

Facilities Sustainability Forum



Tuesday, October 24
8:30 am – 12:00 pm
Student Success Center

Welcome!

Be Informed • Be Involved • Be Inspired



Elemental Impact

Georgia Institute of Technology

Facilities Sustainability Forum

October 24, 2017

Atlanta, GA



Holly Elmore
Elemental Impact Founder

Elemental Impact

Sustainability in ACTION

Work with industry leaders to create best operating practices where the entire value-chain benefits, including corporate bottom lines and the environment. Through education and collaboration, establish the best practices as standard practices.

A Catalyst

Ei is a creator, an incubator.

*Ei determines what could be done that is
not being done and gets it done.*

Ei brings the possible out of impossible.

Ei identifies pioneers and creates heroes.

Award-winning recycling program:

- American Forest & Paper Association 2008 University Recycling Award.
- National Recycling Coalition 2008 Best Overall Recycling, Outstanding College or University Program Award.



***NEVER SUCCUMBED TO SINGLE-STREAM
RECYCLING!!!***

Zero Waste Zones

- Launched in 2009 as the nation's forerunner in the commercial collection of food waste for compost.
- GA Tech was an early ZWZ Participant!
- Sold program to National Restaurant Association in 2012.



Zero Waste Zones

Zero Waste Zones

- *Perfected back-of-the-house prep food waste collection practices.*
- *Hyatt Regency quote: This is EASY, why wouldn't everyone separate kitchen food waste?!!*



Zero Waste Zones

Collaboration is Key for Success



Ei Platforms:

- **Product Stewardship**
Integrity throughout the entire product life-cycle
- **Recycling Refinement**
Moving beyond landfill diversion
- **Soil Health**
Regenerating the foundation of Life
- **Water Use | Toxicity**
The Water Footprint: the new sustainability standard

Recycling Refinement

Moving beyond landfill diversion ...

Recycling Integrity:

Maintaining maximum Material Value With Minimal Energy Expended

Contamination:

an expensive trip to the landfill

Plastic Film Recycling

Plastic Film Recycling

- *Contaminant in single-stream recycling.*
- *Value often exceeds OCC.*

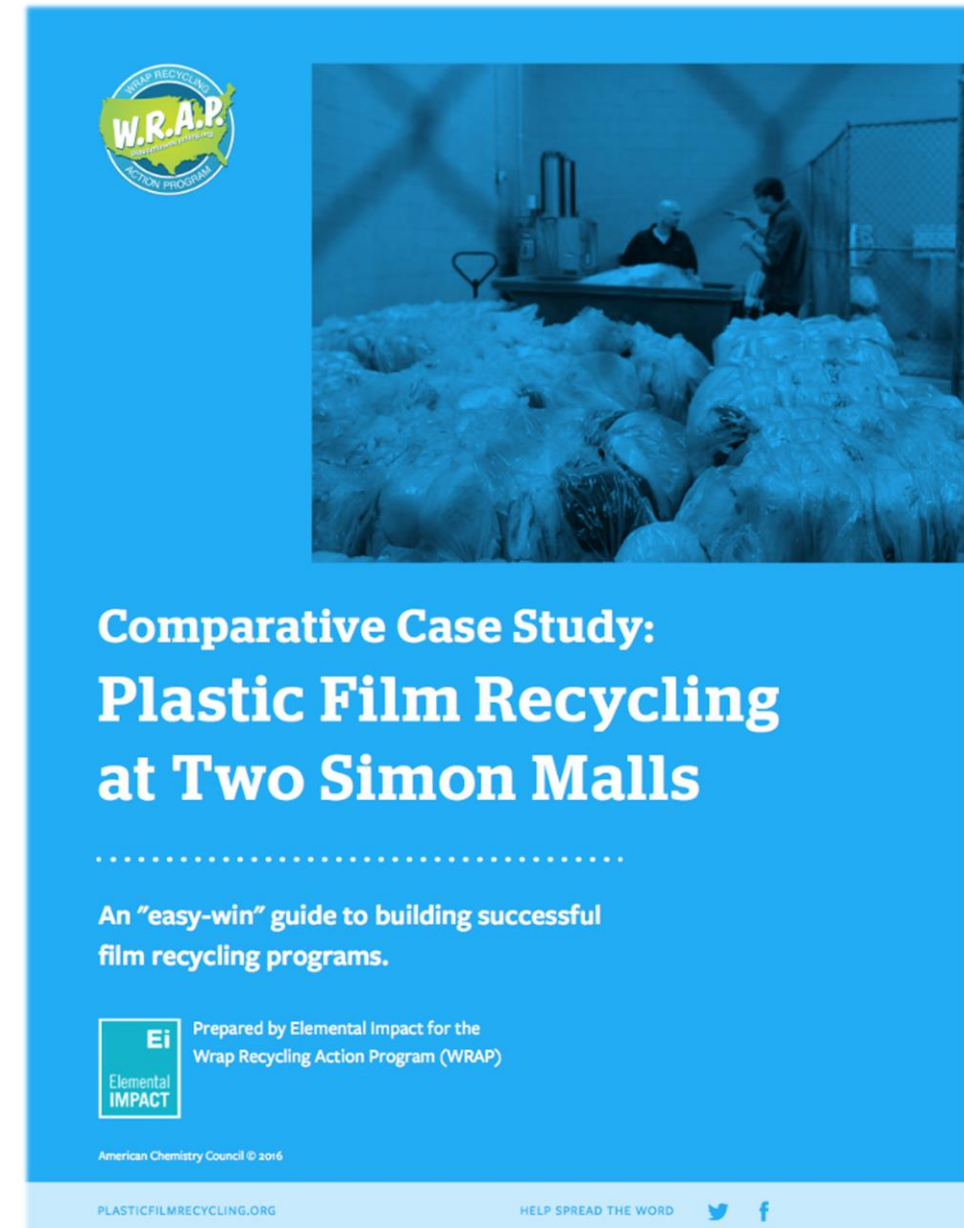


If it was easy, it would already be done!

Plastic Film Recycling

Concord Mills, a Simon Mall

- *Sustainable Food Court Initiative Shopping Mall Pilot*
- *First mall plastic film recycling pilot in nation.*
- *ACC Plastic Film Recycling Group Case Study.*



Plastic Film Recycling

FreshPoint Atlanta

- *Nation's largest produce distributor.*
- *Shrink wrap on incoming & outgoing pallets.*
- *Returned shrink wrap used for customer deliveries.*
- *Ei film on pilot.*
- *Shared with ATL & GWCC*



Plastic Milk Jug Recycling

HMSHost

- *Starbucks - City's largest generator of plastic one-gallon jugs – highly recyclable yet most go to landfill.*
- *HMSHost operated 9 ATL Starbucks in 2011.*
- *2600 milk jugs recycled PER WEEK.*
- *Program broke even to made some \$\$\$.*
- *Mini baler in back of ATL Starbucks.*
- *ATL Starbucks achieved 90% zero waste.*



Post-Consumer Food Waste

Atlanta Airport

- *Sustainable Food Court Initiative Airport Pilot.*
- *Compostable food & beverage packaging provision in 2011 concessionaire contract.*
- *Set the stage for legally binding (vs. regulatory) zero waste compliance.*
- *Compostable Packaging Info Packet*
- *2011 Greening Airport Award*



Post-Consumer Food Waste

GWCC | Georgia Dome

- *Sustainable Food Court Initiative Event Venue Pilot.*
- *Levy Restaurants shifted to reusable serveware in suites & compostable packaging for concessions.*
- *Post-Falcons game food waste collection pilots.*
- *Compostable F&B Packaging Education session.*



Source-Separate Materials Recycling Template

Source-Separated Materials Recycling Template

- *Source-separated material is baled via mini-balers.*
- *Bales collected to common recycling center, baled into standard sized bales, stored until accumulate trucker trailer load, sold in local or commodities market, rebates distributed to participants.*
- *Begin with high value / volume material.*
- *Community-based program.*

Source-Separated Materials

Source-Separated Materials

- *Identify highest value, largest quantity materials.*
- *Source-separate with mini or regular size baler.*
- *Sell directly to manufacturers as raw material or within the commodities market.*
- *Aluminum, cardboard / other fibers & certain plastics are generally the highest value items.*



Source-Separate Materials Recycling Template

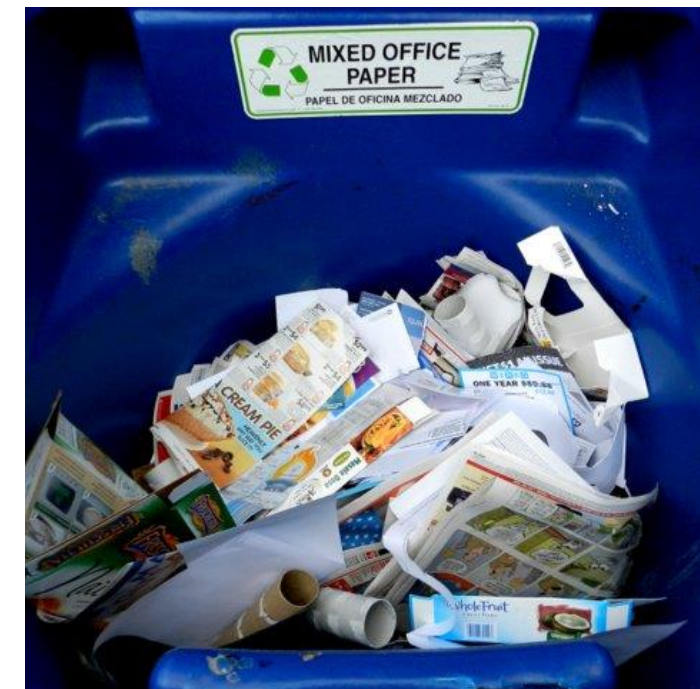
S-SMRT City-Wide Template

- *Georgia Dome served as base generator.*
- *Orwak donated a multi-bin mini-baler for pilot.*
- *Atlanta Penitentiary in partnership with UNICOR served as the recycling center.*



Source-Separated Materials

Contamination is a Mistake!



Ga Tech has CLEAN material streams!

Total Materials Management Approach

Total Materials Management Approach

- *Evaluating the entire materials stream in one cost / revenue center.*
- *Begin with high value / high quantity material.*
- *Create a recycling profit center.*
- *Use profits from high value items (aluminum, plastics, paper / fiber) to offsets costs associated with challenging materials (food waste, glass)*

Recycling Refinement

MISSION ACCOMPLISHED!

Recycling Refinement industry expertise available via Holly Elmore Consulting

Water Use | Toxicity

Airborne Kitchen Grease

A proactive approach to a costly kitchen by-product

- Grease fire prevention.
- Employee safety – cleaning accidents.
- Reduced water & toxic-chemical usage.
- Prevent grease from entering sewer system.
- Cost-savings – reduced labor, water, hood cleaning (toxic-chemical usage), & sewer charges.

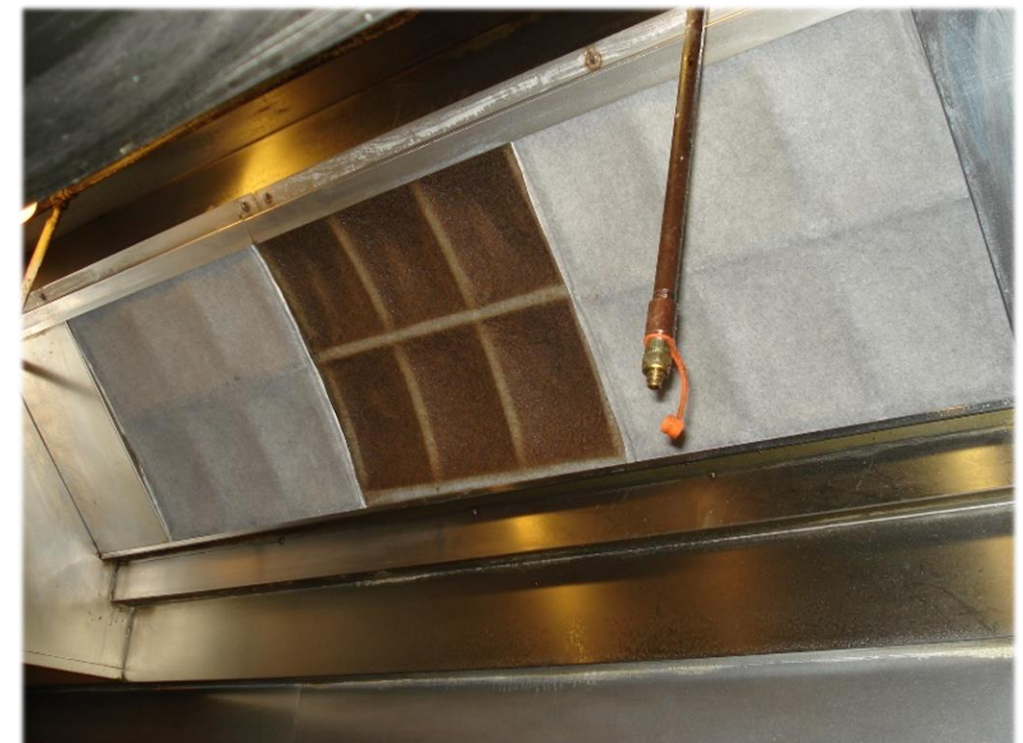


Water Use | Toxicity

Airborne Kitchen Grease

A proactive approach to a costly kitchen by-product

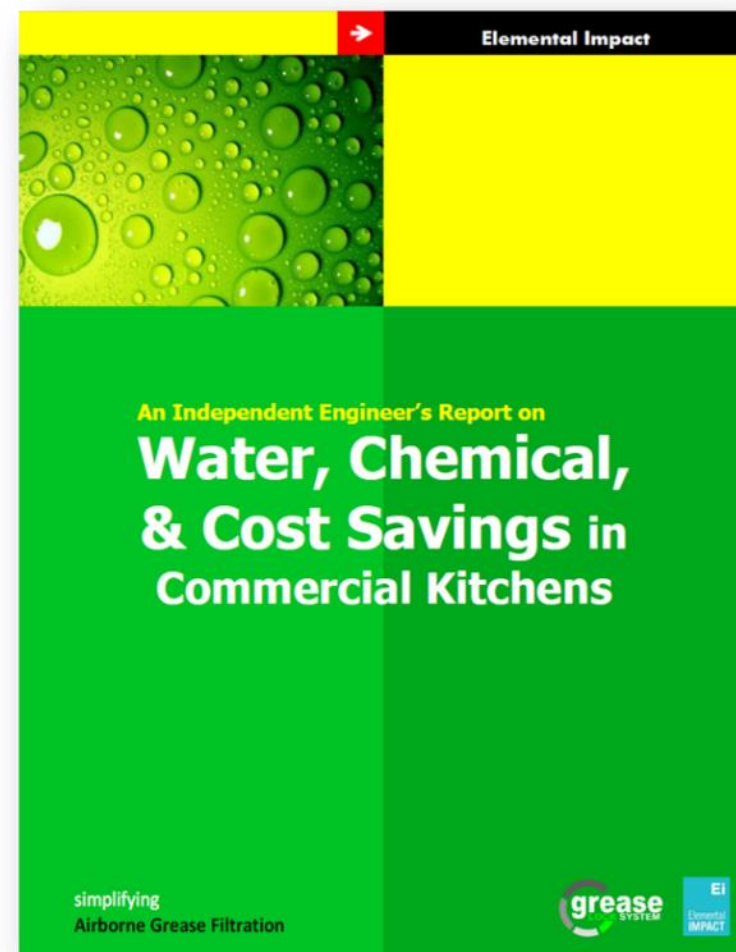
- Disposable filters fit in permanent baffle filters & capture 98%+ of airborne kitchen grease BEFORE entering the exhaust system.
- Proactive: grease does NOT build-up in exhaust system.
- Disposable filters are compostable.



Water Use | Toxicity

Airborne Kitchen Grease

A proactive approach to a costly kitchen by-product



Water Use | Toxicity

Airborne Kitchen Grease

A proactive approach to a costly kitchen by-product



Roof damage from kitchen grease

Water Use | Toxicity

Airborne Kitchen Grease

A proactive approach to a costly kitchen by-product

Atlanta Airport:

- © National contract with HMSHost - rollout program within new design specs.
- © AKG article in American Association of Airport Executives' bimonthly *Airport Magazine* March issue.
- © Campus-wide Atlanta Airport Grease Lock Filter installation approved.

Regenerating the foundation of life

Three focus areas:

- Carbon Sequestration – introduces the Urban Carbon Sink concept.
- Farm Tours – hosted a series of local farm tours in early 2017 for EPA & GWCC.
- Macro Cost of Micro Contamination – introduced at 2016 NZWBC; address microplastic contamination in our soils.

Ei's primary focus for 2017 & beyond

Soil Health

ACTION:

- GWCC planning a 1/3 acre micro-farm on campus; will use regenerative agriculture practices: food produced used in employee café.
- *Southern Farm & Garden* 8-page feature article on KSU | Hickory Grove Farm in Fall 2017 issue.
- Ei-Hosted USCC Conference panel:
Compost's Empowering Role in Sustainable Soils.



Contact Information

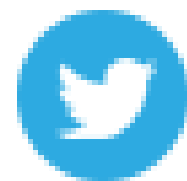
Holly Elmore

holly@elementalimpact.org

404.261.4690



/elementalimpact



@elementalimpact

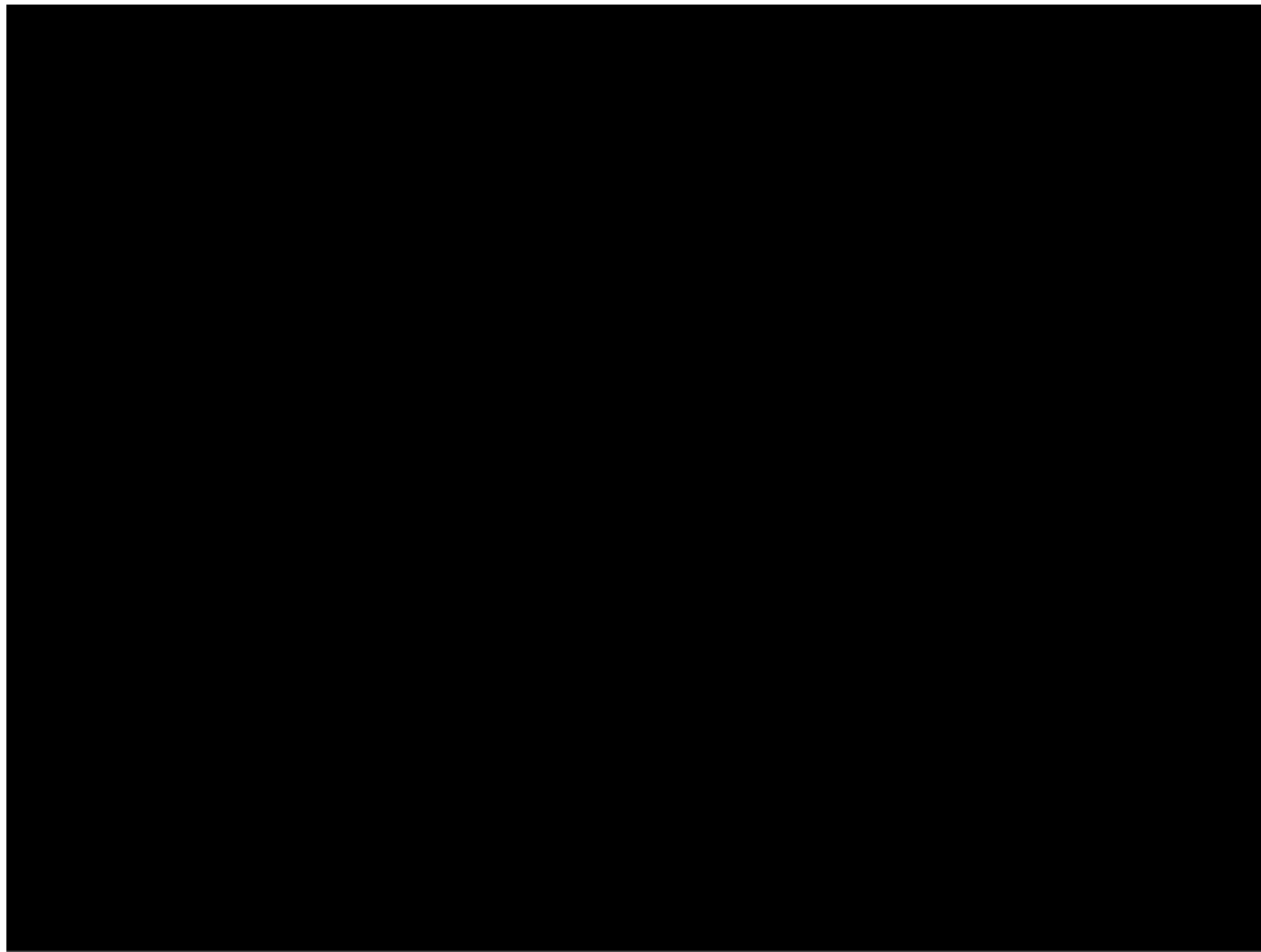
Georgia Tech's Award-Winning Renewable Cleaning Program

Tommy Little
Associate Director, Building Services

www.facilities.gatech.edu/green-cleaning



The Power of Ionized Water



OUR AWARDS:



- Winner of the 2006 National Association of Higher Education Facilities Officers (APPA), “Effective & Innovative Practice Award”.



- Green Cleaning Award for American Schools & Universities (Grand Award, highest honors). Runner-up in the American School & University “Green Cleaning Award” in 2007.



- Georgia Tech most green award Georgia Tech Earth Day 2013 & 2014. Recipient of the Georgia Tech 2008 Environmental Leadership Award.

THE GEORGIA TECH RENEWABLE CLEANING PROGRAM



OUR AWARDS *continued:*



- Named to Princeton Review's sustainability Honor Roll in 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015 and 2016. Of nearly 700 institutions evaluated on sustainability efforts, Georgia Tech was in the top 15.



- Georgia Tech Green Cleaning Program recognized by National Wildlife Federation (2008).



- Georgia Tech's Green Cleaning program is independently certified under Green Seal Standard GS-42 Certified effective 2016.

THE GEORGIA TECH RENEWABLE CLEANING PROGRAM



WHAT IS RENEWABLE CLEANING?

Renewable Cleaning goes beyond 'Green Cleaning'.

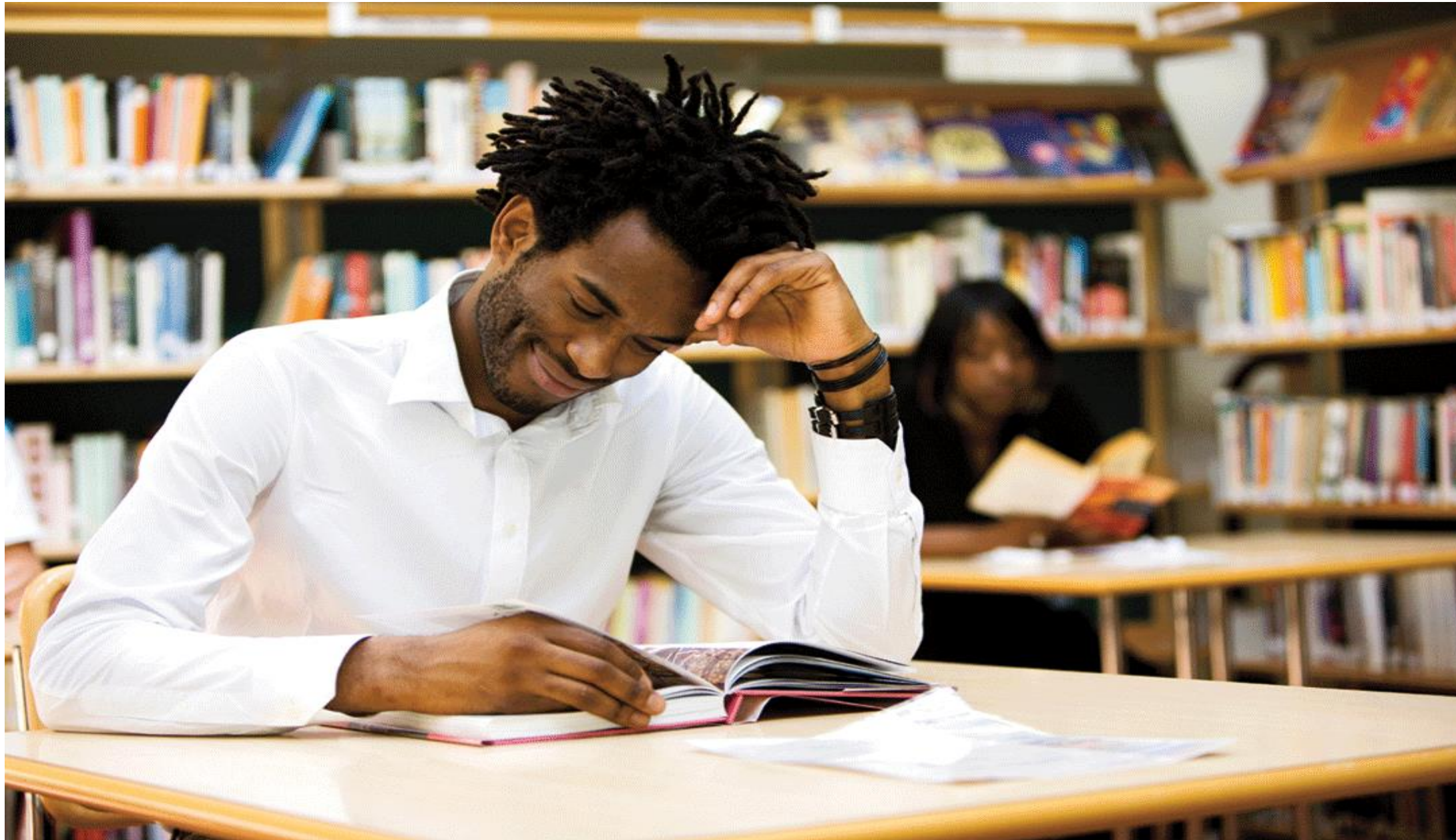
Renewable Cleaning leverage technology instead of traditional methods and chemicals to clean indoor environments, protect public health, and position Georgia Tech as a leader in sustainability.



THE GEORGIA TECH RENEWABLE CLEANING PROGRAM

IN OTHER WORDS...

Renewable cleaning is the safest, healthiest way to maintain our indoor environments.



THE GEORGIA TECH RENEWABLE CLEANING PROGRAM



LEVERAGE ADVANCED RENEWABLE TECHNOLOGIES

Orbital Walk Behind and & Square Scrub Floor Machines uses Ionize Water to create cleaning solutions



Electrochemical (ECA) devices for creating general purpose cleaning and sanitizing solutions on-site

THE GEORGIA TECH RENEWABLE CLEANING PROGRAM



Evolution of Technology

After a two year evaluation we transitioned our cleaning and sanitizing to GenEon Technologies ECA products :



- They have a product that uses the ECA Technology:
 - From table top models to Wall Mounted units that produce up to 2.5 gallons of solution every minute
 - Portable Model that create solution in large volume anywhere and anytime you need it
- Solutions are created on-site and used in our own Spray Bottles, Mop Buckets, Powered Equipment



THE GEORGIA TECH RENEWABLE CLEANING PROGRAM



Evolution of Technology

Our program has evolved! We started with Activeion and used those initial successes to transform our philosophy, process and methodology by leveraging technology that goes beyond Green!



- Cost for Deployment is lower with GenEon
- GenEon cleans the same areas as Activeion, but allows us to do more:
 - Toilet Bowls
 - Showers
 - Floors, etc.
- One University in Georgia was able to remediate a norovirus outbreak using GenEon.
 - Our Animal Life Science Lab is testing the solution



- GenEon creates 3 distinct solutions:
 - Sanitizer/Disinfectants
 - Glass and General Purpose Cleaner
 - Heavy Duty Cleaner / Degreaser
- Can generate solution and fill our own spray bottle, mop systems,
- We can validate solutions strengths using test strips

**BEST OF ALL...
MY STAFF LOVES IT!**

THE GEORGIA TECH RENEWABLE CLEANING PROGRAM



Why they love it?

- Ultimately it comes down to 'does it work as well as what I am currently using?'.
 - The Cleaners work as well or better than anything they have used
- The solutions do not dry out their skin
- Sanitizers actually eliminate odors
- Portability – they can take the Immerse-A-Clean anywhere on campus and make whatever solution they need

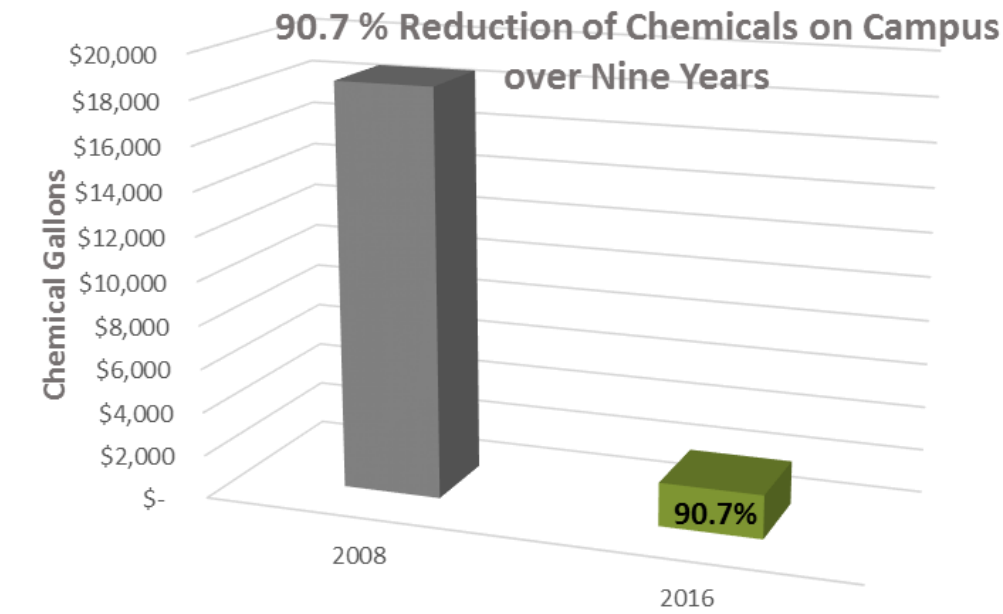
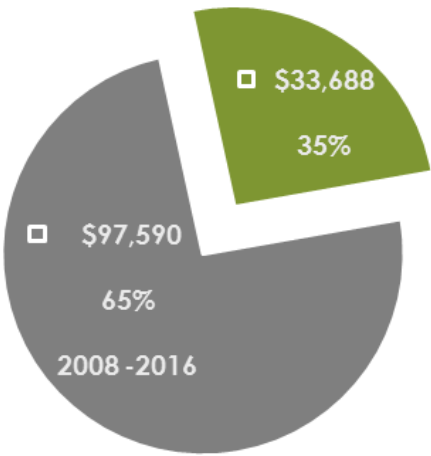


THE GEORGIA TECH RENEWABLE CLEANING PROGRAM



MEASURE RESULTS

Cost Savings From
Chemical Reduction



	2008	2016
Chemical Gallons	\$18,581	\$1,984

Year-over-year percent reduction in chemicals



MEASURE RESULTS

- 2008—2016
chemical cost:

➤ **Projected Cost:**
\$780,720

How much \$ did we save
from 2008 – 2016?



THE GEORGIA TECH RENEWABLE CLEANING PROGRAM



Hygiena ATP Levels of Clean (RLU)	
Ultra-Clean Sterile surfaces and food prep areas	0-10
Very Clean Critical touch points	11-30
Good Clean Floor requirement, and typical microfiber towel performance	31-80
Somewhat Dirty Caution: Surface should be cleaned and has some risk of contamination from disease-causing bacteria (typical mopping practices perform in this range)	81-200
Dirty Warning: Surface needs cleaning and has medium risk of contamination from disease-causing bacteria	201-500
Very Dirty Danger: Surface needs cleaning and has medium to high risk of contamination from disease-causing bacteria	501-1,000
Filthy Danger: Surface needs cleaning and has high risk of contamination from disease-causing bacteria	> 1,000



MEASURE RESULTS

Conduct comparative efficacy testing.

O'KEEFE BUILDING TEST AREA			
	ATP Before ¹	ATP Leading Disinfectant	ATP ionator EXP ³
Men' s urinal	175	2	1
Men' s flush valve	24	3	1
Women' s toilet	96	4	2
Women' s flush valve	83	6	2
Restroom counter top	66	1	0
Training Desktop	145	6	3
Breakroom Table	99	6	3
Telephone	460	40	4
Door handle	87	12	5
Men' s Toilet	600	5	0
Computer Table	180	5	1
¹ Indicates bacteria counts.			
² Popular disinfectant and popular general purpose cleaner were left to sit for at least 10 minutes.			
³ The ionator EXP was sprayed for 6 seconds and immediately wiped.			



MEASURE RESULTS

We recently conducting additional studies using solutions generated from GenEon's TRIO Rx and the MIST (the MIST is a Sprayer with adjustable spray pattern from a stream to a fine spray) with the following results:

AREA TESTED		ATP BEFORE	ATP AFTER
O'Keefe	1st Floor Men's Room - Metal Door Handle	70	7
	1st Floor ROTC - Glass Door Push Panel	674	84
	1st Floor Men's Room - Plastic Paper Towel Hand Roller	602	79
	1st Floor Men's Room - Door Panel	38	9
	2nd Floor Army, Navy, Air Force - Sanitizer Push Panel	175	24
	2nd Floor - Water Fountain Button	1411	79



THE GEORGIA TECH RENEWABLE CLEANING PROGRAM



Questions?



Contact:

Tommy Little

Associate Director

Building Services

(404) 894-6860

tommy.little@facilities.gatech.edu

www.facilities.gatech.edu/green-cleaning



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Sustainable Materials Management

Turning Trash Into a Resource

Cindy Jackson, Associate Director
Office of Solid Waste Management & Recycling

www.recycle.gatech.edu



Mission Statement

- Encourage and expand recycling opportunities
- Develop waste diversion and reuse programs
- Promote efforts to decrease the amount of waste produced on campus
- Encourage an environmentally conscious campus community



Outline

- Overview
- Statistics
- Operations
- Engagement
- Programs



Georgia Tech Overview

People:

- 26,839 students
- 7,063 faculty & staff
- Visitors

Places:

- 239 buildings
- 10 parking garages



OSWM&R Overview



- Recycling History
- Departmental Structure



Statistics

Material	Weight (tons)
How many tons of mixed metal have we collected this year?	
A) 10	
B) 150	
C) 500	

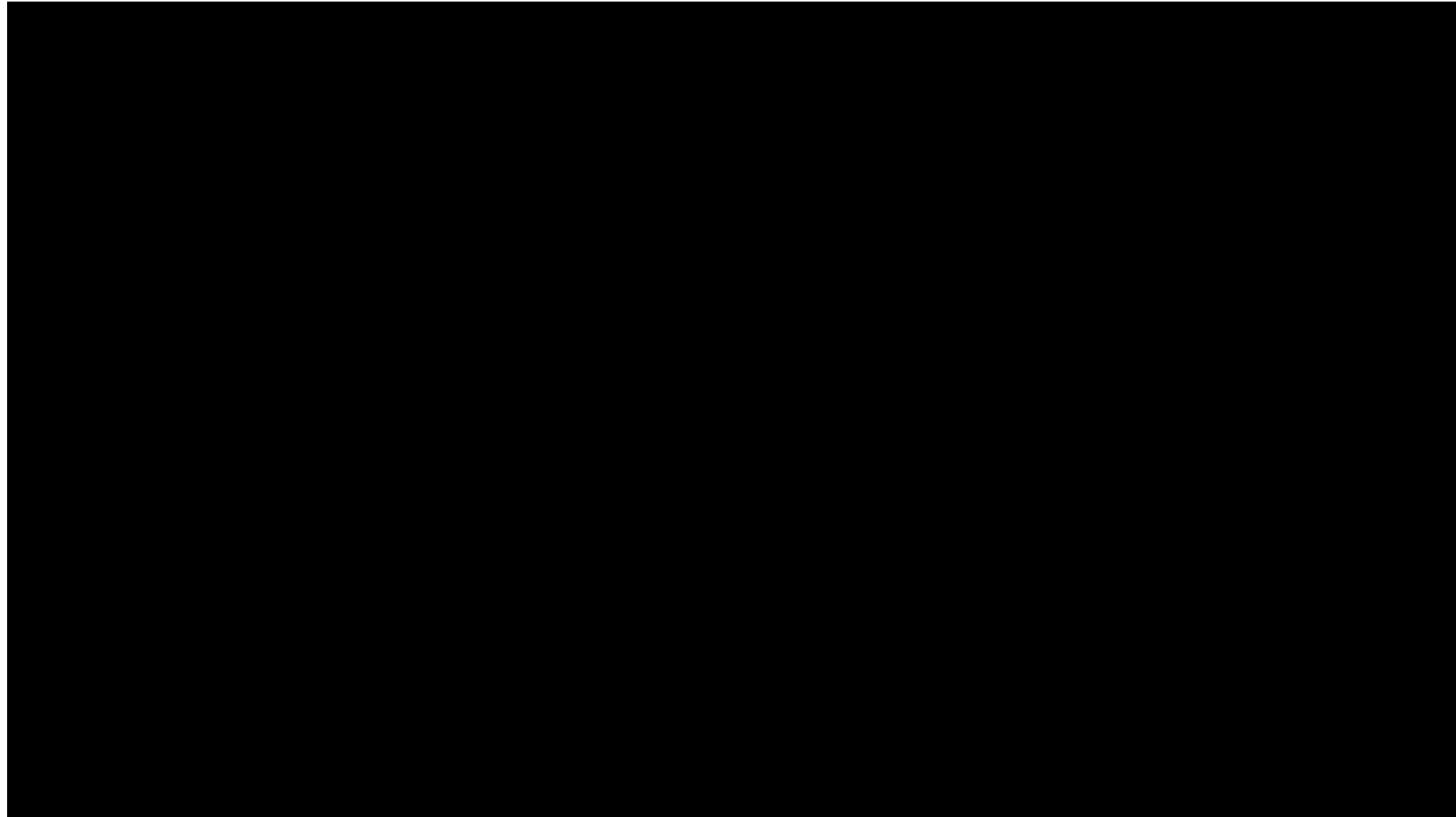
Operations



- Paper and Cardboard Pick-up
- Indoor Recycling – Campus Standard
- Outdoor Recycling – 31 sites



Paper Pickup



Operations



- Greeks
- East Main Drop-off
- Confidential/Sensitive Material
- Temporary Containers



Waste Management Operations



Dumpsters: 156

- Trash: 120
- Recycling: 36



Roll-offs: 14

- Trash: 11
- Recycling: 3



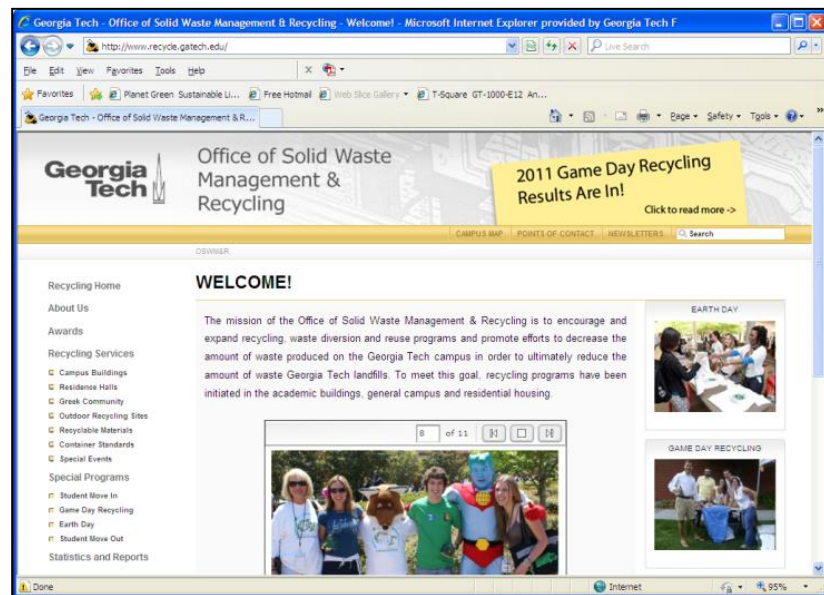
Compactors: 15

- Trash: 13
- Recycling: 2

Total: 185



PR & Marketing



- Website
- Tabling
- Newsletter
- Logo
- Signage



Student Involvement



- Student Alumni Association
- Class Projects
- Volunteers



Student Move-In and Move-Out



- Cardboard
- Nonperishable food
- Household items and clothes



AWARE Program

Actively Working to Achieve Resource Efficiency



Program Goals



- Behavior change
- 50% reduction in solid waste on campus
- Increased recycling
- Cost reduction



Potential Impact

Analysis of solid waste generated in one day at FAB (11.5 lbs)



AWARE



“We in the Carnegie building joined the AWARE program in 2009. It is a simple and effective waste minimization initiative that enables Georgia Tech to use our resources more efficiently. I support the campus wide implementation of this program and encourage your active participation.”

- President G. P. “Bud” Peterson





2017 GT Earth Day
20th Anniversary

Earth Day Festival



- Annual event since 1998
- Environmental education
- Live music, free T-shirts and organic popcorn
- Recycling opportunities

Earth Day Festival



Office Supply Exchange



Clothing Swap



Athletic Shoe Recycling



Electronics Recycling



GAME DAY RECYCLING

GO JACKETS!
GO GREEN!



WWW.RECYCLE.GATECH.EDU

10 Year Anniversary



3 million football fans
have attended games at
Bobby Dodd Stadium



We have increased the
game day trash
diversion rate to 30%



Over 1,300 volunteers
have helped promote
recycling



More than 198 tons of
recyclable material has
been collected

History / Background



- Program began fall 2008
- Waste diversion at home football games
- Game attendance: 45,000 – 55,000 people
- Targets tailgating areas and Bobby Dodd Stadium



Tailgating Strategies



- Blue bags for bottles and cans given out by student volunteers and GT Facilities staff
- Fans fill bags and leave on the ground
- Bags picked up by GT Facilities the following day



Stadium Strategies



- Recycling bins located on Callaway Plaza and at each of the 10 gates
- Green Greeters stationed outside Bobby Dodd Stadium



Stadium Strategies



- Recycling bins for bottles and cans located on concourses
- Bowl picked after game
- Food waste composting in suites
- Cardboard (vendors inside and outside the stadium)



Composting



- Pilot program at EBB
 - Food waste
 - Paper towels
 - Paper based packaging



Be a Green Champion!



Questions?

Contact:

Cindy Jackson

Associate Director

Office of Solid Waste Management & Recycling

(404) 894-2004

cindy.jackson@facilities.gatech.edu

www.recycle.gatech.edu

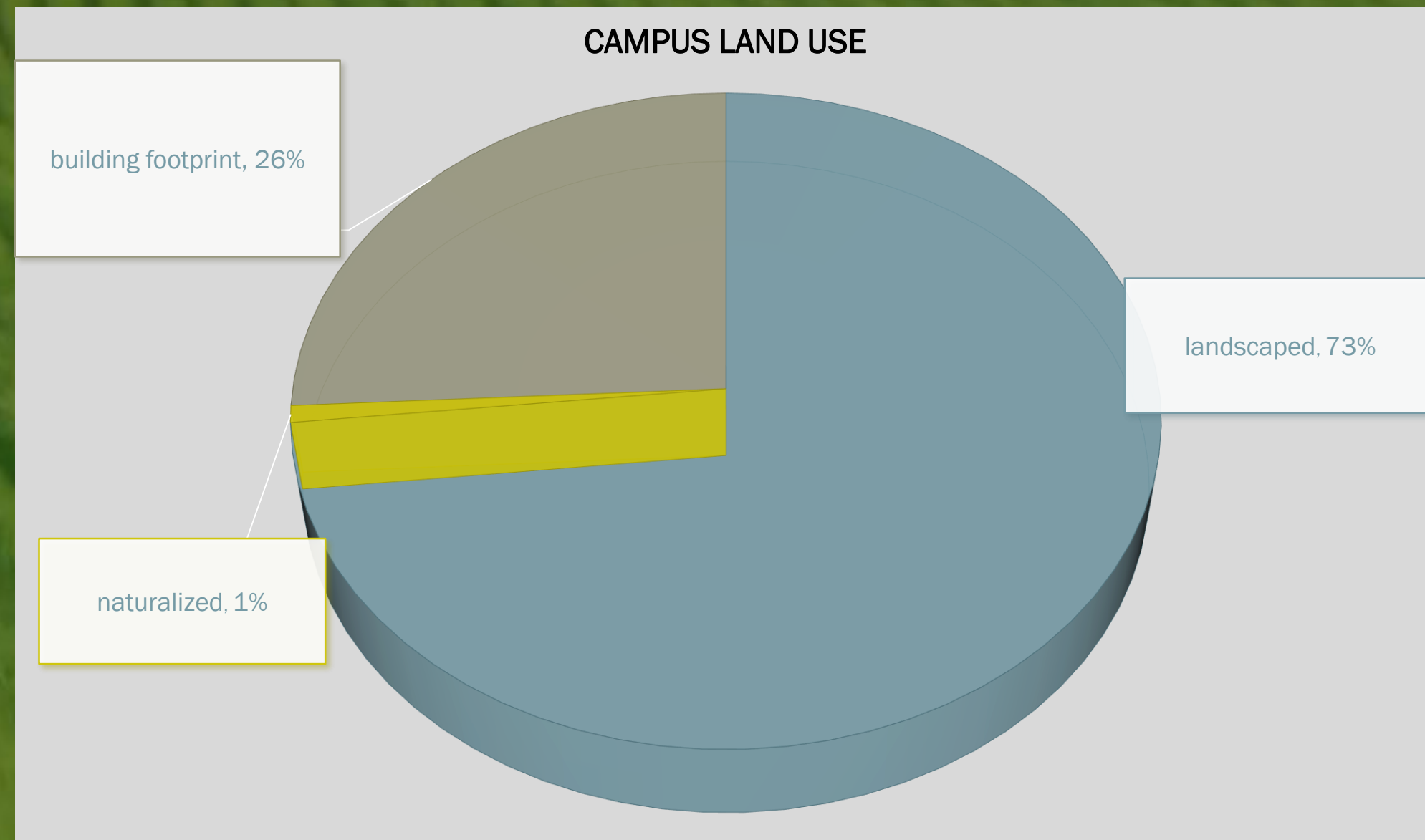


How Tree Campus USA Program Accelerated Environmental Stewardship at Georgia Tech

By
Hyacinth Ide
Associate Director,
Landscape & Fleet Services

Georgia Tech campus is located on a 426 acres of land

312.5 acres = Landscaped 3.5 acres = Naturalized
110 acres = Buildings



The Landscape Services Department is charged with the maintenance of both the landscape and hardscape, including the 12,000 trees on campus.

Two functional divisions; Landscape Services:

- **Landscape Services** with 66 fulltime employees
- **Fleet Services** with 6 fulltime employees including an Associate Director and a Administrative Professional Sr.

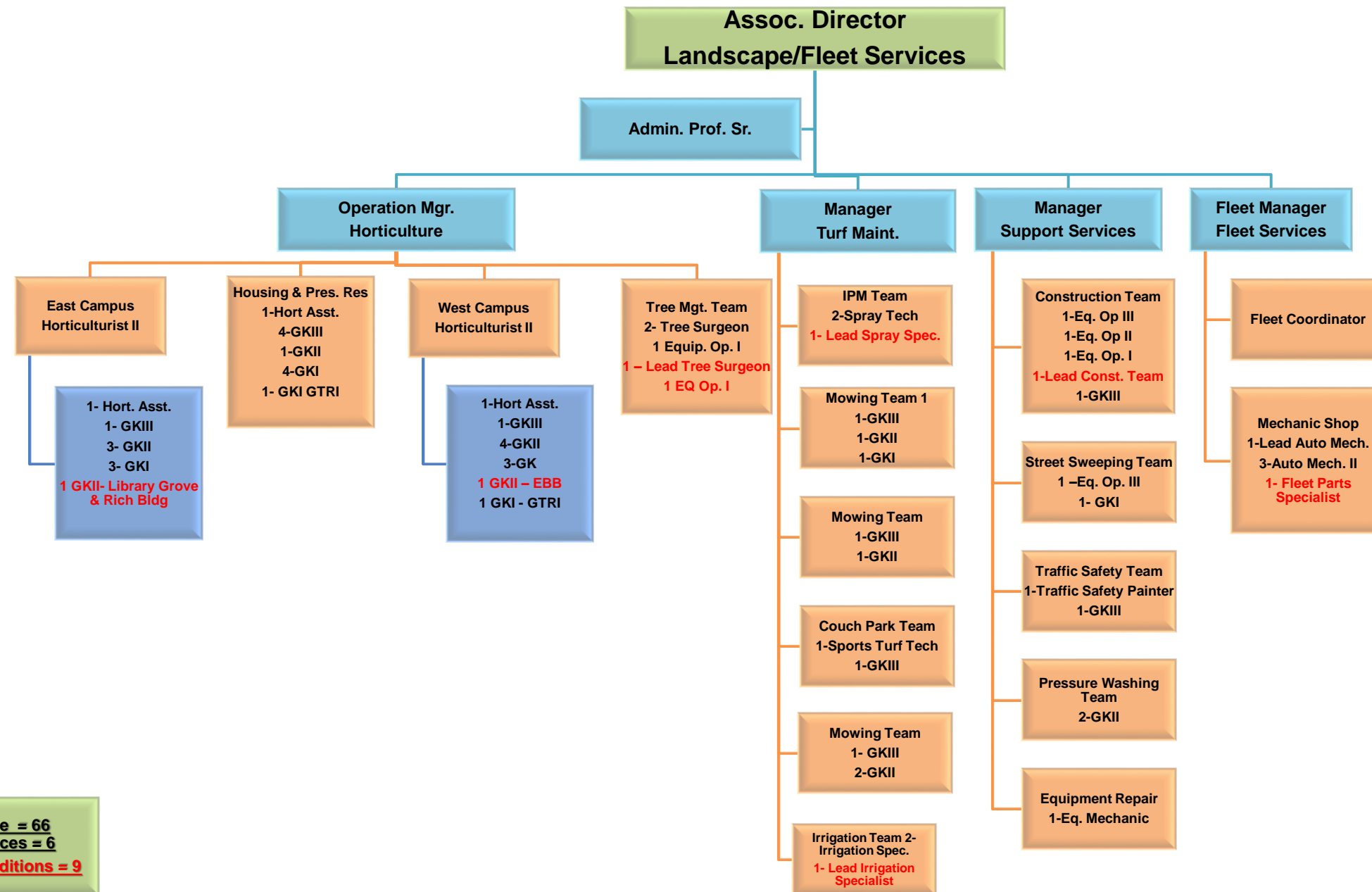
DEPARTMENT MISSION: Enable Georgia Tech to achieve its goal of environmental sustainability by maintaining an integrated, ecologically-based landscape and open space system that serves as a beautiful, attractive and safe campus environment where students, faculty, staff and visitors can enjoy, live, work and study in comfort.

Landscape Services Organization Chart 2001



***70 Fulltime Employees**

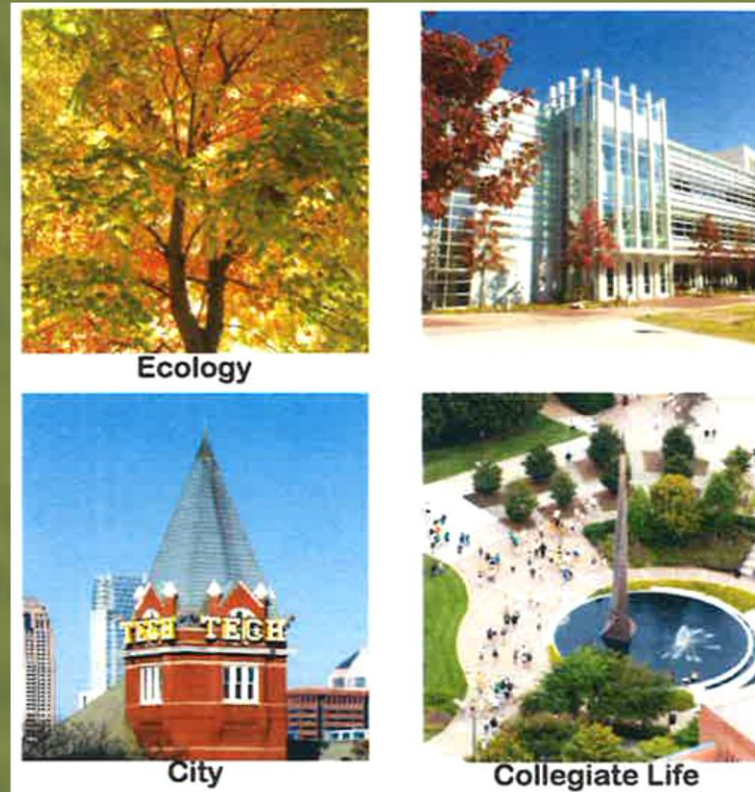
Proposed Landscape Services Organizational Chart 2016



Landscape = 66
Fleet Services = 6

***Proposed Additions = 9**

Georgia Tech's quest for environmental stewardship began in 2004 by establishing The Campus Landscape Master Plan, updated in 2006 and 2010, before being recognized as a Tree Campus USA in 2008 by the Arbor Day Foundation.



Landscape Master Plan Objectives:

1. To increase campus tree canopy to a minimum of 55%
2. To increase campus woodland coverage to 22%
3. To use predominately native plants or ecologically appropriate to this region for planting
4. To increase biodiversity in the plant population
5. To reduce storm water discharge into the Atlanta sewer system

Tree Campus USA

In 2008, Georgia Tech was approached by the Arbor Day Foundation through the Georgia Urban Forest Commission (GUFC) to participate in the newly established national program “Tree Campus USA”.

- Aimed at fostering the development of the next generation of tree stewards.
- Designed to award national recognition to college campuses and the leaders of their surrounding communities for promoting healthy urban forest management and engaging the campus community in environmental stewardship.
- To be recognized as a Tree Campus USA, the college campus must meet five core standards for sustainable campus forest



Tree Campus USA

Standard One for Sustainable Campus Forest

1. Establishment of a Campus Tree Advisory Committee composed of students, faculty, staff and community leaders surrounding the campus.

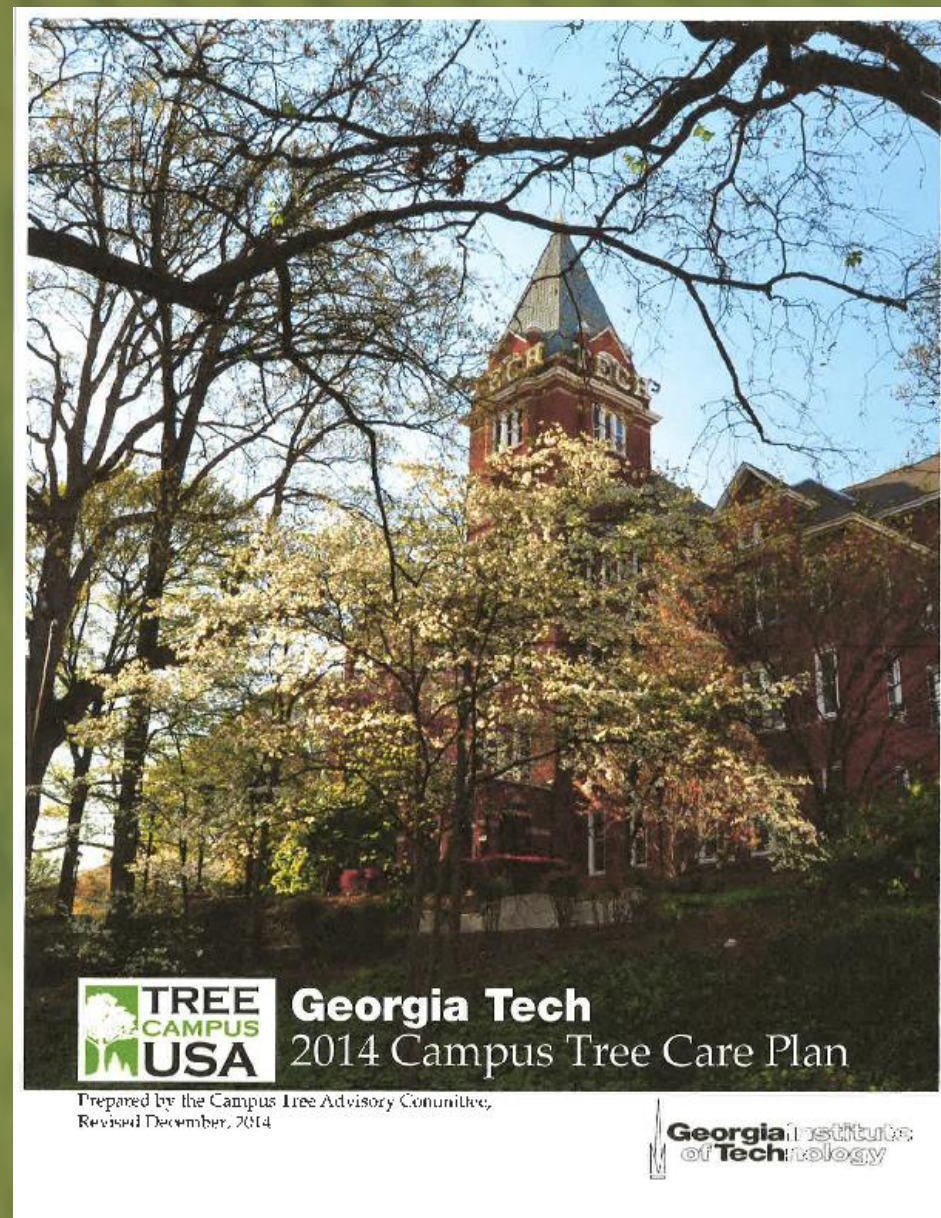
At Georgia Tech, the committee is composed of members from Facilities, CPSM, Parking, Housing, GTRI, students and faculty, Home Park, Midtown and Vine City communities. It holds monthly meetings, developing and updating the Georgia Tech Tree Care Plan every five years and applying for the yearly recognition since 2008.



Tree Campus USA

Standard Two for Sustainable Campus Forest

2. Provide a Campus Tree Care Plan flexible enough to fit the campus needs and circumstances, including goals regarding tree planting, tree replacement canopy cover, GIS Tree Inventory, maintenance, removal, etc.



Georgia Tech's 2009 Tree Care Plan is used as a sample on the Arbor Day's website under Tree Campus USA application procedures.

Tree Campus USA

Standards Three, Four, Five

3. Have dedicated annual budget $27,000 \times \$3.00 = \$81,000.00$ expenditure to satisfy this condition. This means that most college campuses can satisfy the expenditure requirement. Georgia Tech's current expenditure is \$642,320.00.

4. Arbor Day observance is a day set aside to educate the campus community on the importance and benefits of trees on campus and the community at large, such as Earth Day.



5. Service Learning Project: Tech Beautification Day (TBD)

Conducting Tech Beautification in March/April as the Service Learning Project exposes students to most aspects of environmental stewardship by participating in tree plantings, shrub planting, mulch & pine straw spreading, etc. to beautify the campus. TBD also provides over 1,500 hours of free labor per year to Georgia Tech, about \$27,000 each year.

The recognition of Georgia Tech as a Tree Campus USA signifies its commitment toward environmental stewardship by developing tomorrow's leaders-students.

Some of the benefits of Tree Campus USA at Georgia Tech are:

The creation of the Tree Campus USA Advisory Committee was most challenging and also very rewarding. It brought staff, students, faculty & committee leaders under one roof to plan and execute programs that have serious impact on our environment, such as tree replacement, tree safe zone, tree removal, etc.

STUDENT VOLUNTEERS NEEDED!!



**The Georgia Tech Campus Tree Advisory Committee*
is looking for student representatives**

*The Campus Tree Advisory Committee is comprised of members representing the diverse audience of those with a stake in Georgia Tech's campus trees.

In 2008, Georgia Tech was recognized as a Tree Campus USA Campus. The Tree Campus USA program is an initiative that sprang from a partnership between Arbor Day Foundation and Toyota Motor North America, Inc. to foster the development of the next generation of tree stewards. The program is designed to award national recognition to college campuses and leaders of their surrounding communities for promoting healthy urban forest management and engaging the campus community in environmental stewardship. Since the main objective of the Tree Campus USA is to educate students (next generation) on the importance and care of trees, the Georgia Tech Tree Campus USA Advisory Committee is asking for student volunteers to become committee members. The Advisory Committee meets monthly on the second Thursday of each month at 11:00 a.m. in the conference room of Landscape Services at 947 Atlantic Drive on campus.

Students are encouraged to volunteer as advisory committee members.
If you are interested, contact treecampususa@lists.gatech.edu.



STUDENT VOLUNTEERS NEEDED!!



How many trees are on campus?

- A) 1000
- B) 12,000
- C) 30,000



Georgia Tech Tree Bank

A tree removal replacement program resulting from construction or development work on campus.

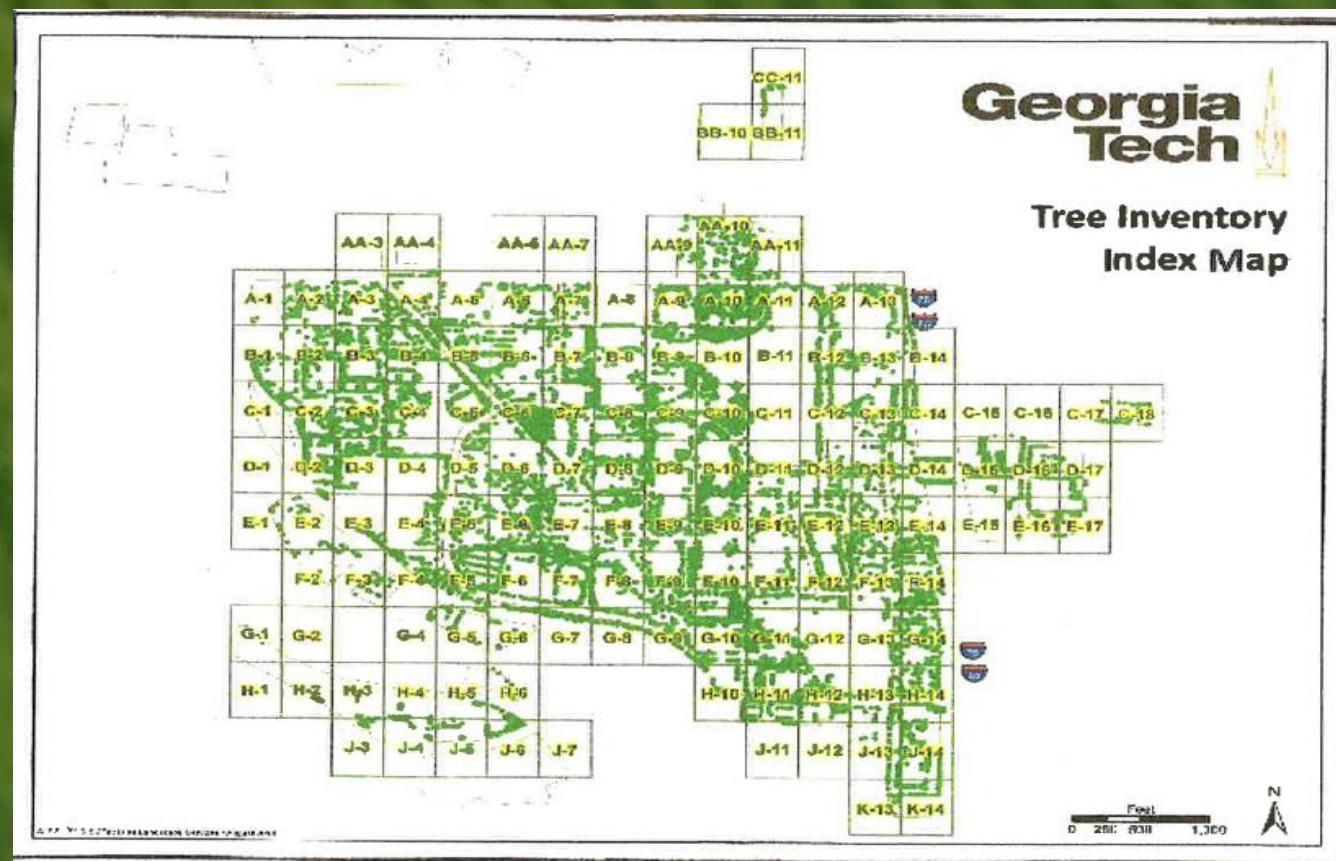


The replacement formula is based on the 2006 Campus Landscape Master Plan as a 1" diameter removed shall be replaced by 1" diameter at a cost of \$200/inch. The Tree Bank is to track and receive whatever was lost and was not replaced on the site.

GIS Tree Inventory –

Completed in 2012 as part of the Tree Care Plan goal. Staff are now trained and capable of updating the database as new trees are planted, pruned, treated or removed.

It also revealed the actual number of trees, types, conditions on campus from an estimated 7,000 in 2008 to 11,000 in 2012 and over 12,000 in 2017 when it was completed. Thus providing a better understanding on what we have to work with and the resources required.



Risk Management: 50 trees Classified Priority 1, i.e. High Risk (unsafe or dangerous) out of the 11,046 trees inventoried at the time. These 50 trees were further evaluated by an ISA Certified Arborist to determine the necessary actions (s) to be taken to include fertilizer application, disease/insect control, pruning or removal. All property owners, including the Greek, Housing, Parking, AA and GTRI were notified of their tree conditions and were advise to consult with an ISA Certified Arborist to obtain acceptable assessment results and the implement the recommendations.

How much are the trees on campus worth?

- A. 1 million
- B. 12 million
- C. 50 million



Bee Campus USA

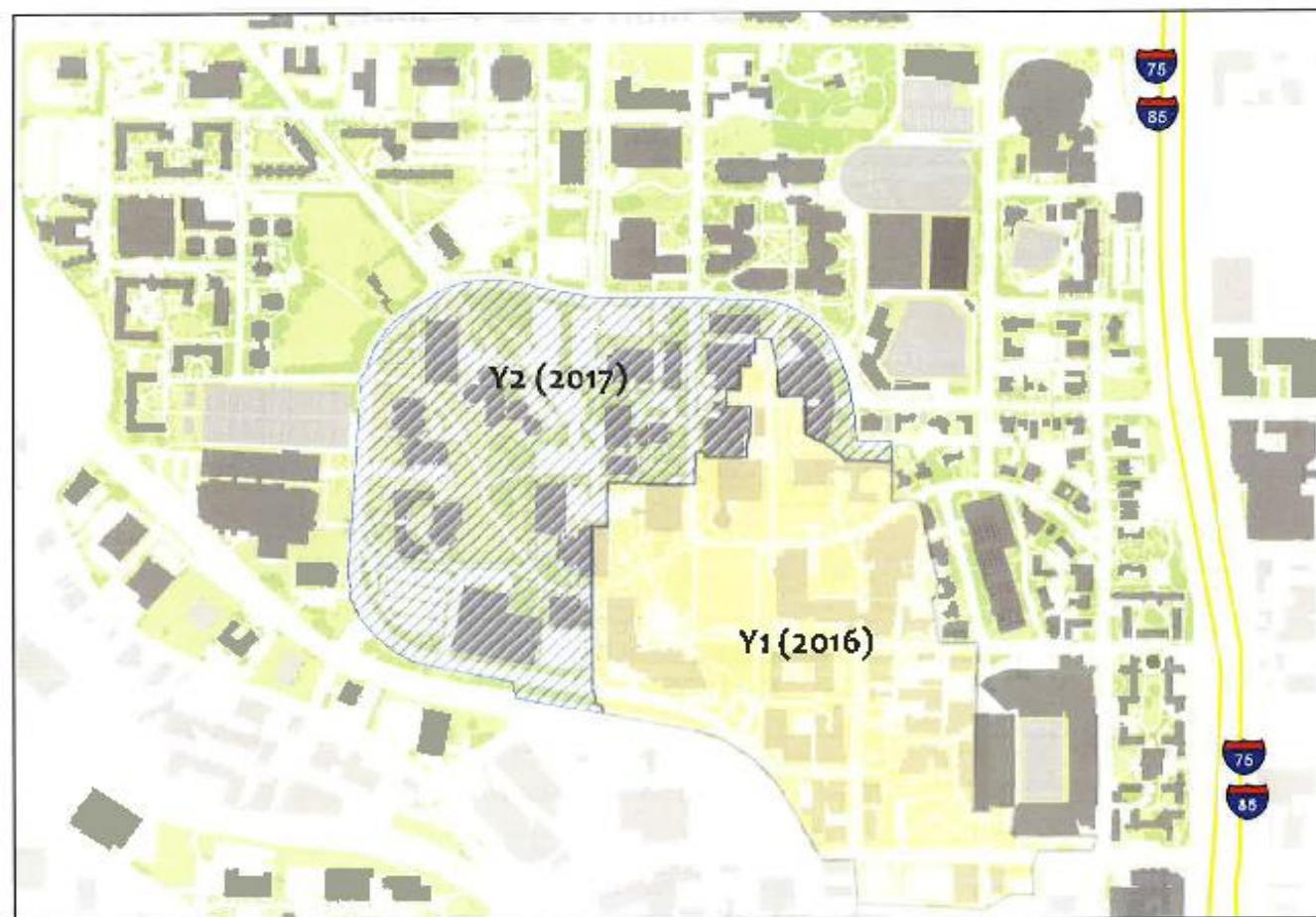
Also it assisted GT to become a Bee Campus USA. The GIS Tree Inventory is a living database and will be updated at regular set intervals. It identified pollinator species on campus and guide for future planting selections as well. On December 5, 2015, Georgia Institute of Technology and Bee Campus USA announced that Georgia Tech is the second university in the nation to be certified as an affiliate of the Bee Campus USA program, designed to marshal the strengths of educational campuses for the benefit of pollinators.



5 Year Campus Tree Management/Inventory Update Plan

With valuable information on campus trees, Georgia Tech in 2016 developed and implemented a 5 year Campus Tree Management/Inventory Update Plan as part of its strategic plan to include a five year pruning cycle, providing adequate equipment and trucks, a well-equipped maintenance shop, new planting, fertilizer, disease and insect control.

Tree re-inventory 5 yr maintenance cycle - Y1 & Y2 zones

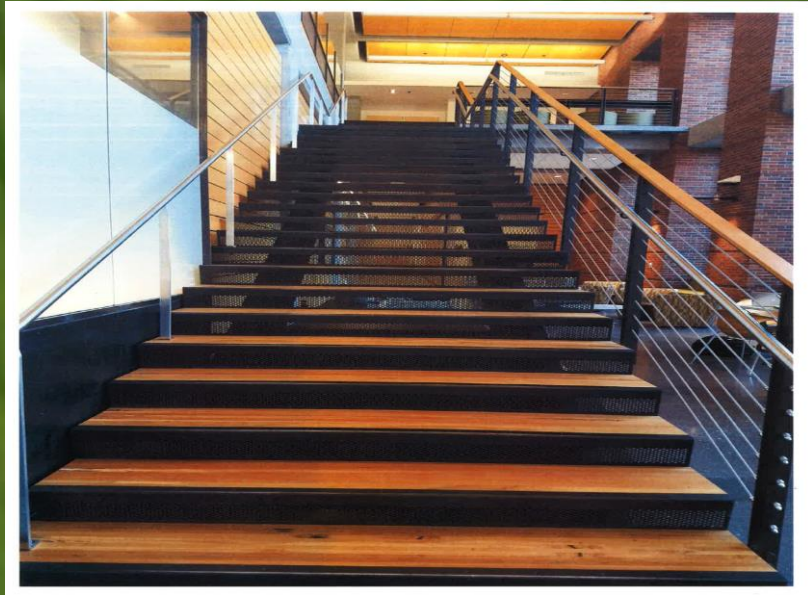


Campus Reforestation



Recycling & Reusing Landscape Materials

- EBB



Wood chips



Living Building



Leaf composting



Tree Removal & Tree Replacement

As part of Facilities-Landscape Services Tree Assessment Program (2015), eight trees totaling 329 caliper inches received Level 3 assessment (high risk) and were recommended for removal. Each of these trees has had two level 3 assessments to confirm the conditions of the trees.

As part of Georgia Tech's annual tree replacement plan, Facilities Management funds 100 – 150 trees to be planted annually on campus. This will replace 250 caliper inches of trees.

The Tree Bank has a \$10,000.00 annual endowment for tree replacement due to nature, diseases or insects infestation. The locations where trees were removed will be studied to determine where and how many trees can be replaced in the vicinity of those removed. During Hurricane Irma, 16 trees fell, total 400 caliper inches across campus.



Awards, Certifications & Recognition

- Georgia Tech Tree Campus USA since 2008, our 9th consecutive year winning, 1st in the state of Georgia and 10th in the nation
- Completed GIS Tree Inventory 2012
- Professional Grounds Management Society (PGMS), Landscape Management & Operations Accreditation 2015
- Professional Ground Management Society (PGMS) Green Star Awards 2015
- Georgia Urban Forest Council President's Award for comprehensive tree inventory and management practice 2015
- Georgia Tech Campus Arboretum 2016
- Georgia Tech Bee Campus USA 2016

Conclusion

It's a win-win situation to be recognized as a Tree Campus USA. Georgia Tech already had most of the 5 core standards required; therefore it was just a matter of putting the information together.

The biggest challenge was forming the Tree Campus Advisory Committee which requires getting people from various departments' together and recruiting students every semester as student members graduate. The committee members are very grateful for the support of the Administration in environmental stewardship programs at Georgia Tech.

Questions:

Contact:

Hyacinth B. Ide

Associate Director

Landscape Services & Fleet Services

(404) 385-1311

hyacinth.ide@facilities.gatech.edu

www.facilities.gatech.edu/landscaping

www.facilities.gatech.edu/fleet-services

Facilities Sustainability Forum



Sustainable Collaborations
panel discussion
will begin after the break

Be Informed • Be Involved • Be Inspired

Facilities Sustainability Forum Panelists



Holly Elmore
Founder and CEO
Elemental Impact



Gary Jelin
Associate Director Design
Services



Ben Mason
Associate Director Building
and Energy Strategy



Maria Del Mar Ceballos
Co-chair, Facilities Sustainability
Committee

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Door Prize Winner

Be Informed • Be Involved • Be Inspired

Facilities Sustainability Forum



Thank you for attending



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