

May 4, 2020

Aaron Benson – Mathy Construction Co.
Solar Connections, Inc.
6254 34th Ave. NW, Suite A
Rochester, MN 55901

RE: Habitat for Humanity - ReStore
3181 Berlin Drive, La Crosse, WI 54601



At your request, Krech Ojard & Associates, Inc. (KOA) has completed a structural review of the Habitat for Humanity – ReStore building for the above-referenced address in La Crosse, Wisconsin. Structural drawings and calculations from the original building were provided and also found from the original building designer. We understand the building owner has a desire to install a new solar panel system on the roof. Evan Berglund, PE, from KOA was able to visit the site in person on April 15th, 2020.

The original structural building drawings are dated March 16, 2006 by Ceco Building Systems from Mount Pleasant, Iowa and was built by Brickl Bros. Inc. based out of West Salem, Wisconsin for Decker's Floor-to-Ceiling store. The calculations from Ceco Building Systems is dated February 3, 2006, job number 11-B-39333. The calculations are clear in showing that the snow load used was in accordance with the 2002 Wisconsin IBC, and snow loads have not changed since that time. There are two rooftop units (RTUs) that are still on the building that were included in the original design. It is also clear that the collateral load used for design was 4 psf. This 4 psf is the load under which the overall distributed weight of the installed solar system must fall under.

Review of existing utilities that are installed and hung from the ceiling are primarily the sprinkler system and very intermittent electrical/lighting, both of which are sparse and well distributed and are estimated to be 2 psf. The Ironridge Engineering Report for this site dated February 27, 2020 shows a distributed average weight of 1.8 psf with attachment spacing of 4 ft.

In light of the information and our observations, the building appears to have adequate reserve capacity to support the solar electric system as long as no other roof loading is present and no additional loads are added in the future. However, there are areas to avoid that warrant adjusting your system layout. These areas include:

- purlins that support the existing rooftop units (only one near the building center may come into play),
- purlins that support the garage door, and
- purlins that support the roof-hung heating unit (near the SW corner, near the loading dock).

The panel layout should be adjusted accordingly to avoid loading these areas. It is also recommended to provide assured lines of connections over the main steel frame lines (every 25 ft.) since doing so will not load the roof purlins at all. Lastly, the owner should be notified and provided a copy of this report so it can be kept on-site so they know that no additional roof loading is allowed after installation of the solar rooftop system.

This work was completed with the degree of care and skill ordinarily exercised by similar design professionals in this location, at this time, under similar budgetary, time, and scope constraints. No warranty is implied. If you have any questions, please contact me at (715) 552-7374.

Respectfully Submitted,

Evan Berglund, PE