

# Colby College

## Integrated Project Sustainability Standards

December 2015

### Integrated Planning and Design

1. New Construction or Major Renovation Projects (Typically \$2 million project budget or greater)
  - a. As part of Colby's planning and design process, sustainability shall be integrated in all conversations, including infrastructure, site and building systems, in order to identify and track project goals and life-cycle costs of design alternatives throughout the process. As applicable to the project and its timeline, a kick-off meeting shall be scheduled as early as practical, ideally during the planning, programming, and/or feasibility portion of the project. Additionally, focused charrettes shall be scheduled as needed during the conceptual, schematic, and design development phases. The consultant team shall plan for representation from major project stakeholders including occupants and operations staff and bring sustainable design alternatives to be considered throughout the planning and design process.
    - i. Prior to commencing design, initial benchmarking data as it relates to energy (ASHRAE, ENERGY STAR, CBECS), water, and other resources (waste, recycling, stormwater, materials, site planning, indoor environmental quality) for the building type shall be shared and discussed. Projects shall use this benchmarking data in order to identify resource reduction goals for the facility. These goals shall be documented and referred back to throughout the project's planning, concept, schematic and design processes. These goals will set the baseline performance for the project and are used to inform and guide project decisions throughout the process. Life-cycle costing shall be considered.
    - ii. The information discussed and the finalized sustainability goals shall be used to draft the Owner's Project Requirements (OPR) document and Basis of Design (BOD). Both of these documents shall be updated throughout the process as a means to document the project team's decisions. The design team will document these with Colby review. There shall be ongoing coordination and collaboration regarding these decisions with the commissioning agent.
    - iii. At a minimum, all requirements included in LEED v4's Integrative Process credit need to be met.
    - iv. Meeting minutes must be compiled for each meeting and/or charrette. Minutes shall document the sustainability topics discussed, next steps with responsibilities and deadlines, project goals and project decisions. These minutes will be collected, compiled, and stored in the College's files for project record.
2. Small Projects, Renewal and HVAC/Utility upgrades (Typically less than \$2 million project budget)
  - a. During the project's early planning and design phases (feasibility, programming, or concept design), address goal setting and sustainable design alternatives to evaluate the project success with project stakeholders. Sustainability needs to be integrated into all design discussions. Facility occupants, site users, other stakeholders, and operations and maintenance staff shall be present for these discussions. Life-cycle costing shall be considered. Design alternatives, as proposed by the design team and stakeholders, and any necessary life-cycle costing analyses, shall be discussed as part of the project kick-off meeting with the project team.

- i. At a minimum, project sustainability discussions shall include but are not limited to the following topics as appropriate for the scope of the project. Some of these may be inter-related.
  - 1. Energy performance by end use (HVAC, lighting, envelope, controls, etc.)
  - 2. Water performance (plumbing fixtures and fittings, process use, irrigation, etc.)
  - 3. Materials selection for facility, fixtures, furniture and equipment
  - 4. Waste management planning and diversion goals
  - 5. Site and landscape sustainability
- ii. Meeting minutes must be compiled for each meeting and charrette. Minutes shall document the topics discussed, next steps with responsibilities and deadlines, project goals and project decisions. These minutes will be collected, compiled, and filed into the College's files for project record.
- iii. If commissioning is included as part of the project scope, the information discussed and the finalized goals from these meetings shall be used to draft the Owner's Project Requirements (OPR) document and Basis of Design (BOD). Both of these documents shall be updated by the design team with Colby review throughout the process as a means to continuously document the project team's decisions.

#### **Planning and Design Review Process**

- 1. New Construction or Major Renovation Projects (Typically \$2 million project budget or greater)
  - a. Sustainability shall be an integral element of planning and design. Coordinate study and drawing reviews with Colby College stakeholders throughout planning and design. As applicable, this includes Planning, Conceptual Design, Schematic Design, Design Development, and Construction Documentation Phase drawing and specification reviews. Plan time in the schedule to review, respond, and close each drawing and specification comment.
- 2. Small Projects, Renewal and HVAC/Utility upgrades ( Typically less than \$2 million project budget)
  - a. See above

#### **Life-Cycle Costing**

- 1. New Construction or Major Renovation Projects (Typically \$2 million project budget or greater)
  - a. When making design recommendations to the College for building systems during design, the design team will use life-cycle costing (LCC) in order to evaluate the full cost of ownership of the design alternatives. The LCC analysis will quantify the 20 year impacts of greenhouse gases, energy costs, and maintenance implications of design options. The scope of LCC will vary from project to project, but will typically focus on envelope, HVAC, stormwater, city water, waste water electrical or other building systems. Other possible study topics include but are not limited to site landscape, circulation or site systems.
    - i. Project Teams will identify those options to undergo evaluation as part of the integrated design charette.
    - ii. For each analysis, the design team is required to write up the results in a 1-page white paper for the project's file.
    - iii. In Appendix A, please find updated utility rates and assumptions to be used in the life-cycle costing exercise.
- 2. Small Projects, Renewal and HVAC/Utility upgrades (Typically less than \$2 million project budget)

- i. LCC shall follow the same standards, and produce the same deliverables as outlined above. As outlined in the Integrated Planning and Design section, any LCC analyses shall be determined during the ongoing design process.

## **Energy Modeling**

1. New Construction or Major Renovation Projects (Typically \$2 million project budget or greater)
  - a. Use hour by hour simulation software (eQUEST or Energy Plus are preferred) to model proposed building and system designs. The energy modeling software shall be able to create parametric runs that compare the energy savings and greenhouse gas (GHG) savings among design alternatives and generate output data for load, system or plant variables on a daily, weekly, or monthly timescale. These simulations will allow Colby to analyze different design strategies in order to reduce their operating costs, minimize greenhouse gas emissions, assist in measurement and verification exercises and inform future projects.
    - i. By phase, the College would like to review the following deliverables:
      1. Schematic Design or Earlier – Initial modeling results based on programming space needs and large assumptions in order to understand the energy consumption implications of the project in kBtu/SF in order to compare to benchmarking data.
      2. Design Development – Prepare parametric runs of design alternatives identified to meet sustainability goals. These results of energy savings will be used to complete the LCC analyses identified in the previous section.
      3. Construction Documents – Complete baseline and design energy models.
      4. Building Turn-Over – Provide the as-built energy model results and its electronic file. This will allow the project to use the energy model as a tool during operation and will help inform future auditing or commissioning activities.
2. Small Projects, Renewal and HVAC/Utility upgrades (Typically less than \$2 million project budget)
  - a. As appropriate to the project, or as identified through the initial goal setting discussion or ongoing integrated planning and design, prepare energy and GHG estimates for design alternatives in order to evaluate their performance.

## **LEED Certification**

1. New Construction or Major Renovation Projects (Typically \$2 million project budget or greater)
  - a. Projects have a requirement to achieve LEED Silver certification at a minimum. LEED Gold or LEED Platinum is the desired goal for each project. The College uses LEED v4 for all certification projects.
  - b. As part of the certification process, project teams are required to earn the credits as outlined in the attached scorecard included in Appendix A at a minimum. Please note these credits represent the minimum breadth and threshold that shall be achieved for each credit.
2. Small Projects, Renewal and HVAC/Utility upgrades (Typically less than \$2 million project budget)
  - a. Based on their budget, scope, and size, some of these projects may not pursue LEED certification. If the College elects to pursue LEED certification, these projects are expected to meet the requirements for New Construction or Major Renovation Projects outlined in Item 1 above. Regardless of LEED certification, it is the expectation that all Small Projects, Renewal and HVAC/Utility Upgrades address the requirements as outlined throughout this document for projects of this scope.

## **Incentive Opportunities**

1. New Construction or Major Renovation Projects (Typically \$2 million project budget or greater)
  - a. Project teams are expected to assist with the specification of lighting, mechanical and other applicable fixtures and equipment that are eligible for utility incentive programs.
  - b. Incentives discussions shall occur during the goal setting and early discussions in the integrated planning and design process.
  - c. For new construction projects (15,000 SF or greater), the College expects the design team to comply with the standards outlined in the Maine's Advanced Building Program offered by Efficiency Maine. The standards for this incentive program are based on the requirements for Tier 1 Projects included in the New Construction Guide by Advanced Buildings.
2. Small Projects, Renewal and HVAC/Utility upgrades (Typically less than \$2 million project budget)
  - a. As applicable, project teams are expected to assist with the specification of lighting, mechanical and other applicable equipment that are eligible for utility incentive programs.
  - b. Incentives discussions shall occur during the integrated planning and design charrette process.

## **Renewable Assessment**

1. As applicable to project scope, evaluate and assess the possibility of integrating a renewable energy system into the building. At a minimum, for new construction projects, discuss and review the building's orientation in order to maximize its potential for a renewable energy system or significant energy conservation retrofits for major renovations.
2. Due to scope or budget, if a renewable energy system is not possible, evaluate and prepare the building to be renewable ready both structurally and mechanically or electrically to ensure the ease of a renewable energy installation at a later date. Possibilities include but are not limited to solar photovoltaic, solar thermal, and wind.

## **Sustainable Site and Landscape Design and Development**

1. New Construction or Major Renovation Projects (Typically \$2 million project budget or greater)
  - a. As applicable to project scope, projects shall meet all prerequisites listed in the SITES v2 Rating System. Requirements shall be reviewed and implemented as part of the project's integrated planning and design process. Site and landscape design shall enhance or develop as applicable the campus green infrastructure.
2. Small Projects, Renewal and HVAC/Utility upgrades (Typically less than \$2 million project budget)
  - a. Where applicable to the project type, the design, construction or site restoration shall include elements that enhance the site and landscape for water conservation, stormwater retention and filtration, habitat and biodiversity, as well as ensuring pedestrian and bike safety.