

BUILDINGENERGY NYC

Winning Formula for LL97 Success: Adopt a Change Management Playbook!

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Winning Formula for LL97 Success

Adopt a Change Management Playbook



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AGENDA

- Overview
- Challenges
- Change Management Strategy
- O&M Fresh Eyes
- Accomplishments
- Key Program Takeaways
- Q&A

Overview: Collaborative Partners



Office of Facilities Planning,
Construction and Management

Sustainability & Energy Conservation



DASNY



- **Decarbonization Program for the University**

- **Funding**
- **Training**
- **Tools**

- **Contract / Procurement Mechanism**

- **Technical Subject Matter Experts**

COLLABORATIVE PARTNERSHIP

Overview: CUNY Community College Portfolio



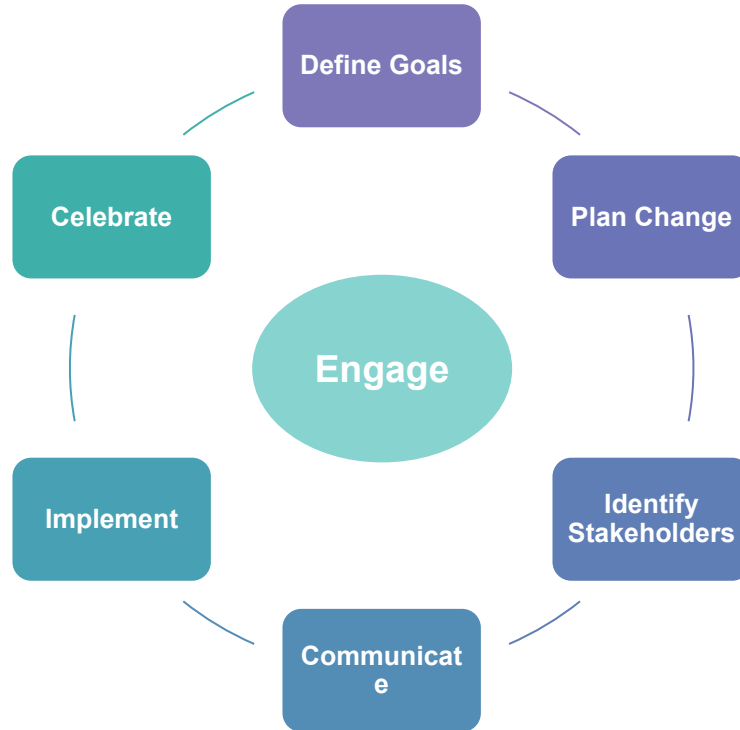
- Founded in 1847, 6 campuses across NYC five boroughs
- Encompasses **25%** of CUNY's **28M ft²**: more than half 50 years or older
- Annual utility expenditure over **\$23M**
- **72,000** students
- Diverse student backgrounds: 34% of undergraduates born outside the U.S.

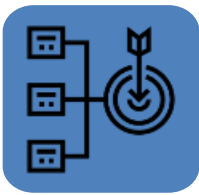
Challenges: Initial Focus at Campus Facilities

- Standardized operations and maintenance (O&M)
- Aging infrastructure
- Preventive Maintenance
- Training / SOPs - Head Knowledge
- Equipment lifecycle
- Capital planning / Budgeting
- Energy expenses and consumption



CHANGE MANAGEMENT STRATEGY





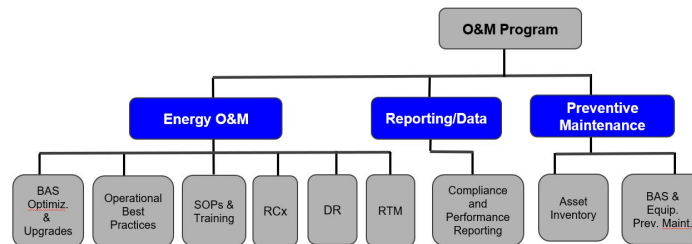
Define Goals

- Integrate energy efficiency into the built environment and culture
- Meet NYC energy and GHG mandates, ***most importantly LL97***
- Establish Best Practices and standards for operations and maintenance
- Reduce utility and equipment operating expenses



Plan Change

- **FOLLOW** an executional strategy or roadmap
- **UNDERSTAND** the motivations, skill requirements, and constraints faced by the facility operators
- **EMPOWER** the operators and occupants
- **PARTNER** with key stakeholders



Establish

- **Communities**
- **Working Groups**
- **Communications Channels**



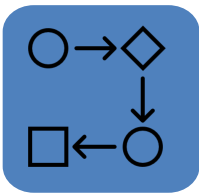
Identify Stakeholders

- Buy-in needed at the top, and in the field
 - Financial Decision Makers to enable the program
 - Operators on board to implement
 - Inform both constituencies with meaningful data
- Identify resistance to change
- Build communities



Communicate

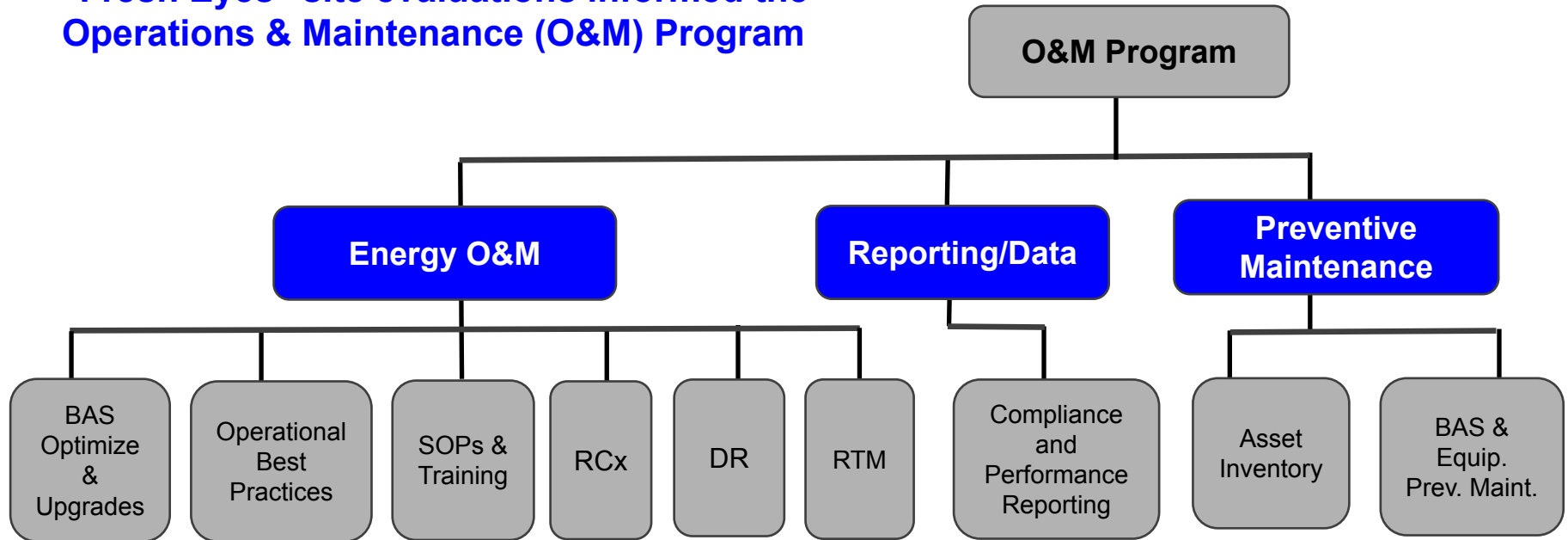
- Convey the mission and the program
- Create **processes** and share with stakeholders
 - Emphasize clear repeatable processes vs. reactive behavior
 - Ensure all understand their roles
- Communicate value, progress towards goals, achieve buy-in
- Repeat the message!



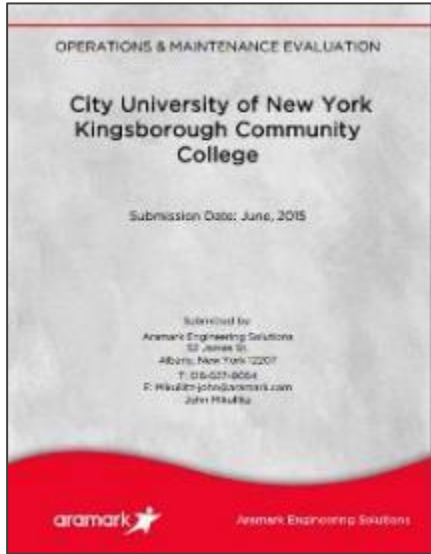
Implement

Project-Based Change Management supported a successful Operations & Maintenance (O&M) Program

"Fresh Eyes" site evaluations informed the Operations & Maintenance (O&M) Program



O&M Fresh Eyes Evaluation: What Is It?



1. Rapid Site-specific assessment

Find O&M areas of opportunity

2. Gap analysis

Emphasis on key O&M areas that create barriers to success;

~ ASHRAE 1+

3. Performed by subject-matter experts

In broad technical disciplines (*energy, O&M, BAS, CMMS, Commissioning*)

4. Deliverable

Identified and prioritized opportunities at each campus to implement **O&M and capital improvements** driven by data analytics (KPIs).

O&M Fresh Eyes: Program Initiatives

| # | Opportunity | Description | Value |
|---|---|---|--|
| 1 | Standard Operating Procedures | Written equipment operating control sequence | <ul style="list-style-type: none">• Training tool for new employees• Operating resource specific for campus equipment• Improves service response, productivity, and efficiency |
| 2 | Optimize Building Automation System (BAS) | Enhance building controls without impacting system design | <ul style="list-style-type: none">• Improves efficiency and IAQ (learning environment)• Provides operator with understanding of how to lower operating costs without significant effort or capital• Energy savings and carbon footprint reduction |
| 3 | Asset Inventory | Accurate and comprehensive database of equipment | <ul style="list-style-type: none">• Creates foundational infrastructure for PM• Centralizes all assets for ease of analysis• Tier assets aligns workload with budget and labor hours |
| 4 | Air Handling Unit Damper Testing and Evaluation | Assess mechanical components that maintain outside, mixed and exhaust air | <ul style="list-style-type: none">• Ensures proper energy used to heat/cool outside air• Reduce cost of air filter replacements; premature failure• Ensures optimal air quality• Eliminates potential of freezing coils and system alarms |

O&M Fresh Eyes: Program Initiatives

| # | Opportunity | Description | Value |
|---|--|--|--|
| 5 | Variable Frequency Drive (VFD) Testing | Inspection, testing and point-to-point retro-commissioning | <ul style="list-style-type: none"> Identifies faulty systems to eliminate energy waste Reduces premature mech. component damage and failures Creates single/comprehensive scope to easily implement across the CUNY's portfolio of campuses |
| 6 | BMS Training and PM Development | On-line training videos and develops complete PM Program | <ul style="list-style-type: none"> Specific training videos for each campus Focus on top 5 common areas that generate waste Provides a written/comprehensive PM scope Improve clarity between staff - contractor responsibilities |
| 7 | Equipment PM Development and Budgeting | Identifies proper PM and budget needs for each asset | <ul style="list-style-type: none"> Comprehensive task and frequencies for all Tier 1 assets Identifies anticipated budget levels (\$ & man-hours) Defines in-house vs service contractor tasks |
| 8 | Boiler O&M Best Practices | Provides tools and training to improve operations | <ul style="list-style-type: none"> Identifies/quantifies operating KPIs and delivers savings Improve campus safety Improves awareness and expertise re: boiler best practices |



Celebrate

- Share success stories and data on energy and GHG reductions
- Develop case studies to highlight program achievements
- Acknowledge team efforts
- Promote sense of ownership
- Create excitement and buy-in

CUNY THE GREATEST URBAN UNIVERSITY IN THE WORLD

BOROUGH OF MANHATTAN COMMUNITY COLLEGE
FITERMAN HALL



**ELIMINATED UNWANTED NOISE
IMPROVED OPERATING INTEGRITY OF
EQUIPMENT AND MINIMIZED FAILURE RATE**

Improved Control of Large Air Handling Units and Return Fans Eliminates Unwanted Noise in Classrooms and Reduces Energy Waste

The rebuilt Fiterman Hall is a 14 story building that is the home to a world-class fine-arts center, and houses approximately 90 Smart Classrooms and computer laboratories, offices, library spaces, music ensemble rooms and a conference center. Fiterman Hall overlooks the World Trade Center site and Memorial Park with scenic views spanning the East River, Hudson River and New York Harbor.

During the Building Automation System evaluation at Fiterman Hall, the engineering team identified that air handling fans were speeding up and slowing down continuously in a rapid succession creating unwanted noise in classrooms, and potential wear and tear on air handling equipment. The air handling unit fan controls were modified to eliminate the continuous slow-down, speed-up issues, and deliver a more consistent air flow to the space.



Graph A: Before & After Static Pressure in each of the Six (6) Units after programming of BAS.
Y-Axis: Duct static pressure reading, X-Axis: Time using 5-minute intervals

-  Improved overall building integrity.
-  Enhanced control to minimize failure and leakage for expensive mechanical equipment such as VAV boxes and ductwork.
-  Reduced energy waste and created financial savings.
-  Eliminated unwanted noise in classrooms.
-  Created a quieter classroom environment, and provided professors the opportunity to teach in a relaxed setting.

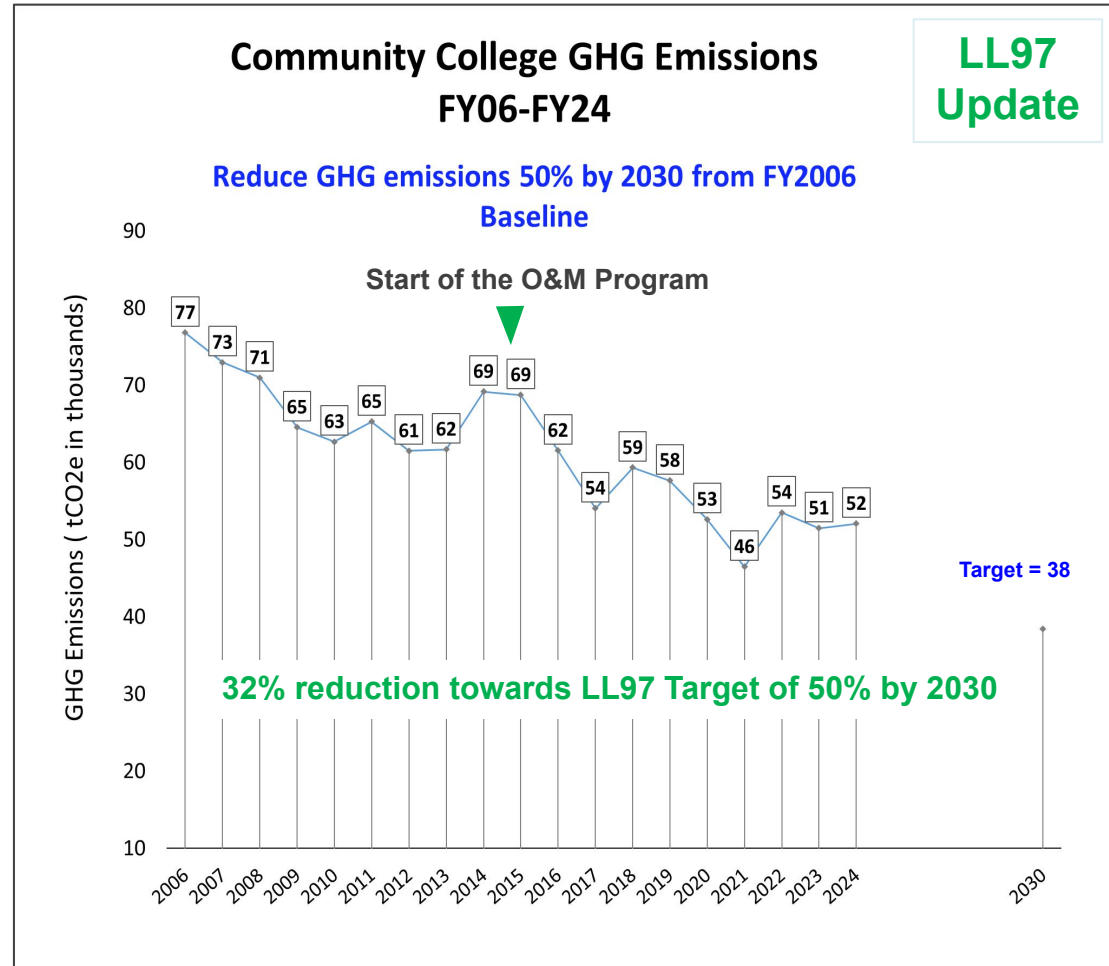
 Sustainable CUNY - CUNY Conserves

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Accomplishments

Fresh Eyes and the O&M Program led to...

- Identification of vital capital improvements
- Support for an Energy Master Plan
- SOPs to retain knowledge of sequences and overall operations
- 69 Engineers trained in BAS
- Significant funding for Energy Master Planning and implementation



Key Program Takeaways

- Recognize the **Gaps** and identify the **Data**
- Identify an **Executive Sponsor** and the **Authority** to make it happen
- Develop the **Communication strategy to Engage the Community**
- Every Campus has **Low Cost / High ROI** initiatives
- The **Asset Inventory** is a critical foundational element
- **Building Automation Systems** offers opportunities for optimization



Questions and Answers



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