Schematic Design Drawings

BUILDING - DESIGN DRAWINGS
The following sets of drawings relate to each other and have an organizational hierarchy in the way they should be presented either in a PowerPoint starting with those drawings.

SITE DRAWINGS
These drawings are all related to each other and their presentation should flow from one drawing to another like the paragraphs in a written document.

Site Location - The purpose of this drawing(s) is to establish where the building is located in a larger context known to the audience of the presentation, such as a neighborhood, district, city, county, state, or country. The intent is to make the audience aware of potential climatic, cultural and other geographic issues important to the design.

Site Analysis Plan – The purpose of this drawing is to show the audience the important site related issues, which influenced the design.
- Emphasis should be on those site analysis issues that directly influenced design decisions.
- Do not present analysis that you may have done but you did not use or respond to in your design.
- Make sure the rest of the design presentation resolves or responds to those issues you present.
- Include immediate context that is critical to the analysis.
- Create additional scaled site plans if needed to communicate all the information.
- Scale: Depends on the information you are presenting.

Site Plan – The purpose of this drawing is to show the relationship between the site design (landscape, parking, etc.), and the footprint of the building.
- Emphasis should be on the landscape architecture and the buildings footprint.
- Include Entourage that gives the audience scale (cars, trucks, buses) and identifies use of the site.
- Include landscaping entourage
- Identify the entrances to the building and/or site.
- Include the roof and components located on the roof, especially if the roof is inhabited.
- Scale: the scale should be appropriate to the size of the site. 20’=1” to 50’=1”

Area/Departmental Plans – The purpose of this drawing is to communicate to the audience the larger divisions of the space planning of the building rather than the specific rooms. For example In an Elementary School these might include Classrooms, Labs (music, science, computer, and gymnasium), Library, Administration, Cafeteria, Core Components (elevator, restrooms, stairs, closets etc.).
- The emphasis should be on showing conceptually how these larger groups of spaces relate to each other and create the spatial organization of the building.
- Scale: the scale should be appropriate to the complexity and size of the building, 20’=1” to 50’=1”.
Plans, Section and Elevation Drawings
These drawings are all related to each other and their presentation should flow from one drawing to another like the paragraphs in a written document.

Design Floor Plans - The purpose of this drawing is to show the horizontal sizes and relationships of the different rooms and spaces as well as the relationship of the interior of the building to the immediate exterior of the building.
- The emphasis should be on the horizontal spatial relationships and use of the different spaces.
- First Floor Plan should include the immediate surroundings of the site. (~15’ from the building)
- Poche walls (Black, Grey,) with enough contrast so the figure/ground relationship can be quickly seen.
- Name all spaces. Put the names in the spaces not in a legend. Use legends only if the text cannot be placed inside the space at a legible scale.
- Furniture and/or equipment denoting the activities of the major work spaces.
- Show ADA compliant restroom layout.
- Show egress stair layout.
- Scale : 1/8” = 1’

Design Building Sections - The purpose of these drawing is to show the vertical sizes and relationships of the different rooms and spaces as well as the relationship of the interior of the building to the immediate exterior of the building.
- Always include Section Cut Lines on the Floor Plans.
- Section through Lobby space.
- The emphasis should be on the horizontal spatial relationships and use of the different spaces.
- Sometimes is useful to label spaces so the audience can quickly relate the section back to the building
- Furniture and activities in spaces.

Elevations
- Scale : Same scale as the Floor Plans. 1/8” = 1’

Perspectives
These drawings Should be used to reinforce the qualities of space and form described above. Work them through-out your presentation to communicate qualities of what is communicated in the other drawings.

Perspectives, General - The purpose of perspectives are to communicate the qualities of design the user will experience.
- The emphasis is to give the audience an experience of your design’s qualities. Look in Architecture magazines for image precedents. Study how the photographers light, compose, and frame their images of Architecture to bring out the qualities of the design.
- Perspectives should be from the vantage point of the user. The person experiencing your architecture. Not God’s view of architecture (unless God is the client) and will be at the presentation.
- Develop a money shot. This is a perspective (interior or exterior) that embodies the qualitative essence of your design. Make this perspective larger and more prominent than the others. Use it to ‘sell’ the design and draw the audience into the presentation.
• **Lighting is critical.** Check your lighting. Make sure you have the lighting set appropriately for the image. Lighting is a critical element in composition.

• **Materials - DO NOT** use crappy materials that do not render well. If you do not have good materials or a well composed material palette render the image without materials or monochromatic. **NO materials (white)** or monochromatic materials are better than crappy looking ones.

• **Check your format.** Format the perspective relative to the emphasis of the image. In general, if the subject is vertical use a portrait layout if it is horizontal use a landscape layout.

• **Compose your image.** Perspectives should have a foreground, mid-ground and background. The foreground elements should draw you into image. The mid-ground is the focus of the image and the background gives the image context.

• Include People and other entourage to give the image life and activity.

• Do not crop small portions of your building unless that portion of your building is ugly. Then first consider covering it with entourage or redesigning it.

• Unless you are really good. Realistic style renderings are not a good choice. Use a more stylistic rendering process or post-process your images in Photoshop.

**Exterior Perspectives**

• The emphasis in exterior perspectives should be on the quality of the exterior form of the building (massing, composition, lighting, materials, activities, etc.)

• **Turn on the sun and adjust it for composition.** If the building is showing the North side of the building you may have to provide another form of light to keep the north side from being too dark. Also decreasing the sunlight parameter and increasing the skylight parameter can help by reducing the contrast of those elements in shade and those in sunlight.

• Change the exterior lights position as needed to draw out the qualities of your design.

**Interior Perspectives**

• The emphasis in interior perspectives should be on the quality of the interior spaces (volume, composition, lighting, materials, furniture, views, etc.)

• Use the general perspective guidelines.

• The lighting of the interior can make or break the quality of the image. Make sure you get the appropriate combination of artificial and sunlight into the image.

**Birds-eye Perspectives or Isometric Drawings** – The purpose of this image is to communicate an overall relationship of different building masses or a complex of buildings.

• The emphasis is on the relationship of the building masses or different buildings.

• Can be useful to communicate site design.

• Do Not use as an alternative to the perspectives above.

• Use sparingly or not at all.

• Use the general perspective guidelines.
BUILDING SYSTEMS - DESIGN DRAWINGS

Structural Floor Plans and Structural Axonometric
These drawings are all related to each other and their presentation should flow from one drawing to another like the paragraphs in a written document.

Typical Structural Floor Plan – The purpose of this drawing is to show the Primary and Secondary members and their relationship at a typical floor to each other.
- Emphasis on the plan relationship of the primary and secondary components
- Show only structure, therefore no walls unless they are structural walls
- Structural Grid should be shown.
- Dimension bay widths and depths. The distance between the grid lines.
- Annotate types of structural components and sizes.
- Use course graphic display.
- Do Not show floor assembly.
- Scale 1/16” = 1’0”

Exploded Structural Isometric – The purpose of this drawing is to show the assemblies of the structural systems by Level.
- Emphasis on the Columns, Girders, Beams and Joists as a system.
- Do not show floors.
- Explode by Level (1,2,3 etc.). DO NOT over explode by components.
- Use medium graphic display.
- Text and Annotations must be done on the Sheet.
- Not to scale technically, but set scale to either 1/16” = 1’0” or 1’ = 20’.

Wall Sections and Details
These drawings are all related to each other and their presentation should flow from one drawing to another like the paragraphs in a written document.

Design Wall Sections – The purpose of a design wall section is to show the layers of the assemblies and their relationship to each other. For instance: Curtain wall to Structure, Column to Beam to Floor, etc.
- Emphasis on the Relationships of assemblies (Envelope, Ceiling, & Structure) and the location of major Structural components (Columns, Beams, Girders, Joists, Floors and Roofs)
- Need only label assemblies and Structural Components
- Dimension Floor to Floor height and Floor Ceiling. Other as critical dimensions having to do with design not construction.
- Sizes of Structural components should be noted.
- Scale ½” = 1’0”

Wall Section Axonometric – The purpose is to show the Design Wall Section in 3d so one can better understand the three-dimensional relationship of the Envelope to the Structure and to communicate the Envelopes aesthetic qualities.
- Emphasis on the Envelope not the Structure.
- Label major assemblies.
- Annotate envelope materials. Use material sample images noted to the drawing.
• Scale ½” = 1’0”
• Not to scale technically, but set scale to ½” = 1’0” to match the Wall section and they both will fit on your sheet the same general size

**Design Call-Out Details** – The purpose is to actually show an understanding of how the building is assembled and built.
- Emphasis on the assembly components and their relationships.
- No Dimensions needed.
- Sizes of components should be noted. (Example: 3.5 inch fiberglass batt, 3” x 5” Steel Angle)
- Scale 1½” = 1’0” to 3” = 1’-0”

**Daylighting and Shading Strategy**
These drawings are all related to each other and their presentation should flow from one drawing to another like the paragraphs in a written document.

**Typical Daylight Plan Distribution - Illuminance Rendering** – The purpose of this drawing is to show the penetration of the daylight into the building.
- Should show the areas and spaces which receive adequate task daylighting at a given time of the day. Annotate so this is obvious
- Use Revit Illumination Rendering to generate Daylight Factors illumination contour graphs.
- Do not need room labels
- Use Fall/Spring Equinox to render image.
- Annotate plan showing where you have full daylight and partial daylight.
- Scale 1/16” = 1’0”

**Daylighting Strategy Wall Section** – The purpose of this drawing is to show how the Envelope and Interior Systems are controlling and distributing the light into a space.
- Emphasis is a diagrammatic drawing showing how the daylighting strategies work.
- Label Daylighting Strategies (Exp: Sidelighting, Top Lighting, Light well, Atrium
- Scale ¼” = 1’0”

**Shading Strategy Wall Section** – The purpose of this drawing is to show how the Envelope System controls heat gain into the building.
- Emphasis on Envelope Shading Strategy.
- Show Typical Winter and Summer Solstice sun angles and the how your envelope shades under these two conditions and how the light gets into the building.
- Annotate materials, components and assemblies that control the light. (Examples: Overhang, Reflective Glass with Solar Heat Gain Coefficient = .35, etc…)
- Scale ¼” = 1’0”

**Mechanical Drawings**

**Typical Mechanical Plan** – The purpose of this drawing is to show the location and distribution of the heating and cooling system for the building.
- Emphasis should be on the size, location and distribution mechanical system components.
- Use reflected ceiling plan. Scale 1/16” = 1’0”