



Case Study Real Salt Lake Soccer Stadium

PROJECT SPECS

MBCI Products: PBR
 Location: Sandy, UT
 Color: Signature® 200 Polar White
 Solar Contractor: Auric Solar
 General Contractor: Custom Carport Designs

Primary owner of the Real Salt Lake Major League Soccer Team, Dell Loy Hansen decides to put solar carports on the parking lot of the Rio Tinto Stadium. Located in Sandy, Utah, a suburb of Salt Lake City, the solar installation is the largest privately-owned solar array in Utah and the fourth largest at a sports or entertainment facility in the US. It provides electricity equal to 73% of the stadium's total power needs - enough power to light and heat 284 homes for a calendar year - reducing the team's energy bills and carbon footprint. Hansen estimates that the stadium's new solar array, a 2020-kilowatt system consisting of 6,423 panels, will save the team \$300,000-\$350,000 per year. That savings also translates into a reduction in pollution and greenhouse gasses from fossil fuel combustion, equivalent to taking 450 cars off the road.

PROBLEM

On a clear day at noon in the temperature zone, there's about a kilowatt - 1000 watts - of energy falling on every square foot of open ground. A free kilowatt, if you could capture it. Of course, energy harvesting technology isn't totally efficient: most photovoltaic solar panels only output usable electricity equal to about 15% of the energy that falls on them. Even so, if you harvested the sunlight from an average parking space, 162 square feet, you could produce about 24 kilowatts. Generating that kind of energy without burning any fossil fuels could save some nice money, and reduce some nasty pollution.

If your solar panels were eight feet off the ground, you could park your car under them to keep it cool, too. And if you happened to own a large parking lot, and solar-paneled all the spaces, you'd have it "made," so to speak: a sizeable financial resource, a large environmental benefit and covered parking.

SOLUTION

The project, completed in the fall of 2015, was built by Custom Carport Designs, South Jordan, Utah, with solar panels supplied and installed by Auric Solar, West Valley City, Utah. It consists of a structural steel tubing frame supporting a roof system that shields the parking space against sun, rain and snow, and which supports the solar panels. The roof system - steel roofing panels and purlins - was supplied by MBCI.

Custom Carport Designs is a family-owned company with a 40-year history. Austin Day, second-generation owner and president, is not afraid to build to a higher standard. In fact, he credits the decades-long success of the company in part to putting 'a little extra' into their carports.

"We do some things differently," Day explains. "We use a heavier gauge beam. Carports here only require a 30-lb. snow load rating, but we built them for 60-lbs. Our concrete footings are 2' square x 3'6" deep, with rebar, and are rated for 110 mph wind. The structural steel we use is rectangular 4-in. x 8-in. tubing with a 1/4-in thick wall, provided by Triple-S Steel. Each pole weighs about 300 lbs. Also, our frame assembly is fully bolted to the sides of the posts, not the top."

The roof panels at Rio Tinto Stadium are MBCI's 26-gauge PBR panels with a Signature® 200 series Polar White finish. "I highly recommend the steel decking roof," notes Day, because of its ability to bear snow load and effectively shield the parking spaces from the weather. We get snow, which melts as temperatures go up to 70 degrees in the same day. Without a good roof ice would build up under the carport in the evening." To create strong support, the solar panels are bolted through to the purlins.

The carports were constructed during the soccer season, so work had to be staged, and on game days, the lots had to be cleared of all work materials. But the project was finished in six months and has made a real impact.

WHY MBCI?

MBCI provides customers quality metal products, superior service and competitive pricing. From a single manufacturing facility in 1976 to now the largest metal roof and wall panels' supplier in the nation, MBCI has grown tremendously with its customers' needs in mind. MBCI manufactures more than 90 different metal panel profiles, as well as performs meticulous testing and offers complete engineering and design capabilities, allowing MBCI to be capable and committed to supporting both the design and contractor communities from project conception through project completion.