



## LEED for Homes Program Procedure for Participation



Thank you for your interest in the LEED for Homes program. Enclosed in this packet you will find information on the program, guidelines for eligible projects, a Builder Checklist, prerequisites projects have to meet, and an application.

1. Complete "DEG Application Form – New LEED Project." Append any additional information about the project. If you have received a fee quote for the project, please attach a copy. Return one copy of the signed application and a \$500 deposit\* to:

Davis Energy Group  
Attention: Patti Heath  
123 C Street  
Davis, CA 95616

\* If the project is accepted, your deposit will be applied to your total fees. Projects that withdraw from the program after being accepted will not have their deposit refunded. If your project is not accepted the deposit will be returned.

2. If selected, return the following documents to Davis Energy Group at the above address:
  - Two signed copies of the DEG Project Contract. We will then sign and return one copy for your files.
  - After we have received your DEG Project Contract, you will be assigned a Representative by Davis Energy Group. The Rep will arrange a Preliminary Rating Meeting to kick off the LEED for Homes process. Please follow the Builder checklist for the step-by-step process.

Your Rep will be your key contact for the coordination of LEED for Homes verifications, tests and final rating.

3. If selected, you will need to register your project online through USGBC's website and agree to pay all applicable registration and certification fees to USGBC. Visit <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147> after your preliminary rating meeting.
4. Once the project has been registered with USGBC, you will receive a welcome email from USGBC, which will include the LEED for Homes logo and guidelines for your use of the logo.

NOTE: Selection for participation in the Program does not guarantee LEED Certification for the homes included in the Program.

If you have received a fee quote for your project, please attach a copy to your application.

# Brief Glossary of Terms

**CFA:** Conditioned floor area. When calculating the square footage of your unit, count only conditioned floor area. Do not include garages, balconies, unless it is air-conditioned.

**CHEERS:** CHEERS<sup>®</sup> (California Home Energy Efficiency Rating Services) is a California statewide 501 (C) (3) non-profit organization dedicated to promoting energy efficiency. Founded in 1990, CHEERS was approved in 1999 by the California Energy Commission as the first home energy rating provider under the Home Energy Rating System Regulations. It has an independent Board of Directors representing utilities, environmental and energy conservation and consulting groups. To find a CHEERS rater in your area go to the [CHEERS website](#).

**Energy Star:** Energy Star is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy to help everyone save money and protect the environment through energy efficient products and practices. Energy efficient choices can save homeowners about a third on their energy bill with similar savings of greenhouse gas emissions, without sacrificing features, style or comfort. For more information, visit [Energy Star](#).

**Energy Star for California:** Energy Star Qualified Homes built in California must be at least 15% more energy efficient than the energy code under which they were permitted. Homes must be inspected by a CEC certified third party HERS Rater. For more information, visit [Energy Star in California](#).

**HERS:** HERS stands for Home Energy Rating System Program. Its purpose is to certify home energy rating services in California. The goal of the program is to provide reliable information to differentiate the energy efficiency levels among California homes and to guide investment in cost-effective home energy efficiency measures.

**LEED:** Leadership in Energy and Environmental Design.

**Provider:** A Provider is an organization that recruits, trains and coordinates LEED for Homes Reps and Raters to serve as third-party verifiers of LEED homes. Providers are the official certifiers of LEED for Homes on behalf of the U.S. Green Building Council. Davis Energy Group works as a Provider in California and Nevada.

**Rater:** A Rater is a subcontractor to or employee of DEG who does the LEED visual inspections on your project. They are also HERS raters.

**Representative “Rep”:** A Rep is a subcontractor to or employee of Davis Energy Group. They are assigned projects in their area and work with the builder to get the home LEED certified. They are responsible for submitting the documentation needed for LEED certification, scheduling the Rater’s inspections, and working with the project team throughout the LEED process.

**Title 24:** Title 24 refers to the code in the California Code of Regulations regarding California’s Energy Efficiency Standards for Residential and Nonresidential Buildings. The standards were established in 1978 in response to a legislative mandate to reduce California’s energy consumption. All LEED homes must be 15 percent above Title 24 in order to be certified.

**USGBC:** United States Building Council.



# Guidelines for Eligible LEED for Homes Projects *2008 Version*

This document provides guidance on the types of projects that can participate in the LEED for Homes pilot program.

## Universal Requirements for Participation

Any project that participates in LEED for Homes must be defined as a 'dwelling unit' by all applicable codes. This requirement includes, but is not limited to, the IRC stipulation that a dwelling unit must include "permanent provisions for living, sleeping, eating, cooking, and sanitation." This language has been interpreted by LEED for Homes to mean that every participating home must have a kitchen and a bathroom.

A LEED for Homes certification must be granted to an individual building. This has the following implications:

1. A building cannot be partially certified. Single units in multi-family buildings cannot participate in LEED for Homes unless the entire building is registered to participate.  
Stacked attached homes, such as condominium flats, are considered to be multi-family buildings.
2. Every unit within a multi-family building must earn the same certification level (e.g. Silver, Gold). The units may achieve certification with a different set of credits and a different point total.
3. Separate buildings must be certified separately. Multiple buildings in a complex, or single-family homes in a subdivision, may be certified separately, but it's not a requirement that all the buildings or homes be certified or that they meet the same certification level.

Single-family side-by-side attached homes, such as row houses, are considered to be separate buildings.

## Provider Involvement

Every LEED Home project team must work with a designated LEED for Homes Provider, and a project registration form must be completed for each project.

The Provider should be involved as early in the process as possible. Projects that have begun construction prior to contacting a Provider may participate in LEED for Homes, subject to the judgment of the Provider, as long as all of the mandatory measures (prerequisites) in LEED for Homes can be met.

Typically, buildings cannot pursue certification after drywall has been installed unless all necessary pre-drywall inspections were performed for a different green homebuilding program.

## Eligible Pilot Projects

The following project types are eligible to participate, subject to the conditions described below. ***Providers are strongly encouraged to scrutinize all projects carefully to ensure that the mandatory measures in the LEED for Homes Rating System can be addressed.***

### Detached single-family homes

Conventional single-family homes, whether custom, production, or affordable, are eligible to participate.

### Attached single-family homes

Homes that serve one family but share one or more vertical party wall with other homes are eligible to participate. This category includes townhomes but does not include stacked duplexes or triplexes, which are considered multi-family buildings.

### Low-rise multi-family

Low-rise multi-family buildings are one to three stories<sup>1</sup> high and include two or more dwelling units.

### Mid-rise multi-family

Mid-rise multi-family buildings are defined as buildings with four to six stories<sup>1</sup> and at least two dwelling units. These projects are allowed to participate in the LEED for Homes Mid-rise Pilot, which is due to end in early 2009. Mid-rise projects must follow the guidance laid out in the Mid-rise Addendum to LEED for Homes, which includes special energy modeling and ventilation requirements.

In order to participate in the Mid-rise Pilot, each project must have a) adequate expertise to conduct modeling per ASHRAE Standard 90.1; and b) adequate expertise on mid-rise components and systems, so as to provide useful advice on energy-reduction strategies.

### Gut / rehabilitation

Projects that are characterized as 'substantial gut/rehab' can participate in LEED for Homes, as long as all of the prerequisites can be met. In order to qualify as a 'substantial' gut/rehab, a project must replace most of the systems and components (e.g. HVAC, windows) and must open up the exterior walls to enable the thermal bypass inspection to be completed.

### Manufactured and modular housing

Manufactured or modular homes can participate in LEED for Homes, but manufacturing plants cannot be LEED certified; only individual homes can earn certification, and only after the home is constructed on-site. Providers and Green Raters are encouraged to ensure that all of the energy requirements are met, particularly the thermal bypass inspection (see prerequisite EA 1.1). These projects will generally require the involvement of the plant manager / owner, and Providers may need to arrange on-site plant inspections. Please consult USGBC for further guidance on manufactured and modular housing.

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<sup>1</sup> A "story" includes any floor with living or commercial space. A floor that is 75% or more garage space is not considered a story for the purposes of defining the building type in LEED for Homes.

## *LEED for Homes Guidelines for Eligible Projects*

### Mixed-use buildings

Mixed-use projects may participate if at least 50% of the building's total floor area is residential. In these cases, the project team is expected to "green" tenant fit out guidelines that address energy, water, air quality, and materials performance of the non-residential portion of the building. These guidelines can be based on the commercial LEED Rating Systems.

### Dormitories and assisted living facilities

These buildings are typically identified by the presence of a central kitchen facility, and the fact that they fall outside of the scope of ASHRAE Std. 62.2. Any building of this type that does not have a kitchen cannot participate in LEED for Homes. If each unit has a separate full kitchen and bathroom, then the building should be treated as a multi-family building and may participate in LEED for Homes.

Buildings with central kitchen facilities must fall into one of the following categories:

- Small buildings with 2-9 units: these buildings should be treated as single-family homes, and each unit should be treated as a separate bedroom.
- Larger buildings with 10+ units: these buildings should be treated as multi-family buildings, in which each unit is a separate living unit. In this case, the ventilation requirements that reference ASHRAE Std. 62.2 should be replaced with similar ventilation requirements from ASHRAE 62.1.

### International projects

Projects outside the United States, US territories, or military bases are not allowed to participate in LEED for Homes. There are only two exceptions to this rule:

- Canadian projects are allowed to participate, because USGBC is working with the Canadian Green Building Council to develop a program in Canada.
- Projects in the Caribbean may submit a special request to USGBC. However, each project must be given explicit approval.

### "In-law" flats

In-law units are typically small, separate units that are attached or co-located with single-family homes. There are a few different designs for in-law flats:

- Attached, with a shared entrance – the in-law flat should be treated as part of the main home. The flat may be considered a separate bedroom, but not a separate unit.
- Attached, with a separate entrance – the in-law flat must earn the same certification as the main house, but it can either be treated as a separate unit or an additional bedroom to the main home.
- Detached - the in-law flat is a separate building from the main home, and the project team can choose whether or not to pursue LEED certification.

# BUILDER CHECKLIST

## Step 1: REGISTRATION PROCESS

The registration process for LEED for Homes projects and the pilot programs listed below is as follows:

- Please review this packet and fill out the application. If your project is 4 to 6 stories high, a Midrise application and checklist can be downloaded from our website [www.davisenergy.com](http://www.davisenergy.com). Both of these packets will include a copy of the CA Energy & Atmosphere section for LEED for Homes. The CA checklist and E&A section are not available on the USGBC site since they are only for California. Projects outside of California will receive the national version of the checklist and application packet.
- Mail the application along with a \$500 deposit check to Davis Energy Group.
- Davis Energy Group will review the application.
- Upon acceptance into the program, Davis Energy Group will e-mail a Welcome packet containing a project contract with a fee structure for your specific project, this builder checklist, and CIR/ID credit checklist.
- The project contract will need to be received by Davis Energy Group before a Representative and Rater are assigned to the project.
- Once the project contract is mailed to DEG, the project team may utilize the LEED for Homes registration form to register your project with USGBC at the following link: <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147>

### MID-RISE PILOT:

USGBC has started a mid-rise pilot to determine whether residential buildings 4 to 6 stories are better served in LEED for Homes or LEED for New Construction. If you have a project interested in this pilot, please register these projects with DEG following the above process.

## Step 2: PRELIMINARY CHECKLIST PROCESS

- The assigned Project Representative will call to set up the preliminary checklist meeting and to request a set of plans, specs and T-24s to review (if available).
- Please have the following folks at the preliminary checklist meeting:
  - General contractor
  - Architect
  - Purchasing Agent
  - Mechanical Engineer
  - Landscape Architect
  - Green Building Consultant (recommended if very little or no green building experience on the team)
- The project team should have the following items at the preliminary checklist meeting:
  - A filled out preliminary checklist to show the Project Representative what credits the team wants to target
  - A copy of the current LEED for Homes manual
  - **A draft of the project's durability plan. The Durability Form must be completed prior to framing or pre-drywall inspections cannot be done.**
  - Notification to the HERS rater (if one is under contract) stating that this project is in LEED for Homes and additional LEED tests will be required. If the HERS rater under contract with the builder is going to do the additional LEED tests, they will need to sign a subcontractor

- agreement with Davis Energy Group and be trained on LEED for Homes following DEG's training requirements.
- Any process questions or "did you do it" questions for the Project Representative
- The Project Representative will discuss responsibilities at the preliminary checklist:
  - The project team will be responsible for gathering all necessary documentation used in verifying certain points selected on the preliminary checklist including but not limited to the durability plan, spec sheets, community map, photos, etc.
  - The best practice for gathering the documentation is for the project team to create a notebook containing 8 tabs, one for each category in LEED for Homes. Behind each category place the necessary documentation verifying the points selected on the preliminary checklist.
  - The Provider Rater will need various pieces of documentation to perform the LEED mandatory verifications at the pre-drywall and final job site visits so documentation can't wait until the last minute.

### **Step 3: Field Verification Process**

- The Project Rater will come to the job site for a pre-drywall verification when the Durability plan is in place. This visit will include the following items:
  - Any necessary HERS tests
  - Quality Insulation Inspection/Thermal Bypass Inspection  
[http://www.energystar.gov/ia/partners/bldrs\\_lenders\\_raters/downloads/ThrmByChklist\\_112006.pdf](http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/ThrmByChklist_112006.pdf)
  - Mandatory LEED visual verifications
  - Mandatory LEED tests
    - Envelope Leakage
    - Duct Leakage
  - Verifications for additional LEED points (if any targeted on checklist)
- The Project Rater will come to the job site for a final verification. This visit includes:
  - Visual verifications and possible additional testing for LEED points
  - Any additional HERS testing
  - Any additional testing for Energy Star requirements

### **Step 4: Final Rating**

The Project Rater will give the verification results to the Provider Representative who will meet with the project team to go through the verification results and fill out the final rating checklist.

### **Step 5: Certification**

The Project Rep will submit the final certification packet to Davis Energy Group for certification.

## **ROLES & RESPONSIBILITIES**

There are 4 roles in the delivery process for LEED for Homes:

- Provider
  - Responsible for reviewing the application and accepting the project into LEED for Homes
  - Assigns a Project Rep and Project Rater to the project team
  - Completes the certification in conjunction with USGBC

- Project Representative
  - Takes the project team through a preliminary checklist review targeting the credits needed for the desired certification level
  - Communicates with the project team and the Project Rater throughout the build schedule
  - Works with the project team to put together the final checklist
  - Prepares the certification submittal package
- Project Rater
  - Performs the LEED for Homes visual verifications that are required by LEED for Homes on the job site at the pre-drywall and final job site visits
  - If the project team chooses to go for points that require optional tests performed by the Project Rater, these tests are billed hourly by DEG. They are not included in the LEED mandatory verifications. For example, on ID 2.3 you can get 3 points for having the Rater verify your durability plan. The hours spent by the Rater verifying this plan would be billed to the project team as a separate line item.
- Certifier
  - Currently the Provider in conjunction with USGBC certifies the units

## **OTHER ROLES:**

### **Design Consultants:**

Every project will need an architect, HVAC design engineer, landscape architect, etc. These are some of the design folks that will be on your project team. These folks should be familiar with green building, but if they're not the next role should be on your team.

There are projects that do require the help of a green building consultant to answer the "how you do it" questions from a green building perspective. When searching for a green building consultant make sure they have a residential green building background in addition to understanding the LEED for Homes rating system. Davis Energy Group can provide this service on an hourly basis.

### **HERS Rater:**

All projects will need to hire a HERS/Energy Star rater that will be paid directly by the project team to perform the necessary HERS and Energy Star tests to meet Title 24 and Energy Star requirements. This HERS Rater could be the same person as the Project Rater doing the LEED visual verifications.

## **PAYMENT SCHEDULE FOR THE BUILDER**

- Pays DEG for Project Rater's LEED for Homes mandatory visual verifications and Provider Representative's verification duties based upon the billing schedule listed in the fee structure as part of the project contract with DEG
- Pays the HERS Rater directly for HERS/Energy Star tests needed for Title 24 and Energy Star requirements per a separate contract with the HERS rater Pays USGBC directly for registration fees when registering the project
- Pays USGBC directly for registration at beginning of process and certification fees when each unit or group of units is certified.

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## LEED for Homes Project Prerequisites

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### **Innovation and Design Process (ID)** no minimum points required

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1.1	<b>Integrated Project Planning</b>	Preliminary Rating
2.1	<b>Durability Management Process</b>	Durability Planning (Pre-Construction)
2.2	<b>Durability Management Process</b>	Durability Management

### **Location & Linkages (LL)** no minimum points required

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No prerequisites in LL

### **Sustainable Sites (SS)** minimum of 5 SS points required

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1.1	<b>Site Stewardship</b>	Erosion Controls (During Construction)
2.1	<b>Landscaping</b>	No Invasive Plants

### **Water Efficiency (WE)** minimum of 3 WE points required

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No prerequisites in WE

### **Energy and Atmosphere (EA)** no minimum points required

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1.1	<b>ENERGY STAR Home</b>	Meets Performance Req's of ENERGY STAR for Homes
8.1	<b>Lighting in California</b>	Meet the lighting requirements of Title-24 in California

### **Materials and Resources (MR)** minimum of 2 MR points required

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1.1	<b>Material Efficient Framing</b>	Overall Waste Factor for Framing Order less than 10%
2.1	<b>Environmentally Preferable</b>	Tropical Woods, if Used, Must be FSC
3.1	<b>Waste Management</b>	Document Overall Rate of Diversion

### **Indoor Environmental Quality (IEQ)** minimum of 6 EQ points required

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2.1	<b>Combustion Venting</b>	Space Heating & DHW Equip w/ Closed/Power-Exhaust, CO monitors every floor, tight-fitting doors for fireplaces
4.1	<b>Outdoor Air Ventilation</b>	Meets ASHRAE Std 62.2
5.1	<b>Local Exhaust</b>	Meets ASHRAE Std 62.2, local exhaust systems must exhaust to outdoors, Energy Star bathroom exhaust fans
6.1	<b>Supply Air Distribution</b>	Perform Duct Design Calc's, design adequate return airflow (jump ducts, multiple returns, or transfer grills)
7.1	<b>Supply Air Filtering</b>	≥ 8 MERV Filters, w/ Adequate System Air Flow
9.1	<b>Radon Protection</b>	Radon Resistant Construction if Home in EPA Zone 1
10.1	<b>Garage Pollutant Protection</b>	NO HVAC, air handling equipment, or ducts in fire-rated envelope of Garage

### **Awareness and Education (AE)**

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1.1	<b>Education for Homeowner</b>	Basic Occupant's Manual & Walkthrough of LEED Home
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## Project Checklist, Addendum A Prescriptive Approach for Energy and Atmosphere (EA) Credits

### **Energy and Atmosphere (EA)**

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2.1	<b>Insulation</b>	3rd-Party Inspection of Insulation, At Least HERS Grade II
3.1	<b>Air Infiltration</b>	3rd-Party Envelope Air Leakage Tested ≤ 7.0 ACH50 (CZ 1-2)
4.1	<b>Windows</b>	Windows Meet ENERGY STAR for Windows (See Table)
5.1	<b>Duct Tightness</b>	3rd-Party Duct Leakage Tested ≤ 4.0 CFM25 / 100 SF to Outside
6.1	<b>Space Heating and Cooling</b>	Meets ENERGY STAR for HVAC w/ Manual J, verify Energy Star programmable thermostat and refrigerant charge test
8.1	<b>Lighting in California</b>	Meet the lighting requirements of Title-24 in California
8.1	<b>Lighting (outside of CA)</b>	Install at Least Three ENERGY STAR labeled Light Fixtures (or Energy Star labeled CFL)



DAVIS ENERGY GROUP INCORPORATED

OFFICE USE ONLY Date Received:

LEED for Homes Program New LEED Project

Project Name: Date: Full Address of Project: This project is: Custom (one home) Production Multi-family Affordable (Mark all that apply.) Gut-Rehab Attached Detached % Affordable If your project is 4 to 6 stories tall, please fill out a LEED for Homes Midrise application. Current status of project(s): Total number of homes/units: Floor plan 1 Square footage: # of bedrooms: If your project has more than 5 distinct floor plans, please continue under home description. Use highest square footage for each floor plan type. Do not count "flips/reverses" Count ONLY conditioned floor area. Floor plan 2 Square footage: # of bedrooms: Floor plan 3 Square footage: # of bedrooms: Floor plan 4 Square footage: # of bedrooms: Floor plan 5 Square footage: # of bedrooms: Estimated Breakground Date: Estimated Completion Date:

Preliminary LEED Certification Level from LEED Checklist (if known):

Certified (minimum 45 Credits) Gold (75 Credits) Silver (60 Credits) Platinum (90 Credits)

Applicant Name:

Title Company Full Address Tel Fax Email

Applicant Description:

Home owner Builder Architect/Designer Other

Builder Name:

If same as applicant, check here

Title Company Full Address Tel Fax Custom Home Builder Multi-family Home Builder Other Average Annual # of Homes Built:

**Designer/Architect Name:** \_\_\_\_\_ **If same as applicant, check here**

Title	Company
Full Address	
Tel	Fax
Email	

**Billing Information Name:** \_\_\_\_\_ **If same as applicant, check here**

Title	Company
Full Address	
Tel	Fax
Email	

**Additional Contacts for this Project:**

Title	Company
Full Address	
Tel	Fax
Email	

Who will be your Project Team Leader for LEED for Homes? Please list their contact information.

Description of Your Team's Experience with Green Building:

**Level of Expertise with Green Building (for your team):**

New to Green Building	<input type="checkbox"/>	Fairly Knowledgeable/Experienced	<input type="checkbox"/>
A Little Knowledge/Experience	<input type="checkbox"/>	Very Knowledgeable/Experienced	<input type="checkbox"/>

**Do you currently have a green home building consultant with background in residential building?**

Yes  What is their name? \_\_\_\_\_

No  Do you need a green consultant? Yes  No

**Other Green Building Programs you have Participated in:**

Energy Star for Homes	<input type="checkbox"/>	California Green Builder	<input type="checkbox"/>
GreenPoint Rated	<input type="checkbox"/>	Other	<input type="checkbox"/>

**Do you currently have a HERS rater under contract to do HERS and Energy Star tests?**

Yes  No

Description of Home(s) Proposed for Participation: (attach pages if desired)

## Requirements

Please return one copy of this application with a \$500 check made out to Davis Energy Group. If your project is not accepted, your check will be returned.

**If accepted, the applicant agrees to:**

1. Send two signed copies of the DEG Project Contract. We will then sign and return one copy for your files.
2. Pay all applicable DEG fees as outlined in LEED for Homes Project Contract's Exhibit A Fee Schedule.\*
3. Register your project through USGBC's website and pay all applicable registration and certification fees.

ACCEPTED and AGREED To:

Company Name:

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Representative Signature:

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Representative Name and Title:

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\*Final certification may be withheld until all fee payments are received.