

Sustainable Solutions for the Built Environment

DCP 3210, Section 5265, Fall 2018

Tuesdays (Periods 3&4) 9:35-11:30am and Thursdays (Period 3) 9:35-10:25am

Rinker, Room 215

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Office Hours: TH 10:30-12:00pm, or by appointment

The term **built environment** refers to the human-made surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighborhoods and cities that can often include their supporting infrastructure, such as water supply, and energy networks. The built environment is a material, spatial and cultural product of human labor that combines physical elements and energy in forms for living, working and playing. It has been defined as “the human-made space in which people live, work, and recreate on a day-to-day basis”. The “built environment encompasses places and spaces created or modified by people including buildings, parks, and transportation systems”. In recent years, public health research has expanded the definition of "built environment" to include healthy food access, community gardens, “walkability”, and “bikability”, reason include sustainable development aimed at smart growth.



<http://www.burnsmcd.com/Sustainability-Summit>

To provide sustainable solutions for the built environment, we must:

Use all resources wisely, Consider the needs of future generations, Evaluate a wide range of risks, Protect and enhance the environment, Conserve energy and natural resources, Improve quality of life, and Encourage innovative approaches to the design, construction, operation and maintenance of facilities.

Learning Objectives

This course is designed to produce the following outcomes:

- Evaluate and communicate the effectiveness of current sustainability initiatives in the built environment and ability to assess whether they are operating in an effective sustainability framework.
- Create a focus on the execution of strategies to drive long term sustainability performance.
- Develop own body of knowledge to improve own sustainability competency and learn the importance of communicating the built environment's sustainability level.
- Understand how to reflect on the future of sustainability in the built environment, communities, and cities.
- Identify the characteristics of best-practice in sustainable building/development/infrastructure initiatives and look beyond current initiatives to resilient buildings and cities.
- Communicate and justify sustainable design principles, strategies, solutions and/or outcomes.

Course Format

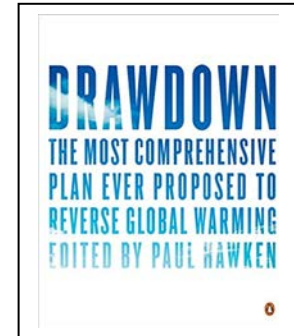
Delivery Method: Lectures, discussions, guest speakers, case studies, work in teams, team presentations, quizzes, reports, and field trips.

Course Website: <https://iss.at.ufl.edu/>: Course material will be on e-learning on Canvas, including readings, lecture slides, assignment, quizzes, announcements, and grades. All course material will be posted before semester starts.

Communication: Outside of class, e-mailing barmagh@ufl.edu is the best and preferred method of communication.

Required Text/Reading:

Required Text: Drawdown, The most comprehensive plan ever to reverse global warming, by Paul Hawken. <http://www.drawdown.org/>



In Addition to the online articles provided (see schedule).

This is a reading-intensive course. Active student engagement with the reading material and associated class discussions will be an important component of your grade (see grading policy below).

Reading Assignments: Starting August 28th required submission for each reading topic is a minimum 3 comments, statements or questions before every class. The team assigned the topic will lead the discussion.

Field Trips

A multi-day field trip is required for this course as a complement to course material and topics.

➤ Out of State Field Trip; Atlanta Georgia

This field trip has been scheduled for October 3th, 4th, and 5th. The destination of this field trip is Atlanta, Georgia. The cost for the trip ranges from \$250.00 to \$350.00 per person depending on the number of students in the class. This includes transportation, hotel, breakfast and Wi-Fi. The final cost of the trip will be communicated to the students the 1st week of classes. The fee is collected on September 4th. **Checks and money order only, make checks and money order payable to University of Florida.**

Below is the link to UF catalog of courses for DCP 3210, and reference to this field trip as a requirement.

<https://catalog.ufl.edu/ugrad/current/design/Majors/sustainability-and-the-built-environment.aspx>

➤ Local Field Trips:

- TH; 9/6, Wastewater Treatment Plant.
- T; 9/18, Leveda Brwon transfer station (waste and recycling management).
- TH; 10/18, O'Connell Center, LEED Gold

➤ Guest Speakers:

- TH; 11/1, Chris Castro, City of Orlando

- By the end of 2nd week of classes, each student must e-mail me the name and contact information of the class Instructor(s) that will be missed during Atlanta field trip. I will notify them about this required field trip.

Tools and Resources

- <https://www.buildinggreen.com/ufl>; is an excellent resource on the latest in sustainable built environment, cases studies, articles, materials, and more. This is a membership based site, where University is a member of. That means you have full access to all the site content.
- To access this site while on campus, you will automatically be logged in the site.
- To access the site while off campus, you can remotely access the site using VPN.
- To access some campus resources when you are physically off campus, you may need to install UF's VPN. The [UF VPN Service](#) is designed to allow University Faculty, Staff, and Students to securely "tunnel" into campus over other networks, such as their home internet connection, and access services as if they were on campus. Basically, it lets your computer appear as if it were located physically on campus. To install, go to vpn.ufl.edu . To get more information about VPN, you can visit: <https://connect.ufl.edu/it/wiki/Pages/glvpn.aspx>.

Paperless

- E-learning on Canvas will be the hub for the communication, announcements, assignments, and exams.
- Check e-learning on Canvas for the weekly material and presentations.
- Set up your e-mail to receive class announcements from e-learning on Canvas.
- All assignments/papers/presentations must be turned in electronically through e-learning on Canvas.
- Final paper and personal statement should be in single spaces and 12 font.

Class Attendance and Make-Up Policy

- Students attending class must be prepared for active participation and discussion. A quality learning experience in this course rests heavily on interaction and exchange ideas related to sustainable built environment.
- You are encouraged to take notes electronically, but not using the computer for surfing web for non-class related topics and doing work for other classes. **In this case student must e-mail the instructor his/her notes at the end of the class.**
- **Using cell phones, texting, and surfing the web during class are not allowed except for class related search or an emergency.**
- Attendance is required. Arriving late to class (5-10 minutes after start of the class, or falling asleep in the class) will be considered a ½ absence. Leaving early while the class is in session will be considered an unexcused absence.
- **Attendance for the final presentations is required. 5% will be deducted from the final grade if absent and attend the final presentations late (5 minutes after starting the presentations).**
- Class work can **only** be made up for **excused** absences. Excused absences include illness, religious holidays, a death in the family, or participation as an athlete in official UF athletic events; to be excused, absences must be properly documented, for example with a doctor's note or documentation from athletic program. University policies can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Reading material and discussion

- This is a reading-intensive course. Active student engagement with the reading material and associated class discussions will be an important component of your grade.
- Each student to read and understand the purpose/main idea of the topic and submit three comments related to the topic for discussion.
- Students must complete the reading and post the required summary on his/her Canvas page before class.
- A team of two students will be assigned to lead the discussion to each topic.
- **At the end of each module, teams who were leading the discussion for the week will present to the class a case study related to the module topic showing the issues related to sustainability for the built environment. This case study can be local or global. Also, the team can show a TED talk or other reputable videos related to the topic of the module.**

Final Project: Think Resilient and Sustainability

- This is a team project.
- **Final Project Topic:** Each team's final topic must be related to an identified/known/anticipated challenge in the built environment, and propose a solution to address the challenge. **This is due 9/13/2018.**

Sample project topics related to Infrastructure and the Built Environment

<ul style="list-style-type: none"> • Topics in Drawdown book • Coastal Protection • High Performance Buildings • Biophilic cities • Resilient cities • Energy/Renewable • Transportation • Water and Wastewater 	<ul style="list-style-type: none"> • Living Building Challenge and Communities • Site and Transportation • Indoor Air Quality • Sustainable Development • Material use and Waste Management • Health and well-being • Solid waste
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All projects, presentations, quizzes, and assignments must be turned in on time; projects or assignments may be turned in early. If you will not be in class to turn the assignment in, even if it is an excused absence (e.g. studio field trip), you must turn the assignment in early. Any assignment turned in after it is due will be marked late, and your grade will be penalized.

Requirement for the class to attend fall semester Green Building Learning Collaborative event. This program is scheduled for Wednesday, September 25th from 3:00- 5:30.



Grading

Assignment	Instruction	points of grade	Due date
Exams (2)	Individual;	30	Exam 1; 10/2/2018 Exam 2; 11/15/2018 On Canvas
Assignments,	Individual Reading Assignments & Discussion; - Drawdown & Online Articles	15 15	In class, and on Canvas. See schedule
	Two pages on Atlanta and local field trips reflection paper	5	
Final project report and presentation Or 3-5 minutes Video & report Or 3-5 minutes Video and presentation	Team project on a sustainable solution for the built environment. In 1500-2000 words describe the case, the challenge, the outcome of the solution and your recommendations. This must be in a report format.	35	Final week, submit on Canvas Final Presentations 11/27: teams, 4, 5, 7, 9 & 11 11/29: teams, 2 & 12 12/5: teams, 1, 3, 6, 8 & 10

Grade Scale:

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Numeric Grade	93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	0-59
Quality Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0

See: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Online course evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>

Accommodating Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Student Honor Code and Academic Honesty

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions.

Campus Resources**Health and Wellness**

U Matter, We Care:

If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc/Default.aspx>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department, 392-1111 (or 9-1-1 for emergencies). <http://www.police.ufl.edu/>

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu

<https://lss.at.ufl.edu/help.shtml>

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <http://www.crc.ufl.edu/>

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/>

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

<http://writing.ufl.edu/writing-studio/>

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>

“Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.”

Need Help? Don't hesitate to ask

PROBLEMS WITH e-learning on Canvas

For issues with technical difficulties for e-learning on Canvas, contact the UF Help Desk at:

Learning-support@ufl.edu

(352) 392-HELP(4357) - select option 2

<https://lss.at.ufl.edu/help.shtml>

Disclaimer: This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to adjust to accommodate field trips and guest speaker’s availability and based on what is new in the sustainability industry. Such adjustments are communicated clearly in class and via written announcements on Canvas. These adjustment are not unusual and should be expected.

Weekly Class Schedule

Date	Topic	Reading & Assignments	Teams
Module 1: Welcome and Introduction to Sustainability			
<p>TH, 8/23</p>	<ul style="list-style-type: none"> - Welcome & Introduction - Review syllabus - Review use of Canvas - Form teams - Access Building green.com - Green Building rating system - What is architecture 2030 <p>Progress on 2030 Goals, Ten Years Late</p> <ul style="list-style-type: none"> - Video, Road to Zero, Ed Mazria <p>UF sustainability and green building status</p> <p>Paris Climate Change Agreement</p>	<p>https://www.buildinggreen.com/ufl</p> <p>http://architecture2030.org/</p> <p>https://www.buildinggreen.com/feature-shorts/progress-2030-goals-ten-years-later</p> <p>http://architecture2030.org/watch-ed-mazria-and-peter-calthorpes-presentation-from-cnu-23/</p> <p>http://sustainable.ufl.edu/ www.facilities.ufl.edu</p> <p>http://newsroom.unfcc.int/</p> <p>http://earthjustice.org/features/paris-agreement?gclid=EAIaIQobChMI7rvu5JK21AIVTySBC_h0_XJQQuEAAAYASAAEgL7E_D_BwE</p>	<p style="text-align: center;">-----</p>
<p>T, 8/28</p>	<p>Cutting Emissions as Cities Grow: 8 Actions from WRI</p> <p>How Boston Reduced Its Carbon Footprint</p>	<p>https://www.buildinggreen.com/newsbrief/cutting-emissions-cities-grow-8-actions-wri</p> <p>https://www.buildinggreen.com/feature-shorts/how-boston-reduced-its-carbon-footprint</p>	<p>Team 1</p> <p>Team 1</p>

	<p>On Track to Meet the Paris Agreement</p> <p>Video.....</p> <p>Opting Out of Paris Accord Fortifies Global Warming Battle</p> <p>Colleges Making Progress—and Money—on Their Carbon Commitments, <i>look at UF</i></p> <p>Do You Understand Sustainable Design? Nine Quick Ways to Find Out</p> <p>Drawdown, the most comprehensive plan ever proposed to reverse global warming</p>	<p>http://architecture2030.org/on-track-to-meet-the-paris-agreement/</p> <p>https://www.youtube.com/watch?v=v8WsSMexjXM</p> <p>https://www.buildinggreen.com/op-ed/opting-out-paris-accord-fortifies-global-warming-battle</p> <p>https://www.buildinggreen.com/newsbrief/colleges-making-progress%E2%80%94and-money%E2%80%94their-carbon-commitments</p> <p>https://www.buildinggreen.com/blog/do-you-understand-sustainable-design-nine-quick-ways-find-out</p> <p>http://www.drawdown.org/ Read page 216-224</p>	<p>Team 1</p> <p>-----</p> <p>Team 2</p> <p>Team 2</p> <p>Team 2</p> <p>All Teams</p>
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Module 2: Whole-Systems Thinking: Living building & Communities

<p>TH, 8/30</p>	<p>Summary</p> <p>How to succeed Living Building Challenge</p> <p>Product and Building Materials Red List and alternative</p> <p>Community-Scale Sustainability: Accelerating Change for People and Planet</p> <p>New Handbook Demystifies the Living Community Challenge</p> <p>Video, Packard Foundation HQ</p>	<p>Introduction/presentation</p> <p>https://www.buildinggreen.com/node/8163</p> <p>https://www.go-gba.org/resources/green-building-methods/materials-red-list/</p> <p>https://www.buildinggreen.com/feature/community-scale-sustainability-accelerating-change-people-and-planet</p> <p>https://www.buildinggreen.com/news-analysis/new-handbook-demystifies-living-community-challenge</p> <p>https://www.packard.org/about-the-foundation/our-green-headquarters/tour-our-building/</p>	<p>Team 3</p> <p>Team 3</p> <p>Team 3</p> <p>Team 4</p> <p>-----</p>
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<p>T, 9/4</p>	<p>IgCC Opens Compliance Pathway Based on Actual Energy Use</p> <p>IgCC Local Adoptions by State</p> <p>First Standards for Carbon Neutral Buildings Launched in Canada</p> <p>Analyze a Neighborhood with the Touch of a Button</p>	<p>https://www.buildinggreen.com/newsbrief/igcc-opens-compliance-pathway-based-actual-energy-use</p> <p>http://bcapcodes.org/code-status/local-adoptions/#fl</p> <p>https://www.buildinggreen.com/newsbrief/first-standards-carbon-neutral-buildings-launched-canada</p> <p>https://www.buildinggreen.com/newsbrief/analyze-neighborhood-touch-button</p>	<p>Team 4</p> <p>Team 4</p> <p>Team 5</p> <p>Team 5</p>
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	<p>Community-Scale Sustainability: Accelerating Change for People and Planet</p> <p>The Four Core Issues to Tackle for Resilient Design (And the Programs That Can Help) Farming in Cities Worth \$33 Billion a Year</p> <p>Pest Prevention: Steps Designers Can Take</p> <p>Drawdown, the most comprehensive plan ever proposed to reverse global warming</p>	<p>https://www.buildinggreen.com/feature/community-scale-sustainability-accelerating-change-people-and-planet</p> <p>https://www.buildinggreen.com/feature/four-core-issues-tackle-resilient-design-and-programs-can-help</p> <p>https://www.buildinggreen.com/news-analysis/farming-cities-worth-33-billion-year</p> <p>https://www.buildinggreen.com/feature/pest-prevention-steps-designers-can-take</p> <p>Read Tropical Forests, Land use sector</p>	<p>Team 5</p> <p>Team 6</p> <p>Team 6</p> <p>Team 6</p> <p>All Teams</p>
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Assignment #1: calculate your carbon footprint, <http://www.nature.org/greenliving/carboncalculator/>

Assignment #2: One page summary on **Tropical Forests** and the reverse of global warming, double space, 12 point font

Module 3: Looking Beyond the Built Environment; Green building is about more than buildings

TH, 9/6	Field trip	<p>UF Wastewater Treatment Plant located on Gale Lemerand Drive, south of Physics' building, ask for Jared Howard.</p> <p>http://campusmap.ufl.edu/</p>	
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T, 9/11	<p>Summary</p> <p>Green Roads</p> <p>Institute for Sustainable Infrastructure (ISI), Envision</p> <p>Biophilia and biomimicry</p> <p>Biophilic cites</p> <p>The Four Core Issues to Tackle for Resilient Design (And the Programs That Can Help)</p> <p>What's the Secret to High Performance?</p> <p>Resilient Design-Smarter Building for a Turbulent Future</p>	<p>Introduction/presentation</p> <p>https://www.greenroads.org/2899/why-greenroads.html</p> <p>http://sustainableinfrastructure.org/envision/</p> <p>http://www.terrabinbrightgreen.com/reports/14-patterns/#biomorphic-forms-and-patterns</p> <p>http://citiscopes.org/story/2015/whats-biophilic-city-let-timothy-beatley-explain</p> <p>https://www.buildinggreen.com/feature/four-core-issues-tackle-resilient-design-and-programs-can-help</p> <p>https://www.buildinggreen.com/news-analysis/what-s-secret-high-performance</p> <p>http://www2.buildinggreen.com/article/resilient-design-smarter-building-turbulent-future?</p>	<p>Team 7</p> <p>Team 7</p> <p>Team 7</p> <p>Team 8</p> <p>Team 8</p> <p>Team 8</p> <p>Team 9</p>
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	<p>The Four Core Issues to Tackle for Resilient Design (And the Programs That Can Help)</p> <p>Resilient Design: 7 Lessons from Early Adopters</p> <p>Video; Biophilic design</p> <p>Drawdown, the most comprehensive plan ever proposed to reverse global warming</p>	<p>https://www.buildinggreen.com/feature/four-core-issues-tackle-resilient-design-and-programs-can-help</p> <p>http://www2.buildinggreen.com/article/resilient-design-7-lessons-early-adopters?</p> <p>https://vimeo.com/ondemand/biophilicdesign</p> <p>Read Wind Turbine & Solar Farm, Electricity generation sector</p>	<p>Team 9</p> <p>Team 9</p> <p>-----</p> <p>All Teams</p>
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Assignment #3: One page summary on **Wind Turbine & Solar Farm** and the reverse of global warming, double space, 12 point font

Module 4: Land Use Planning; The importance of land-use planning in creating sustainable communities and transportation

<p>TH, 9/13</p>	<p>Summary</p> <p>New Urbanism, principles, benefits, & challenges</p> <p>Conservation subdivision</p> <p>See conservation subdivision design overview and case studies</p> <p>Video: Conservation subdivision</p> <p>Conservation subdivision design overview</p> <p>New EcoDistricts Protocol Aims for Green Building at Scale</p>	<p>Introduction/presentation</p> <p>http://www.newurbanism.org/newurbanism/principles.html</p> <p>http://www.landchoices.org/conservationsubs/4steps/consubs_4steps_arendt_1.htm</p> <p>http://www.landchoices.org/toptenways.htm</p> <p>https://www.youtube.com/watch?v=pL8vuF34KbU, https://www.youtube.com/watch?v=lbGWpwuNfHI</p> <p>http://www.landchoices.org/conservationsubs/consubs_pdfs/flawed_processes_flawed_results.pdf</p> <p>https://www.buildinggreen.com/news-analysis/new-ecodistricts-protocol-aims-green-building-scale</p>	<p>Team 10</p> <p>Team 10</p> <p>Team 10</p> <p>-----</p> <p>Team 11</p> <p>Team 11</p>
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Final project scope due 9/13/2018

<p>T, 9/18</p>	<p>Field trip Shelly Samec Waste management and recycling, Meet at the Leveda Brown transfer station located on Waldo Road at 5115 N.E. 63rd Ave in Gainesville.</p> <p>Video; NYC Special Initiative for Rebuilding and Resiliency</p>	<p>wear closed toe shoes During the tour the following items will be covered: -A brief history of solid waste management in Alachua County -How various waste components are disposed of in Alachua County - Where our recyclables go - How to properly dispose of hazardous materials https://www.yelp.com/biz/leveda-brown-environmental-park-and-transfer-station-gainesville</p> <p>http://www.nyc.gov/html/sirr/html/about/about.shtml</p>	<p>-----</p>
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	<p>Video: Why 100 resilient cities?</p> <p>Drawdown, the most comprehensive plan ever proposed to reverse global warming</p>	<p>https://www.youtube.com/watch?v=AtmADVlk_-Q</p> <p>Read Green Roof, Buildings and Cities sector</p>	<p>-----</p> <p>All Teams</p>
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Assignment #4: One page summary on **Green Roof** and the reverse of global warming, double space, 12 point font

Module 5: Site and Landscape; Sustainable Sites

<p>TH, 9/20</p>	<p>NYC Community Rebuilding and Resiliency plan</p> <p>100 resilient cities</p> <p>Resilient Design Strategies</p> <p>Work Globally, Design Locally</p> <p>Transportation; US high speed rail</p> <p>Carbon Savings from Transit</p> <p>Denver Votes Green Thumbs Up for Green Roof</p>	<p>http://www.nyc.gov/html/sirr/html/report/report.shtml</p> <p>http://www.100resilientcities.org/resilience#/-/ http://www.100resilientcities.org/cities#/-/</p> <p>http://www.resilientdesign.org/resilient-design-strategies/</p> <p>https://www.buildinggreen.com/feature/work-globally-design-locally</p> <p>http://www.ushsr.com/ushsrmap.html find out about the status of Florida high speed rail</p> <p>http://www2.buildinggreen.com/article/huge-carbon-savings-transit-could-dwarf-building-efficiency?</p> <p>https://www.buildinggreen.com/news-analysis/denver-votes-green-thumbs-green-roofs</p>	<p>Team 11</p> <p>Team 11</p> <p>Team 12</p> <p>Team 12</p> <p>Team 12</p> <p>Team 1</p> <p>Team 1</p>
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<p>T, 9/25</p>	<p>Summary</p> <p>Putting a “LID” on Harmful Stormwater Runoff</p> <p>White Roofs in Cold Climates a Mistake</p> <p>Sustainable Sites Initiative</p> <p>SITES for Sustainable Landscapes Aligns with LEED</p> <p>Win the Turf Wars with Rubber-Free Artificial Fields</p> <p>BuildingGreen-Approved Landscaping Products</p> <p>The Consumer road to self-driving cars</p> <p>More Questions Than Answers in Report on Reflective Pavements</p> <p>Drawdown, the most comprehensive plan ever proposed to reverse global warming</p>	<p>Introduction/presentation</p> <p>https://www.buildinggreen.com/primer/putting-%E2%80%9Clid%E2%80%9D-harmful-stormwater-runoff</p> <p>https://www.buildinggreen.com/newsbrief/white-roofs-cold-climates-mistake-says-lca-study</p> <p>http://www.sustainablesites.org/rating-system</p> <p>https://www.buildinggreen.com/news-analysis/sites-v2-sustainable-landscapes-aligns-lead</p> <p>https://www.buildinggreen.com/product-review/win-turf-wars-rubber-free-artificial-fields</p> <p>https://www.buildinggreen.com/product-guide/landscaping</p> <p>https://na.panasonic.com/us/trends/consumer-road-self-driving-cars</p> <p>https://www.buildinggreen.com/newsbrief/more-questions-answers-report-reflective-pavements</p> <p>Read Water Distribution & Water Saving, Buildings & Cites sector</p>	<p>Team 1</p> <p>Team 2</p> <p>Reference</p> <p>Team 2</p> <p>Team 2</p> <p>Team 3</p> <p>Team 3</p> <p>Team 3</p> <p>All Teams</p>
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Assignment #5: One page summary on **Water Distribution & Water Saving** and the reverse of global warming, double space, 12 point font

Requirement for the class to attend fall semester **Green Building Learning Collaborative event.** This program is scheduled for Wednesday, September 26th from 3:00- 5:30.



Module 6: Rain water management & Water Conservation; water could become the greatest constraint to development

<p>TH, 9/27</p>	<p>Summary</p> <p>Video, Florida, Georgia water war continues</p> <p>Florida loses to Georgia in water wars ruling</p> <p>Stormwater biofiltration</p>	<p>Introduction/presentation</p> <p>http://www.ajc.com/news/what-the-georgia-florida-water-war/qoTMrJhfOKzGUKdYjaC7L/</p> <p>http://www.miamiherald.com/news/local/environment/article132784134.html</p> <p>http://www2.buildinggreen.com/article/stormwater-biofiltration-s-also-smaller-and-cheaper?</p>	<p>-----</p> <p>Team 4</p> <p>Team 4</p>
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	Porous pavement	http://daily.sightline.org/2012/01/03/the-porous-road-less-traveled/	Team 4
	What Makes Plumbing Green? Guide to Plumbing Products	https://www.buildinggreen.com/feature/what-makes-plumbing-green-buildinggreen%E2%80%99s-guide-plumbing-products	Team 5
	Net-Zero Water and More: Moving Beyond “Low Flow”	http://www2.buildinggreen.com/article/net-zero-water-and-more-moving-beyond-low-flow?	Team 5
T, 10/2	Modular, Onsite Graywater System	https://www.buildinggreen.com/product-review/modular-onsite-graywater-system	Team 5
	How Low-Flow Can You Go with Plumbing Fixtures?	https://www.buildinggreen.com/product-review/how-low-flow-can-you-go-plumbing-fixtures	Team 6
	Video; water closet	https://www.youtube.com/watch?v=wBRH-H-Sg2E	-----
	Design Strategies for Occupant Engagement—and Why They Boost Performance	https://www.buildinggreen.com/feature/design-strategies-occupant-engagement-and-why-they-boost-performance	Team 6
	The Embodied Energy of Tap Water	https://www.buildinggreen.com/primer/embodied-energy-tap-water	Team 6
	Watersense	https://www3.epa.gov/watersense/	Team 7
	Tampa Bay Water	http://www.tampabaywater.org/tampa-bay-seawater-desalination-plant.aspx https://efc.sog.unc.edu/sites/www.efc.sog.unc.edu/files/2017/Tampa%20Bay%20Water_Final_Web.pdf	Team 7
	Drawdown, the most comprehensive plan ever proposed to reverse global warming	Read Geothermal & Rooftop Solar , Electricity Generation sector	All Teams

Assignment #6: Write one page summary on **Geothermal & Rooftop Solar** and the reverse of global warming, double space, 12 point font

Exam 1; e-learning on Canvas

Atlanta Trip

W, 10/3-10/5	Review for Atlanta trip	This is a required field trip for this course Leaving Gainesville, 10/3 at 6:00 a.m. Leaving Atlanta, 10/5 at 1:00 p.m.	
	Mercedes-Benz Stadium/ Atlanta Falcons Football Club	http://mercedesbenzstadium.com/mercedes-benz-stadium/ http://mercedesbenzstadium.com/fan-matters-blog/	All Teams All Teams
	The Atlanta BeltLine,	http://beltline.org/about/the-atlanta-beltline-project/atlanta-beltline-overview/	All Teams
	Epsten Group, Inc.	http://epstengroup.com/	All Teams
	Perkins +Will	http://inhabitat.com/perkinswills-atlanta-office-is-now-the-highest-scoring-leed-platinum-project-in-north-america/	All Teams
	Ponce City Market	http://poncecitymarket.com/content/uploads/Sustainability-Facts.pdf http://poncecitymarket.com/content/uploads/Sustainability-Site-Map.pdf	All Teams All Teams
	Serenbe Community	http://www.serenbecommunity.com/home.html	All Teams
	Emory University	http://sustainability.emory.edu/page/1001/HOME http://news.emory.edu/stories/2015/01/er_water_reclamation/campus.html	All Teams

Module #7: Energy Conservation, Efficiency, and Renewable energy

Green buildings and communities starts with energy savings

T,10/9	What Makes the Building Envelope Green? BuildingGreen's Guide to Thermal & Moisture Protection Products	https://www.buildinggreen.com/feature/what-makes-building-envelope-green-buildinggreen%E2%80%99s-guide-thermal-moisture-protection	Team 7
	Climate Change: Building Industry, You've Got This!	https://www.buildinggreen.com/feature/climate-change-building-industry-you-ve-got	Team 8
	New Zero Energy Certification Powered by ILFI and NBI	https://www.buildinggreen.com/newsbrief/new-zero-energy-certification-powered-ilfi-and-nbi	Team 8
	Could Passivhaus High-Rise Become the Norm?	https://www.buildinggreen.com/newsbrief/could-passivhaus-high-rise-become-norm	Team 8
	Thoughts on the Future of the Zero Energy Market	https://www.buildinggreen.com/news-analysis/thoughts-future-zero-energy-market	Team 9
	Ultimate Building Efficiency Requires Team Integration	https://www.buildinggreen.com/newsbrief/ultimate-building-efficiency-requires-team-integration	Team 9
	Zero-Energy Buildings for All	https://www.buildinggreen.com/blog/zero-energy-	Team 9

	Drawdown, the most comprehensive plan ever proposed to reverse global warming	buildings-all-0 Read Insulation , Buildings & Cities sector	All Teams
Assignment #7: Write one page summary on Insulation and the reverse of global warming, double space, 12 point font			
Assignment #8: Two page reflection paper on Atlanta field trip , double space, 12 point font			
TH, 10/11	Summary Net Zero Energy Building Solar Farms Offer Renewable Power Source Energy Is Federally Endorsed Metric for Net-Zero Buildings Scaling Up Engagement with Net-Zero-Energy Goals The Best Indoor LED Luminaires of 2016	Introduction/presentation http://www.treehugger.com/green-architecture/net-zero-energy-building-certification-finally-defines-what-net-zero-really-means.html http://www2.buildinggreen.com/article/solar-farms-offer-renewable-power-rest-us? https://www.buildinggreen.com/news-analysis/source-energy-federally-endorsed-metric-net-zero-buildings https://www.buildinggreen.com/news-analysis/scaling-engagement-net-zero-energy-goals https://www.buildinggreen.com/product-review/best-indoor-led-luminaires-2016	Team 10 Team 10 Team 10 Team 11 Team 11
T, 10/16	Building Enclosure Commissioning: Ensuring Durable and Energy-Efficient Buildings Verifying Performance with Building Enclosure Commissioning New Refrigerants, Less Global Warming The Cost of Comfort: Climate Change and Refrigerants Brock Environmental Center Vindicates Onsite Wind	https://www.buildinggreen.com/primer/building-enclosure-commissioning-ensuring-durable-and-energy-efficient-buildings https://www.buildinggreen.com/feature/verifying-performance-building-enclosure-commissioning https://www.buildinggreen.com/primer/new-refrigerants-less-global-warming https://www.buildinggreen.com/feature/cost-comfort-climate-change-and-refrigerants https://www.buildinggreen.com/newsbrief/brock-environmental-center-vindicates-onsite-wind-generation	Team 11 Team 12 Team 12 Team 12 Team 1

	<p>Product as a Service: Buying the Lumen, Not the Lightbulb</p> <p>Embracing the Economy as a Design Challenge</p> <p>The Cost of Comfort: Climate Change and Refrigerants</p> <p>Drawdown, the most comprehensive plan ever proposed to reverse global warming</p>	<p>https://www.buildinggreen.com/primer/product-service-buying-lumen-not-lightbulb</p> <p>https://www.buildinggreen.com/feature/embracing-economy-design-challenge</p> <p>https://www.buildinggreen.com/feature/cost-comfort-climate-change-and-refrigerants</p> <p>Read Refrigeration, Material sector</p>	<p>Team 1</p> <p>Team 1</p> <p>Team 2</p> <p>All Teams</p>
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Assignment #9: Write one page summary on **Refrigeration** and the reverse of global warming, double space, 12 point font

Assignment #10: calculate your energy consumption
https://www.energystar.gov/index.cfm?fuseaction=home_energy_yardstick.showGetStarted

TH, 10/18	Field Trip	<p>O’Conner Center, LEED V4 Gold Building http://floridagators.com/sports/2015/12/28/renovation.aspx</p>	
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Module 8: Indoor Environmental Quality; An unhealthy building/community cannot be a green building/community

<p>T, 10/23</p> <p>Read the whole report</p>	<p>Summary</p> <p>Radon in Buildings</p> <p>WELL Building Standards</p> <p>Fitwell</p> <p>Employee Performance Doubled in Well-Ventilated Buildings</p> <p>Do Living Walls Make for Cleaner Indoor Air?</p> <p>Clean, Fresh Air: Getting What We Need</p> <p>VOCs: Why They’re Still Here and What You Can Do About It</p> <p>Drawdown, the most comprehensive plan ever proposed to reverse global warming</p>	<p>Introduction/presentation</p> <p>http://www2.buildinggreen.com/article/radon-and-schools-study-denial?</p> <p>http://www2.buildinggreen.com/article/well-building-standard-officially-launches?</p> <p>https://fitwel.org/certification</p> <p>https://www.buildinggreen.com/news-analysis/employee-performance-doubled-well-ventilated-buildings</p> <p>https://www.buildinggreen.com/product-review/do-living-walls-make-cleaner-indoor-air</p> <p>https://www.buildinggreen.com/feature/clean-fresh-air-getting-what-we-need</p> <p>https://www.buildinggreen.com/feature/vocs-why-they-re-still-here-and-what-you-can-do-about-it</p> <p>Read Electric Vehicles, Transport sector</p>	<p>Team 2</p> <p>Team 2</p> <p>Team 3</p> <p>All Teams</p> <p>Team 3</p> <p>Team 3</p> <p>Team 4</p> <p>All Teams</p>
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Assignment #11: Write one page summary on **Electric Vehicles** and the reverse of global warming, double space, 12 point font

TH, 10/25	Green Chemistry Meets Green Building	https://www.buildinggreen.com/primer/green-chemistry-meets-green-building	Team 4
	Wood, Concrete, and Steel—And Their Incomparable EPDs	https://www.buildinggreen.com/feature-shorts/wood-concrete-and-steel-and-their-incomparable-epds	Team 4
	How to Get from VOC Certifications to Better Products	https://www.buildinggreen.com/feature-shorts/how-get-voc-certifications-better-products	Team 5
	Façade as Ventilation: Moving beyond Open Windows	https://www.buildinggreen.com/product-review/fa-ade-ventilation-moving-beyond-open-windows	Team 5
	VOC Testing: What It Can and Can't Tell You	https://www.buildinggreen.com/primer/voc-testing-what-it-can-and-can-t-tell-you	Team 5

Module 9: Material and Resources

Understanding the environmental impact of what goes into our buildings

T, 10/30	Summary	Introduction/presentation	
	BuildingGreen Announces Top 10 Products for 2018	https://www.buildinggreen.com/product-review/buildinggreen-announces-top-10-products-2018	Team 6
	Better Steel, Lower Impacts	https://www.buildinggreen.com/feature/better-steel-lower-impacts	Team 6
	Trump Imposes Tariffs on Imported Solar Panels	https://www.buildinggreen.com/newsbrief/trump-imposes-tariffs-imported-solar-panels	Team 6
	The PVC debate, a fresh look	https://www.buildinggreen.com/feature/pvc-debate-fresh-look	Team 7
	The Great Eight: High-Impact Material Choices for Green Building	https://www.buildinggreen.com/feature/great-eight-high-impact-material-choices-green-building	Team 7
	What makes product green	http://www2.buildinggreen.com/article/what-makes-product-green	Team 7
	Bamboo Flooring: Still Green, for a Price	https://www.buildinggreen.com/product-review/bamboo-flooring-still-green-price	Team 8
	Cladding: More Than Just a Pretty Façade	http://www2.buildinggreen.com/article/cladding-more-just-pretty-facade?	Team 8
	Resilient Flooring	https://www.buildinggreen.com/product-guide/resilient-flooring	Team 8
Would Wood Skyscrapers Improve Urban Sustainability?	https://www.buildinggreen.com/news-analysis/would-wood-skyscrapers-improve-urban-sustainability	Team 9	

	Drawdown, the most comprehensive plan ever proposed to reverse global warming	Read, LED Lighting (Household), buildings & cities sector	All Teams
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Assignment #12: Write one page summary on **LED Lighting (Household)** and the reverse of global warming, double space, 12 point font

TH, 11/1	Guest speaker	Chris Castro, Sustainability Director, City of Orlando	
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Module 10: Material and Health

Understanding the health impacts of what goes into our buildings

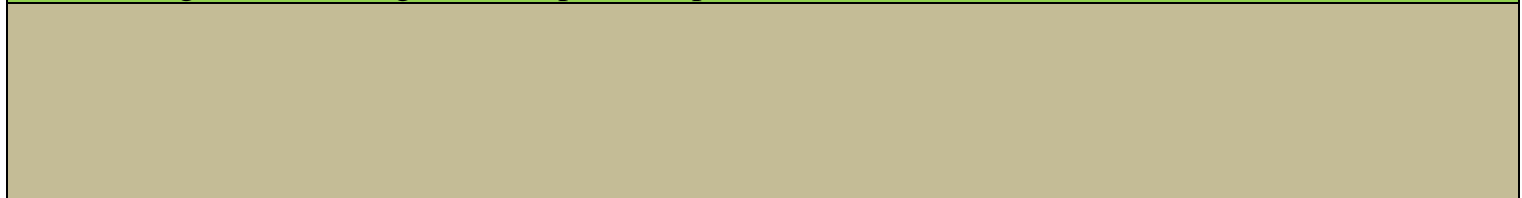
T, 11/6	<p>Summary</p> <p>What's an HPD Health Product Declaration?</p> <p>Why Chemical Transparency Matters</p> <p>TSCA Reform: Chemical Regulations, at a Cost</p> <p>Beating the red list</p> <p>Greenest Greenbuild Products for the Indoor Environment and More</p> <p>Drawdown, the most comprehensive plan ever proposed to reverse global warming</p>	<p>Introduction/presentation</p> <p>https://www.buildinggreen.com/feature-shorts/what%E2%80%99s-hpd-health-product-declaration-faqs</p> <p>https://www.buildinggreen.com/feature/why-chemical-transparency-matters</p> <p>https://www.buildinggreen.com/primer/tsca-reform-chemical-regulations-cost</p> <p>http://www2.buildinggreen.com/article/take-control-your-materials-four-empowering-lessons-teams-beat-red-list?</p> <p>https://www.buildinggreen.com/product-review/greenest-greenbuild-products-indoor-environment-and-more</p> <p>Read, Reduced Food Waste, Plant-Rich Diet, & Silvopasture, Food sector</p>	<p>Team 9</p> <p>Team 9</p> <p>Team 10</p> <p>Team 10</p> <p>Team 10</p> <p>All Teams</p>
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Assignment #13: Write one page summary on **Reduced Food Waste, Plant-Rich Diet, & Silvopasture** and the reverse of global warming, double space, 12 point font

TH, 11/8	<p>Summary</p> <p>Weather & Air Barriers</p> <p>SIREWALL: The Next Generation of Earthen Walls</p> <p>Welcome to the trusted source for credible sustainable product information</p>	<p>Introduction/presentation</p> <p>https://www.buildinggreen.com/product-guide/weather-air-barriers</p> <p>https://www.buildinggreen.com/product-review/sirewall-next-generation-earthen-walls</p> <p>https://spot.ulprospector.com/en/na/BuiltEnvironment</p>	<p>Team 11</p> <p>Team 11</p> <p>Resource</p>
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	<p>Cleaner Lungs Could Pay for Billion-Dollar Emissions Policies</p> <p>Understanding GreenScreen and List Translator Benchmarks</p> <p>Connection between water conservation and infections</p> <p>Building product and health</p>	<p>https://www.buildinggreen.com/newsbrief/cleaner-lungs- could-pay-billion-dollar-emissions-policies</p> <p>https://www.buildinggreen.com/primer/understanding-greenscreen-and-list-translator-benchmarks</p> <p>http://www2.buildinggreen.com/article/surprising-connection-between-water-conservation-and-deadly-infections?</p> <p>http://www2.buildinggreen.com/article/building-products-and-health-look-risk-vs-hazard?</p>	<p>Team 11</p> <p>Team 12</p> <p>Team 12</p> <p>Team 12</p>
<p>TH, 11/13</p>	<p>Summary</p> <p>Design for the next century’s weather</p> <p>Resilient Design-Smarter Building for a Turbulent Future</p> <p>The Four Core Issues to Tackle for Resilient Design (And the Programs That Can Help)</p> <p>Resilient Design: 7 Lessons from Early Adopters</p> <p>Six Ways Existing Buildings Can Save the Plane</p> <p>Raze or Retrofit? Six Extraordinary Answers to an Everyday Question</p> <p>What Makes the Building Envelope Green? BuildingGreen’s Guide to Thermal & Moisture Protection Products</p> <p>Drawdown, the most comprehensive plan ever proposed to reverse global warming</p>	<p>Introduction/presentation</p> <p>http://www2.buildinggreen.com/article/designing-next- centurys-weather?</p> <p>http://www2.buildinggreen.com/article/resilient-design- smarter-building-turbulent-future?</p> <p>https://www.buildinggreen.com/feature/four-core-issues- tackle-resilient-design-and-programs-can-help</p> <p>http://www2.buildinggreen.com/article/resilient-design-7- lessons-early-adopters?</p> <p>https://www.buildinggreen.com/feature-shorts/six-ways-existing-buildings-can-save-planet</p> <p>https://www.buildinggreen.com/feature/raze-or-retrofit-six-extraordinary-answers-everyday-question</p> <p>https://www.buildinggreen.com/feature/what-makes-building-envelope-green-buildinggreen%E2%80%99s-guide-thermal-moisture-protection</p> <p>Read, Educating Girls & Family Planning, Women & Girls sector</p>	<p>Team 1</p> <p>Team 1</p> <p>Team 2</p> <p>Team 2</p> <p>Team 3</p> <p>Team 3</p> <p>Team 4</p> <p>All Teams</p>

Assignment #14: Write one page summary on **Educating Girls & Family Planning** and the reverse of global warming, double space, 12 point font




Module 11: Looking ahead: Climate Adaptation,

T, 11/15	<p>Summary</p> <p>Green Building Training for Low-Income Communities</p> <p>‘Build Higher’: HUD’s Rules After Harvey, Irma, Maria</p> <p>How a Hurricane Forged New Hope for Resilience</p> <p>Bouncing Forward from Disasters Building commissioning</p> <p>Concrete Pours through Loophole in New Carbon Law</p> <p>Urgent: Zero-Carbon Buildings Needed</p> <p>Drawdown, the most comprehensive plan ever proposed to reverse global warming</p>	<p>Introduction/presentation</p> <p>https://www.buildinggreen.com/newsbrief/green-building-training-low-income-communities</p> <p>https://www.buildinggreen.com/feature-shorts/build-higher-hud-s-rules-after-harvey-irma-maria</p> <p>https://www.buildinggreen.com/feature-shorts/how-hurricane-forged-new-hope-resilience</p> <p>https://www.buildinggreen.com/op-ed/bouncing-forward-disasters</p> <p>https://www.buildinggreen.com/news-analysis/concrete-pours-through-loophole-new-carbon-law</p> <p>https://www.buildinggreen.com/newsbrief/urgent-zero-carbon-buildings-needed</p> <p>Read Cars, electric bikes, and Air planes, Transport sector</p>	<p>Team 4</p> <p>Team 5</p> <p>Team 5</p> <p>Team 6</p> <p>Team 6</p> <p>Team 7</p> <p style="background-color: yellow;">All Teams</p>
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Exam 2, e-learning on Canvas

Assignment #15: Write one page summary on **Cars, electric bikes, and Air planes** and the reverse of global warming, double space, 12 point font

11/21-11/23	<p>Thanksgiving Holiday <i>Have a happy and safe holiday</i></p>		
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Module 12: Economics and Green Jobs

T, 11/20	<p>How Nature Creates Green Jobs—If We Listen</p> <p>Can Bioinspired Innovations Find Economic Footing?</p> <p>Grow your green building knowledge with LEED Lab: What students are saying Green Building to Create 3 Million Jobs by 2018, Says USGBC</p>	<p>https://www.buildinggreen.com/blog/how-nature-creates-green-jobs%E2%80%94if-we-listen</p> <p>https://www.buildinggreen.com/newsbrief/can-bioinspired-innovations-find-economic-footing</p> <p>http://www.centerforgreenschools.org/grow-your-green-building-knowledge-leed-lab-what-students-are-saying</p> <p>https://www.buildinggreen.com/news-analysis/green-building-create-3-million-jobs-2018-says-usgbc</p>	<p>Team 7</p> <p>Team 8</p> <p>Team 8</p>
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	How to Build Green At No Added Cost	https://www.buildinggreen.com/feature/how-build-green-no-added-cost	Team 9
	The Cost of LEED Certification	https://www.buildinggreen.com/primer/cost-leed-certification	Team 10
	Six Ways Existing Buildings Can Save the Planet	https://www.buildinggreen.com/feature-shorts/six-ways-existing-buildings-can-save-planet	Team 11
	20 Ways to Advance Sustainability in the Next Four Years	https://www.buildinggreen.com/feature/20-ways-advance-sustainability-next-four-years	Team 12
11/27, 29, and 12/4	Final Presentations 11/27: teams, 4, 5, 7, 9 & 11 11/29: teams, 2 & 12 12/5: teams, 1, 3, 6, 8 & 10	20 minutes presentation including video (if selected) and Q/A per team. Each team to turn in: <ul style="list-style-type: none"> - Report and presentation. Or - Report and a video (3-5 minutes). Or - Presentation and a video (3-5 minutes) 	