Overview

Two key accomplishments which occurred during the 2014–15 school year are truly eye-catching—one on the south side of campus and one near the north entrance. The first building one sees upon entering campus from Cobb Parkway is the beautiful new Murray Athletic Center, which has received a LEED Gold rating.

If you enter Lovett from Paces Ferry Road and proceed downhill toward the main part of campus, you will see Lovett’s first solar array, which sits atop the walkway running from the Lower School to the chapel.

Both of these structures send a clear message to visitors and members of the school community: Lovett is environmentally responsible and on the cutting edge of advances in sustainable architecture and renewable energy.

Less immediately visible, but every bit as important (if not more so) are the strides the sustainability program made during the 2014–15 academic year in the classroom, in faculty professional development and in student engagement.

All of these accomplishments are in keeping with the school’s Environmental Policy Statement, which affirms that:

“Lovett is committed to incorporating leading environmental practices into its educational and operational goals, and to fostering environmental awareness and stewardship among our community.”
Sustainability in the Classroom

There are many ways in which teachers in all divisions weave lessons related to sustainability into their curricula. Below are some examples. By no means is this a comprehensive list.

Upper School
- Angela Mitchell’s Spanish VI students participated in a worldwide TED-Ed program in which they developed multilingual lesson plans and presentations about sustainability that are available on the internet. The projects focused on reducing the cost and amount of copy paper being used, developing an application to promote carpooling to school, and promoting the use of electric cars within the Lovett parent community.

Here are links to the projects on You Tube:
http://tiny.cc/s7wt1x
http://tiny.cc/n8wt1x
http://tiny.cc/t8wt1x

- Alex Reynolds and scientists from Catolica University in Quito have laid out 15 transects on Lovett’s Siempre Verde cloud forest property in Ecuador. Lovett students will be able to gather data on flora, fauna, and climate conditions when they visit Siempre Verde and contribute to an ongoing scientific research project. The Lovett sustainability program has helped fund the transect project.

- Jennnifer King’s science students produced four PSA (Public Service Announcement) videos promoting a grid neutral Lovett and developed websites to accompany them.

Links to their PSA videos:
http://tiny.cc/98wt1x
http://tiny.cc/p9wt1x
http://tiny.cc/daxt1x
http://tiny.cc/zaxt1x
A Makers Lab has been created in the Community Center which is equipped with several 3D printers, a laser cutter, computers, and various supplies which students may use to design and build things. Thirty students, guided by Karl Hwang and Jim Wingate, are in the Maker’s Club. Sustainability-related projects they accomplished this year included assembling a battery powered bicycle, installing headlights on Lovett’s solar powered golf cart, and launching three balloons to collect atmospheric data.

Here are links to a video of a balloon launch and to some of the data they collected:
http://tiny.cc/pbxt1x
http://tiny.cc/7bxt1x

Sixteen physics students chose to take alternate final exam in the spring in the form of a year-long project to design and build a device that would measure CO2 emissions in the carpool line. They met with four engineers from GA Tech to troubleshoot their initial designs, and learned to build circuits, and to program the board to collect data. Building the CO2 sensor is still a challenge that must be overcome, but the project may be passed along to other students during the 2015–16 school year.

Wade Morris’s Introduction to Economics course explores, in part, the relationship between capitalism and the environment. The course concludes with a series of guest panelists, which this year included several people who work in sustainability-related industries.
Middle School

- Diane Husmann’s sixth grade science students constructed wooly pockets and a vertical garden.
- Seventh grade science students, directed by Petter Bauer, Sharon Conforto, and Rachel Chou, studied biomimicry.
- Eighth grade advanced science students, with support from Erin Dixon and Katy McDougal, engaged in a pilot program in which they learned how to make alternative energy machines and wrestled with the challenges of generating and maintaining a sufficient supply of energy.

Lower School

- Lower School teachers focused on discussing teaching for sustainability at faculty meetings this year.
- Sarah Spiers worked with Facing the Future to develop grade level sustainability themes and lesson plans for every grade in the Lower School.
- All students learned about the importance of bees and what can be done to help pollinators survive.
- More teachers than ever helped plan Earth Week activities and on Earth Day every teacher participated with their classes.
- Sarah Spiers took faculty on an outdoor field trip to encourage them take their students outside more often and use the campus as their classroom.
Jaimie Cloud, a nationally recognized expert in Education for Sustainability (EfS), conducted a two-day audit of Lovett’s sustainability program January 29–30, 2015, with a special focus on determining how well Lovett is educating its students for sustainability. Ms. Cloud held a series of focus group discussions and wrote a report which was shared with administrators and sustainability leaders. Some of her key conclusions:

- Much work has been done to move cultural norms and practices related to the physical plant, grounds, and operations and some teachers have developed exemplary units, courses, and/or lessons that can be shared as exemplars.
- There is no shared understanding of what sustainability/Education for Sustainability are.
- There is readiness among the faculty to integrate all of the strategic initiatives in the service of educating for a healthy and sustainable future.
- The school community can make authentic contributions to sustainability through formal learning opportunities, service learning and project based learning embedded in curriculum, and instruction at Lovett, and through informal activities on and off campus.
- The faculty requested professional development and coaching opportunities that help them understand what sustainability and education for sustainability are, and that help them integrate EfS, The Vision for Learning, and the other strategic initiatives into their curriculum and instruction in rich and meaningful ways. A significant number would like to begin work soon.
- We need a short- and long-term implementation plan that puts in place a system to integrate and diffuse The Vision for Learning, EfS, and the other strategic initiatives throughout the system vertically and laterally in a way that is documented, shared and iterated and improved over time.
- EfS Benchmarks should be adopted, clearly articulated, taught, assessed, and understood by administrators, teachers and students.
- Time needs to be built in to plan, think, design, and/or innovate curriculum, design and calibrate assessments, have critical conversations, analyze student work for evidence, etc.
- EfS professional development and coaching must be ongoing for the next 3-5 years (at least) if we want to produce evidence of EfS in the students.

Ms. Cloud conducted a special EfS workshop for Lovett administrators on August 2, and a workshop for about 30 teachers August 3–4. In addition, Sandra Switzer, Joe DeLuca, Bob Amar, and Diane Husmann attended the Cloud Institute Design Studio in New York City July 26–31. During the 2015–16 school year, Sandra and Joe will be leading EfS professional development cohorts with 24 Middle and Upper School teachers and will be working on integrating sustainability education more effectively into Lovett’s curriculum.
Green Team & Student Leadership Accomplishments

One of the most gratifying and important accomplishments of the 2014-15 school year was a significant increase in the number of students participating in Green Team activities and other student led sustainability projects. Sandra Switzer, Joe DeLuca, Sarah Spiers, and Mallorie Fonseca helped guide Green Team and Culture Crew activities in their respective divisions.

Upper School Green Team Highlights
- Working with Alison Thomas, of Keep My Planet Green, to offset carbon emissions from 158 cars. Upper School Green Team members engaged in five lunch meetings with Ms. Thomas, who helped them develop a fundraising strategy and trained Green Team members in marketing and communications.
- Raising $1,500 for solar panels on campus, including $1,000 earned by having the largest number of volunteers for the annual Parents Night Out Service Board Fundraiser.
- Organizing the annual January e-waste drive which collected a total of 2,500 pounds of electronic waste which was properly recycled. In addition, 74 cell phones, 13 laptop computers, 19 ink jets, and 15 digital/video cameras were collected and redeemed for $178.50.
- Organizing Earth Week festivities.

Middle School Green Team Highlights
- Weighing pre-consumer and post-consumer waste in the kitchen and dining hall. This contributed vital information to the calculation of Lovett’s Diversion Rate.
- Making morning educational announcements about food and creating a sustainability trivia contests in preparation for Earth Week.
- Increased Middle School participation in the e-waste drive.
- Presenting a Middle School assembly about composting and collaborating with Keep My Planet Green to offset carbon emissions from cars.
- Participating in a webinar with the founder of TerraCycling.
Lower School Activities

- Students worked with the Culture Crew, guided by Mallorie Fonseca, to develop videos that promote composting. All students learned about the full process, from waste to organic matter, which was incorporated into the Lower School garden.
- Several organic garden work days were held.
- Students measured compost waste to better educate themselves.

The Lovett Environmentally Responsible Investment Group

- The Lovett Environmentally Responsible Investment Group (LERIG) is composed of students who are interested in learning about and promoting investments in mutual funds and corporations that are environmentally responsible and fossil fuel free. On February 24, 2015, LERIG leaders made an excellent presentation to members of the Board of Trustees and Business Office personnel. As a result of their thorough research and analysis, their recommendation to purchase $5K of fossil fuel free mutual funds and stocks has been accepted and the orders have been executed. LERIG will continue to monitor their securities and research other “green” investments.
Diversion Rate

Two eco-consultants from Waste Management, Inc., conducted a waste stream analysis at Lovett April 19–21, 2010. According to their calculations, Lovett diverted 21.1 percent of its waste stream between July 1, 2009 and May 10, 2010. In other words, nearly 80 percent of the school’s trash was sent to a landfill. Unsurprisingly, fiber (paper/cardboard), organics (food) and plastic bottles were the largest components of the waste stream. Among the 15 recommendations made by Waste Management’s “Green Squad” were the following suggestions:

- Consider implementing a comprehensive composting program.
- Clearly label all recycling containers and use consistent bins all across campus.
- Switch from single use condiments to bulk condiment service.
- Switch to bulk yogurt service or cups made from plastic #5.
- Strive to purchase high post-consumer % recycled content products.
- Advertise the recycling program on campus.

All of the recommendations listed above have been implemented over the past four or five years. The weighing of pre-consumer and post-consumer kitchen and dining hall food waste by Joe DeLuca and some Middle School Green Team students last fall provided critical data which helped measure the effectiveness of the school’s composting program, which was spearheaded by Meredith Statler, Director of Dining Services. A new calculation completed in February of 2015 determined that Lovett’s diversion rate increased from 21.1 percent in 2009–10 to 38.9 percent in 2013–14. This is a significant accomplishment which should be source of pride for every member of the school community. The details of the diversion rate calculation are as follows:

**Diversion Rate Calculation for 2013–14**

- 97,140 lbs. of post-consumer food waste composted in 2013–14 school year
- 1,352.5 lbs. of pre-consumer food waste composted in 2013–14 school year
- 3,829 lbs. of used cooking oil sent to Physical Plant to be made into biodiesel fuel
- 10,410 lbs. of aluminum cans and plastic recycled in 2013–14 school year
- 33,300 lbs. of paper and cardboard recycled 2013–14 school year
- 4,515 lbs. of library books recycled in 2013–14
- 37,000 lbs. of clay recycled (1000lbs/week) during 2013–14 school year
- 6,367.5 lbs. of computers recycled in 2013–14
- 1,755 lbs. of books recycled in campus shop in May 2014
- 155 lbs. of batteries recycled by campus store in 2013–14 school year.
- Unable to determine the number or weight of reused/recycled school uniforms
- 304,880 lbs. of trash sent to landfill in 2013–14 school year

*Total Amount recycled and composted material: 194,129 lbs.*

*Total amount of waste generated: 499,009.4 lbs.*

*Diversion Rate: 38.9 percent*
Earth Week

Green Team students and their faculty sponsors organized a full slate of Earth Week activities again this year. Our Sustainability Scholar-in-Residence was Garth Johnson, an artist who uses recycled and re-purposed materials. He addressed assemblies in the Middle and Upper schools, visited classes in all three divisions, and directed Lower School students in creating an art installation that was displayed in the Hendrix Garden.

The Lower School Earth Day program focused on pollinators. Ted Dennard, of the Savannah Bee Company, came to campus to educate the students, and all Lower School students took a pollinating plant home.

Garth Johnson, Scholar-in-Residence

Ted Dennard, Savannah Bee Company
Other Earth Week activities were as follows:

- **Monday:** Outdoor Wear Non Uniform Day
- **Tuesday:** A viewing and discussion of the documentary film, *Chasing Ice*, during lunch
- **Wednesday:** Blue/Green NUD; Walk to School/Carpool Day; special Earth Day lunch; plant sale by Upper School botany students
- **Thursday:** Petitions to bring more solar panels to Lovett and to get a Living Wall at Lovett; a sign-up to offset car emissions for Keep My Planet Green; outdoor barbeque; Lower School solar panel dedication; poetry slam; electric car expo; King of Pops popsicles; plant sale
- **Friday:** petitions; discussion of *Chasing Ice* during lunch
Dedication of Lower School Solar Array

During the Earth Week outdoor barbeque on Thursday, April 23, Trey and Juliette Jarrard, Headmaster Billy Peebles, Sandra Switzer, Director of Sustainable Education, and students from the Middle Upper School Green Teams participated in a ribbon cutting ceremony marking the installation of Lovett’s first solar array which covers the walkway from the Lower School to the chapel. The array was generously donated to Lovett by Trey Jarrard, the Founder and CEO of Renewvia Energy, and his wife, Juliette. Their daughter, Rae, is a member of the Class of 2019.

The 36 panel, 11.5 kWh array was commissioned on March 31, 2015. The system is expected to produce 15,552 kWh of power in a year and offset approximately 10.9 tons of CO2 annually. For real time data on the energy produced by the solar array go to the Sustainability link (under Character) on the Lovett webpage and click on “Lower School Solar Panel Array.”
In addition to the Lower School Solar Array, the completion of the Murray Athletic Center (LEED Gold rating) and the huge improvement in Lovett’s Diversion Rate, there were a number of other significant accomplishments which demonstrate Lovett’s commitment to operating our campus facilities in an efficient and environmentally responsible manner.

- Four electric vehicle charging stations were installed near the entrance to the parking deck. The charging stations can fully charge an EV battery (zero to full) in two hours. Cars in parking spaces on either side of the 4 EV chargers can reach them. In addition, four cars can be charged (though not as quickly) using regular electrical outlets in the parking deck. Faculty members who drive electric vehicles have developed a system for sharing the chargers and using them efficiently.

- Lovett purchased Renewable Energy Certificates from Sterling Planet to offset 25 percent (1,837,500 kWh) of the school’s electricity consumption in 2014. This is the second straight year that Lovett was the leading school in Georgia in the Green School Alliance’s Renewable Energy Purchasing Consortium.

- Lovett received proposals from Hannah Solar, Renevia Energy, Radiance Solar, and Inman Solar to install small scale solar power demonstration projects or larger solar arrays in a variety of locations, including the roofs of the Physical Plant, Middle School, and Glover Gymnasium. We are hoping to move ahead with more projects.

- Guidelines were developed which the Sustainability Advisory committee may use in expending funds that have been entrusted to it. The guidelines seek to measure the economic, environmental and education value of proposed capital projects. An updated project spreadsheet is being created and should be completed this summer.
Acknowledgments

Special thanks are due to the following people and organizations that have devoted time, energy and resources to supporting Lovett’s sustainability program:

- Mike Lanning, who has produced over 1600 gallons of biodiesel fuel from used cooking oil from the dining room
- Jeff Rountree and all members of the Physical Plant and Housekeeping staffs who assist with our composting and recycling programs
- Alison Thomas and other members of Keep My Planet Green
- Dwight Bell and Kirsten Bell of Eco-Metrix Environmental Management
- Jim Meyer, Chairman, and all members of the Buildings & Grounds Committee

The Sustainability Advisory and Outreach Board
Glenn Cartledge
Jeff Dinkle
Bill Dunkel
Chris Dunn
Alan Gray
Jim Mahoney
David Meriwether
Ira Pearl
Billy Peebles
Brian Scales
Kashi Sehgal
Laura Seydel
Sandra Switzer
John Wells

Upper School Green Team
Meredith Bond, Co-President
Emma Pollard, Co-President
Max Hart
Emily Johnson
Aaron Schunk
Elizabeth Champion
Michael Moore
James Packman
Lauren Rausaw
Muhammad Dhanani
Seth Rogers
Josh Eiland

Middle School Green Team
Kendall Green, Co-President
Riya Patel, Co-President
Harper Finch
Kendall Hart
Mary Eliza Kamerschen
Justin Novellas
Riya Pater
Laura Pencea
Towner Schunk
Eden Turner
Rhea Varma
“The earth I tread on is not a dead, inert mass. It has a body, has a spirit, is organic.”

—Henry David Thoreau

“Caring for human capital and natural capital (Earth) as much as we traditionally have cared for financial capital will give social equity and environmental stewardship their rightful places alongside economic progress, and move society to reinvent the means for achieving economic progress itself.”

—Ray Anderson