LEED for Homes Water Conservation Measures

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Davis Energy Group

- LEED for Homes Program Provider: California and Nevada
- Engineering Firm specializing in:
  - Innovation: Energy-saving HVAC technologies
  - Consulting: Energy modeling, grEEn® design
  - Market Transformation:
    - LEED for Homes, Building America, Energy Star, IAP, EFL, GPR
    - Residential grEEn® Consulting
    - Commercialization – NightBreeze Technology

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Participation to Date

- REGISTERED
  - California and Nevada: ~2,700 active units
  - Nationwide: ~10,250 active units

- CERTIFIED
  - California and Nevada: 205 units
  - Nationwide: 667 units

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LEED™ FOR HOMES

Water Conservation

- Typical Savings – 20,000 to 40,000 gals per year
- Areas to Save
  - Outdoor
  - Surface
  - Indoor

Outdoor Water Conservation

- SS 2: Landscaping
  - Prerequisite
    - No invasive plants
  - 2.2 Basic Landscaping Design
    - Turf must be drought tolerant
    - Don’t use turf in densely shaded areas
    - Don’t use turf in areas with a slope of 25%
    - Add mulch or soil amendments
    - All compacted soil must be tilled to at least 6 inches

AND/OR

Outdoor Water Conservation

- 2.3 Limit Conventional Turf

  AND/OR

- 2.4 Install Drought Tolerant Plants

  OR

- 2.5 Reduce Overall Irrigation Demand by at least 20%

Outdoor Water Conservation

- WE 1.1 Rainwater harvesting system
  - System must be designed to hold all water from a 1-inch rainfall event

  AND/OR
- WE 1.2 Graywater reuse system
  - Graywater can be collected from at least one of the following:
    - Clothes washer
    - Showers
    - Some combination of faucets

  OR
- WE 1.3 Use of municipal recycled water system

Outdoor Water Conservation

- WE 2.1 High Efficiency Irrigation System
  - Choose up to a max of 3 items from the list to incorporate into the irrigation system

  AND/OR
- WE 2.2 Third-Party Inspection
  - Perform 3rd party inspection of irrigation system in use

  OR
- WE 2.3 Reduce Overall Irrigation Demand by at least 45%
  - Water savings must be calculated by a landscape professional. Must earn all points in SS 2.5 before receiving points for this credit

Surface Water Management

- SS 4.1 Permeable Lot: 70% of built lot is permeable or designed to capture runoff for infiltration onsite. Area that can be counted includes:
  - Vegetative landscape
  - Permeable paving
  - Impermeable surfaces are designed to direct all runoff toward a permanent infiltration feature; examples: vegetated swale, on-site rain garden or rainwater cistern

Surface Water Management

- SS 4.2 Permanent Erosion Controls
  - Terracing or retaining walls for a steep slope

    OR
  - Plant 1 tree, four 5-gallon shrubs or 50 sq. ft. of native groundcover per 500 sq. ft. of disturbed area

Surface Water Management

- SS 4.3 Management of Runoff from Roof
  - Install permanent storm water controls designed to manage runoff from the home
  - Install vegetated roof to cover 50% of the roof area

    OR
  - Install vegetated roof to cover 100% of the roof area
  - Have the site designed by a certified landscape designer so that all water runoff fro the home is managed through an on-site design element

Indoor Water Conservation

- WE 3.1 High Efficiency Fixtures and Fittings
  - Faucets less than or = 2.0 gpm
  - Showers less than or = 2.0 gpm per stall
  - Toilets less than or = 1.3 gpf **OR** are dual flush and meet the ASME A112.19.14 requirements **OR** meet EPA's WaterSense specs

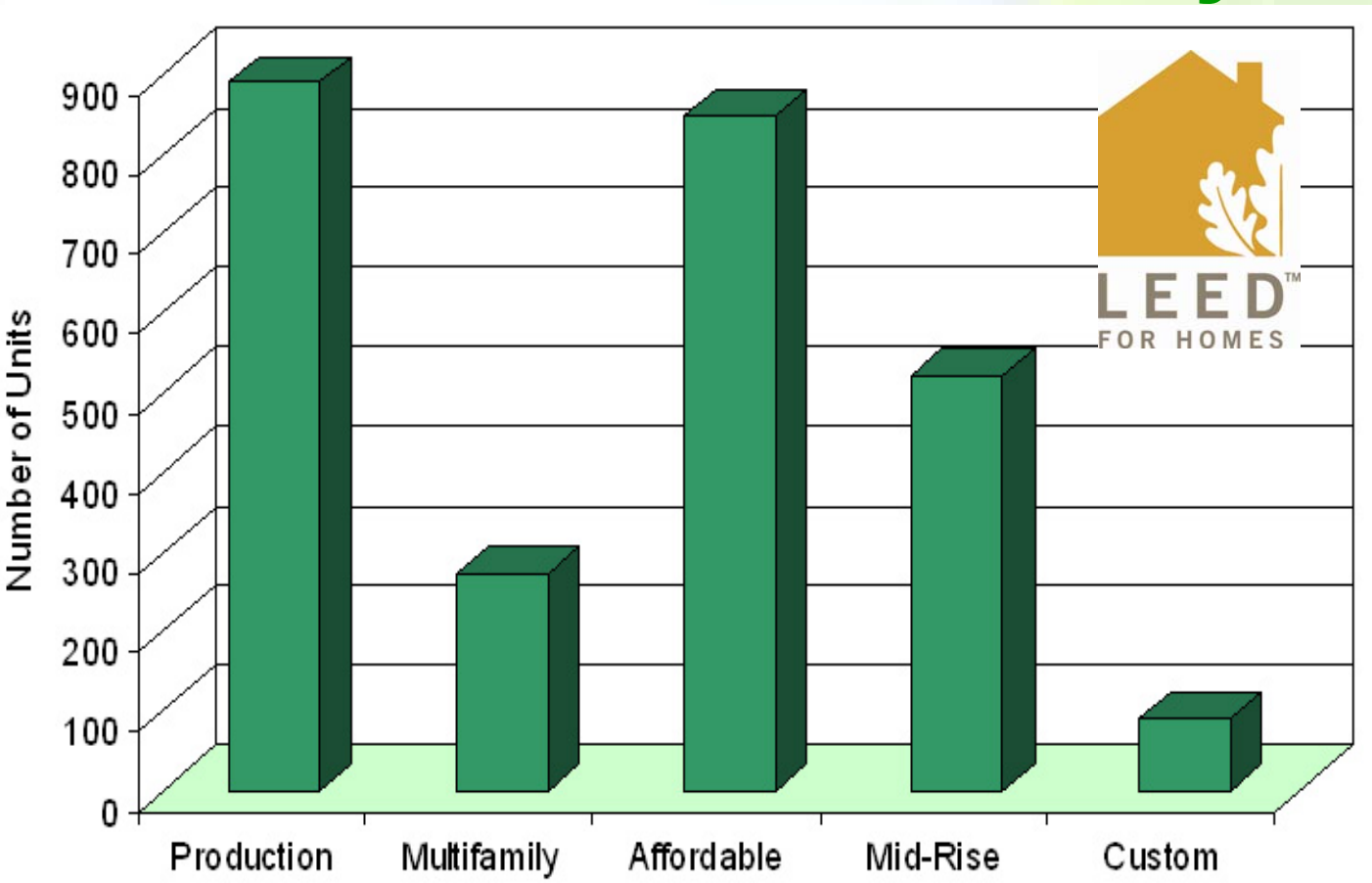
Indoor Water Conservation

- WE 3.2 Very High Efficiency Fixtures and Fittings
  - Showers less than or = 1.75 gpm per stall
  - Toilets less than or = 1.1 gpf
  - Faucets less than or = 1.5 gpm **OR** meet the EPA's WaterSense faucet specs

Sources

- LEED for Homes Rating System, January 2008 from the U.S. Green Building Council
- A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California from the Dept of Water Resources
- EPA's WaterSense specs and label

LEED for Homes Projects



As of May 2008

- Grupe Company
- Pinn Brothers
- Clarum Homes
- DR Horton
- Habitat for Humanity
- 1st Community Housing
- Coachella Valley Housing
- Episcopal Community Services
- Kit Carson Development
- LA Housing Partnership
- Olson Urban Housing

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Occupant Behavior

A. How do we educate the occupants to actually use all of the great water saving features that are built into their home?
B. With the rise of affordable, MF and mid-rise projects sometimes water is individually metered and sometimes it's paid for by the landlords. How do we convince the occupants that they should care about how much water they use?