

ROOFTOP SOLAR: ICAP 2020

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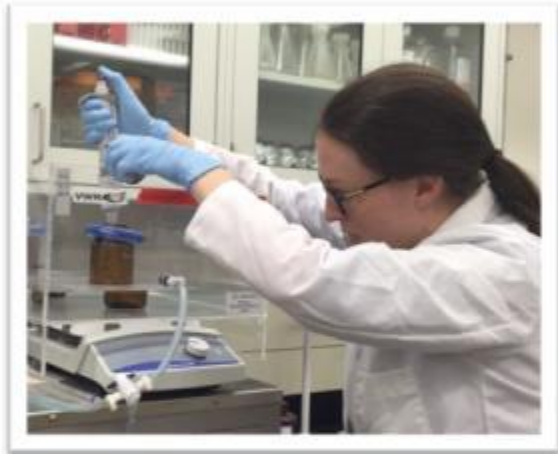


INSTITUTE FOR SUSTAINABILITY, ENERGY, AND ENVIRONMENT



August 2016

ABOUT ISEE[®]



ACTIONABLE RESEARCH



CAMPUS SUSTAINABILITY



EDUCATION & OUTREACH



2008

AMERICAN COLLEGE & UNIVERSITY PRESIDENTS'

CLIMATE COMMITMENT



AMERICAN COLLEGE & UNIVERSITY
PRESIDENTS' CLIMATE COMMITMENT

February, 2008

AMERICAN COLLEGE & UNIVERSITY
PRESIDENTS' CLIMATE COMMITMENT

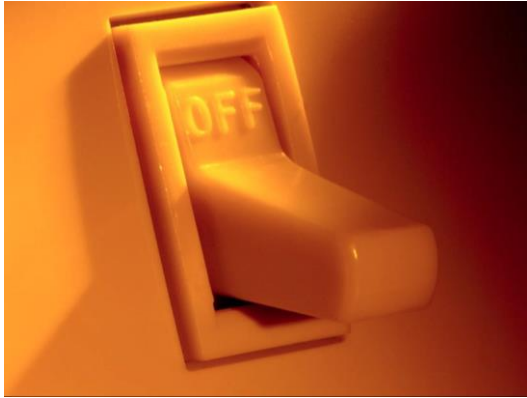
2015 ILLINOIS CLIMATE ACTION PLAN

“This new plan is ambitious, and it positions Illinois at the forefront of tackling the profound sustainability challenges that face humanity, including climate change and clean energy...The costs of inaction are tremendous, as climate change threatens not only the environment but also the very future of our students.”

– Barb Wilson, Interim Chancellor



SWATEAM AREAS



Energy Conservation & Building Standards



Energy Generation, Purchasing, & Distribution



Transportation



Purchasing, Waste, & Recycling



Water and Stormwater

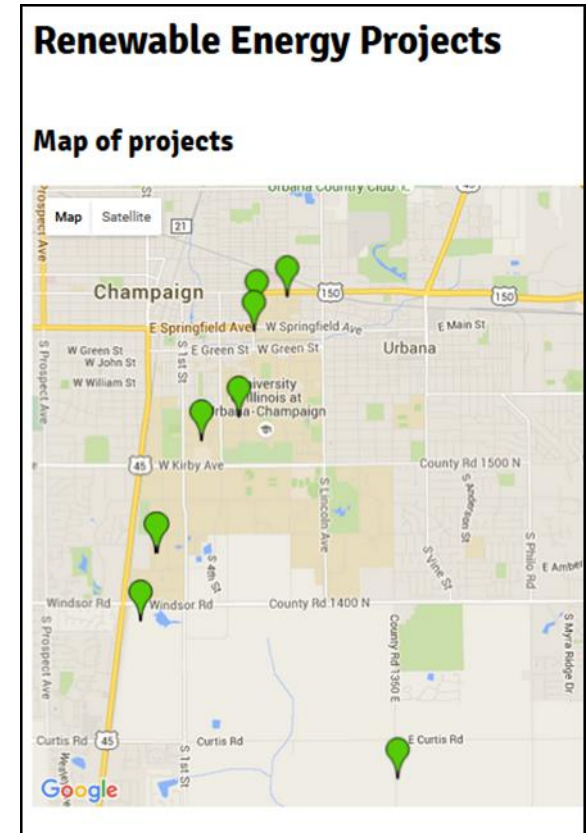


Agriculture, Land Use, Food, and Sequestration



RENEWABLE ENERGY ON CAMPUS

- Solar PV
- Solar thermal
- Geothermal
- Biomass
- Wind
- Renewable Energy Certificates
- Power Purchase Agreements



SOLAR PHOTOVOLTAICS



- 2006 Business Instructional Facility
- 2014 Electrical and Computer Engineering Building – in progress
- Ground Mounted PVs at Building Research Council, & Solar Farm
- Uni High Gym
- Future buildings/retrofits

ROOFTOP SOLAR OBJECTIVES

- “Expand on-campus solar energy production.
 - By FY20, produce at least 12,500 MWh/year, and
 - by FY25 at least 25,000 MWh/year, from solar installations on campus property.
 - These targets represent 5% and 10% of our expected 2050 electricity demand, respectively.”
- We have 7,865 MWh/year currently installed.
- We need 4,635 MWh/year more by the end of FY20.

[https://uofi.app.box.com/files/0/f/2802975201/iSEE -
Solar Working Group Box Folder 2014](https://uofi.app.box.com/files/0/f/2802975201/iSEE_-_Solar_Working_Group_Box_Folder_2014)

CURRENTLY EXISTING INSTALLATIONS

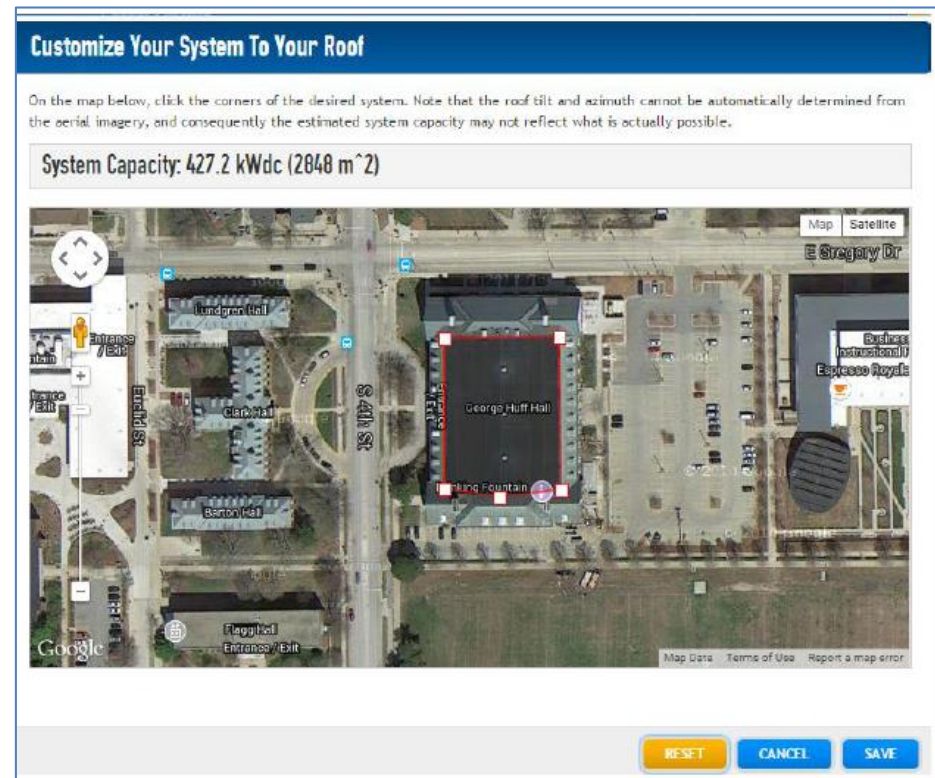
Year	Location	Name-plate Capacity (MW)	Annual generation (MWh)
FY10	Business Instructional Facility	0.033	45
FY13	Building Research Council	0.015	19.6
FY14	ARC solar thermal	unknown	unknown
FY16	Solar Farm	5.87	7800
Total			7864.6



STUDENT LED ACADEMIC ANALYSIS

THE PROCESS SO FAR...

1. Rooftop Photovoltaic Master List – Brendan McDonnell reviewed all campus facilities for rooftop solar potential in PVWatts.
2. Architecture Review Committee first cut – yes, no, or maybe for large buildings
3. Building Maintenance Foreman and “roofing subject matter expert” – Corey Weil facilitated
4. Project Plan Development – Niharika Kishore coordinating now



PROPOSED PROJECT INSTALLATIONS

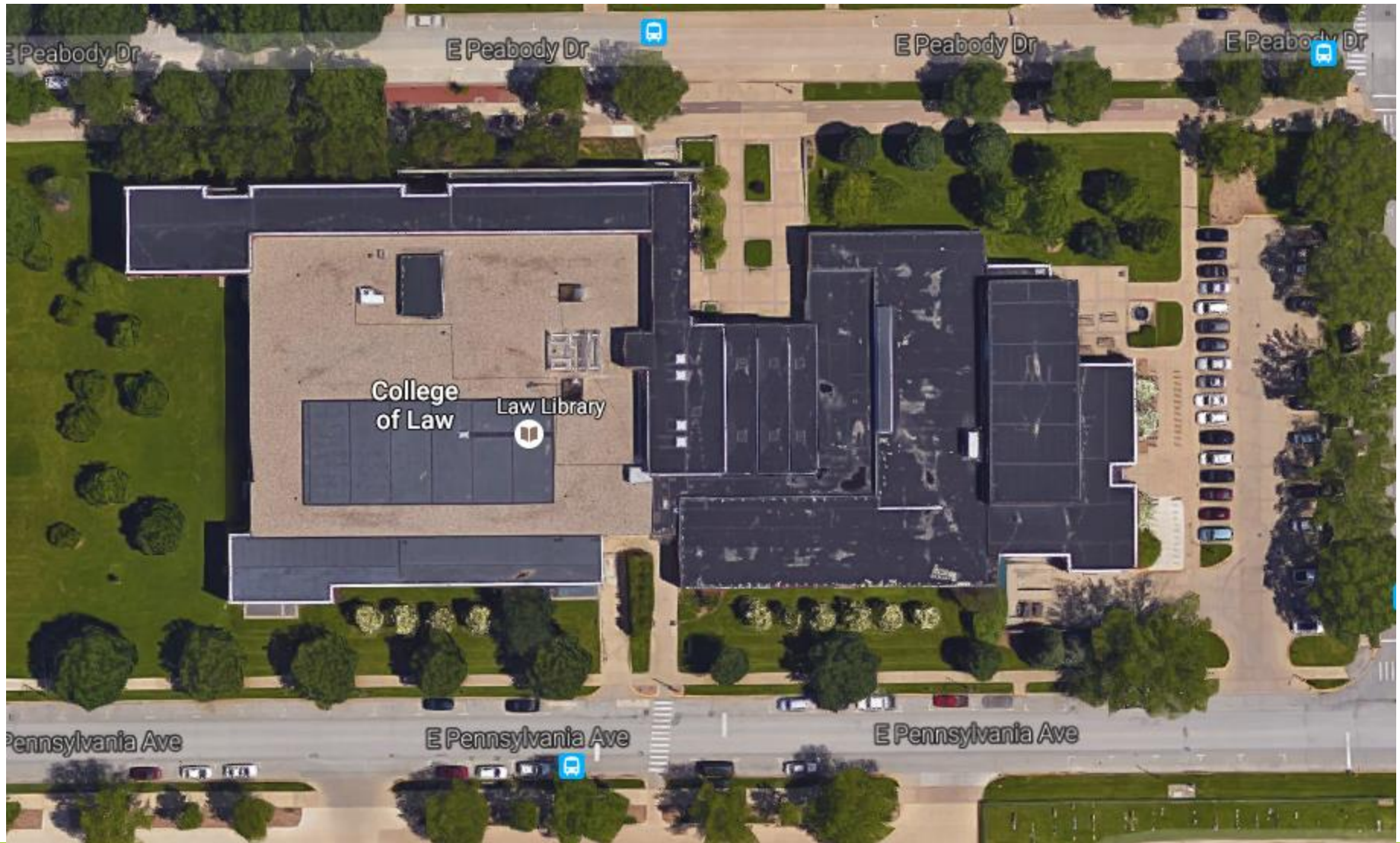
Location	Annual generation (MWh)
BIF rooftop	unknown
Energy Farm Building awning	unknown
NCPD roof & structure	1595
Physical Plant Services Building	791
Activities and Recreation Center	725
ECE rooftop	399
Law Building	395
Ikenberry Dining Hall	382
Digital Computer Library	263
Abbott Power Plant	263
Rehabilitation Education Center	185
Plant Sciences Laboratory	164
Timothy J. Nugent Hall	158
Institute of Genomic Biology	158
Richard T. Ubben Basketball Comple	151
Oak Street Library	151
Bousfield Hall	145
Garage and Carpool	125
Ikenberry 3 rooftop solar	45
Speech & Hearing Sciences	14
Total	6109

Why go ahead with this?

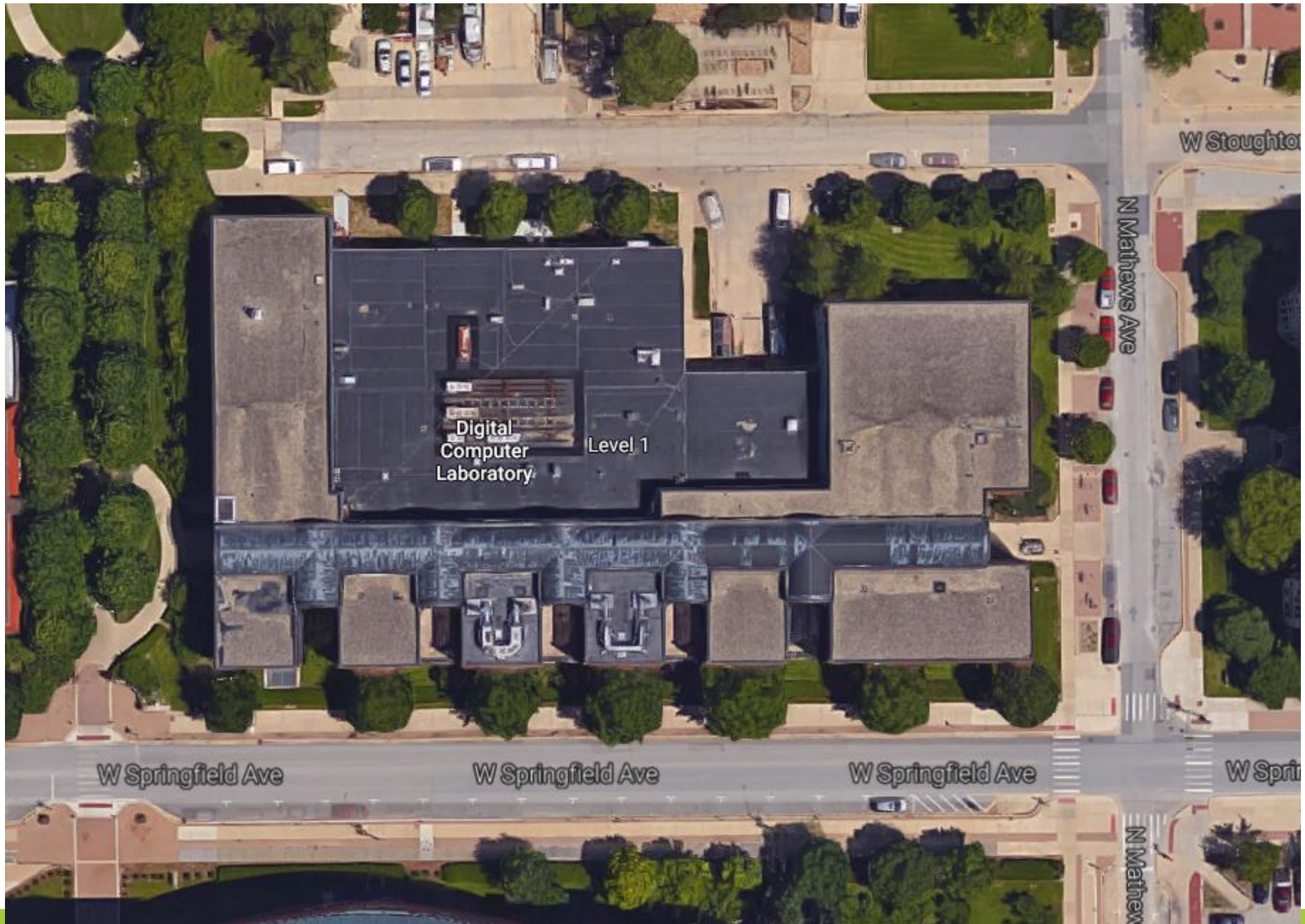
- It's clean and it's green!
- Helps meet the campus' sustainability goals
- Your building could now be counted as a green building which increases the value of your building
- Long term energy conservation and hence saving money
- Aligns with the College of Engineering's goal of Developing Leaders of Energy & Sustainability
- Resonates with the College of Law's Environmental Ethics Initiative
- Furthers DCL's commitment to energy conservation



LAW BUILDING



DIGITAL COMPUTER LIBRARY



DISCUSSION QUESTIONS

- Can we include your building in this project proposal?
- What benefits do you see for your department from having the rooftop solar?
- What resources could you contribute to this effort?
- Are there building specific needs we should be aware of?

ROUGH TIMELINE

- FY17 Project development and sourcing funds
 - Meeting with potential buildings
 - Writing the RFP
 - Seeking funding
- FY18 Request for Proposals (RFP)
- FY19 Installation completed
- FY20 Obtain 12,500 MWH/year

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