

Green and Healthy Property Management

A Guide for Multifamily Buildings

2013

Local Initiatives Support Corporation
New York City



Prepared by

Ellen Tohn, Environmental Strategies, LLC
Colleen Flynn, LISC New York City

Originally Prepared by

Elizabeth Glynn and Kristin Blum, Boston LISC
Ellen Tohn, Environmental Strategies, LLC

Published by

Local Initiatives Support Corporation New York City, (LISC New York City)

Acknowledgements

LISC New York City greatly appreciates the organizations whose generous support made our guide possible: Con Edison and Citi Foundation.

This guide for green and healthy property management policies and procedures, originally developed by Boston LISC, was adapted by LISC New York City, The NYC Department of Health and Mental Hygiene and The NYC Coalition for a Smoke-Free City with the assistance from Ellen Tohn of Tohn Environmental Strategies. The guide is part of LISC New York City's *Green and Healthy Neighborhoods* Initiative and Two Shades of Green, a new partnership between LISC New York City, NYC Department of Health and Mental Hygiene and the NYC Coalition for a Smoke-Free City. TSG was formed to bring cost-effective green and healthy practices to existing affordable housing buildings. LISC New York City is extremely grateful for the partnerships that made this guide possible. Specifically, LISC New York City would like to thank Deborah Nagin, Sean Robin and Sarah Wolf at NYC DOHMH, Rachelle Rochelle at NYC Coalition for a Smoke-Free City and Ellen Tohn of Tohn Environmental Strategies.

The original guide was written by Ellen Tohn of Tohn Environmental Strategies in collaboration with Kristin Blum and Elizabeth Glynn of Boston LISC, as part of the CDC Green Retrofit Initiative. The work that provided the basis for this publication was supported by funding under a U.S. Department of Housing and Urban Development award. The substance and findings of the work are dedicated to the public. The author and publisher are solely responsible for the accuracy of the statements and interpretations contained in this publication. Such interpretations do not necessarily reflect the views of the Government.

About LISC New York City

LISC New York City is dedicated to helping low-income New York City neighborhoods become healthy communities of choice—good places to live, do business, work and raise families. LISC has thirty years of experience developing the infrastructure of community-based organizations by providing technical and financial assistance; building capacity of local institutions to respond to changing community needs; sharing best practices to maximize precious resources; and brokering collaboration among its vast network of partners—government, nonprofit, and corporate—to tackle issues on the community level. Over the last 30 years, LISC New York City has invested approximately \$2.0 billion in more than 75 New York City community development corporations (CDCs) and other local groups. With our support, these organizations have developed over 33,000 affordable homes and apartments and more than 2 million sq. ft. of commercial space. www.lisc.org/nyc/

Table of Contents

Introduction	page 3
Overview	page 3
How to Use This Guide	page 4
Energy Assessment	page 5
Energy Reduction	page 7
Water Assessment	page 10
Water Conservation	page 12
Green Laundry	page 14
Pest Control	page 15
Green Cleaning	page 19
Waste Reduction and Recycling	page 21
Unit Turnover and Inspection	page 23
Green Product Specifications	page 25
Green Office Practices	page 27
Resident Training	page 28
Smoke Free Housing	page 29
Active Design	page 31
Appendix A: Unit Turnover and Inspection Checklist	page 34
Appendix B: Green Property Management Schedule	page 36
Appendix C: Green Agenda Items	page 37
Appendix D: Smoke-Free Housing Survey	page 38
Appendix E: Two Shades of Green Benchmark Worksheets	page 39

Introduction

LISC New York City is dedicated to helping low-income New York City neighborhoods become healthy communities of choice—good places to live, do business, work and raise families. Over the last 30 years, LISC New York City has worked with CDCs to develop over to 33,000 affordable apartments and more than 2 million square feet of commercial space. Creating green and healthy homes is an integral part of their Building Sustainable Communities model, which increases quality of life in low-income neighborhoods by creating affordable housing, good schools, economic opportunities, and healthy built environments.

Between 2010 and 2012 Community Weatherization Partners LLC (CWP), a joint venture between LISC New York City and Enterprise Community Partners, oversaw an ambitious and successful program that weatherized 2,226 apartments in 96 multi-family affordable housing buildings in New York City. LISC New York City made important enhancements to the program to ensure that the intended health, economic and environmental benefits would be comprehensive. These enhancements were critical to the program's success, and included the following: documenting the financial benefits of weatherization to influence funding programs and policy; better coordination of work to enable minimal disruption to the tenants; active resident engagement; post-construction monitoring to make sure that the intended savings will be realized; and training property management staff on energy and water saving procedures. This comprehensive program resulted in reduced energy and water consumption and cost, improved indoor air quality, and better trained maintenance staff.

We are publishing this guide to provide our community partners and other owners of low-income housing with a basis for an open discussion with their property managers about green and healthy goals, implementation of those goals, and ongoing oversight of the properties' energy performance. The guide will help organizations to decide which tasks need to be implemented by the owner, and those that need to be executed by the management staff to achieve the best results within their housing portfolios.



Overview

The Local Initiatives Support Corporation (LISC) developed these Green and Healthy Property Management Policies and Procedures to help affordable housing owners define and pursue measures to reduce the use of energy, water, and harmful chemicals in their properties, reduce waste generated onsite, save money, create healthier living environments for residents, and reduce the carbon and environmental footprint associated with residential properties. Owners and property managers are encouraged to review these sample policies and practices and tailor them to meet their needs.

The document presents goals and key actions and is intended to comply with and enhance the Housing Quality Standards published by HUD. Activities best undertaken by the property owner are distinguished from those most appropriately pursued by the property manager. Activities to monitor green and healthy practices are most effectively linked to existing activities (e.g., monthly meetings, annual financial reviews, capital planning, etc.). Therefore the green and healthy practices are, whenever possible, integrated with existing management practices. Appendix B summarizes a model schedule to implement these green and healthy policies.

This document was originally developed by the Boston LISC in collaboration with Boston area Community Development Corporations. The LISC New York City office, The NYC Department of Health and Mental Hygiene and The NYC Coalition for a Smoke-Free City have adapted the content for NYC owners and managers.

Finally, going green is a process. Owners are encouraged to update their green commitments to take advantage of new technologies, strategies, and opportunities.

Lastly, NYC's Two Shades of Green (TSG) Initiative, a new partnership between LISC New York City, NYC Department of Health and Mental Hygiene and the NYC Coalition for a Smoke-Free City. TSG was formed to bring cost-effective green and healthy practices to existing affordable housing buildings. TSG is working with Community Development Corporations (i.e., property managers and owners of affordable housing) to create green, healthy, and safe buildings. The TSG team developed action plan templates and benchmarks for each green and healthy priority area to define implementation steps and track progress. These tools are included in Appendix E.

How to Use This Guide

Property owners and managers can use this Guide to develop green and healthy property management practices that are appropriate for their organization and buildings. It is a four-step process.



1. Assess Current Practices: Start by comparing current practices to those recommended in this Guide. Both the property owner and manager should

participate in this step because each has relevant information. Use the worksheet provided in Appendix C to help with this process. For example, ask:

- Is your organization tracking energy and water use in each building?
- Have you established energy and water targets?
- Do you have an Integrated Pest Management Policy?

The assessment should help the team to discuss key issues:

- If we are not achieving the practice recommended in this Guide, is it possible?
- What would it take for us to improve our practices?
- What is a reasonable goal for our organization and a given property?

2. Develop Your Goals: Decide the scope of the green and healthy practices your organization would like to address. Do you want to tackle the 14 listed in this Guide or begin with a subset? Using the information gathered in Step 1, tailor goals that will be effective for your organization. State each goal clearly and identify the responsibilities for both the owner and property manager. LISC has a template of this Guide in a word processing format to help property owners develop a tailored set of policies and procedures.

3. Secure Organizational Commitment: Green and healthy practices thrive when the portfolio has a “green champion,” and the leadership of that organization has empowered the green champion to implement portfolio-wide and property-specific green policies. At this stage, it is important to secure the support of the organization’s senior managers. For non-profit housing owners, this will often be the Board and Executive Director. In for-profit companies, the senior managers’ support is critical.

4. Pursue and Track New Practices: It is critical to monitor progress in addition to implementing your new procedures. Often new practices require tweaking. Regular tracking, as outlined in this Guide, is an important element of any change in operational activities and will enable the owner and manager to provide information to the Board or senior managers, who will ask, “How is it going?” The written Green and Healthy Property Management Guide and monitoring data will help the property owner tell the “green story” of the portfolio.



Energy Assessment

Goal

Measure and track energy usage associated with buildings using a common metric, normalized by square footage, and adjusted for weather conditions to enable comparisons in energy use across the portfolio and across years. Use energy tracking data to inform maintenance and management activities, capital needs planning, and targeted energy upgrades.

Key Actions

Property Owner

- 1. Create Benchmarking Data and Threshold for Action:** Compile and enter baseline data into benchmarking software that will allow comparisons among buildings and across years with differing heating/cooling needs. Establish a threshold for action related to heating energy use (e.g., >10 BTU/square foot/Heating Degree Day—BTU/ft²/HDD).
- 2. Review Baseline Data:** Meet with Property Manager to review baseline energy data and resolve data quality issues.
- 3. Review Data Monthly:** Require tracking reports from Property Manager and maintenance staff.
- 4. Conduct Annual Review of Data:** Annually review energy usage, effectiveness of efficiency efforts (including new construction, renovations, or energy upgrades), and planned energy retrofits

Property Manager

- 1. Provide Monthly Update to Property Owner:** Identify building with high-energy use (>10 BTU/ft²/HDD), significant energy changes (e.g., >10%) from last year, and energy use data from properties with completed energy retrofits.
- 2. Provide Annual Review to Property Owner:** Identify changes in energy use, track usage after upgrades, and suggest actions to reduce high-energy use.

Tracking

Monthly review energy data with property owner and manager. Integrate energy tracking with other “Dashboard” metrics used by owner. See Appendix C for sample Monthly Review Agenda.

Annual review.

Resources

EnergyScoreCards—Software to track and evaluate energy usage
<http://www.energyscorecards.com/>

Building Performance Compass—Software to track and evaluate energy usage
<http://pdsconsulting.com/>

EPA Portfolio Manager—Software to track and evaluate energy usage
https://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager

Wegowise—Software to track and evaluate energy usage <http://www.wegowise.com>

NYC Resources

Con Edison—Owners can access past two years of energy use using online account: use your account number (s) and logon at <http://www.coned.com/>

Con Edison—Free on site building energy assessment for multi family owners and access to incentives for residents and owner upgrades
http://www.coned.com/energyefficiency/residential_multifamily.asp

NYC Energy Efficiency Calculator—Excel worksheet that uses your bills to quantify energy usage <https://prattcenter.net/energy-efficiency-calculator>



Energy Conservation

Goal

Reduce energy use in buildings to achieve the target energy benchmark in existing buildings (less than 10 BTU/square foot/Heating Degree Day) and new construction (less than 6 BTU/square foot/HDD).

Key Actions

Property Owner

1. Pursue Utility, Government or Other Funding: Apply to government or utility funded energy retrofit programs, target buildings using more than 10 BTU/ft²/HDD.

2. Identify Energy Saving Opportunities For Projects Not Undergoing Energy Retrofits: Request that the Property Manager provide a written summary of potential energy saving measures in buildings that exceed the target energy use and are not pursuing audits or energy retrofits. Consider the below listed opportunities and other opportunities the property manager may identify.

a. Mechanical Equipment: Identify buildings with old equipment (20 years old) or inefficient equipment, if easily determined (e.g., <80%). Examples of inefficient equipment include: 1) modular boilers or systems with combined heat and domestic hot water; 2) integrated domestic hot water and heating systems, particularly in buildings with greater than 50 units; 3) water re-circulating loops, noting uninsulated or exposed pipes; 4) mechanical equipment with make up air units; 5) inappropriate outdoor temperature reset controls for hydronic (hot water) boilers, and steam systems; and 6) electric motors, transmission and drive systems.

b. Appliances: Identify non-energy conserving equipment (e.g. non-ENERGY STAR) in common areas and apartments (e.g., refrigerators, air conditioner [central and room], clothes washer, and dishwashers (See Green Laundry).

c. Common Area Lighting: Identify incandescent bulbs/fixtures. Identify T-12 lights with magnetic ballasts (replace with T-8 and electronic ballasts). Identify exterior lights without photo sensors. Identify opportunities for motion/occupancy sensors.

d. Insulation Opportunities: Identify opportunities to add insulation: attics and below roof crawl spaces (e.g., < 8–10 inches); wall cavities; basements; crawl spaces; and other locations.

e. Air Sealing: Identify opportunities in attics or below roof crawl spaces, unconditioned basement spaces with penetrations to conditioned spaces, penetrations through exterior walls in conditioned spaces, and penetrations between units. As budget permits, hire a qualified certified contractor to perform blower door testing on individual apartments to more precisely identify air sealing opportunities, as apartments turnover or approval is received from tenants. Contract professional to inspect and test ventilation ducts for air sealing opportunities and assess feasibility of recommended measures.

3. Integrate with Capital Planning: During annual capital planning process, identify potential energy saving measures in priority properties (>10 BTU/ft²/HDD), review utility program opportunities, and integrate energy saving measures in capital planning. Engage an energy auditor in conjunction with periodic Capital Needs Assessments (approx every 4–5 years) or complete a “Green Capital Needs Assessment,” as funding permits.

4. Specify Energy Conserving Equipment: Specify ENERGY STAR appliances for all replacements provided by the Property Owner to common areas or apartments (e.g., refrigerators, bath fans, boilers, air conditioners [central and room], clothes washers, windows, doors, skylights, light bulbs and ballasts).

5. Maintenance and Unit Turnover: Require removal of window air conditioning (AC) units and insulating around AC sleeves during heating season (Nov–April), to extent feasible and when storage is possible. Incorporate energy savings assessment and upgrades into unit turnover and annual inspection protocols. (See Unit Turnover and Inspection Checklist in Appendix A.)

6. Track Energy Performance After Construction: In recently constructed or renovated properties, review energy usage data to assure the building is performing as intended and undertake actions to address poor performance (e.g., mechanical system and control adjustments).

7. Train Staff: Superintendents and management staff are generally the first responders on all aspects of a building’s operations and maintenance. They interact with tenants, supervise building staff, and communicate with building owners and outside contractors. Building superintendents are in a key position to perform low-cost and no-cost strategies that ensure energy and water conservation and to ensure savings are maintained over time.

Property Manager

1. Baseline: Provide baseline inventory of potential energy saving measures noted in #2 above.

2. Annually: Provide summary of energy benchmarking data to identify buildings above the target energy use (>10 BTU/ft²/HDD) and potential energy saving measures.

3. Specify ENERGY STAR Appliances: Specify ENERGY STAR for all replacements (e.g., refrigerators, bath fans, boilers, air conditioners [central and room], clothes washers, dishwashers (See Green Laundry), windows, doors, skylights).

4. Maintenance: Require tenants to remove tenant supplied window air conditioning (AC) units during the heating season (November–April), to the extent feasible. Provide and install AC window sleeve covers during heating season (November–April).

Tracking

Annual review of energy usage.

Resources

Consortium for Energy Efficient Residential Sector—Information on energy efficient equipment <http://www.cee1.org/>

Database of State Incentives for Renewables & Efficiency—Listing of state resources <http://www.dsireusa.org/>

EPA EnergyStar <https://www.energystar.gov>

DIY Guide The White Roof Project <http://whiteroofproject.org/diy/>

National Grid Energy Efficiency Services
<https://www1.nationalgridus.com/EnergyEfficiencyPrograms>

NYC Resources

Con Edison Multifamily Energy Program
http://www.coned.com/energyefficiency/residential_multifamily.asp

NYC Cool Roofs—Information and products
<http://www.nyc.gov/html/coolroofs/html/home/home.shtml>

New York Energy Smart—www.getenergysmart.org/

NYSERDA Multifamily Energy Performance Program
<https://www.nyserda.ny.gov/BusinessAreas/Energy-Efficiency-and-Renewable-Programs/Multifamily-Performance-Program.aspx>

NYSERDA EmPower Program
<https://www.nyserda.ny.gov/BusinessAreas/Energy-Efficiency-and-Renewable-Programs/Residential/Programs/Low-Income-Assistance/EmPower-Overview.aspx>

Weatherization Assistance Program (WAP)
<http://www.nyshcr.org/programs/weatherizationassistance/>



Water Assessment

Goal

Evaluate all properties for water usage; normalize by person or bedroom. Identify properties where water use exceeds target benchmark (greater than 55 gallons per person per day or 83 gallons per bedroom per day; other benchmarks may apply in single room occupancy units or other types of units).¹

Key Actions

Property Owner

1. Baseline and Annually: Determine water usage in gallons/person/day and/or gallons/bedroom/day.

2. High Use Properties: Identify properties where water usage exceeds the target benchmark (greater than 55 gallons/person/day or 83 gallons/bedroom/day).

Property Manager

1. Benchmark Water Usage: Under direction from Property Owner, input water usage data into electronic tracking system on at least a quarterly basis.

2. Assess Water Usage Onsite: Under direction from Property Owner, conduct water assessment to document fixture specific water use in buildings exceeding water threshold (e.g., showerheads, faucets, toilet leakage).

3. Quarterly & Annually: Provide updates to Property Owner on water usage in buildings.

Tracking

Quarterly review of water usage.

Annually identify significant changes in water consumption, target buildings for water conservation efforts in the coming year, and evaluate the effectiveness of completed water conservation measures in terms of water consumption.

Resources

Bright Power—Software to track and evaluate energy usage
<http://brightpowerinc.com/>

Building Performance Compass—Software to track and evaluate energy usage
<http://psdconsulting.com/software/compass/product-tour-benchmarking/>

Wegowise—Software to track and evaluate energy usage <https://www.wegowise.com>

¹ This water benchmark was determined in discussions with an experienced water conservation company that anticipates significant savings and payback periods less than two years for most properties that exceed these benchmarks.

**NYC
Resources**

Two Shades of Green Water Conversation Benchmark Worksheet—Appendix E

NYC DEP—Track water use and pay bills

<http://www.nyc.gov/html/dep/html/home/home.shtml>



Water Conservation

Goal Reduce water use in properties to below 55 gallons per person per day or 83 gallons per bedroom per day.

Key Actions

Property Owner

- 1. Water Conserving Equipment:** Specify EPA WaterSense and water conserving fixtures and appliances during upgrades and unit turnover. Specify toilets with a Maximum Performance (MaP) rating of at least 750g and minimum of 1.28 gallons per flush in efficiency. (See Green Products)
- 2. Target Water Conservation Projects:** In buildings that exceed water targets, obtain cost proposal to undertake water saving measures and anticipated payback; pursue cost-effective strategies. Request proposal from the property manager and third party financing/contracting entity. Pursue projects.
- 3. Offer Resident Training:** Provide resident training in conjunction with property manager at lease up and regular intervals, consistent with resident training plan.
- 4. Water Conserving Landscapes:** Ensure plantings for new developments are draught tolerant or do not need irrigation.
- 5. Water Meters:** Ensure commercial units are separately metered for water. Submetering is a relatively easy way to decrease a building's water consumption.

Property Manager

- 1. Integrate with Property Upgrades:** Install EPA WaterSense and water conserving fixtures/equipment and appliances during renovations and upgrades (e.g., low flow faucet aerators, showerheads, toilet flappers inspected or toilets upgraded). Require laundry contractor to meet Green Laundry specifications.
- 2. Integrate with Unit Turnover:** Install water-conserving fixtures during unit turn over (e.g., low flow faucet aerators, showerheads, toilet flappers inspected or toilets upgraded). (See Unit Turnover and Inspection.)
- 3. Water Conservation Maintenance:** Upgrade toilet flappers every five years, or more often if appropriate.
- 4. Respond to Owner Request for Proposals:** Provide cost proposals, as requested by the property owner, to undertake water conservation upgrades.
- 5. Conduct Conservation Measures:** Implement water conservation upgrades as requested by the property owner.

6. Resident Training: Provide information to tenants on the importance of reporting toilet and fixture leaks (e.g., what does a leaking toilet sound like).

7. Water Abatement Meters: Identify buildings where it may be appropriate to obtain a sewer abatement meter (i.e., properties with substantial water needs, but no accompanying sewer usage, such as irrigation or buildings reusing their steam condensate to make hot water) and discuss possible implementation with the property owner.

Tracking

Annually establish priorities for conservation efforts and update policy.

Resources

EPA WaterSense—Water conserving equipment and information

<http://www.epa.gov/watersense/>

Maximum Performance

<http://www.map-testing.com/about/maximum-performance/map-search.html>

Map of Water Rebates by State <http://www.savewateramerica.com/index.htm>

Water Efficient Landscaping

http://www.epa.gov/WaterSense/docs/water-efficient_landscaping_508.pdf

NYC

Resources

Two Shades of Green Water Conversation Benchmark Worksheet—Appendix E

NYC DEP Water Conservation Programs

http://www.nyc.gov/html/dep/html/ways_to_save_water/index.shtml

NYC DEP Toilet Replacement Program

http://www.nyc.gov/html/dep/html/ways_to_save_water/toilet_replacement_program_faq.shtml

Niagara Conservation for products

http://www.niagaraconservation.com/water_conservation/products



Green Laundry

Goal

Reduce the use of water and energy by laundry equipment, while maintaining high functioning cleaning and drying equipment.

Key Actions

Property Owner

Require ENERGY STAR clothes washers and clothes dryers with moisture sensors in central laundry facilities.

Property Manager

1. Central Laundry Contracts: Require contractors/vendors of central laundry equipment to provide ENERGY STAR washers and clothes dryers with automatic shut off controls linked to moisture sensors. Using ENERGY STAR's qualification system, select the most efficient machines taking into account cost-effectiveness. For dryers, maximize the Modified Energy Factor (minimum 1.8) and minimize the Water Factor (maximum 8.0).² Provide signage for residents regarding high efficiency machines and appropriate detergent use (e.g., most HE machines require much less detergent). Require annual cleaning of dryer vents and annual inspection of connections and machine operations.

2. Lease Addendum for Residents Supplying Personal Machines: If residents are permitted to install washers and/or dryers, inspect the unit annually to ensure the water is drained properly, connections are secure, and dryers are vented appropriately. Dryer vents should be cleaned annually.

Tracking

Annual review.

Resources

Consortium for Energy Efficiency, Residential Sector—Information on energy efficient equipment <http://www.cee1.org/>

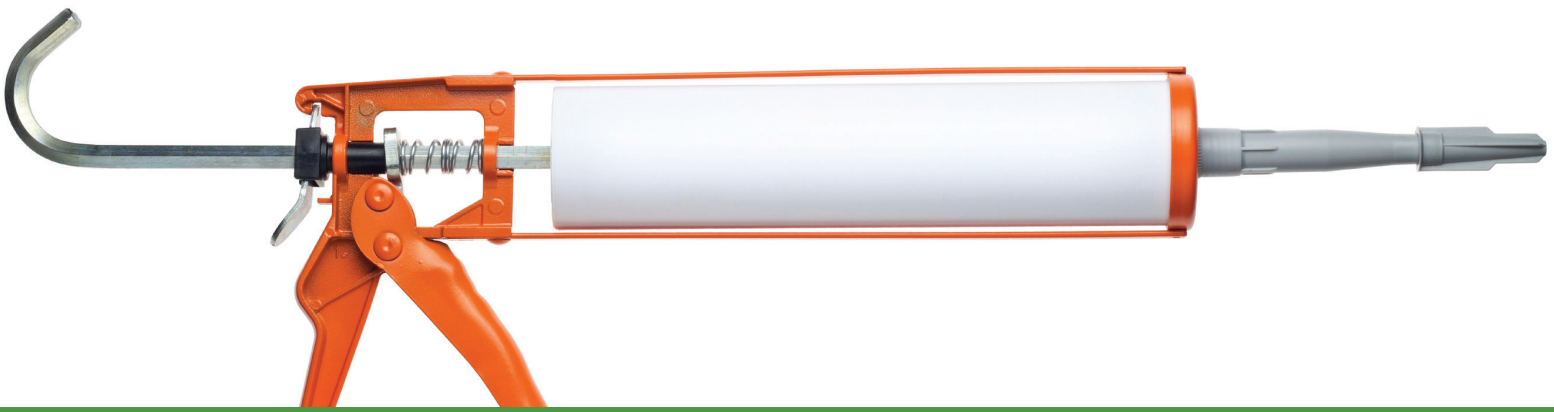
EPA WaterSense—Water conserving fixtures, equipment and information <http://www.epa.gov/watersense/>

EPA EnergyStar—Energy efficient appliances and equipment <https://www.energystar.gov>

NYC Resources

New York Energy Smart—Energy efficient equipment and information <http://www.nyserda.ny.gov/residential>

² Modified Energy Factor (MEF) is an equation that takes into account the amount of dryer energy used to remove the remaining moisture content in washed items. The higher the number, the greater the energy savings.



Pest Control

Goal

Minimize pest problems using Integrated Pest Management (IPM) strategies, which cost-effectively prevent and address pest problems while minimizing the harm to people, property and the environment.

Traditional pest control relies on scheduled application of pesticides. In contrast, IPM methods use a range of strategies to minimize conditions that attract pests such as food, water, and harborage and rely on pesticides as a last resort.

Key Actions

Property Owner

- 1. Hire IPM Experienced Pest Professionals:** Contract with pest professionals that have IPM training and experience. Check references. Pest professionals also must have the appropriate licensing required by New York State Department of Environmental Conservation (DEC).
- 2. Ensure Contracts Include Core IPM Components:** A good IPM contractor will provide a thorough inspection to identify the nature and extent of the problem and supply a written report with steps to address these issues. These core IPM components are presented below in the property manager section.

Property Manager

IPM Practices: Ensure contracts with pest professionals require the below Integrated Pest Management elements, taking into account contracting restrictions (e.g., Minority and Women-owned Business Enterprise (M/WBE) requirements).

- 1. IPM Training and/or Certification:** Require IPM training, experience and/or certification (e.g., Green Pro, Green Shield or equivalent IPM training). All pest professionals in NYC must have the appropriate NYC DEC license.
- 2. IPM Policy:** Contractor shall include written IPM policy.
- 3. Inspections:** Contractor and Property Manager shall jointly conduct initial and periodic inspections of exterior and interior spaces to identify pest entry points and evidence of pests. Contractor shall provide written evaluation of pest control needs, along with description of problem areas, recommended structural, sanitary, or procedural modifications that will reduce pest access to food, water and shelter (e.g., seal entry points such as openings, cracks, crevices; cover and control pest access to trash cans/dumpsters/trash chutes).
- 4. Monitoring:** Once the recommended repairs and pest control actions have been made, contractor will continue to monitor the building and report back to the property manager on ongoing IPM activities and pest levels.

5. Pesticide Use: Pesticide application shall be considered after all other methods have been attempted to respond to observed pest problems. Use spot treatments rather than area-wide applications. Select lowest-toxicity pesticide needed for the required treatment and treat only when finding evidence of pests.

a. Approved Products: Do not apply any pesticide product that has not been included in the IPM Plan or approved in writing by the Property Owner. All products must be used as specified on product's label.

b. Application by Need: Employ the least hazardous material, most precise application technique, and minimum quantity of pesticide necessary to achieve control. Ensure application of products containing pesticides render the pesticides inaccessible to residents, visitors, pets (if allowed), and staff.

c. Prohibited Products: Pesticide sprays (unless it is an insect growth regulator or needed to address bedbug infestations), foggers or bombs, organophosphate or chlorinated hydrocarbons pesticides are not permitted.

d. Pesticide Storage: The Contractor shall not store any pesticide product in the buildings specified in this contract.

e. Notification: Provide written notice of the intention to apply any pesticide application and post treated areas, at least 24 hours prior to application.

6. Insect Control: Apply insecticides as "crack and crevice" treatments—i.e., formulated insecticide is not visible to a bystander during or after the application process. For cockroaches, prioritize baits, gels, growth regulators and boric acid are preferred.

7. Rodent Control: As a general rule, rodent control inside buildings shall be accomplished with trapping devices only. If rodenticides are to be used, all rodenticides shall be placed in tamper-resistant bait stations or deep down into rodent burrows (according to label.) No rodenticide shall be visible or accessible to building occupants.

a. Trapping Devices: Trapping devices shall be out of public view or locked inside trapping stations to avoid being disturbed by routine cleaning. Devices shall be checked on a schedule and the Contractor shall be responsible for disposing of all trapped rodents.

b. Bait Boxes: All bait boxes shall be tamper-resistant and secured box so it cannot be picked up or moved. Rodenticide baits shall be secured on rods inside the box. Labels shall be placed on the inside with the Contractor's business name and address, and dated by the Contractor's technician at the time of installation and each servicing.

c. Rodenticides: When rodenticides are deemed essential, the Contractor shall obtain approval from the Site/Building Manager. All rodenticides shall be placed either in locations not accessible to children and pets or in EPA-approved tamper-resistant bait boxes. Bait blocks should be used in bait stations and pellets or meal formulations used for baiting rodent burrows. Tracking powders should not be allowed for use in an IPM plan.

8. Unit Turnover: Provide unit turnover services and recommended responses for maintenance staff to prevent and address pest issues, including apartment cleaning and maintenance such as sealing cracks, crevices, and holes, and fixing any leaks.

9. Resident Education: Provide on-site resident education as needed, in conjunction with Property Owner/Manager. Ensure that all building occupants know how to report pest sightings. Provide residents with guidance on how to dispose of all household garbage and recycling.

Ensure management staff undertake the below activities.

1. Preventative Measures:

- Provide regular cleaning in common areas, hallways, stairwells, laundry rooms, trash chutes, garbage areas, maintenance/utility areas and all exterior space.
- Seal cracks, holes and crevices to prevent potential pest entry. Seal doors, windows and other entry points to the building (such as pipes and wires.)
- Provide sufficient cans or dumpsters to containerize all waste before pick-up. Provide trash removal on a regular schedule to avoid garbage overflow. In addition, wash garbage cans/dumpsters to prevent food and debris build-up. Bring garbage cans or bags to the curb as close to pick up as possible. If building has a compactor, clean compactor weekly to prevent debris build up.
- Integrate pest exclusion (e.g., sealing holes, crack, crevices) with energy efficiency and air sealing activities, and ensure that openings are sealed after routine construction, repair, and installation work.
- Keep any landscaped areas well-trimmed and maintained to reduce harborage.

2. Approve Contractor IPM Plan: Property managers shall review and approve the IPM Plan submitted by the Pest Control Contractor and work with residents to undertake appropriate actions.

3. Resident Complaints: Maintenance staff shall respond promptly to pest complaints. Ten to 14 days after action has been taken, the building manager/property manager shall follow up on the conditions.

4. Written Notice: Property Managers shall provide written notice to residents at least 24 hours prior to pesticide application.

5. Resident Education: Property Managers shall develop, in conjunction with IPM contractor, education and outreach during lease up, periodic resident education sessions, and during pest infestations. To the extent feasible, incorporate the below items in resident leases. Work to ensure residents understand their responsibilities:

- Report to management pest sightings and conditions that may attract pests.
- Do not use foggers, bombs, or sprays.
- Keep their home in a clean, clutter-free and sanitary condition, per lease requirements.
- Prepare apartment for pest management service visits according to instructions provided in advance.

Tracking

Quarterly, review pest issues and responses.

Annual review.

Resources

Boston Public Health Commission, "IPM: A Guide for Managers and Owners of Affordable Housing." <http://www.hria.org/resources/integrated-pest-management.html>

GreenPro Certification <http://www.npmagreenpro.org/>

Green Shield Certification <https://www.greenshieldcertified.org>

National Center for Healthy Housing, "IPM in Multi Family Housing", training for managers and contractors <http://www.nchh.org/Training/IntegratedPestManagement.aspx>

NYC Resources

Two Shades of Green Integrated Pest Management Benchmark Worksheet—Appendix E

New York City Department of Health and Mental Hygiene, “How to Control Pests Safely: Getting Rid of Roaches and Mice.”

http://www.healthyhometraining.org/ipm/NYC_Pests_Healthy_Home.pdf

New York City Department of Health and Mental Hygiene, “Preventing Rats on Your Property: A Guide for Property Owners and Tenants.”

http://www.nyc.gov/html/doh/downloads/pdf/pest/rodent_control.pdf

New York City Department of Health and Mental Hygiene, “Preventing and Getting Rid of Bedbugs Safely: A Guide for Property Owners, Managers, and Tenants.”

<http://www.nyc.gov/html/doh/downloads/pdf/vector/bed-bug-guide.pdf>

NYC DOHMH provides training for residents, superintendents, and building owners on safe and effective ways to deal with bed bugs, rats, and other pests. For more information, call 311.



Green Cleaning

Goal

Maintain properties cost-effectively using green cleaning products that minimize the use of harmful or toxic chemicals. Ensure property management staff and vendors use green cleaning products when cost-effective.

Key Actions

Property Owner

- 1. Products:** Require staff, property manager and vendors/contractors to use green cleaning products that meet third party certification unless such products are not available or cost-effective. Acceptable green certifications: Greenseal, U.S. Environmental Protection Agency Design For the Environment (Dfe), Eco Logo.
- 2. Training:** Require training of building operation staff using cleaning products alongside management staff at beginning of transition to green cleaning and a follow up after 3–6 months. Ensure this is part of property management activities or subcontracted cleaning activities.
- 3. Evaluate Green Products and Costs:** Work with property manager to track costs of green versus traditional cleaning products and maintenance staff satisfaction with green products.
- 4. Tenant Education:** Include tenant educational outreach flyers or include a presentation in any regular tenant meetings to explain the changes in the cleaning regimen.
- 5. Survey:** Conduct a pre and post survey for building operation and maintenance staff and tenants to assess changes in health, perception and behavior associated with transitioning to green cleaning.

Property Manager

- 1. Green Products:** Require all vendors (cleaning, other rehab contractors) to use green certified cleaning products unless the product is not available or cost-effective. If vendors cannot identify an available cost-effective cleaning product that is GreenSeal or EcoLogo Certified, or Dfe approved for a particular use, the vendor shall evaluate if that specific product is needed. If the product is critical the vendor shall provide the Property Manager a written request to justify the use of a non-third party certified cleaning product and obtain written authorization. Such authorization is not required during emergency cleaning activities.
- 2. Dilution Systems:** Encourage the use of: dilution control systems (to reduce packaging waste and supplies), Microfiber wipes and mops, HEPA filtration vacuums, Green Seal certified or Forest Stewardship Council (FSC) certified paper products.

3. Training & Evaluation: Require training of building operation staff using cleaning products alongside management staff at beginning of transition to green cleaning and a follow up after 3–6 months. Track costs of green versus traditional cleaning products and maintenance staff satisfaction with green products.

4. Tenant Education: Require cleaning vendors to provide tenant education materials and assist in outreach/meetings.

Acceptable Green Certifications: Greenseal, Dfe, EcoLogo

Tracking

Annual review.

Resources

Design for the Environment (Dfe) <http://www.epa.gov/dfe/>

EcoLogo <http://www.ecologo.org/en/>

GreenSeal <http://www.greenseal.org/>

NYC

Resources

Two Shades of Green Cleaning Benchmark Worksheet—Appendix E

New York State Green Cleaning Program <https://greencleaning.ny.gov/Entry.asp>

Vendors: Crown Janitorial; National Maintenance



Waste Reduction and Recycling

Goal Reduce waste disposal and encourage recycling to the maximum extent feasible. Comply with local requirements for waste disposal and recycling.

Key Actions

Property Owner

- 1. Local Standards:** Comply with local recycling and waste disposal standards.
- 2. Resident Training:** Provide resident training, in conjunction with the Property Manager, to encourage recycling.
- 3. Rehab Specs:** Incorporate recycling friendly design into rehab specifications and relevant work order requests.
- 4. Flooring:** Require property manager to request bids from flooring vendors to recycle removed carpet.
- 5. Electronics:** Work with Property Manager to undertake at least one recycling pilot initiative to provide options for residents to recycle electronics not currently recyclable at the curbside.
- 6. Resident Training:** Work with Property Manager to provide resident training on green practices, including recycling, at lease up and on an ongoing basis.

Property Manager

- 1. Local Standards:** Comply with local waste disposal and recycling requirements. Contact local recycling office to set up site visit if needed.
- 2. Flooring:** Require flooring contractors to provide bids to recycle and not dispose of used/ removed carpet during carpet installations (bids for 100%, 50% or 30% recycled). Recycle carpet if cost-effective (i.e., no more than 5% cost increase over traditional disposal).
- 3. Recycling Bins:** Provide each housing unit with a recycling bin and instructions for cleaning bin.
- 4. Electronics:** Prepare recycling pilot innovation plan to explore recycling electronics at community collection days, if available. In conjunction with owner, determine if pilot will be conducted.

Tracking

Annual review. Evaluate new recycling initiatives to assess success, costs, and implementation issues.

Resources

Environmental Protection Agency <http://www2.epa.gov/recycle>

NYC Resources

NYC Department of Sanitation Bureau of Waste Prevention, Reuse and Recycling
<http://www.nyc.gov/html/nycwasteless/html/home/home.shtml>

NYC Carpet Recycling
<http://www.nyc.gov/html/dsny/html/collection/bulk.shtml>



Unit Turnover and Inspection

Goal

Incorporate actions to identify and address opportunities to save energy, save water, and reduce waste disposal, reduce use of pesticides/chemicals, and create healthier living environments into unit turnover practices and annual inspection protocols.

Key Actions

Property Owner

Require the Property Manager to include green items into unit turnover protocols, annual inspections, and other comprehensive property maintenance inspections.

Mechanical Systems/Electrical

- Set thermostat to 50 degrees.
- Turn off air conditioner units (unless needed to avoid excessive heat).
- Between November–April install AC cover sleeve or remove unit; check caulking.
- HEPA vacuum and wipe baseboard radiators; make sure fins are not damaged and still capable of transmitting heat.
- Ensure light fixtures are ENERGY STAR; if not, replace with ENERGY STAR.
- Replace bulbs with CFL or energy efficient.
- Check operation of carbon monoxide detectors and smoke alarms, repair as needed.
- Check operation of radiator valves and air vents and steam traps; replace non-working units.

Appliances

- Specify ENERGY STAR appliance for all replacements.
- Direct vent kitchen range to exterior where possible.

Plumbing/Bath/Kitchen

- Replace toilets operating with 3 gpf with EPA WaterSense toilet.
- Check toilet for leaks with dye test and replace flapper as needed.
- Check showerhead for flow <1.75 gpm, install new low flow as needed.
- Check shower diverter for leaks.
- Check bath fan operations, install ENERGY STAR fan on timer where possible.
- Check faucet aerators and install as needed: kitchen <1.5 gpm, bath <.5 gpm.
- Check under sinks for leaks and air gaps, repair and air seal as needed.

Windows/Doors

- Caulk windows, storms, rebalance and ensure smooth operation.
- Check and repair weather stripping/door sweeps on entry doors.

Flooring/Painting/Cleaning/Pests/Trash (See Green Products)

- Inspect for pests; report problems to IPM contractor, seal holes for pest entry.
- HEPA vacuum carpet.
- Use green certified replacement flooring.
- Recycle removed carpet, to extent cost effective.
- Use low VOC paints.
- Use green certified cleaning products.
- Ensure recycling bins are present.

Locate and Seal internal Air Leaks

- Seal gaps along baseboard edges, junctures of walls and ceiling.
- Check for gaps and seal edges at electrical outlets, switch plates, pipe penetrations.

Property Manager

1. **Integrate green unit turnover and inspection items** into existing checklists and protocols.
2. **Provide green unit turnover protocol** to Property Owner to review.
3. **Train maintenance staff** on new procedures.
4. **Train new residents on recycling procedures**, use of thermostats and baseboard controls, cleaning of any special floor materials, etc.

Tracking

Annual review.

Resources

U.S. EPA Energy Star <https://www.energystar.gov>

U.S. EPA Water Sense <http://www.epa.gov/watersense/>

Unit Turnover and Inspection Checklist—Appendix A

NYC

Resources

NYC Waste Less <http://www.nyc.gov/html/nycwasteless/html/home/home.shtml>

New York State Green Cleaning Program <https://greencleaning.ny.gov/entry.asp>



Green Product Specifications

Goal Specify and install green products when available and cost effective during work order requests, renovation, and property maintenance.

Key Actions

Property Owner

Identify green certifications and products for use by: property management staff, contractors and owner staff undertaking repairs, renovations, or maintenance. A list of such certifications and products is provided below.

Property Manager

Require staff and contractors to specify the green products identified by the Property Owner. Modify vendor contracts as needed to ensure compliance with your green goals.

Product	Green Specification
Bathroom	
Toilet	EPA WaterSense— 1.28 gpf with at least 350 gram waste removal. Recommend at least 750g in MaP rating
Showerhead/	<1.75 gpm—adjust if low water pressure (EPA WaterSense specifies 2 gpm)
Faucet Aerators	Kitchen: 1.5 gpm at 60 psi Bath: < 1.0 gpm test for performance (WaterSense allows 1.5 gpm)
Bath Fan	EPA ENERGY STAR
Appliances & Lighting	
Refrigerators	EPA ENERGY STAR
Air Conditioner	EPA ENERGY STAR
Dishwasher	EPA ENERGY STAR
Lighting	EPA ENERGY STAR; Interior CFL and T-8 linear fluorescent lamps with electronic ballasts; Exterior—photo sensors; LED exit lights
Cleaning Supplies	
Cleaners	GreenSeal, Dfe Approved, or EcoLogo Certified

Flooring & Cabinets

Carpet & Entry Mats	Green Label or Green Label Plus Certified by Carpet & Rug Institute Recycle removed carpet: Vendor to supply price quote to recycle removed carpet and components (100%, 50%, 30% recycled).
Resilient Floor	FloorScore Certified by Resilient Flooring Association
Floor Adhesives	Low VOC < 50 g/L for carpet and VCT; consistent with US GBC LEED
Cabinets	Urea formaldehyde free cabinets, certified California 93120 Compliant for Formaldehyde—Phase 2. If not available seal edges and exposed wood

Paint & Paper

Interior Paint	GreenSeal certified or meet LEED for Homes VOC standards
Paper Towels	GreenSeal or EcoLogo Certified

Tracking

Annual review.

Resources

- CEE Super-Efficient Washers—Specifications and qualified products
<http://www.cee1.org/content/commercial-clothes-washer-specification-suspension>
- Dfe (US EPA Design for the Environment)—EPA identified low toxicity products
<http://www.epa.gov/dfe/pubs/projects/gfcp/>
- EcoLogo—Green products certified by Canadian Government
<http://www.ecologo.org/en/seeourcriteria/>
- EPA WaterSense—EPA tested water conserving products
<http://www.epa.gov/watersense/>
- EPA ENERGY STAR—EPA tested energy efficient products
http://www.energystar.gov/index.cfm?fuseaction=find_a_product.&s=mega
- FloorScore—Resilient Flooring Association certified products
<http://rfci.com/>
- Green Label and Green Label Plus Certified by Carpet—Carpet and Rug Institute (CRI) certified products
<http://www.carpet-rug.org/commercial-customers/green-building-and-the-environment/green-label-plus/>
- GreenSeal—Green certified products <http://www.greenseal.org/>
- MAP Toilet Testing—Independent testing on toilet effectiveness and water conservation
<http://www.map-testing.com/>

NYC Resources

New York State Green Cleaning Program <https://greencleaning.ny.gov/Entry.asp>



Green Office Practices

Goal

Reduce the use of energy, water, product consumption, and toxins in on site property management offices and in owner offices, to the extent feasible.

Key Activities

Property Owner

Use the below green products and practices at the Property Owner's offices and property management offices at residential properties.

Green Products & Purchases

1. Purchase minimum 20% post consumer recycled paper.
2. Use GreenSeal or Forest Stewardship Council (FSC) certified bathroom and kitchen paper products.
3. Install water filters, rather than providing bottled water.
4. Supply reusable kitchenware (silverware, dishes, glasses, etc.) if washing facilities are available.
5. Purchase green office furniture (Forest Stewardship Council Certified or made with high recycled content) or used furniture, to the extent feasible.

Office Practices

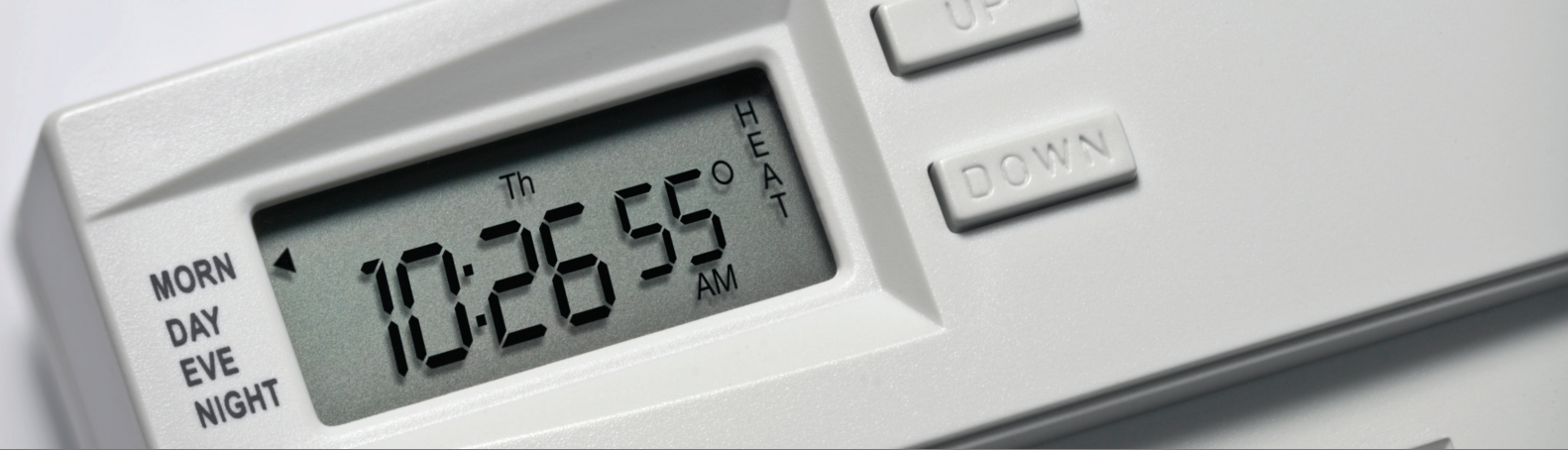
1. Turn off lights when not in use and install motion sensors for conference rooms.
2. Recycle printer cartridges, electronics, paper, cans, bottles, light bulbs, and batteries.
3. Enable sleep mode on computers and other electronics (faxes, printers, etc.). Turn off computers, printers, and copiers at the end of the day.
4. Specify new printers have double sided printing capability.
5. Encourage employees to get to work by walking, bike riding, carpooling, or riding public transit. See the following link for the EPA's Commuter Choice Primer for information on starting a Commuter Choice program — http://ntl.bts.gov/lib/jpodocs/repts_pr/13669.html
6. Subscribe to online billing to reduce paper use, when feasible.

Property Manager

Comply with the above green practices and products, to the extent feasible.

Tracking

Annual review.



Resident Training

Goal Provide residents with information and tools to support and participate in green practices.

Key Actions

Property Owner

Provide training, in conjunction with Property Manager, on green building practices when tenants move in and at regular intervals. Integrate with other related training (e.g., financial literacy).

Property Manager

- 1. Working with the Property Owner, provide training on green and healthy practices to residents** at move in and at regular intervals. Possible training areas to include: use of thermostats and baseboard controls, energy conservation, recycling procedures, green cleaning, reporting pest problems and IPM responses, healthy living and water conservation actions.
 - 2. Encourage residents to use online billing** to reduce paper use.
 - 3. Provide signage in the building reminding and encouraging green behavior** such as reporting leaks and pests, location of local farmers markets, recycling pick up days, etc.
 - 4. Integrate with any existing tenant organization activities.** Identify potential Green Leaders or Champions for the building.
 - 5. Use contests and prizes for reductions in energy and water usage** in the building. Reinvest energy and water savings for something tenants want in the building.
-

Tracking Annual review.

Resources Enterprise Green Communities Resident Training in a Box—Sample slides, exercise, and handouts for resident green and healthy training
<http://www.enterprisecommunity.com/solutions-and-innovation/enterprise-green-communities/resources/resident-engagement>

NYC Resources NYC Resident Training Resources
http://www.nyc.gov/html/oer/html/community/worker_training.shtml



Smoke Free Housing

Goal

Explore establishing smoke-free housing policies for new developments and existing properties. A 100% smoke-free building is one where smoking tobacco products are not allowed anywhere on the premises, including within individual units. A 100% smoke-free building can also include a building where smoking is restricted to a limited outdoor area.

Key Actions

Property Owner—Selecting the Right Pilot Sites

Option 1) Pilot-test a smoke-free housing policy for a new construction or a building undergoing a substantial rehab. This is the best time to go smoke-free.

Option 2) Choose a single inhabited site to implement a smoke-free housing pilot policy. Use results to inform efforts to expand smoke-free policies to the existing portfolio.

Step 1: Explore resident interest and support in pursuing smoke-free housing in existing buildings through the use of tenant surveys and resident education.

Step 2: Pilot the building with the lowest smoking rate and/or highest level of support for going smoke-free.

**See NYC Health Department's "Smoke-Free Housing Toolkit" for more information, listed below.*

Property Manager

Step 1: Establish the parameters of the smoke-free policy—What areas of the property will be covered? When will the policy take effect? How will violations be addressed? A policy that covers the entire property will have the biggest impact.

Step 2: While developing the policy, work with the property owner to support resident education and outreach, including resident surveys and meetings. Education should include information on smoking cessation resources and services.

Step 3: Notify residents of the new policy in writing, and include a smoke-free rider to all leases at renewal. (Restrictions to changing the lease apply to rent-regulated apartments.)

Step 4: Install signage and provide printed material for visitors at the main entrances of each building with a smoke-free housing policy. Market the building as "smoke-free" to prospective tenants.

Step 5: Respond to complaints of violations promptly, according to the terms of the new lease.

Sample Smoke-Free Housing Policy Language

Due to the increased risk of fire and the known health effects of secondhand tobacco smoke, smoking is prohibited in the entire premises, including inside residential units, all common areas and areas within 15 feet of entrances, windows, doors, and air-intake units. The only exceptions to this rule are in the designated smoking areas listed below, if applicable. This rule applies to owners and tenants and any other persons on the premises, including guests and servicepersons.

Sample smoke-free lease riders, as well as sample resident surveys are available on the websites of the NYC Health Department, and the New York State Tobacco Control Program—see Resources below.

Tracking

Annually track progress. Evaluate pilot efforts.

Resources

HUD Smoke Free Toolkits
<http://portal.hud.gov/hudportal/HUD> and search “smoke-free”

NYC

Resources

Smoke-Free Housing Survey—Appendix D

Two Shades of Green Smoke-Free Housing Benchmark Worksheet—Appendix E

Smoke-Free Housing Kit for Landlords & Managing Agents (Call 311 to request a free copy)

NYC Health Department <https://www.nyc.gov> and search “smoke-free housing”

Smoke-Free Housing New York State <http://www.smokefreehousingny.org/>

NYC Coalition for a Smoke-Free City <http://www.nycsmokefree.org/>

NY State Quitline: Call 1-866 NYQUITS, or <https://nysmokefree.com>

NYC Quits: Call 311, or <https://a816-nycquits.nyc.gov/pages/homepage.aspx>



Active Design

Goal Increase opportunities for active living for residents, staff and visitors by incorporating active design strategies (www.nyc.gov/adg) into the building interior and exterior, and in the surrounding community where appropriate.

Key Actions

Property Owners and Property Managers

- 1. Explore opportunities related to active design**
 - Meet with managers and owners about benefits of active design
 - Involve building management/owners and potentially residents to conduct a walk-through of building interior, exterior and surrounding area to assess for active design opportunities and needs
 - Identify any known or potential resources including financial, volunteer or other that can assist with implementation of active design strategy(ies)

- 2. Identify and implement project**
 - Select potential active design strategy(ies)
 - Conduct tenant engagement activities to assess interest in and desire and need for potential active design strategy(ies)
 - Assess feasibility and potential impact and finalize selection of strategy(ies) for implementation.
 - Obtain Board vote and/or other needed approvals
 - Develop work plan, obtain needed resources, and conduct project

- 3. Maintenance and evaluation**
 - Monitor effectiveness (e.g., track use, resident feedback)
 - Track costs of operations and maintenance

Active Design Opportunities

Property Owners and Property Managers

- 1. Encourage stair use:**
 - a. Ensure stairs are accessible:** Allow stairs to be used to access all occupied and common area floors by building users, particularly tenants. If there are security concerns, consider implementing a key-card or security-code system to maintain security while providing stair access to all building tenants. A study by the NYC Fire Department showed that emergency exits can be impeded by lack of familiarity with location and configuration of the stairs. Increasing stair visibility and use can potentially assist with increase effectiveness of emergency exists.

b. Make stairs more inviting: Paint with bright colors, and incorporate artwork such as murals and music. Enhance stair visibility by using stair doors with fire-rated glass. Having glass on doors could also increase natural lighting into some stairs and assist with energy needed for lighting in stairs. Use signage and design treatments to improve wayfinding and to help direct people to the stairs. In new construction, design the stairs to be prominently located at the entrance.

c. Post signs of encouragement. NYC has free “Burn Calories, Not Electricity. Take the Stairs!” signs that can be placed at elevator call areas and outside stairwells, which can be ordered for free by calling 311. These signs have been shown in studies to consistently increase stair use. Or you can sign from the Centers for Disease Control Stairwell sign or design your own!

2. Support bicycling: Provide indoor bicycle storage and/or secure outdoor bicycle parking. More information on obtaining a free City Rack or permit to install your own bicycle racks can be found here:

<https://www.nyc.gov/html/dot/html/bicyclists/bikerack.shtml>

3. Encourage children’s play: Provide safe indoor and/or outdoor active plays paces for children and youth. Simple inexpensive features such as colorful ground markings that are stenciled or painted onto available spaces can inspire children to play more actively.

4. Facilitate exercise for adults: Provide a room or space with exercise equipment. Consider making it adjacent to children’s play areas so parents can exercise while keeping an eye on their kids. Inexpensive outdoor exercise equipment that is manually operated is available, in addition to more traditional indoor exercise bikes and elliptical machines. A simple walking track around children’s play areas can be created inexpensively with paint.

5. Create community through healthy activities: Provide multi-use rooms for social gatherings involving exercise classes, healthy cooking classes and other activities.

6. Create a gardening space or other green space: Large or small, in a yard or on a roof, gardens are good for health. Gardening is a form of physical activity for people of all ages. Gardens can provide fresh, healthy food while helping to create a sense of community.

7. Provide water fountains in common areas: Promote access to a healthy and sustainable beverage option. Providing a spigot on water fountains allows users to safely and easily fill reusable water bottles.

8. Change the food environment: Provide a map of the healthy and fresh food vendors, supermarkets and/or farmers’ markets in the neighborhood. Organize a Farm Share/Community Supported Agriculture (CSA) distribution on your site. Reduce, change, or eliminate unhealthy food and beverage vending machines. If your building has outdoor space accessible to the neighborhood, consider organizing a farmers market. If your building has available retail space and could accommodate a supermarket, consider attracting a supermarket operator using the Food Retail Expansion to Support Health (FRESH) zoning and tax incentives (see <http://www.nycedc.com/program/food-retail-expansion-support-health-fresh>).

9. Make your street safer and nicer: Install planter boxes or order a street tree or street bench. The NYC Department of Parks and Recreation plants street trees free-of-charge on sidewalks in front of homes, apartment buildings, and businesses. More information can be found here under resources.

Resources

Center for Active Design <http://centerforactivedesign.org/>

StairWELL to Better Health/CDC
<http://centerforactivedesign.org/>

NYC Resources

Two Shades of Green Active Design Benchmark Worksheet—Appendix E

Active Design Guidelines
http://www.nyc.gov/html/ddc/html/design/active_design.shtml

Active Design Supplement: Affordable Designs for Affordable Housing
<http://centerforactivedesign.org/affordablehousingcosts>

Active Design Guide for Community Groups
<http://www.nyc.gov/html/doh/downloads/pdf/environmental/active-design-community-guide.pdf>

Order a Stair Prompt: Call 311

NYC Suggest a CityRacks (bike rack) location
<http://www.nyc.gov/html/dot/html/bicyclists/cityrack-suggest.shtml>

NYC Request a CityBench
http://www.nyc.gov/html/dot/downloads/pdf/citybench_form.pdf

NYC Request a Street Tree
<http://www.nycgovparks.org/trees/street-tree-planting/request>

NYC Plaza Program
<http://www.nyc.gov/html/dot/html/pedestrians/publicplaza.shtml>

Appendix A: Unit Turnover and Inspection Checklist

Energy Efficient Building Operators Training Apartment Unit Turnover Checklist

Building Address: _____ Unit: _____

A	General Health & Safety	Notes/Comments
1	Identify and repair all water leaks. All potential sources for mold & mildew are corrected	
2	Ensure all CO/Smoke detectors are operational with new back-up batteries	
3	Seal all plumbing & piping chases and all wall gaps against pests and air infiltration	
4	Seal all electrical wall outlets against pests and air infiltration	
5	Check all kitchen and bathroom GFI outlets by plugging in outlets without pressing the reset button	
6	Check all electrical outlets for proper function and check all breaker box components for proper function.	
7	Utilize green cleaning products for all cleaning activities. Utilize a HEPA vacuum when vacuuming.	
8	DHW temperature should not exceed 120° F	
B	Kitchen Areas	Notes/Comments
1	Exhaust vents are cleaned and free of debris—ensure exhaust is adequately exhausting air out of the kitchen	
2	Ensure all surfaces—countertops, cabinets, walls behind stove/sink, caulk, grout, etc. are water tight and free of mold & mildew	
3	Ensure all gaps behind appliances, cabinets, counters, and other areas are sealed against pest and air infiltration	
4	Kitchen stove/oven: Check for any gas leaks with a gas sniffer. Make sure the pilot light stays lit, and all components are clean. Make sure oven interior surfaces are clean and free of debris	
5	Kitchen refrigerator: Vacuum clean behind and around the refrigerator.	
6	Kitchen rangehood: Replace charcoal filter. Ensure fan is operational	
7	Check all plumbing and piping to repair any leaks or corrosion	
8	Check kitchen faucet aerator is less than 2.0 GPM	

C Bathroom Areas		Notes/Comments
1	Exhaust vents are cleaned and free of debris—ensure exhaust is adequately exhausting air out of the bathroom	
2	Ensure all surfaces exposed to water are water-tight and free of mold & mildew (shower walls, bathtub, caulk, grout, tiles)	
3	Check all plumbing and piping to repair any leaks or corrosion	
4	Ensure all gaps behind cabinets, counters, toilets, and other areas are sealed against pest and air infiltration	
5	Toilet should be 1.5 GPF—if higher, toilet must be replaced.	
6	Check toilet for any leaks—replace flapper and other components as needed. Ensure toilet is adequately sealed against leaks.	
7	Showerhead should be less than 2.0 GPM; bathroom faucet should be less than 1.5 GPM	
D Apartment Envelope (Windows, Doors, Walls)		Notes/Comments
1	Inspect window operation. Windows should have proper weatherstripping, should be air sealed, and should close/open properly. Repair windows as necessary.	
2	A/C sleeves should be tightly air sealed with an insulated panel if there is no A/C unit in use or operation	
3	Caulk and seal all wall outlets against pests & air infiltration, particularly those at or adjacent to an exterior wall.	
4	Entry door should close tightly, and be sufficiently weatherstripped to prevent pest and air infiltration.	
5	All hollow door frames should be sealed against pest and air infiltration	
E Heating Radiators and Convectors		Notes/Comments
1	Heating radiators should be vacuumed clean & free of debris and in functional shape. Straighten out bent radiator fins. Radiators with badly damaged covers and fins should be replaced.	
2	In 1-pipe steam systems, check radiator pitch	
3	In 2-pipe steam systems, check steam traps and radiator pitch	
4	Ensure that all thermostatic radiator valves are functional—replace defective units.	

Adapted from an Energy Efficient Building Operator's Training Course conducted by Bright Power, Inc. and Steven Winter Associates, Inc. for Community Weatherization Partners, Inc.

Appendix B: Green Property Management Schedule

	Property Owner	Property Manager
Start Up	<ul style="list-style-type: none"> • Adopt green policies. • Benchmark baseline energy & water use. • Identify buildings with high energy or water use. • Apply for resources (utility) to address high energy and water use buildings. • Target energy & water upgrades. 	<ul style="list-style-type: none"> • Review policies, tools, and vendor contracts for consistency with Green and Healthy Guide. • Become familiar with energy & water benchmarking data system. • Prepare report for owner identifying buildings with high energy use (>10 BTU/ft²/HDD) and identify potential energy saving opportunities. • Work with owner to identify buildings with high water use.
Monthly	<ul style="list-style-type: none"> • Meet Property Manager to review energy use. 	<ul style="list-style-type: none"> • Report energy use to owner. Identify high users.
Quarterly	<ul style="list-style-type: none"> • Review water use, pest, recycling, and other green issues. 	<ul style="list-style-type: none"> • Report water use, pest, recycling, and other green issues to owner.
Seasonal		<ul style="list-style-type: none"> • Remove AC units and insulate AC sleeves (Nov–Apr).
Annual	<ul style="list-style-type: none"> • Review energy and water usage. Identify buildings with greatest energy & water saving potential, plan for upgrades, evaluate performance of upgraded buildings, and integrate with capital needs planning. • Review compliance with green specifications, vendor contracts, and policies. 	<ul style="list-style-type: none"> • Review energy and water use with owner. Identify buildings with greatest energy & water saving potential and evaluate performance of upgraded buildings. • Provide owner update on compliance with green specifications, vendor contracts, and policies.
Bi-Annual	<ul style="list-style-type: none"> • Review and modify green & healthy policies. 	<ul style="list-style-type: none"> • Review green & healthy policies with owner.

Appendix C: Green Agenda Items

Sample Green Agenda Items Monthly Property Management Meeting

1. Review energy & water usage in the five most inefficient buildings
2. Review energy and/or water use after retrofits – if applicable
3. Review unusual energy or water usage spikes and responses
4. Review unusual activities (pest problems, water leaks, vacancy rates, etc.)

Appendix D: Smoke-Free Housing Survey

[Date]

Dear Residents:

Many apartment building owners are exploring strategies to create healthier environments within their buildings. Some are choosing to adopt “smoke-free” policies for a number of reasons: People who already suffer from an illness such as asthma, chronic bronchitis, heart disease, diabetes or cancer are particularly susceptible to the effects of secondhand tobacco smoke. Young children are also especially vulnerable to the dangers of breathing secondhand smoke, and on average are exposed to more of it than adults. In addition, smoking materials are a leading cause of residential fires in New York.

To better ensure the health and safety of all persons living here, we are considering adopting a smoke-free policy at the [building/complex]. We would like to hear from you!

Please fill out the survey below and return it to [name] by [date] so we may consider your views.

Sincerely,
The Management

Cut here 

1. Do you now smoke cigarettes or other tobacco products every day, some days, or not at all?

Every day Some days Not at all

2. Do you allow people, including yourself, to smoke tobacco products in your apartment?

Yes No

3. Have you smelled tobacco smoke in your home that comes from another apartment or outside?

Yes No

4. Does smelling tobacco smoke in your home bother you?

Yes No

5. Are you concerned about the health effects of secondhand tobacco smoke on you or someone you live with?

Yes No

Additional Comment: _____

6. Would you like this building to be smoke-free? (Meaning no smoking indoors, including in apartments)

Yes No

Additional Comment: _____

7. If yes to the above, would you prefer that smoking is prohibited everywhere on the property—both inside and outside?

Yes No

Additional Comment: _____

(Optional)

Name: _____

Phone: _____

Apartment #: _____

Appendix E: Two Shades of Green Benchmark Worksheets

Water Conservation

Date:	Two Shades Team Member:	Borough:
Organization:	Primary Contact:	Number of Units:
Site Name:	Address:	Number of Residents:

Intervention	Benchmarks + Steps	Status/Notes	Next Step	Assistance needed from TSG Team
<p>Water Conservation <i>Goal: Implement water conservation measures in one or more buildings in order to:</i></p> <ul style="list-style-type: none"> • Reduce the presence of mold (evidence identified by building staff and complaints from tenants) • Conserve water use • Control moisture • Reduce water bills 	<p>1. Monitor water usage and bills in all properties</p>			
	A) Gather water bills			
	B) Confirm meters for each building			
	C) Enter data in tracking software or spreadsheet			
	<p>2. Analyze and evaluate properties for water savings and identify what water conservation measures should be implemented.</p>			
	A) Develop baseline water usage in gallons/person/day and/or gallons/bedroom/day			
	B) Identify properties where water usage exceeds the target benchmark (greater than 55 gallons/person/day or 83 gallons/bedroom/day)			
	C) Conduct water assessment to document fixture specific water use in buildings exceeding water threshold (e.g., showerheads, faucets, toilet leakage)			
	D) In buildings that exceed water targets, obtain cost proposals to undertake water saving measures			
	E) Use a water conservation check list in tandem with anticipated payback to decide which water saving measures should be pursued.			

Intervention	Benchmarks + Steps	Status/Notes	Next Step	Assistance needed from TSG Team
<p>Water Conservation Goal: Implement water conservation measures in one or more buildings in order to:</p> <ul style="list-style-type: none"> • Reduce the presence of mold (evidence identified by building staff and complaints from tenants) • Conserve water use • Control moisture • Reduce water bills 	<p>3. Implement water conversation strategies and upgrades.</p>			
	<p>4. Provide resident education on water conservation measures and importance of reporting leaks.</p>			
	<p>A) Hold a tenant meeting to discuss simple water conservation strategies for residents and importance of reporting leaks. Also notify tenants about the water conservation measures going into building and discuss the global and local importance and benefits</p>			
	<p>B) Provide water conversation materials with simple steps to reduce water use</p>			
	<p>C) Provide information to tenants on the importance of reporting toilet and fixture leaks</p>			
	<p>D) Provide resident training at lease up</p>			
	<p>5. Train building Staff</p>			
	<p>A) Train building staff in simple cost-effective water conservation strategies and water benchmarking and tracking process</p>			
	<p>B) Review current Standard Operating Procedures to ensure it includes identifying and fixing problems that are wasting significant water and responding to resident complaints. Train building staff to check usage data for spikes and check meters at 3 am, when usage is low to identify leaks</p>			
	<p>6. Track water consumption to evaluate the effectiveness of completed water conservation measures</p>			
	<p>A) Quarterly review of water usage</p>			
	<p>B) Annually identify significant changes in water consumption, target buildings for water conservation efforts in the coming year, and evaluate the effectiveness of completed water conversation measures in terms of water consumption</p>			

Integrated Pest Management

Date:	Two Shades Team Member:	Borough:
Organization:	Primary Contact:	Number of Units:
Site Name:	Address:	Number of Residents:

Intervention	Benchmarks + Steps	Status/Notes	Next Step	Assistance needed from TSG Team
<p>Integrated Pest Management Goal: Implement building-wide IPM in order to:</p> <ul style="list-style-type: none"> • Reduce the presence of pest (evidence identified by building staff and complaints from tenants) • Reduce pesticide use; eliminate use of pesticide foggers, bombs and sprays 	<p>1. Review current pest control contract; determine whether current contractor provides IPM services and specifically what that would mean. If not, identify another company</p>			
	A) Hire a DEC licensed contractor with structural 7A license			
	B) Identify someone to do IPM coordination in the building			
	C) Implement new contract			
	<p>2. Train building staff about IPM and review Standard Operating Practices (SOPs)</p>			
	A) Review SOPs including garbage handling, cleaning schedules, and maintenance procedures to address leaks, seal holes, and respond to complaints and assure that SOP's are consistent with safe and effective pest reduction			
	B) Train building staff in IPM			
	<p>3. Notify tenants about new policy</p>			
	A) Have a tenant meeting to discuss IPM, its benefits, and ways to report problems			
	B) Underscore prohibition and dangers of using pesticide foggers, sprays, bombers and other illegal/hazardous pesticides			
	<p>4. Implement building-wide IPM policy</p>			
	<p>5. Monitor effectiveness and costs (less complaints, sightings, contract costs over the year)</p>			

Green Cleaning

Date:	Two Shades Team Member:	Borough:
Organization:	Primary Contact:	Number of Units:
Site Name:	Address:	Number of Residents:

Intervention	Benchmarks + Steps	Status/Notes	Next Step	Assistance needed from TSG Team
<p>Green Cleaning Goal: Transition properties to use green cleaning products in order to:</p> <ul style="list-style-type: none"> • Minimize the use of harmful or toxic chemicals • Ensure that property management staff and vendors use green cleaning supply products when cost-effective 	<p>1. Monitor and track current cleaning supply costs</p>			
	A) Collect and input current cleaning supply costs into a tracking spreadsheet			
	<p>2. Select a green cleaning vendor for at least one building</p>			
	A) Use the Green Cleaning Vendor criteria to select vendor			
	<p>3. Train building operation and maintenance staff on the benefits and how to use the green cleaning supplies</p>			
	A) Review existing Standard Operating Procedures including garbage handling, maintenance procedures and supplies to address ways to reduce harmful chemicals and toxins throughout building			
	B) Hold training led by vendor with building operation staff using cleaning products alongside management staff before the transition to green cleaning			
	C) Conduct one follow up training after 3 to 6 months to understand how transition process is going			
	<p>4. Provide tenant education and outreach</p>			
	A) Notify tenants of green cleaning transition via outreach materials			
B) Hold a tenant meeting to discuss benefits of green cleaning products and products you can make/use in apartments				

Intervention	Benchmarks + Steps	Status/Notes	Next Step	Assistance needed from TSG Team
<p>Green Cleaning Goal: Transition properties to use green cleaning products in order to:</p> <ul style="list-style-type: none"> • Minimize the use of harmful or toxic chemicals • Ensure that property management staff and vendors use green cleaning supply products when cost-effective 	<p>5. Evaluate effectiveness of green cleaning transition</p>			
	<p>A) Conduct a pre-post survey for maintenance staff and tenants to understand changes in perception and behavior</p>			
	<p>B) Continue to track green-ing cleaning vs. conventional cleaning costs to evaluate costs over time</p>			

Smoke-Free Housing

Date:	Two Shades Team Member:	Borough:
Organization:	Primary Contact:	Number of Units:
Site Name:	Address:	Number of Residents:

Intervention	Benchmarks + Steps	Status/Notes	Next Step	Assistance needed from TSG Team
Smoke-Free Housing Goal: Implement building-wide smoke-free housing policies to: <ul style="list-style-type: none"> • Reduce resident and staff exposure to secondhand tobacco smoke • Lower property damage costs from second-hand smoke in units • Decrease risk of fire 	1. Conduct Resident Survey on Smoke-Free Housing			
	A) On-site meeting between staff and DOHMH/Borough Smoke-Free Partnership			
	2. Draft smoke-free housing policy and lease language			
	A) Hold tenant education meeting on smoke-free housing			
	3. Implement a smoke-free policy			
	A) Improve access to smoking cessation services and treatment			
	4. Evaluation Post Implementation			
	A) Reduced complaints about secondhand smoke wafting in from other units			
B) Reduced turnover costs for apartments inhabited by smokers				

Active Design

Date:	Two Shades Team Member:	Borough:
Organization:	Primary Contact:	Number of Units:
Site Name:	Address:	Number of Residents:

Intervention	Benchmarks + Steps	Status/Notes	Next Step	Assistance needed from TSG Team
Active Design <i>Goal: Increase opportunities for active living for residents, staff and visitors by incorporating active design strategies into the building interior and exterior, and in the surrounding community where appropriate</i>	1. Inventory opportunities related to active design			
	A) Meet with managers and owners about benefits of active design			
	B) Involve building management/owners and potentially residents to conduct a walk-through of building interior, exterior and surrounding area to assess for active design opportunities and needs			
	C) Identify any known or potential financial or other resources including financial, volunteer or other that can assist with implementation of active design strategy(ies)			
	2. Identify project			
	A) Select potential active design strategy(ies)			
	B) Conduct tenant engagement activities to assess interest in and desire and need of potential active design strategy(ies)			
	C) Assess feasibility and potential impact			
	D) Finalize selection of strategy(ies) for implementation			
	E) Board vote and/or other needed approvals			
	3. Physical transformation or policy change			
	A) Develop work plan			
	B) Identify and obtain needed resources			
	C) Execute work plan			
	D) Press release/opening ceremony or other recognition			

Intervention	Benchmarks + Steps	Status/Notes	Next Step	Assistance needed from TSG Team
Active Design <i>Goal: Increase opportunities for active living for residents, staff and visitors by incorporating active design strategies into the building interior and exterior, and in the surrounding community where appropriate</i>	4. Maintenance and evaluation			
	A) Monitor effectiveness and other evaluation, including tracking use			
	B) Track costs and/or benefits of intervention			
	C) Track costs of operations and maintenance			



501 Seventh Avenue, 7th Floor
New York, NY 10018
(212) 455-9800
www.lisc.org/nyc