



TO: Andy Kopplin, Louisiana Recovery Authority
Ramsey Green, Louisiana Recovery Authority

FROM: Matt Petersen, Global Green USA
Rachel McMahon, Global Green USA

RE: Green schools criteria for CDBG funds

DATE: December 6, 2006

Per your request, Global Green USA (GGUSA) is pleased to provide you with this draft set of recommendations for green building criteria that the Louisiana Recovery Authority (LRA) will use to award Community Development Block Grant (CDBG) funds to school construction projects. We are excited by your commitment to reconstruct schools in a manner that maximizes opportunities for student performance, occupant health, energy efficiency, and resource conservation.

This memo contains both a recommendation for increased funding levels and a schedule for assistance from GGUSA to the LRA. The attached document makes specific proposals for the green building criteria, requirements for application submittal, and the verification necessary for disbursement of funds.

The GGUSA team will travel to the affected region from December 11-14 to tour schools and hold further discussions with you and other stakeholders. Following that trip, GGUSA will submit a final set of recommendations to the LRA no later than December 31, 2006.

Recommend Increased CDBG Level

GGUSA proposes that all schools be required to meet the Green Building criteria proposed in the attached document and that, in recognition of the increased cost of green building, applicants receive 14% of total construction cost instead of the current 10% level.

Assistance from GGUSA to LRA

Quarter 1, 2007

1. Assist the LRA in developing its application materials that pertain to the green portion of the CDBG criteria outlined in this document.
2. Collaborate with the LRA and Architects for Achievement, as appropriate, in developing application materials.
3. Deliver a work plan for verification assistance to LRA.



Quarters 1 - 3, 2007

1. Hold workshops that will target school facilities departments, architects and planners. These workshops will be based on the green building portion of the actual adopted standards – how to apply for funding, explanation of specific criteria, implementation the standards, etcetera.
2. Create and distribute educational materials for educators and decision makers about benefits of green schools for Louisiana.

Throughout 2007

1. Review school construction plans and verify fulfillment of the green building requirements in the application.



DRAFT Green Schools Criteria

*For the Louisiana Recovery Authority
Prepared by Global Green USA*

December 6, 2006



Green Building¹

Preference will be given to projects that *show their project as being in accordance with the following principles and criteria of green school design.* ~~include elements of green building, as measured by the nationally recognized LEED (Leadership in Energy and Environmental Design) Green Building Rating System and/or the Natural Resources Defense Council's Green Communities Criteria. Among others, these standards emphasize sustainable site development, water conservation, maximizing energy efficiency, building facilities using renewable materials, and improving indoor environmental quality.~~

A. Green Building Principles

- 1) *Efficient to Operate*
Green schools use significantly less water and electricity than conventional schools. The benefits are lower utility bills and reduced impact on local resources. Green schools use energy-efficient electric lighting and HVAC systems, dehumidification, ductwork, and water-saving fixtures, to fulfill this principle.
- 2) *Durable and Resilient*
Green schools are designed to withstand severe weather and age. Green schools employ durable roofs, windows, sufficient drainage and water-resistant flooring, to achieve this principle.
- 3) *Healthy and Productive Environment for Students and Staff*
Green schools have health and intellectual benefits for students, teachers and staff. Optimum indoor air quality is ensured through superior ventilation and natural or non-emitting paint, carpet, furniture and cleaning products. A productive learning environment is supported by maximum day lighting using windows and/or skylights, and good acoustics.
- 4) *Environmentally Responsible*
Green schools also employ materials and construction practices that minimize impact on the environment. Building materials and other products that contain maximum recycled content and, to the extent possible, are produced using locally-grown materials, are utilized. Construction and demolition waste is recycled or used on-site.

¹ Recommended amendment to the LRA's CDBG Disaster Recovery Funds evaluation criteria, page 3.



B. Green Building Criteria

- 1) *New or Substantially Reconstructed Schools*
Must achieve a minimum of 33 points in the United States Green Building Council's Leadership in Energy and Environmental Design for Schools (LEED for Schools) program. Five of the minimum 33 points must be those required to achieve the Mold Prevention and Remediation Credit.
- 2) *Damaged School Rehabilitations*
Must fulfill the requirements in the following list of rehabilitation requirements (Attachment A).

C. Application Requirements

Applicants must provide the following:

- 1) *New or Substantially Reconstructed Schools*
The checklist for LEED for Schools with the minimum numeric goal of 33 points. Five of the 33 points must be those required to achieve the Mold Prevention and Remediation Credit.
- 2) *Damaged School Rehabilitations*
Incorporate all applicable items in the Damaged School Rehabilitation Requirements (Attachment A).

Disbursement of Funds

Disbursement of funds will take place following verification by the LRA that all requirements are met at the 100% construction documents phase.

To verify green building criteria, the LRA will require the following documentation at the 100% construction documents phase:

- 1) For new or substantially reconstructed school projects, access to the project's LEED-Online Design Application, a copy of the building commissioning plan, and a full set of plans and specifications.
- 2) For damaged school rehabilitation projects, the Damaged School Rehabilitation Requirements checklist, signed by the project applicant, and a full set of plans and specifications.

Attachment A

Damaged School Rehabilitation Checklist

If any of the following systems, fixtures, or finishes are altered or replaced, then the following requirements apply. The items highlighted in yellow remain to be defined:

- a. Windows
 - i. Double-paned
 - ii. Minimum U-factor of 0.65 and SHGC of .40
 - iii. At least one operable window per classroom
- b. Skylights (excluding tubular systems)
 - i. Minimum U-factor of 0.75 and SHGC of .40
- c. Air Conditioners
 - i. At least SEER 14
 - ii. Controlled by programmable thermostat
 - iii. Include dehumidification controls
 - iv. Must be right-sized per (Standard TBD)
- d. Heat Pumps
 - i. At least 14 SEER or 10.5 EER
 - ii. At least 7.8 HSPF or 3.3 COP
 - iii. Controlled by programmable thermostat
- e. Ducts (including supply and return plenums)
 - i. Mechanically fastened and sealed with mastic
 - ii. Be fully located in conditioned space or insulated to a minimum R4.2 level
- f. Roofing
 - i. For low-sloped roofs (< 2:12) have a minimum Solar Reflectance Index (SRI) of 0.78
 - ii. For steep-sloped roofs (> 2:12) have a minimum Solar Reflectance Index (SRI) of 0.29
- g. Building Insulation
 - i. Minimum wall R-value of 13, ceiling R-value of 19 and include radiant barrier
 - ii. Fiberglass insulation products must be listed on the CHPS low-emitting materials list
- h. Vapor Barrier/Retarder
- i. Lighting
 - i. Classroom
 1. Set a performance goal of 40 foot-candles
 2. Ceiling Heights of 9'6" and above: Use suspended direct/indirect, basic indirect or semi indirect luminaries with dimmable ballasts and T-8 or T-5 lamps

3. Ceiling Heights of 9'6" and below: Use recessed parabolic, basket, or lay-in coffer luminaries with dimmable ballasts and T-8 or T-5 lamps
- ii. General interior lighting must be T-8 florescent or better
- iii. Exit sign lights must be LED
- iv. Exterior lighting fixtures must be full cut-off type and no light may cross the property line
- v. Controls
 1. Classroom lighting controls must include occupancy sensors and photosensors that dim lights when sufficient daylight is present
 2. General Interior lighting, with the exception of emergency lighting, must be controlled by timers
 3. Exterior lighting must be controlled by daylight sensors

j. Daylighting

- i. Consider installing exterior or interior light shelves on north and south facing clerestory (> 6'8") windows
- ii. If replacing roof consider adding tubular skylights

k. Improve Acoustical Performance

- i. Adopt a performance goal of achieving classroom sound levels of 45 dba or less
- ii. Avoid locating HVAC equipment within or directly above the classroom
- iii. Mount roof-top HVAC equipment using vibration dampers
- iv. Use at least four supply diffusers per classroom, each with an NC rating of 18 or less
- v. Size ducts large enough so that air flow velocities do not exceed 2000 fpm for circular ducts, 1200 fpm for rectangular ducts and 800 fpm for branch ducts
- vi. Walls between individual classrooms and between classrooms and hallways or administrative spaces should have a minimum STC rating of 50

l. Pollution Remediation

- i. Mold
- ii. Lead
- iii. Soil testing

m. Exterior Drainage

- i. Surface Drainage must fall away from the building at a minimum 2 percent pitch for the first 10 feet
- ii. Roof Drainage, including gutters and downspouts, must flow onto splash blocks or other drainage system and infiltrate at least 12" from building



- n. Bathroom Fixtures
 - i. Toilets – Dual flush (flushometer or tank-type)
 - ii. Urinals – 0.5 gpf or waterless
 - iii. Lavatory Facets – 0.5 gpm with automatic controls
 - iv. Showerheads – 2.0 gpm
- o. Paint
 - i. Must meet GreenSeal-11 VOC standards
- p. Flooring
 - i. Vinyl sheet goods may not be used (Use natural linoleum, natural rubber or tile products as a substitute)
 - ii. Carpet may not be used in hallways or building entryways
 - iii. Resilient Flooring products must be listed on the CHPS low-emitting materials list
 - iv. Carpet must be certified to Green Label Plus standards by the Carpet and Rug Institute
- q. Built-In Cabinetry and Casework
 - i. Must be free of added urea-formaldehyde
- r. FFE
 - i. Furniture must be Greenguard certified
 - ii. Small Electronic Appliances (i.e. computers, copy machines, etc.) must be Energy Star listed
- s. Recycle at least 50% of Construction and Demolition Waste
- t. Incorporate School Buildings as a Teaching Tool