



San Diego's first off-grid Passive House has its very own wind turbine

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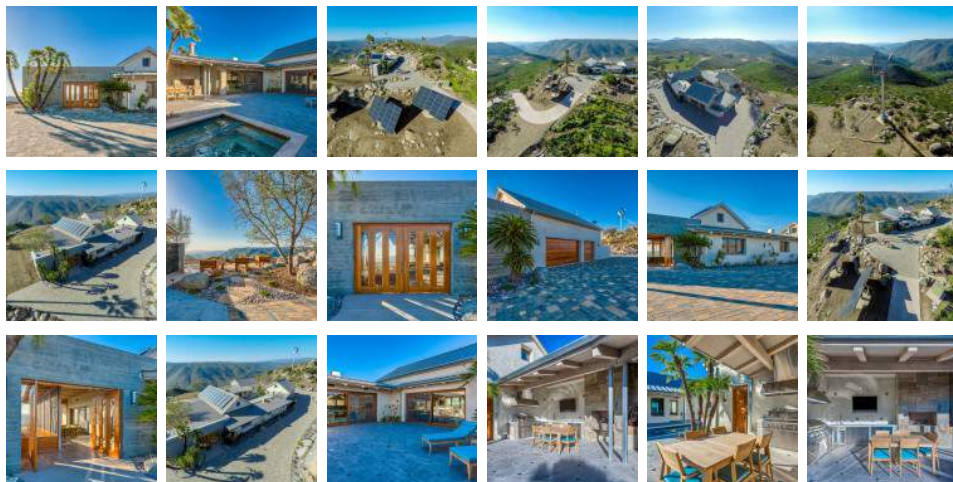
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by Lidija Grozdanic

VIEW SLIDESHOW

San Diego's first certified Passive House, which contains an astounding mixture of sustainable features, gets all its energy from a solar array and a 17-foot **wind turbine**. San Diego contractor **Alliance Green Builder** created a system that would take the building off-grid and earn Casa Aquila a **LEED Platinum** certification. Combined with thermal efficient heat recovery, top-notch insulation and plenty of smart features, the home is a truly impressive example of green living.





The project is located on a hilltop in Ramona, California, where temperatures are sometimes below freezing in the winter and often in excess of 100-degrees in the summer. This desert-like climate called for a solution that would include high insulation and an air-tight envelope. A **heat recovery ventilation system** provides optimal indoor air quality and maintains thermal efficiency.



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The most impressive aspect of the home is the sophisticated energy system, which is expected to eventually take the home off-grid. Currently, the house generates **renewable energy** and runs off a battery system, utilizing the grid only for back-up energy. Its prominent location is one of the best sites in San Diego County for harvesting wind-generated energy. A 2.3 kW, 17-foot high wind turbine was installed on a hill just above the home and is expected to generate energy almost every day in a year for a minimum of 12 hours a day. Large dual-axis trackers outfitted with 24 **solar panels** are expected to produce the bulk of the energy produced on site-around 44,000 kWh per year.



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Inside the house, various **energy-efficient appliances** such as an induction cooktop and a heat pump dryer ensure a lower than average energy consumption. High-efficacy **LED lighting** is used throughout, with several control and monitoring systems providing data for energy use and generation, as well as water resource levels and water consumption.

+ Alliance Green Builder

+ Casa Aquila

Photos via KNB Associates

