



GREEN HABITAT: A Student Design Competition



About the Competition

The “Green Habitat” student design competition is designed to inform and challenge students in architecture attending Southern California colleges and universities, to design a low-income, affordable housing development that exemplifies the high performance, low energy design principles championed by the US Green Building Council’s Leadership in Energy and Environmental Design (LEED®) certification program and the American Institute of Architects Committee for the Environment, in addition to meeting core architectural program considerations for the client, Habitat for Humanity®.

For this competition, students are being asked to design an 11-unit housing development on a real, currently undeveloped, 3-acre site in Sylmar, being planned by the San Fernando/Santa Clarita Affiliate of Habitat for Humanity®. The goal of the competition is to help Habitat develop a ‘green’ model for this and future developments, and to raise student awareness in the potential and applications of sustainable design for this and future projects.

In developing a design proposal, competitors are asked to address several critical issues:

- Architectural expression that embraces the ethics of sustainability
- Minimal ecological impact
- Reduce green house gas emissions
- Design for human comfort
- Design for flexibility, adaptability and passive performance
- Design for ease of construction by lay-builders (i.e., Habitat volunteers)
- Exceptional design innovation
- Cost benefit analysis over 30 years (i.e., compared energy savings over traditional construction)
- USGBC LEED-Home point estimate

The Awards

A total of \$3,000 in cash prizes will be awarded to the winning students- \$1,500 for 1st, \$1,000 for 2nd, and \$500 for 3rd. Project proposals will be on display in the Gallery at the Harley Ellis Devereaux from July through September 2007.

The Jury

The jury consists of John Dale, AIA, LEED AP, Associate Principal, Senior Designer, Harley Ellis Devereaux, Jason Lorcher, PE, LEED AP, Director, GreenWorks Studio, Gary Goldblum, AIA, LEED AP, Harley Ellis Devereaux, Bharat Patel, Board Chairman of the Los Angeles Chapter of the U.S. Green Building Council & DMJM Principal, and Tom Neary, Habitat for Humanity SF/SC & Vice President, Morley Builders.

Sponsors and Supporting Organizations

The competition is co-sponsored by Harley Ellis Devereaux (a 500-person multidisciplinary A/E practice with 7 offices throughout the US and leaders in sustainable architecture), GreenWorks Studio, a sustainable design consultancy (based in Los Angeles and contributors to 2 LEED® Platinum certified projects), and Morley Builders, a general construction and construction management firm based in Santa Monica (builders of several award-winning LEED® certified projects), and representatives from the Habitat for Humanity® San Fernando/Santa Clarita Valleys Affiliate.

Information

For additional information about the competition, please contact Amy Masten at Harley Ellis Devereaux, at 323.965.7444 or akmasten@hede.com. Please do not contact Habitat for Humanity®, Morley Builders, or GreenWorks Studio requesting information about this competition.



HARLEY ELLIS DEVEREAUX





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Competition Statement

A house is a home when it shelters the body and comforts the soul.

— Phillip Moffitt

The recent and rapid evolution of sustainable design has been focused primarily on commercial and institutional buildings. The Green Habitat project was established to help ensure that the knowledge and experience gained from these efforts, and shared through the efforts of the US Green Building Council (USGBC) and the American Institute of Architects (AIA) Committee on the Environment (COTE), are translated into the most common, and most important, of building structures, the house.

In the case of the homes created by the Habitat for Humanity® program, these are houses that already provide benefits beyond measure to a significant and important sector of the low-income population, and that can be made even better by incorporating “green” design principals. By reducing construction waste, simplifying construction, lowering energy consumption, and maximizing the impact the buildings have on their site, a sustainably designed Habitat for Humanity® project will benefit the new owners and their new communities.

Given the enormous impact of the built environment on the ecological health of the planet, sustainable design is unquestionably one of the critical issues that challenge building designers. Architects, engineers and constructors must meet this challenge head on by fully embracing the ethic of sustainable design, by creating buildings of beauty, integrity and ecological soundness.

By embracing these goals, the Green Habitat Student Design Competition will be instrumental in providing valuable research and knowledge to guide and stimulate this and future Habitat for Humanity® projects across the country.

The Challenge

The program for the Green Habitat project requires 11 attached or semi-attached 3-4 bedroom 2-story houses, as well as parking and shared recreational/relaxation areas. Each house will be approximately 1,600-1,700 sq. ft., including 2 covered parking spaces.

In developing a design proposal for the housing complex, competitors are asked to address several critical issues. These include appropriate response to the climate and culture of the site in the Sylmar area of Los Angeles’ San Fernando Valley, the integration of sustainable practices, including but not limited to, solar, wind, photovoltaic or passive systems, and material selection, conformance with local codes and planning requirements, and the opportunities for enhancement of the Habitat’s housing design standards and the quality of life and cost of ownership/maintenance of the homes by their new owners.

In addition, competitors should address the following Evaluation Criteria in defining the concept and scope of their design proposal:

- Architectural expression that embraces the ethics of sustainability
- Minimal ecological impact
- Reduce green house gas emissions
- Design for human comfort
- Design for flexibility, adaptability and passive performance
- Design for ease of construction by lay-builders (i.e., Habitat volunteers)
- Exceptional design innovation
- Cost benefit analysis over 30 years (i.e., compared energy savings over traditional construction)
- USGBC LEED® point estimate





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The Site

The site selected for the competition consists of a triangular-shaped 3-acre parcel at the intersection of Foothill Boulevard at Cobalt Street in Sylmar, just South of the 210 Freeway. Located nearby are the Olive View-UCLA Medical Center, the Hansen Lake Recreation Area and Los Angeles Mission College. Drawings of the project site will be available to the competitors. The Lake View Terrace Library, with a LEED Platinum rating (designed by GreenWorks Studio and Harley Ellis Devereaux) is approximately 7 miles from the site.

The Program

The program component areas in net square feet (nsf) for each of the 11 residential units of the Green Habitat buildings re as follows:

1.0	Entry	25 nsf
2.0	Living	300 nsf
3.0	Dining	180 nsf
4.0	Kitchen	130 nsf
5.0	Bedroom #1	170 nsf
6.0	Bedroom #2, #3, #4	130 nsf (x 2 or x3)
7.0	Bathroom #1	50 nsf
8.0	Bathroom #2	50 nsf
9.0	Garage	400 nsf
10.0	Storage	25 nsf
	Total building requirements (net square feet, nsf):	1,590 – 1,720 nsf
	Total project requirements (net square feet, nsf):	17,490 – 18,920 nsf

1.0 Entry

Compact entry opening into the living area or common space between living areas and dining/kitchen

2.0 Living

Open plan that includes adjacent dining and kitchen to minimize hallways and other elements that restrict use

3.0 Dining

Adequate space for occupant’s daily needs; not an entertainment area; open to the living room and immediately adjacent to the kitchen

4.0 Kitchen

Compact and utilitarian; functional without being extravagant in size or appointment; provide direct access to garage/parking

5.0 Bedroom #1

Master bedroom for head of household with appropriate closet space and work space if possible

6.0 Bedroom #2, #3, #4

Secondary bedrooms should provide for sleeping and closet space for minor; arrange multiple rooms to minimize hall space required for access to them, the master bedroom and adjacent bathroom

7.0 Bathroom #1

Located on the ground floor and provided with stand-up shower in lieu of tub/shower combination





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8.0 Bathroom #2

Located on upper floor and provided with tub/shower combination

9.0 Garage

Enclosed parking for 2 cars, and includes space for laundry equipment (i.e., washer/dryer) and water heater.

10.0 Storage

Secure storage for occupant's miscellaneous goods and materials

Resources

The following resources to answer questions and inquires for input on sustainable design and Habitat for Humanity® design criteria are available to the competitors via email only during the competition. Resource advisors will strive to be timely in their response to questions, but no guarantees are implied, and competitors are responsible for their own research. All questions and responses will be shared with all entrants.

- Jason Lorcher, PE, LEED AP, Managing Director, GreenWorks Studio (jjlorcher@greenworkstudio.com)
- John Dale, AIA, LEED AP, Principal, Senior Designer, Harley Ellis Devereaux (jrdale@hedev.com)
- Gary Goldblum, AIA, LEED AP, Harley Ellis Devereaux (ggoldblum@hedev.com)
- Bharat Patel, LEED AP, Board Chairman, Los Angeles Chapter/USGBC & DMJM Principal (bharat.patel@dmjmgm.com)
- Tom Neary, Habitat for Humanity San Fernando/Santa Clarita Valley Affiliate & Vice President, Morley Builders (tneary@morleybuilders.com)

References

The following references provide specific information on Habitat and sustainable “green” housing design. Some of these are focused specifically on meeting USGBC LEED® certification criteria, and competitors are strongly encouraged to use these resources. They are essential for understanding the nature, scope and objectives of the competition program.

- Habitat for Humanity: www.habitat.org
- Habitat for Humanity Santa Fernando/Santa Clarita Valley Affiliate: local.habitat.org/sfscv
- US Green Building Council: www.usgbc.org
- Green Builder: www.greenbuilder.com
- Green Resource Center: www.greenresourcecenter.org
- Green Home Building: www.greenhomebuilding.com
- 2030 Challenge: www.architecture2030.org

Schedule

January 5, 2007	Deadline for receipt of Registration Forms (there is no registration fee)
June 25, 2007	Deadline for receipt of Competition Submission at Harley Ellis Devereaux (there is no submission fee)
July 9, 2007	Prize winners announced





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Summer 2007

Prize winners' submissions on display in Lobby Gallery of Harley Ellis Devereaux

Awards

The competition jury will convene in July 2007 to select prize-winning projects and honorable mentions. Winners will be notified of the competition results directly. A list of winning projects and honorable mentions will be posted on the Habitat for Humanity SFSCV Affiliate website (local.habitat.org/sfscv), the Harley Ellis Devereaux website, the GreenWorks Studio website and the Morley Builders website.

Prize-winning submissions will also be exhibited in the Lobby Gallery at Harley Ellis Devereaux's Los Angeles office on Wilshire Boulevard.

Eligibility

The competition is open to students of architecture in BA/BS in Architecture (upper-level, 3rd year Studio or above), Bachelor of Architecture (upper-level, 3rd year Studio or above), and Masters of Architecture programs in Southern California (San Luis Obispo to San Diego). All competitors are required to work under the direction of a faculty sponsor. Submissions should be principally the product of work in a design studio course. All students wishing to participate must submit registration forms.

Registration

Students who wish to participate in the competition must submit the initial registration form and return it to Harley Ellis Devereaux by January 5, 2006. Only one form per faculty advisor, please. Student teams wishing to enter must list all team members and the faculty sponsor on the registration form. **There is no submission fee to participate in the competition.**

Faculty Advisor Responsibility

The administration of the competition at each school is left at the discretion of the faculty sponsor, within the guidelines set forth in this document. Work on the competition may be structured over the course of one or two semester or one or two quarters, as necessary to meet the competition schedule requirements.

Evaluation Criteria

Faculty sponsors are expected to develop a system to evaluate the work of their students using the criteria set forth in this document. The evaluation should be an integral part of the design process, encouraging students to scrutinize their work in a manner similar to that of the jury. The final result of the design process will be the submission of up to four (4) presentation boards describing the design solution (see Presentation Format and Required Drawings, below). In addressing specific issues of the competition program, submissions must demonstrate the design solution's response to the following Evaluation Criteria:

- **Architectural Expression That Embraces the Ethics of Sustainability**

The design solution should demonstrate sustainable design as an integral and synergistic element of an architecture that is aesthetically delightful and contextually sensitive to people, place and time. The buildings themselves should become learning tools that invite and engage the community to see and experience sustainable design and, thereby, increase awareness of the ecological impact of buildings.

- **Minimal Ecological Impact**

The design solution should achieve energy and environmental performance goals that significantly reduce energy use and environmental impact compared to standard practice. To this end, the project should adopt a design process that appropriately integrates building systems for performance. The





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project should consider life-cycle costs and benefits of adopting green-design strategies pertaining to energy use, water conservation, and materials selection.

- **Design For Human Comfort**

The design solution should support the comfort of the occupants, achieved through high levels of indoor quality pertaining to ergonomics, thermal comfort, visual quality, acoustic performance, and indoor air quality.

- **Design For Flexibility, Adaptability and Passive Performance**

The design solution should allow for changes in programmatic needs and configurations (e.g., additional bedroom), by using modular design and flexible utility distribution systems. To the greatest extent possible, designs should utilize low energy, passive systems to reduce operational and maintenance costs.

- **Design for Ease of Construction by Lay-Builders (i.e., Habitat Volunteers)**

The design should reflect construction techniques that can be performed by semi-skilled, volunteer workers (under skilled supervision), wherever possible.

- **Exceptional Design Innovation**

Special credit will be given to competitors that incorporate particularly innovative ideas in their design solutions – ideas that achieve results beyond the expectations of the sponsors.

- **Cost Benefit Analysis**

Competitors should include a 30-year projection of energy savings from design concepts included in the submission compared to traditional energy usage for similar, standard construction.

- **USGBC LEED® Points**

The design should strive to earn maximum points using the USGBC LEED-H (for Home design) score sheet. Special credit will be given to competitors that achieve high LEED values (i.e., Silver, Gold or Platinum).

Presentation Format

Drawings must be firmly mounted or drawn directly on no more than four (4) 20" x 20" illustration, foam core, or other stiff lightweight mounting material. Any other type of presentation (unmounted, 3-dimensional, or mounted on wood or glass) will be disqualified.

The names of the student competitors, their schools, or faculty advisors, must not appear on the front or back of any board, or on the LEED Checklist. An unsealed envelope holding a copy of the completed Submission Form and LEED Checklist must be affixed to the back of one of the boards. Each board should be numbered on the back in the sequential order in which they should appear (i.e., 1 or 4, 2 of 4, etc.).

Competitors should keep in mind that due to the large number of entries possible, preliminary review does not allow for the hanging or end-to-end display of presentation boards. Accordingly, competitors should not use text or graphics that cross over from board to board.

Entries may be either originals or high-quality reproductions. Competitors should make adequate photographic and/or digital (300 dpi) reproductions of their work prior to submission. Winning entries will be required to submit photographic and/or digital (300 dpi) reproductions for use in the competition summary catalog and exhibit material. **Please note that submission boards cannot be returned under any circumstances.**



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Required Drawings

It is required that each submission directly address the specific criteria outlined in the Competition Program and Evaluation Criteria set forth in this document. Incomplete or undocumented entries are subject to disqualification. All drawings should be drawn at a scale appropriate to the design solution and include a graphic scale and north arrow.

Presentations should include the following required drawings:

- A ground floor and/or site plan showing the relationship of the housing units to the surrounding neighborhood, landscaping, and pedestrian and vehicular circulation patterns.
- Additional floor plans as applicable.
- Elevations and/or sections sufficient to show the building's relationship to the site and the integration of building services and systems.
- At least one three-dimensional representation in the form of either an exploded axonometric, section perspective, or model photograph that clearly illustrates the design solution's intention.
- At least one detailed section drawing or three-dimensional model (either photograph(s) of a physical model or computer-generated images) illustrating the integration of sustainable practices.
- Systems Integration Diagrams that describe and highlight how building systems work to achieve sustainability objectives (e.g., a diagram indicating energy flows through the buildings including, but not limited to, the envelope and HVAC systems, highlighting energy efficiency features).

All program components should be clearly labeled in all drawings. Competitors are encouraged to include any other drawings, photographs, and/or diagrams that will help to communicate the nature of their design solution.

LEED® Checklist

A one-page copy of the standard USGBC LEED-Home Checklist indicating estimated values achieved in each category shall be included with each submission. In developing the LEED Checklist competitors should use the USGBC guidelines to inform assumptions of performance. The checklist is available for download at <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147>.

Submission Form

A completed Submission Form must accompany each entry. A copy of the completed form must be enclosed in an unsealed envelope firmly attached to the back of one of the presentation boards. A copy of the LEED Checklist must also be included with the Submission Form.

Shipping Instructions

Submissions should be shipped in cardboard boxes or sturdy wrapping. Wood crates and other excessive packaging materials (tape, wrapping paper, bubble wrap or packing "peanuts") are not permitted. Do not tape tracing paper or any other type of protective material to individual boards. These requirements are designed specifically to reduce waste and must be adhered to strictly.

All submissions must be received at Harley Ellis Devereaux by 5:00 PM PDT, June 25, 2007. Please note that due to the number of entries Harley Ellis Devereaux is not able to otherwise acknowledge receipt of submissions. Harley Ellis Devereaux cannot be responsible for customs processing or related fees. C.O.D. shipments cannot be accepted.





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Ship submissions to:

Harley Ellis Devereaux

Attn: Amy Masten: Green Habitat Student Design Competition
5150 Wilshire Boulevard
Los Angeles, CA 90036 / 323.965.7444

Important Notes

Submissions cannot and will not be returned under any circumstances. Upon receipt submissions become the property of Habitat for Humanity San Fernando/Santa Clarita Affiliate. Competitors submitting original material for the competition should make adequate photographic and/or digital (300 dpi) reproductions of their work prior to submission. While it is the goal of this competition to develop ideas to incorporate sustainable elements into the design of Habitat housing, Habitat for Humanity San Fernando/Santa Clarita affiliate has no obligation to use any submission for construction of future projects.

Harley Ellis Devereaux, GreenWorks Studio, Morley Builders, Habitat for Humanity San Fernando/Santa Clarita Chapter, the AIA, the USGBC, and all sponsoring organizations reserve the right to publish drawings, written descriptions, photographs, and the names of competitors without compensation.

For Additional Information

Competition updates will be posted on Harley Ellis Devereaux's Web site at www.hedev.com/competition.

All questions regarding the competition should be addressed to:

Harley Ellis Devereaux

5150 Wilshire Boulevard
Los Angeles, CA 90036
Attn: Amy Masten, Communications Services

Tel: 323.965.7444, x394
Fax: 323.965.7445

Email: habitatcompetition@hedev.com



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