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To Whom It May Concern,

I am pleased to affirm the value and innovative nature of Penn's Century Bond for this STARS report. In March 2013, Penn issued a 100-year century bond for the sum of \$300 million, at a historically low interest rate of 4.67%. Of this sum, two-thirds will be used to fund 45 lighting and up to 17 whole-building HVAC energy conservation projects on Penn's campus.

Although this is a non-traditional use of these types of funds, deferred maintenance projects like these generally have greater difficulty in garnering donor support, contrary to new building construction. The need to upgrade these aging critical systems, however, is a top priority in terms of reducing the University's electricity and energy use. According to research by the US Green Building Council, buildings account for 24-50% of energy use, 38% of carbon dioxide emissions, and 72% of electricity consumption in the United States; at Penn, about 60% and 20% of the University's total emissions are from electricity and steam use, respectively. The new lighting systems are estimated to create an annual energy savings of 50-60% per building, equating to 10 million kilowatt hours of electricity saved, or 15.5 million pounds of carbon dioxide mitigated annually. For each of the HVAC projects, an average 42% annual energy savings is estimated, which equates to 20 million pounds of carbon dioxide mitigated per year. Penn's Facilities and Real Estate Services have estimated that these improvements will pay off their initial capital investment in the form of cost reduction and energy savings in six years for the lighting projects and twenty-five for the HVAC projects. Additional energy savings over the life of the systems will help pay the accrued bond interest over time.

The Century Bond and the energy projects it funds reflect the University's sustainability sentiments outlined in Penn's Climate Action Plan and its physical/strategic campus plan, PennConnects 2.0, and I believe that this initiative exemplifies the sustainable innovation that this STARS report seeks.

Sincerely,

Ken Ogawa

Ken Ogawa
Executive Director of Operations and Maintenance
Facilities and Real Estate Services
University of Pennsylvania