EDAPT Example Project  
1123 W 3rd Ave, Denver, CO 80223

Xcel Energy’s Energy Design Assistance Program

Introductory Report

June 29, 2013

**Prepared for:**

Mr. Customer

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Energy Design Assistance Program Process & Timeline

Xcel Energy’s Energy Design Assistance (EDA) process is designed to assist the Owner and Design Team in making decisions concerning energy-efficiency measures for the project. The main steps of the process are as follows.

|  |  |  |
| --- | --- | --- |
| **Construction stage** | ENERGY DESIGN ASSISTANCE STATE | **DATE** |
| **aPPLICaTIon**  **Design phase** | Step 1: APPLICATION  Complete application  Xcel Energy accept/reject of application | **June 29, 2013** |
| **PRE/EARLY SCHEMATIC DESIGN PHASE** | Step 2: INTRODUCTION  Introductory meeting  EDA Program overview  Energy efficiency strategy discussion  Begin collection of building and incremental cost data  Submit introductory report | **July 15, 2013** |
| **Schematic Design phase** | Step 3: PRELIMINARY ENERGY ANALYSIS (PEA)  Early massing, HVAC, daylighting (Enhanced Track only)  Preliminary energy analysis meeting  Review of analysis results in PEA report  Selection of measures to be included in final energy analysis  Submit PEA report |  |
| SD completion | |  |
| **Design Development phase** | Step 4: FINAL ENERGY ANALYSIS (FEA)  Final energy analysis meeting  Review of updated whole building analysis in FEA report  Review of program incentives  Introduction to verification process  Customer selects an energy design alternative, showing an intent to move forward with selected measures |  |
| DD completion | |  |
| **Construction Document phase** | Step 5: CONSTRUCTION DOCUMENT (CD)  Customer sends final design CDs to EDA Verification Consultant  **EDA Verification Consultant:**  Confirms measures included in final design documents. Sends to EDA  Modeling Consultant to update model  Submits CD report with updated model results and incentive  EDA consultant complete green certification docs (Enhanced Track only)  Design team completes documentation for fee reimbursement |  |
| **CD Completion** | |  |
| **Construction** | **Construction Occurs. Estimated construction completion date** |  |
| **Construction ends** | |  |
| **Post-Occupancy** | EDA Verification Consultant conducts:  On-site measurement and verification. Sends M&V results to EDA Modeling Consultant to update model  Submits M&V report with updated model results and incentive |  |
| **Incentive payment to customer is received approximately two months post-verification** | | |

Xcel Energy, through the Energy Design Assistance program, has qualified energy consultants to provide our customers with a service that includes an integrated design process. This integration includes using an energy model to predict energy savings. The energy model itself is an instrument to project results and review different energy efficiency opportunities. The results of these models belong to Xcel Energy and their customers as participants through the Energy Design Assistance program.

Xcel Energy customers participating in the Energy Design Assistance program may distribute the results of their model to anyone they choose. Xcel Energy will not release this information unless written permission from the customer has been obtained.  As a result of this permission, two reports will be provided: the Preliminary Energy Analysis Report and the Final Energy Analysis Report. Xcel Energy also cautions the use of these reports; data is based on an analysis done for a specific time frame.  Buildings naturally adjust as occupancy reaches its full potential, causing variations from pre-construction data.

Energy Design Assistance Incentives

Rebate to Customer

Xcel Energy provides rebates based on a pay for performance (P4P) model. P4P calculates the customer and design team rebate based on a percentage of total energy saved (kW, kWh, Dth) relative to the ASHRAE 90.1-2007 EDA Base model. P4P percentages and payment schedule are available at [www.xcelenergy.com/businessnewconstruction](http://www.xcelenergy.com/businessnewconstruction).

Energy Design Assistance projects must implement a combination of energy saving measures that meet or exceed Xcel Energy’s required minimum annual energy savings thresholds in order to achieve the full potential of cash incentives. Requirements include:

Basic Track: 15% kW savings reduction, and 15% natural gas savings reduction relative to code

Enhanced Track (Early Analysis/Certification): 30% kW savings reduction, and 15% natural gas savings reduction relative to code.

Note: The EDA Enhanced track is for customers who have a more aggressive energy goal and want to begin analysis in pre-design. By taking a look at earlier design options there is greater flexibility to make decisions. Additional analyses covered in the Enhanced track include 3rd party verified sustainable green building certification (ex. U.S. GBC’s Leadership in Energy and Environmental Design (LEED-NC), massing, daylighting, lighting, and/or early HVAC.

If these requirements are not reached, the project may receive a reduced incentive to offset some of the energy design assistance costs associated with early energy modeling. In addition, if the minimum required savings are not met, Green Building Certification submittal work, such as LEED EA Credit 1, will not be completed or rebated for projects in the Enhanced track.

The building must be a natural gas customer of Xcel Energy to receive the natural gas incentives. If the building is on transport gas service at the time of the introductory meeting, natural gas incentives will not apply.

Project Summary

|  |  |
| --- | --- |
| Project Name | EDAPT Example Project |
| Xcel Energy Project # |  |
| Location | 1123 W 3rd Ave, Denver, CO 80223 |
| Building Type | Hotel |
| Conditioned Floor Area | 52,000 |
| Unconditioned Floor Area | 0 |
| Above-Grade Stories | 3 |
| Below-Grade Stories | 0 |
| Electricity Provided by Xcel | Yes |
| Natural Gas Provided by Xcel | Yes |
| District HeatingGas Provided by Xcel | Yes |
| District Cooling Electricity Provided by Xcel | Yes |
| EDA Baseline | ASHRAE 90.1-2007 |
| Track (Basic or Enhanced) | Basic |
| Certification (Enhanced Only) | USGBC LEED Silver |
| Early Analysis (Enhanced Only) |  |
| Estimated Savings (vs. baseline) |  |
| Demand (kW) | 20 |
| Energy (kWh) | 100,000 |
| Gas (Dth) | 200 |
| Estimated Construction Completion Date | June 29, 2014 |
| Estimated 80% Occupancy Date |  |
| Estimated Verification Date |  |

|  |  |
| --- | --- |
| Customer incentive calculations are based on the following dollar amounts | |
| Demand ($/kW) | $ 400 |
| Energy ($/kWh) | $ 0.04 |
| Gas ($/Dth) | $ 4 |

Project Participants

Project participants at the meeting included:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Company | Role | E-Mail | Phone | In Attendance |
| John Doe | The Best Architects | Architectural Firm | john.doe@arch.com | (252) 626-8842 | Yes |
| Jim Smith | The Best Mechanical Engineers | Mechanical Engineer | jim.smith@contractor.com | (252) 626-8842 | yes |

Project Goals & Analysis Scope

The customer’s goal is to build a LEED Silver hotel that saves energy compared to a code minimum building while staying within budget. The design must be simple enough that the building can be run without an on-site facility manager, and must meet minimum brand standards enforced by the hotel brand. The mechanical system cannot be changed due to these brand standards. The architect has little experience considering energy efficiency in designs, but is very interested in learning and being a part of the process.

This analysis will include building orientation, building envelope (insulation levels, infiltration, windows), lighting systems, and plug-load equipment (TVs, mini-fridges, etc. in guest rooms).

The hotel will be three stories with roughly 52,000 sf of floor area. Because of the HVAC design limitations on this project, we recommend that this building go through the Basic EDA Track.

Measure List

The following energy efficiency measures were discussed with the Design Team to consider for analysis. This list will be further expanded during analysis.

* Architectural
  + - Building orientation
    - Changing window-to-wall ratio
    - Wall insulation levels
    - Roof insulation levels
    - Window types
* Lighting
  + - Efficient lighting and lighting controls in guest rooms
  + Plug load & equipment
    - Efficient TVs, mini-fridges, etc. in guest rooms

Next Steps & Action Items

* Action Item: Send initial programming drawings to Energy Consultant
  + Assigned to: John Doe (The Best Architects)
  + Due Date: 7/20/2013
* Action Item: Send cut sheets for potential window types to Energy Consultant
  + Assigned to: John Doe (The Best Architects)
  + Due Date: 7/20/2013
* Next meeting: PEA meeting – August 10, 2013