

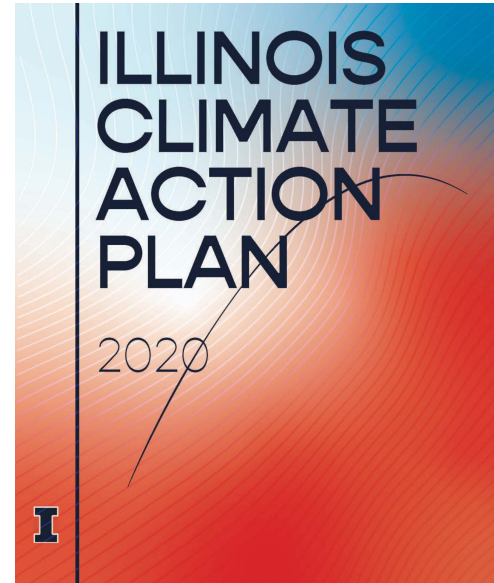
University Laboratory High School Sustainability Assessment

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NRES 285: Sustainability iCAP Ambassadors

- Field Experience Course
- Building: University Laboratory High School
- Objective: Become familiar with iCAP objectives and assess sustainability to make feasible recommendations at Uni High
- Main goal: Establish a sustainable culture at Uni High



Building Profile

- Opened on September 12, 1921
- 53,113 gross square feet
- Shared by ~360 students and 49 faculty members
- 17 classrooms, 18 offices, and 13 departments are in the building



Student Survey

- Received 45 responses from the students
- Purpose: Understand the culture around sustainability at Uni High
- Questions:
 - Recycling
 - Labels: Well-labeled and effective?
 - Materials: Recyclable or not?
 - Awareness: Always, sometimes, or not at all?
 - Composting:
 - Interest and support?
 - Sustainable culture:
 - Is sustainability promoted?
 - How can it be improved?

Words From The Students

“Our building is extremely old and outdated in many aspects, but we are adding technology in some spaces. I’d like to see some energy conservation such as solar panels or some other method because we do use a lot of emery throughout the building.”

“...[Sustainability] can be improved through less distribution of paper products, for example syllabuses/worksheets being distributed digitally by default and printed by request”



“There’s only options to recycle bottles and cans but students usually have a lot of paper to recycle and there aren’t too many places to do that.”

“Lots of stuff not recycled, just not something that’s ever talked about at all in Uni (sustainability)”

“...there’s a lot of posters being printed often, but maybe a sign that reminds people how much damage they’re doing with each print job as well. Also reminders to unplug electronics when not in use, promoting silverware from home instead of plastic utensils from school.”

“[Unfortunately], it’s easy to ignore these issues when they’re not promoted and encouraged often. I hope we can change the culture!”

I do think stopping the use of fossil fuels is HUGE in fighting climate change, and if we could really emphasize how much of an issue climate change is, that would be ideal.”



- Anonymous Student

Recent Energy Use

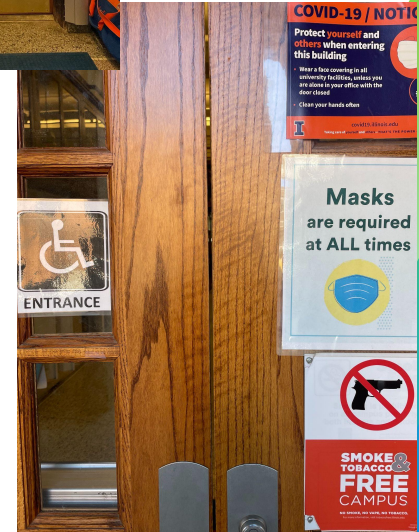
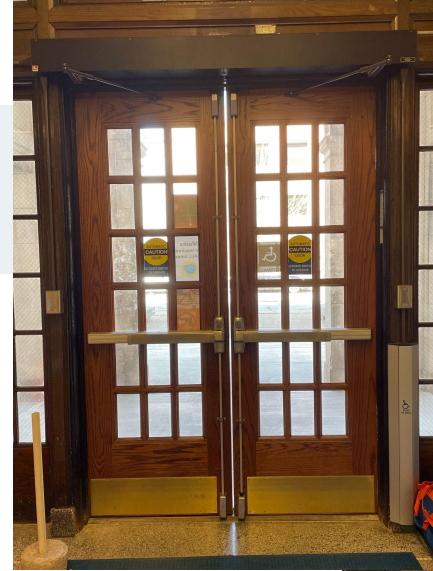
- FY 21 total utility usage: 4 billion kJ
 - Increase of 10.5% from FY20
 - Ranked 144th out of 651 total buildings (354 on campus) in energy consumption
 - **126,583.96 kg CO2e** produced in FY 21
 - **Steam:** 129.49kg
 - **Chilled Water:** 9,258.55kg
 - **Natural Gas:** 518.518kg
 - **Electricity:** 116,677.4kg
 - 314,207 miles being driven by an average gasoline-powered car (Earth's circumference 12.5+ times)
 - 140,054 pounds of coal burned

Electricity Usage

- Electricity usage has, generally, been decreasing over the past few years
- However, we're seeing an increase in FY22
 - FY 17: 334, 570 KWH
 - FY 18: 328,877 KHH
 - FY 19: 287,546 KWH
 - FY 20: 254,903 KWH
 - FY 21: 198,769 KWH
 - **FY 22: 245,198 KWH**

Energy

- Energy was seen as the highest-priority in addressing sustainability!
- **Switch all lights to motion sensor LED**
- Replace doors
 - Large gap between doors allows outside air in and inside air out
 - Safety concern when wood swells and doors can't shut
 - Aluminum or steel doors would be more efficient than wood
 - **Weather stripping** while in transition to door replacement



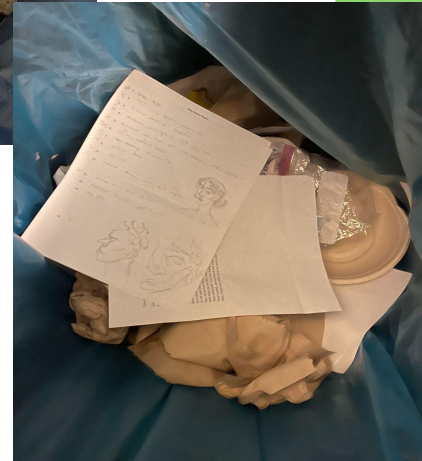
Energy

- **Upgrade windows** to at least double pane, but triple pane if possible
 - Double pane windows reflect 90% of energy and let in 10% of energy
 - Triple pane windows reflect 97% of energy and let in 3%
- If the roof were to be replaced, then solar installation should proceed
 - Contact Scott Tess at srtess@urbanainlinois.us ([Get Solar Energy](#))



Waste

- There are already over 30 well-labeled recycling bins!
 - 82% of students thought recycling bins are well-labeled and easy to read
- 33% of students were aware of the recyclability of materials they recycle, with 47% being somewhat aware
- Contamination was found in all recycling bins!



Waste

- “I think the trash cans are labeled well, but some of the containers look very similar and it’s easy to accidentally put things in the wrong bins.”
- To combat this, **three-way recycling bins** should be implemented
 - Made from recycled milk jugs!
 - Reach out to Shawn Patterson at the Waste Transfer Station at sptrsrn@illinois.edu



Photo Credits: Maria Maring

Waste

- In transition to three-way bins, **add clear and consistent labels to current bins**
 - Adding signage on trash cans encouraging recycling
- Same bin-shape & bin-color to specific bin-contents
 - Consistent number of each bin on each floor
- **Black bins should be reserved for trash only**



Waste

■ Composting!

- “Hendrick House lunch this year generates a lot of waste”
- 95% were strongly or moderately interested in participating in composting
 - “We drafted and sent a composting proposal last year for our social justice class but were ignored by the administration.”
- Student Sustainability Committee could potentially fund this
- Vermiculture, a worm composting RSO on campus, would be a great resource to partner with

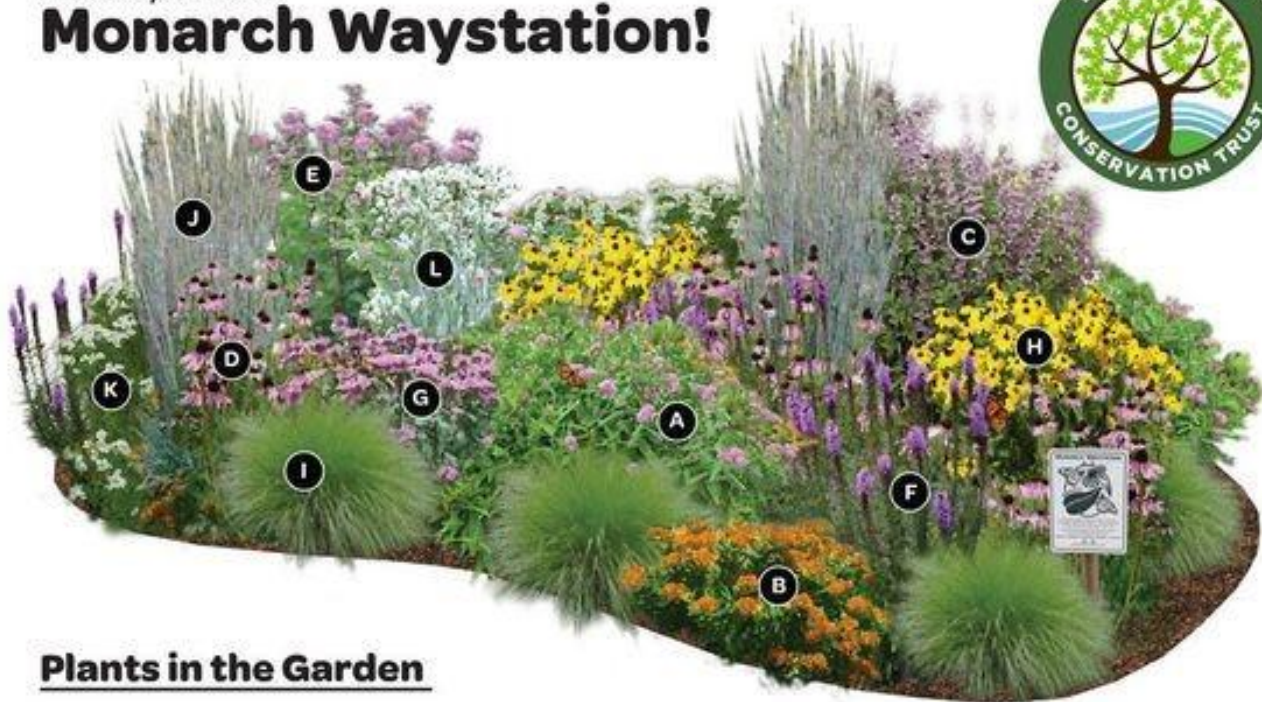


Land

- No bird-strike zones
 - Should be kept in mind when replacing windows
 - 8 x 10 ft. area
- Former butterfly garden
- **More native plantings** (currently 22 trees on block)
- Plans for bare spots?



Create your own Monarch Waystation!



Plants in the Garden

- A** - Swamp Milkweed *Asclepias incarnata*
- B** - Butterfly Weed *Asclepias tuberosa*
- C** - Wild Blue Indigo *Baptisia australis*
- D** - Pale Purple Coneflower *Echinacea pallida*
- E** - Joe Pye Weed *Eupatorium purpureum*
- F** - Prairie Blazing Star *Liatris pycnostachya*

- G** - Wild Bergamot *Monarda fistulosa*
- H** - Showy Black-eyed Susan *Rudbeckia fulgida* var. *speciosa*
- I** - Prairie Dropseed *Sporobolus heterolepis*
- J** - Little Bluestem *Schizachyrium scoparium*
- K** - Mountain Mint *Pycnanthemum virginianum*
- L** - Rattlesnake Master *Eryngium yuccifolium*

Artwork provided by:

fingers
LANDSCAPE ARCHITECTS

Positive Potentials of Land

- UIUC RSOs could be resources for collaborating
 - Red Bison, From the Ground Up, Grow2Give
- Educational tool about importance of native plants
- Students could be interested!

Water

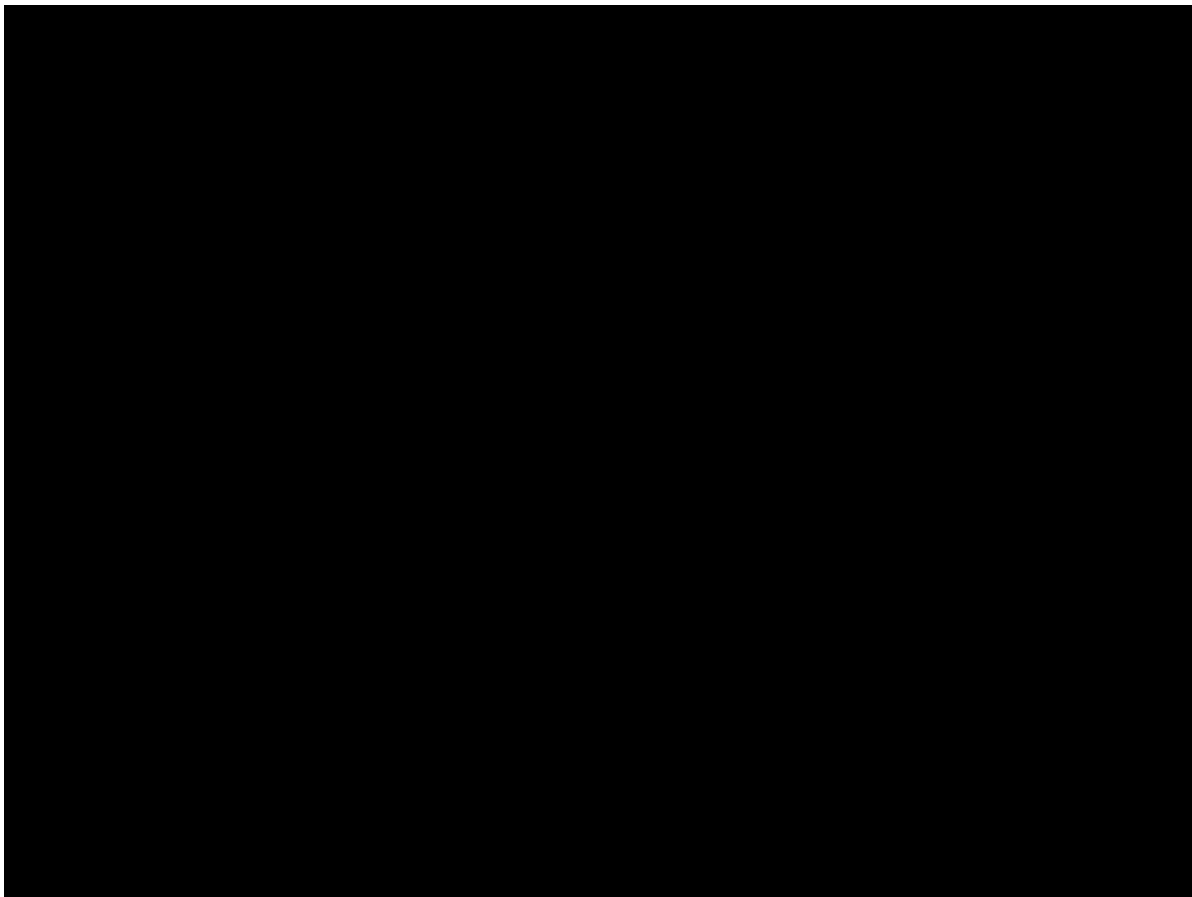
- Ponding—a safety concern
 - Prohibit sidewalk driving
 - Level low areas
 - Permeable pavers



Water

- Parking lot drainage
 - Lined with plantings
- Fix ceiling and window leaks
- Toilets, urinals, fountains and faucets
 - Make all low-flow or dual flush (Womens: 1.6 g/flush)
 - Sensor water bottle filters





Transportation

- To gauge how students got to school, Holly collected this data before Uni classes started on Thursday, March 10
 - 2 bike
 - 1 scooter
 - 12 walk
 - 231 dropped off (car)
 - 28 bus
- This matched survey results with most kids getting to school via car

Transportation

- Students expressed safety concerns with riding public transportation and biking to school
- 40% of students said they wouldn't feel comfortable riding the bus to/from school
- 53% of students said they wouldn't feel comfortable biking to/from school
- "Relating to the buses, I'd likely be more comfortable once covid is less of an issue."
- "Buses do not make sense for a lot of people; there's literally no possible way I, and many others, could take a bus to school...maybe for small school districts but the uni population is very spread out. Also biking? I live too far..."

Transportation

- Incentivize biking, if possible, and **carpooling** to school
 - Monthly raffle for those who participate
 - Bike Club could facilitate this!
- Address carpooling at orientations before school year begins
 - Begin opt-in private directory that could inform parents about who lives close to them

Engagement


- Certify Green Offices
 - Helps offices implement sustainable practices in their workplace
 - Use smart plugs to turn devices on and off from your smartphone, close windows when HVAC is on, turn off lights when leaving office for significant time periods
 - Contact the Greener Campus Program through iSEE
- Sustainability Bulletin Board to promote tangible, sustainable actions students can take
 - Turn off lights when you leave a room
 - Recycle whenever you can
 - Reduce meat intake

Engagement

- Sustainability Events Each Month/Semester
 - Different sustainability focus each month (can partner with the University)
 - Energy reduction (**Uni Lights Out**), Recycling, Gardening, etc.
 - **Recycle-Bee**
 - Have students place certain everyday products in the correct recycling bins - including difficult items such food packaging, wax-covered cardboard, etc.
 - Sustainability Trivia with fun prizes
 - Student-run events (Student Council, TREE Club, etc.)
 - Incentives to participate: Pizza Party!



Sustainable Culture at Uni High



*Thank you for
listening!
Questions?*