



ENERGY CONSERVATION & BUILDING STANDARDS

More than 80% of campus greenhouse gas emissions result from on-site combustion and grid electricity purchases that heat, cool, and provide electricity to campus buildings. Consequently, achieving our carbon neutrality goal will require a strong building energy conservation program, and this is considered top priority as it leads directly to both emissions reductions and cost savings that can facilitate even further emissions reductions. The ECBS SWATeam members recommend actions the Urbana-Champaign campus can take to best reduce building energy consumption.

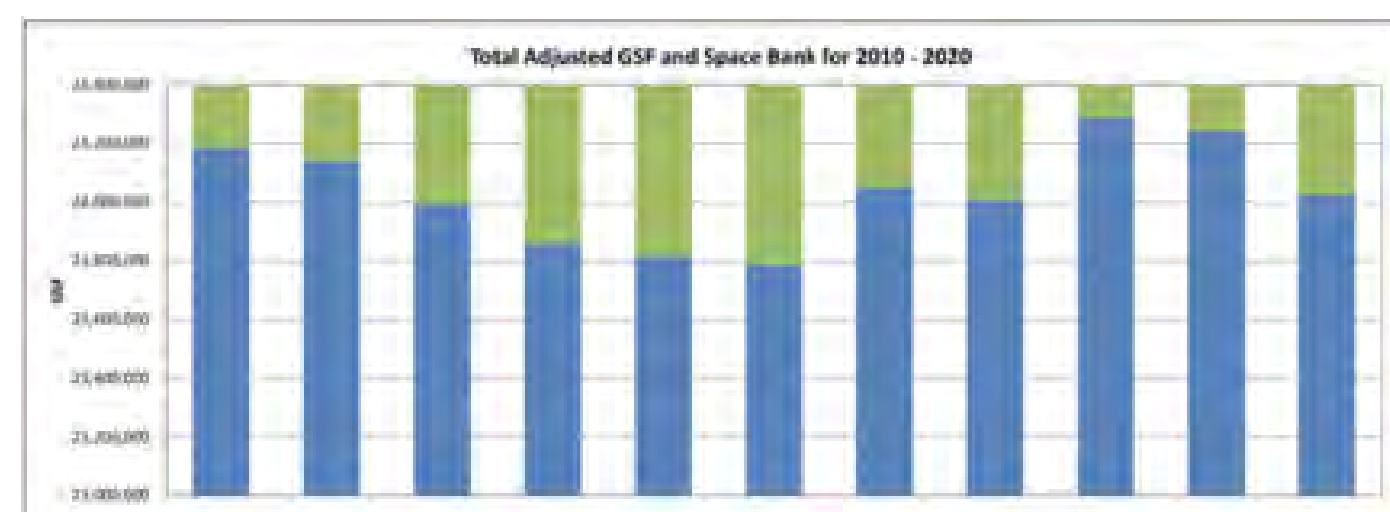
OBJECTIVES

2.1. Maintain or reduce the campus gross square footage relative to the FY10 baseline.



Status:
Policy approved in 2015

- The Net Zero Space Growth Policy was approved and adopted into the Campus Administrative Manual effective July 1, 2015.
- Numbers prior to 2015 have increased due to adding existing buildings to the inventory (as not all buildings were in the database) — and we are much closer to a complete inventory. Numbers past 2015 have changed due to buildings going off line and coming on line at a different rate than predicted. Furthermore, numbers for 2019-2020 are forecasted and may not come to fruition.
- Associate Director for Space Analysis Jill Maxey is tracking square footage of campus and the “space bank.” See DRAFT below. Green bar represents current and projected space bank. Blue bar represents current gross square footage (GSF).



The blue bar shows adjusted Gross Square Footage, from 2010 to 2020, with a projections for 2019 and 2020.

2.3. Strengthen centralized conservation efforts focusing on building systems to achieve a 30% reduction in total campus building energy use by FY20. This includes meeting the LED Campus commitment.



Status:
Achieved; improving annually

- Based upon the FY18 energy data, we have achieved a 36% energy use intensity reduction, surpassing our 2020 iCAP goal of 33%.
- Energy Service Company (ESCO) projects are continuing. Retrocommissioning (RCx) projects at the Electrical and Computer Engineering (ECE), Administrative Information Technology Services (AITS), and McKinley Health Center buildings are underway. RCx accrued avoided utility costs of more than \$55 million in 11 years of operation.
- More funding is needed to achieve more energy conservation. We do have advisable energy projects that require funding.
- A Certified Green Labs Program recommendation was approved. iSEE's program, already up and running, focuses on reducing energy consumption in labs (e.g. fume hoods, freezers).
- LED bulbs continue to be installed in exterior lights and interior exit signs.

2.2. Identify the highest achievable energy standards for new buildings and major renovation, and incorporate these into the campus facility standards by the end of FY16.



Status:
Standards updated Oct. 1, 2017

- The Adopted American Society of Heating, Refrigerating and Air-Conditioning Engineers' (ASHRAE) 90.1-2013 energy standard is the current standard for new construction in the University of Illinois Facility Standards.
- Energy savings that are obtained under the 2013 edition of ASHRAE 90.1 exceed those from the 2010 edition, which is required in Leadership in Environmental Energy Design (LEED) 4. The U of I Facility Standards require compliance with all LEED prerequisites and several additional credits, resulting in energy savings in excess of 8%.
- The campus Facility Standards for Energy Conservation include a requirement for a minimum of 25% improvement for new construction and 20% improvement for major renovations above the “baseline” building.

2.4. Engage and incentivize the campus community in energy conservation, including a comprehensive energy campaign, with at least 50% of units participating by FY20.

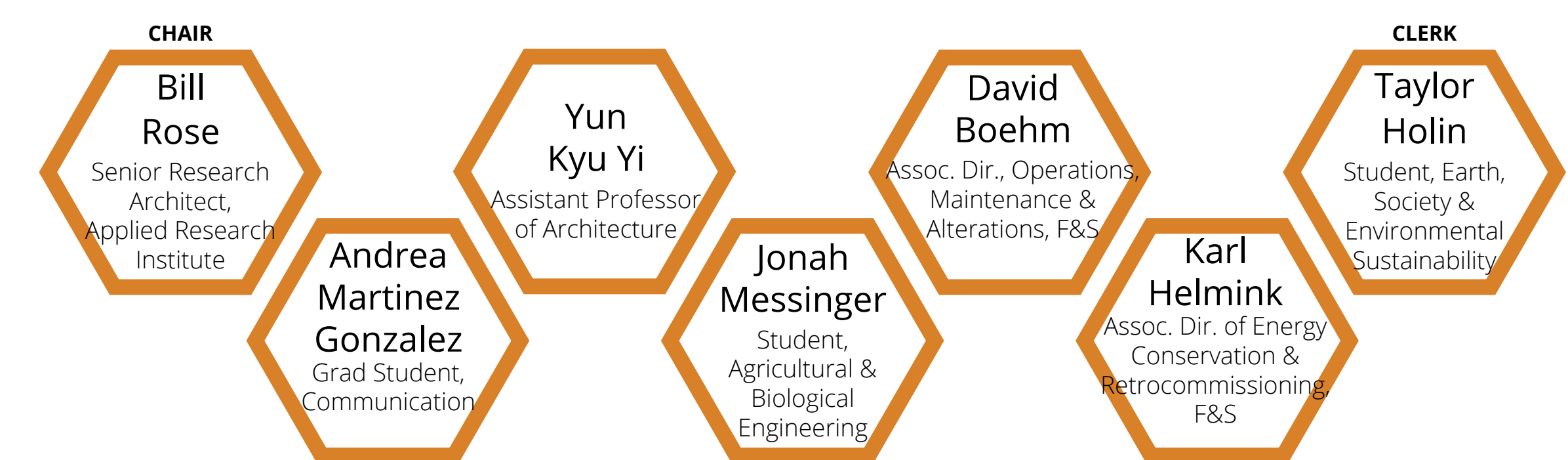


Status:
In progress

- Illini Lights Out through FY18: 70,225 lights turned out. ~ \$10,500 saved. 88.2 tons of carbon saved. 500+ students participated. Being implemented monthly through iSEE.
- Certified Green Office Program (CGOP) had 75 units participating by end of FY18.
- Eco-Olympics engaged 16 residence halls in FY18 with 16,353 kWh (27,343 pounds of carbon) saved.
- U of I campus won first place in the International Laboratory Freezer Challenge FY18 (see photo above right), with 45 labs in 17 buildings reducing total energy by an estimated 720 kWh per day from October 2017 through June 2018. The annual total of 262,800 kWh of electricity saved was equivalent to 26 American households in a similar time span.



TEAM MEMBERS



ACKNOWLEDGEMENTS

The ECBS SWATeam would like to thank Paul Foote, a consultation team member, as well as Claire Kredens and Vince Spagnola, iSEE student interns implementing Illini Lights Out.

