Overall Energy Consumption at the Capital Circle Office Center

The new Department of Revenue (DOR) buildings were completed in 2010 and are located at the Capital Circle Office Center (CCOC) in Tallahassee. The buildings earned gold level certification from the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system.

The new DOR buildings were connected to the main CCOC electrical distribution system in August of 2009. However, the DOR buildings were not fully occupied until the later months of FY 2009/2010. The most recent 12-month period from June 2010 through May 2011 represents a full year that the new DOR buildings were known to be fully occupied.

The table below shows the total electrical consumption for the CCOC campus back through FY 2007/2008. FY 2007/2008 represents the last year of energy consumption before construction of the new DOR buildings began. Therefore, FY 2007/2008 best represents CCOC energy consumption prior to the construction of the new DOR buildings.

Actual Capital Circle Office Center (CCOC) Electrical Consumption

Year	CCOC Square Footage	Total Electrical Consumption (kWh)	Notes
FY 2007/2008	1,292,328	21,949,000	*Base year; Prior to all work and modifications*
FY 2008/2009	1,292,328	21,042,000	*DOR under construction; modifications under way*
FY 2009/2010	1,792,328	23,565,600	*DOR on main CCOC system, but not fully occupied*
FY 2010/2011	1,792,328	24,245,200	*DOR fully occupied*

The new DOR buildings were designed to be very energy efficient and consume only 4.55 million kWh of electricity annually. The impact of the new DOR buildings on the CCOC system (i.e., the difference between FY 2010/2011 and FY 2007/2008 consumption) was only 3.0 million kWh.

Viewed from a different perspective, the total square footage increased 38.7 percent while the annual electrical consumption only increased 10.5 percent. The supporting calculations are as follows:

> ***Percent change in square footage: (1,792,328 – 1,292,328) ÷ 1,292,328 = 0.387 = 38.7%***
> ***Percent change in kWh: (24,245,200 – 21,949,000) ÷ 21,949,000 = 0.105 = 10.5%***

The "better than expected" energy performance can be partially attributed to post-design changes to the CCOC central energy plant. Part of the DOR project involved installing a new chiller unit in the CCOC central energy plant, but the chiller that was originally specified was abandoned for a more energy efficient unit. In fact, it became clear that the original chiller could be downsized and could still provide adequate cooling capacity for the additional load that the new DOR buildings placed on the CCOC central system.

A smaller but dramatically more efficient chiller was ultimately selected. The new chiller is by far the most energy efficient machine in the CCOC central plant and is now being used as the base-load unit. Along with a chiller plant optimization effort that has given the plant variable flow capabilities , the new chiller is reducing energy consumption and costs for the entire CCOC campus throughout the year.