



Case Study Georgia Institute of Technology

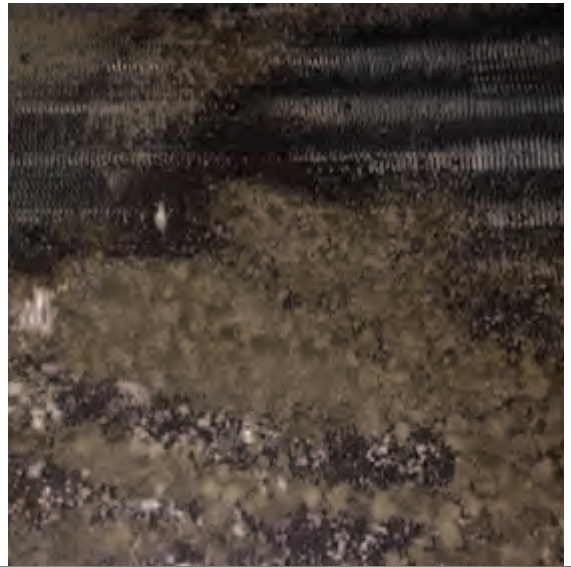
PURE-*Steam* Coil Cleaning Help Georgia Tech Facilities Saves Energy and Improve IAQ

The Project:

Montgomery Knight (February 22, 1901 – July 25, 1943) was an aeronautical engineer who specialized in rotary-wing aircraft. He was the first director of the Guggenheim School of Aeronautics at the Georgia Institute of Technology and a founder of and long-time researcher at the Georgia Tech Research Institute

GT is a leading technology and science university renowned for their deeply-held commitment to improving the human condition. The faculty and students are solving some of the world's most pressing challenges: clean and sustainable energy; disease diagnosis and treatment; and national defense and security, among others. The campus of GT participates in the GREEN BUZZ and Leadership in Energy and Environmental Design (LEED) a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high-performance green buildings.

BEFORE



AFTER



BUILDING REMEDIATION SCIENCES



Contract Holder
FSS Contract GS-10F-0488R

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The Concern:

With energy costs rising, Georgia Tech University had taken a close look at HVAC maintenance, including the total operating cost of its HVAC system. They found that the conventional coil cleaning foam/rinse method only superficially cleaned the surface of the coil and pushed small debris further into the coil causing decreased air flow, a musty odor, decreased temperature and humidity control and decreased the quality of the indoor air. In addition, GT was concerned about the thousands of gallons of chemicals that would otherwise be sent in the water system polluting the eco system.

The forward thinking facilities staff at GT felt these dirty coils were nothing but a pot of gold buried in dust and debris in these air handling systems. They were right.

The Solution:

Due to Georgia Techs desire for going green, saving energy and providing a healthy learning environment for staff, guests and students they turned to the scientists at Pure Air Control Services and the uniquely developed process of cleaning coils: PURE-Steam Coil Cleaning. The process is totally green (no chemicals) certified by the Green Clean Institute (one of the few in the country) and has a proven track record for saving energy, improving indoor air quality and improving comfort. GT has recognized a **41%** improvement in airflow and **116% ROI**




Benefits of the PURE-Steam Coil Cleaning process:

PURE-Steam Coil Cleaning process is totally GREEN – uses no chemicals, utilizing a proprietary (up to) 350 degree steam for a deep cleansing of the coils helping to

- Sanitize the coils/blowers assembly (Green process)
- Removes latent debris from deep within the coils
- Creates improved air flow
- Create better cooling capacity
- Saving energy (typical .22 cents per sq ft)
- Improving indoor air quality
- Extends HVAC equipment life

Project Georgia Tech University

PURE-Stream Coil Cleaning

	Before PURE-Steam	After PURE-Steam	Net Improvement
CFM	6286	8964	2476  41%
WC	0160wc	0.126	0.34  21%
Pa	39.9Pa	31.4Pa	8.5Pa  21.30%

CFM - Cubic feet per minute
 WC - Inches in water column
 Pa - Pascals

Annual Energy Savings **\$2,198.00** **116% ROI**
 14 months payback



Air Handling Unit T&B Report

6286

Before

8964

After

Airflow Data		
	Design	Actual
Outlet Total		
Unit Total	12700	6286
Return	12700	
OSA		

	Design	Actual
Average Amps		7.6
Average Volts	480	483
Motor RPM		
Fan RPM		
Motor Manuf.		
Motor HP		
Phase		
Motor Frame		
Service Factor		

Miscellaneous Data		
SP Setpoint		
VFD Setting (Hz)		

Static Pressure Profile Data						
	A	B	C	D	E	F
(in.wc)	-0.11	-0.21			-1.75	
External Static				0.35		
Total Static						

Airflow Data		
	Design	Actual
Outlet Total		
Unit Total	12700	8964
Return	12700	
OSA		

Motor / Fan Data		
	Design	Actual
Average Amps		8.3
Average Volts	480	483
Motor RPM		
Fan RPM		
Motor Manuf.		
Motor HP		
Phase		
Motor Frame		
Service Factor		

Static Pressure Profile Data						
	A	B	C	D	E	F
(in.wc)	-0.12	-0.23			-1.81	
External Static				0.44		
Total Static						

Static Pressure Profile Data										
	A	B	C	D	E	F	G	H	I	J
(in.wc)	-0.12	-0.23			-1.81					0.32
External Static					0.44					
Total Static										

Steam Coil ROI **116%**