

Note to PCD Project Manager: Include this language as an exhibit to the Design Professional agreement. Read the highlighted instructions and make changes as necessary. Delete the highlighted language for final contract or Work Order, as applicable. Do not change or delete section headings.

EXHIBIT D
Property Control Division
Green Building Standards

A. Commitment to Sustainable Design

Sustainable design is a priority for this project. It is the intent of the State of New Mexico to apply sustainable development concepts in the planning, design, construction, environmental management, operation, maintenance and disposal of facilities and infrastructure projects, consistent with applicable laws and budget requirements.

In 2010, the New Mexico Legislature enacted the *Energy Efficiency Standards for Public Buildings*. This act requires, for appropriations made after January 1, 2011, that new buildings, selected building additions, or selected building renovations be designed and constructed to attain the U.S. Environmental Protection Agency ENERGY STAR[®] qualification, or an alternative, equivalent standard specified by rule of the department.

B. Property Control Division Green Building Design and Construction Principles

The facility should be designed to:

1. **Optimize Site Potential:** Creating sustainable buildings starts with proper site selection, including consideration of the reuse or rehabilitation of existing buildings. The location, orientation, and landscaping of a building affects the local ecosystem, transportation methods, and energy use.
2. **Minimize Energy Consumption:** A building should rely on optimizing system efficiencies and employing conservation measures. Renewable energy technologies should be used in facility projects whenever feasible and cost effective. New facilities should achieve a minimum delivered energy performance standard of 50% of the US energy consumption for that building type as defined by the U.S. Department of Energy. And for buildings eligible to use the EPA's ENERGY STAR[®] Portfolio Manager tool, achieve a minimum energy performance rating of 69. After January 1, 2011, new buildings, selected building additions, or selected building renovations shall be designed and constructed to achieve an energy performance rating of 75 or higher and be eligible to attain the U.S. Environmental Protection Agency ENERGY STAR[®] label.
3. **Protect and Conserve Water:** Fresh water is an increasingly scarce resource. A sustainable building should reduce, control or treat site runoff, use water efficiently, and implement as many water efficiency improvement Best Management Practices as practicable.
4. **Use Environmentally Preferable Products:** Buildings should be constructed of materials that minimize lifecycle environmental impacts such as global warming, resource depletion, and toxicity. In a materials context, life cycle includes raw

- materials acquisition, product manufacturing, packaging, transportation, installation, use, and ultimate disposal.
5. Enhance Indoor Environmental Quality (IEQ): The IEQ of a building has a significant impact on occupant health, comfort, and productivity. Among other attributes, a building should optimize daylighting, be well ventilated, control moisture, and avoid the use of materials with high volatile organic compound (VOC) emissions.
 6. Optimize Operational and Maintenance Practices: Buildings should be designed to take into account the energy and environmental impacts of operating and maintaining the building. Designers are encouraged to specify materials and systems that reduce maintenance requirements, and/or require less water, energy and toxic chemicals to maintain.

C. LEED® Green Building Rating System™

The United States Green Building Council's (USGBC) "Leadership in Energy and Environmental Design (LEED®) Green Building Rating System™" is the preferred metric. LEED is a flexible system that can accommodate a wide variety of project types, locations, and budgets. LEED uses a menu approach to measure compliance that enables the design team to select which of the credits and points are most appropriate to their individual project. Where actions or criteria identified in LEED are not applicable to a specific project, are not cost effective, or do not comply with current state criteria, the LEED system allows use of alternative features or practices.

While the USGBC is responsible for developing and publishing the rating system and criteria for LEED certification, the project evaluation and certification responsibilities belong to the Green Building Certification Institute (GBCI) an independent nonprofit organization that complies with American National Standards Institute (ANSI) accreditation process standards.

D. Project LEED Certification with the GBCI

Insert one of the following:

Submission of project documentation to the GBCI for official LEED certification is not required for this project. However, the Design Professional shall provide documentation of design decisions as required in the Green Building Design Report, and a LEED scorecard and score shall be submitted to the PCD based on the team's self-assessment of the project.

or

Submission of project documentation to the GBCI for official LEED certification is required for this project. The Design Professional shall be responsible for submitting project documentation to the GBCI for LEED certification, and shall coordinate materials with the construction contractor who shall have primary responsibility for documentation of construction phase elements and requirements.

E. Green Building Design Goal Setting Session

A green building design goal setting session shall be held at the outset of the project. The Design Professional shall initiate and lead this session. Participants should include at a minimum: the Design Professional's team and their consultants representing planning, site design, civil engineer, architecture, MEP (mechanical, electrical, plumbing) engineering, and interior design; user representatives, facility maintenance personnel, PCD project manager and other individuals as warranted.

The green building design goal setting session shall be used to develop consensus on the sustainable design strategies and technologies that will be explored during the design effort. The Design Professional shall use the Preliminary LEED Scorecard as a goal setting tool during this session to determine which of the credits are likely to be earned, which are possible and which are not applicable to the project. This session shall be documented in a concise report that contains a narrative discussion of project goals and priorities.

F. Integrated Design

An integrated design process shall be employed for this design effort, to endeavor to provide the best value solution for the state. It is the responsibility of the Design Professional to ensure that the schematic design and design development process benefits from the input of the full design team representing planning, site design, civil engineering, architecture, MEP (mechanical, electrical, plumbing) engineering, and interior design; user representatives, PCD project manager, facilities manager, and cost consultant. The schematic design charrette shall be attended by design professionals and state facilities staff representing all disciplines. The charrette process shall be followed by a series of full team design and coordination sessions as the design is developed and finalized.

G. Green Building Design Reports

Green Building Design Reports are a requirement of this contract. These reports provide the PCD with documentation that enables project managers to track the design effort as it is progressing. The Design Professional is responsible for preparing a Green Building Design Report at the end of Schematic Design, and at the end of the Design Development/Documentation phase. Drafts of the Green Building Design Report must be submitted with the drawing and specification submittals at 30%, 60%, and 98% Construction Document complete phases.

Unless stated otherwise, the Green Building Design Report documenting construction phase contractor-related elements and requirements shall be completed by the construction contractor.

Content of the Green Building Design Report shall be organized to include each LEED credit, intent, and Task (e.g., Concept, Design Approach, and Construction, Commissioning)/Documentation.

H. Energy Analysis

Energy analysis is a requirement of this contract. This service can be provided either by the Mechanical Engineer responsible for design and documentation of systems, or by an energy analysis consultant. It is the responsibility of the Design Professional to verify that the findings from the energy analysis are well integrated into the design effort, and are used to inform decisions about site planning, architectural envelope design, lighting, and mechanical systems.

Energy modeling requirements include the following:

1. Creation of base case energy model: The base case model serves as a point of comparison for evaluating design options. It represents a building that is minimally compliant with ASHRAE 90.1.
2. Characterization of energy use: Energy use characterization gives the team an understanding of where energy is being used in the facility, and where the greatest savings are possible. This information is presented in pie charts that describe energy cost and energy consumption by end use (e.g. heating, cooling, plug loads, ventilation, etc.).
3. Development of Energy Conserving Measures (ECM's): ECM's are developed and evaluated, for each installation or modification of equipment or system, to provide an estimate of the potential impact on energy use and peak load.
4. Energy analysis of at least three (3) preferred schemes: The individual ECM's are bundled together to produce at least three (3) scheme options. Each of the scheme options is then modeled so the interaction between the various measures can be understood.
5. Revised energy runs: As the design is refined and finalized, revised energy runs are needed to track the energy performance of the design. Up to three revised energy runs are included in the basic energy modeling scope.
6. The Design Professional is responsible for submitting the EPA's ENERGY STAR[®] *Statement of Energy Design Intent* form that shows the design rating at the end of Construction Documents phase.

I. Renewable Energy Systems

Where preliminary screening indicates that use of renewable energy systems may be cost-effective, and if funding is available, then the following requirement should be included in Exhibit D:

Prepare engineering analysis and design studies to integrate renewable energy systems into the design. The type of systems and size of systems shall be optimized using life cycle cost analysis.

J. Daylighting Analysis

For facilities greater than 50,000 SF with potential for complex daylighting solutions, the following requirement should be included in Exhibit D:

A model is required to evaluate daylighting solutions.

K. Cost/Benefit Analysis

Cost/benefit analysis is a requirement of this contract. Cost/benefit analysis shall be used as a design tool to verify that the design provides the best value to the state. Acceptable design alternatives shall be analyzed to determine the best potential for savings and the impact on operations and maintenance and LEED certification. Analyses shall be accomplished using as appropriate and applicable, in combination or alone: Simple payback analysis, standardized payback equations, or life-cycle cost analysis.

Life cycle cost analysis evaluates investment cost (first cost), utility costs (energy, water use, wastewater disposal), operation and maintenance costs, and periodic replacement costs.

Life cycle cost analysis is recommended to guide the following decisions:

- High performance building envelope: Test options that create a high performance envelope including high performance glazing, insulation (beyond code required levels), overhangs for sun control, light shelves, etc. Evaluate savings in energy consumption and potential reductions in the cost of mechanical systems that may result. Also, consider maintenance and periodic replacement costs of these options.
- Energy efficient lighting: Test options that utilize daylighting, energy efficient electric lighting, task-ambient lighting and lighting controls such as daylight dimming and occupancy sensors. Evaluate savings in energy consumption and potential reductions in the cost of mechanical systems that may result. Also, consider maintenance and periodic replacement costs of these options.
- Mechanical system selection: Test a minimum of three different system options to determine the relationship between first cost and life cycle value. Consider operating costs, maintenance and periodic replacement costs of these options.
- Materials durability: Test a minimum of three options for building cladding and roofing to determine the relationship between first cost and life cycle value. Consider operating costs, maintenance and periodic replacement costs of these options.

Produce feasibility study(s) and engineering report(s), to explore potential use of these design strategies and to select the preferred system options prior to engaging in a full life cycle cost analysis:

- Greywater recycling systems
- Alternative wastewater treatment systems

L. Commissioning

Commissioning **is/is not** a requirement of this contract.

M. Measurement & Verification

Measurement & Verification **is/is not** a requirement of this contract.

N. EPA's Comprehensive Procurement Guidelines (CPG)

The EPA Comprehensive Procurement Guidelines (CPG) is the preferred resource for recycled content materials. Meet the EPA CPG for the use of materials with recovered content to the maximum extent possible and practicable.

Final project specifications shall include a list of all CPG items in division 1, and shall explicitly state the recycled content requirements in divisions 2 through 9.

O. No smoking

The building will be designated a no-smoking facility.

P. Regulations and Standards

The following regulations and standards shall be adopted as requirements for this project:

- Comply with environmental laws.
- Meet the requirements of ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential.
- Meet the requirements of ASHRAE Standard 62.1 Ventilation For Acceptable Indoor Air Quality.
- Meet the requirements of ASHRAE Standard 55 Thermal Environmental Conditions for Human Occupancy.

Q. Additional Meetings and Studies

The Design Professional shall be required to attend one design process analysis meeting. The purpose of this meeting is to assess the State's efforts to implement sustainable design and construction requirements into the project and review any lessons learned from the overall effort. The meeting will be conducted as a round table discussion session. The Design Professional shall provide a written analysis of the environmental goals of this project and the design's success in meeting these goals. The Design Professional shall also provide a summary of tools and processes used to research and implement these goals and their results. Additionally the Design Professional shall provide a summary of the actual man-hours expended by the Design Professional's team to implement these requirements.