

structurally
sound

SUNNY DISPOSITION



Photos: Peter Molick Photography



SOLAR PANELS HAVE long been attractive from an energy-saving standpoint, but they typically haven't been held in high regard for their aesthetics. More often than not, they are relegated to rooftop arrays, out of sight and out of mind.

Not so at NRG Stadium, home of the Houston Texans. The stadium's solar installation consists of 600 solar panels spread across the stadium for a total system size of 180 kW, with the structural elements being designed by DLR Group and Walter P Moore. The project is the result of close collaboration between DLR's engineering and architectural teams and energy provider NRG to support the latter's mission to get people to "think differently about energy."

NRG Stadium's original pedestrian bridge (constructed for its opening in 2002 as Reliant Stadium) is a steel truss arch that spans the main road in front of the stadium. The addition of new "stealth wings" (as dubbed by the design team) on each end of the bridge facilitated a unique entry point into the stadium while showing off the new addition of sustainable solar panels mounted on top. The flared wings play on the existing braced steel structure of the bridge and the braced roof structure of the stadium. The new structure dips down before curving back up to cantilever out in a sweeping flare using steel wide-flange beams rolled in both the hard way and the easy way by AISC Member Chicago Metal Rolled Products.

The weatherproof entry canopy in front of the stadium uses rolled HSS purlins that are seamlessly welded to create 200-ft-long undulating ribbons. These are splayed along a radiused HSS girder to create an hourglass shape to the canopy. The purlins cantilever 24 ft at each end to extend over the ticket booths in front of the Stadium, and the HSS14×14 "Y" columns tip the entire canopy 10° to provide an incline angle for the solar panels. ■