**Energy iCAP Team Meeting**

Tuesday, December 15th, 2020

12:00 pm via Zoom

*Members in attendance: Bill Rose (Co-Chair), Andy Stumpf (Co-Chair), Paul Foote (Staff), Sushanth Girini (Staff), Tim Mies (Staff), Marcela Vega Munoz (Staff), Brinn McDowell (Student), Peter Davis (Student), Matthew Gold (Student), Yun Kyu Yi (Faculty), Karl Helmink, Ximing Cai, Meredith Moore, Kimmy Chuang (Clerk)*

Meeting

**Update on ESCO**

* Previous Team thought very highly of that recommendation of ESCO. College of ACES has been designated of receiving the next ESCO project, and conversation has said that we will likely need investment of 20-30 million and saving around 1 million an year.
* Evaluation of campus energy, when the ESCO comes through they'll do evaluation of ACES spaces (like VetMed which had millions of investments) College of Engineering has also had ESCO, Chemistry buildings as well have been evaluated for projects.
* We need evaluation of buildings to get to 2050 goal, but we're in an era of not much money and we need to be selective about what we push forward.

* Recommendation for retro-commissioning and ESCO has been discussed for about 3 years.
* Do we need to quantify how much?
  + No, details from previous ESCOs can support
  + Provost Office is coming to next iWG meeting to move retrocommissioning forward and there is a lot of support. We could pass to Provost Office or Sustainability Council.
* Next ESCO would likely incorporate a lot of lab improvements
* Draft recommendation template for ESCO
* iWG may get back to us in January about how the ESCO has progressed

**Energy Master Plan Recommendation**

* Energy Master Plan is likely to be a 6-figure job, but we can still recommend for it to be done because it's important to know how much the 2050 goal would cost
* Morgan has reached out to Andy to start planning "Comprehensive Energy Planning Document" and discussions have started about scope, initial costs
  + This was one of the objectives in iCAP 2020 and it may take a lot of time, which is why we are starting now and is likely viewed as a priority for the iWG. Should we form a study a study group? Should we recommend for F&S to form a study group?
  + Andy will spearhead recommendation to do what has really already begun to start. The sooner we face the reality that we need to plan for millions of dollars, the more likely we are able to enact a big change such as abandoning the steam system
* Andy has conversed with Westboro about using a net-zero software. Net-zero models are being done on all military buildings across the world, even though we can't use their models

**Energy Code Compliance Recommendation**

* Draft completed, if comments are received soon, we should plan on submitting to the iWG in January
* State-owned buildings are required to have a "Performance Model" using prescriptive requirements provided that generates an Energy Cost Budget. In order to comply, the buildings must be 10% better than what they modeled.
* For the 5 that are already modeled, we should also calibrate the performance model to how the building is actually using energy. So as a result we would have prescriptive, modeled, and actual estimates.
* The actual model is made using average values to understand ideal usage. Calibrated model is more like what is actually happening in the building, what weather was, and then is used to modify the actual model.

* Rationale: It is required by State Law. It is a good idea. We need to be able to put Energy Use of Campus Buildings into classrooms, and we can only do this if the models are on a platform that can actually be shared. The input file for a given building can serve as an educational resource.
* This can bring public attention to compliance; we are not requiring compliance, but we are urging it by pointing out these realities.
* Contractor who engages with students to provide experience. Needs language to describe how much the contractor is deciding student involvement. We could maybe develop a course through iSEE where students engage in a class. "Student involvement is recommended."
* Timeline : students can have input along the way, doesn't need to be same group of people and may be able to take care of their own course timelines
* Yun Yi will look how long this may take
* There is also a lot of research opportunities within this. Could even apply to COVID-19 research about air filtration.

**Building Envelope Team**

* SSC has funded the team and work is supposed to get started in March!
* Peter and Matthew will be put in touch with Stacy Gloss to help with the Building Envelope Team, and the SSC likely wants multiple students to help. Bill thinks having a dozen students would be really helpful for blower-door tests. Infrared Thermography tests are best used before sun-up which may be difficult for students.
* ICRT, Morgan, and Stacy Gloss will determine how to contact students.

**Energy Efficiency (Labs & Residence Halls)**

* Paul is meeting with Brinn this week to see what Brinn has done in her lab and how we can spread that to other labs on campus
* Email chain has started with Matthew and Peter about energy efficiency in residence halls
* Are there any unused freezers that could be used for distributing the COVID-19 vaccine? There is an equipment list that would be recording where freezers and other equipment is on campus
  + Could send out a Mass Email if

**Ongoing Studies**

Compressed Air Feasibility Study at Abbott Power Plant.

* Creating air and then using excess electricity from solar farm, storing gas underground

Gas Technology Institute in Chicago

* Use hydrogen to generate electricity and getting methane from a gas pipeline

**Possible Recommendation to Evaluate Space Usage**

Retrocommissioning process has met with ACES department heads, new building budgeting model has made them look at space underutilized, seems to be the same as 2016, and they appreciated input.

* Turner Hall's systems and spaces need to be regenerated and re-used in order to save cost and energy