

2.4.4 ENERGY ISSUES

2.4.4.1 Life Cycle Cost Analysis

Purpose of Life Cycle Cost Analysis

Connecticut General Statutes (CGS), Sec. 16a-38, requires that a Life Cycle Cost Analysis (LCCA) be performed by design professionals for all State owned or funded new buildings, additions or renovations, in order to evaluate all reasonable alternate designs for life cycle cost effectiveness.

LCCA Determination Request

All State funded projects are required to submit a [Life Cycle Cost Analysis Determination Request Form](#) (DPW form # 310F) to the Department of Public Works (DPW). The data shall be evaluated by the DPW Chief Engineer to determine if a full LCCA is required for a given project. The DPW-Project Manager will distribute the forms to the A/E at the initial scope meeting. The A/E shall then return the completed forms as early as practical in the programming/schematic design phase, so the DPW can determine if a full LCCA will be required.

Life Cycle Cost Analysis

When required, the Architect/Engineer must prepare and submit a full LCCA in the manner required under CGS 16a-38, and specified in the guidance document [LCCA Guidance Document](#) and utilize the [Life Cycle Cost Analysis Form](#) developed by DPW. Energy Goals shall be consistent with ASHRAE/IES 90.1-1999 *Energy Efficient Design of New Buildings except New Low-Rise Residential Buildings*, and/or the Connecticut State Building Code.

The LCCA package will include:

- A narrative description including at least three different types of heating, cooling, ventilation, domestic water heating, and lighting systems to be evaluated;
- Complete economic calculations for each alternative;
- Recommendations for system selections. The recommendations should include information on the best warranty for the systems and materials being proposed, and any comments provided by the agency and/or DPW.

The economic calculations will employ reasonable and documented economic factors (discount rates, fuel cost inflation rates, etc.). Some freeware (such as BLCC5, published by the Federal Energy Management Program (FEMP), include federal economic data models. (<http://www.eere.energy.gov/femp/techassist/softwaretools/softwaretools.html>) Current facility energy costs should be used as a baseline when available.

DPW Technical Services Unit will issue LCCA review comments. The DPW Chief Engineer will provide the final approval of all LCCA packages. Any changes in the design after such approval will require a new LCCA package to be submitted.

2.4.4.2 Energy Conscious Design

There are several programs available from the utilities that provide financial incentives to include energy efficient materials and systems in a project. These programs cover activities from new construction and major renovations (Energy Conscious Construction – CL&P; Energy Blueprint – UI) to equipment replacements and minor improvements (Custom Services – CL&P; Energy Opportunities –UI). DPW actively participates in the programs from both Connecticut Light & Power (CL&P) and United Illuminating (UI).

Consultant's Procedure Manual

All A/Es **ARE REQUIRED** to participate in the programs for which their project qualifies. The A/E **IS REQUIRED TO** attend meetings and provide the data and analysis required by the utility to insure the maximum incentive for the state is accomplished. The A/E shall identify, in each section of the technical specifications, the items associated with a utility agreement. The A/E is responsible for verification that the materials and systems installed meet the requirements of the agreement for the project.

The primary contact person for implementation of the programs is the DPW Project Manager. The facility's utility account representative, if one is assigned to the facility, is the utility's initial point of contact. The following are additional contacts associated with the utility programs:

Contact: Northeast Utilities
The Connecticut Light & Power Company
Program Administrator
PO Box 270
Hartford, CT 06141-0270
Telephone: (860) 832-4805 or FAX: (860) 832-4700

United Illuminating
Program Administrator
PO Box 1564
New Haven, CT 06506
Telephone: (203) 499-2025 or FAX: (203) 499-2800