PechaKucha

ReNEWable Home

CR Herro
Meritage Homes
renewable
living home
Intentions:

• Optimize Multigenerational Needs
• Improve Health
• Improve Disaster Resistance
• Optimize Energy Efficiency
• Implement Advanced Energy Management
• Improve ‘Buildability’

• MAINTAIN FIRST COST AND TRADITIONAL AESTHETICS
Multigenerational Design

- Independent Grandparent suite off Kitchen
- Master Retreat
- Independent 2° Access
Multigenerational Design

- Independent Boomerang Suite
- Common / Private Areas
- 3 homes in one
Improve Health

Homes to the Power of ZERO

A Symbol of Excellence

HEALTHFUL ENVIRONMENT

COMFORT PLUS

ADVANCED TECHNOLOGY

ULTRA EFFICIENT

QUALITY BUILT

DURABILITY

What is the DOE Zero Energy Ready Home™ Label?

It is a Symbol of Excellence for energy savings, comfort, health, quality, and durability met by a select group of leading builders meeting U.S. Department of Energy Guidelines.

What is a Zero Energy Ready Home?

It is a high-performance home so energy efficient, all or most annual energy consumption can be offset with renewable energy. In other words, it is the Home of the Future.
Improve Health

• Indoor airPLUS
  – Supply ventilation
  – High efficiency filtration
  – Low VOC
  – ACH50 <2

• Smart Ventilation

• Dehumidifying humidifier

• Mildew Resistant Paint (SWP)

• VOC catalytic reduction (Air Renew)
Disaster Resistance

- Stronger
- More durable
- Precision engineered
- Energy efficient
- Rot/Mold/Termite-proof
- Cleaner, Healthier, Safer
- Quieter
Disaster Resistance
Energy Efficiency

- Insulated Slab / Slab Edge
- Insulated Concrete
- Low E Windows
- UV Reflective Roof
- Multihead Variable Flow Minisplits
- Dehumidifying ventilation
- Heat Pump water heater
- EE Appliances / LED lights
- Home Automation
Energy Efficiency

Total Costs

Variable Costs

Fixed Costs

$ $ Units
Energy Management

SCE Residential Peak Load Shift
Impact of 10% PV Generation

Source Data: SCE, NREL
Energy Management

1. Smart ventilation (off peak)
2. Isolated Thermal mass / phase change
3. Thermal storage (heatpump HVAC precool off peak)
4. Low solar heat gain (reflective / vented cladding materials)
5. Smart appliances
6. Large hot water storage w/ heat pump.
7. West facing solar.
Energy Management

• The number of things connected to the Internet exceeds the number of people on Earth. By 2020, there will be 50 billion connected devices.
Buildability
Buildability
Buildability
# Buildability

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**NOTE:** Embodied energy values based on several international sources - local values may vary.
THANK YOU!

CR Herro
VP of Innovation