

The Edgiest Edge

Artist/Scientist/Alchemist David Knox is on the edge of design

By Kirstin Pires

For most builders, the art of the infinity pool is in engineering of vanishing edge so that it — and the vessel of which it is part — go unnoticed, deferring to the water it contains. Viewers perceive the water, but not the vessel that gives it shape. But for David Knox, the edge where water in transit leaves the pool is an exciting canvas for his extraordinary glass tiles.

“You have a very specific change of plane right there,” says Knox. “So not only is the water running over it, but my glass is designed to have a balance of surface reflection and transmitted light. The light goes in and pulls the color out and has depth. If you turn those tiles, the whole color patterns begin to change, so you get

dramatic shifts in the way that our eyes perceive the colors.”

Knox knows a little something about the physics of seeing color. In the 20 years before he started Lightstreams Glass Tile in Mountain View, Calif., Knox founded and served as president of an industrial-laser company working with crystal-based laser systems.

Collaborating with the owner, architects, designers and builders of Jade Mountain Resort in St. Lucia (pictured on these pages), Knox invented and manufactured the glass tile that clads the 24 cantilevered infinity pools at the celebrated resort, which is nestled in the side of the mountain. Knox offered AQUA some thoughts on edge ornamentation that goes beyond decoration.

A POOL WITH A VIEW

Oftentimes, vanishing-edge pools are breathtaking from one viewpoint and not so much from other angles. Knox suggests that the entire structure and multiple vantage points be considered. “Show me the angle of the sun, show me the angles in the pool,” he says. “How is it going to look from the outside? How is it going to look to the swimmer who cruises up to the vanishing edge and hangs there? [The edge] is a wonderful hidden space in the pool to work with. It is like little secret gardens, I think it’s my favorite area to design to. More so than the waterline — although I’m doing some really cool waterlines.”

From the swimmer’s standpoint, the spillway is a very inviting spot.



The interplay of light, angles and water yields myriad effects from one special tile.





Water allows both reflection and transmission of light, giving designers many possibilities.

“People kind of like to hang on the vanishing edge. You go over and you put your arms over it and, unlike the rest of the pool, where you have to lift yourself up over the coping, you can kind of just hang,” he says. “So the slope of the spillway is a wonderful place for a point of ornamentation. You have this change of surface planes, so optically, it’s an awfully nice area to pick up different reflections and color patterns knowing that as the water comes over the glass, the shimmering effects are going to be spectacular. We’re increasing the pattern density of the waterline, so it’s a very inviting place, kind of a gateway, literally and figuratively.”

PAINTING WITH LIGHT

The properties of light — and how it’s manipulated — give designers a dizzying array of options. When light hits the different surfaces that make up the vanishing-edge pool’s weir, the possibilities multiply. “The photonic density of the sun in a tropical,

or even temperate locations in the summer, is quite high,” says Knox, “so that’s a lot of light that’s coming in and saturating the glass.

“At different angles, the light is either reflecting off the surface of the glass and doing this colorful iridescent, prismatic effect off the surface, or it’s transmitting through and then reflecting off the backside of the glass and picking up all the colors — or mixing them,” he says. “When you tone down the number of photons you have, the whole mix changes.”

Designers can use this principle to create dynamic spaces. As poolscapes are used more and more as entertaining spaces, being able to offer clients a number of “looks” to their pools is a great advantage. “That’s what I call the day and night effect,” says Knox. “I am hopeful that all of my glasses have a very sort of cheery effect during the day and then at night they kind of put on a black cocktail dress. When the saturation of the sunlight isn’t there, we’re now working with

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Light at the edge of the earth: An incredibly dynamic and complex effect results from layering of elements. Above, low-angle light makes the pool look monolithic, glowing with warm light. At left, different angles, the movement of the water and intensity of light gives the same tile many different and constantly changing looks.

just the cooler surface reflections and everything cools down and follows the mood. As you begin to flick on the pool lights, the tiles begin to pick up and channel the light, so the glasses become light guides. They give that mystical, sparkly, cave effect. Let's tune down the chemical systems in our bodies, which we naturally do at night."

CONTROLLING THE EFFECT

The manner in which the edge is detailed has important ramifications for how the entire pool is viewed. A designer may want to give the impression that the pool has no end. Or she might want to make viewers wonder how the water is contained with no visible coping. "If you put a tile waterline on the inside edge of the weir, it defines its plane," says Knox. "It won't give as much of an 'infinity' effect, because there's a line there. With a tile waterline, you don't wonder, 'Where does the pool end?' but you do wonder, 'Where is the water going?'"

WORKING COLOR

The materials chosen to ornament the weir must — of course — also have a functional purpose. "A few things to consider," says Knox. "Most pool builders and designers will want to *not* have a break in the action [of the water flowing over the weir]. They want the water to be a still plane. So tiles give you a lot of mechanical flexibility. Say you wanted your 1/8th inch water going over evenly across the entire edge. Normally you'd have to level the weir edge perfectly and shave it down and polish the gunite to get it precise. The advantage of tile is that you can adjust the edge by tiny amounts just by tapping the grout spacing, much like using a shim.

"You can really get a nice smooth edge by using a tile with a bullnose. You have the water really skimming over the top. The only issue is that you have to grout right up to the edge, so you don't have channels. You just use your thumb and press in some more grout. Piece of cake. So mechanically, there's a great advantage," he says.

Another detail the glassmaker has used lately is a tile that acts as a lens. The bullnose is the edge of the weir and protrudes just enough to catch the sunlight. "So the sun coming in, from the viewer's standpoint, will create a very narrow band of light, like an internal glow," says Knox. "And the water is running more smoothly over it. Some pretty nice effects."

LESSONS TO LEARN

While most designers won't have the opportunity to create a mountain-scape that is studded with jewel-like, cantilevered infinity pools, increasing numbers of designers and builders will have the chance to style a vanishing-edge pool.

Knox suggests that designers consider all the variables in the design equation, even if the plans don't call for his magical glass tile. Consider what the light will do at different times of the day. What shadows will it make? How will it reflect or transmit the light when it hits the water?

"There's a lot to play with," says Knox.

