

Quilting in the Third Dimension

Resource Sheet for Attendees

Modern Quilt Group • Online Presentation

Overview

This presentation explores how modern quilters create the illusion — or the reality — of dimension in their work. The techniques range from the purely visual (optical illusions achieved through value placement alone) to the genuinely physical (fabric that lifts off the surface, casts shadows, and responds to light).

"How do we make a flat surface feel alive? In every way possible — and modern quilting is still finding new answers."

Part One: Visual Dimension — Tricking the Eye

These techniques produce quilts that are physically flat but appear three-dimensional. The illusion is created through value (light/medium/dark placement), contrast, colour, geometry, and the way the brain interprets visual information.

The Foundation: Value

Every optical illusion in quilting rests on a single principle: the consistent arrangement of light, medium, and dark values to simulate a light source hitting a three-dimensional surface.

- Light value = top face of the cube (fully lit)
- Medium value = one side face (partially in shadow)
- Dark value = opposite side face (deepest shadow)
- Consistent placement across all blocks = the illusion holds
- Inconsistent placement = the illusion collapses

Practical tip: photograph your fabric layout and convert to greyscale on your phone. If the depth disappears, your value contrast isn't strong enough yet.

Tumbling Blocks

One of the oldest optical illusions in quilting — the same visual principle appears in the mosaic floor tiles of Pompeii. Three diamonds (or two diamonds and two 60-degree triangles) are arranged with consistent light/medium/dark placement to create the appearance of three-dimensional cubes stacked together.

- Traditional construction uses Y-seams (inset seams) — considered challenging by many
- Modern strip-piecing methods achieve the same result without Y-seams

- Modern palette: bold solids in three values of a single hue produces a graphic, contemporary look
- Rotating the light source direction changes the entire character of the quilt

Bargello

Strip-pieced waves that create the illusion of undulating movement across the quilt surface. All construction is strip-piecing — long rectangles only, no complex shapes.

- Strips are sewn in a colour/value sequence, cut horizontally, then offset step-by-step to create the wave
- Ombré fabric collections make this much more accessible for modern quilters
- Modern approach: 3–4 values of one hue, or two complementary colours for maximum graphic impact
- Jelly rolls work beautifully for Bargello construction

Op Art and Impossible Geometry

The intersection of quilting with the 1960s optical art movement of Bridget Riley and Victor Vasarely. Warped grids, floating cubes, impossible geometry, and paradoxical shapes are all achievable with careful value management.

- Key artist: Miriam Nathan-Roberts — a California-based quilt artist who has explored visual paradox in quilts since the 1980s
- The approach: start with a visual question, then design the quilt to investigate it

Transparency Effects

Value gradients simulate one fabric showing through another — like acetate overlays — without any actual layering. Pure colour planning creates the illusion of translucency. Works best with a limited, carefully chosen palette.

Quilting Density as Dimension

The act of quilting itself creates topography. Dense quilting compresses the surface, making those areas recede. Unquilted areas puff and advance. Even on a completely flat quilt top, the quilting lines become a contour map of a three-dimensional surface.

Part Two: Physical Dimension — When Fabric Leaves the Surface

These techniques produce quilts where the fabric genuinely leaves the plane. The resulting work casts real shadows, responds differently in different lighting conditions, and can be felt as well as seen.

Cathedral Windows

An origami-inspired folding technique that dates to the 1930s. Named for its resemblance to stained glass church windows. The finished quilt is self-enclosing: no batting, no backing, no binding required.

- Start with a large square of fabric — traditionally muslin, now any quilting cotton

- Fold and press all four edges to the centre, then fold again — creating a smaller folded square with four flaps
- Join folded squares at their edges by stitching the touching folds
- Place a small 'window' square of accent fabric at the intersection of four joined blocks
- Roll the folded edges back over the raw edges of the window fabric and stitch down — creating the curved window frame
- The folded curve falls naturally on the bias — no clipping needed
- Machine-sewn methods now exist; the traditional technique is hand-sewn
- 4–5 layers of cotton — the finished quilt is substantial and warm

Modern approach: use bold printed fabrics as the 'windows' against a white or solid-coloured background for a graphic, contemporary result.

Prairie Points

Squares of fabric folded diagonally twice to make small triangles. Traditionally used as a decorative binding alternative, but increasingly incorporated across modern quilt surfaces.

- Fold a square in half diagonally to make a triangle, then fold in half again — making a smaller right-angle triangle
- Insert into seams or applique to the surface with the open edge down and the folded point visible
- Create actual cast shadows — the quilt looks different in morning light versus evening light
- Can be used in sashing, between blocks, across a surface — not just in the border

Puff / Biscuit Quilts

Each unit is a small fabric 'pillow' stuffed with polyester fill, joined together to create a quilt that billows from the surface. Modern versions in bold solids or ombré gradients can look like three-dimensional pixel art.

- Two squares of fabric: a slightly larger top square and a smaller backing square
- The excess fabric in the top piece is pleated at the corners before stitching — this excess becomes the puff when stuffed
- Fill each unit with polyester toy filling before closing
- Units are joined right sides together along their edges to form the quilt top
- No separate batting needed — the stuffed units provide all the warmth

Trapunto

Selected areas of a quilt top are padded with an additional layer of batting, creating raised relief that stands above the surrounding surface. Originating in Renaissance Italy, it works beautifully with modern minimal geometric design.

- High-loft polyester batting is used for the raised areas; regular cotton batting for the rest
- The surrounding area is quilted very densely — this is what makes the raised sections stand out by contrast
- Light fabrics show the shadows and relief most clearly
- Can be done on a domestic machine — not only on a longarm

- Shadow trapunto method: extra batting is held with water-soluble thread, which washes away after quilting
- Lighter and simpler motifs are easier for modern quilters — a raised hexagon on a plain background can be a complete design statement

The principle: dense surrounding quilting compresses the surface, making unpadded areas recede and padded areas appear to rise even more dramatically. The greater the density contrast, the stronger the effect.

Part Three: Featured Artists

These artists represent different points on the spectrum from visual illusion to full sculptural form. Exploring their work is a starting point, not a complete survey — the field is vast.

Velda Newman

Californian quilt artist known for extraordinary, larger-than-life botanical quilts in which individual elements (petals, leaves, pods) are padded and layered to create remarkable dimensional realism. Trained as a painter before turning to textile art.

- Key technique: padding individual appliqued elements to give them physical lift, body, and natural curve
- The same principle applies to geometric modern work — a padded hexagon, a lifted triangle
- Search: Velda Newman quilts | veldanewman.com

Miriam Nathan-Roberts

California-based quilt artist who has explored optical illusion and visual paradox in quilting since the 1980s. Her work applies Op Art principles with artistic rigour — starting from a concept rather than a pattern.

- Key lesson: ask 'What visual experience do I want to create?' before asking 'Which pattern shall I use?'
- Her lineage connects modern quilting's optical work to a rich art-historical tradition
- Search: Miriam Nathan-Roberts quilts | [Wikipedia article available](#)

Emily Van Hoff

Contemporary textile artist whose fully sculptural, installation-scale quilted work pushes the boundary of what a quilt can be. Her pieces are padded, dimensional, and sometimes freestanding — existing in gallery spaces rather than on walls.

- Represents the furthest edge of the form
- The conceptual move she makes — 'Why does this have to be flat?' — is available at every scale
- Find her work on Instagram: search Emily Van Hoff textile art

Video Resources

All videos are freely available on YouTube. For Zoom presentations, open each link in a browser tab before the session and use Zoom's 'Share Tab' option with 'Share audio' enabled. Play 60–90 second clips and pause to comment.

Segment	Video Title	Link / URL	Note
Optical illusion blocks	Illusion Block Quilt — Missouri Star / Jenny Doan	youtube.com/watch?v=qBSZxu3nHDI	Beginner-friendly demo
Op Art / modern	Qbert 3D Steps Quilt	youtube.com/watch?v=n9tTQ3_N_ew	Angles & contrast, 2025
Bargello wave	Bargello 3D Illusion from Strips	youtube.com/watch?v=yTsW80EANKI	Free pattern included
3D overview	How to Create 3D Quilt Designs	youtube.com/watch?v=SzN74Sk8XEI	Good visual range
Cathedral Windows	Cathedral Window Tutorial — Teresa DownUnder	youtube.com/watch?v=hWF1qy0F9IU	Clear folding demo
Cathedral Windows	Easy Cathedral Window — Missouri Star	youtube.com/watch?v=akKU0zg-qaw	Machine-friendly method
Physical 3D	3D Blockhead Quilt — Jordan Fabrics	youtube.com/watch?v=UNi7bvq_qYQ	Simple physical 3D

Books Worth Having

Dimensional Quilting

- **C. June Barnes** — Exploring Dimensional Quilt Art

The definitive resource for physical and sculptural 3D quilting. Covers manipulation, folding, pleating, and structural techniques. Includes worked examples and the maths for scaling. Highly recommended.

- **various authors** — Cathedral Window Quilts

Multiple books on this topic exist at different skill levels. Look for editions covering both traditional hand-sewn and modern machine methods.

- **Karen McTavish** — The Secrets of Elemental Quilting

The standard reference for trapunto from a leading practitioner. Traditional in orientation but the principles apply directly to modern minimal work.

- **various** — Prairie-Point Pizzazz: Quilts with New Dimension

Dedicated exploration of prairie points beyond the border, with contemporary applications.

Optical Illusion & Colour

- **various** — The Ultimate Bargello Quilt Book

Good entry point into Bargello construction and colour planning.

For colour theory and value planning (essential for optical illusion quilts), any book by Joen Wolfrom on colour in quilting is an excellent investment.

Online Resources & Communities

Galleries & Inspiration

- **Quilt Inspiration Blog:** quiltinspiration.blogspot.com — Extensive galleries including optical illusion and 3D quilts. Excellent reference archive.
- **SAQA (Studio Art Quilt Associates):** saqa.com — Professional organisation for art quilters. Free video library including a panel discussion specifically on 3D art quilts.
- **Pinterest — Optical Illusion 3D Quilts:** pinterest.com — Search 'optical illusion 3D quilts' for large visual collections. Good for building a reference library.

Patterns & Tutorials

- **Quiltdom:** quiltdom.com/optical-illusion-quilts/ — 15 optical illusion patterns reviewed with difficulty ratings.
- **Patchwork Posse:** patchworkposse.com/30-free-optical-illusion-quilt-patterns/ — 30 free optical illusion patterns.
- **I Love Quilting Forever:** ilovequiltingforever.com/three-dimensional-3d-quilt-patterns/ — 3D quilt pattern round-ups including free options.
- **Bad Ass Quilters Society:** badassquilterssociety.com — Excellent article on trapunto for modern quilts — practical and accessible.
- **Nancy's Notions:** nancysnotions.com — Trapunto for modern quilting — contemporary approach.

Social Media

- Instagram: search #modernquilt3D, #trapunto, #cathedralwindowquilt, #bargelloquilt, #tumblingblocksquilt
- MQG (Modern Quilt Guild) online community at themodernquiltguild.com

Six Things to Try — One for Every Level of Ambition

You don't need to tackle everything at once. Pick the one that feels like the right next step from where you are.

1. Value Exercise (any level)

Plan a quilt where value contrast alone creates the illusion of depth. No folding, no stuffing — just fabric, light, medium, and dark. This is the single most transferable skill from today.

2. Prairie Points (accessible)

Add prairie points somewhere unexpected in your next project — not in the border, but somewhere in the design itself. See how they change the surface.

3. One Cathedral Window Block (intermediate)

Make just one block — not a whole quilt. Once you understand the folding sequence, the rest follows naturally. Use Teresa DownUnder's YouTube tutorial as your guide.

4. Trapunto Test Piece (intermediate)

Take a scrap of light-coloured fabric, place extra batting behind a simple geometric shape, and quilt the surrounding area as densely as you can manage. Wash and see what emerges. No pressure — this is a test piece.

5. Op Art Study (any level — design exercise)

Before choosing a pattern, sketch a design starting from a visual question: 'What would a cube look like in fabric?' or 'How would I make a flat surface appear to ripple?' Let the question lead the design.

6. Look at 'Oh Yeah' Again (David Sirota)

After today, look at David's quilt with fresh eyes. Which of the techniques we discussed does it use? How did he combine them? What would you do differently in your own version?