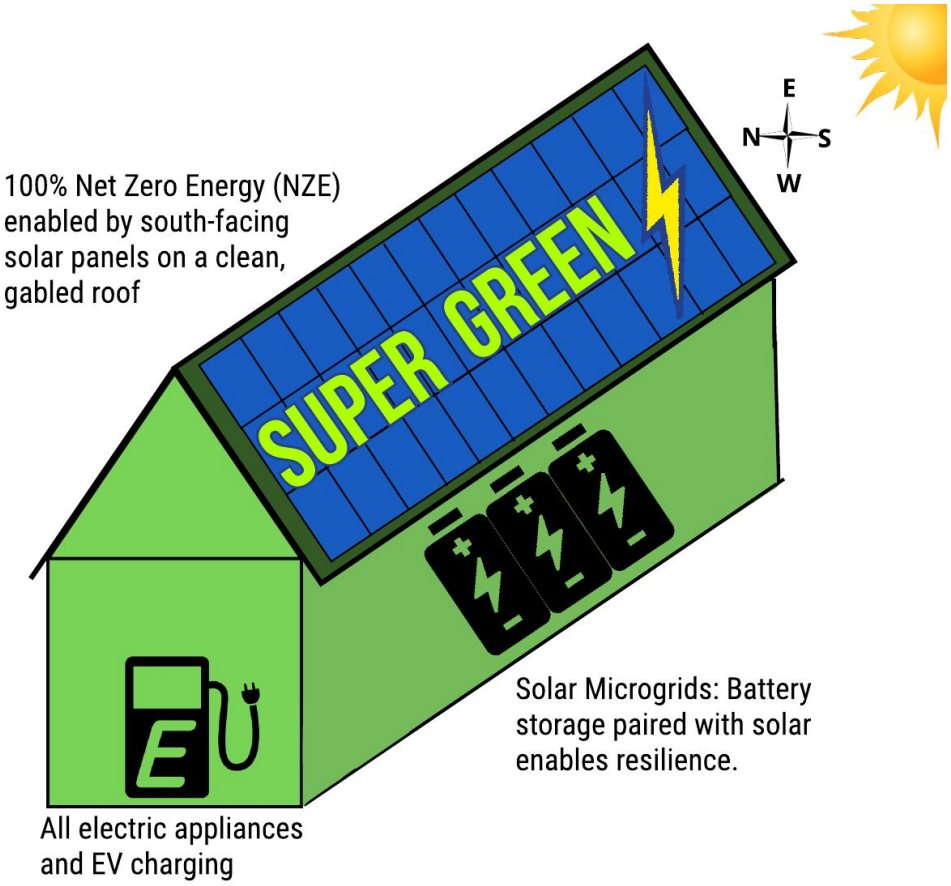
Clean Coalition

Green Rebuild Initiative (GRI)

Facilitating 100% Electric, Net Zero Energy Rebuilding with full Solar Microgrid resilience

Optimizing the trifecta of Economic, Environmental, and Resilience benefits

Super Green



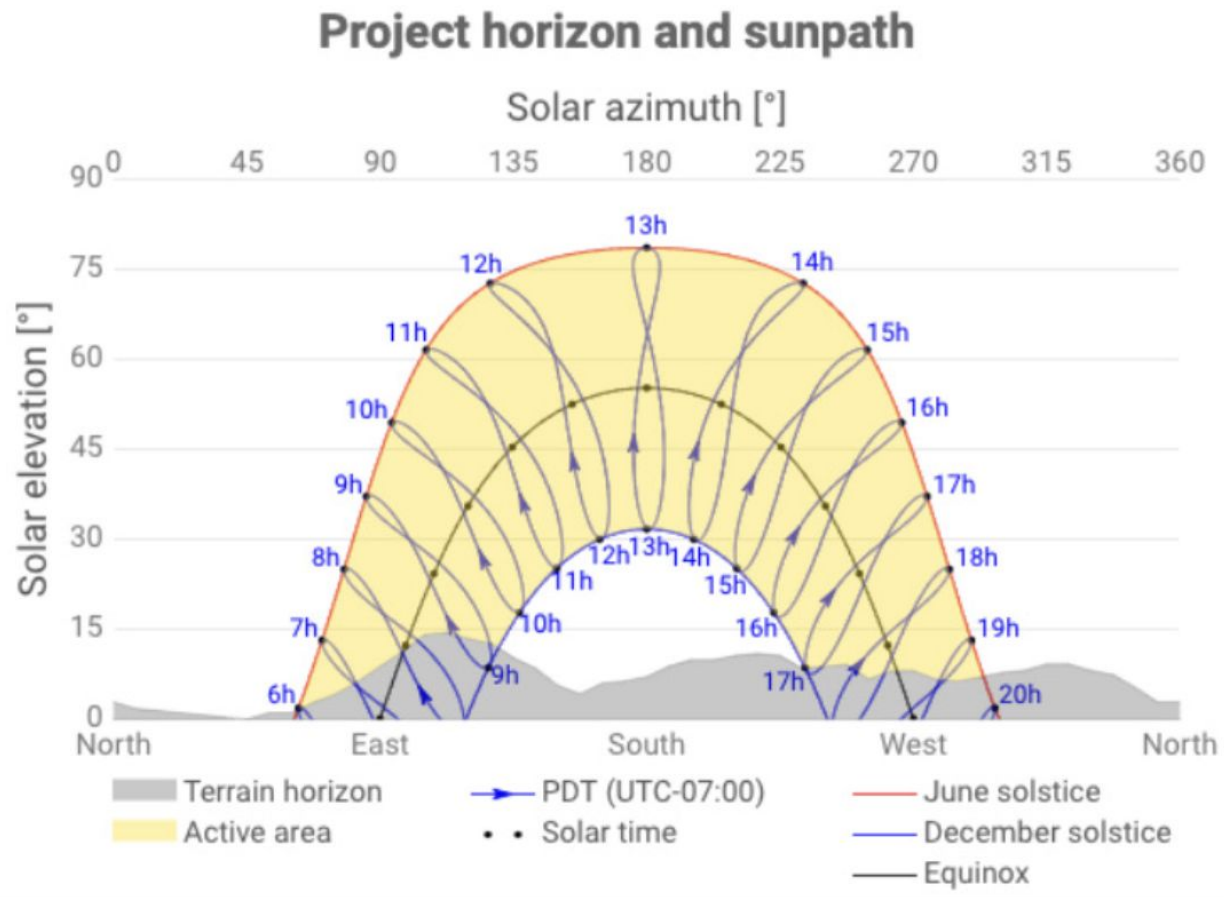
What is ”super green”?

1. 100% electric (no gas service to the home and ideally be an all-EV household).

2. Hosts enough solar to achieve Net Zero Energy (will require about 35 solar panels for a typical 2,500 square foot all-electric home with about 10,000 miles of home EV charging per year).

3. Includes a Solar Microgrid that combines the solar to a battery.

The importance of south-facing panels:



	Energy input kWh/m²	Energy loss/gain kWh/m²	Energy PVOUT specific kWh/kWp	Energy loss/gain kWh/kWp	Energy loss %
Global horizontal irradiation (GHI) theoretical	**2106.9**				
Horizon shading (terrain + horizon objects)	2095.8	-11.1			-0.5
Global horizontal irradiation site specific	**2095.8**	**-11.1**			**-0.5**

GRI Mission & Plan

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Mission:

To establish a handful of super green rebuild designs for property owners that lost their homes in the recent LA Fires, with the intention that these designs will be widely publicized to facilitate other property owners in Pacific Palisades, Altadena, and way beyond to rebuild in a super green fashion. Super green designs are 100% electric and Net Zero Energy (NZE), with Solar Microgrids that ensure an unparalleled trifecta of economic, environmental, and resilience benefits.

Plan:

1) Identify a handful of property owners who are committed to rebuilding in a super green fashion.
2) Establish initial renderings and identify recommended appliances.
3) Perform load analysis and size solar & storage for meeting NZE and resilience preferences.
4) Coordinate with a Tiger Team of designers, architects, and builders to facilitate comprehensive super green rebuilding designs – and subsequent construction plans for the new homes.
5) Publicize the designs widely:
    a) Media (eg: Sammy Roth @ LA Times)
    b) Collaborations with other parties like Rick Caruso, Mayor Bass and Steve Soboroff, Green Building Council, Direct Relief, and others.
    c) Webinars to educate everybody about the GRI's super green showcase designs.

GRI Mission & Plan

The economics associated with Super Green buildings are very attractive. A typical 1,500sf Super Green home will need about 12kW of solar to achieve Net Zero Energy (NZE), requiring about 30 standard-sized solar panels on about 600sf of clean (no protrusions) south-facing roof surface.

While the upfront cost of this 1,500sf Super Green home will be about $60k higher to build than a standard 1,500sf home, about one-third of that cost can be recovered via tax benefits, rebates, and other incentives -- and the net investment will generally earn a 10%+ tax-free, risk-free return-on-investment (ROI) via reduced energy bills. There is no other risk-free investment that earns such a high ROI, which is equivalent to a long-term certificate-of-deposit (CD) that earns a 15%+ annual-percentage-rate (APR).

Confirmed Collaborators

Confirmed collaborators:

- **John Bello, P.E.,** President at Bello Global Consulting.
- **Fallon Vaughan**, Developer that built 10 super green homes in Paradise, CA following the wildfire disaster there (Nov 8, 2018).
- **Dennis Allen**, Founder of Allen Construction, a leading green building home builder.
- **Tim Hade**, Co-Founder of Scale Microgrids, a leading solar-driven microgrid solutions provider.
- **Lauren Michele,** Owner & Sustainability Consultant, California Home Designs.
- **Ellen Bildsten,** Architect and member of the American Institute of Architects.
- **Elisa Garcia,** Architect with Garcia Architects.
- **Jonathan Port**, Founder and President of Permacity Foundation.
- **Altadena Collective,** A group of architects and designers in Altadena who want to work together to get more people to build back, keep the character of Altadena, and use collective power to create more affordable options.
- **Best Techs Contracting,** Los Angeles and Orange County based contractor.

Target Collaborators

Target collaborators:

- **Rick Caruso**, Leading Steadfast LA, a non-profit focused on accelerating the rebuilding efforts in Palisades.
- **Karen Bass** and **Steve Soboroff**, Karen Bass appointed Steve Soboroff to lead LAs recovery and expedite rebuilding strategies.
- **Steve Glenn**, CEO, Plant Prefab, Pioneering sustainable and efficient housing solutions.
- **Colin Mangham**, Director of Innovation, USGBC California, driving advancements in green building practices.
- **Vamsi Kotla**, CEO, ReMo Homes, Zero-Carbon Steel Modular Homes (won $3 million from the California Energy Commission Grant)
- **Direct Relief**, leading disaster response organization.
- **Habitat for Humanity,** nonprofit organization that helps families build and improve places to call home.
- **US Green Building Council,** nonprofit that promotes sustainability in building design, construction, and operation.
- **California Insurance Commission**
- and more…

Electric Appliances

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Heating & Cooling

- **Heat Pump HVAC System** – Provides both heating and cooling efficiently.
- **Electric Radiant Floor Heating** – Optional for additional comfort.
- **Energy Recovery Ventilator (ERV) or Heat Recovery Ventilator (HRV)** – Improves indoor air quality and efficiency.
- **Ceiling Fans** – Helps reduce HVAC energy use.

Water Heating

- **Heat Pump Water Heater** – Highly efficient alternative to gas water heaters for domestic water.
- **Pool & Jacuzzi Heat Pumps** – Highly efficient alternative to gas heating.

Kitchen Appliances

- **Induction Cooktop & Stove** – More efficient and safer than traditional electric coil or gas stoves.
- **Electric Oven** – Convection or standard electric oven.
- **Microwave** – A quick and efficient cooking option.
- **Electric Toaster Oven/Air Fryer** – Helps reduce energy use compared to a full oven.
- **Electric Coffee Maker/Kettle** – For boiling water efficiently.
- **Electric Refrigerator & Freezer** – ENERGY STAR-rated for efficiency.
- **Dishwasher** – Preferably an energy-efficient model.
- **Garbage Disposal** – If needed, an electric-powered option.

Electric Appliances

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Laundry & Cleaning

- **Heat Pump Clothes Dryer** – Uses less energy than a conventional electric dryer.
- **Electric Washer** – ENERGY STAR-rated front-load preferred.

Lighting & Power

- **LED Lighting** – High-efficiency lighting throughout the home.
- **Smart Thermostat** – Helps optimize heating/cooling energy use.
- **Smart Power Strips & Outlets** – Helps prevent phantom energy loads.

Renewable Energy & Storage (For Energy Independence)

- **Solar Panels (Photovoltaic System)** – Generates electricity from the sun.
- **Home Battery Storage System** – Stores solar energy for nighttime or outages (e.g., Tesla Powerwall, Enphase, LG Chem).

Other Home Systems

- **Electric Car Charger (EV Charger)** – Level 2 charger for electric vehicles.
- **Electric Lawn Equipment** – Mower, trimmer, blower (battery or corded).
- **Electric Fireplace (Optional)** – Alternative to a gas fireplace.
- **Electric Water Pumps** – If the home has a well or irrigation system.

Meet the Team Leading the GPC

ALLEN CONSTRUCTION

Craig Lewis

- Founder of Clean Coalition, a nonprofit organization dedicated to accelerating the transition to clean energy and resilient communities.

Lollie Kuhl

- Architectural designer focused on empowering homeowners with actionable guidance for rebuilding sustainably.

Haley Weinstein

- Communications lead at Clean Coalition.

Fallon Vaughan

- Developer that built 10 super green homes in Paradise, CA following the wildfire disaster there in late-2018.

John Bello, P.E

- President at Bello Global Consulting.

Dennis Allen

- A pioneer in sustainable architecture and construction with decades of experience designing energy-efficient homes.
- Recognized for integrating green technologies into high-performance buildings.

Tim Hade

- A pioneer in Solar Microgrids and backup power solutions more generally.