



# Switching Static Billboard Structures to Digital

Print billboards are being retrofitted with their digital counterparts.

By Louis M. Brill

**A**s outdoor-advertising companies introduce or expand their digital-billboard inventories, they face the challenge of where to install them along existing highway routes. What's true in real estate is true for outdoor-advertising placement: location, location, location.

However, where do you place digital boards when print boards already occupy the best placement? One solution is to "swap out" a premium, print-billboard location and replace with its digital counterpart.

This article shows how a structural engineer and two outdoor-advertising companies discuss how they transformed static billboard structures to handle their digital-billboard counterparts.

## R. Scott Lewis

R. Scott Lewis (New Canaan, CT), who has designed spectacular-sign structures in Times Square since 1991, and many print/electronic-billboard structures throughout the northeastern U.S., has transformed

several existing, print-billboard structures into their heftier, digital-billboard counterparts.

Lewis discussed some of the technical details in these structural conversions. First, the local municipality must agree that an electronic billboard can replace its print counterpart. "Sometimes when we see the billboards, in the best of possible worlds, they're in good enough shape that a billboard conversion would be very straightforward, with one type of sign face replacing the other," he said.

When a print billboard needs refurbishment to improve its physical-support capabilities, Lewis recommends reinforcing various parts so it can support a much heavier digital billboard.

If the billboard structure can't be converted, the company should simply consider another billboard site.

The evaluation begins when the sign's base and the structure's foundation are first measured. An ultrasonic,

thickness-measuring device determines the wall thickness of the torque tube. Rusted spots can be reconditioned, or removed and replaced with new metal. Corrosion that's reduced the original metal thickness by 15% or more has created significant problems that probably spell removal.

Occasionally, Lewis finds an original billboard structure built for a lower windload than allowed by current building codes.

"When you change from print to digital billboards, the new building codes need to be followed, because you're substantially changing the use of the structure and must design for both a higher wind pressure and also for the greater weight load of the LED cabinets," Lewis said.

In one instance, Lewis found a usable billboard structure with an undersized foundation. The 30- to 40-year-old frame was assembled with vertical trusses. The sign structure pre-dated the concept of a single-size billboard structure. The existing billboard frame had

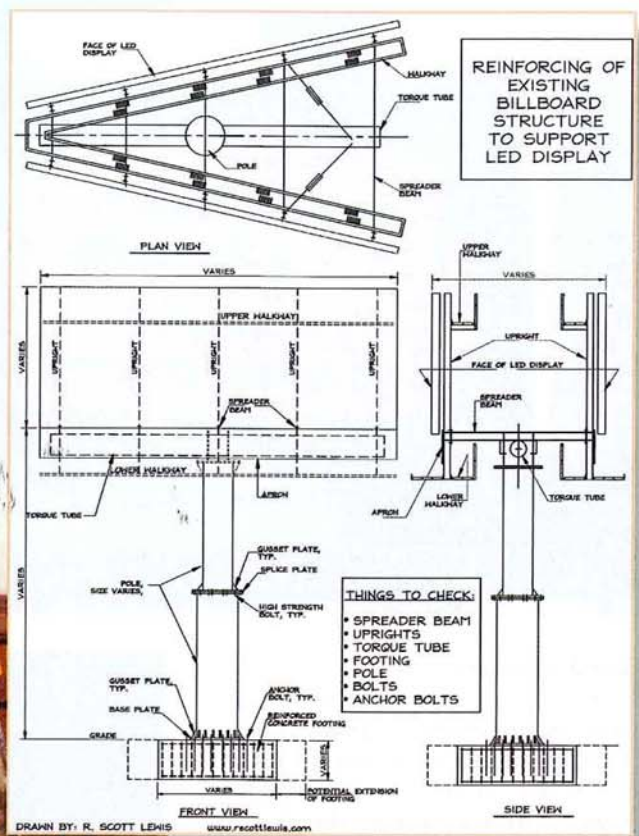


Photo credit: R. Scott Lewis

adequate reserve-support capacity for the additional weight of a digital billboard, but its foundation was questionable – the soil was rather soft, and the original support piles were old enough to have been made of timber.

So, Lewis’ designed an expanded foundation for the base, which required driving additional piles into the new foundation setup. “Because of the physical restrictions around the billboard, we weren’t able to get pile-driving equipment into place, because the billboard structure was too close to a railroad right-away,” Lewis said. “Instead, we had to use a mini-pile driver and drill the piles in place around the foundation. The only other issue on the front of the billboard sign was to bolt on some new support brackets to allow the proper attaching of the LED sign cabinets to the billboard structure.”

In another billboard infrastructure review, a full-flag, single-pole sign’s two sign faces were displayed in a

**This billboard structure (also shown on the facing page) hails from another era when steel erector sets upheld billboards. Despite its age, this triple-truss-support, double-faced display could support an LED-sign cabinet, with certain reinforcements to its foundation. The addition of new piles, placed between the old pile caps of the already existing foundation, and a new concrete foundation, support the additional weight of the sign cabinets. Whereas the old pile caps were supported by timber piles, the new ones are supported by newly drilled pipe piles.**

**(Inset) In another billboard infrastructure review, a full-flag, single-pole sign’s two sign faces were displayed, in the drawing, in a V configuration. To convert both billboards, Scott Lewis designed a diagonal steel tube (a “kicker”) that supported the torque tube, which, otherwise, would’ve been overstressed by two LED displays.**

V-configuration. Having considered whether to convert both billboards from print to LED displays, Lewis realized the horizontal, 30-in.-diameter torque tube would be overstressed and couldn’t support

one LED display, let alone two. To give the sign structure extra strength, Lewis designed a diagonal steel tube (known as a “kicker”) that supported the torque tube, which kept the LED display in place.



### Land Displays

Land Displays (Berks County, PA), an outdoor-advertising company with a billboard inventory of poster panels, permanent bulletins, tri-visions and digital billboards, handles the placement issue on a case-by-case basis.

“The attraction of digital billboards to our advertisers in our marketplace is very strong,” said Jim Landrigan, Land Displays’ president, “so it behooves us to improve our digital-billboard inventory by adding other key locations in our markets for our clients.”

Landrigan said new digital billboard replacements depend on the region and marketplace. It could replace an existing print board or cover a new location. Besides local sign-code regulations, a primary challenge is the physical integrity of the sign structure – if the existing structure can physically support the new (and much heavier) digital billboard.

Local billboard engineers examine each prospective board and determine what it would take to swap out a print billboard with an LED-display cabinet. The findings stipulate what kind of, and how many, changes would be required by either re-engineering the structure or completely rebuilding it.

Of the seven digital displays within Land Display’s billboard inventory, three were new structures and four were existing, print-billboard locations that were converted. Land Displays plans to convert two additional locations in 2010.



**Land Displays (Berks County, PA) assesses conversion of print boards to digital versions case by case. Of the seven digital displays within its billboard inventory, three were new structures and four were existing, print-billboard locations that were converted.**

### CBS Outdoors

CBS Outdoors (NYC) offers a national-advertising program that includes advertising platforms with malls, transit (on buses and on station platforms), street furniture

and sports stadiums, all fully integrated in every major U.S. city and region. Within this family of advertising media, the company also offers national coverage of both print and digital billboards.



In the San Francisco Bay area, along the East Bay side of the San Francisco-Oakland Bay Bridge, CBS Outdoor erected a 20 x 60-ft., double-faced, digital billboard. Because of the heavy traffic and the LED-cabinet weight, the billboard's sign structure was custom designed for road placement on the East Bay side of the bridge.



Photo credit: CBS Outdoor



CBS Outdoors has 70+ digital billboards and anticipates many more as advertiser demand grows. Jodi Senese, CBS Outdoors' executive VP of marketing, said, "In our placement of digital billboards, we tend to focus our installations on what we call 'iconic locations,' which are high-demand, high-profile positions along highways or tunnels."

CBS prefers highway choke points, where passing traffic slows down, which creates a longer dwell time for viewing the boards.

G. Todd Lathan, VP of the CBS Outdoors Digital Div., whose group assists in the deployment and installation of the newly acquired digital billboards, said, "As CBS Outdoors moves forwards with our digital-billboard expansion, more often than not, we'll find ourselves replacing our pre-existing print billboards

with our digital counterparts. When necessary, we'll upgrade that existing billboard structure as required. In our review of these structures, sometimes they're OK, sometimes they need to be upgraded significantly."

Older structures (some are roughly 50 years old), which normally require work, are prime retrofitting candidates. Once the structure has been refurbished, the digital billboard is assembled and installed.

CBS Outdoor billboard displays comprise individual, LED modules that are tiled together into a final display.

"We begin with a pre-built box frame and then insert all the LED modules in place. Once onsite, the modules are assembled with rear-service-access catwalks, and they're lifted onto the primary billboard support structure" Lathan said.

### Digital-billboard growth

As the digital billboard component of outdoor advertising percolates its way into the outdoor-advertising community, a few, critical, market drivers will continue to stimulate its growth. The cost of acquiring digital billboards continues to descend, making them more readily available for outdoor-advertising companies just getting started with digital billboards and for those who are expanding their existing, outdoor, electronic-media network.

Also, as media planners develop their clients' marketing campaigns, they'll see digital billboards as an important part of their advertising buy into regional and national markets. This, in turn, reinforces outdoor-advertising companies' strategies of building and expanding their already existing, digital-billboard networks.

As digital-billboard inventories continue to grow, many print billboard locations will be destined for structural conversions, a trend that will only accelerate as the economy improves. With more digital billboards appearing on roadsides, advertisers and media planners can position their messages in a new light and create a greater reach in connecting with the passing public. ■

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