

• BEYOND CAL-GREEN •  
Cost Effective  
Zero-Net Energy Homes

**Bob Massaro, Founder and CEO**  
**The Healthy Building Companies • Thriving Communities**  
**Napa, California**

**BayREN September Form 2016**

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Presenting within the context  
of our projects that are  
Zero Net Energy  
and  
Ultra Low Water Consuming

...

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WHAT WE DO

HOW WE ARE DIFFERENT

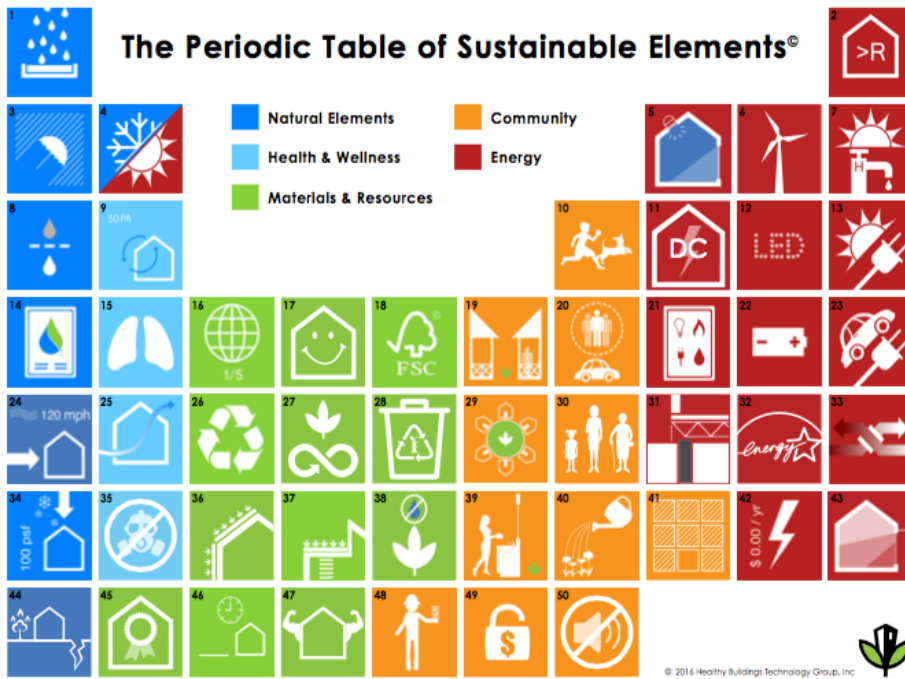
WHY WE ARE COST EFFECTIVE

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THRIVING  
COMMUNITIES

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## Application of our Sustainable Elements **MULTI-FAMILY**



## Application of our Sustainable Elements **MULTI-FAMILY**



45 Townhomes - Napa 2006

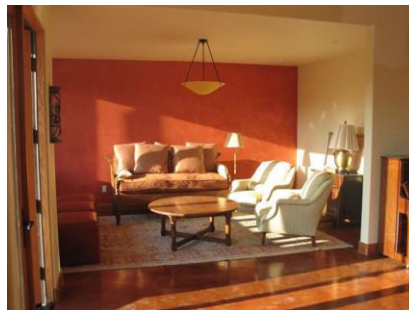


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## Application of our Sustainable Elements **SINGLE-FAMILY**



Custom Home – Sonoma 2007



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## Application of our Sustainable Elements **STUDENT HOUSING**



Dormitory (61 Students)  
St. Helena 2010



## Application of our Sustainable Elements **SUPPORTIVE HOUSING**

Supportive Housing , Napa 2012



## Application of our Sustainable Elements **CASE STUDY HOMES (Spec)**



Showcase Homes  
2013 - Napa



## Application of our Sustainable Elements **MINI-OHOMES**



# Raising the bar – Introducing Three New Projects



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# Harvest Village 11 New ZNE Homes



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# Harvest Village



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# Huntley Square A MiniOHome Village (575 S.F.)



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## Napa Creek Village

Targeted to be the Greenest  
Multi-Family Project in the U.S.



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## Napa Creek Village 48 Rental Condos • Napa



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## Looking at these projects through 3 Lenses



1. Our Design Principles
2. Why we are so Cost Effective.
3. Our 4 “Value Metrics”

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## #1 - Create and Enliven Community



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## #2 - Reduce our Carbon Footprint



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## #3 - Provide Healthy Indoor Environments



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## #4 - Save every drop of water we can!



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## #5 - Build beautiful places people will thrive in.



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## Our Cost Effectiveness Equation

Smarter

+

Faster

=

Greener & Healthier

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## OTechnology Advanced Steel Panelization



healthy  
BUILDINGS  
TECHNOLOGY GROUP

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# The Offsite Process



**TECHNOLOGY IS NOT – MODULAR, PREFAB, MOBILE HOMES, TRAILERS...**



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# The Onsite Process



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## ANY APPLICATION TO 4 STORIES

Multi - Family



Single Family



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## Money saved from OTechnology is used to pay for...

- Renewable Energy
- Grey Water Systems
- Electric Vehicle Charging Stations
- Living Walls
- Community Gardens....

... and other features that improve the **beauty** of the projects and the **quality of life** for our residents.

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BUILD IT GREEN Confirms –  
NCV among the greenest of 40,000 projects  
they have ever evaluated.



Annual energy savings equivalent to **3,472,072** lightbulbs.



Annual water savings equivalent to **30,371** bathtubs.



One-time overall carbon emissions avoided equivalent to taking **11,646** cars off the road.



Annual overall carbon emissions avoided equivalent to taking **42** cars off the road.



Annual savings of solid waste diverted from landfills equivalent to filling **345** trash cans.

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## Preliminary LEED Analysis Napa Creek Village

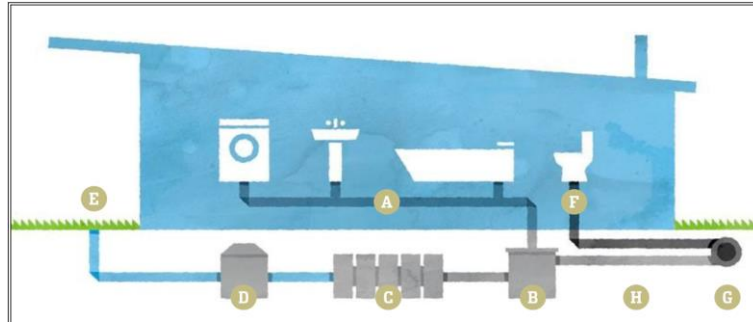
Phase	Projected	Possible
Innovation & Design Process	10	11
Location & Linkages	10	10
Sustainable Sites	21	22
Water Efficiency	15	15
Energy and Atmosphere	20	38
Materials & Resources	15	16
Indoor Environmental Quality	17	21
Awareness & Education	3	3
Total	<b>111</b>	136

**Upper Level LEED Platinum!**

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## Grey water system



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## Grey Water

- Showers only – Too much water otherwise.
- Increased water consumption of plants.
- NCV - First MFR project in the North Bay with G.W. System
- No Garbage Disposals – Encourage composting
- Sanitation District & Effluent

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## NO Natural Gas

- 100% Electric (heat pumps, HP water heaters, Induction cooking)



- Any excess plug loads covered by Marin Clean Energy 100% Clean Energy

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## Re-examining Planning Codes \*Pocket Neighborhoods



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# Napa Creek Village



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## Our Success Metrics- Blower Door Tests

1230 Darling St., Napa, CA 94558	Main House	Cottage
Square Footage	1,260 ft <sup>2</sup>	640 ft <sup>2</sup>
Volume of House	10,710 ft <sup>3</sup>	5,440 ft <sup>3</sup>
Total Surface Area	3,735.5 ft <sup>2</sup>	2,142 ft <sup>2</sup>
Blower Door Results @ FINAL	366cfm @ 50Pa	124cfm @ 50Pa
ACH@50 (air changes/hr)	2.05 ACH50	1.37 ACH50
ACHnat (air changes/hr)	0.102 ACHn	0.068 ACHn

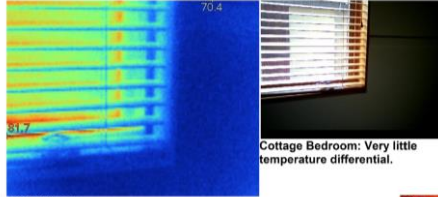
Main House and Cottage compared to other Standards

Program	Standard	Main House	Cottage
Title 24 Compliance	3 SLA	1.10 SLA	0.73 SLA
Energy Star V.3	≤ 4.0 ACH @ 50Pa	2.05 ACH @ 50Pa	1.37 ACH @ 50Pa
Passive House	≤ 0.60 @ 50Pa	2.05 ACH @ 50Pa	1.37 ACH @ 50Pa

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# Our Success Metrics – Infra-Red Images

## THERMAL IMAGING PICTURES



Cottage Bedroom: Very little temperature differential.

IR000005.IS2  
7/16/2013 12:51:25 AM

### Main Image Markers

Name	Temperature
Hot	81.7 F
Cold	70.4 F



Cottage Side Door: No air leakage from around weatherstripping.

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7/16/2013 12:48:05 AM

### Main Image Markers

Name	Temperature	Background
Hot	78.0 F	71.6 F
Cold	69.4 F	71.6 F

# Our Success Metrics – Awards

LEED Gold



LEED Gold



Valley Oaks Villas was identified as one of the **Top Three Green Neighborhoods in the North Bay** by Solano Magazine, April/May 2008.



## Our Best Success Metrics – Happy Clients

**"Comfortable and Wonderfully Quiet"**  
10/29/12 – Randy and Mary Allana

"The space has been **given considerable thought. You can feel the attention to detail** and it is appreciated by all who enter."

01/12/13 Tahlia & Sam

"A definite WOW experience. **Made me feel so GOOD about the environment -- that everything is constructed to support Mother Earth** and her populace. I will spread the word OHome."

11/29/12 Anne

**"The OHome continues to amaze.** Great use of space, good concepts. The O Home is a **wonderful place to relax, reflect, and refresh.**"

02/14/13 Lisa

"We were **super impressed with all the sustainability elements**

04/21/13 Julie and Todd

**"WOW - is the word for the O Home.** What a great modern space, great light, great location, a great feel all around. We loved staying here. **Lara's allergies - sneezing - didn't affect her once while in the OHome. She really appreciates good, clean, dust-free air!**"

01/30/13 Tony & Larq

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## High-Performance Housing that is affordable for all

### Our Project Mix

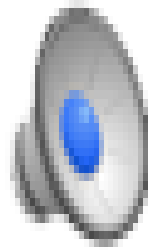
**Market Rate 50%**

**Workforce 25%**

**Affordable (Deed Restricted) 15%**

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An Impact Investment needs balance to be successful for people and the planet.



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## Our Goal

**To modify the built environment to....**

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# Change the World!



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# Thank You!

Questions?



**HEALTHY  
BUILDINGS**



**THRIVING  
COMMUNITIES**

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