

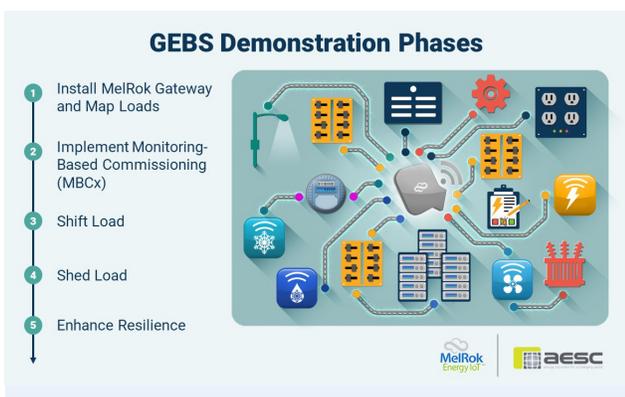
TECHNOLOGY OVERVIEW

MelRok's Energy IOT Touch (www.melrok.com) is a low-cost, OpenADR2.0B-compliant gateway that enables facility data gathering, fault detection, and bi-directional system control. GEB capabilities include energy optimization, load shed and load shift, and enhanced resilience. Ideal technology applications include buildings with the following characteristics:

- Medium commercial low-rise
- Existing Building Automation System (BAS)
- Utility demand charges, critical peak pricing, or variable TOU rates
- Engaged facility management staff
- Buildings with DERs

Demonstration Overview

Alternative Energy Systems Consulting (www.aesc-inc.com) will install the MelRok gateway, perform building retrocommissioning, and deploy a series of existing and new Python control algorithms (schedule based, predictive, and dynamic) to validate technology-enabled customer and grid benefits, including energy efficiency, demand cost savings through load shifting, and demand response (DR) benefits through load shedding.



After a solar and storage microgrid is installed, AESC will deploy additional load control tests, including under islanded conditions to validate incremental resilience enabled through load control.

What is GEB?

Grid-interactive Efficient Buildings (GEB) are energy-efficient buildings with smart technologies characterized by the active use of distributed energy resources (DERs) to optimize energy use for grid services, occupant needs and preferences, and cost reductions in a continuous and integrated way.

FIELD VALIDATION SITE



JCC Santa Ana Appellate Courthouse, [Coolcaesar](#), [CC BY-SA 4.0](#), via Wikimedia Commons

Judicial Council of California (JCC) Appellate Courthouse

- **Location:** Santa Ana, CA
- **Area:** 52,000 sq. ft.
- **Description:** Constructed in 2009, rooftop DX HVAC units serving VAV boxes with hot water reheat. Natural gas-fired boiler for reheat. Johnson Controls automation system.
- **Utility:** Southern California Edison; Rate: SCE TOU GS-3-E rate
- **DERs:** 82 kW rooftop PV and 120 kW/240 kWh battery energy storage system planned.
- **Expected GEB strategies:** RCx, load shift, load shed, enhanced resilience.

Measuring Success

- ▶ Establish baseline and counterfactual operation.
- ▶ Evaluate impacts on energy and cost savings, load shed, load shift, and resilience capacity.