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Building Operational Guidelines

Operational Guidelines Mission Statement

We encourage the best practices for healthier living for residents and occupants, staff, and maintenance personnel by promoting a policy adopted in full to comply with Fitwel requirements, which focuses on indoor air and environmental quality with the intent to reduce respiratory issues and the transmission of airborne contagious diseases for all.

Operational Guidelines

Applying Healthy Building Operational Guidance will encourage the community to be mindful for the prospective well-being of themselves and of others by adopting the following operational policies and protocols from I to VIII:

Modified Implementation Date: October 7, 2026

This Building Operation Guidelines applies to the entire site including all premises within the following site:

- All commercial and/or residential land within the project site associated with the site's typical operations, including public infrastructure or rights of way.
- All on-site outdoor areas are accessible to project occupants.
- All on-site indoor and outdoor common areas are accessible to project occupants for each building within the site.

I. Tobacco- and Smoke-Free Policy:

○ **Rationale:**

8 Spruce prohibits all forms of smoking consumption, which exposure to secondhand smoke and increases the risk of cardiac and pulmonary conditions for both tobacco users and other occupants.

○ **Implementation Guidance:**

The Tobacco and Smoke-Free Policy applies for indoor and outdoor areas within 60 feet away. There is no designated smoking area and prohibits the use of all forms of smoking, tobacco, and unregulated nicotine products, including:

- Cigarettes and cigars (commercially or self-rolled)
- Pipes, hookahs or water pipes
- Electronic cigarettes
- Smokeless tobacco for placing in the mouth or nose obtain nicotine
- Tobacco use includes smoking, chewing, dipping, or any other use of tobacco products.

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II. Indoor Air Quality (IAQ) Policy

- **Rationale:**

Implementing an IAQ policy promotes a healthy and comfortable indoor environment for residents and occupants with the purpose of minimizing the contact of pollutants by confirming adequate ventilation and maintaining comfortable temperature and humidity levels to prevent the risk of respiratory issues such as allergies or asthma, and the transmission of airborne contagious diseases.

- **Implementation Guidance:**

This Indoor Air Quality (IAQ) Policy is designated for resident, occupant and building management to practice for a healthier Indoor Air Quality.

- **Management and Maintenance**

- ✓ Source Control

- Manage pollutant sources through all of the following: Properly sealing doors, floors, and windows
 - Regularly checking for and eliminating mold OR ensuring IAQ parameters are not conducive to mold growth
 - Installing appliances so that they vent to the outside OR have continual ventilation
 - Diluting and removing pollutants through ventilation
- Manage moisture through all of the following:
 - Using moisture tolerant materials in areas with high humidity and moisture, including kitchens, bathrooms, water closets, and maintenance rooms
 - Minimize cold gapping to prevent condensation and mold growth
 - Ensuring proper drainage
- Implement a building-wide smoke-free policy and ensure that no smoking is allowed within 60-feet or 20-meters from all building entrances.

- ✓ Housekeeping

- Detail best practices to improve the indoor air. Best practices may include:
 - Maintenance of interior plants (watering, pruning, and removal of dead or decaying plant matter etc.) where necessary to prevent mold growth

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- Regular disposal of garbage and other waste
- Hygienic storage of garbage and other waste, including no open-top waste bins
- Hygienic storage of foods, including refrigeration where necessary
- Prohibiting products or other sources of harmful or bothersome odors and contaminants from spaces where cleaning chemicals are stored (such as utility rooms) from impacting air quality with permanently ventilated areas

✓ Training

- Provide continuing education and training opportunities for those who operate and maintain the building air distribution systems, including:
 - Checking for mold.
 - Managing and monitoring air filters.
 - Checking air ducts.
 - Managing and checking the operations of the building's air system.
- Provide best practices for air quality improvement with all occupants, as follows: Checking for
 - mold.
 - Managing and monitoring air filters.

• Ventilation and Filtration

✓ Assessment

- Consult with a certified HVAC expert to assess the HVAC system and identify the following:
 - Ventilation needs based on occupancy levels, as determined by ASHRAE 62.1 - 2019 or EN 16798-3:2017:Part 3, CIBSE Guide.
 - The air changes per hour, equivalent air changes per hour, or volume per floor area capacity based on the design of the ventilation system
 - Opportunities to increase the outdoor air supply, ensure dilution of CO₂, and avoid over-ventilation.
 - Impacts of ventilation adjustments on energy use, thermal comfort, acoustic comfort, and maintenance needs

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- Filtration needs based on any recirculation of air, and applicable strategies for increasing air filtration grades needed according to outdoor air quality (such as Eurovent REC 4-23)
- ✓ Ventilation Enhancement
 - Avoid the blockage of ventilation supplies, exhausts and other grills
 - Demonstrate consideration of natural ventilation techniques where possible that take into account location, climate, and outdoor air quality, which can include any of the following:
 - Operable windows
 - Doors to the outside
 - Operable Skylights
 - Vents
 - Solar chimney
 - Wind Tower that can be closed during inclement weather conditions
 - Trickle ventilator with attenuation to natural ventilation openings in order to provide acoustic conditions as specified in ANSI S12.2
 - Other intentional strategies or devices in the building designed for ventilation through thermal, wind, or diffusion effects.
- ✓ For projects utilizing a natural ventilation system, align to the 2019 ASHRAE - ANSI standard where applicable.
- ✓ Detail regular ventilation for the building and ensure when operating and continuously occupied, the system meets one of the below as applicable to the building:

30% higher ventilation levels than those outlined in the relevant ASHRAE ANSI standard, as applicable to the building and space(s): • 62.1 - 2022: Commercial Buildings • 62.2 - 2022: Residential Buildings	OR	People Outdoor Air Rate (Rp): 10 L/s*person	OR	≥ 5 air changes per hour (ACH) in all applicable areas
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- **Filtration Enhancements**

- ✓ Filtration for centralized recirculated air systems:
 - When spaces are continuously occupied, install MERV 8+ filters
- ✓ Filtration for outdoor air intake air systems:
 - When spaces are continuously occupied, install MERV 13+ filters or ensure implementation of one of the following filtration or air treatment approaches:

UVGI luminaires	OR	UV-C in ducts or air handling units	OR	Mobile Filtration Units or portable air cleaners
Upper Room UVGI: ASHRAE GPC37: Guideline for the application of Upper Air (Upper Room) Ultraviolet Germicidal UV-C Devices to Control the Transmission of Airborne Microorganisms or ANSI/IES RP-44-21 Ultraviolet Germicidal Irradiation (UVGI)		UV-C: ASHRAE standard 185.1: method of testing UV-C lights for use in Air Handling Units of Air Ducts to Inactivate Airborne Microorganisms		• Units should be placed where air intake and discharge are not impeded • Devices may include any or combinations of air cleaning technologies (filters, sorbents, UVGI systems, etc.) • Manufacturer instructions should be used to guide placement and ensure devices are appropriately sized for the space in which they will be used, based on CADR.

- **Infection Risk Management Mode**

- ✓ Operational systems must have the capacity to align with ASHRAE Standard 241 during contagious disease outbreaks, as defined by the national, regional, and/or local public health authority.

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- **Maintenance**

- ✓ Describe a plan for regular maintenance of ventilation and filtration systems that is reviewed annually that includes the following:
 - Inspection of HVAC system and peripheral devices to check efficiency, air balance, filter status, and status of the mechanical systems
 - Replacement of filters and any worn or non-functioning parts as needed
 - Cleaning evaporators and condensers
 - Removals of standing water from drain pans
- ✓ Establish a notification system that allows building occupants to alert building management of potential indoor air quality issues
- ✓ Assign specific departments and/or personnel responsible for completing the above tasks
- ✓ Close off any gaps around air filters to minimize air moving around them instead of through them by measuring air drops to ensure filters are within their tolerance
- ✓ Inspection of upper room UVGI equipment to check performance and status of the germicidal irradiation systems by measuring radiance levels at least every 6 months

- **HVAC Operations**

- ✓ HVAC system operations for the building must:
 - be run during all occupied hours to ensure clean air enters and is distributed throughout the building
 - be run at a reduced ventilation rate of 0.3l/s/m³ (or 1 Air change/hour) for 1 hour ahead of operational hours to flush out contaminants

- **Humidity Control**

- ✓ Include strategies for controlling the relative humidity (RH), such as:
 - prevent infiltration by meeting one of the following:
 - sealing any cracks and gaps around windows, doors, lighting fixtures or any other areas
 - pressure testing near windows, doors, and light fixtures to limit infiltration
 - ensure pipe insulation meets requirements established in ASHRAE ANSI 90.1 - 2019 or BS 5422:2009.
- ✓ Outline strategies for microbe and mold control in applicable areas, such as:
 - regular inspections for condensation, water damage, and mold growth indoors OR monitor moisture and condensation levels outdoors

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- notification system to report mold or water damage
- use of mold-resistant materials
- support air flow with ventilation within all wet areas and areas susceptible to moisture
- implement protocol for drying any damp areas and fixing any leaks within 24 to 48 hours that includes:
 - A system for tenants or residents to report wetness or leaks within the building.
 - A protocol for building management to respond to all reports and discoveries of wetness or leaks within the building.
- **Managing Closures**
 - ✓ Ensure that in the event of closure of 2 weeks or more, the following steps are completed before re-occupancy:
 - Establish a temperature set point to ensure building does not drop below 55 F and does not go above 86 F (or 13 C to 30 C).
 - The building will be assessed for mold, excess moisture, and stagnant water, and any identified issues will be remediated.
 - If the HVAC system has not been active for 2 weeks or more, it should be operated for 48 - 72 hours to “flush out” the system and ensure the following:
 - After the “flush out” period, filters should be examined and replaced if necessary.
 - If odors are detected during the “flush out” period identify the source, and remediate any residual mold.
 - Develop a schedule for weekly inspection of the HVAC system for the first month of occupancy. These inspections can be gradually reduced to monthly or quarterly depending on the system’s maintenance needs.
 - Assess inlet plenums to ensure the vermin screen is clear of debris and no pooling of water has occurred within the plenum.
 - Check pre filters should for any visible signs of wetting and mold growth on the cardboard frame.
 - Evaluate all internal surfaces of AHU sections and internal surfaces of ventilation system ductwork through one of the following:
 - check for any visible signs of bacterial growth, including visible presence of mold or surfaces that are wet or slimy to the touch.

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- implement microbial surface sampling within AHU.
- Clean all cooling coils.
- Assess the base of cooling coils, drainage trays and glass traps for visible bacterial contamination, including visible presence of build up on water surface or internal surfaces that are wet or slimy to the touch.
- If a wet humidification system is installed, properly clean and recommission without fail prior to being put back into operation to ensure reenergized spores are not pumped into the airflow.
- If a system has been off for a longer period of time (6 weeks+), implement a full Ventilation Hygiene Risk Assessment that includes dust and microbial sampling of the internal surfaces of the ductwork.
- **Procurement**
 - ✓ Ensures that all new products and materials procured within the project meet the required thresholds from at least five of the product categories below:
 - **Materials**

For each product category selected, ensure products and materials are either naturally low-emitting products (stones, ceramics, concrete, untreated solid wood) or meet the applicable certification and testing standards below:

 - Interior Insulation: 100% of insulation
 - Flooring Systems: 100% of all systems
 - Ceiling Systems: 90% of systems by square feet or meters
 - Wall Paneling: 100% of all paneling including, but not limited to interior wall assemblies, gypsum board, doors, frames, wall coverings, window systems, and interior surfaces of exterior walls)
 - Paints and Coatings: 90% by volume for emissions and 100% for VOC content of paints and coatings applied on-site and used on the interior of the air barrier
 - Adhesives and Sealants: 90% by volume for emissions and 100% for VOC of adhesives and sealants applied on-site and used on the interior of the air barrier.
 - Furniture: 90% by cost of furniture
 - Composite Wood: 100% of composite wood for cabinetry, excluding flooring, ceiling, wall panels, or furniture.

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- **Materials Transparency**
For 50% of products or 25 distinct permanently installed products (including flooring, insulation, wet-applied products, ceiling and wall assemblies and systems, as well as other product types listed in this section), provide a publicly disclosed list of materials by the manufacturer, a disclosure organization or a third party through one of the following:
 - ANSI/BIFMA e3 Furniture Sustainability Standard: at least 3 points under either 7.5.1.3 Advanced Level in e3-2014 or 7.4.1.3 Advanced Level in e3-2012
 - Declare label by the International Living Future Institute
 - Health Product Declaration (HPD) published in the HPD Public Repository, or an Environmental Product Declaration (EPD) published in the EPD Public Library
 - Cradle-to-Cradle Certified product, or a product with a Material Health Certificate from the Cradle to Cradle Products Innovation Institute
 - Product Lens Certification by UL
 - Product Health Declaration by Global Green Tag
 - A manufacturer's inventory containing CAS numbers of all individual compounds down to 1,000 ppm (0.1%). If the product contains a trade secret compound, GHS hazards of category 1 or 2 are listed and a concentration range is provided for each undisclosed component.
- **Gas Stoves within Residential Projects**
 - Prohibit the purchase of new gas stoves and ovens within residential projects.
- **Accepted certification and testing standards:**
 - ✓ Certified to UL GREENGUARD Gold (accepted for all categories' VOC emission requirements except Composite Wood)
 - ✓ California Department of Public Health Standard Method V1.2 2017 (accepted for all categories' VOC emission requirements except Furniture and Composite Wood)
 - ✓ California Air Resources Board (CARB) 2007 Suggested Control Measure (SCM) for Architectural Coatings (accepted for Paints and Coatings VOC content requirements)

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- ✓ California Air Resources Board (CARB) requirements for ultra-low-emitting formaldehyde (ULEF) resins or no-added formaldehyde based resins (Accepted for Composite Wood)
- ✓ South Coast Air Quality Management District SCAQMD Rule 1113 (accepted for Paints and Coatings VOC content requirements)
- ✓ South Coast Air Quality Management District SCAQMD Rule 1168 (accepted for Adhesives and Sealants VOC content requirements)
- ✓ ANSI/BIFMA e3 2019 credits 7.6.1, 7.6.2, and 7.6.3 (accepted for Furniture)
- ✓ EPA TSCA Title VI for ultra-low-emitting formaldehyde (ULEF) resins or no added formaldehyde resins (NAF) (accepted for Composite Wood)
- ✓ AgBB Testing and Evaluation Scheme 2010 (accepted for all categories' VOC emissions requirements except Furniture)
- ✓ EN16402 (accepted for Paints and Coatings VOC content requirements)
- ✓ EN13999 (Parts 1-4) (accepted for Adhesives and Sealants VOC content requirements)
- ✓ Green Star – Interiors v1.2 credit 12 for Indoor Pollutants to show compliance with low-emitting materials (accepted for Paints and Coatings, Adhesives and Sealants, and Composite Wood)
- ✓ European Decopaint Directive (2004/42/EC) (accepted for Paints and Coatings, Adhesives and Sealants VOC content requirements)
- ✓ Canadian VOC Concentration Limits for Architectural Coatings (accepted for Paints and Coatings, Adhesives and Sealants VOC content requirements)
- ✓ Hong Kong Air Pollution Control (VOC) Regulation (accepted for Paints and Coatings, Adhesives and Sealants VOC content requirements)
- ✓ EU Directive 2004/42/CE “Paints Directive” (accepted for Paints)
- ✓ EN 13986 (accepted for Wood Paneling)
- ✓ 14080:2005 (accepted for Timber)
- ✓ EN 14342:2005 (accepted for Wood Flooring)
- ✓ EN 14041:2004 (accepted for Floor Coverings)
- ✓ EN 13964:2004 (accepted for Ceilings)
- ✓ EN 13999-1 (accepted for Floor Adhesive)
- ✓ EN 233:1999, EN 234:1997, or EN 259-1:2001 (accepted for Wall Coverings)
- ✓ Eurofins Indoor Air Comfort USA (accepted for all categories' VOC emission requirements except furniture)
- **On-going Construction and Renovations**
 - ✓ Includes a plan for managing indoor air quality during any construction and major renovations and prior to occupancy. The plan must at a minimum control for the following categories:
 - Moisture, such as:
 - storing all absorbent products and materials separately in areas that are protected from dust and moisture.
 - avoiding enclosing wet materials during construction.

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- Particulates, such as:
 - protecting permanently installed ventilation systems during construction
 - employing entryway systems at all construction site entrances and exits
- VOCs, such as:
 - storing VOCs separately from absorbent products and materials
 - installing all possible paints/coatings and adhesives and sealants prior to absorbent products and materials
- Outdoor emissions:
 - Developing a plan to protect occupied spaces from outdoor fumes generated by construction activities.
- Tobacco, such as:
 - prohibiting smoking within the construction site
 - Prohibiting smoking within 65 feet or 20 meters of building entrance and ventilation openings
- Ensuring that construction crews wear protective masks to protect workers from harmful chemicals used during construction and renovations, such as paints, spray foams, and other harmful materials.

III. Indoor Air Quality (IAQ) Assessment Protocol

- **Rationale:**

Regularly testing air quality levels increases awareness of specific contaminants and indoor air conditions, highlighting potential concerns and allowing for remediation — which can reduce risk of dizziness and respiratory issues including asthma and COPD.
- **Implementation Guidance:**

Incorporating Fitwel v3 Indoor Air Quality Assessment Protocol as follow below will guide how to regularly inspect air quality levels will help identify and mitigate potential health hazards associated with poor indoor air quality which leads to prospective respiratory illnesses, allergies, and other health problems.

 - Implementing the following Assessment Protocol to address IAQ concerns, such as by improving ventilation and cleaning practices.
 - The property addresses potential issues related to mold growth by requiring tenants to notify management of water leaks, excessive moisture, or mold growth. They also emphasize maintaining cleanliness to prevent mold.

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- Tenants should test alarms monthly, report any issues, such as beeping device to the Landlord/Property Management, and avoid tampering with the devices.
- Tenants are encouraged to prevent excessive smoke, odors, or other objectionable smells from emanating from their apartments.
- 8 Spruce implements a strict non-smoking policy that applies to the entire premises and areas within 60 feet of entrances, windows, doors and air-intake units.
- The Compliance Department shall annually schedule moisture testing.
- 8 Spruce manages and maintains occupancy levels throughout the project to ensure indoor air quality is not compromised.
- To ensure best practices in IAQ management operations, the 8 Spruce Operations Team is responsible for the following:
 - ✓ The installation and maintenance of smoke and carbon monoxide detectors in rental units. They are generally responsible for replacing alarms when they wear out.
 - ✓ Mechanical improvements such as upgrading HVAC units and ductwork, as well as rebalancing/recommissioning of ventilation systems, also providing air or air duct cleaning as needed
 - ✓ Supporting air flow with natural and/or mechanical ventilation, especially within all wet areas and areas susceptible to moisture.

When a further assessment is required, follow the protocol below:

Air Quality Metrics

- ✓ Indoor air quality assessment must include the following metrics:
 - The following air quality parameters must be monitored following the protocols under Section 3 to confirm compliance with the recommended parameters:
 - PM2.5
 - CO2
 - Temperature
 - A minimum of three of the following air quality parameters may be monitored OR tested (as listed) following the protocols under Sections 3 and 4:
 - TVOC or VOC
 - TVOC (monitored or tested)
 - All individual VOCs (tested):
 - Acetaldehyde
 - Acrylonitrile
 - Benzene
 - Naphthalene
 - Toluene

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- Relative Humidity (monitored or tested)
- Ozone (tested)
- CO (tested)
- Formaldehyde (tested)
- Nitrogen Dioxide - NO₂ (tested)

Monitoring Protocol

- ✓ Air quality monitoring must be conducted:
 - To continuously show monthly averages and peaks lasting for more than one hour during work hours while HVAC systems are operating at design parameters.
 - On each floor, every 3,500 square feet (or 325 square meters) or per Air Handling Unit (AHU) zone, whichever is more stringent.
 - Using monitors that meet all of the following requirements:
 - Has a data output of at least once every 5 minutes
 - Has a data loss rate of 10% or less
 - Has a minimum operating range for temperature of 0 - 40 °C (or 32 - 104 °F).
 - Has a minimum operating range for relative humidity of 5-85% RH, non-condensing
 - Requires permanent installations within 3-8 feet from the ground
 - Is calibrated and confirmed functional without defect prior to shipping.

Testing Protocol

- ✓ Air quality testing must be conducted:
 - annually post-occupancy in all required areas outlined in Section 1.
 - after any construction and major renovations prior to occupancy within all required areas outlined in Section 1.
 - post occupancy following all long-term shutdowns of the HVAC system (2 weeks or more), within all required areas outlined in Section 1.
 - on each floor, every 3,500 square feet (or 325 square meters) or per Air Handling Unit (AHU) zone, whichever is more stringent.
 - within a sample of 15% of all dwelling units, based on the total number of units (for multifamily residential and senior housing projects, only).

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- on 25% of all tenant occupied floors, based on the total number of floors, for multi-tenant projects.
- over a period of at least 24 hours.
- to show the average levels measured for each required zone.
- during work hours while HVAC systems are operating at design parameters.
- in the breathing area between 3 to 8 feet from floor level.
- using one of the following testing methods as applicable and as outlined in the IAQ assessment parameter chart below

Air Quality Improvement Protocol

- ✓ If the recommended limits for air quality metrics are not met after assessment, a protocol to improve the air quality will be implemented that includes the following:
 - Ventilation improvements, such as:
 - Natural ventilation, such as windows and doors
 - Mechanical ventilation enhancements
 - Air cleaning or purification systems, such as:
 - Particle removal, HEPA cleaning
 - Gaseous pollutant removal
 - UV-C Sanitation
 - Electronic air cleaners
 - Mechanical improvements, such as:
 - Upgrading HVAC unit
 - Upgrading HVAC ductwork
 - re-commissioning/rebalancing of ventilation systems
 - Occupancy management, such as:
 - Reduce occupancy levels
 - implementing/optimizing a demand-controlled ventilation system.

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Indoor Air Quality Assessment Parameter Chart

INDOOR AIR QUALITY ASSESSMENT PARAMETER CHART								
ALL REQUIRED	Parameter		Assessment Type	Threshold	Testing Process	Testing Specifics	Monitoring Process	Improvement Specifics
	PM2.5		Monitoring	less than 12 µg/m³	N/A	N/A	IAQ Sensor	HEPA
	CO2		Monitoring	less than 1000 ppm.	N/A	N/A	IAQ Sensor	Carbon filters
	Temperature		Monitoring	maintained within from 68-79F (20-26C)	N/A	N/A	IAQ Sensor	
CHOOSE THREE								
	TVOC OR VOCs	TVOC	Testing or Monitoring	less than 500 µg/m³ or 132.73 ppb (ug/m3 = ppb * 3.767)	ISO: 16000-6 (TVOC), EPA Compendium Methods IP-1, EPA Compendium Methods TO-1, TO-11, TO-15, or direct reading	N/A	IAQ Sensor	Photocatalytic Oxidation, Bipolar Ionisation, Carbon filters
		VOC (all individual VOCs are required)	Testing	Acetaldehyde: 140 ug/m3 or lower	– DNPH-coated silica adsorbent via pumped or passive sample – HPLC-UV (EPA compendium IP-6) pumped sampling analysis	60 minute sample	N/A	Photocatalytic Oxidation, Bipolar Ionisation, Carbon filters
			Testing	Acrylonitrile: 5 ug/m3 or lower OR Caprolactam: 2.2 ug/m3 or lower	pumped sampling	60 minute sample	N/A	Photocatalytic Oxidation, Bipolar Ionisation, Carbon filters
			Testing	Benzene: 10 ug/m3 or lower	pumped sampling	60 minute sample	N/A	Photocatalytic Oxidation, Bipolar Ionisation, Carbon filters
			Testing	Naphthalene: 9 ug/m3 or lower	pumped sampling	60 minute sample	N/A	Photocatalytic Oxidation, Bipolar Ionisation, Carbon filters
			Testing	Toluene: 300 ug/m3 or lower	pumped sampling	60 minute sample	N/A	Photocatalytic Oxidation, Bipolar Ionisation, Carbon filters
	Relative Humidity		Testing or Monitoring	between 30-60% for temperatures 1 degree Fahrenheit or higher; between 20-60% for temperatures 0 degrees Fahrenheit or below	handheld device, direct reading	2 readings a minimum of 2 weeks apart	IAQ Sensor	Humidifier, Dehumidifier
	Ozone		Testing	less than 0.07 ppm	diffusion tube	2-4 week exposure	N/A	Carbon filters
	CO		Testing	less than 9 ppm	handheld device, ISO 4224, EPA Compendium Methods IP-3, direct reading	2 readings a minimum of 2 weeks apart	N/A	Carbon filters
	Formaldehyde		Testing	less than 20 ug/m3 or 18 ppb	methods in accordance with IP-6, ISO 16000-3, ASTM D5197, or NIOSH 2016	breathing zone (3-8 feet above finished floor), test 2 times per location (at least 60 minutes apart within a 24 hour period) and report the average levels measured for each zone	N/A	Photocatalytic Oxidation, Bipolar Ionisation, Carbon filters
Nitrogen Dioxide (NO2)		Testing	less than 0.2 ppm 8-hour TWA (pulled from ACGIH) OR annual average of less than 40 ug/m3 or 21 ppm (pulled from WHO)	diffusion tube	2-4 week exposure	N/A	Carbon filters	

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IV. Integrated Pest Management (IPM)

- **Rationale:**

Utilizing the IPM method shall direct technicians to safely practice when using products that contain pesticide and use these products as last remedy when the non-chemical prevention was not effective as initiative plan to minimize the impact of site management practices on the local ecosystem, and to reduce exposure of occupants, staff, and maintenance personnel to potentially hazardous chemical, biological and particle contaminants.

- **Implementation Guidance:**

This IPM Plan shall govern all components of pest management at the project building and site. The practices identified in this Plan shall be wholly adopted and used in 100 percent of the pest management scenarios at 8 Spruce. The procedures and strategies to meet the goals and intent of this policy are the In-Field Operational Standards that are utilized in an IPM Program.

Pest inspections

Detailed inspection of the premises for the presence of pests, signs of past and present pest activity. Conducive conditions of structural design and sanitation practices/levels that would attract pests to the structure as well as creating breeding/harborage areas.

Pest population monitoring

Use monitoring and control devices to determine the presence or absence of pest activity within the building structure.

Action thresholds

A threshold is the boundary between a tolerable and an intolerable level of a pest. The higher the threshold, the more pests can be tolerated. Some levels of pest presence, except in the cases of a few serious health or quarantined pests, can usually be tolerated.

Integrated Pest Management is not geared toward eradication of the pest. The goal is to reduce the pest below the level where harm will occur. As it relates to urban pest management, specifically multi-unit; multi-family dwellings, harm may be related to economics, aesthetics, tolerance, or human health. The IPM program herein emphasizes inspection, monitoring and the judicious use of pesticides when warranted, and only in the presence of confirmed activity or evidence thereof. This IPM program does not allocate for the use of pesticides on a predetermined calendar basis, nor does it employ the use of pesticides for prophylaxis. If, and when, pesticide use is deemed necessary, low-impact materials will be utilized first, e.g., meta-active baits. If residual pesticides are to be used, they will only be applied in a manner consistent with its labelling. The

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following pest specific thresholds define at what point action must be taken, and the use of pesticides is to be considered.

Cockroaches: American and Oriental

- Indoors: two cockroaches.
- Outdoors: five cockroaches if observed on the structure itself.

Cockroaches: German and Brown-banded.

- Indoors: two cockroaches.
- Outdoors: N/A

Ants (excluding Carpenter)

- Indoors: 10 ants.
- Outdoors: 10 ants observed on the structure itself.
 - ✓ No treatment is necessary if only observed foraging in landscapes.

Ants (carpenter)

- Indoors: 10 ants.
- Outdoors: 10 ants if observed on structure itself, or if ant colony is suspected inside or within 25 feet of the structure.

Grain and Flour Pests (stored product insects)

- Indoors Only:
 - ✓ If found in food for human consumption: one/package or container
 - ✓ If found in pet food: five if escaping from packaging
 - ✓ If found in pheromone traps: two of any one species (total of all traps).

Mice

- Indoors: any mouse sighting or fresh evidence of mice (e.g., new mouse droppings, tracks, etc.)
- Outdoors: any noticeable burrows or activity under or around the structure within 25 feet.

Rats

- Indoors: any rat sighting or fresh evidence of rats (e.g., new droppings, tracks, etc.).
- Outdoors: any active burrows or activity under or within the structure within 50 feet.

Pest Technicians, Select Exterminating are on demand and on-site to inspect, report and provide a control plan to determine the point at which pest presence becomes a nuisance, health hazard, or economic threat, prompting the need for pest control action

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management. The Services shall include the control and eradication of, but not be limited to cockroaches, ants, flies, fleas, rodents, crickets, silverfish, beetles, spiders, mites, wasps, millipedes, centipedes, mice, rats, and bed bugs.

Implementing all the following non-chemical prevention and control methods:

- Implement the sanitary and exclusionary actions needed to prevent pest survival within the building structure.
- Use monitoring and control devices to determine the presence or absence of pest activity within the building structure.
- Re-Evaluate Management Strategies to determine if pests are present and activity continues after all measures have been implemented, determine what IPM Products (always implementing the least toxic and least invasive to manage/eliminate pest activity) to utilize.
- Re-inspect and evaluate the effectiveness of all utilized management methods on control and management of targeted pests. If activity continues or management practices are not sufficient, revise management programs and tools to effectively manage/eliminate pest activity. If specific products or practices need to be incorporated outside the IPM Program, meet and review proposed strategies with building management team before continuing with successive steps to eliminate populations and activity.
- Contractor, Select Exterminating may utilize approved control methods for effectively managing the rodent population, including bait stations, glue traps, snap traps and other legally permissible control methods.
- Mechanical methods (such as using trapping devices, light traps, snap traps or glue boards, modifying pest habitats)
- The contractor shall implement an effective management and control plan; Such plan must focus on maintaining complete sanitary standards in and around all buildings at the Property.
- Structural methods - Contractor shall only employ labor in connection with the services capable of working harmoniously with Residents Services and Tradesmen to improve non-chemical prevention by the following control methods:
- Environmental methods (such as improving sanitation, removing clutter, implementing cleaning protocols, upkeep of landscaping, keeping refuse in tight containers, locating waste containers away from building)
- Structural methods (such as adding physical barriers, fixing leaking pipes, sealing cracks, and using air curtains).

Recordkeeping

Recordkeeping is required to demonstrate ongoing compliance with the IPM plan. All applications of pesticides shall be electronically tracked and stored as per Federal and/or State specific regulations inclusive of, but not limited to the following:

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- ✓ Application Date & Time
- ✓ Location
- ✓ Target Pest
- ✓ Pesticide Trade Name
- ✓ Pesticide Active Ingredient
- ✓ EPA Registration Number

Preventative Maintenance Report

- Bait Station Map.
- Best Practices Monthly Update Report.
- Monitor weekly schedule and coordinate with the Supervisor.
- If pesticides are used for the pose of least possible hazard and are used final alternative when all other control strategies have proven to be unsuccessful.
- The contractor is responsible for comprehensive Pest Control services and Integrated Pest Management to outdoor spaces and building areas including but not restricted to the following areas of service.
- Pest control technicians will section off work area with appropriate warning signs when in need to protect passing tenants and occupants from entering the work area, for any applicable areas and working stations.
- The contractor shall perform Services during normal working hours, unless special treatments have been pre-arranged and approved by the owner. The scheduled maintenance service shall be twice a month 24 weeks per year on a weekday during the daytime hours.
- Property management team should send Safety Data Sheet (SDS) documents to residents upon treatment request either by mail or email.
- Prohibit aerial spraying to reduce drift to surrounding areas throughout the property, especially within the outdoor common areas due to on-site proximity to the amenities and Residential Entrances.

Identification

Identification of structural pests (cockroaches, mice, rats, etc.) as well as occasional invaders and other animals/organisms that may enter the building structure and affect the tenants and or the building structure.

Documentation & Communication

Document and Communicate the Critical Control Points that are occurring in the facility or could allow pests to become established within the building structure. Provide specific recommendations to designated contact personnel that will help eliminate conducive conditions that pests will utilize to survive. These conditions and recommended corrective actions will be followed up on in subsequent inspections to ensure that required corrective action has been taken.

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- Monitor pest populations, set action thresholds, and implement non-chemical prevention and control measures before applying pesticides
- Use pesticides as a last resort if monitoring indicates that non-chemical prevention and control methods are not working
- If pesticides are needed, use targeted applications specific to the issue pest and start with least toxic substances

Safe Practices

If or when an action threshold is met, and the use of an approved pesticide is necessary; both human and environmental exposure will be minimized by only applying pesticides in a manner consistent with their EPA approved label.

V. Safe Chemical Storage

○ **Rationale:**

Ensuring that chemical products are either third-party verified as safe, or that their storage areas are properly ventilated, reduces the risk of exposure to airborne toxins and potential resultant symptoms, including wheezing, asthma, allergic reactions, and skin irritation.

○ **Implementation Guidance:**

Ensure that all chemicals are stored safely within all the buildings and are stored in a space with separate source ventilation unless the chemicals meet one of the following qualifying standards:

- Store chemicals in a well-ventilated area: This helps disperse fumes and reduces the risk of inhalation hazards.
- Ensure proper ventilation for chemical storage rooms: property must have a dedicated chemical storage room for the specific ventilation requirements outlined in the Building Code, which applies to all chemicals unless it meets one of the following qualifying standards:
 - ✓ Green Seal
 - ✓ California Code of Regulations
 - ✓ Ecologo
 - ✓ EPA Safer Choice
 - ✓ ISO 14024-compliant (Type 1) Ecolabel.
- Keep incompatible chemicals separate: Do not store chemicals together that could react dangerously if mixed. For example, acids and bases should be stored apart.
- Follow specific guidelines for different types of chemicals: Flammable gases, liquids, and solids, as well as corrosive or toxic substances, require specific storage procedures. Consult resources such as the FDNY's NYC Fire Code Guide for detailed information on handling and storing flammable liquids.
- Avoid using storage rooms for other purposes: Dedicated chemical storage rooms should not be used for activities like mixing chemicals or general storage.

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- Ensure proper ventilation for chemical storage rooms: If you have a dedicated chemical storage room, it must meet specific ventilation requirements outlined in the Building Code.
- Refer to the 8 Spruce 's House Guidelines: like many other property managements, they have specific rules regarding the types of items that can be stored and how they should be disposed of. If in doubt, contact 8 Spruce Property Management for specific instructions on chemical storage and disposal within the building.
- Dispose of hazardous materials properly: NYC has specific guidelines for disposing of hazardous waste. 8 Spruce residents should consult NYC.gov's resources regarding waste disposal, including instructions for batteries and other potentially hazardous items.
- Report any concerns: If you have concerns about potential exposure to hazardous materials or require assistance with chemical storage, contact 8 Spruce management.

VI. Chemical Purchasing Policy

○ **Rationale:**

A chemical purchasing policy can ensure that materials brought into the building will conform to standards that preserve high Indoor Air Quality (IAQ), contributing to enhanced respiratory and mental health.

○ **Implementation Guidance:**

This guideline applies to all purchases made within the buildings to ensure Facility Operations and suppliers meet specific criteria related to chemical quality, safety, and regulatory compliance. All vendors must be approved through RealPage Vendor Credentialing in compliance with 8 Spruce for qualification and background check. However, some chemicals may pose greater risks and require extra precautions.

• **Procurement Policy**

- ✓ Cleaning chemical products and materials must meet the applicable certification and testing standards below:
 - Non-disinfectant cleaning products meet one of the following:
 - Certified by the Global Ecolabelling Network (GEN)
 - EPA's Comprehensive Procurement Guideline (CPG) Program, with a listing under the CPG Product Supplier Directory
 - EPA's Safer Choice Label
 - Ecologo Certified
 - Green Seal Certified
- ✓ Disinfectants must meet all the following:
 - Follow CDC and manufacturer guidelines for safe use

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- Be listed on EPA List N and contain any the following safer active ingredients:
 - Hydrogen peroxide
 - Ethyl alcohol/ethanol
 - Citric acid
 - L-lactic acid
 - Caprylic acid
 - Thymol
- ✓ Pesticides must meet one of the following:
 - Use Tier 3 pesticides as identified by San Francisco hazard tier system
 - Use pesticides listed in San Francisco Reduced Risk Pesticide List
 - All active substances are marked EPA approved label.
 - All active substances are cataloged as “low risk” in the EU Pesticides Database.
 - All active substances are marked as “Approved” in the EU Pesticides Database and are either classified as Class U or not classified in the latest version of “The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification.”
- **Inventory + Purchasing**
 - ✓ Ensure that an inventory is created and maintained of all chemical products and materials that meets all of the following:
 - Includes the following information for each chemical product and material:
 - product name or identifier on the label
 - pricing
 - manufacturer and supplier information.
 - Identifies the risks of chemical products and materials with Safety Data Sheets (SDSs) for all products and materials that includes the following information:
 - the properties of each chemical
 - the potential health hazards
 - protective measures and safety precautions for handling, storing, and transporting the chemical
 - recommended or intended use of the chemical
 - restrictions on use (including recommendations given by the manufacturer or supplier).
 - Designates a person(s) responsible for obtaining and maintaining the SDSs.

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- Includes a form for requests, orders and approvals.
- Outlines the process for approving and adding chemicals to the purchasing list.
- ✓ Establish a procurement plan to replace all non compliant chemical products and materials that meets the following:
 - Identify all non compliant chemical products and materials.
 - Create a list of compliant and approved chemical products and materials that can be purchased by the supplier.
 - Ensure all new chemical products and materials purchased are on the approved chemical list.
- **Materials Transparency**
 - ✓ Ensure that the following materials transparency information is accessible to project occupants for all chemical products, materials used and purchased within the project:
 - Safety Data Sheets (SDSs) or product information for all chemical products and materials that identifies all of the following:
 - the properties of each chemical
 - the potential health hazards
 - protective measures and safety precautions for handling, storing, and transporting the chemical
 - recommended or intended use of the chemical
 - restrictions on use (including recommendations given by the manufacturer or supplier).
 - Protective measures for safe handling practices and storage that are implemented within the project.
 - Includes a form for concerns, questions, or requests relating to the chemical products and materials used.
 - ✓ Share the materials transparency information with all occupants through one of the following:
 - tenant lease or manual
 - a digital platform, such as a website or digital application
 - communication material, such as notification emails or newsletters.

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VII. Water Management Plan

- **Rationale:**

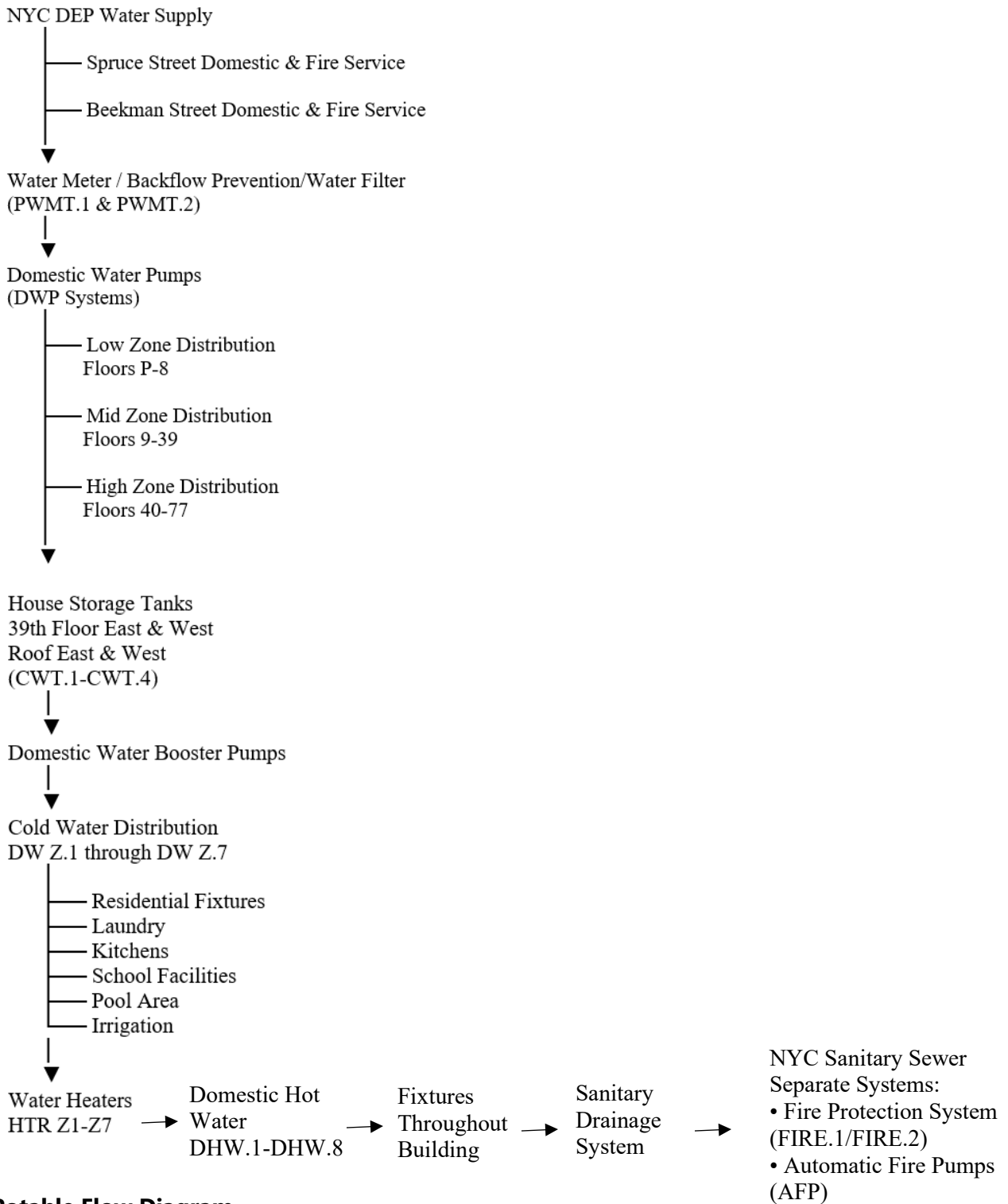
Developing, implementing and publicizing a comprehensive water management protocol helps ensure drinking water quality and feelings of safety, increasing water consumption and associated nutritional benefits, while decreasing risk of exposure to water pathogens and contaminants.
- **Implementation Guidance:**

Management Teams must use the document as guidance to detail all of the following components implemented within this project. Property Management must order annual cleaning to the water tanks and report results for bacteriological tests through a certified Laboratory.
- **Water Management Team**
 - ✓ Property Management Team
 - ✓ Technical Experts (Vendor)
- **Water System**

8 Spruce's Water System Flow Diagram (Process Flow Diagram) shown below:

 - connections to external water sources
 - distribution system for drinking water supply, including the following:
 - receiving
 - cold water distribution
 - heating methods
 - hot water distribution
 - waste (water to drain or sewer)
 - location of hot tubs, water heaters or boilers, and cooling tubs
 - location of decorative water features
 - location of water-based safety equipment, including:
 - fire sprinkler systems
 - eye wash stations

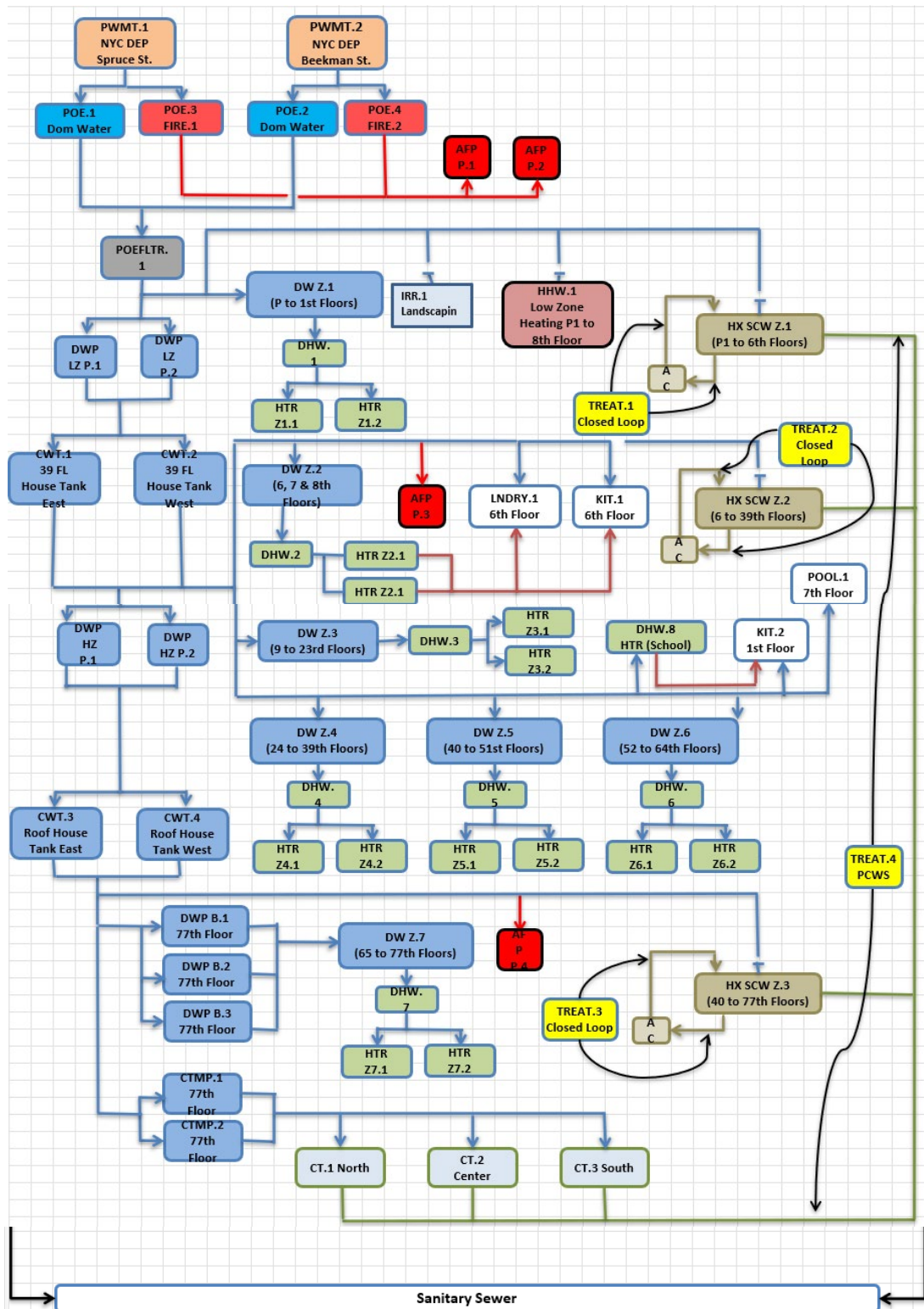
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Potable Flow Diagram

All colored systems shown in the flow diagram are CLs.

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Process Flow Diagram above connections to external water sources

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Connections to External Water Sources

The building receives potable water from the New York City Department of Environmental Protection (NYC DEP) through two service connections:

1. Spruce Street Water Service (PWMT.1)
2. Beekman Street Water Service (PWMT.2)

Each service supplies domestic water and fire protection water to the building. Water passes through metering and backflow prevention equipment prior to entering the domestic water distribution system.

distribution system for drinking water supply, including the following:

Drinking Water Distribution System

Receiving

Potable water enters the building from NYC DEP through dedicated domestic water service entrances and water meter assemblies. Water is routed through point-of-entry treatment and monitoring equipment before entering building distribution piping.

Cold Water Distribution

Domestic water booster pumps distribute water to seven pressure zones:

Zone	Floors Served
DW Z.1	P-Level to 1st Floor
DW Z.2	6th-8th Floors
DW Z.3	9th-23rd Floors
DW Z.4	24th-39th Floors
DW Z.5	40th-51st Floors
DW Z.6	52nd-64th Floors
DW Z.7	65th-77th Floors

House tanks provide water storage on the 39th floor and roof.

Water Heating Methods

Each domestic water pressure zone is served by dedicated water heating equipment identified as:

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- HWH Z1.1 / HWH Z1.2
- HWH Z2.1 / HWH Z2.2
- HWH Z3.1 / HWH Z3.2
- HWH Z4.1 / HWH Z4.2
- HWH Z5.1 / HWH Z5.2
- HWH Z6.1 / HWH Z6.2
- HWH Z7.1 / HWH Z7.2
- HWH School Water Heater

These heaters produce domestic hot water for building occupants and common-area facilities.

Hot Water Distribution

Domestic hot water systems are designated:

- DHW.1
- DHW.2
- DHW.3
- DHW.4
- DHW.5
- DHW.6
- DHW.7
- DHW.8

Hot water is distributed to fixtures located within the corresponding pressure zones.

Sewer

All plumbing fixtures are discharged to the sanitary drainage system, which conveys wastewater to the municipal sanitary sewer system.

Location of Hot Tubs, Water Heaters, Boilers, and Cooling Towers

Water Heaters

Water heating equipment is distributed throughout the building mechanical systems and is identified as HWH Z1 through HWH Z7.

Cooling Towers

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Cooling towers are located on the 77th Floor Mechanical Level:

- CT.1 North
- CT.2 Center
- CT.3 South

Served by condenser water treatment and heat exchanger systems.

Pool / Water Recreation Feature

A swimming pool is identified on the 7th Floor:

- POOL.1

No hot tubs or spas are provided.

Decorative Water Features

The water feature is located on the P1 Level and pumps water through 5 pumps to the fountains in the West Plaza.

Water-Based Safety Equipment

Fire Protection

The building contains dedicated fire protection systems including:

- FIRE.1
- FIRE.2
- AFP P.1
- AFP P.2
- AFP P.3
- AFP P.4

These systems provide fire sprinklers and standpipe protection throughout the building.

Eye Wash Stations

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No eyewash stations.

Safety Showers

No emergency safety showers

Water Use Descriptions

The potable water system at 8 Spruce Street receives water from two independent municipal service connections supplied by the NYC Department of Environmental Protection. Water enters the building through metered domestic water services and passes through point-of-entry treatment, monitoring, and backflow-prevention equipment on the P1 level. One service entrance is on the north side of the building along Spruce Street, and the second is on the south side along Beekman Street.

Domestic water booster pumps distribute cold water throughout the building using multiple pressure zones designed to serve the 77-story structure. Intermediate potable water storage tanks located on the 39th floor and roof provide operational storage capacity, pressure stabilization, and distribution to upper building zones. Domestic cold water is distributed to residential apartments, amenity spaces, public areas, kitchens, laundry facilities, school facilities, irrigation systems, water features, pool systems, and other occupied areas throughout the building.

Cold water serving domestic fixtures is supplied directly to fixtures requiring cold water service or routed through dedicated domestic water heating equipment serving each pressure zone. Domestic water heaters generate hot water which is distributed through dedicated domestic hot water systems serving sinks, lavatories, showers, bathtubs, kitchen fixtures, janitorial fixtures, and other plumbing fixtures requiring hot or tempered water. Hot water recirculation systems maintain system temperatures and reduce delivery time to end-use fixtures.

The building also contains separate fire protection systems supplied through dedicated fire service infrastructure and fire pump equipment. Fire protection pump equipment is located on the P1, 39th Floor, and 76th Floor mechanical levels, providing fire sprinkler and standpipe coverage throughout the building. These systems are maintained separately from the domestic potable water distribution system except where approved cross-connections are protected by code-compliant backflow prevention assemblies.

Cooling tower systems serving the building HVAC infrastructure are located on the 77th Floor mechanical level. The cooling towers utilize treated condenser water loops, heat exchangers, and water treatment systems to support building cooling operations. These systems remain separate from the potable water system except where makeup water is provided through approved backflow prevention devices.

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The building includes a swimming pool located on the 7th Floor and associated pool water treatment and circulation equipment. The pool system receives water separately from the domestic potable water distribution system and treats it in accordance with applicable operating requirements.

The sanitary drainage system collects wastewater generated from residential fixtures, kitchens, laundry facilities, pool-related operations, mechanical equipment, and other plumbing fixtures throughout the building. Wastewater is conveyed through the building sanitary piping network and discharged to the municipal sanitary sewer system.

Overall, the building water system consists of municipal potable water supplies, domestic cold water distribution, domestic hot water generation and recirculation, fire protection systems, cooling tower systems, irrigation systems, pool systems, water features, and sanitary drainage systems that collectively serve the residential, educational, amenity, and operational functions of the facility.

Hazards

- Identify hazards (such as physical, microbial, or chemical) and characterize the risks for contamination of drinking water quality for all of the following, as applicable:
 - ✓ Physical hazards, including high water temperatures
 - ✓ Chemical hazards, including:
 - old pipes that leach metals into water
 - low or no residual oxidant or available water treatment
 - ✓ Microbial hazards in areas with major water stagnation either by design (such as a cap) or lack of use (unused fixture)
 - ✓ Presence of scale, debris, algae, or other commensurate organisms in the water system or equipment served by the system
 - ✓ Presence of backflow problems or cross-connection between water systems with different uses and/or purposes.
- Determine hazard control measures that can be applied to reduce risk of contamination, such as:
 - ✓ flushing protocol with frequency (daily/weekly/monthly) and duration (minutes), including:
 - hot and cold-water systems will be flushed at all points of use within a building
 - hot water will be flushed until it reaches its stabilized maximum temperature and where possible be delivered at $\geq 120^{\circ}\text{F}$.
 - ice machines will be cleaned and disinfected according to manufacturer's instructions prior to return to use following prolonged shutdown. Any ice that has been sitting in the ice machine reservoir

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for greater than one week will be discarded and replaced with newly made ice.

- ✓ Provide backflow preventers to prevent cross connections at:
 - incoming mains cold water point of entry to the facility
 - fire sprinkler systems and irrigation systems to domestic cold water
- ✓ maintaining water heaters at appropriate temperatures as recommended by the manufacturer and establish temperature setpoints for water heaters at least 140°F, and higher if possible, taking scalding prevention into consideration.
- ✓ replacing old piping and fixtures, including removing or draining “dead legs” (pipes abandoned or inadequately decommissioned during construction or renovation)
- ✓ continuously maintaining and monitoring disinfectant and chemical levels.
- ✓ for water-based safety equipment, perform a review of their current practices and protocols to confirm that regular flushing, cleaning, and disinfection of these systems are conducted in accordance with manufacturers’ specifications.
- Determine how control measures can be regularly monitored, including through:
 - ✓ visual inspections
 - ✓ checking disinfectant levels
 - ✓ checking temperatures using calibrated thermometers,
- Establish interventions and/or contingency responses (predetermined corrective actions) to bring control measures out of range or above limits back into range, such as the following:
 - ✓ bring temperature into range when water temperature is too high
 - ✓ call service tech to repair when equipment pump fails
 - ✓ flush fixture for 3 minutes when oxidant levels are low.

CDC Controlling Legionella Guidance – Information captures shown below:



Monitoring Building Water

For Public Health
MAR. 15, 2024

KEY POINTS

- It's important to monitor the temperature, disinfectant residuals, and pH of building water, and identify areas where water moves slowly.
- Promptly addressing any identified issues can help reduce the risk of *Legionella* growth and spread within a building's water system.



Measure water temperature

Legionella grows best between 77°F–113°F (25°C–45°C). There's potential for *Legionella* growth in the absence of other *Legionella* controls under either of the following conditions:

- Cold water temperatures rise above 77°F (25°C)
- Warm water temperatures fall below 120°F (49°C)

Cold water guidance

Store and circulate cold water at temperatures below 77°F, although *Legionella* may grow at temperatures as low as 68°F (20°C).

Hot water guidance

Store hot water at temperatures above 140°F (60°C). Ensure hot water in circulation doesn't fall below 120°F (49°C) and recirculate hot water continuously, if possible.

Maintain water heaters at appropriate temperatures while following local and state anti-scald regulations. Sometimes maximum temperatures allowed by a state may be too low to limit *Legionella* growth. Engineering controls that mix hot and cold water together at or near the point of use can both:

- Reduce the risk of scalding
- Allow water in pipes to remain hot enough to limit *Legionella* growth

Tip

Measure the time it takes for hot water to reach the maximum temperature. This is an indication of how quickly or efficiently hot water travels in the system.



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Measure disinfectant residual

Maintaining a disinfectant residual throughout a system can help prevent *Legionella* growth.

Action: Measure the disinfectant residual to confirm its presence.

Note the difference between the disinfectant residual value at the water supply and at fixtures.

Did you know?

The difference between incoming and point-of-use disinfectant residual values can indicate an issue. Water age, sediment and biofilm, and warm temperatures are all things that increase depletion of disinfectant residuals.



Measure pH

Certain disinfectants work best within an optimal pH range. Learn more from the Environmental Protection Agency at [Technologies for *Legionella* control in premise](#)

[plumbing](#)  https://www.epa.gov/sites/default/files/201609/documents/legionella_document_master_september_2016_final.pdf

Identify areas where water moves slowly

Slowly moving or stagnant water increases water age, which provides opportunities for *Legionella* growth. Increased water age also contributes to disinfectant residual loss and water temperatures favorable for *Legionella*.

Action: Look for faucets or fixtures that aren't used regularly and flush them to maintain water flow.

Resources

[ASHRAE Guideline 12](#)  | <https://www.ashrae.org/technical-resources/standards-and-guidelines/read-only-versions-of-ashrae-standards>

[CDC toolkit: Controlling *Legionella* in common sources of exposure](#) <https://www.cdc.gov/control-legionella/php/toolkit/control->

[CDC's *Legionella* environmental assessment form marking guide](#)  <https://www.cdc.gov/investigate-legionella/legionella-environmental-assessment-marking-guide-508.pdf>

[CSTE resource: *Legionella* Remediation Options for Building Water Systems](#)  https://cdn.ymaws.com/www.cste.org/resource/resmgr/resources/CSTE_Legionella_Remediation_.pdf

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Water Management Operations

Develop procedures to confirm the water management program is operational throughout the building water system

- verification: confirm that program is being implemented as designed (e.g. keeping records that WMP team did what they said they would do)
- validation: confirm program has been implemented as designed and is effectively controlling hazardous conditions throughout the building water system through the following:
 - determining applicable test(s) to perform and frequency required
 - performing test(s) to determine if the water system is operating safely and if results are outside healthy range/limits, determine how to respond to bring water quality back into range/limit
- document water management activities and inform building occupants about issues with drinking water quality.

Additional Water Management Guidelines

- The best way to kill germs is to boil the water.
- Consider purchasing a water filter pitcher that targets contaminants, which remove parasites or viruses. Consult with 8 Spruce Management Team.
- Flush faucets and showerheads: Before using them after a period of inactivity, especially if you notice a drop in water pressure.
- Clean showerheads and faucet aerators to prevent germ buildup.
- Maintain and replace water filters regularly according to manufacturer's instructions notes from the CDC.
- To ensure best practices in water management operations, the 8 Spruce Operations Team is responsible for the following:
 - Maintaining the water supply system.
 - Maintaining water heater: setting the temperature between 130°F–140°F can kill Legionella with caution in handling of getting burnt. Additionally, the team should monitor and maintain hot water quality.
 - Maintaining device-specific water management programs for cooling towers, hot tubs/spas, decorative fountains, and centrally installed misters, atomizers, air washers or humidifiers when applicable.
 - Identifying physical, chemical, and microbial hazards in drinking water supply, as well as the presence of commensurate organisms or backflow and cross-connection problems.

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- Determining control and preventative measures such as checking temperature and levels, visual inspections, cleaning and flushing protocols, and repairing or replacing old fixtures.

VIII. Emergency Preparedness Plan:

- **Rationale:**
Implementing and establishing how individuals will receive emergency alerts and warnings and determining a safe place in the event of an evacuation, which can prevent the risk of negative impacts such as injuries and the spread of infectious disease.
- **Implementation Guidance:**
The following Emergency Preparedness Plan document is implemented for fire, flood and water intrusion.

Emergency Action Plan – Fire/Flood/Water Intrusion

Business Name	8 Spruce (NY) Owner LLC / Beam Living
Address	276 First Avenue Loop New York, NY 10009
Telephone	(212) 420-5000
Last Revision Date	August 10, 2026

Evacuation Types

SHELTER IN PLACE PROCEDURES

The term, Shelter-in-Place, means to seek immediate shelter and remain there during an emergency rather than evacuate the area. **Shelter-in-Place should only be used when an evacuation is not safe.** Certain events may necessitate the initiation of the Shelter-in-Place protocol. The decision to Shelter-in-Place will be made by lobby staff in consultation with the Emergency Response Team or FDNY/NYPD incident command officer.

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Once the decision has been made, building management will instruct the building community to Shelter-in-Place. This notification will be made using all means of communication available.

The following are examples of instances when Shelter-in-Place protocol may be used:

Shelter-in-Place (hazardous incident) Recommendations

In the event of a critical incident where hazardous (including chemical, biological, or radiological) materials may have been released into the atmosphere either accidentally or intentionally, a decision to Shelter-in-Place may be the preferred method of safely waiting out the situation. The following recommendations should be considered:

- Move to rooms with no windows that can open or are open.
- Rooms that have little or no ventilation are preferred.
- Close any open windows and doors if you cannot move.
- Remain in this location until told that it is safe by Security.

Shelter-in-Place (violent person) Procedures

In the event of the presence of a person or persons deemed to be a threat to the facility, a decision to Shelter-in-Place would be made by lobby staff in consultation with the Emergency Response Team or FDNY/NYPD incident command officer. This is the preferred method of keeping people out of harm's way, controlling pedestrian traffic onsite, and controlling access to buildings.

Upon receiving notification to Shelter-in-Place:

- Stay in your apartment and/or room.
- Notify those around you and encourage others to remain in your apartment rather than to try to leave the building.
- Lock the doors. If applicable, cover the door window and pull down the blinds.
- Turn off the lights and stay calm.
- Stay away from the windows.
- Turn your cellular phone to silent mode.
- Monitor your cell phone, e-mail, or visit the site website for updates on the situation.
- Report any suspicious activity, sounds, smells to Security.
- Remain out of sight and place furniture between you and the doors/windows.
- Only come out when you recognize the authority directing you to evacuate your shelter or when instructed via 8 Spruce's website, e-mail, and/or text.

Shelter-in-Place (weather) Recommendations

A severe weather event such as a flood or wind event during normal operating hours of the building may necessitate you to Shelter-in-Place until the threat of bad weather has passed. Relocating from your

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room to a space that has no windows or to a lower floor may increase your chances of survival. It is recommended that you:

- Move to an interior room with no windows, or a hallway on the lowest floor possible.
- Move to an interior stairwell if all rooms have windows.
- Stay in the center of the room away from doors and windows.
- Stay in place until the danger has passed.
- Move to the basement of the building, as they usually provide the best protection.

EVACUATION PROCEDURES

Some emergency situations may require that the building be evacuated.

Evacuation protocols are as follows:

- Evacuation routes for the building can be found in the lobby of the building. Be aware that evacuation route(s) in the building may change due to the situation.
- If notification to evacuate occurs by authorities or the Emergency Response Team, do so immediately. Encourage residents in your vicinity to also comply with evacuation directives. Staff members evacuating a building that houses residents with mobility impairments or physical disabilities should attempt to assist these individuals.
- Follow recommended evacuation routes as shortcuts may be blocked.
- Elevators may be used to evacuate individuals physically unable to utilize stairways. An elevator key must be utilized to operate elevators in these circumstances. Escorts should break the glass on the red emergency box and access the key to assist individuals out of the building.
- During evacuation, do not take time to collect personal items.
- Call 911, and then the residential management office at (212)-877-2220.
- Do not reenter the building until authorized to do so by building management.

Communication

For each emergency situation, differing modes of communication may be utilized depending upon the severity of the situation and the needs of the facility. The **Emergency Response Team** will determine which methods of communication will be utilized and the messaging to be communicated.

- 8 Spruce's Property Management team can and will send out a mass communication to residents in the event of an emergency via email, text message, or voice message. Additionally, depending on the situation, a newsletter will be distributed to the residents, and an additional posting will be published on 8 Spruce's website.

Media Relations Policy

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Please direct all media-related inquiries to the Building Management at media@beamliving.com. This policy is in place to assure consistency and accuracy in our message.

Training Information

Supervisors will review emergency procedures yearly with all staff. All employees must sign off following the training to ensure all employees are aware of the applicable emergency procedures. New employees will be trained in emergency procedures by their supervisor at the start of their employment and the supervisor will sign off on the new employee checklist that this has been completed. Each year procedural drills will be conducted with all building staff.

Emergency Contacts

Employees and residents are strongly encouraged to periodically update their emergency contact information with the residential management office for emergency situations.

Responding to Floods and Other Water Intrusion

If a water intrusion event occurs (flooding, broken pipes, roof damage, storm damage), immediate action is required to prevent a water intrusion event from becoming a larger issue. The underlying cause of water intrusion must be identified and corrected. An immediate response upon notification or observation (within 24 to 48 hours) and thorough clean up, drying, and removal of water-damaged materials will prevent or limit additional issues from arising from the water intrusion. Assure proper repairs are performed so that water intrusion does not recur.

Source and Type of Water

The source and type of water will be one of three categories defined by The Institute for Inspection Cleaning and Restoration Certification (IICRC) S500 Standard and Reference Guide for Professional Water Damage Restoration.

Category I Water – Examples are city water or direct rainwater, melting ice or snow, or potable water.

Category II Water – Examples are river or sea water, storm water runoff, groundwater, discharge from some appliances, chilled water, cooling tower water, boiler water, sewage with no human effluent.

Category III Water – Sewage containing human effluent. NOTE: Category II water may become Category III water with passage of time

While all types of water damage, including “clean water,” can result in the growth of bacteria on building materials, Category II water and particularly Category III water can contain elevated concentrations of pathogenic microorganisms, including bacteria, fungi, viruses, and parasites. If water damage is from Category II or Category III water, special precautions must be taken. In sewage

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situations, pathogenic bacteria and viruses should be dealt with by evacuation of the area until cleanup and disinfection are completed.

Water Intrusion - Response Action

The following actions may be performed by qualified maintenance personnel who have received appropriate training. Pre-qualified contractors may be utilized to aid in responding to water intrusion as needed.

1. Stop the source of water. If the water source is unknown, seek assistance to identify the cause of the moisture/water condition.
2. Immediately report the event to designated personnel.
3. Maintain life safety. If there is no risk of electrical shock, turn off circuit breakers supplying electricity to wet areas and/or unplug and remove any small electrical items located in the wet area. If there is a risk of electrical shock, leave the area immediately and contact a member of the Emergency Response Team.
4. Determine the source of the water and respond with the appropriate equipment. Remove remaining water by using extraction methods. Pump out, mop up, wet vacuum, or squeegee any standing water from the affected area.
5. Depending on the amount and source of water, the Emergency Response Team may determine that a professional drying contractor should conduct drying and extraction procedures. If warranted, pre-approved drying contractors should be contacted to start the drying process as soon as possible.
6. If the water intrusion was identified within 48 hours of initial occurrence, water extraction and drying activities should be initiated immediately. If the source is Category I water, initiate or conduct the following applicable drying procedures:
 - Remove standing water immediately by wet vacuuming and extraction
 - Remove wet materials, taking care to avoid wetting other locations
 - Remove affected carpet and/or padding (if present)
 - Move furnishings or equipment away from the wall, put on blocks to raise off the floor, or clear the area of these items
 - Remove pictures or other wall hangings from walls
 - Peel any vinyl wall coverings from the affected part of the wall
 - Remove cove base moldings if water has potentially entered the wall cavity
 - Where gypsum wallboard is affected, drill holes in the gypsum wallboard to facilitate drying inside the wall cavity. Drill approximately 1" diameter holes in each stud cavity along the bottom of the wall
 - Increase the ambient temperature of the space to maximize dehumidification
 - Provide dehumidifiers to expedite drying and control humidity
 - Provide positive air circulation with fans to expedite drying and control humidity

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7. Monitor affected surfaces for adequate drying and potential mold growth
If the water source is Category II or Category III water, appropriately disinfect non-porous surfaces per the disinfection manufacturer's instructions and discard impacted porous surfaces if they cannot be adequately cleaned and disinfected.
8. During and after drying procedures, the affected areas should be inspected to determine effectiveness of drying procedures to assure the materials are dried thoroughly. Use moisture meters, if applicable, to monitor the progress of drying efforts.
9. Accelerate the drying process with dehumidifiers, fans, and/or heaters. Maintain indoor humidity levels between 30 to 50% relative humidity, if feasible, to facilitate drying of large areas.
10. Inspect for presence of suspected visible mold growth. Porous building materials that stay wet for longer than 48 hours should be treated as though mold growth were present.
11. Document the incident with photographs and written documentation of all communications and courses of action taken.

Fire Response Plan

If a fire is reported, activate the fire alarm (if available and not already activated) to warn

Occupants/employees to evacuate. Dial 911 to alert the Fire Department. The following information should be provided to the Fire Department:

- Business name and street address
- Nature of fire
- Fire location (building and floor)
- Type of fire alarm (detector, pull station, sprinkler waterflow)
- Location of fire alarm (building and floor)
- Name of person reporting fire
- Telephone number for return call

Emergency Response Team to direct evacuation of residents, employees, and guests

When a fire is discovered, the following actions shall be taken:

- Activate the nearest fire alarm (if installed)
- Notify the local Fire Department by telephone
- If the fire alarm is not available, notify the site personnel about the fire

emergency by the following means (check applicable):

- Cell Phone

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- Text
- Email
- Notifi
- Other (specify)

Extinguish the fire ONLY if:

- The Fire Department has been notified
- The fire is small and is not spreading to other areas
- Escaping the area is possible by backing up to the nearest exit
- The fire extinguisher is in working condition and personnel are trained to use it

Upon being notified about the fire emergency, occupants must:

- Leave the building using the designated escape routes
- Assemble in the designated area (specify location)
- Remain outside until the competent authority (Designated Official or designee) announces that it is safe to reenter

The Emergency Response Team or Designated Personnel must:

- Disconnect utilities and equipment unless doing so jeopardizes his/her safety
- Coordinate an orderly evacuation of employees, residents, and guests
- Perform an accurate head count of employees and residents reported to the designated area
- Determine a rescue method to locate missing persons
- Provide the Fire Department personnel with the necessary information about the facility

Area/Floor Monitors must:

- Ensure that all employees have evacuated the area/floor
- Report any problems to the Emergency Response Team at the assembly area
- Assist all physically challenged employees in emergency evacuation

Fire Evacuation Procedures

- Evacuate the building along evacuation routes to primary assembly areas outside
- Redirect building occupants to stairs and exits away from the fire
- Prohibit use of elevators
- Emergency Response Team to account for all employees and visitors at the Assembly Area

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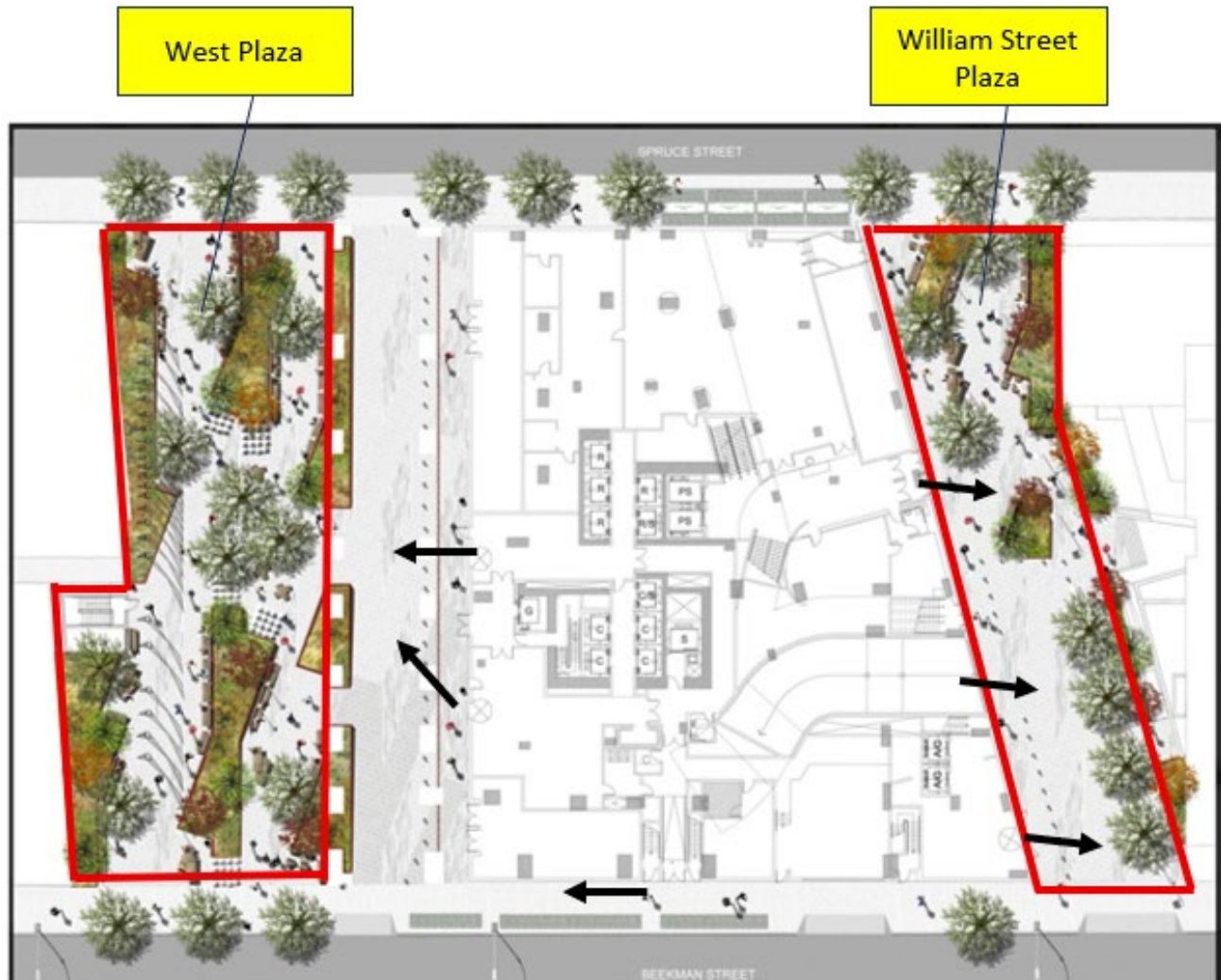
Appendix: Fire Safety Notice – Inside Resident Unit



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8 Spruce Outdoor Safe Shelter Locations

Onsite – West Plaza & William Street Plaza



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Offsite - City Hall Park (0.1 mile) & IS 131 (0.73 mile)

NYC Hurricane Evacuation Zone Finder

8 SPRUCE ST, MANHATTAN, NY, 1...

NYC Hurricane Evacuation Zone Finder

1 2 3 4 5 6

5 You are currently located in evacuation zone 5 and are not required to evacuate

Borough: Any borough Accessible: [icon]

This icon indicates a site has a physically accessible pathway. Dismiss

IS 131
0.73 mi
100 Hester Street New York, NY 10002
Between Forsyth Street and Eldridge Street

Adams Street Educational Campus
1.45 mi
283 Adams Street Brooklyn, NY 11201
Between Johnson Street and Willoughby Street

Norman Thomas HS
2.77 mi
111 E 33 Street New York, NY 10016
Between Park Avenue and Lexington Avenue

IS 131
100 Hester Street New York, NY 10002
Between Forsyth Street and Eldridge Street

NYC Evacuation Center Website: <https://finder.nyc.gov/hurricane/locations?mView=map>

IX. Conclusion:

The healthy building operational guidelines are available to residents, occupants, contractors, staff, and maintenance personnel in the following methods:

Digital platform – <https://www.live8spruce.com/building/community-health-guidelines>