HAND DRAWING AND 3D MODELING:
Hybrid Methods for Design Visualization

Speakers:
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Speaker Bio:
Jim Leggitt, FAIA
Architect, urban planner, author and illustrator, Jim Leggitt, FAIA, has developed and teaches his new method of
design visualization that merges traditional hand drawing techniques with new 2D and 3D digital tools, software and
reprographs. Principal of the Denver planning and landscape architecture firm studioINSITE, Jim has conducted
webinars, drawing seminars and workshops for AIA regional and national conventions, ProGreen EXPO, universities,
SketchUp Basecamps, landscape and architectural firms throughout the US and Canada. Leggitt authored his
second edition of DRAWING SHORTCUTS: Developing Quick Drawing Skills Using Today’s Technology, published in
2010 by John Wiley and Sons, which has been adopted by over 50 universities and translated in three foreign
languages.

Dan Tal, ASLA
Daniel Tal, RLA, ASLA author of Google SketchUp for Site Design has worked in the architectural and landscape
design industry for over 14 years. His second book Rendering in SketchUp was published in March 2013. He writes
articles for various publications such as Landscape Architecture Magazine and teaches SketchUp workshops across
the country. He provides online SketchUp webinars throughout the year and regularly speaks at national trade
conferences including the American Society of Landscape Architecture.

Overview:
Integration of hand drawings with quickly generated 3D models into the design process is a vital approach for
effective design communication with clients and sound economic strategy in today’s business climate with short
deadlines, tight budgets and high client expectations. Two national experts in visual communication share their
successful methodologies that will improve your productivity and competitive skill level.

Learning Objectives:
• Explore cutting edge 2D/3D hybrid drawing techniques that improve your productivity and skill level by combining
  traditional drawing methods with digital tools.

• Develop a comprehensive vocabulary of traditional and digital design strategies for generating design ideas on
  projects at school or in your professional practice.

• Observe a “how to” live demonstration by the speakers who will share tips and techniques for quick hand
  sketching and 3D modeling design concepts with SketchUp.

• Compare different drawing solutions that convey context, scale, detail, composition, topography, perspective, color,
  light, human activity, landscape and season.
Resources:

Book: DRAWING SHORTCUTS: Developing Quick Drawing Skills Using Today's Technology, author Jim Leggitt, FAIA, published in 2010 by John Wiley and Sons. This second edition of Jim's book first published in 2001 has been adopted by over 50 universities and translated in three foreign languages. The book explores how to merge traditional hand drawing techniques with 2D and 3D digital tools such as SketchUp and Photoshop. Drawings by more than 15 nationally recognized visualists.

Book: GOOGLE SKETCHUP FOR SITE DESIGN, author Daniel Tal, ASLA, published in 2009 by John Wiley and Sons. This popular illustrated guide explains how site professionals can use the SketchUp tools and functions to construct expressive models of exterior spaces and architecture. This is one of two books by Daniel Tal, a national expert on 3D modeling and new visualization software such as Lumion, Shaderlight and SU Podium.


SketchUp Software: www.sketchup.com
Shaderlight Rendering: www.shaderlight.com
Presentation Download: a PDF of this presentation to download can be found at www.danieltal.com
SketchUp Video Tutorials: www.danieltal.com
Hand Drawing Blog and Tutorials: www.drawingshortcuts.com

Session Outline:

I. Introduction: Value Visualization
   a. Establishing the value of design concept visualization using effective hand drawings and 3D SketchUp models.
   b. The importance of combining strategic design methodologies with smart economics.
   c. Drawing, modeling and teaching trends in academia

II. Process Modeling: Solutions that match your time and budget
   a. Why process modeling is effective
   b. Step-by-step approach to developing 3D strategic alternatives
   c. Integrating SketchUp models with clients presentations
   d. Value and Judgement: hand drawings or 3D renderings?
   e. Merging the surface and the screen: hand sketching, 3D modeling, and final renderings

III. Hand Drawings and Digital Hybrids: Merging traditional hand drawing with digital tools
   a. Overlay composite method of drawing
   b. Print composite method of drawing
   c. Digital drawing and painting trends
   d. Digital watercolor process
   e. Advanced digital montage

V. Hands-on/How-to: Live demonstration of techniques for merging hand drawings with SketchUp modeling
**Drawing Tools, Notes and Definitions:**

**Observation Drawing:** The process of “direct drawing” in which one sketches from observing a subject. This is most common using pencils or pens in a standard sketchbook.

**Imagination Drawing:** This method of drawing is completely from the “mind’s eye” in which one originates a drawing without tracing over an image or observing a subject. Similar to “cartooning”, this method of drawing can be quick to generate. Another form of imagination drawing is “visual scribing” in which illustrations are generated from listening to a dialogue or conversation.

**Overlay and Trace Drawing:** This “step-by-step” drawing method utilizes a print of an image (either a photograph or SketchUp model view) which is then covered with trace paper and developed into a sketch. By overlaying the base image, one can create a drawing that matches the proportions and perspective accuracy of the original subject.

**Color Markers:** Four commonly used markers from Chartpak AD, Prismacolor, Letraset and Copic are solvent based with dual tips (fine point, broad point). The Chartpak AD marker has a single tip and is generally preferred due to its large ink capacity and blending characteristics.

**Colored Pencils:** Prismacolor pencils are the industry standard and available in both sets and individually at art supply stores. I generally use colored pencils to supplement marker color by creating variable tones and textures in pencil (skies, paving materials, etc.).

**Perspective:** Standard one-point, two-point and three-point options depending on the subject being illustrated. I use the three-point aerial perspective for urban planning projects when visualizing large site areas.

**Drawing Size:** I encourage all to draw as small as possible 11”x17” or smaller. This enables you to easily scan your original artwork on a standard desktop scanner. Any drawing at a larger size will dramatically increase drawing time and should be only used for detailed planning projects.

**Drawing Format:** The shape of a drawing (square, vertical rectangle, horizontal rectangle) should be established to reflect the format in which the image is being presented. Most of my drawing formats are now horizontal and with a 6:9 proportion.

**Drawing Detail:** I promote the approach of “less is more”. A quick sketch with minimal detail can be quite representational and take a fraction of time to generate versus one with a great amount of detail. Before starting a drawing project, determine ahead of time if you want to show a lot of detail and delineation and what is expected of the drawing. Keep it simple and quick.

**Drawing People:** I used to trace people from image files and now utilize SketchUp people in most of my drawings. 3D modeling with SketchUp is a great source for placing people into scenes and accurately getting their proportions correct. Avoid creating people any larger than 2” in a drawing or you will find yourself getting bogged down in too much illustrative detail.

**Drawing Cars:** I find the easiest method for drawing cars is to populate a SketchUp model with car components and integrate them into drawings either by tracing them or incorporating them into composite drawings. I rarely draw cars from imagination.

**Drawing Trees:** Unless I am required draw a specific species of tree, I typically include three different trees into drawings - evergreen trees, shade trees and ornamental trees. Trees can either be delineated from imagination or simply traced from landscape components added to SketchUp models.

**SketchUp:** This 3D software originated in 2001 is an easy to use computer modeling program that allows for infinite construction options, perspective control and visual effects. A great majority of my visualization projects have SketchUp models integrated with the drawing.
**SketchUp Strategies:** If I am constructing a SketchUp model for a visualization project, instead of building a highly detailed and time consuming model, I will either construct a “massing model” or a “stage set model” with the intent to capture the basic 3D information with the least amount of time investment and detail.

**Google Image:** This internet tool is a perfect source for visual information when constructing a drawing. I am amazed at numerous sources of photography when researching subjects to draw. [houzz.com](http://houzz.com) is a great source for precedent photos.

**Google Earth:** More information with high resolution aerial photography is available for use in creating SketchUp models and renderings. I’m always using Google Earth for site dimensions, integrating 3D buildings in SketchUp and quickly building base images for drawings. The Google Street View is an excellent source for generating base information for sketches. The high position of Street View cameras is ideal for creating perspectives.

**Digital Photography:** The digital camera, invented in 2002 has practically been upstaged by smart phones for capturing images of existing conditions. I will print my photographs letter size on a standard home printer and trace over the photograph to create drawings. The existing photograph paired with my drawing makes a great “before and after” presentation.

**Drawing Tablets:** More designers are creating digital drawings on Samsung and Apple tablets using a large number of drawing apps. I also use the Wacom Cintiq drawing monitor for creating 100% digital drawings - completely drawn and colored in the computer.

**Composite Scan Drawing:** This drawing method involves a basic overlay and trace drawing method with the original artwork drawn directly over a print (most often from a SketchUp model). BOTH the original artwork and base model image are then scanned together. The model view is visible beneath the artwork and creates an interesting hybrid that blends together hand drawing with 3D computer modeling.

**Print Composite Drawing:** This drawing method involves drawing DIRECTLY onto a bond print from a SketchUp model view. The matte finish of a coated bond paper is ideal for adding pen and pencil linework, colored pencils and colored marker. The final illustration is a seamless integration of 3D computer visualization and hand drawing.

**Digital Painting:** Generated entirely in the computer, this visualization option most likely integrates Adobe Photoshop for illustrating and coloring a digital image.

**Digital Watercolor:** This “next generation” of hybrid visualization involves a multi-step approach that starts with a SketchUp model view that has been photo-realistically rendered using Shaderlight, then printed and drawn directly onto with graphite pencil, colored markers and colored pencils. The artwork is finally scanned and altered with a watercolor filter using Adobe Photoshop. The resulting image looks very much like a traditional hand painted watercolor rendering.

**Digital Mashup:** This complex hybrid rendering technique incorporates digital photography, 3D computer modeling in SketchUp, traditional hand drawing and digital painting. The resulting visual representation is a blend of digital tools and traditional hand drawing techniques.