**Energy iCAP Team Meeting**

Tuesday, November 17th, 2020

8:00 am via Zoom

*Members in attendance: Bill Rose (Co-Chair), Andy Stumpf (Co-Chair), Paul Foote (Staff), Tim Mies (Staff), Marcela Vega Munoz (Staff), Brinn McDowell (Student), Peter Davis (Student), Matthew Gold (Student), Kimmy Chuang (Clerk)*

1. Old business

Digester recommendation

* The College of ACES should conduct a Feasibility Study to construct and operate an anaerobic digester on the University of Illinois at Urbana-Champaign campus. The College of ACES should then proceed in accordance with the results of the Feasibility Study.
* Approved by iCAP Working Group, recommendation transmitted to College of ACES
  + ACES has responded in the affirmative but the Dairy Farm is a ways out so the study is a ways out
  + iCAP said that we're interested in finding biogas, but F&S is still looking for it

Building Envelope recommendation

* The aim of this project is to develop in-house expertise at reducing wasteful heat transfer through building envelopes, particularly through air-tightening. This skill set will be applied to:

1.     Achieving energy reductions of 20%-30% in small to medium buildings

2.     Assisting in scoping and directing equivalent efforts by contractors in larger buildings

3.     Spreading skills and concerns to other trades which indirectly affect energy use in buildings.

4.     Coordinating with mechanical retrocommissioning, which may impact equipment size

5.     Advising departments regarding energy impacts of use of their buildings

* Seeking support from SSC, but their funding is limited this year because fees were only collecting for a 1/3rd of the students and not being collected next semester. Have asked for people to cut back projects to only the bare minimum -->
* Cut back proposal to building envelope on Transportation building as Phase 1. Thermal imaging and blower-door testing. Indoor Climate, Research, and Training (ICRT) will provide their blower-door test.
* SSC will be voting December 5th, if funding is approved then we can start in January (better to do when it's colder outside so looking to test in March then there will be a report in March) --> what do we actually do about the results about energy savings

* Retrocommissioning has been super successful "Saving the planet one building at a time" 27% energy savings. Multi-functional team that goes into a building for 6 months and looks at the HVAC system, but Bill pointed out that we should be have a similar team looking at the Building Envelopes so we can save just as much.
* Saved 84 million dollars, gone through 80-90 buildings on campus, only invested 20 million.
* In F&S, there are very clear lines between people responsible for different classifications of work (construction, maintenance, etc.) which sometimes wasn't as efficient, and that's how the idea for the Retrocommissioning came up.
* AFMA provided funding for Retrocommissioning staff for the first couple years. Hoping CEJA will get more funding for the state.
* Building Envelope would do the same and hope for initial funding and then lead to become self-sufficient (1st building savings would be able for 2nd building savings etc.) but there is possibility for failure.
* Aim of the recommendation is to build a team of experts, and not just testing a building. The first building testing could serve as training exercises.
* Looking for student member to serve on the Building Envelope team to bring a new perspective to staff. Would meet abut 3 times during Spring semester -- Peter Davis volunteered.
* Diagnostics of a residential building usually takes about 2-3 hours, but fixing of the problems found will take longer. Hard to write a work order in house because there are so many potential issues that can be found so the team would need to flexible.
* Retrocommissioning Team has already seen a lot of "holes" when adjusting for a building's humidity and comfort, which is also then important for envelope.

* 20 year agreement where university contracts with outside company ECM (energy conservation measures) which are analyzed for how much energy they will save. The contract says university will pay them for how much they save.
* Need money upfront to do more of these projects because they work so well. But who should we give money to and why do you need money if we save all of it?
* Rob Roman, director of utilities, Tony Spurlock, Karl Helmink, and others will give update at iWG so the recommendation is moving forward

* If the actual energy use of a building is greater than its predicted usage, that is often due to building envelopes.
* YungYi teaches at School of Architecture and is interested in building performance

1. New business

Student interests

* Peter Davis
* Reducing energy consumption of every College Unit by 2035. Make educational material about how to reduce it.
* Professor Erika Meyers has showed that publishing your energy use versus other energy use is completely ineffective when students don't control their energy use. Research what kinds of social nudges would get students to reduce individual energy use
* EcoOlympics
* Matthew Gold
* Putting up signs or adding to Mass emails to turn off lights to reduce electricity. IlliniLightsOut was an initiative that started with the Energy SWATeam. Engagement SWATeam is really interested focusing on sending out that kind of messaging, and Matthew could attend.
  + Labs that are left on for no reason. Incentivizing faculty through freezer challenge or faculty.
* Brinn McDowell
* Green Initiative of her research lab (Chemistry lab) showed that you can save $16,000 a year. Could collaborate with Paul Foote to see if it be implemented in Turner Hall.
* Something within building structure or the Department needs to be aware of it. NRES and Crop Science heads are meeting with people and collaborating on solutions.
* Could Paul consolidate efforts for conserving energy in labs and collaborate with students before next meeting. Also get Paul in touch Engagement team.
  + What has been done, what is being done

Staff interests

* Paul Foote (what is ESCO? Energy Savings Contracting)
* State Farm Center, BFL has been approved for retrocommissioning.
* Karl Helmink thinks Building Envelopes is really important to get into campus standards.
* Marcela Munoz
* $2-5,000 for a hood, what makes a difference is if they have bypass. Hoods that don't pass certification are decommissioned.
* Yun Yi
* HVAC system is very important to circulate fresh air and don't contaminate COVID-19. Are there any studies on how buildings are being managed?
* Worried about cross-contamination of buildings, group of engineers were tasked with looking at what ASHRAY has sent out. Paul can pass along information to Yun Yi.
* We have to maximize both the efficiency, ventilation, and conservation of buildings but there aren't studies out there which would be really helpful.

Chair priorities

* Student evaluating all the geothermal projects on campus which can then be included in the Energy Master Plan
* If we are going to meet Energy needs by 2050, what must be done? Are we doing all that we need to do?
* Energy code compliance
* Recommendation first draft by Bill
* There has been progress, business plan incorporates space into their discussions which is a starting point
* Yun Yi and Bill looked at the modeling of energy code compliance and could help with drafting recommendation.
* Universities can serve as incubators of ideas, SSC will always be there even though they're not collecting fees this year we can still apply for funding elsewhere. We can create a recommendation for getting something done longer in the future.
* Paul will start group email with Brinn about conserving energy use in labs and another email about disseminating energy use reduction materials with Matthew, Peter, and Engagement team