

PAE Engineering's Net-Zero HQ – The Living Building

PAE HQ is an internationally renowned net-zero, 5-year old building. Over 2000 architects and engineers visit every year to see the latest in building technology.

PAE has installed the DREAM Platform and the Super SkyBox, and is featuring the data collection of many systems including:



- Solar Edge solar inverter
- Schneider Electric MicroGrid Controller
- Battery Energy Storage System (BESS)
- LG Hydronic Floor Heating System
- Lochinvar (AO Smith) water heaters
- Automated Logic Building Management System
- Digital Lumens Lighting control system

The SkyCentrics Super SkyBox is extracting data from all of these systems in real time. The current value propositions are as follows:

1. Real-time data extraction to the Super SkyBox and SkyCentrics cloud DREAM platform
2. Providing data through REST API to PAE Engineers and other partners
3. Solar Panel optimization by 24 hour ahead prediction of weather and solar gain and on the energy of the: Whole Building, the battery, the Lochinvar water heaters, and the LG Hydronic Floor Heating System. The optimization focuses on maximizing the use of the solar generation and minimizing both grid electricity and . exporting to the grid
4. Providing SkyCentrics' Certified OpenADR 2.0b grid Virtual Top Node (VTN) and Virtual End Node (VEN) turning the building into a Grid-Interactive Efficient Building (GEB).
 - a. First demonstration for PGE (local utility) will be to FLEX the battery system.
5. Providing SkyCentrics AI enhanced virtual building engineering tools to PAE and partners for data extraction and real time engineering assistance. This was done by ingesting the manuals of all machines, equipment and systems in the building (added to the SkyCentrics Core Common MCP server) while also ingesting all submittals, and engineering documents and spreadsheets specific to the building (added to the private MCP server for the building, hosted by SkyCentrics) for answering specific questions about the building for PAE engineers and partners