



Clean Power Alliance Power Ready Program

Last edited on May 16, 2022

Calabasas Site Assessment Overview:
Calabasas City Hall + Founder's Hall

Address: 100 Civic Center Way, Calabasas, CA 91302

Meter Number: V349N-011907

Solar Size	270 kW
BESS Size	167kW / 667 kWh
Facility Age	2008
Facility Size	2,640 ft²
Critical Loads	Founder's Hall, Lights, Plug Loads, IT / Wifi

The Calabasas City Hall complex is just south of the 101 freeway, centrally located in the community. There are three buildings in this complex: City Hall to the west, the Library to the east, and a smaller Senior Center to the south.

The City Hall is already partially backed up by a generator. There is no backup power generation for the Library or the Senior Center. Inside the Library is a large space called Founder's Hall, which may serve as a community resource center during future grid outages.

Intended Resilience

In the event of a grid outage, the Power Ready goal is to enable Founder's Hall (in the library) to serve as a community resource center. Top priorities to prepare Founder's Hall include: plug loads, lighting, all servers, internet equipment, and AV equipment. Ideally, the city would also

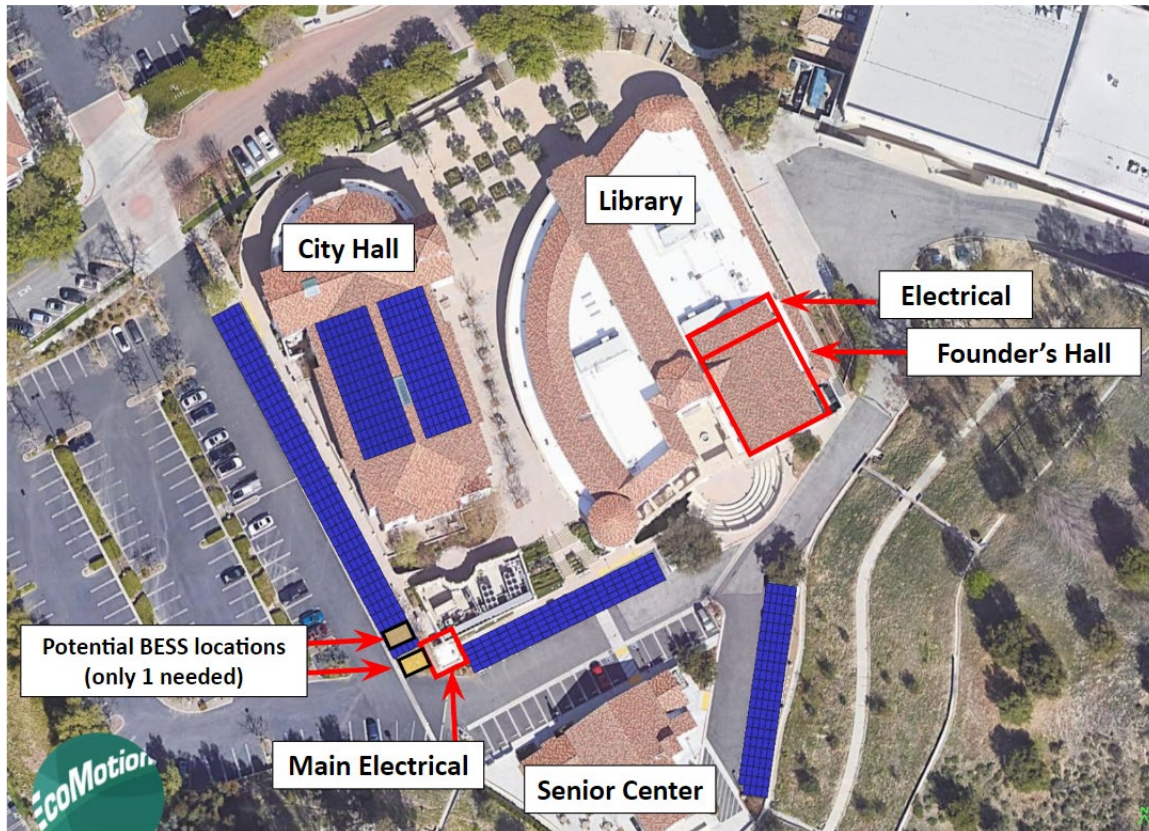
like to have some HVAC backed up, to provide limited cooling in the single room of Founder's Hall.

Solar System Size and Location

The carports combine to equal approximately 165 kW of PV panels. The rooftop array is approximately 105 kW. Together, they equal 270 kW, which is projected to generate 430,000kWh annually. The annual usage of the entire campus is 900,000 kWh, but the annual usage of Founder's Hall is but a fraction of this. The entire campus is on a single meter.

The addition of the 105 kW rooftop array yields an increased annual production of about 155,000 kWh, which represents over a 50% increase in annual energy production compared to the carports alone with no rooftop solar. This is desirable from the perspective of resilience, as it means there will be more energy available on average to recharge the battery during a grid outage, extending the duration of off-grid functionality for all loads connected to the solar and battery (i.e., the Founder's Hall loads).

The Helioscope design sites solar in various areas of the parking lot, in three long, single-row carports. The large parking lot to the west is not owned by the city, so solar was not feasible there. The East-facing area of the City Hall roof was selected as the best location for solar due to having the longest exposure to the sun in a given day. The west-facing roof is also slightly north facing, and thus yields less energy per solar panel.



BESS Size and Location

Our initial economic and resilience optimization suggests an ideal battery size of approximately 167 kW/ 667 kWh.

The facility has an annual peak kW demand of 306 kW; through SGIP, a battery with 4-hour discharge may be sized up to 306 kW/ 1224 kWh. The Power Ready program design stipulates that approximately 25% of BESS capacity be maintained as a “Reserve Capacity” that is always ready for an unplanned outage. The remaining 75% of BESS capacity may be used for daily energy management services, notably energy arbitrage and peak demand clipping.

The ideal BESS location is in the parking lot, near the main electrical room at the southwest corner of the City Hall building (see map).

Electrical Infrastructure

The main electrical meter and switchboard (1600 amp, 277/480 V) are located at the southwest corner of the city hall, in an independent electrical room, at the bottom of a set of stairs with

external access from the parking lot. From here, electricity is distributed to secondary switchboards and panels in all three buildings on the campus.

The main electrical room for the Library, including Founder's Hall, is located near the south end of the library. This electrical room contains:

- MS1 (600 amps, 477/208V)
- Panel HA1 high voltage lighting panel (477/208) library lighting and exterior lighting
- Transformer T-1
- Distribution Panel DP1 (120/208)
- Panel LA1, (120/208) interior lighting and receptacles and AV equipment
- Panel LB1 (120/208V) kitchen equipment, computers, lighting
- Panel LC1 (120/208V) computer and plug loads

The microgrid should back up everything downstream of DP1 (including Panels LA1, LB1, and LC1). Or alternatively, the microgrid could backup up MS1 and everything downstream in order to incorporate some HVAC loads.

All electrical equipment is in excellent condition, with clear access and good circuit labeling.