Putting good ideas to work for a carbon-neutral, flourishing campus

Sustainable CWRU

February 2017
Case Western Reserve University Stats

- 8 millions sq. feet
- $20+ million annual utility spend
- 200,000 mmtco2e
- 185 urban acres, 140+ buildings
- 400 acres off-campus Farm property
- 2 million local food spend by Bon Appetit
- 1,300 research labs
- 130 fleet vehicles
- 18,000+ people
- $360.1 million in research revenues
- 750,000 annual community volunteer hours
- 1,001 squirrels
WHAT WE’RE WORKING ON

ENGAGEMENT
GREEN BUILDING +
RECYCLING & MATERIALS MANAGEMENT
CLIMATE ACTION PLAN
Sustainable CWRU Elements

- Climate Action Plan
- The Fowler Center for Business as an Agent of World Benefit
- Great Lakes Energy Institute
- University Farm
- Summer Undergraduate Research in Energy and Sustainability
- Social Justice Alliance
- Sustainability Alliance
- Campus Planning & Facilities Management
- Student Groups
- Staff Green Teams
- Environmental Studies Major
- Lots of sustainability related research
- …
ENGAGEMENT
Student Sustainability Ambassadors

**Recycling & Waste**: Neil Chavan & Helen Sanderson, Lori Sun & Divya Manoharan

**Climate & Energy**: Maggie McClarren & John Kilbane

**Green Building**: Duck Rhee & Carlos Lewis-Miller

**Transportation**: Amelia Samett & Tom Ugras

**Green Grounds**: Kayla Buckelew & Claire Holliday

**Local Food & Water**: Thanvi Vatti & Keith Hill
• Green Your Lawn
• Alternative Fuel Vehicles
• Green Design for Your Home
• Greening Your Holiday w/ Upcycled Gifts (November 29!)
+ Monthly Newsletters

• Solar for Your Home
• Biking to Work
• Recycle Like a Master
• Tink’s Green Building Features
• Our Energy Grid
+ Social Media
Green Your Lab Certification Program w/ Student Audit Option

### Green Lab Check List - Certification Program For CWRU Labs

**Energy**

**Electronics & Lights**

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<td>Does the lab have proper shutdown procedures for equipments such as computers, monitors, printers, cell phones &amp; battery chargers, etc.?</td>
<td>Y - 2 point / N - 0 point</td>
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<td>E2</td>
<td>Does last person in the lab turns off lights &amp; other equipments?</td>
<td>Y - 1 point / N - 0/ NA</td>
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<td>Are there reminder signs for shutting the equipments?</td>
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<td>Do the lab members make an effort to use natural light when possible?</td>
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GREEN BUILDING, GROUNDS, & TRANSPORTATION
University Green Buildings

1. North Residential Village - Silver House 1-4, 6-7 & Gold/House 5 only
2. Tomlinson Hall - Silver
3. Tinkham Veale University Center - Gold
4. Wyant Athletics and Wellness Center - Silver
5. LS Think Box – Projecting Silver
6. New STJ Residence Hall – Projecting Border Gold/Silver
7. Mandel School of Applied Social Sciences – LEED Interior project Silver
8. LS Alumni Center
9. Health Education Campus – Goal of Gold
10. New Dental Clinic
Tink Green Building Technology Features

- 40kW Solar Array
- Live Roof
- Double-Skin Facade
- Radiant Floor
Beyond Pesticides & Green Grounds Strategy

**WHITE HOUSE**
Pollinator Health Task Force:

Planting flowers is **NOT ENOUGH** to save bees.
Tackle the core problem: **PESTICIDES!**

#NationalHoneyBeeDay

**Tree Campus USA**

Awarded to Campuses that:
- Form a Campus Tree Advisory Committee
- Develop a campus tree care plan
- Create campus tree program with annual expenditures
- Participate in Arbor Day observance
- Complete a service learning project

**FIU: Tree Campus USA**

[Video]
Transportation

- Bike Fixit Stations
- Over 130 bike racks
- Bike Sharing (coming this Spring)
- Greenie shuttle system
- Car sharing - Enterprise & Zip
- Ride matching program through NOACA
  – relaunching in April 2017
- RTA – new van pool subsidy
- Green fleet practices
Bon Appetit & Univ. Farm Composting Partnership

Where Compost Can Go:

• Pre-consumer, kitchen scraps (University Farm accepts)
• Post-consumer (Industrial facility or in vessel)
• Special Events (Industrial facility)
CLIMATE ACTION PLAN
Climate Action Plan (CAP) Commitments
Signed ACUPCC 2008 / CAP published 2011

- Publicly report CWRU’s GHG emissions inventory every year
- Report on CAP progress every 2 years
- Update plan every 5 years
- Requires we build min. LEED silver for new construction
- Goal to expand sustainability literacy academically
Climate Action Plan Emissions Mitigation
CAP Reduction Strategies

A: Space Management
B: Central Chiller Expansion
C: Reduced Air Travel
D: Green IT
E: Energy Conservation (short term)
F: Behavior Change
G: Steam Line Improvements
H: Energy Conservation (mid term)
I: Energy Conservation (long term)
J: Building Standards
K: Combined Heat & Power
L: Waste Reduction
M: Geothermal
N: Solar (Hot Water)
O: Coal to Gas Conversion
P: Chiller Upgrades
Q: Green Power (CWRU)
R: Green Power (MCCo)
S: Wind
T: Transportation Strategies
U: Solar (Photovoltaic)
GREEN LAB AUDIT PROGRAM
## Green Lab Check List - Certification Program For CWRU Labs

### Energy

#### Electronics & Lights

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Example Sensor Data from a Final Report

Think[box] Lighting Patterns

- **Weekdays, Business Hours**
  - Light on & Occupied
  - Light on & Unoccupied
  - Light off & Occupied
  - Light off & Unoccupied

- **Weekdays, Non-Business Hours**
  - Light on & Occupied
  - Light on & Unoccupied
  - Light off & Occupied
  - Light off & Unoccupied

- **Weekends, Business Hours**
  - Light on & Occupied
  - Light on & Unoccupied
  - Light off & Occupied
  - Light off & Unoccupied

- **Weekends, Non-Business Hours**
  - Light on & Occupied
  - Light on & Unoccupied
  - Light off & Occupied
  - Light off & Unoccupied
Checklist Categories

1. **Materials:**
   Recycling, Shipping/mail, Source reduction, Chemical usage & disposal

2. **Communication:**
   Orientation/education, Work related travel/field work

3. **Energy conservation/equipment:**
   Water, Electronics, lights, Freezers & refrigerators, Fume hoods, Comfort
Replace Your Ultra-Low Temperature Freezer

- Lowest cost of ownership
- Low waste heat
- High sample integrity

Upgrade your −80°C Freezer and receive a $3000 rebate from Facilities Services
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