

Elemental Impact

Georgia Institute of Technology

Facilities Sustainability Forum

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Atlanta, GA



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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

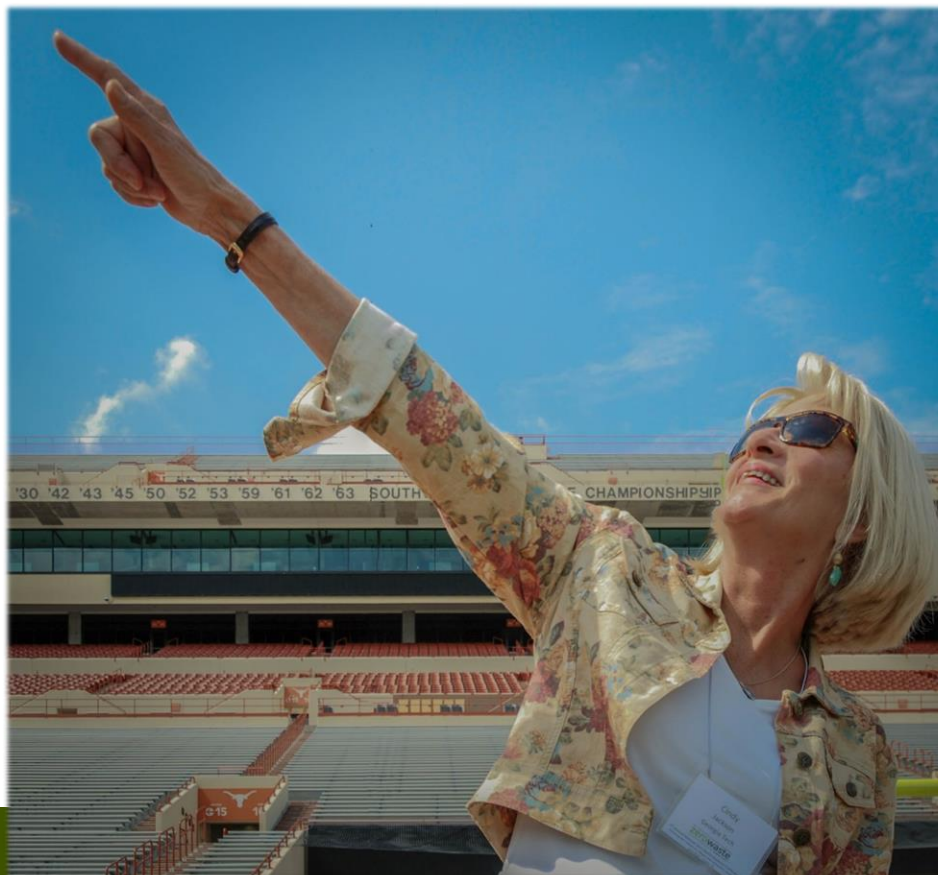
Ei is a creator, an incubator.

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.

Home of the AMAZING Cindy Jackson



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.*

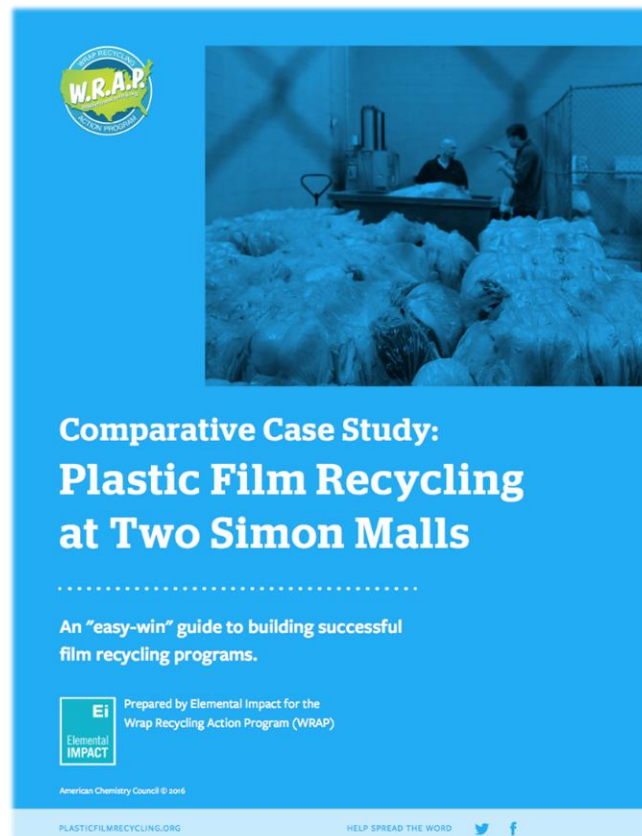


If it was easy, it would already be done!

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 serviceware in suites & compostable packaging for concessions.*
- *Post-Falcons game food waste collection pilots.*
- *Compostable F&B Packaging Education session.*



Source-Separate Materials Recycling Template

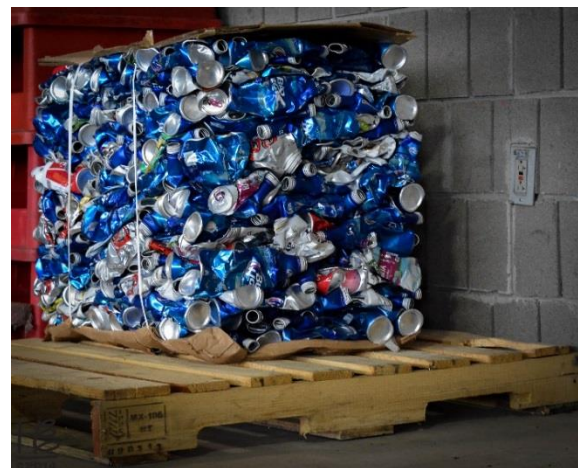
Source-Separated Materials Recycling Template

- *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

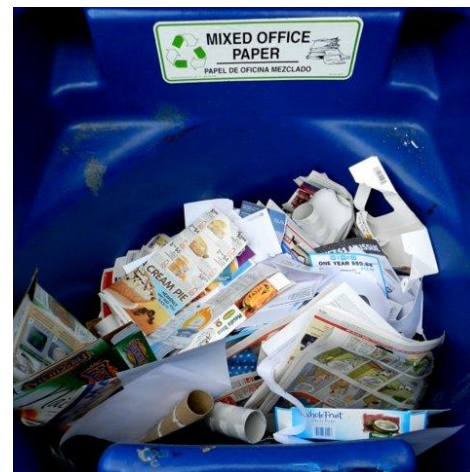
S-SMRT City-Wide Template

- *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.

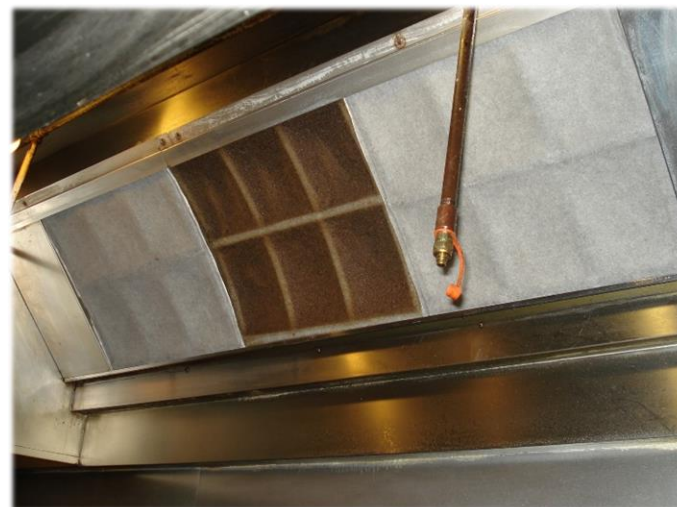


Water Use | Toxicity

Airborne Kitchen Grease

A proactive approach to a costly kitchen by-product

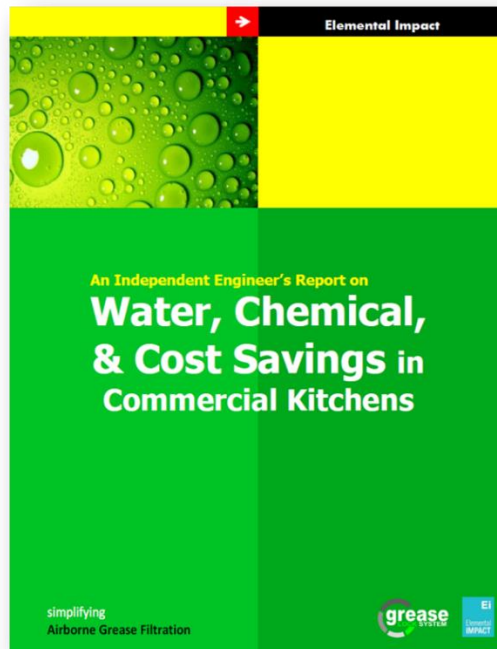
- Disposable filters fit in permanent baffle filters & capture 98%+ of airborne kitchen grease BEFORE entering the exhaust system.
- Proactive: grease does NOT build-up in exhaust system.
- Disposable filters are compostable.



Water Use | Toxicity

Airborne Kitchen Grease

A proactive approach to a costly kitchen by-product



Water Use | Toxicity

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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

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.



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