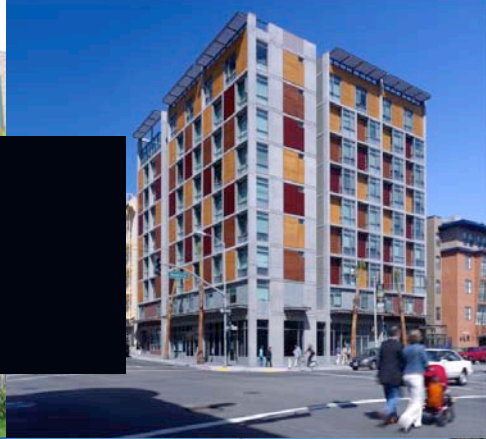
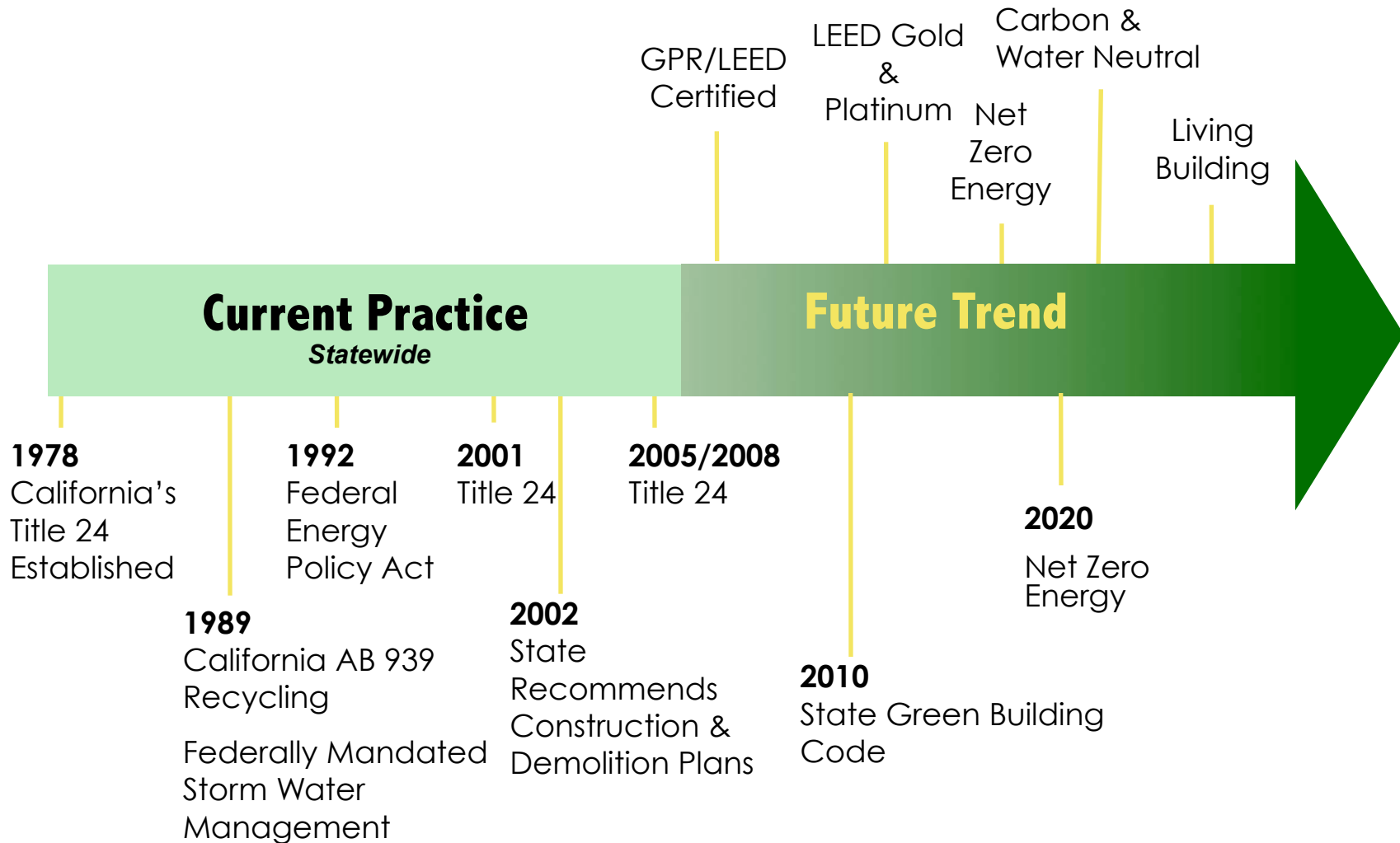


Green Incentives and Programs



Trends in Green Building

Green Building Related to Local, State & Federal Regulations



How Does Green Fit Your Mission?

“foster the establishment of communities that are safe, decent, and affordable...”

“...provide housing and services in order to strengthen communities...”

“...open new doors in people’s lives through responsible design, development, and operation of service-enhanced affordable housing.”

“...create stable, vibrant and healthy communities by developing, financing and operating affordable, program-enriched housing...”

“...to create and strengthen healthy communities through the provision of quality, affordable, service-enriched housing...”

Green + Affordable \Rightarrow Sustainability

EQUITY

ECONOMICS

ENVIRONMENT

Affordable Housing Provides

Safe, decent homes
Social services & programs

Economic stability
An opportunity for all to live in a community

Reduced air pollution and carbon emissions
Increased health benefits

Green Building Adds

Healthier indoor spaces, important for children & seniors
Improved public health by encouraging walking/biking
Reduced health risks for construction & maintenance workers

Lower utility costs, allowing spending to shift toward higher-priority items (e.g., education, healthcare, equity)
Decreased O&M costs for the developer/operator, allowing more units or services to be provided

Efficient land use through brownfield/infill redevelopment and compact design
Reduced needs for natural resources through passive heating/cooling strategies and recycled materials
Climate change mitigation through energy efficiency and renewable energy

So Where Are We Now?

1. Unfunded Mandate

- **(i.e. Code or Expectation)**

2. Incentive Programs

- **Can pay for the mandate**

3. Certifications Programs

- **Can be and/or pay for the mandate**

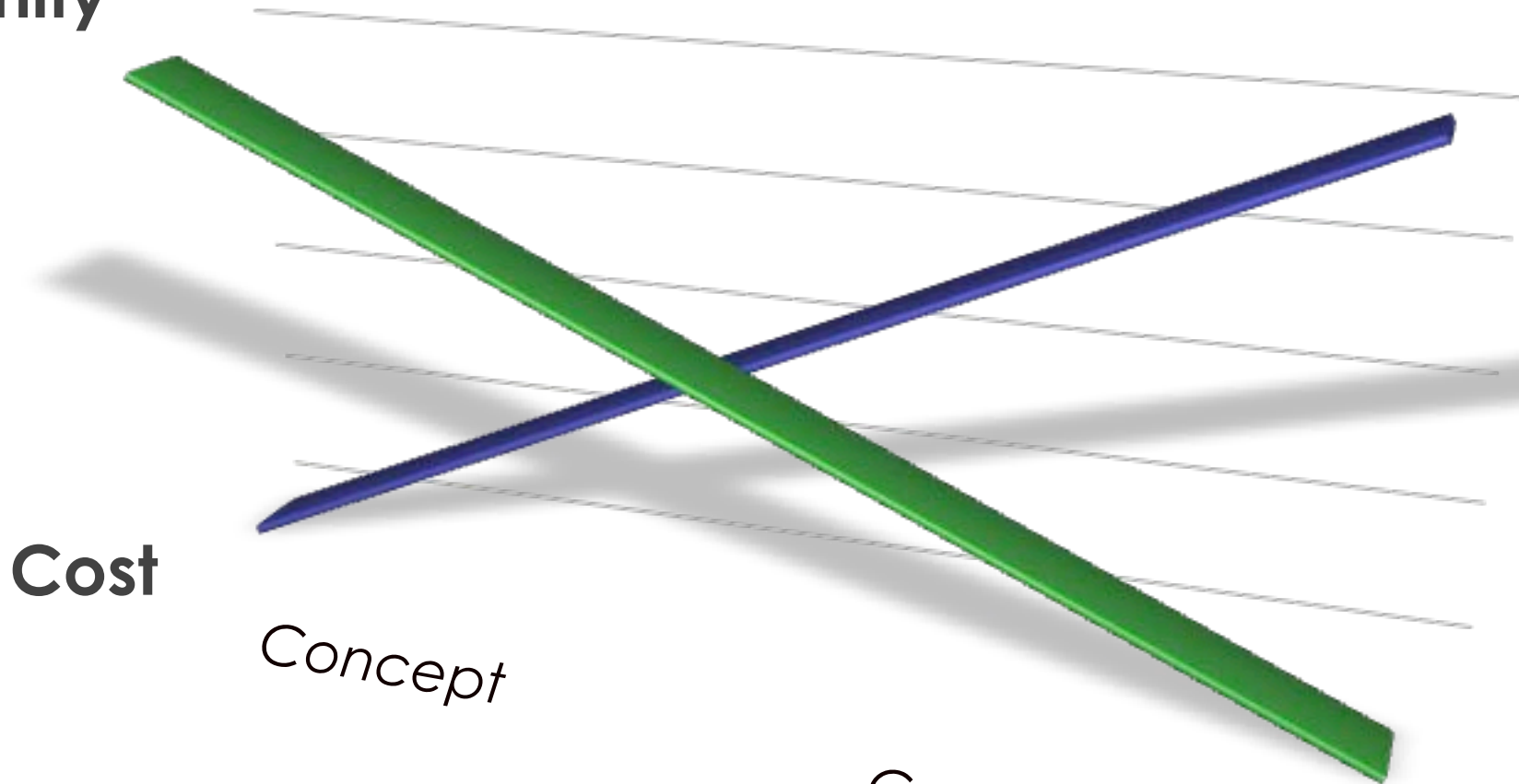
Start Early!

Opportunity

Cost

Concept

Construction



15% Better than Title-24

Certificate Of Compliance : Residential			(Part 1 of 4)	CF-1R							
Energy Calc Co. <small>Documentation Author</small>			Date: 8/16/2007								
EnergyPro <small>Compliance Method</small>			CA Climate Zone 02 <small>Climate Zone</small>								
			Building Permit # _____ Plan Check/Date _____ Field Check/Date _____								
TDV (kBtu/sf-yr)	Standard Design	Proposed Design	Compliance Margin								
Space Heating	13.64	10.83	2.81								
Space Cooling	7.16	3.95	3.21								
Fans	1.79	1.25	0.54								
Domestic Hot Water	18.11	15.91	2.20								
Pumps	0.00	0.00	0.00								
Totals	40.70	31.93	8.77								
Percent better than Standard:			21.5%								
BUILDING COMPLIES - HERS VERIFICATION REQUIRED											
Building Type: <input type="checkbox"/> Single Family <input type="checkbox"/> Addition <input checked="" type="checkbox"/> Multi Family <input type="checkbox"/> Existing + Add/Alt		Total Conditioned Floor Area: 4,197 ft ² Existing Floor Area: n/a ft ² Raised Floor Area: 0 ft ² Slab on Grade Area: 2,607 ft ² Average Ceiling Height: 8.0 ft Number of Dwelling Units: 4.00 Number of Stories: 2									
Building Front Orientation: (S) 170 deg Fuel Type: Natural Gas											
Fenestration: Area: 620 ft ² Avg. U: 0.38 Ratio: 14.8% Avg. SHGC: 0.35											
BUILDING ZONE INFORMATION											
Zone Name	Floor Area	Volume	# of Units	Zone Type	Thermostat Type	Vent Hgt.	Vent Area				
Res HVAC	4,197	33,574	4.00	Conditioned	Setback	8	n/a				
OPAQUE SURFACES											
Type	Frame	Area	U-Fac.	Insulation Cav.	Act. Cont.	Azm.	Tilt	Gains Y / N	Condition Status	JA IV Reference	Location / Comments
Roof	Wood	2,438	0.032	R-30	R-0.0	170	0	<input checked="" type="checkbox"/> <input type="checkbox"/>	New	01-A7	Residence

Multifamily New Homes Program

High-rise (> 3 stories) + **Low-rise** (\leq 3 stories)

Performance Incentives exceed T-24 by 15%

- Developer – \$150/unit – \$200/unit
- HERS Rater - \$60/unit
- Energy Consultant - \$50/unit

Appliance Incentives for ENERGY STAR®

- Dishwashers, Refrigerators, Clothes Washers

Free Design Assistance

Additional Program coordination

Administered by HMG in PG&E Territory

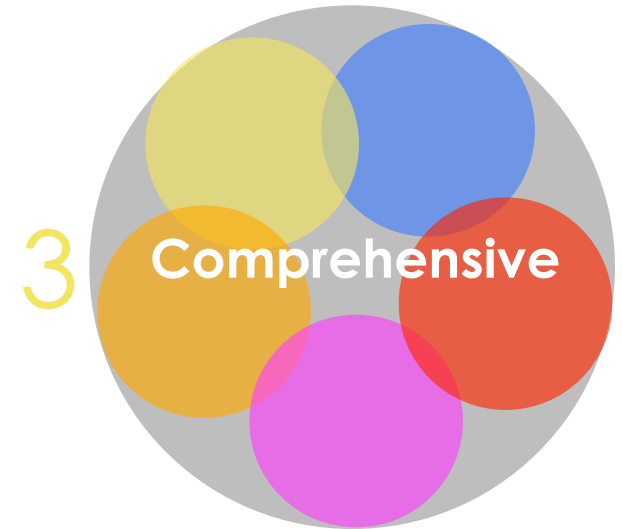
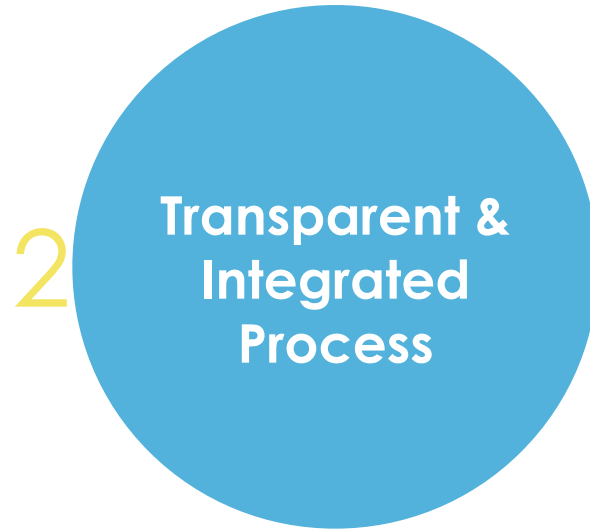


CALIFORNIA MULTIFAMILY
NEW HOMES PROGRAM

New Solar Homes Partnership

- **Special Incentive for Affordable Housing**
 - **\$3.50/watt for solar systems on residential units**
 - **\$3.30/watt for solar systems servicing common areas**
- **Requires 15% better than T-24**
- **Incentive levels decline to zero over 10 years as megawatt goals achieved**
- **9% TCAC Project**
 - **Common Area System at no first cost/Units Possible**
- **4% TCAC Project**
 - **Common Area System with no cost debt/Units Difficult**
- **Administered by PG&E**

Rating System Components

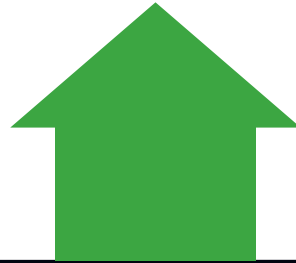


Using Ratings Systems



State Funding Requirements

Using Ratings Systems

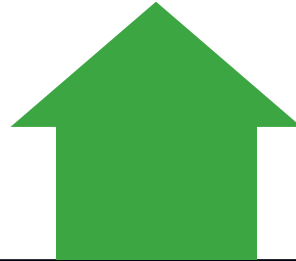


15% Better than T-24/Energy Star Homes

State Funding Requirements

QuickTime™ and a
TFF (Uncompressed) decompressor
are needed to see this picture.

Using Ratings Systems



Certification Programs

Independent Certification

Points

Integrated Design

3rd Party Verification

Prerequisites



Energy Star Homes

QuickTime™ and a TFF (Uncompressed) decompressor are needed to see this picture.

State Funding Requirements

Green Building Rating Systems



Green Communities

- ⑩ Designed specifically for affordable housing and launched in 2004
- ⑩ 2008 version is aligned with the USGBC's LEED-Homes Rating System
- ⑩ Administered by Enterprise Community Partners
- ⑩ Establishes eligibility for \$50,000 grant
- ⑩ No in-field verification
- ⑩ Requires operational performance reporting



Green Communities: Basic Req's.

Prerequisites

Integrated Design

Site, Location & Neighb.

Site Improvements

Water Conservation

Energy Efficiency

Materials

Healthy Living Environment

Operations & Maint.

1.1 Green Development Plan

2.1a Smart Site Location: Proximity to Existing Development

2.1b Smart Site Location: Protecting Environmental Resources

2.1c Smart Site Location: Proximity to Services - New Construction

2.2 Compact Development: New Construction

2.3 Walkable Neighborhoods: Sidewalks and Pathways

3.1 Environmental Remediation (Phase 1 Assessment)

3.2 Erosion and Sedimentation Control

3.3 Landscaping

4.1 Water-Conserving Appliances and Fixtures

4.2 Efficient Irrigation

5.1 Efficient Energy Use (15% above T-24)

5.2 Energy Star Appliances

5.3 Efficient Lighting: Interior (Energy Star Advance Lighting Pkg.)

5.3 Efficient Lighting: Exterior (daylight sensors/timers)

5.4 Electricity Meter

6.1-6.5 (None)

7.1-7.18 (Next Page)

8.1 Building Maintenance Manual

8.2 Occupant's Manual

8.3 Homeowner/New Resident Orientation

Green Communities: Basic Req's.

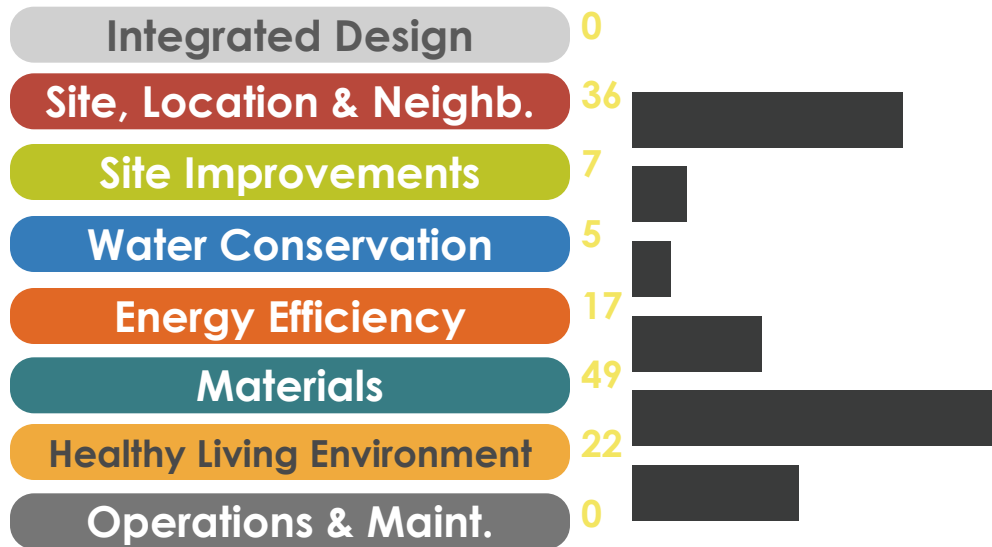
Prerequisites & Minimum Points

Healthy Living Environment

- 7.1 Low/No VOC Paints/Primers
- 7.2 Low/No VOC Adhesives/Sealants
- 7.3 Urea Formaldehyde-free Composite Wood
- 7.4 Green Label Certified Floor Coverings
- 7.5a Exhaust Fans – Bathroom (Energy Star Labeled)
- 7.5b Exhaust Fans – Kitchen (power vented)
- 7.6a Ventilation: New Construction (ASHRAE 62.2)
- 7.7 HVAC Sizing (ACCA Manuals J and S)
- 7.8 Water Heaters: Mold Preventions (drain pans or tankless)
- (7.9 Materials in Wet Areas)
- 7.10a Basements and Concrete Slabs: Vapor Barrier
- 7.10b Basements and Concrete Slabs – Radon (Zones 1 & 2)
- 7.11 Water Drainage
- 7.12 Garage Isolation (Air barrier, CO monitor, no HVAC)
- 7.13 Clothes Dryer Exhaust
- 7.14 Integrated Pest Management (Seal all penetrations, screens)
- (7.15 Lead-Safe Work Practices (pre-1978))
- 7.18 Combustion Equipment (power vented, CO monitors)

Green Communities: Basic Req's.

Points Available



Minimum Points Thresholds

New Construction 35 points

Moderate Rehabilitation 30 points

Green Point Rated

- ⑩ Developed and updated in collaboration with diverse California industry stakeholders.
- ⑩ Applies to single- and multi-family projects, high-rise, mixed use and existing single family homes.
- ⑩ Managed by Build It Green, a California non-profit organization. Ratings performed by Build It Green-certified GreenPoint Raters.
- ⑩ Tied to California codes and standards, therefore tailored for CA builders.
- ⑩ Applicable to all levels of green building from emerging to advanced green builders.



Green Point Rated: Basic Req's.

Prerequisites

Community

N1 Incorporate GreenPoint Rated Checklist into plans

Energy Efficiency

J2 15% above Title 24

IAQ/Health

None

Resource Conservation

A3a 50% waste diversion by weight

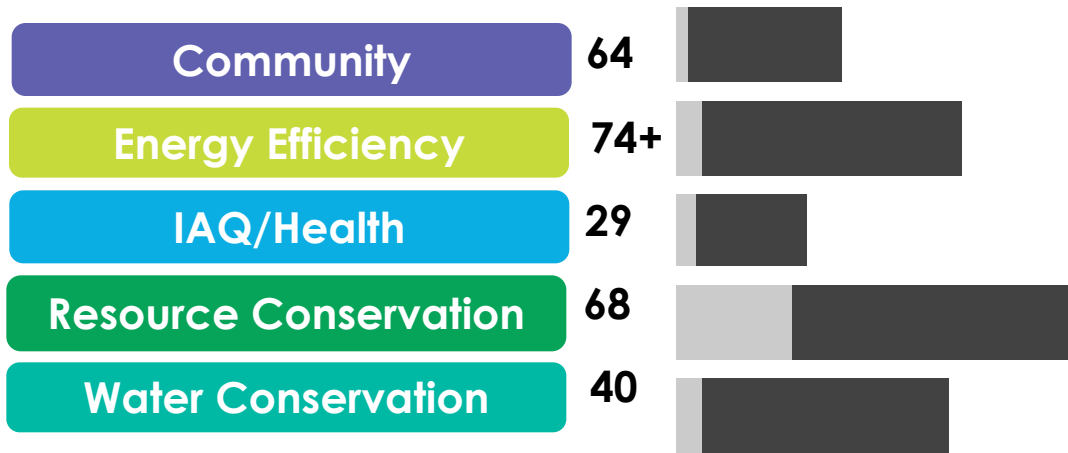
C10a All shingle roofing has 3-yr subcontractor warranty and 20-yr manufacturer warranty

Water Conservation

None

Green Point Rated: Basic Req's.

Points Available (Multifamily)



Minimum Points Threshold

Single Family

50 points

Multifamily

50 points

LEED for Homes



- ⑩ Developed by USGBC through a consensus-based process involving diverse industry stakeholders
- ⑩ Applies to single- and multi-family projects. Applies to residential projects up to three stories. Mid-rise (4-6 stories) projects in pilot.
- ⑩ Administered through regional providers meaning more interaction with raters throughout design and construction.
- ⑩ Lower costs than traditional LEED Rating Systems. Designed for the top 25% of builders.
- ⑩ Provides a national benchmark for what constitutes a "green building"

LEED for Homes: Basic Requirements

Prerequisites & Minimum Points

Innovation & Design

- 1.1 Preliminary Rating
- 2.1 Durability Planning
- 2.2 Durability Management

Location & Linkages

Sustainable Sites

- 1.1 Erosion Controls (During Construction)
- 2.1 No Invasive Plants

Water Efficiency

Minimum 3 Points

Energy & Atmosphere

- 1.1 Performance of ENERGY STAR for Homes (15% \geq T-24, QII, TBI)
- 11.1 Refrigerant Charge Test

Materials & Resources

Minimum 2 Points

- 1.1 Framing Order Waste Factor Limit
- 2.1 FSC-Certified Tropical Woods
- 3.1 Construction Waste Management Planning

Indoor Environmental Quality

Minimum 6 Points

- 2.1 Basic Combustion Venting Measures
- 4.1 Basic Outdoor Air Ventilation
- 5.1 Basic Local Exhaust
- 6.1 Room by Room Load Calculations
- 7.1 Good Filters
- 9.1 Radon-Resistant Construction in High Radon Risk Areas
- 10.1 No HVAC in Garage

Awareness & Education

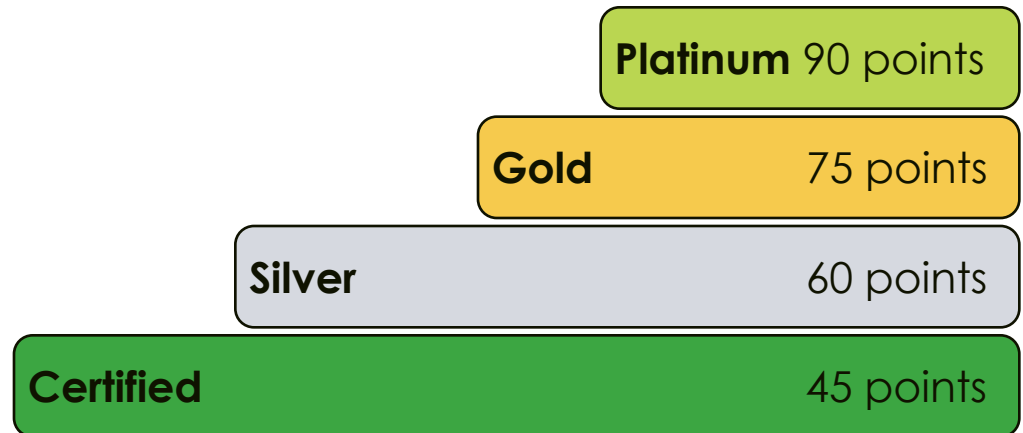
- 1.1 Basic Operations Training

LEED for Homes: Basic Requirements

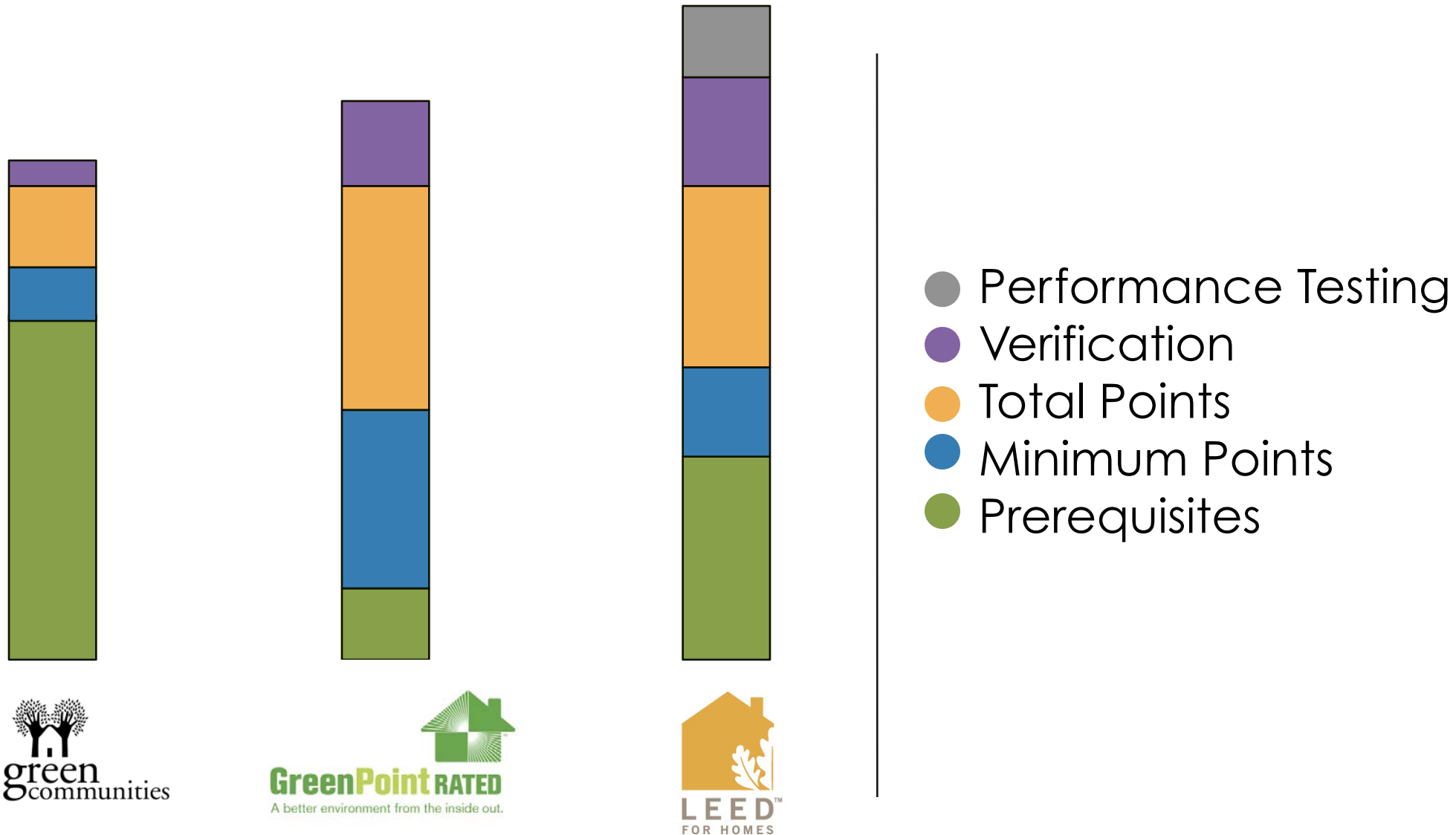
Points Available



Points Thresholds



Green Building Rating Systems



Certification Costs and Incentives

	Green Communities	GreenPoint Rated	GreenPoint Rated with Energy Star	LEED for Homes (includes Energy Star)
Multifamily building, 50 units	\$50,000	\$6,750 – 8,000	\$16,750 -20,500 \$10,000 - 12,500	\$30,000 approx \$10,000 - 12,500

So Which One Do I Use?

- **Requirements**
- **Incentives**
- **Experience**
- **Prerequisites**
- **Project Goals**
- **Organizational Goals**

Remember, a rating system is merely
a means to an end



Ted Bardacke

Global Green USA

2218 Main Street, 2nd Fl.
Santa Monica, CA 90405

tbardacke@globalgreen.org

(310) 581-2700

GLOBAL GREEN USA

BLUEPRINT FOR GREENING
AFFORDABLE HOUSING



BLUEPRINT FOR

GREENING

AFFORDABLE HOUSING



GLOBAL GREEN USA