PUBLIC SECTOR NEW CONSTRUCTION

The Illinois Department of Commerce and Economic Opportunity (DCEO) offers financial incentives for energy efficiency improvements in Public Sector building designs that surpass energy code requirements. Incentives of up to $2.50 per square foot (sf) are available.

Eligible projects include new construction or major renovation by customers of ComEd, Ameren Illinois, Nicor, Peoples, or North Shore. Renovation projects must exceed 15,000 square feet. Applicable renovations should involve a change in occupancy classification or affect at least two or more of these three systems: Building Envelope, HVAC Systems, or Lighting Systems.

Incentives reflect how far beyond the Illinois Energy Conservation Code for Commercial Buildings (IL ECC) the building or components will be constructed. The size of the incentive is based on computer-simulated energy and cost savings. The exact amount is calculated from the difference in modeled energy consumption (in electric kWh and natural gas therms) and the percentage difference in facility energy costs between the proposed building design and a minimally code-compliant baseline building design—i.e., how far the design goes beyond the code.

Two types of incentives are available for new construction. The Base Incentive is $0.08 per kWh saved and $0.80 per thermm of natural gas saved. A LEED Bonus Incentive ranges from $0.20 per square foot (for projects designed to be 10% beyond code) to $1.00 per square foot (for projects 30% or more beyond code) for projects that will be applying for LEED Silver, Gold, or Platinum Status. The maximum award cannot exceed $50,000 for the LEED Bonus or $2.50 per square foot for both incentives combined. Starting in 2011-2012, the percentage beyond code is based on combined energy cost savings from electricity and natural gas.

The projects reviewed by SEDAC received DCEO public sector incentives ranging from $15,348 to $80,388. As an example, last year a 30,350 square foot school received $54,842 in incentives. The school was designed to be 48% beyond code, was applying for LEED Gold, and was modeled to save 306,150 kWh. The incentives were calculated as follows:

<table>
<thead>
<tr>
<th>Incentive</th>
<th>Cost (max. award)</th>
<th>Incentive Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Incentive</td>
<td>$0.08/kWh saved * 306,150 kWh</td>
<td>$24,492</td>
</tr>
<tr>
<td>LEED Incentive</td>
<td>$1.00/sf (max. award) * 30,350 sf</td>
<td>$30,350</td>
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<tr>
<td>Total Incentive</td>
<td></td>
<td>$54,842</td>
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</tbody>
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Ideas for designs that exceed code minimums:

- **Increase building insulation levels** beyond minimum total assembly performance requirements for code compliance. Particularly in new construction, this item is a fairly simple improvement and the benefit should persist for many years. Increased insulation also contributes to a more comfortable building and smaller mechanical systems. Post construction, insulation is typically very difficult to increase. Special attention should be paid to increasing levels of continuous insulation to minimize the effect of thermal bridging. See SEDAC newsletter article November 2010.

- **Specify high quality windows, doors and skylights** that exceed the minimum energy performance characteristics specified by the code. With regard to a building envelope, windows (and other glazed elements) are analogous to a weak link in a chain. During the summer windows allow significant solar heat gain that subsequently must be removed by the cooling system, and during the winter windows allow significant heat loss that must be replaced by the heating system. Also, adding permanent shading elements can further reduce unwanted solar heat gain. Once again, benefits of this improvement include both its persistence for many years and its contribution to a more comfortable building environment. Windows are typically very costly to improve post construction. See SEDAC newsletter article December 2010.

- **Envelope air sealing** – Although the current code does not address a specific measured level of air tightness, the code does require envelope elements be sealed to reduce air and moisture infiltration. See SEDAC newsletter article November 2010. Reducing air infiltration is a proven method to achieve energy savings, can contribute to the durability of the envelope assembly, and can contribute to a more comfortable interior environment. In the absence of air sealing metrics in the code, this measure is not currently eligible for incentive funds.

- **Specify higher efficiency heating and cooling plants** that exceed the minimum energy performance characteristics specified by code. The incentives help offset the increased cost of the more efficient equipment, and the building will reap the additional benefit of lower utility bills. See SEDAC newsletter article May 2011.

- **Specify ventilation system improvements** – Increased savings can be achieved by expanding the scope and application of measures such as outdoor air damper shutoff control, demand control ventilation, and economizers to more systems than required for minimum code compliance. See SEDAC newsletter article July 2011. Including expanded (beyond code) application of energy recovery and use of systems (such as dedicated outdoor air units) provides even more opportunities for saving.

- **Specify high efficiency lighting and controls** – Typically, a significant portion of every utility bill is due to lighting. Many ways to reduce lighting loads below code-allowed maximums are available. High quality fixtures, premium lamps and ballasts, daylight dimming controls, and occupancy sensors are a few examples that can contribute to substantially reduced lighting loads and a decrease in cooling loads. Color and reflectance levels of interior finishes also influence human perception of how well lit a space is and should be considered in the design. Adding occupancy sensors, photosensors, or programmable time-based lighting control to spaces not currently required by the code can also lead to beyond-code savings.

- **Adding variable frequency drives for motors** beyond those required by the current code can yield substantial savings. The speed can be modulated on motors in many applications with systems designed for variable flows.

Private businesses can apply to ComEd or Ameren Illinois for New Construction incentives. Designing new buildings or renovations to achieve a level of energy performance beyond code required specifications generates long term benefits in the built environment. Available financial incentives make that choice more affordable.

For more information call SEDAC at 800-214-7954 or see the SEDAC website.