project itself is highly conceptual or a particular floor plan/building space has not been determined. The student, building on their bubble diagramming skills, should begin to envision proportional bubble sizing strategies for square footage allotments based on a design project program.

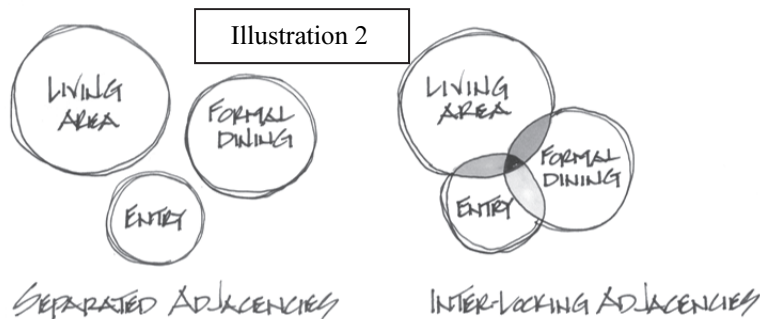
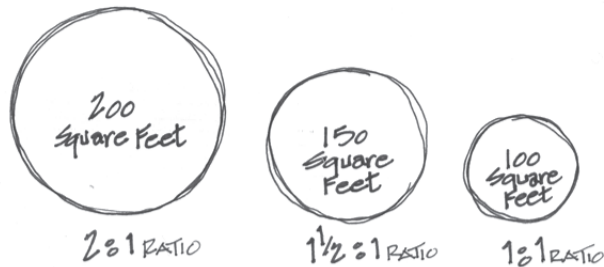


Illustration 3

See Exercise 1, page 117: Ideation Chapter 10

Space allocations

Start with any size free-hand circle and enlarge/reduce in proportioned ratios the circles to represent square foot allocations of space requirements.

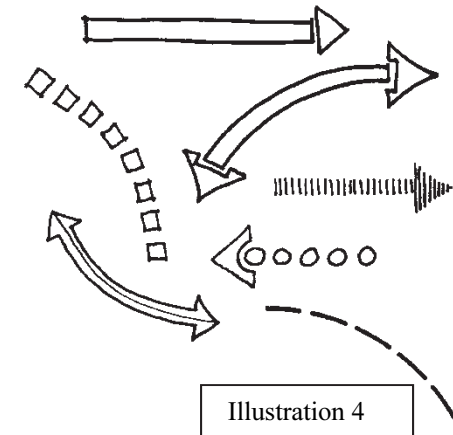
Adjacencies

Space allocations then need to be located graphically using the determined program requirements for “functional proximities.” These spatial groupings can be illustrated as separate adjacencies or interlocking adjacencies. (Note: an advantage of the interlocking adjacencies can show visually the level of proportional importance of the adjacency.)

Circulation patterns

Two types of graphic illustrations for circulation/traffic patterns within a bubble diagram that have consistently been used are *primary and secondary* relationships. Primary illustrations can also be considered “public access” and secondary illustrations can be considered “private access” for either residential or non-residential projects. These graphic symbols are used as *directional connectors* between space allocation bubbles. Examples in Illustration 4 can be used as primary or secondary circulation as long as each is identified in a symbol legend key discussed in “**Written Information**”. Students are encouraged to develop their own types of graphic symbols keeping in mind to be consistent in use of the symbols and not to overpower the bubble diagram with artistic quality.

See Exercise 2, page 118: Ideation Chapter 10



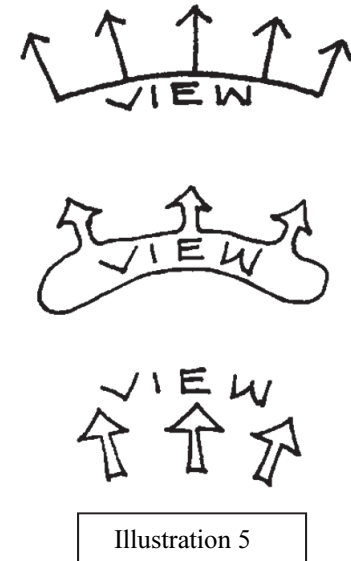
View indications

The project program may emphasize the importance of a particular view or views in relation to the space allocation bubbles. This can be done by simply placing a similar graphic representation as depicted in Illustration 5 just outside of the diagram bubble for that particular space allocation. Again, students can graphically experiment with types of illustrations to use but not to overpower the presentation.

Special features

Design focal points such as a fireplace, stairs, level changes, media center, skylights, etc. should just be noted for a bubble diagram. A representative shape and proportional size for such components would be more appropriately depicted on a space block plan or schematic floor plan diagram.

See Exercise 3, page 119: Ideation Chapter 10



Written information

Space identification

Free-hand lettering for each space allocation bubble must be identified as indicated in Illustration 3. Just be consistent in space title names so not to confuse the viewer and an appropriate lettering size proportional to the bubble size. Sometimes it may be necessary to letter beyond the bubble shape, which is acceptable, but again be consistent visually.

Notes

If there are some significant features or information necessary to communicate to the viewer at this conceptual stage of the design illustration process, *be selective*. (Save some of your information for the oral presentation). The scale of note information, as a general rule, should be approximately one-third (1/3) the height of space titles.

Symbol legend

Creating a symbol legend for the bubble diagram is just as important as all design development and construction drawing documents. The symbol legend should include *circulation/traffic patterns*, indicating **primary and secondary** relationships, and again, could be identifying public and private relationships, intended important *view* identification, and any other visually needed graphic symbol. The words “circulation and/or traffic patterns” could be added to the legend description. Graphic arrows (as shown in Illustration 4) added to either or both ends of the circulation pattern symbols can help define the importance of direction flow of the circulation and room space allocation.

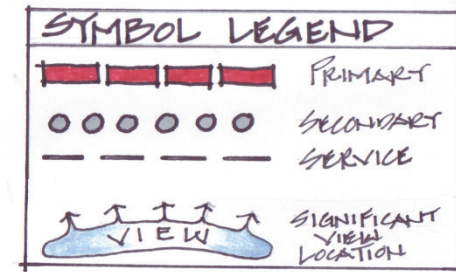


Illustration 6

Project/client information

Identify the project and/or client name, project location (if known), date, and reference to a drawing number, such as “*Concept Bubble Diagram #1*,” for record keeping purposes. As shown on “Illustration 7” to the right, hand-lettered information could be standard architecturally-trained styling (7a) or custom lettering, or a combination of both (7b). Custom hand-lettering is further discussed in “Graphic Creativity” below.

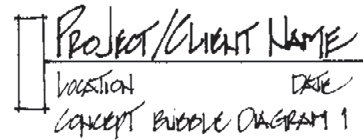


Illustration 7a

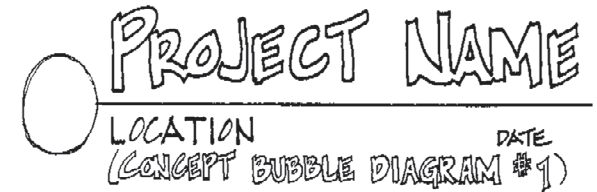


Illustration 7b

Graphic Creativity

Line graphics

Using “*line graphics*” as well as “*delineations*” discussed in the following section is a choice of the student designer.

The author uses both to emphasize certain diagramming components that are deemed important based on the project program and written information being conveyed depicted in Illustration 8a (underscoring space names) and 8b (accenting titles) respectively.

Varying graphic “line weights” can help in emphasizing illustration information also.

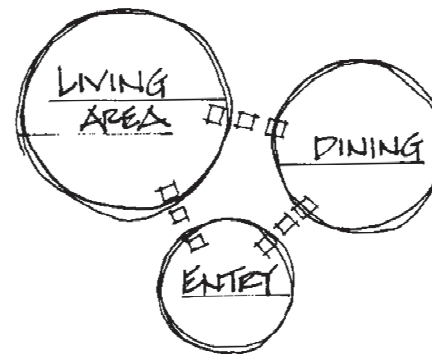


Illustration 8a

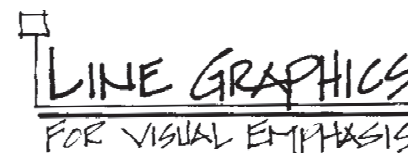


Illustration 8b

Delineations

Students may be familiar with various delineation techniques for visual enhancements in any type of illustration; the most common ones are depicted in Illustration 9a, 9b, and 9c. Dots or “pointillism,” lines, cross-hatching, and combination of the three can be used to accent/emphasize diagram bubbles, project title information (Illustrations 9a and 9b respectively).

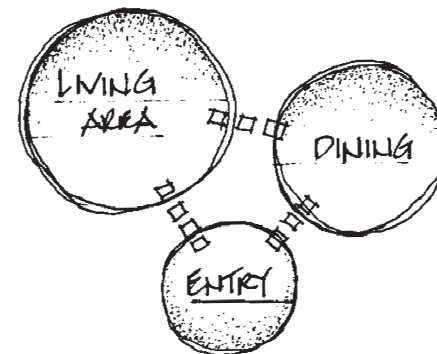


Illustration 9a

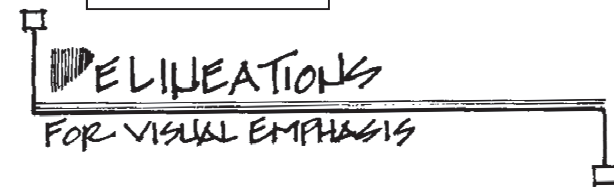


Illustration 9b

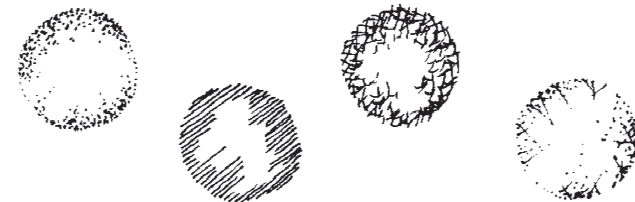


Illustration 9c

Illustration 9c shows an example of the common delineations used for any graphic representation. Again, the student should experiment and practice delineations; you may create your own style(s).

See Exercise 4, page 120: Ideation Chapter 10

Custom lettering techniques

Students can create their unique lettering style, specifically for project title information, sub-titles, and student name/class/school information using an “under-lay guide” that is hand-lettered on another sheet of paper (author prefers “bond/copy” paper). Using light guide lines also for all lettered information is essential for height and style consistency, and proportional correctness. Create the lettering guide styles using a medium to wide-tip felt marker or pen for a variety of size and visual style from all upper case to upper/lower case letters, and from architecturally-trained lettering to more “boxed” type lettering as depicted in Illustration 10. Experiment!

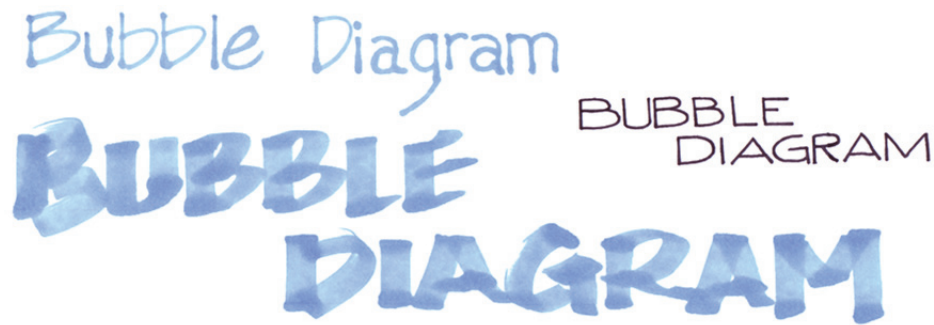


Illustration 10

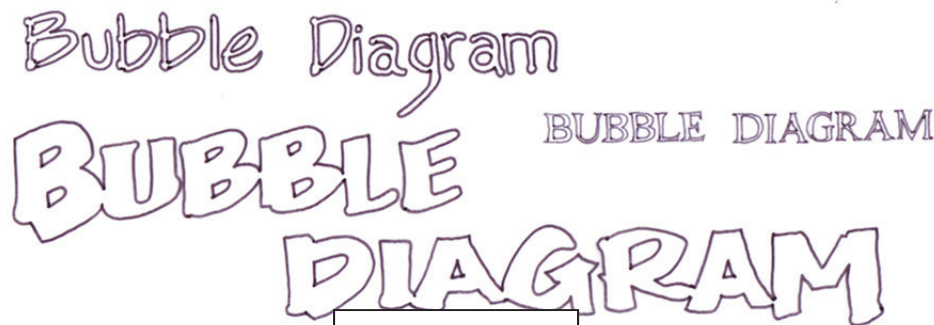


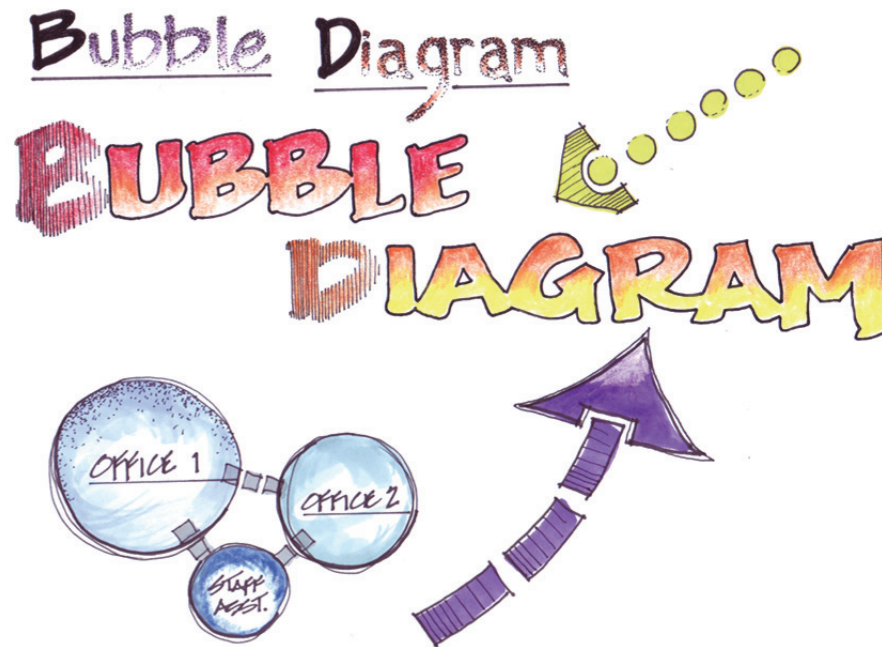
Illustration 11

Then, using lettered guides as above in Illustration 10, overlay tissue paper or sometimes bond copy paper will suffice as long you can see the letter images beneath, and line trace the letters to create the desired graphic look as depicted in Illustration 11. Check out various copy-right free font styles to trace over for additional letter graphic uniqueness.

See Exercise 5, page 121: Ideation Chapter 10

Color and enhancement applications

The use of color in any illustration application always draws the attention of the viewer, focusing in on a particular feature or group of features. Color in bubble diagramming should always be used to help visually organize the composition, identify functional groupings and associations, highlight a significant project program component, and/or visually stimulate written graphic information. In addition to color being a visual stimulant, it can also inspire or be inspiring through “ideation” processes envisioning potential color schemes for the project setting the stage for further design development and presentation discussions. But, grayed neutral schemes with various delineations have been quite successful visually, that has a “professional finished” appeal to them. Illustration 12 below is an example of color enhancement possibilities for both diagramming bubbles and written information. The next page shows two bubble diagram scenarios incorporating illustration process sketching techniques discussed in this chapter.



See Exercise 6, page 122: Ideation Chapter 10

Illustration 12

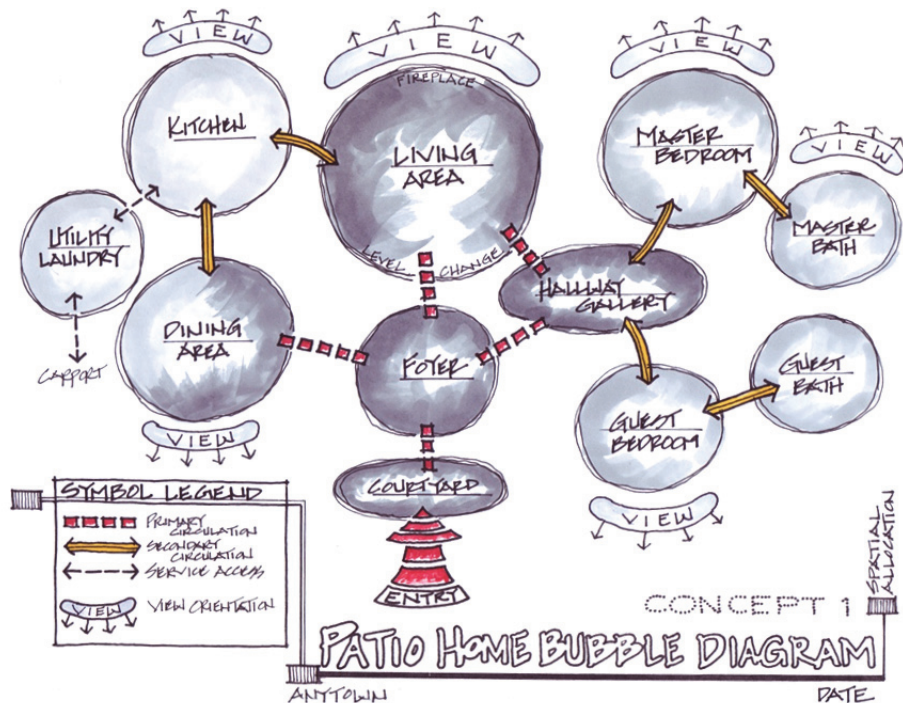


Illustration 13

Illustration 13: A neutral color scheme would be appropriate in identifying the spatial allocations only when “color” is not an influential factor at this stage of the design process, as in this residential project scenario example created by a list of predetermined client program requirements.

- using three color hues of cool grays and re-emphasizing each bubble perimeter with the same cool gray marker.
- the dining area, in both illustrations, has two different color applications to convey both “service” and “social/community/public” spaces
- remember to use very light guide lines for all lettered information (4H or non-photo blue pencil leads), and erase them before adding color

Illustration 14: Color in bubble diagramming is important when “color” is an influential visual and project program factor (i.e., complement the presentation color scheme or assist in emphasizing spatial allocation groupings)

- additional shading delineations in each bubble (i.e., light lavender pencil over the yellow-gold and aqua green bubbles help to not only distinguish those groupings but also reinforces the “secondary/service/private” circulation relationships)
- living area, foyer, and dining area have “pointillism” delineation to emphasize those functional areas
- hallway/gallery has angular linear line delineation to emphasize a unique project program requirement

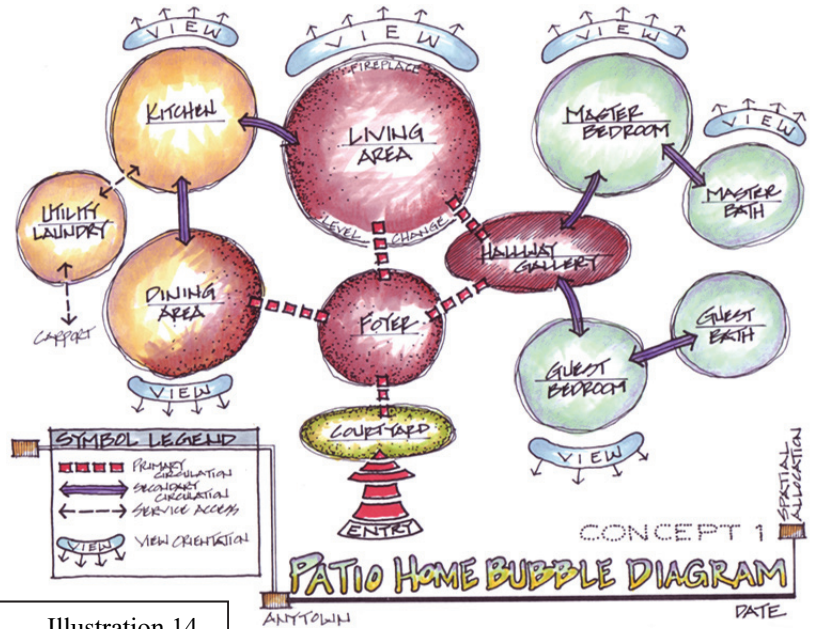


Illustration 14

Grid Scaling for 2 and 3-dimensional illustrations

2-dimensional grids:

The term “grid scaling” is a technique to create a guide in developing two and three-dimensional hand sketches without mechanical drawing skills that can take valuable time during the design process. One must have the basic knowledge of these mechanical drawing skills to understand and develop the free-hand sketching techniques. The professional design community and practicum still do embrace and sometimes require these skills from the student intern and/or the design graduate entering their professional career in order to create quick sketches for their firm’s project meetings and to assist the client in the design process prior to design development and construction documents. When multiple concepts are needed to be addressed, hand-drawn illustrations can save time and budget dollars. Illustrations 15, 16, 17 below are examples of proportional “grid scaling” to use for 2-dimensional plans, elevations, sections, and details. The next page will show sketching applications.

Lines 1-4 were sketched first for horizontal proportions and lines A-D vertically to finish the module widths. Each square can represent any size module (1, 2, 5 feet square) as an example.

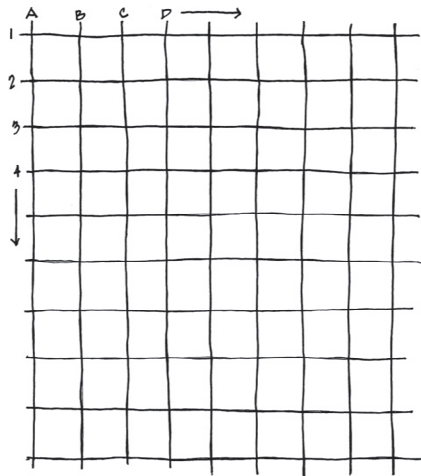
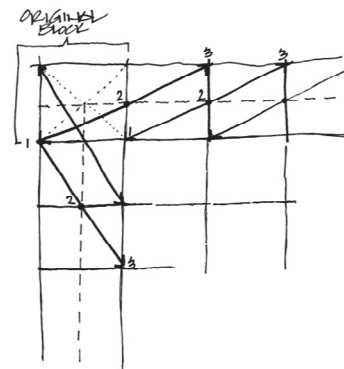


Illustration 15

Illustration 16



Dotted lines in original block to find center point, then dashed lines, horizontally and vertically to divide block. Then a line from point 1 through mid-point 2 intersecting extended top block line to find 3 which is the next equal block module width. Continue the horizontal and vertical lines to create as many grid blocks as needed.

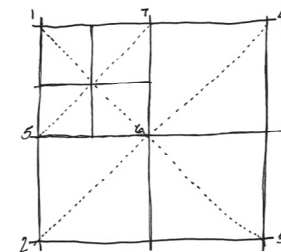


Illustration 17

Dividing a large block (points 1-4) into equal areas:

Dotted lines corner-to-corner with a horizontal and vertical line through the intersecting dashed lines divide the square into four equal modules. Then repeat the process as in block 1,5,6,7 to create smaller grid scaling as needed.

2-dimensional grid scaling applications

(Remember to use a 4H or non-photo blue pencil leads for all grid guidelines and lettered information-*this creates consistency and overall neatness for your work*)

Both sketches in Illustration 18 & 19 use the same grid setup as in Illustration 15 on the previous page. The office plan sketch in Illustration 18 uses the grid as 2-foot square modules and base and upper cabinet elevation in Illustration 19 the grid represents 1-foot square modules. The noted dimensions show using the different grid scaling modules how one can proportionally “guesstimate” various dimensions.

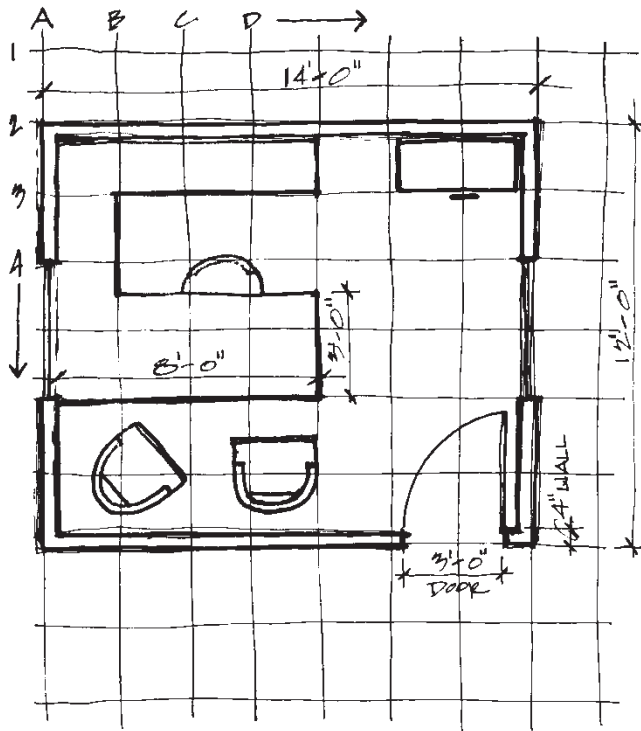


Illustration 18

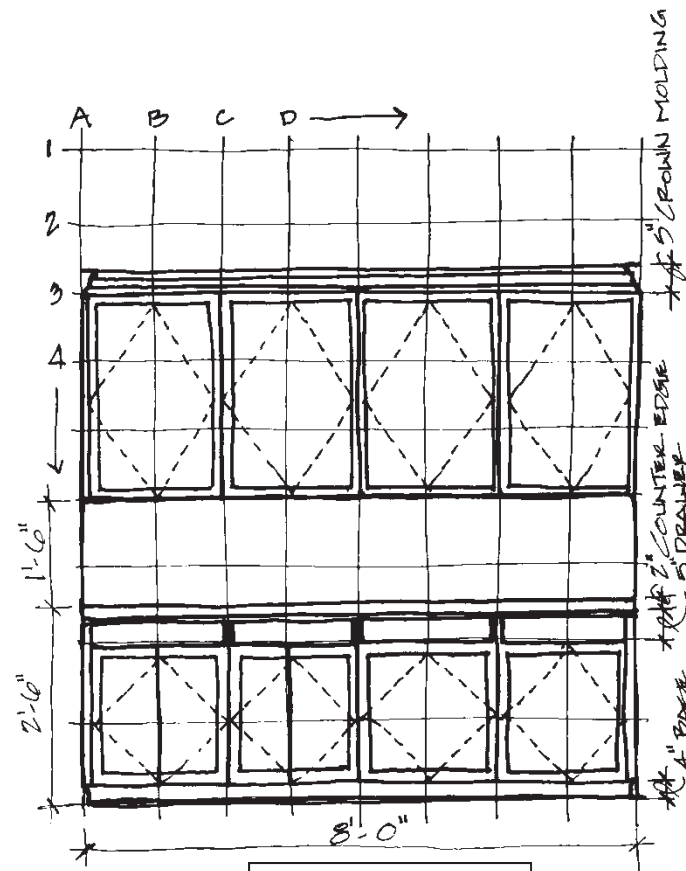


Illustration 19

3-dimensional grids:

Using and understanding one and two-point perspective mechanical drafting techniques, one can easily set up quick 3-dimensional grid guides to use for sketching. And, again, no architectural scale is required in setting up these types of grid scaling guides. A review of a one-point perspective is shown below in Illustration 20 and quick sketch application in Illustration 21.

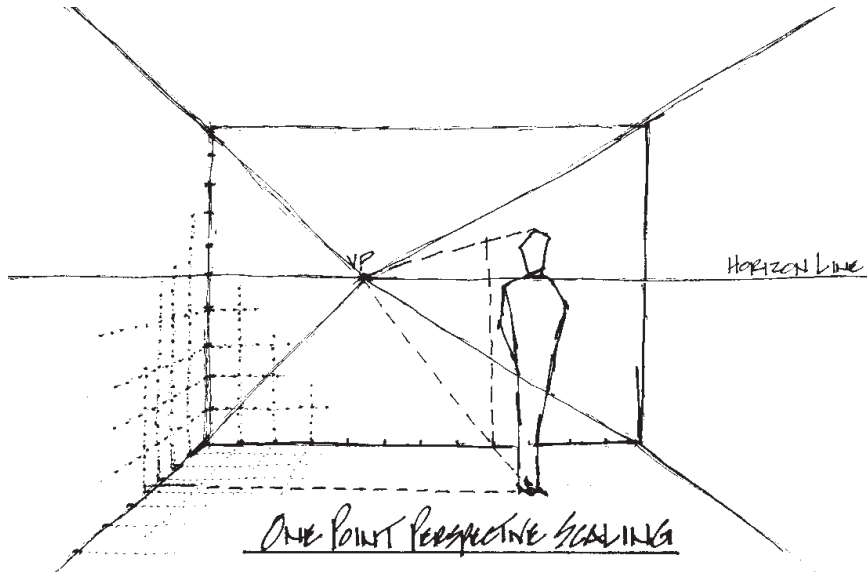


Illustration 20

Illustration 20

The back wall is drawn first in a one-point perspective and the grid modules are created on the space surface by one of the methods in Illustrations 16 and 17, or simply “eyeballing” the proportional grids. (size of the wall turned out to be 12 feet wide by 10 feet high)

-Then deciding on the horizon line and vanishing point (VP), one can create the grid modules on all surfaces of the interior space indicated by the dotted lines.

- And, extending lines through all four wall corners create floor and ceiling lines.

-The person is located 8 feet from the left and 3.5 feet out from the back wall.

Illustration 21

Sketchy line work is shown below the horizon line to locate features proportionally correct. Remember that one sees the tops of surfaces below the horizon line and the underside of surfaces above the horizon line.

-Always check your lines of perspective correctness with the vanishing point located.

-The darkened (varied felt tip lines) above the horizon line show the potential for a more finished look to the sketch that will be discussed in detail in Ideation Chapter 4 and Chapter 5 “Delineation Enhancements”.

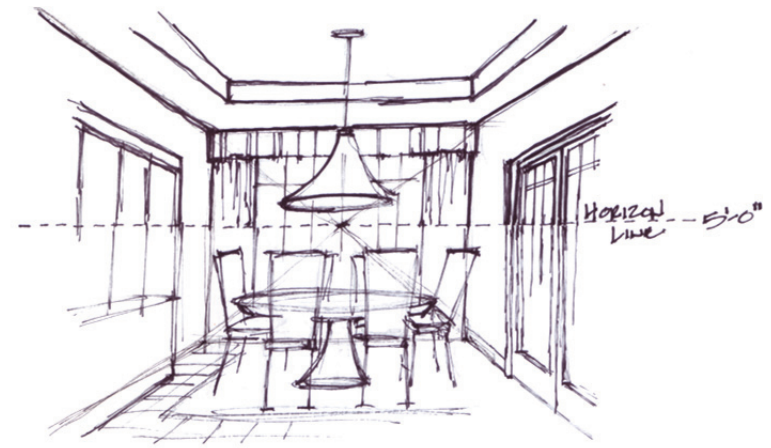


Illustration 21

A review of two-point perspective is shown below in Illustration 22. A detailed discussion and finished drawing examples will be shown in Ideation Chapter 5 “Delineation Enhancements” and Ideation Chapter 8 “Portfolio of Illustration Applications.”

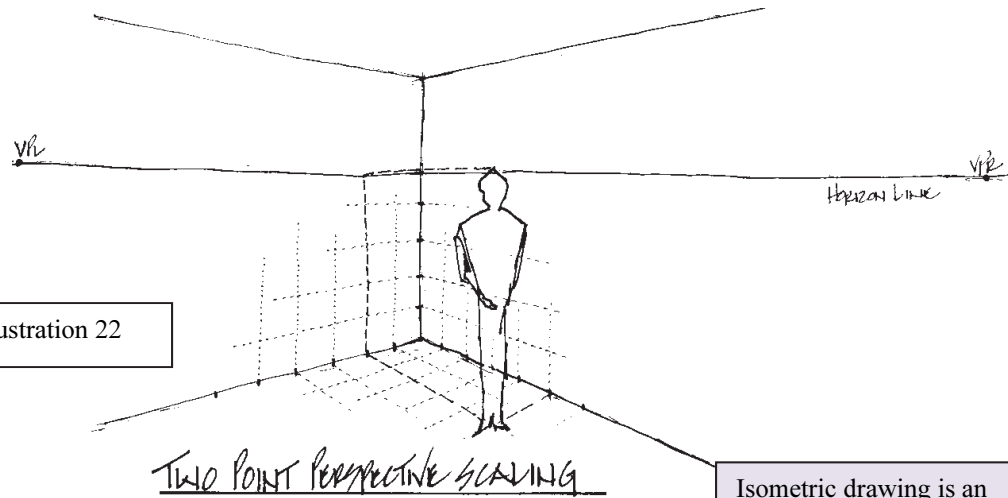


Illustration 22

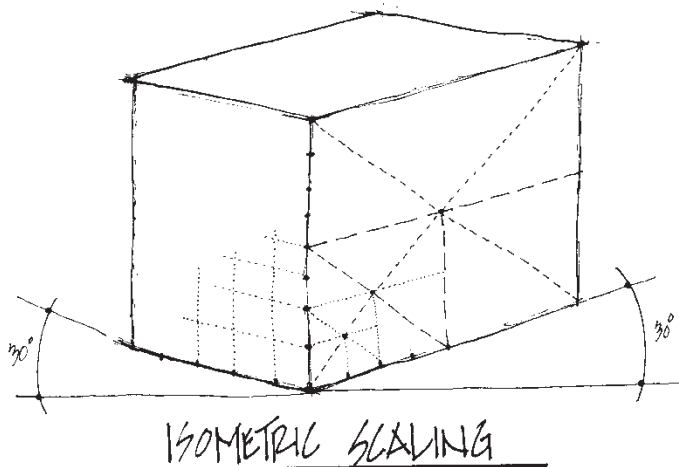


Illustration 23

Isometric drawing is an excellent technique to illustrate furniture pieces and enlarged interior and architectural detailing components.

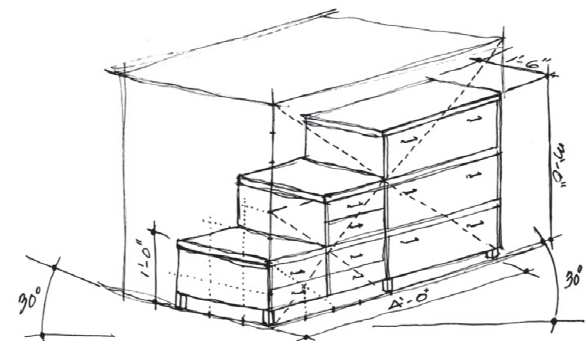
-The initial 3-D “box” is drawn at a 30-degree orientation off a horizontal guideline and scaling divisions are created using one of the methods previously discussed as shown in Illustration 23.

-Illustration 24 shows an application for a “Tansu” unit.

Two-point perspectives always start with drawing a line to represent any “true corner” of the space, determining the number of grid divisions on that line to represent “feet” dimensioning.

-Then, using one of the methods for creating grid modules on the space surfaces similar to a one-point perspective and location of the horizon line, vanishing points left (VPL) and right (VPR), and “eye-balling” foot increments from the “true corner” to finish grid scaling, the drawing guide is ready for drawing exploration.

-Remember to experiment locating the vanishing points (not too close to the “true corner”) so the drawing looks proportionally correct.



TANSU STORAGE UNIT
UTILIZING ISOMETRIC GRID SCALING

Illustration 24

Space Block Plans

The experience gained in bubble diagramming and grid scaling is essential when further developing project concepts in relationship to space planning. The “space block plan(s)” is similar to the *schematic layout* phase prior to creating a preliminary floor plan. This type of process drawing is a standard planning aide in commercial projects, but is useful in large-scale residential projects as well. It is an illustration that defines space allotments within a supplied floor plan for the design project, usually with color applications designating the required program functional areas, and various notes and labeling system. The look of a hand sketched space block plan still conveys conceptual thinking and development. CAD (computer aided drafting) programs can achieve the same process, but a more “finished” appeal to the presentation. Illustration 25 is an example floor plan shell that may be furnished for a project, and Illustration 26a depicts the first step of a space block plan solution identifying square footage allotments for intended spaces prior to illustrating “sub-sets” of individual space requirements as show in Illustration 26a on the following page 35.

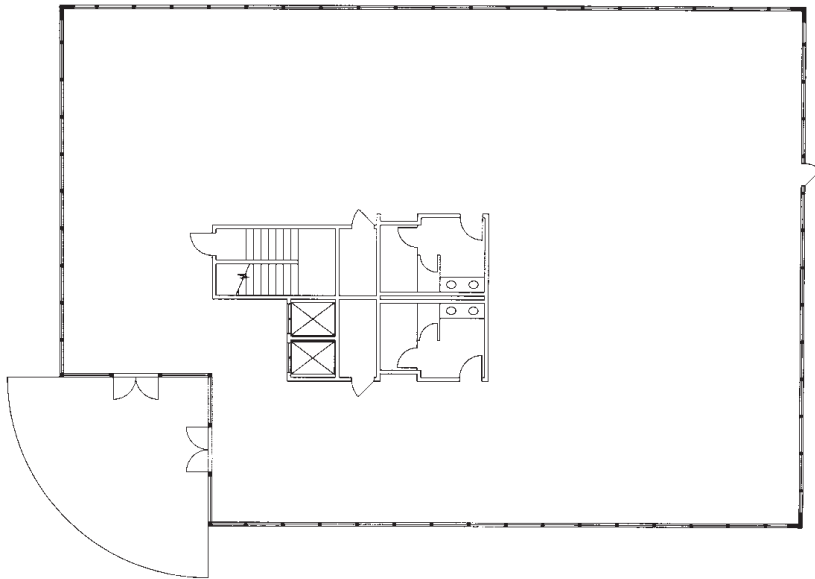


Illustration 25

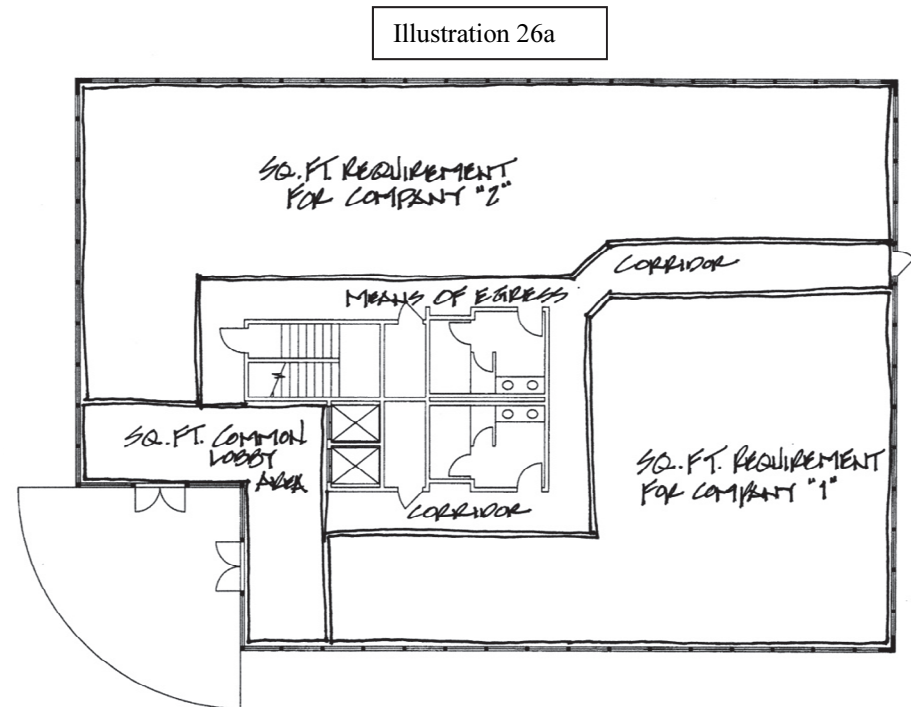


Illustration 26a

Illustration 26b below conveys a finished space block plan with all “sub-sets” of individual project space requirements “to scale” in relation to the building shell floor plan. In this example, the monochromatic color scheme with varied light and dark hues designates the individual “company” office areas. The use of color and line delineation helps to differentiate between office areas, *means of egress* (corridors), and common lobby area. And, for visual clarity and impact, the center core of elevators, restrooms, stairs, and storage compartments are left uncolored.



Illustration 26b

See Exercise 7, page 123: Ideation Chapter 10

“Boxed” room areas could be shown with overlapping of drawn lines instead of illustrating boxes with white space separations between them.

Schematic plans and elevations

Hand-sketched presentation floor plan techniques can also be utilized in documenting what the design profession calls “as-built” drawings. All designers, interior and architectural students and professionals, are required to have knowledge and skills in documenting an existing space if a set of plans are not available to use for a project. So, whether a student or professional project, one may need to visit a building site and create an as-built drawing(s) that identifies wall and interior partition locations, doors and door swings, windows/glazing, power and communication outlets, plumbing fixtures, built-in millwork, heating, ventilating, and air conditioning sources, ceiling detailing, and sometimes significant elevation feature illustrations. And, usually, dimensions need to be identified with the as-built information. The hand-sketched creation of concept, presentation, and/or as-built plans and elevations is an important skill to acquire to assist in design process illustrations in order to compile information for final CAD generated documents. Whichever type of sketched drawing is required, and the drawing needs to have “*scaled correctness*”; the use of grid scaling would be appropriate. The following illustration steps use grid scaling in creating the various floor plan steps for a final hand-sketched presentation drawing.

STEP 1

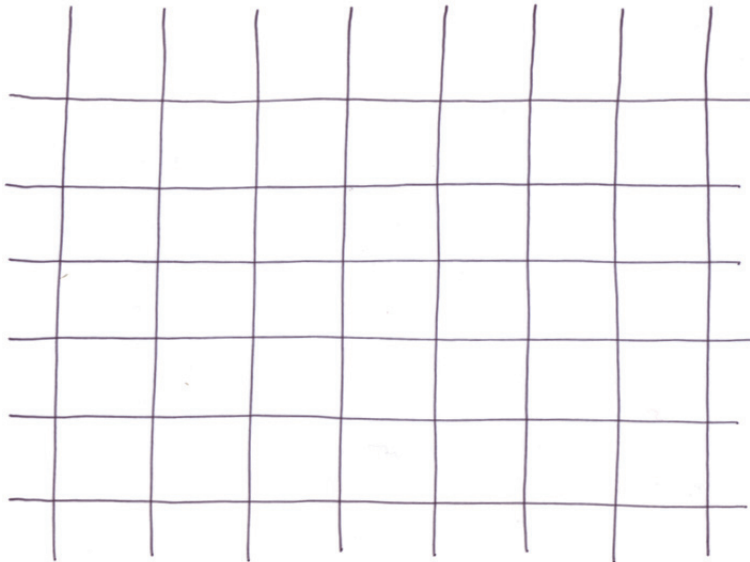


Illustration 27 shows the basic grid scaling guide that represents 4'-0" modules for a home renovation project.

STEP 2

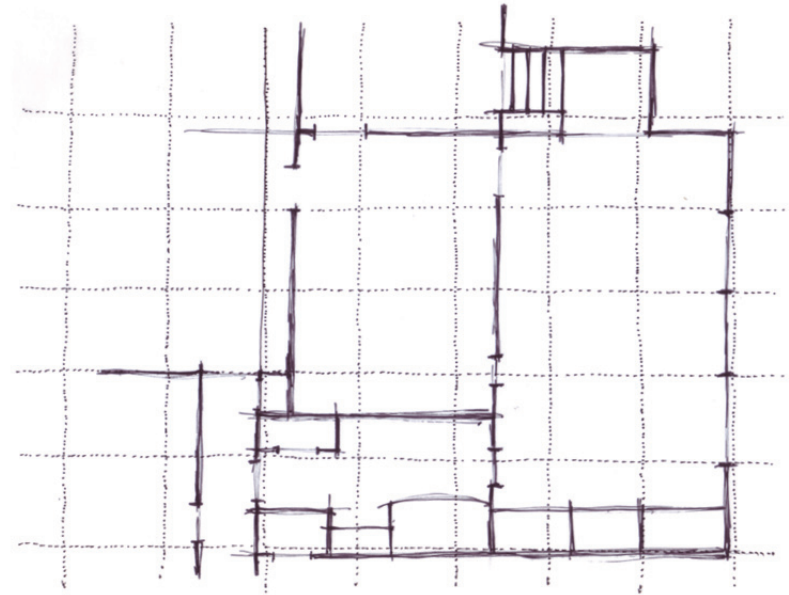


Illustration 28 shows using the grid line scaling guide (dotted lines) for the initial location of interior partitions/doors/windows. Always use multiple “sketchy” line work to locate all features.

STEP 3

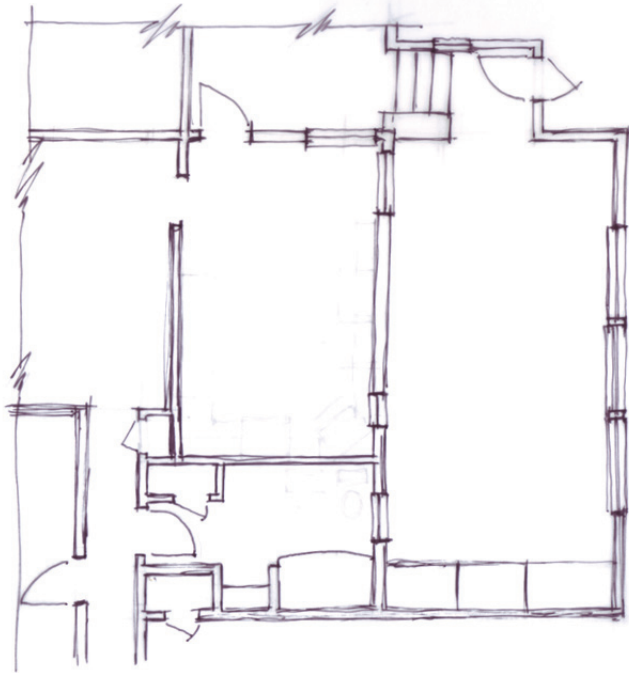


Illustration 29 above shows the definition of all the correct locations and “to scale” interior partitions/doors/windows/built-in millwork using a bolder (thicker) felt-tip over the sketchy line work. Constantly check yourself with the grid guidelines to verify dimensional correctness.

If documenting an “as-built” drawing; locations of power and communication outlets, light fixtures/switching, and heating, ventilating, and air conditioning sources can be shown for future construction documents.

STEP 4

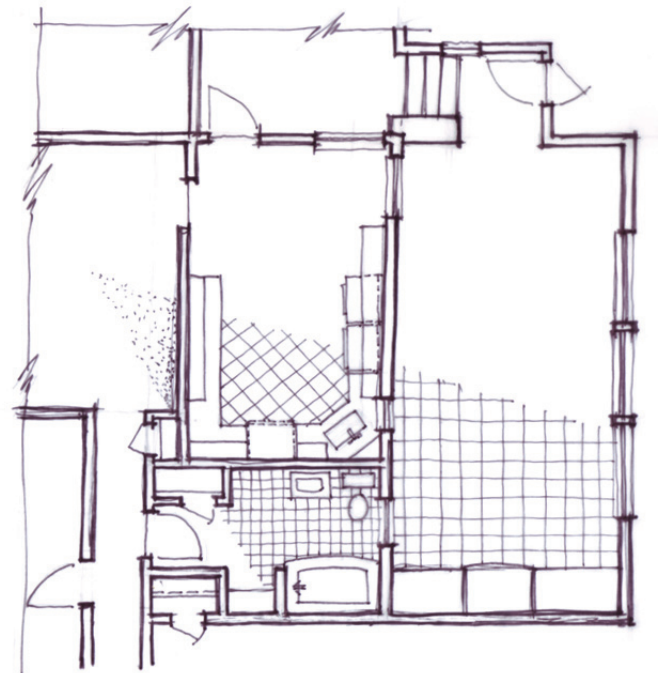


Illustration 30 above shows a limited reference to various types of floor coverings. Surface delineation types and illustrations will be covered in Ideation Chapter 5.

Remember to vary the felt-tip and/or pencil line weights using a hierarchy of feature importance. As a suggestion: *major feature lines and tiles should be the heaviest line weight, built-in millwork/door swings/windows and notes should be medium line weight, and surface delineations the lightest line weight.*

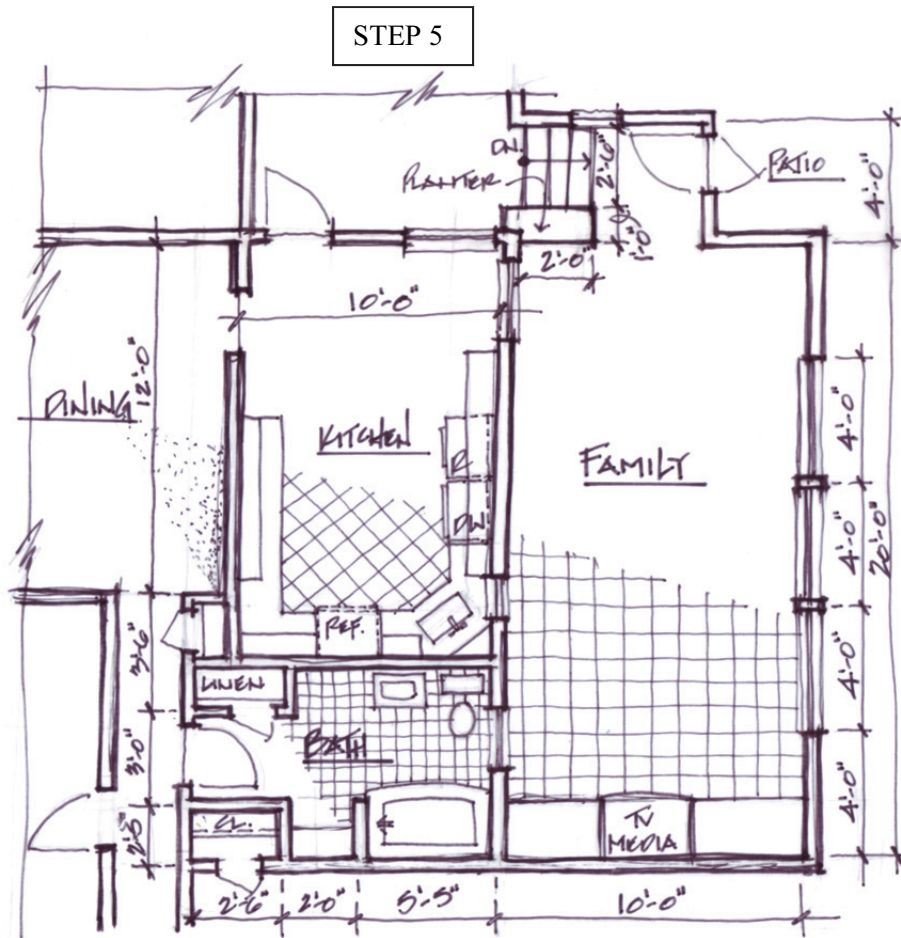


Illustration 31

See Exercise 8, page 124: Ideation Chapter 10

Illustration 31 shows a finalized version of the floor plan renovation with major dimensions, room titles, and various feature identifications. One could choose to delineate, (sometimes called “pochette”) the walls and interior partitions for added visual impact and spatial definition. These delineation types will be discussed and illustrated in Ideation Chapter 5.

Suggestion: *Try not to overpower the sketch with floor material delineations, just indicate a proportion of the intended or existing floor surfaces. One may choose to delineate more area if depicting a detailed floor covering presentation plan that has various design line work needed to be conveyed. Your design judgment and/or project requirement stipulations would be the determining factor(s) regarding the issue of how much to visually portray.*

Illustration 32 on the following page is an example of a larger project hand-sketched plan for a conceptual presentation including furniture arrangements.

In creating scaling correctness, it is always advisable to either create your own grid guide if one is not supplied to you, especially at “on-site” documentation visits, or use a supplied/purchased grid. Then, just determine what each grid module dimension needs to be represented and start sketching the document using trace paper and/or a sketch pad.

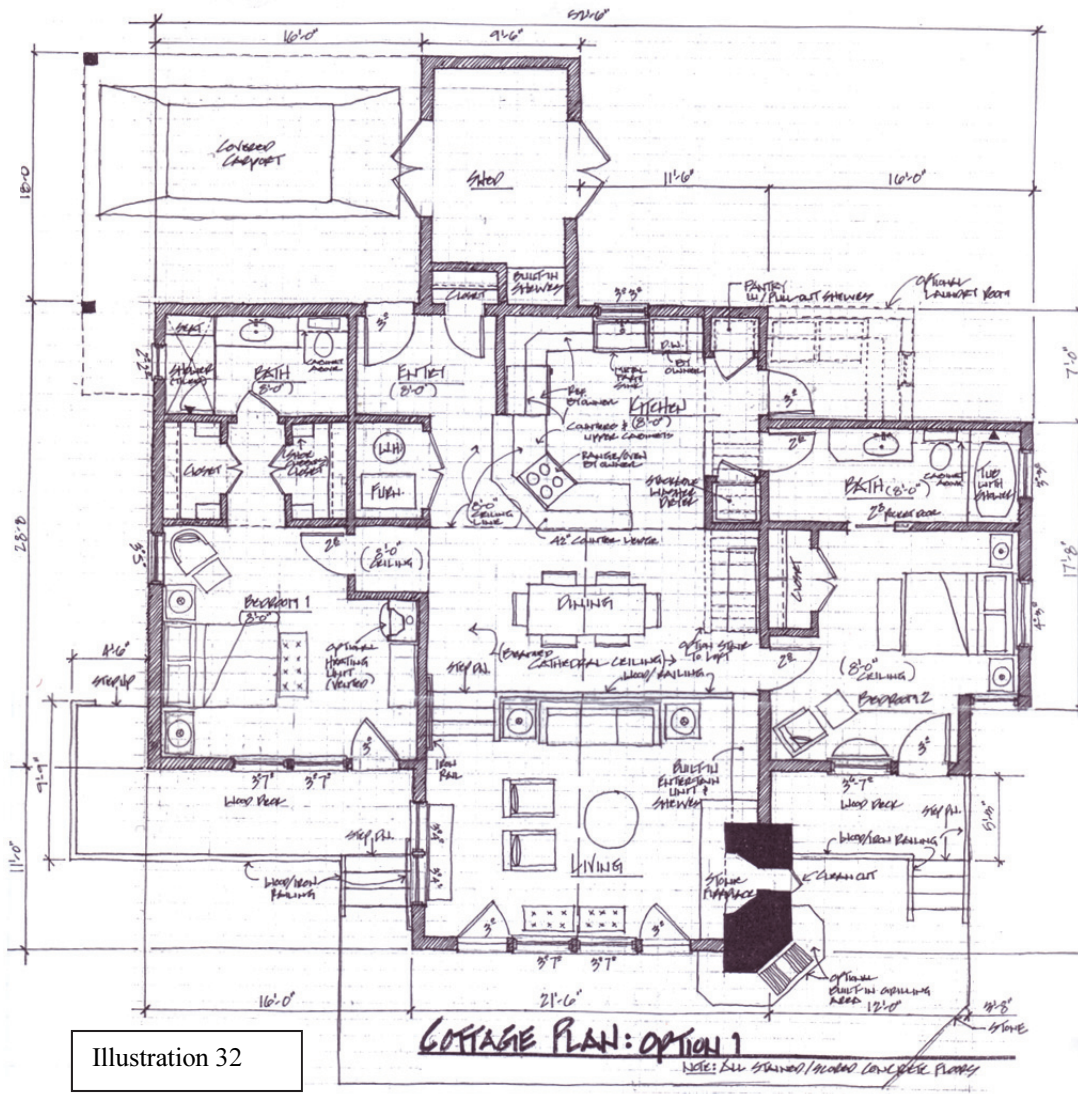


Illustration 32

The grid module guidelines can still faintly be seen (each grid module unit represented 1'-0" square feet) and most of the “sketchy” line work has been covered with various black felt-tip line weights according to the previously mentioned line hierarchy.

The exterior walls and interior partitions have been delineated graphically using 45 degree lines.

There is no floor covering delineations, because as noted, the floor material is stained concrete. (Scoring pattern will be determined)

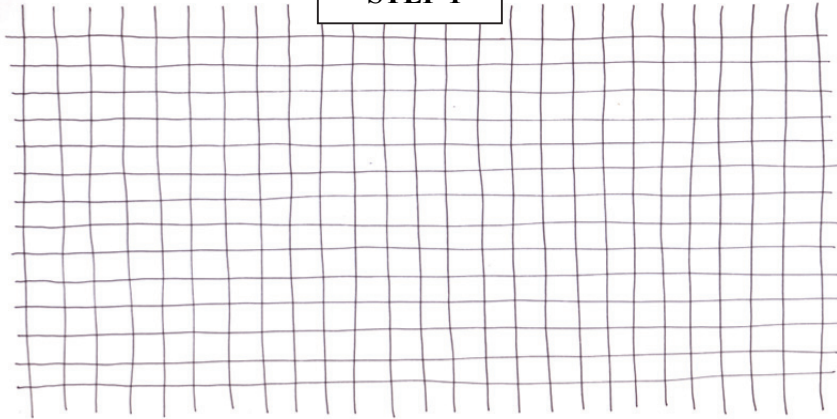
One can erase some or the majority of the pencil guidelines as illustrated with this example. This is at the discretion of the designer if one feels that the multiple sketchy line work would be distracting for a final conceptual presentation.

Suggestion: The use of black felt-tip is a good illustration tool for visual impact and clarity especially when copies are needed or sending via email.

See Exercise 9, page 125: Ideation Chapter 10

Sketching an elevation, similar steps are followed as in plan illustrations, but usually the grid guideline modules represented are smaller because of the potential feature detailing that can be conveyed. A 1-foot square grid would be appropriate for such detail scaling as Illustration 33 shows for Step 1. In Step 2, Illustration 34, block out the main features first, locating the feature component dimensional correctness.

STEP 1



STEP 2

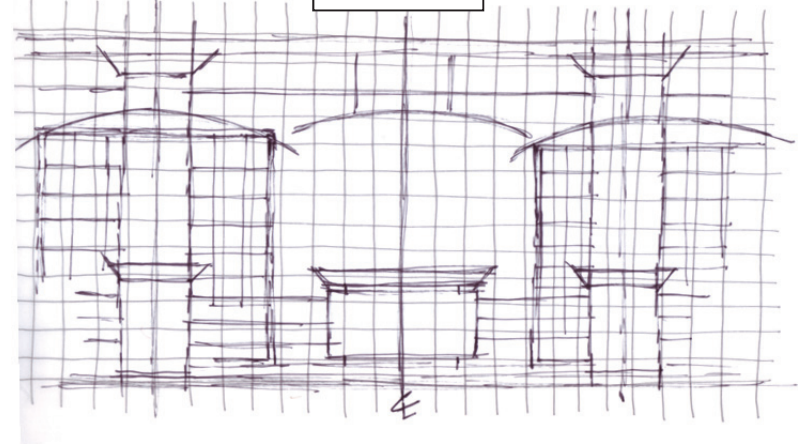
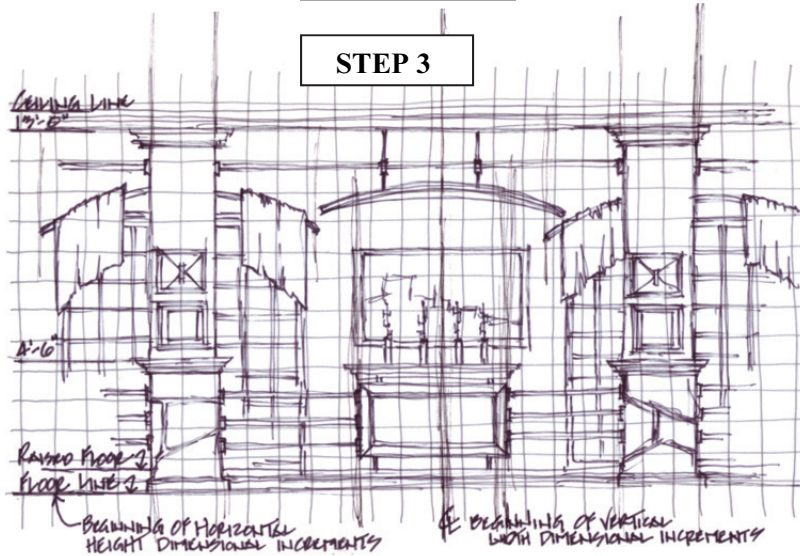


Illustration 33

Illustration 34

STEP 3



Step 3: add surface finish and material detailing in pencil.

Step 4: finalize in felt-tip pens line weight hierarchy and erase all pencil guidelines, if one chooses to.

STEP 4

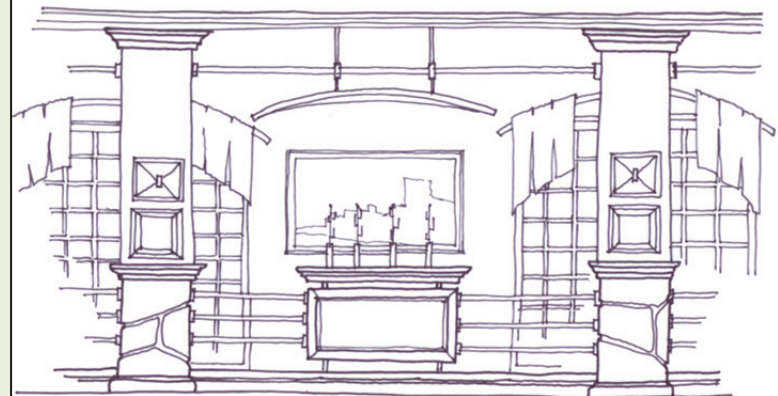


Illustration 35

Illustration 36

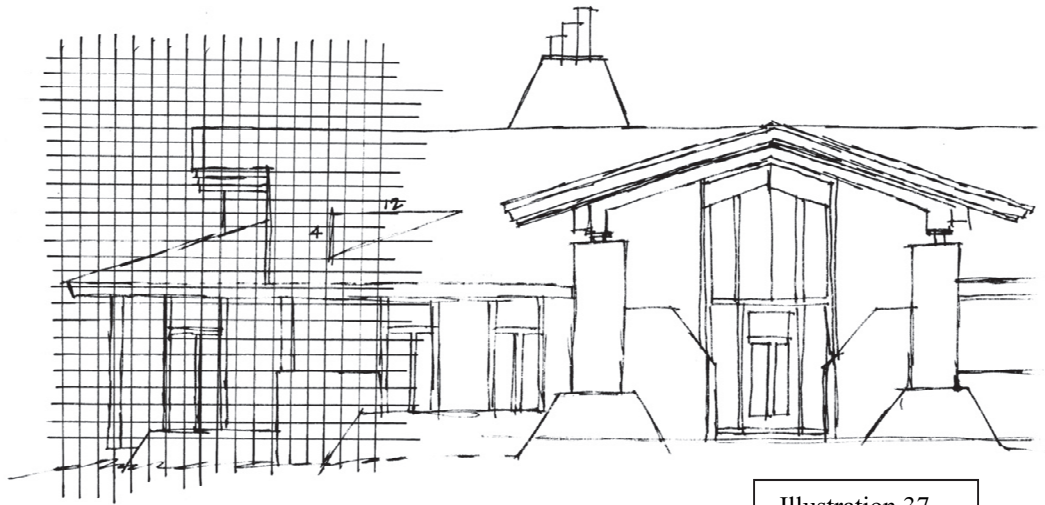


Illustration 37

In the exterior home elevation to the left, Illustration 37, the partial grid (for visual clarity of instruction) is represented as *1-foot squares* also for architectural detailing. Block in the major features for correct dimensional proportions prior to illustrating surface material building products in detail.

Illustration 38 starts to depict surface material delineation detailing such as wood components, stone, and some planting delineations.

Illustration 39 shows a final rendition drawing with erased guidelines and the use of heavier line weights for foreground features.

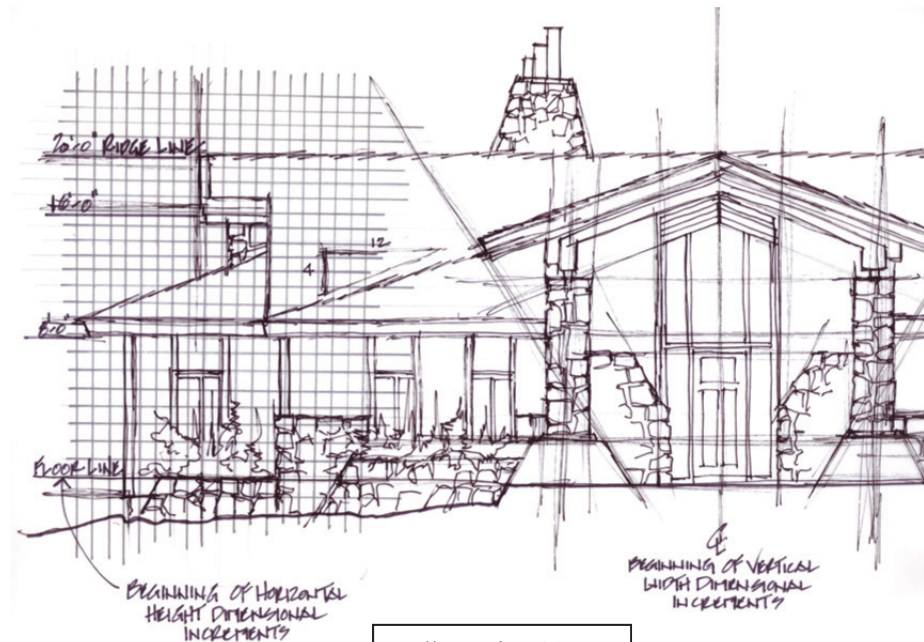
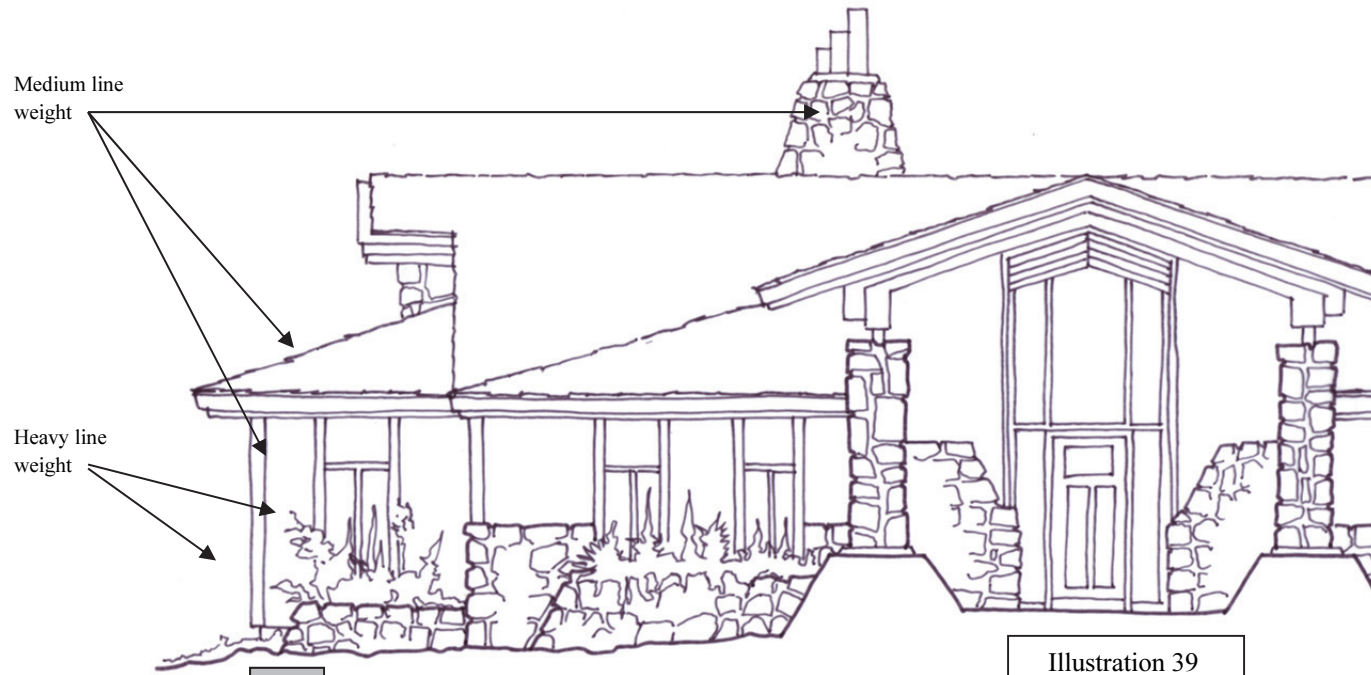


Illustration 38

It is important to note in creating *visual depth* to any illustration, heavy line weights will emphasize features and components that are closer to the viewer. Surface material delineation detailing will be enhanced in Ideation Chapter 5.



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Illustration 39

See Exercise 10, page 126: Ideation Chapter 10