



**CONSTRUCTION RULES AND
REGULATIONS**

**REQUIRED SPECIFICATIONS
AND PERFORMANCE
CRITERIA**

DESIGN GUIDELINES

**HIGH PERFORMANCE
DESIGN AND
CONSTRUCTION
GUIDELINES**

**501 Seventh Avenue New
York, NY**

July 18, 2019

SECTION I

BUILDING RULES AND REGULATIONS

A. General

CONTACT INFORMATION

Main.....212-695-3617

Building Manager – Robert Pender.....212-695-3617

Robert Pender

Property Manager

T: 212 695 3617

rpender@empirestaterealtytrust.com

B. Compliance with Rules and Standards

All construction work proposed for “Tenant Alterations” must comply with NYC Department of Buildings, New York City, New York State and Federal Government agencies having jurisdiction over the project, the Administrative Code of the City of New York, ADA, and 501 Seventh Avenue Buildings Rules and Regulations and Performance Standards.

C. Submission of Drawings

Tenant will submit to the Building Manager (Landlord) for review and comment prior to commencement of any work, Electronic PDFs, and four (4) sets, 1/8” scale, one hundred percent completed (signed & sealed) Architectural, Mechanical, Electrical, Plumbing (including sprinklers), Fire Alarm and Structural submissions. The drawings sets will be provided to Landlord’s consulting engineers for their review/comment.

Request for existing base building drawings by Tenant’s architect or engineer must be made in writing to the Building Manager. The Tenant will be responsible for all related charges and costs. Building Manager (Landlord) will not be responsible for base building drawings accuracy. Tenant’s architect(s) and engineer(s) to confirm accuracy of drawings.

The final “issue for construction” set of drawings and documents shall incorporate all of the Landlord's comments and requirements and shall be maintained on site at all times. Provide electronic .PDFs and two complete sets of full-size and one “half-size” reduced drawings to Building Manager,

D. Permits and Applications

All work shall be filed with the NYC Dept. of Building and no work shall commence until the permits have been issued by the City of New York Department of Buildings. Copies of the permits and perforated/stamped plans must be given to the Building Manager as well as posted/maintained on the construction site at all times.

The following expediter shall be used for the purposes of filing for permits:

501 Seventh Avenue
New York, NY 10018

**Rizzo Group
1333 Broadway
Suite 500
New York, NY 10018
646-867-7960**

All Permit applications should be sent to:

**Robert Pender
Property Manager
501 Seventh Avenue
T: 212 695 3617**

All Tenants, Contractors, Architects and Engineers applying for a permit for construction at 501 Seventh Avenue are required to complete the applications as outlined below:

Business Name: 501 Seventh Avenue Associates, LLC

Address: 501 Seventh Avenue
New York, NY 10018

Phone: 212 695 3617

Name of Signatory: Robert Pender

E. Contractors

The Landlord will furnish a per-approved list of MEPS (Mechanical, Electrical, Plumbing, and Sprinkler sub-Contractors). All MEPS work must be performed by sub-contractors on the pre-approved list. All work must be performed with harmonious labor relations.

F. Building Approved Vendors

Fire Alarm: Sirina Fire Protection

BMS: Intrepid Control Systems

Elevator: Nouveau Elevator

G. Certificate of Insurance Requirements

Before commencing any work to the premises, the Tenant is required to have their General Contractor and all subcontractors furnish a certificate of insurance to the Building Management office. **See attached for Certificate of Insurance.**

H. Access to the Building/Contractor Passes

Tenant to provide a list of contractors' names as well as Tenant contact employees that will be working in the building. List to be submitted to 501 Seventh Avenue's Building Management office, attention Carmen Cornier - ccornier@empirestaterealtytrust.com

Contractors will be required to register with and get passes from the building office every day that access is required. Contractors must present an Official Government photo ID in order to receive a pass. No Contractors' pass will be issued without Government issued photo ID presented.

The building office is staffed Monday to Friday, 8 AM to 5 PM. No access will be provided before/after-hours unless pre-approved by and scheduled with Building Management.

H. Deliveries and Building Freight Elevators

Delivery of all materials to the construction site must be made to the Loading Platform, on West 37th Street. The freight elevators are directly accessible at the loading dock.

All deliveries must be scheduled with Building Manager or building management personnel designated by the Building Manager. To schedule delivery of materials and use of freight elevators, submit request (see sample) to Building Management or use Work Speed. The normal operating hours for the freight elevators are 7:00 AM to 5:30 PM. Elevators are subject to availability and are available on a "first come first serve" basis. After hours use of the freight elevator for transport of construction materials/personnel must be scheduled in advance and may be subject charges (levied to tenant) at the prevailing rates. Should elevator mechanics be required for special delivery, the cost of having elevator mechanics on site shall be borne by tenant as applicable.

Passenger Elevator cars are not to be used in any way for transporting materials or construction personnel. No material or equipment shall be carried under or on top of elevators.

Freight Elevator ratings and size

- 3 car (SC – 17) – 4500 lb rating – 90" deep X 84" wide (126" on diagonal), 96" high with additional 16" of height with hatch open)
- 4 car (SC –18) – 4500 lb rating – 90" deep X 84" wide (126" on diagonal), 96" high with additional 16" of height with hatch open)

Loading dock measures 50' wide and 21' deep. The unloading area has a ceiling height of 12 feet.

All materials are to be brought in proper containers and deliveries must be made directly to space under alterations. No storage or staging of materials is allowed on loading dock, in freight elevator lobby, in public corridors, elevator lobbies or any space other than site of construction.

All dollies, hand trucks, jacks, etc. shall be in good condition; iron wheels are not permitted in the building. Overflow or leakage from containers will not be tolerated.

All carpeted areas that will be affected by the moving of equipment or containers should be protected by pre-approved building standard means. Refer to Building Standard for protection requirements.

I. Protection of Public Areas & Building Equipment

All public areas such as elevator lobbies, corridors, lobbies, loading docks, toilets, etc. shall be maintained clean and protected using W&H standard materials. Equipment and other property belonging to the Building shall also receive protection and shall be repaired if damaged in the course of construction, to the satisfaction of the Landlord. The wall to wall floor protection consists of brown paper, masonite sheets taped together (brown tape or blue painters tape), covered by filmtex, and walls to be protected by W&H corrugated paper (with masonite underneath in freight areas), provided by building at tenants expense.

Shoe – wiping mats (either wetted down or sticky) to be provided at all entry points to adjacent areas.

J. Certificate and Completion of Work

The Tenant and/or Tenant's General Contractor shall submit the following certificates to the Building Management Office upon completion of work, including, but not limited to:

501 Seventh Avenue
New York, NY 10018

1. Building Notice Application approvals and sign-offs issued by the Department of Buildings. Electrical and HVAC certificates issued by:
 1. DOB.
 2. FDNY.
 3. Special Inspections.
 4. Equipment use permits.
2. A properly executed air balancing report signed by the project's professional mechanical engineer shall be submitted to the Landlord upon completion of HVAC work.
3. Copies of release of lien from the GC and all sub-contractors.
4. In addition to the above, Tenant to submit to Landlord upon completion of work a "close-out" book which will include all detailed "As-Built" documents for Architectural, Structural, HVAC, Sprinklers, Fire Alarm and Electrical Circuiting Plans. All Guarantees, warranties and operating manuals of equipment installed shall be provided. (Two hard copies and CAD drawings in AutoCAD 2000 or later are required).
5. At completion of project, General Contractor to complete project completion checklist. **See Building Manager for completion check-list.**

K. Refusal of Permission

The Building Management Office also reserves the right to halt construction, at tenant's expense, upon failure of the Tenant General Contractor to comply with any of the Building Design Guidelines and Construction Specification Standards.

L. Amendment to Rules and Standards

Landlord reserves the right to amend any of these Rules and Standards at any time.

M. Violations of Building Rules

Repeated violations of any of the building rules contained herein, including use of passenger elevators, shall constitute grounds for Landlord requiring ejection of the offender, whether tradesman, subcontractor, or General Contractor. Depending on the severity of the violation(s), the offender may be barred from performing work throughout the building and any building supervised by W & H Properties and Malkin Properties.

Penalties will be charged for violations of certain Building Rules, in addition to any costs incurred by the Building. These Rules include (but are not limited to);

- Use of passenger elevators by construction personnel - \$250. per occurrence
- Use of non-designated (tenant only) restrooms - \$250 per occurrence
- Smoking anywhere in the building - \$250 per occurrence
- Use of radios on jobsite - \$250. per occurrence
- Noisy work during non-designated times - \$250. per occurrence

Rules and penalty amounts are subject to change.

N. Structural Work

Any structural modification must be reviewed and approved by Building Structural Engineer prior to commencement of work. This includes core drilling or trenching as the floor slab is a structural component of the building. No conduits/core drilling or cutouts are permitted to be installed in the floor slab without written approval from the Building Management/Landlord. Building Management/Landlord reserves the right to restrict locations of such items to areas that will not interfere with the Buildings framing system or components. No Conduits or cut-outs are permitted outside of Tenant's premises.

O. Building Services and Related Fees

Contact tenant services coordinator (Carmen Cornier, 212 695 3617 or ccornier@empirestaterealtytrust.com) for current fee schedule.

P. General Conditions/Requirements for All Work

1. There is no smoking allowed anywhere in the building.
2. No radio playing is permitted on the jobsite.
3. Use electric equipment only; fuel powered equipment is not permitted.
4. Do not burn materials or debris on premises.
5. All entrance locksets shall be master keyed as required by the building management.
6. Windows shall not be opened without Landlord approval. Any windows that are opened must be closed at the end of the work day.
7. No exterior hoisting will be permitted. All products specified are to be assembled on-site and delivered to the site in such a manner so as to allow unobstructed passage through the building freight elevators, lobbies, corridors, etc. The general contractor will be responsible for protection of all finished spaces as required.
8. If suspected asbestos containing material is uncovered during tenant's renovation, Building Management is to be notified immediately to remediate.
9. General Contractor to provide a superintendent or foreman (project manager) capable of communicating with Building Management on premises at all times. In addition, a laborer capable of communicating with Building Management is to be on site to police job at all times, continually keeping area safe, broom clean, and free of all debris.
10. Contractor to inform building management of any incidents (e.g. damage, leaks, thefts, etc.) or injuries and submit a detailed incident report within one business day of the incident.
11. If Tenant's General Contractor or subcontractors are negligent in any of their responsibilities, Tenant shall be charged for any corrective work performed on tenant's behalf by the Landlord with an administrative fee.
12. General Contractor to provide Building Management with an emergency contact list.
13. Harmonious relations shall be used by all contractors and subcontractors performing any and all work in a professional manner. Labor shall work in close harmony with one another as well as with the building management and building's maintenance personnel.
14. Construction personnel are to use only the assigned bathroom and wash-up facilities as directed by Building Management.
15. Contractors and vendors who operate cellular phones, PDA's and/or two-way communication devices should keep the volume on these devices no louder than necessary. When passing through tenant or public spaces, the device should be set to vibrate. Where the use of the device is necessary in a work space, the contractor should be mindful of his or her surroundings and keep conversations and the volume on cellular phones and two-way communications to a minimum. There is to be no loitering in Building common areas for the use of these devices.
16. All work shall be accomplished in strict conformance to the applicable local, state, OSHA and base building standard codes and requirements. Removal of materials and equipment items shall be done when safely disconnected from operating services by contractor skilled in this trade.

17. Do not allow demolished materials to accumulate inside or outside of Building. Remove from the site all rubbish and debris resulting from work of demolition. Wet down debris to control dust.
18. The general contractor shall be responsible for all temporary services and utilities during the course of demolition including adjacent tenants. Cost or use charges for temporary facilities are chargeable to the tenant.
19. All fire exits and/or stairways to be kept clear, marked and accessible and doors are to remain closed at all times to maintain fire evacuation integrity of stairwell. Any missing or damaged photo luminescent markings must be replaced.
20. At all times contractor shall maintain: 1. Operable exit signage & egress lighting. 2. Safe egress passage to all exits. 3. Active fire detection/suppressing systems or fire watch.
21. Use designated transportation routes to Tenant work area. Contractor is not to use fire exits, stairways or passenger elevator cars as a means of daily access to and from construction site, or for storage of equipment and materials.
22. The practice of "chocking" open doors or making hardware inoperative will not be permitted.
23. Avoid and prevent the disturbance to other Tenants. Work in or around other Tenant areas must be coordinated in advance with Building Management and proper security must be provided at Tenant's expense.
24. No work is to be performed in Building's mechanical equipment rooms, service areas or electrical closets without first checking in with Building Manager/Engineer.
25. Restore damaged fireproofing at existing structure due to new construction.
26. Electric panel covers are not to be left off at any time unless when being worked on. Cover shall be replaced each night before leaving the site.
27. General Contractor to provide temporary lighting and power per code for duration of project. The contractor shall clearly label lighting panels and breakers used for lighting. Temporary lighting to be removed at the completion of construction.
28. All work shall be subject to inspection by Building Management. Such supervision and inspection shall be at Tenant's expense, if applicable. Any and all deficiencies noted, as a result of the inspection, shall be corrected by the Tenant, or the Tenant's contractor at the Tenant's expense, if applicable. Any and all punch list items identified by Building Management shall be corrected within twenty (20) working days, unless such items affect life safety in which case they should be addressed immediately, Building Management has the right to back-charge tenant for additional Building Management and consultant services.
29. Landlord shall not be responsible for any disturbance or deficiency created in the air conditioning or other mechanical, electrical or structural facilities within the building as a result of the alterations. If such disturbance or deficiency results, it shall be the Tenant's responsibility to correct the resulting conditions immediately and to restore the services to the complete satisfaction of the Landlord, its architect and engineers. Building Management reserves the right to make such corrections at the Tenant's expense.
30. All equipment shall be identified by system number, and their performance/operating data on the design drawings. All equipment shall be specified, with manufacturers name, model number, etc.
31. Contractor's Drawings, Tagging and Labeling: All wires must be properly tagged at panel, and all panels properly phase balanced after addition of separate circuits where change were made. All valves must likewise be properly tagged. Failure to properly tag all wires and valves will result in additional charges to Tenant as Building Management test and tags all wires and valves where General Contractor has made changes. All plumbing lines, electrical lines and telephone wires in another Tenants' premises must be tagged to the Landlord's approval before completion of project if services traverse other occupied Tenant spaces or building common areas. Any slab penetrations must be properly tagged with suite and purpose. A typed completed directory in the electrical panel must be upgraded by Tenant's General Contractor to reflect all circuits both new and existing. A dated, 8 1/2" x 11" complete panel directory, on the Electrical subcontractor's letterhead shall be furnished to Building Management as part of the project closeout documentation.
32. "Safe-off", with valves, caps or plugs, all services supplying plumbing fixtures and equipment in areas designated for demolition, prior to the start of demolition work.
33. All mechanical and plumbing connections to building water systems, waste and vent lines, etc. are to be performed after normal working hours and coordinated with the Building Management/

Engineers. Provide isolation/shut-off valves for all water lines (Mechanical and Plumbing) with no interruption of tenant service during normal business hours and not without being coordinated with building.

34. Base building fire alarm system integrity shall be maintained at all times. Existing ceiling mounted speakers, smoke detectors and strobes shall be carefully removed from ceiling tiles and walls and placed high in space, secured to the structural steel. Do not disconnect or remove or paint over any fire alarm wiring, devices or fire alarm panels without active participation from Building Management. Carefully protect BBFAS wiring during construction.
35. Per New York City code requirements for floor coverage, the Fire Detection and Protection System must be on-line and the Class "E" system must be maintained. If the above cannot be met, a fire watch must be maintained with a minimum of 24 hour advance notification to the Building Manager that the General Contractor requires fire detection/protection systems to be off-line. The fire watch is to meet all applicable and governing agency codes, and provide adequate and proper documentation. Fire watch shall perform no other duties while on watch. If requested, certified fire watch can be provided by the Building Management at the Tenant's expense. If the fire watch is provided by a Tenant's contractor, all responsibilities/duties of such fire watch shall be in compliance with NYC Local Law 5. Any work performed on the Class "E" System must be done by 501 Seventh Avenue Fire Alarm contractor-Sirina Fire Protection. Terminations and contacts provided by Sirina Fire Protection. All requests to take the Class "E" System off-line including sprinkler drain downs requests, if applicable, must be made in writing to the Building Management Office with a minimum of 48 hours in advance. Failure to comply may result in the issuance of monetary fines. All associated fees/fines will be submitted to and are the sole responsibility of the tenant. A person holding a "Certificate of Fitness" F91, F93 (Fire Guard Construction) issued by the Fire Department shall be required to be on duty in the capacity of a fire guard during all hours whenever the smoke detector system or sprinkler system has been taken off-line. Certificate F91 covers 8am-5pm, Monday through Friday. Certificate F93 covers 5pm-8am, Monday through Friday, and all hours on Saturday and Sunday.

Fire guards shall maintain log books recording the following:

- Date and time floor(s) taken off-line.
- Floor(s) taken off-line.
- Time of inspection and conditions found.
- Date and time floor(s) system restored.
- Name and Certificate number of Fire Guard.

All systems must be restored at the close of the business day. In cases of after business hours demolition fire guards shall be on duty as long as the system is off-line.

Certified Fire Guards are required to adhere to all duties of Fire Guard as required by the Certificate of Fitness and have on their person the Certificate of Fitness or photographic copy of such permit for inspection by the Fire Department and 250 West 57th Street.

36. Provide and maintain filter on supply and return grille openings as applicable, to keep dust from entering the Building's air supply systems. Provide double filters, or apply bulk filter media over package filters at all HVAC equipment running during construction, including perimeter induction units. Upon completion of demolition/construction all filters are to be removed, equipment cleaned to Management satisfaction and unit primary filters to be replaced. If this is not completed, Building management will perform cleaning at Tenant's expense.
37. The floor slabs are a structural component of the building. See SECTION N: STRUCTURAL for the requirements for review and approval of any requests including Core drilling or trenching. Core drilling in electrical closets is strictly forbidden.
38. Adhesives, sealants and sealant primers must comply with volatile organic compound (VOC) limits as outlined in south coast air quality management district (SCAQMD) Rules 1168 effective July 1, 2005 and amended on January 7, 2005.
39. Aerosol adhesives must comply with green seal standard for commercial adhesives GS-36 in effect on October 19, 2000.



**REQUIRED SPECIFICATIONS AND
PERFORMANCE CRITERIA**

**501 Seventh Avenue
New York, NY**

SECTION II

REQUIRED SPECIFICATIONS AND PERFORMANCE CRITERIA

A. Demolition

1. All demolition must take place after 6pm or before 8am or on weekends.
2. For PCB ballast and lamps disposal, please contact building management to obtain empty barrels and to schedule pick – up of full barrels. All PCB ballasts to be salvaged.
3. The contractor shall completely remove all abandoned tenant equipment (AC units, exhaust fans, piping, ducts, hangers, supports, receptacles, light fixtures, transformers, wiring, pull boxes, water heaters, etc.) all the way back to core risers, electrical panels, the nearest active branch main, and capped sealed watertight or airtight. All openings shall be properly patched, sealed and firestopped to maintain the original integrity and fire rating of all walls, partitions, ceiling clips, etc.
4. The entire fire alarm system shall be tested by Building Management before and after demolition to verify that all devices remain operational. Existing ceiling mounted speakers, smoke detectors and strobes shall be carefully removed. Contact Building fire alarm vendor (Sirina Fire Protection) and Building Management office for technical assistance in the event that existing devices or wiring are inadvertently damaged during demolition. It will be the demolition contractors' responsibility to pay any fees to correct and/or repair for such services.
5. Fire dampers in ducts shall be removed upon removal of fired rated partitions. Ducts shall be properly reconnected after removal of fire damper.
6. Any and all equipment and devices serving other tenants are to remain.
7. All open floor outlets shall be capped with walker Parkersburg Duct Blanking Plate no. 1043-S (or approved equal).

B. Construction Waste Management and Recycling Requirements

1. General Contractor and subcontractors to collect targeted construction waste identified in Construction Waste Management, Divert 75% from Landfill outlined in:
<https://new.usgbc.org/node/1731280?return=/credits/commercial-interiors/v2009>
2. Description of waste management procedures to be documented and reviewed with the building prior to commencement. A plan should include listing of transportation methods, collection methods and sorting facilities/companies. Any materials being repurposed, salvaged or reclaimed should be identified.
3. Off-site sorting to be sent to a building approved sorting facility/company.
4. All residual food waste and food containers to be segregated from recycled waste materials.
5. G.C. to submit documentation in the form of weigh tickets and/or receipts for all material reclaimed, landfilled and diverted from landfill. Hazardous materials to be identified and disposed of in accordance to Federal/ State and local law.
6. Hazardous materials to be identified and disposed of in accordance to local law.

C. Ceilings

1. All hangers to be installed in strict conformance with the contract documents. . Drilling for hangers shall be done before 8 AM or after 6 PM. Hangers shall be a minimum of 1" x 1/8" fiat black iron or ¼" galvanized rod, hung on maximum of 4'-0" centers.
2. Perimeter ceilings should not be below top of window frame.
3. All ceiling tile should have the highest recycled content whenever possible.
4. Refer to Design Guidelines for building standard window pocket details. (Pages 16-17)

D. Flooring and Finishes

1. Specify highest recycled content materials whenever possible.
2. Specify and install low-emitting (low or no Volatile Organic Compounds) adhesives (GS-36), sealants, paints (Green Seal Standards GS-11), coating, flooring systems, composite wood and agrifiber products.
3. All carpet to have Green Label Plus Certification. All carpet should have backing recycled content face weight, 3rd party certified. (SCS or other)
4. Certification of fire and flame spread rating confirming to applicable law must be submitted to building management.
5. Window treatment – building standard window treatment to be Phifer Sheerwave style 2100 10% openness with valance.

DI. Architectural Woodwork

1. Woodwork shall be fire-retardant wood only and provide written certification that the same has been complied with.
2. Adhesives shall not contain urea-formaldehyde resins and be able to achieve Greenguard indoor air quality certification.
3. Building **will not** provide free day of AC to acclimate any millwork/wood flooring. Standard/lease defined charges will apply.
4. Specify and use wood products certified by the Forest Stewardship Council (FSC).

DII. Furniture

1. All furniture located within 12” of existing perimeter convector unit enclosures to be open backed furniture and moveable to permit proper access to convector units. No furniture shall be less than 12” from the perimeter.

DIII. HVAC

1. Prior to commencing with design drawings, tenant to provide load letter to building to confirm impact on base building systems and envelop.
2. Heating, Ventilating and Air Conditioning (HVAC) systems shall be designed in accordance with the ESRT High Performance Efficiency Criteria and Guidelines, New York City Building Codes, New York State and City Energy Code, SMACNA, and ASHRAE.
3. HVAC system design layout shall not have an adverse effect on the existing base building systems. New design supply air quantities shall not exceed base building design air quantities (CFM) and should be field verified. Prior to alterations, perform traverse air readings at all ducts entering the tenant space and design accordingly, record CFM and static pressure available. Submit results of pre-demolition traverse air readings to Building Management with design documents.
4. In the event a window needs to be converted to an outside air intake, the modification to the windows are to be done to manufacturers’ specifications – color is to match the new building standard windows. Building management to approve any window modifications. Coordinate

with Building Management. Shop drawings from the manufacturers are available for review at the building office.

6. Ductwork:

- 6.1. Drawings shall show new and existing outside air, supply, return and exhaust air ducts, with all sizes indicated.
- 6.2. All ductwork, except for special exhaust systems, shall be constructed of galvanized sheet metal. Flexible ductwork is not permitted. Supply and return ductwork upstream and downstream of handling units and terminal boxes for the first 15 feet, shall be provided with 1 inch acoustical lining.
- 6.3. All ductwork shall be constructed in accordance with the latest SMACNA manual. Low pressure ductwork, 2 inch rating minimum for ductwork between VAV units and air outlets, and medium pressure ductwork, 6 inch rating minimum for ductwork between base building fans and VAV units.
- 6.4. All ductwork shall be sealed air tight in accordance with and SMACNA seal classification – A.
- 6.5. All ductwork being reused shall be inspected, sealed per SMACNA requirements, leak tested, and insulated by the mechanical contractor. All existing ductwork to be reused shall conform to specifications for new ductwork being installed.
- 6.6. For full floor tenant build out, all new medium pressure ductwork (>2 in. construction) shall be leak tested. Leak testing shall be performed in accordance with SMACNA leak testing manual. Results to be submitted to Building Management office.
- 6.7. Flexible canvas connections and vibration isolators shall be provided at ductwork connections to air handling units, fans and other rotating equipment.
- 6.8. Opposed Blade Volume dampers shall be shown on drawings wherever required for air balancing purposes. Volume dampers above sheetrock or inaccessible ceilings shall be cable type.
- 6.9. Access doors shall be indicated on the drawings wherever required for access and servicing of equipment such as coils, humidifiers, motors, fire/smoke dampers etc. and as necessary, and shall be a minimum of 18 inches x 18 inches. Access doors in insulated or lined ducts shall be double panel, insulated, minimum 20 ga.; access doors in non-insulated duct shall be double panel, minimum 20 ga. or single panel, minimum 18 ga. Access Door openings shall not be obstructed by pipes, conduits, lighting fixtures, sprinkler heads, etc.
- 6.10. Duct hangers shall be indicated and specified in accordance with the New York City Building Code and SMACNA.
- 6.11. Ductwork may not be suspended from electrical conduits, sprinkler piping, or water lines, hung ceiling, or any other existing or new mechanical or electrical system components. All ductwork shall be hung from building steel or existing duct attachments.

7. Air Outlets:

- 7.1. All air outlets shall be indicated on the drawings, including face size, neck size, and CFM.
- 7.2. Refer to Design Guidelines for Specific models.

8. Air Terminal Units:

- 8.1. New air terminal units shall be Variable Air Volume type (VAV), single duct, pressure independent with factory mounted controls. Controls are to be DDC electronic, compatible with Johnson Controls Metasys system or BACNet (or other open protocol) compatible.
- 8.2. Air terminal units shall not serve more than one tenant, and shall not be located on top of partitions, lighting fixtures, electrical conduits or piping. Operator and access doors of air terminal units shall be fully accessible.
- 8.3. Tenant shall clean, recondition, recalibrate and test all existing air terminal units to be reused, including controls. Submit results of test to Property Management Office.
- 8.4. All VAV air terminal units shall open to maximum CFM setting during warm-up/cool-down cycle.
- 8.5. Refer to Design Guidelines for Specific models.

9. Fire and Smoke Dampers:

- 9.1. Accessible fire and/or smoke dampers and access doors shall be shown on the drawings wherever required by the New York City Building Code or other authorities having jurisdiction. Dampers shall be BSA or MEA approved and conform to the NFPA standards latest edition.
- 9.2. Combination Fire & Smoke dampers shall be leakage Class 1, constructed to meet the requirements of UL555S, be so labeled, and have MEA number, and be operated by an external two position electric actuator that meets the latest UL555S standard. Dampers shall be controlled by fire alarm system shut down. Interface relays, BMS connection, and all wiring to be provided by the tenant.
10. Special Exhaust Systems:
 - 10.1. By approval by Base Building Management.
 - 10.2. As per NYC Building Code.
 - 10.3. Drawings for range hood kitchen exhaust systems shall indicate manufacturer and model number of the rangehood(s), CFM exhaust and ductwork connection to the duct riser. Ductwork shall be insulated and installed in accordance with the New York City Building Code and the latest edition of NFPA. All equipment shall be BSA or MEA approved. Tenant is to render exhaust odor free as to not cause a nuisance to other tenants.
 - 10.4. Dishwasher exhaust ductwork shall be stainless steel, shall slope downwards in the direction of the dishwasher connection and shall be water tight.
11. Perimeter Radiators:
 - 11.1. Existing steam radiators shall be shown on drawings including unit, control valve and thermostat.
 - 11.2. Perimeter radiators should not serve more than one area or office. New control valves and traps should be installed to provide independent control to each office. Coordinate with Base Building for specific requirements and model.
12. Insulation:
 - 12.1. Design and performance of components and methods specified herein shall comply with the applicable provisions of the NYC Code, New York State & City Energy Conservation Construction Code.
 - 12.2. All insulation, including jackets or facings, adhesives, mastics, cements, tapes and glass cloth for or as per NYC Code.
 - 12.3. Any treatment applied to jackets or facings to reduce flame spread or smoke production shall be permanent. The use of water soluble treatments is prohibited.
 - 12.4. All perimeter walls behind convector covers shall receive 1" foil rigid insulation attached with masonry screws.
13. Air Cooled Equipment:
 - 13.1. AC Units 65,000 BTU or less (Constant Volume, Ceiling Mounted). Acceptable Manufacturers: York (JCI), United Cool Air, Carrier or Approved Equal
 - 13.2. AC Units greater than 65,000 BTU (VAV Floor Mounted with free cooling). Acceptable Manufacturers: York (JCI), United Cool Air, Carrier or Approved Equal
14. Water Cooled Equipment:
 - 14.1. AC Units 65,000 BTU or less (Constant Volume, Ceiling Mounted with airside economizer). Acceptable Manufacturers: York (JCI), FHP, Trane, Carrier, Mammoth, United Cool Air, or Approved Equal.
 - 14.2. AC Units greater than 65,000 BTU (VAV Floor Mounted with airside economizer). Acceptable Manufacturers: York (JCI), FHP, Trane, Carrier, Mammoth, United Cool Air, or Approved Equal.
15. Controls:
 - 15.1. To facilitate coordination, installation, start-up service and warranty, all automatic temperature control work shall be done by the automatic temperature control manufacturer.
 - 15.2. Tenant build-outs are to include demand based ventilation.
 - 15.3. Tenant to install hard wired leak detection at all water cooled AC units and provide local alarms.

16. All HVAC systems shall be balanced and adjusted in accordance with ASHRAE 111 (practices for measurement, testing, adjusting and balancing of building heating, ventilation, air conditioning, and refrigeration system), SMACNA (HVAC systems testing, adjusting and balancing) and TABB (international standards for environmental systems balance). The tenant is responsible to retain the services of a certified member of the Associated Air Balance Council (AABC) or the National Environmental Balancing Bureau (NEBB). Final balancing to be witnessed by building staff. A minimum of 24 hours notice to the property manager is required. Complete balancing reports approved by tenant's engineer to be submitted to Building Manager.
17. Testing:
 - 17.1. The contractor shall complete all tests required by all rules, regulations, etc., of ASHRAE, National Codes and all New York City authorities having jurisdiction and shall prepare and file all forms, tabulations, plans, etc., pertinent thereto with the referenced authorities. The contractor shall accomplish all testing work with personnel of proper caliber, including design professionals, where so required.
 - 17.2. The contractor shall flow balance every system to the quantities as shown on all related drawings.
 - 17.3. After installation, all piping, valves, and fittings shall be hydrostatically tested to 150% of their maximum system design pressure but no less than 150 psig. Only water shall be used as a test medium. All testing shall be witnessed by the Building Engineer. The Manager shall document his/her observations of successful testing showing no failures or leakage in each system. Duration of test shall be a minimum of 4 hours with system valves capped, pressure apparatus disconnected, and no change in pressure.
18. Prior to accepting any system as ready for use, copies of the necessary Building Department, Fire Department, and DEP permits and record drawings shall be supplied to the Property Manager. Main riser valves to tenant system will not be opened until Building Engineer is fully satisfied that system has been properly cleaned, tested and treated. Main riser valve is only to be opened or closed by building personnel.

H. Plumbing - including Leak Detection and Leak Prevention Requirements

1. All plumbing must be indicated on the drawings. Indicate make and model number for proper engineering and roughing. If a contractor must enter another tenant's area to perform work, it is the tenants' responsibility to make the arrangement with the Building Management.
2. All plumbing work, materials, equipment and fixtures shall be new and approved by Property Management office and by authorities having jurisdiction over the work, including but not limited to, the New York City Plumbing Code.
3. All Pantries, Sinks, Dishwashers, Ice makers, Coffee Machines and other counter-top dispensers must incorporate leak detection and water shut-off systems (WaterCop System or approved equal). The Leak Detection and Shut Off system shall be connected to and monitored by the Building's BMS System at the tenant's expense. The shutdown of the water supply must be indicated on the drawings including the make and model number of the system and the sequence of operation. The system must be connected to, and monitored by, the BMS system.
4. All workmen employed to perform the work shall be skilled in their respective trades and under direct supervision of a New York City licensed plumber. All work shall be performed in a neat and workman like manner consistent with building practices.
5. No plumbing piping shall be run in, or through, electric closet rooms, telephone closet rooms, and elevator machine rooms.
6. Provide hangers and supports for horizontal and vertical piping in accordance with the current New York City Plumbing Code. No piping shall be supported from ductwork, other piping, or electrical conduit.
7. The plumbing contractor shall be responsible for insuring that access doors are installed for

and existing valves concealed by masonry, plaster or drywall construction. Minimum size shall be 18 inches x 18 inches, unless otherwise approved and shall be rated when installed in rated construction. The rating of the access door shall match the construction it is installed in.

9. Plumbing riser diagrams shall be provided for any plumbing work, all waste drainage, storm drainage, vent, water and gas systems.

9. Hot water heating equipment shall be approved by the New York City Board of Standards and Appeals. Manufacturers and model numbers shall be specified. M.E.A. numbers for gas fired equipment shall be indicated. Tenant shall provide supplemental tank type or instantaneous electric domestic hot water heater for new pantries, toilets, etc. Provide drip pan beneath heater and automatic shut off with local alarm for all tank type.
10. Tenant meters are generally not required for hot and cold domestic water services, but if such services are required, they shall be installed in compliance with the NYC DEP.
11. Replace isolation valves at riser prior to furnishing and installing new connections.
12. With Building Manager approval, tenant may install a sump pump for pantries. The sump pump shall be provided with a drip pan and leak detector for automatic shut off with local alarm.
13. All domestic water supply system piping, fittings and valves shall be insulated. All insulation shall be furnished and installed in compliance with the NYC Plumbing Code and New York State & City Energy Conservation Construction Code.
14. Install supplemental drip pan and leak detection to isolate water supply to hot water heaters.
15. Provide unions or flanges at connections to each piece of equipment to facilitate removal.
16. Prior to disconnecting and connecting new work to existing systems, the plumbing contractor shall notify the Building Manager and offer a proposed schedule of work. Building Management will authorize connections and coordinate necessary shut downs and drain downs as required. Shut downs and drain downs may be performed by Building Management. Two (2) days advance notice to the Building Manager is required.
17. Connecting new work to existing systems shall be performed in a neat and acceptable manner. All affected work is to be restored to its original condition and operation.
18. When connecting to existing stacks and risers, provision is to be made for future connections by providing capped and valved outlets on domestic water risers and plugged outlets on the sanitary and vent stacks.
19. Tests:
 - 19.1 Test all domestic water piping hydrostatically to 125 psig.
 - 19.2 Hydrostatic test pressures shall remain constant, with no variation for 120 minutes.
 - 19.2 Test shall be witnessed by Building Engineer.
 - 19.4 The plumbing contractor will be held responsible for all damage due to test failures and leakage in the test area and adjacent tenant or building spaces.

I. Electrical

1. Engineer shall retrieve and review all relevant archived documents, which are available in the Property Manager's office. In addition to this review, the engineer shall field verify all existing conditions and indicate on plans: all meter numbers, panel board designations, circuit numbers, electrical closet designations, etc. This information must be provided regardless of whether or not the equipment will ultimately be removed.
2. Provide a complete power riser diagram including the main riser serving the construction floor/area. Indicate all floors served by the riser and indicate its main overcurrent protection rating. All new risers shall be copper; connections, taps etc. shall be of the high compression type.
3. Energy Efficient Lighting: Specified Light Power Density shall be per the High Performance Efficiency Criteria. Lighting fixtures shall be completely wired and constructed to comply with all NYC and National Electrical Codes and Underwriters Laboratories Standards for electrical lighting fixtures. Lutron lighting controls should be incorporated in design. Tenant should include Lutron Control Systems.
4. Energy star equipment/appliances should be used whenever possible.
5. Emergency Powered Lighting: The tenant engineer must submit a letter to the Property Manager stating that the emergency lighting is code compliant. Emergency lighting

fixtures must have self-contained battery back-up units. Battery shall be for 90 minutes of operation.

7. Provide a connected and demand load summary for all new and existing equipment and indicate the watts-per-square-foot usable based on the tenant's useable square footage.
8. Electric closets shall not be used to install wiring and/or conduit from floor to floor.
9. Lighting & Appliance Panel boards are maintained by the building and therefore, unless otherwise noted, panel boards shall be provided as follows:
 - 8.1 Panel boards exceeding 100 amperes must be approved by Building prior to installation.
 - 8.2 Panels shall be factory assembled, deadfront, bolt-on circuit breaker type, UL listed.
 - 8.3 Trims shall have door-in-door construction.
 - 8.4 New electric panels shall be named as in the following example:

LP-10-1		
LP	=	Lighting panel
10	=	Floor number
1	=	Panel ID (sequential)
10. Threaded aluminum or rigid steel conduit shall be used when power distribution is exposed and is run outside of tenant space. Provide and install compression fittings when installing EMT. EMT can be used in accessible suspended ceiling and shall be run from room to room with a minimum of one junction box in suspended ceiling in each room. MC Cable with ground wire shall be utilized for branch circuits in dry hollow locations, hung ceiling and block walls. MC Cable shall not be used for homeruns. BX Cable shall not be used.
11. All wire, cable and bus shall be copper.
12. Any structural modification must be reviewed and approved, in writing, by building structural engineer prior to commencement of work. This includes and core drilling or trenching of the floor slabs. No conduits/core drilling or cutouts are permitted to be installed in the floor slab without written approval from the Property Manager (Landlord). Property Manager (Landlord) reserves the right to restrict locations of such items to areas that will not interfere with the buildings structural systems nor effect another tenant's occupied spaces.. No Conduits or cut- outs are permitted outside of tenant's premises.
13. Sub-Metering: Landlord shall supply and install, at tenant cost, sub meters at all existing base building feeders supplying the leased premises in accordance with approved tenant engineering drawings. Tenant to submit data centers as defined by EPA for Energy Star. Tenant should review W & H Properties Energy Efficiency Guidelines for ways to reduce total tenant energy use.
14. All work must be filed with New York City Department of Buildings and the Bureau of Electrical Control. The permit must be posted at the job site and copies of Permit and Final Inspection must be sent to the Building Manager's Office. The electrical drawings identified in the Tenant Work Consent letter must be at the job site at all times.
15. It shall be the contractor's responsibility to balance loads to within 10%, correct any existing violations and refurbish electric panels where necessary. The condition of all electric panels and closets at the project completion is subject to the review and approval of Building.
16. At the completion of the alteration, meter pans, safety switches, panels, and other distribution devices are to be correctly labeled. Previous labeling or markings are to be removed or painted over. Provide black lamicaid sheet with 3/2 inch white lettering, fastened with epoxy cement.
17. All panel directories are to be type written with the main feeder number, main panel number, circuit number and the location and purpose of circuits. Panel board branch circuits shall be labeled as to space, room number, and purpose—"Space 503, Circuit #5, Lighting Outer Office"—by electrical contractor. This work will be done to the satisfaction of the Landlord.

18. The source of all new risers shall be identified in a manner consistent with existing switchboard designations. All pull boxes required for new riser installations must identify the riser and the tenant and/or equipment served.
19. Wiring must have solid color insulation.
20. The color of switch legs must match phase circuit color.
21. Blown fuses and tripped circuit breakers on floors not under construction are to be changed or reset by Building Engineer only.
22. When an electrical design involving emergency lighting is done by a licensed electrical contractor, the following statement must appear in the comments field of the work permit application: "I certify that the installation and design as indicated on this application complies with the requirements of the building code including Local Law 16."
23. Upon completion of the electrical work, the licensed electrical contractor must submit to the Property Manager's office, a copy of the Certificate of Electrical Inspection for all work performed including the installation of emergency lighting if applicable.
24. Electrical contractor shall remove all unused wiring back to the source. Any non-used outlets shall be abandoned, existing wires pulled out, and continuation of circuitry if needed to maintain other spaces shall be in scope of work.
25. Where demolition is to take place in the area of the building fire safety equipment such as alarms, speakers, smoke detectors, floor warden stations, etc., the building engineering department must be notified 48 hours prior to start of demolition so that equipment may be protected or removed (by contractor if necessary).
26. Lighting controls shall be designed by Lutron. Lighting shall be controlled wirelessly. Provide wireless occupancy sensors, wireless switch, daylight sensors, and power packs. Refer to Design Guidelines for specific models.

J. Security

1. REQUIRED SPECIFICATION: Entrance door security system shall be building standard. Furnish and install in-wall J-box, wiring (provide 120V power) and a Siedle flush mounted housing item # GU611-3-1-0 part # KR611-3-1-0. Edge of housing to be 6" from door frame, 48" AFF center line.

K. Telecommunications

1. Refer to "General Conditions/Requirements for All Work", "Demolition" and "Design Guidelines" for more information
2. Tenant to submit plan identifying cabling route, impact on building common areas and adjacent spaces.
3. Cable should not be attached, connected to any hangers that support ceilings or ducts. Cable to be properly labeled and independently hung up 'J' hooks or cable tray.
4. Cable run outside of demised tenant space to be run in conduit or EMT.
5. Low voltage risers to be labeled on every floor.

L. Class "E", Fire /Life Safety Systems

1. Refer to "General Conditions/Requirements for All Work", "Demolition" and "Design Guidelines" for more information
2. The building is equipped with approved modified Class E Fire Alarm System. Tenant's engineer is responsible for meeting all code and Building requirements.
3. Base building fire alarm system vendor is Sirina Fire Protection. Contact Mike Costa at 212-929-6800 ext. 256. All equipment, devices and system re-programming shall be provided by this vendor as retained by tenant's contractor.

4. Tenant's engineer shall contact Sirina Fire Protection in order to coordinate project requirements which shall be fully reflected on the design drawings submitted to the building manager for review.
5. Any work on the base building fire alarm system shall be performed with permission of the Building Manager. Work is to be performed at tenant's expense by contractors approved by Building Management. Final connections to the base building system are to be coordinated with the Building Manager.
6. Replace all existing fire speaker/strobe face plates with white, all new fire speaker/strobe to be white.
7. Field verify the location of all existing base building fire alarm devices and indicate all equipment, including duct smoke detectors on both the demolition and construction drawings submitted for review.
8. All new initiating devices installed by tenants shall be intelligent - addressable type compatible with the base building AFA fire alarm system and approved by the Building Manager. Drawings must be prepared using Building standard symbols and must be reviewed by the Building Manager.
9. Fire Guards (Alteration, Construction):

A person holding a "Certificate of Fitness" F91, F93 (Fire Guard Construction) issued by the Fire Department shall be required to be on duty in the capacity of a fire guard during all hours whenever the smoke detector system or sprinkler system has been taken off-line. Certificate F91 covers 8am-5pm, Monday through Friday. Certificate F93 covers 5pm-8am, Monday through Friday, and all hours on Saturday and Sunday.

Fire guards shall maintain log books recording the following:

 - 1) Date and time floor(s) taken off-line.
 - 2) Floor(s) taken off-line.
 - 3) Time of inspection and conditions found.
 - 4) Date and time floor(s) system restored.
 - 5) Name and Certificate number of Fire Guard.

All systems must be restored at the close of the business day. In cases of after business hours demolition fire guards shall be on duty as long as the system is off-line.

Certified Fire Guards are required to adhere to all duties of Fire Guard as required by the Certificate of Fitness and have on their person the Certificate of Fitness or photographic copy of such permit for inspection by the Fire Department and 501 Seventh Avenue.
10. The tenant's engineer must field verify the location of all existing base building fire alarm devices and indicate them on both demolition and construction drawings submitted for review.
11. System Control Panels:
 - 11.1 Data gathering panels for tenant connection are located on miscellaneous floors. Additional capacity may be added as needed at the tenant's installation and maintenance expense. All building fire alarm panels including any tenant sub system panels, shall be fitted with building standard key. Splicing is not permitted
 - 11.2 All wiring shall be of an approved 200°C jacketed Teflon type. In areas where wiring is susceptible to damage due to exposure to potential mechanical damage (e.g., service elevator lobby, MER, EMR, etc.), the wiring shall be installed in rigid steel conduit.
 - 11.3 All wiring within demised premises shall be upgraded to 200°C Teflon Standard. Replace existing wiring of devices to remain to suit.
12. Sub-Systems (Tenant Systems): Sub-system panels shall be installed within the Tenant demised space and must be readily accessible to Building personnel. Indicate the location of the panel on drawings submitted for review. Approved sub-systems must report to the base building system through interface modules. All sub-system wiring shall be installed in rigid steel conduit as required by code. Tenant sub-system panels shall be fitted with Sirina Fire Protection key number, and shall be accessible to Building Management at all times.
13. If the total quantity of initiating devices (smoke detectors, duct detectors, pull stations, smoke dampers, waterflow switches, etc.), exceeds base building system capacity, the tenant shall provide and install a separate subpanel or provide necessary components as coordinated with Sirina Fire Protection to accommodate devices.

14. Programming: Sirina Fire Protection is the agent to perform all programming and make computer graphic changes necessary to incorporate tenant fire alarm equipment into the base building fire alarm system. The tenant shall pay all programming costs and the cost to change computer graphics. The tenant's engineer must submit a fire alarm record drawing to facilitate all programming and computer graphics updates. Failure to do so will result in additional costs which will be charged to the tenant. Sirina Fire Protection shall provide installation shop drawings for review/approval prior to commencing installation.
15. Full floor tenants shall provide a two area smoke detectors in each of the passenger, night and freight elevator lobbies, for compliance with current RS-18 requirements. Detectors shall be connected to the addressable loop serving the floor.
16. Full floor tenants shall install new manual pull stations mounted at ADA conforming height at each existing pull station location that is not already at such conform height. When the new pull stations have been programmed, existing pull stations shall be removed and patched to match the exiting finish. No splices are permitted.
17. Full floor tenants shall relocate existing fire warden stations to ADA conforming mounting height. Warden station wiring shall be extended to the new location. Upon activation the existing outlet shall be removed and patched to match existing finish. No splices are permitted.

M. Sprinklers

1. The building is equipped with automatic wet-pipe sprinkler systems. The design of the tenants' sprinkler systems shall be coordinated with Building Management to ensure compatibility with existing building sprinkler system.
2. Sprinkler systems are to be designed in accordance with building codes of the City of New York, Fire Department rules and regulations, Factory Mutual recommendations, and all other authorities having jurisdiction.
3. The sprinkler drawing must include, in addition to a plan view showing all piping, a riser diagram showing proposed connections to the existing system.
4. Sprinkler floor control valve assembly details shall be indicated on drawings with all associated components.
5. Sprinkler head detail shall be shown on the design drawing for each installation type.
6. Sprinkler systems layout shall be designed to insure that all sprinkler heads provide adequate coverage. Associated drawings shall be submitted for review.
7. Pre-action sprinkler system piping layouts shall be indicated on the drawings and shall include the following: pre-action valve assembly, tamper water flow switch and all associated mechanical and electrical components. A separate electrical riser diagram indicating all electric components including but not limited to detectors, pull stations, A/V devices, bells, signage, etc. and tie-ins to existing system shall be provided to facilitate NY Fire Department electrical review and installation approval. Pre-action valve assembly details must be shown on the drawing with all associated components, including drain and test assembly.
8. Hydraulic calculations must be submitted to Building Engineer for all sprinkler system designs. Water density, areas of sprinkler operation and water supply requirements shall be in accordance with NFPA standards as modified by the NYC Building Code
9. The sprinkler system design basis shall be indicated including: Square feet area to be sprinkled, class of occupancy, design density (GPM/sq.ft.), minimum remote sprinkler head pressure (psig). System description including sprinkler size, total number of heads, K-factor and C-factor used.
10. Water supply information including GPM and pressure required, for fire pumps, pressure tanks or gravity tanks shall be provided.
11. Provide details for any modifications, including fire reserve modifications, to the existing gravity tanks where required.
12. Tenants to sprinkler all rooms on leased floor.

14. Sprinkler systems piping material, valves, fittings, hangers, switches, drain/test stations and all associated components shall be in accordance with applicable regulations. Model numbers and pressure ratings of all sprinkler system components shall be specified on the design drawings.
15. Piping: All piping including sprinkler valves assembly shall be Schedule 40 black steel, Schedule 10 piping shall not be used.
16. Fittings: All fittings shall be cast iron threaded, cut grooved or roll grooved.
17. All exposed vertical risers (and valve handwheels) shall be painted in accordance with local law 58.
18. All connections to existing FSP/Spk risers shall utilize welded connections, Weldolet as manufactured by Bonney Forge Corp.
19. Valves: The valves tabulated below have been selected from the catalogs of Nibco & Milwaukee Mfg. Co. and are representative of the design, materials, and working features desired.

1) Gate Valves (all valves 3 inches and larger)

<u>End</u>	<u>Model No.</u>	<u>P.S.I. W.W.P.</u>	<u>Materials</u>	<u>Spindle</u>	<u>Size</u>
Flanged	P-607-OTS	175	IBBM	O.S.&Y.	3" & larger
Flanged	P-667-O	175	IBBM	O.S.&Y.	3" & larger

2) Butterfly valves (1 " through 2-1/2 inches) with built-in tamper switch

<u>End</u>	<u>Model No.</u>	<u>P.S.I. W.W.P.</u>	<u>Materials</u>	<u>Size</u>
Threaded	BB-SCS02	175	Bronze	2-1/2" & smaller
Grooved	BBVSCS02	175	Bronze	2 1/2" & smaller

3) Check Valves

<u>End</u>	<u>Model No.</u>	<u>P.S.I. W.W.P.</u>	<u>Materials</u>	<u>Size</u>
Threaded	KT-403-W	200	Bronze	3" & smaller
Grooved	F-903-W	175	IBBM	2 1/2" & larger

20. Sprinkler Heads: All sprinklers shall be of the quick response type. Spray type, with 1/2 inch normal discharge orifice. Temperature ratings 160°-175° F except where special conditions exist. Sprinkler heads shall be installed and secured in a workman-like manner, so that the finished area is not damaged. Sprinkler heads installed in ceiling tiles shall be located in the center of a tile with a tolerance of + 1/2 inch. Where concealed type sprinkler heads are used, the cover plates shall be flush with the ceiling plane and per the manufacturer's installation guidelines to limit shadow effect. Refer to Design Guidelines for Specific models.
21. Waterflow Switches: Vane-type waterflow detectors shall be installed on the sprinkler system piping as designated on the drawings. Waterflow switches shall not be mounted in a fitting or within 12 inches of any fitting that changes the direction of waterflow. Detectors shall be designed for mounting on either vertical or horizontal piping, and have a sensitivity setting to signal any flow of water that equals or exceeds the discharge from one sprinkler head. Detector switch

mechanisms shall incorporate an instantly recycling pneumatic retard element with an adjustable range of 0 to 70 seconds. Switches shall have a minimum rated capacity of 7 amp 125 volt A.C. - 25 amp 24 volt D.C. and shall be actuated by a polyethylene vane extending into the waterway of the piping. Detectors shall be of weatherproof dust tight construction, provide a 1/2 inch conduit entrance and be finished in red baked enamel. (Potter Electric)

22. Tamper Switch: Valve supervisory switches shall be provided on all control valves. The switch mechanism shall be contained in a weatherproof die cast aluminum body which shall provide a 1 inch tapped conduit entrance and incorporate the necessary facilities for attachment to the valve. Switch housings shall be finished in red baked enamel. The switch mechanism shall have a minimum rated capacity of 7 amp 125 Volt AC: 0.25 amp 24 volt D.C. (Potter Electric). Tamper switches shall be arranged so as not to interfere with normal operation of the valve and shall be adjusted to operate within 2 revolutions of the control valve or when the stem has moved no more than one fifth of the distance from its normal open position
23. Pressure Reducing Valves: Provide pressure reducing valves as required. The valve is to be of all bronze construction with bronze and stainless steel trim. The valve shall be LTL listed and rated for 300 psi working pressure and able to be tested to its full rating stamped on valve without damage to any part of the valve. The valve shall be spring actuated, balanced piston, single seated type without diaphragm. All parts are to be easily removable or replaceable sealed at the factory; a seal is to be affixed to the valve at the factory for protection against tampering. Cla-Val, Model 90G-21 or approved equal.
24. Pressure Relief Valves: All sprinkler systems requiring a pressure relief valve shall be provided with a diaphragm operated pressure relief valve. The valve seat and all working parts exposed to the fluid to be of non-ferrous material. Lonerger Co. - T Series or approved equal.
25. Pressure Gauges: Gauges are to be of a type approved by authorities having jurisdiction and shall have 4 1/2 inch dials, cast brass cases, and have a range equal to twice the working pressure. Each gauge shall have a shut-off cock or valve together with a plugged outlet for the connection of an inspector's test gauge. Gauges shall be double spring type. Provide a gauge on both sides of each pressure reducing valve.
26. Sprinkler piping exposed to the elements (freezing conditions) shall be adequately covered and heat-traced.
27. Provisions are to be made for electrical connection of the water flow and tamper switches to the Building Modified Class "E" Fire Alarm system, by the electrical contractor. Final connections to the sprinkler alarm riser is to be coordinated with the Building representative.
28. Closing of any building OS&Y control valve at any time is to be coordinated with the Building Manager. Provide a minimum of 3 days notice.
29. All control valves, pressure reducing valves, check valves, water flow, tamper switches etc., shall be installed so as to be easily accessible for maintenance and removal.
30. Sprinkler system piping shall be installed so that all or any part of the system can be completely drained. Drain assemblies shall be connected to drain riser and are to be provided with a globe or angle type valve and spill to an approved receptacle to avoid flooding drain riser or slop sink. Provide dead leg drains, consisting of either a heel tee with a plugged outlet or a 1" nipple and cap, to allow for drainage of trapped branch lines.
31. Sprinkler piping and risers shall be adequately supported from the building structure. Types of hangers and installation methods shall be in accordance with the requirements of the applicable version of NFPA-13 of 2002 as modified by Appendix Q the NYC Building Code. On branch lines, there shall be not less than one hanger for each length of pipe. On loops or mains, there shall be at least one hanger between each two branch lines.
32. Inspector's test connection shall be at least 1 inch diameter terminating in an outlet giving a flow equivalent to one operating sprinkler. The test assembly shall include a globe or angle valve, sight glass, 1/2 inch orifice, union and all other appurtenances, required for a complete assembly.
33. For any modifications or additions to the existing system and prior to filling sprinkler system with water, air pressure testing is to be done. The air test shall be conducted at a pressure of 40 psig for 24 hours with a maximum pressure loss of 1 1/2 psig. Test is to be witnessed by a Building representative. Arrangements are to be made, with a 24 hour notice, with the Building Engineering. After acceptance of the air pressure test by the Building representative, the system is

to be water filled and arrangements made by the tenant to have the formal acceptance test by authorities having jurisdiction and witnessed by the Building Management office representative. A 24 hour notice is required by the Property Manager through the Building representative. In the course of this test, waterflow and tamper switches are to be connected electrically, at the tenant's expense. A hydrostatic test is to be performed on piping installed at a pressure of 200 psig for 2 hours with no loss in pressure, independent of the rest of the building for any modification or addition.

34. Furnish and install signs and seals as and where required by Building, NYC and NFPA. Signs shall be located near the device in a conspicuous location. Furnish and install updated signage at the floor control assemblies indicating required pressure, flow and the quantity of sprinkler heads calculated.
35. Furnish and install a 3 inch brass tag, with 1-1/2 inch red numbers to each valve. Also provide to the Building office representative, a piping diagram of the sprinkler system indicating the location of all control valves by number, and a valve chart, designating purpose or area served by each valve.
36. Upon acceptance of the system, a complete briefing for all personnel is to be conducted for all shifts. The briefing will include a complete demonstration of the system.
37. Furnish the Building Management office with the quantity of spare sprinkler heads and wrenches as specified in NFPA 13 of 2002 as modified by Appendix Q of the NYC Building Code and escutcheon plates.
38. It shall be the responsibility of the tenant to provide a copy of the agencies' signoffs and copies of approved drawings to the Building.



DESIGN GUIDELINES
(Building Standard Specifications)

501 Seventh Avenue
New York, NY

SECTION III **DESIGN GUIDELINES**

GENERAL ARCHITECTURAL	
FIRESTOPPING	Seal all penetrations of existing/new fire rated partitions.
ABATEMENT	Use only certified asbestos abatement contractor approved by the building management to remove all asbestos.
MILLWORK	All millwork including blocking and bracing shall be fire retardant as per code.

ARCHITECTURAL TYPICAL DESIGN	
ENTRY DOORS & HARDWARE	<p>Double or Single-Entry Doors: Size: (2) 3'-0" x 7'-10" x 1/2" <i>or</i> (1) 3'-0" x 7'-10" x 1/2" Type: ½" Thick Tempered Bronze Tinted Glass w/ Top & Bottom Solid Aluminum Rails w/ Black Anodized Finish 2" Solid aluminum tubing. Closer: Center Hung Overhead Door Closer Pivot: Top & Bottom Pivots Pulls: Back to Back Pulls-Satin Chrome Finish Building Standard Maglock: Cylinder/drop lock—keyed on exterior, thumb turn on interior to match building grand master.</p> <p>Security: Siedle Item: MR 611-3/1-0 W/ KR611-3/1-0 W/GU 611-3/1-0 MICACEOUS DARK GREY - Provide (2) BM 611-0 and (1) TM612-1 Mounted 4'-4" AFF top of box. 6" off frame. Website Link: Siedle Vario System</p>
DOOR HARDWARE & FRAMES (METAL & GLASS OFFICE FRONT)	<p>Conference Room: Size: 3'-0" x 8'-0" x 1/2" Type: Glass Door w/ Passage Set Color: Clear Anodized metal Hinges: Manufacturer recommended Finish: US26D Satin Chrome Door Stop: Manufacturer recommended, Finish: US26D Satin Chrome</p> <p>Office Doors: Size: 3'-0" x 8'-0" x 1/2" Type: Glass Door w/ Lockset Color: Clear Anodized metal Hinges: Manufacturer recommended Finish: US26D Satin Chrome Door Stop: Manufacturer recommended, Finish: US26D Satin Chrome</p>

<p>DOOR HARDWARE & FRAMES (WOOD & GLASS OFFICE FRONT)</p>	<p><u>Conference Room/ Office Doors:</u> Size: 3'-0" x 8'-0" x 1-3/4" Type: Plain Sliced Cherry veneer/glass door Color: Stain to match building control sample.</p> <p>Office Lockset: Manufacturer: Schlage – ‘D’ Series/ND53PD, Item: Athens Finish: BHMA 626; US26D</p> <p>Conference Rooms Passage set: Manufacturer: Schlage – ‘D’ Series/ND10S, Item: Athens Finish: BHMA 626; US26D</p> <p>Hinges: Hager Item: AB700 Series (3) Knuckles, (2) Pair, Finish: US26D Satin Chrome Door Stop: Rockwood Item RW44326D, Finish: US26D Satin Chrome Silencers: Rockwood Item: RW609 (3) Per Leaf, Finish: Grey</p> <p>Material Guidelines:</p> <ul style="list-style-type: none"> ▪ Urea formaldehyde free. ▪ FSC Certified wood with COC certification. ▪ Manufactured or extracted within 500 miles of final installation. ▪ Be engineered wood product with recycled content cores. <p>Adhesives:</p> <ul style="list-style-type: none"> ▪ No styrene butadiene, methylene chloride or chlorinated hydrocarbons.
<p>DOOR HARDWARE & FRAMES (GENERAL)</p>	<p>Service Rooms, Storerooms/Mechanical & Closet Doors: Size: 3'-0" x 7'-10" x 1-3/4" Type: Hollow Metal, Non-Rated, Knock-down Frames</p> <p>Classroom Lockset: Manufacturer: Schlage – ‘D’ Series/ND75PD, Item: Athens Finish: BHMA 626; US26D</p> <p>Passage set: Manufacturer: Schlage – ‘D’ Series/ND10S, Item: Athens Finish: BHMA 626; US26D</p> <p>Storeroom/Mechanical Lockset: Manufacturer: Schlage – ‘D’ Series/ND80S, Item: Athens Finish: BHMA 626; US26D</p> <p>Hinges: Hager Item: AB700 Series (3) Knuckles, (2) Pair, Finish: US26D Satin Chrome Door Stop: Glynn-Johnson Item GJ-454S, Finish: US26D Satin Chrome Silencers: Ives Item:SR64/65 (3) Per Leaf, Finish: Grey Closer: Norton #8501, Finish: US26D Satin Chrome (For Mechanical Rooms) Seal: Zero Head: Jamb Seal #770AA w/ #770SPB. Zero Automatic Mortised Drop Seal #364AA (For Mechanical Rooms Only)</p>

**WOOD OFFICE
FRONT CONTROL
SAMPLE**



<p>PAINT</p>	<p>Primer General: Benjamin Moore – Ultra 500 Primer N534 Website: Benjamin Moore - Ultra Primer N534</p> <p>Primer Metal Surfaces: Benjamin Moore – Super Spec HP Acrylic Metal Primer P04 Website: Benjamin Moore - Super Spec HP</p> <p>General Paint: Benjamin Moore – Eco Spec WB #373 Color: Cotton Ball (OC-122) Finish: Flat Website: WB Interior Latex #373 - Eco Spec WB #373</p> <p>Ceiling Paint: Benjamin Moore – Eco Spec WB #373 Color: Super White Finish: Flat Website: Benjamin Moore - Eco Spec WB #373</p> <p>HM Doors/Frames & Convactor Cover Paint: Benjamin Moore – Eco Spec WB #376 Color: Cotton Ball (OC-122) Finish: Semi-Gloss Website: Benjamin Moore - Eco Spec WB #376</p> <p>Primer plus two (2) coats paint.</p>
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<p>FLOORING</p>	<p>Polished Exposed Concrete with Sealer: Manufacturer: Dur-A-Flex Item: (2) Part Epoxy Resin Sealer Dur-a-Glaze # 4 WB Primer hardener w/ Dur-a-Glaze #4 Resin topcoat Finish: High Gloss clear</p> <p>Offices / Conference Rooms: Manufacturer: Bentley Style: Empire County Color: Building the Empire Product #PDS#147586-021 Pile Weight: 32 oz</p> <p>Field Carpet: Manufacturer: Bentley Style: Empire State Color: NY State of Mind Product #PDS#147586-016 Pile Weight: 32 oz</p> <p>Resilient Flooring: Manufacturer: Amtico Style: AR0ABB28 Color: Black Envy Size: 4-1/2" x 36" Beveled Website Link: AMTICO</p> <p>Wall Base: Manufacturer: Johnsonite Style: Wall Base Reveal (MW-121-F) Color: # 29 Moon Rock 4 1/4" High Floor Score Certified Website: Johnsonite - Wall Base</p> <p>Transition Strips: Manufacturer: Roppe Style: Vinyl Accessories Color: #114 Lunar Dust Floor Score Certified 10% Recycled Content Website Link: Roppe Vinyl Accessories</p> <p>Material Guidelines:</p> <ul style="list-style-type: none"> ▪ PVC free. <p>Adhesives:</p> <ul style="list-style-type: none"> ▪ Low VOC systems with no styrene butadiene, methylene chloride or chlorinated hydrocarbons.
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MECHANICAL ROOM FLOOR	Floor Sealer: Scofield Systems Scofield Selectseal-W Website Link: Scofield Selectseal-W Applied per manufacturer instruction.
APPLIANCES	Refrigerator 30” Manufacturer: GE Monogram Item: ZIC30GNDII / Reversible Hinge Finish: Stainless Steel Website: Refrigerator Refrigerator 36” Manufacturer: GE Monogram Item: ZIC360NHLH / Left Hinge Item: ZIC360NHRH / Right Hinge Finish: Stainless Steel Website: Refrigerator Microwave Manufacturer: GE Monogram Item: ZEM115JSS Finish: Stainless Steel Website: Microwave Dishwasher Single Drawer Manufacturer: Fisher & Paykel Item: DD24SCTX9 EZKLEEN Finish: Stainless Steel Panel Website: Dishwasher Dishwasher Double Drawers Manufacturer: Fisher & Paykel Item: DD24DAX9 EZKLEEN Finish: Stainless Steel Panel Website: Dishwasher
PANTRY FIXTURES	Sink Manufacturer: Elkay ELUHAD-2115 Finish: Stainless Steel Website: Elkay Sink Faucet Manufacturer: Moen Align Series 7165 W/ Spray Finish: Chrome Website: Moen Faucet

<p>SOLID SURFACE COUNTERTOP & BACKSPLASH</p>	<p>Solid Surface Countertop Manufacturer: Han Stone Color: Royal Blanc Thickness: 1-1/4” Website: Hanstone</p> <p>Pantry Backsplash Manufacturer: Walker Zanger Style: Roku Color: White Size: 1x6 Mosaic Offset Website: WalkerZanger</p> <p>Adhesives to be low VOC systems with no styrene butadiene, methylene chloride or chlorinated hydrocarbons.</p>
<p>PLASTIC LAMINATE</p>	<p>Wall Cabinets and Shelves: Manufacturer: WilsonArt Item: Laminate Color: D354K-01 Finish: Glossy 20% Recycled Content Website: Wilsonart</p> <p>Adhesives to be low VOC systems with no styrene butadiene, methylene chloride or chlorinated hydrocarbons.</p>
<p>MILLWORK VENEER</p>	<p>White Melamine on interior cabinets. Birch Veneer for Hat Shelf @ Coat Closet.</p> <p>Material Guidelines:</p> <ul style="list-style-type: none"> ▪ Urea formaldehyde free. ▪ FSC Certified wood with COC certification. ▪ Manufactured or extracted within 500 miles of final installation. ▪ Be engineered wood product with recycled content cores. <p>Adhesives:</p> <ul style="list-style-type: none"> ▪ No styrene butadiene, methylene chloride or chlorinated hydrocarbons.
<p>MILLWORK PULLS</p>	<p>Manufacturer: Hafele Model: #101.20.720 Website: Hafele</p>

COAT CLOSETS	Landlord to supply chrome rod and wood shelf for approximately 5 linear feet of closet space.
INTERIOR PARTITIONS	<p>Demising: Landlord will provide rated, insulated partitions separating each tenant as required by code.</p> <p>Typical: 2 ½” metal studs 16” O.C. slab to slab partition with 5/8” gyp. bd. on both sides.</p> <p>Typical w/ Sound Attenuation: 2 ½” metal studs 16” O.C. slab to slab partition with 5/8” gyp. bd. on both sides & acoustical batt insulation</p> <p>Plumbing: 3 5/8” metal studs 16” O.C. slab to slab partition with 5/8” water resistant gyp. bd. on both sides & acoustical batt insulation</p> <p>Rated Partitions: As per Architectural details.</p>
CEILINGS	<p>Open Ceilings at Perimeter: One layer painted 5/8” Gyp. Bd. With 1-5/8” furring channel.</p> <p>Acoustic Ceiling Tile: Grid: Armstrong, Silhouette 9/16” bolt slot w/ 1/8” reveal Tile: Armstrong, Ultima Tegular Series #1912HRC (High Recycled Content) Size: 24" x 24" x 3/4" Color: White Website Link: Armstrong Ceiling Grid Website Link: Armstrong Ceiling Tile</p> <p>Gyp. Bd. Ceilings: One layer painted 5/8” Gyp. Bd. With 1-5/8” furring channel.</p> <p>Material Guidelines:</p> <ul style="list-style-type: none"> Manufactured or extracted within 500 miles of final installation. <p>Adhesives:</p> <ul style="list-style-type: none"> No styrene butadiene, methylene chloride or chlorinated hydrocarbons.
WINDOW TREATMENTS	<p>Manufacturer: Phifer Sheerweave Style: 2100, 10% openness with valance Color: PO2 white Note: with valance, manual crank and mounting hardware Website Link: Phifer SheerWeave Style 2100</p>
EMERGENCY LIGHT FIXTURES	<p>Manufacturer: AtLite Type: LED Exit Light w/ Emergency battery pack Item: Marathon Series Edgelit exit sign series 6” Red letters with White trim</p> <p>Website Link: AT Lite Edgelit Exit Sign</p>

LIFE SAFETY	Each floor is tied into the building Fire Alarm system. All equipment by Siemens.
LIGHT FIXTURES	<p>Pendant Lighting Fixture: Item: Axis LT Series Linear Pendant Lamp: 3000K LED Driver: 0-10V Website Link: Axis LT Fixture</p> <p>Recessed Lighting Fixture: Manufacturer: Axis Type: 2x2 / 2x4 recessed light fixture Item: DIA22 & DIA 24 Lamping: 3000K LED Driver: 0-10V Website Link: Axis Dia Fixture</p> <p>Recessed Downlight: Manufacturer: Fraxion3 Slim Item: F3SMFT-WHWH-90C-14A2-5Y1-CA1 Lamp: 3000K 2 SDCM LED Driver: 0-10V Website Link: Fraxion3 Slim LT Fixture</p> <p>Wall Sconces Manufacturer: Zaneen Item: L3NE-SUR-SYS-DI-OP-2/4/6-120-L306-DV-00 Lamp: 3000K LED Driver: 0-10V Note: Crystal White finish for Wood Office Front Scheme Anodized aluminum for Metal Office front Scheme Website Link: Zaneen Never Ending</p> <p>Undercabinet Lighting: Manufacturer: Phillips Model: ColorKinetics ew Power Powercore Website Link: Philips eW Profile Powercore Lamping: INTEGRAL 2700K LEDS</p> <p>Mechanical Room: Manufacturer: Texas Fluorescent – 555 Series Item: 555-A-48L-F30W4100L-DMV-30K-WH Lamping: LED Website Link: Texas Fluorescent</p>

MECHANICAL SYSTEMS	
HVAC	<p><u>Perimeter:</u> Steam radiators. Existing manual valves to be replaced with automatic control valves to be tied to the VAV box where AC units over 5 Tons are installed. If units are constant volume, automatic control valves to be tied to a local thermostat, one per exposure. Coordinate all tie-ins and requirements with Base Building during design phase.</p> <p><u>Base Building Interior AC:</u> Water or air-cooled units with economizer. Units over 65,000 BTUH to be VAV. Interior distribution via pressure independent VAV boxes, Anemostat single inlet or approved equal. Tie-in to existing base building water system to be coordinated with Base Building during design phase.</p> <p><u>VAV:</u> Pressure independent single duct Anemostat variable air volume boxes with DDC controllers mounted in the factory by the box manufacturer. Tie box into BMS.</p> <p><u>Controls:</u> Central BMS – Johnson Metasys System. DDC for VAV, box mounted by manufacturer, tied to BMS.</p> <p><u>Filters:</u> MERV 8 during construction. MERV 13 during occupancy.</p> <p><u>New building standard for complete tenant fit up:</u></p> <ul style="list-style-type: none"> • Ceiling air diffusers to be Anemostat model Paragon 2'x2', baked white enamel finish. • Ceiling return grilles to be Anemostat model Paragon 2'x2' 15" Neck, baked white enamel finish. • Side wall diffusers to be Anemostat model S2H 1'x2' 20GA steel diffuser, baked white enamel finish. • Side wall return grilles to be Anemostat model S3H 1'x2' 20GA steel grille with 45 degree deflection, baked white enamel finish. <p><u>Supplemental A/C:</u> All by Tenant – Water or Air-Cooled DX. Refrigerant to be CFC free.</p>

PLUMBING	
PLUMBING PIPING	<p>Tenant connections to the plumbing system are accomplished at various wet columns located through-out the floor. Tenants to install new isolation valves when connecting to CW & HW risers.</p> <p><u>Sanitary, Waste and Vent:</u> No hub service weight cast iron, with heavy duty neoprene gasketed couplings with stainless corrugated jackets and a minimum of four stainless steel clamps per coupling.</p> <p><u>Domestic Hot and Cold Water:</u> Type "L" copper, sweat joints, lead free solder insulate with ½" fiberglass with factory jacket.</p> <p><u>Storm:</u> Schedule 40 galvanized steel pipe with threaded galvanized DWV fittings.</p> <p>Install low-flow fixtures within tenant suites and pantries. Less than or equal to: 0.5 GPF – Urinal 1.28 – Water Closet 0.5 GPM – Lav</p> <p>Install Instantaneous electric hot water heaters, Eemax Model #SP-3208</p>

ELECTRICAL SYSTEMS	
POWER	Electrical Power: An Electric closet; power is fed from 120/208V panels in “Core” electrical closet.
TENANT METERING	Tenant power to be sub-metered. Tenant panels to be located within tenant demised premises.
FIRE ALARM	Sirina Fire Protection
EMERGENCY LIGHTING	Battery backup required for emergency. Exit Lights: L.E.D. Type (Required under ASHRAE 90.1-2004)
SECURITY	
SECURITY	Siedle Intercom System (3 X 1 module) Website Link : Siedle Vario System

SPRINKLER	
SPRINKLER HEAD (BUILDING STANDARD)	<ul style="list-style-type: none"> ▪ Concealed Pendent Sprinkler Type, Reliable “G4A” ▪ Exposed Upright/Pendent Sprinklers Type Reliable Model F1FR ▪ Sidewall Sprinkler Type Reliable Model SW56 Recessed F2 Escutcheon ▪ Extended Coverage Sidewall Sprinkler Type Reliable Model F1FR Extended Coverage EC-9
SPRINKLER PIPING	Mains and branches: Schedule 40 black steel with 125 PSI screwed fittings.



**HIGH PERFORMANCE
DESIGN AND
CONSTRUCTION
GUIDELINES**

**250 WEST 57TH STREET
New York, NY**

ESRT High Performance Design and Construction Guidelines

Energy Efficiency:

Lighting:

Reduce lighting power density from ASHRAE/IESNA 90.1-2016 standards by at least 10% and up to or exceeding 35%.

For office spaces, the ASHRAE/IESNA 90.1 2013 and NYCECC standard is 0.9 W/SF. This may be achieved through efficient lighting design, use of low wattage fixtures and reflective surfaces as well as LED task lights and day-lighting optimization strategies.

Implement dimming and tuning throughout.

Implement lighting controls, including daylight dimming controls for at least 50% of lighting load and occupancy sensors for at least 75% of connected lighting load.

Per NYCECC, daylight-responsive controls complying with Section C405.2.3.1 shall be provided to control the electric lights within 15 feet of windows and under skylights (ASHRAE 90.1-2013 requirements are similar).

Per NYCECC (and ASHRAE 90.1-2013), occupant sensor controls shall be installed to control lights in the following space types:

1. Classrooms/lecture/training rooms
2. Conference/meeting/multipurpose rooms
3. Copy/print rooms
4. Lounges
5. Employee lunch and break rooms
6. Private offices
7. Restrooms
8. Storage rooms
9. Janitorial closets
10. Locker rooms
11. Other spaces 300 square feet or less that are enclosed by floor-to-ceiling height partitions
12. Warehouses
13. Open Plan Offices

All lights in the space are to be tied into occupancy sensor based controls to ensure all lights are turned off following 15 minutes of all occupants leaving the space.

Per NYCECC (and ASHRAE 90.1-2013), occupant sensor controls shall automatically turn off lights within 20 minutes of all occupants leaving the space, be manual on or controlled to automatically turn the lighting on to no more than 50% power, and shall incorporate a manual control to allow occupants to turn lights off.

Per NYCECC (and ASHRAE 90.1-2013), each area of the building that is not provided with occupant sensor controls shall be provided with time switch controls.

Per NYCECC, internally illuminated exit signs shall not be more than 5 watts per side.

Tie in lighting controls to base building BMS for energy data reporting and monitoring.

HVAC:

All HVAC systems to meet or exceed ASHRAE 90.1-2016 or NYSERDA Stretch Code, whichever is more stringent.

Air or waterside economizer to be included in all applicable work.

Motorized outside air dampers must be designed, installed, tied into BMS and commissioned.

Where possible, install heating, ventilation and air conditioning systems that comply with the efficiency requirements outlined in the New Building Institute's Advanced Buildings™ Core Performance™ Guide Sections 1.4: Mechanical System Design, 2.9: Mechanical Equipment Efficiency and 3.10: Variable Speed Control.

For the tenant fit-out spaces, provide as applicable:

- a separate control zone for each solar exposure and interior space
- controls capable of sensing space conditions and modulating the HVAC system in response to space demand for all private offices and other enclosed spaces (e.g., conference rooms, classrooms)

The system should be capable of modulating AHU and zone minimum supply volume below 0.30 cfm/ft² (1.52 L/m²) of supply volume for standard VAV terminals, or below 22.5% of the peak design flow rate for fan powered VAV boxes).

Where possible, tie in radiators or perimeter heating/cooling system to VAV box controls and BMS.

Per NYCECC, HVAC equipment shall meet the minimum efficiency requirements of Tables C403.2.3 when tested and rated in accordance with the applicable test procedure.

Per NYCECC, the supply of heating and cooling energy to each zone shall be controlled by individual thermostatic controls capable of responding to temperature within the zone. Where humidification or dehumidification or both is provided, at least one humidity control device shall be provided for each humidity control system. Where a zone has a separate heating and a separate cooling thermostatic control located within the zone, a limit switch, mechanical stop, or direct digital control system with software programming shall be provided with the capability to prevent the heating set point from exceeding the cooling set point and to maintain a deadband in accordance with Section C403.2.4.1.2.

Per NYCECC, multiple-zone VAV systems with direct digital control of individual zone boxes reporting to a central control panel shall have automatic controls configured to reduce outdoor air intake flow below design rates in response to changes in system ventilation efficiency (Ev) as defined by the New York City Mechanical Code.

Implement Demand Controlled Ventilation through the use of CO₂ sensors in densely occupied areas and throughout the space (CO₂ monitors must be between 3 and 6 feet above the floor) and in the return air stream to the Air Handling Unit serving the space and tie in to controls.

Per NYCECC, demand control ventilation (DCV) shall be provided for spaces larger than 500 square feet and with an average occupant load of 25 people per 1,000 square feet of floor area (as established in Table 403.3 of the New York City Mechanical Code) and shall be served by systems with one or more of the following: 1. An air-side economizer, 2. Automatic modulating control of the outdoor air damper, 3. A design outdoor airflow greater than 3,000 cfm.

Right size equipment based on efficient lighting and plug loads (As stated in the plug load section below target lighting and plug load of 2.0-2.5 Watts per square foot or less of connected load).

Per NYCECC (and ASHRAE 90.1-2013), design loads associated with heating, ventilating and air conditioning of the building shall be determined in accordance with ANSI/ASHRAE/ACCA Standard 183.

If heating and cooling are provided by a single piece of equipment and are controlled by separate thermostats or sensors means will be provided to prevent the heating set point from exceeding the cooling set point minus any applicable proportional band. Means can include limit switches, mechanical stops, or software programming for DDC systems.

Per NYCECC, static pressure sensors used to control VAV fans shall be located such that the controller set points is not greater than 1.2 inches w.c. (200 Pa). Where this results in one or more sensors being located downstream of major duct splits, not less than one sensor shall be located on each major branch to ensure that static pressure can be maintained in each branch.

Specify CFC and HCFC-free refrigerants. Montreal Protocol called for a complete phase-out of CFC-based refrigerants by 1995 and HCFCs by 2030. Do not use CFC-based refrigerants in new HVAC&R systems.

Install local instantaneous hot water heaters. Hot water storage tanks must be separately called out along with an explanation for their requirement versus instantaneous hot water heaters.

Per NYCECC, water-heating equipment and hot water storage tanks shall meet the requirements of Table C404.2.

Additional Efficiency Package Options

Per NYCECC, Tenant Spaces shall comply with at least one of the following:

1. More efficient HVAC performance in accordance with Section C406.2.
2. Reduced lighting power density system in accordance with Section C406.3.
3. Enhanced lighting controls in accordance with Section C406.4.
4. On-site supply of renewable energy in accordance with Section C406.4.
5. High-efficiency service water heating in accordance with Section C406.7.

Submeter and pay for utilities based on usage. Submeter HVAC, plug loads, and lighting loads separately.

At a minimum, assign circuits for lighting, HVAC, and plug loads (for example, circuits 1-4 lighting, 5-8 HVAC, and 9-12 plug load. This is no incremental cost and enables separate tracking of categories of energy usage.

Plug Loads:

ESRT's standard Load Letter form shall be utilized and completed for ESRT review.

Reduce plug loads by specifying equipment and appliances including, without limitation: computers, monitors, printers, refrigerators, dishwashers, water coolers, food service equipment, copiers, and A/V and IT equipment that meet or exceed EPA Energy Star requirements.

Implement plug load management strategies including occupancy sensors, outlet-based controls, circuited controls, and/or software programs. This measure is to be implemented if the simple payback period is demonstrated to be five years or less based on projected savings and estimated cost subject to the Empire State Realty Trust team's review.

Target lighting and plug load of 2.0-2.5 Watts per square foot or less of total connected load.

Per ASHRAE 90.1-2013, receptacles greater than or equal to 50% of all 125 volt 15- and 20-amp receptacles shall be automatically controlled in: private offices, conference rooms, rooms used primarily for printing and/or copying functions, break rooms, classrooms, individual workstations. This also applies to 25% of modular furniture circuits. Controlled receptacles must be visually marked to differentiate from uncontrolled receptacles and uniformly distributed throughout the space.

Commissioning:

A third party commissioning agent shall perform commissioning of energy systems within the tenant space or installed as part of the tenant's lease agreement including, without limitation, lighting, lighting controls, HVAC systems, BMS (including, but not limited to, VFD's, CO2 sensor calibration and DCV BMS and OA tie-in, motorized OA damper tied into DCV and BMS, static pressure or discharge air temperature reset, supply and return air setback schedules, air and water side economizers), Testing and Balancing, functional testing of applicable equipment, and electrical to ensure design optimizes performance and systems are constructed and function per efficient design.

Commissioning Report shall be submitted to ESRT for review prior to occupancy of the space and shall include, but not be limited to, all systems listed above.

Per NYCECC, commissioning and functional performance testing of the building mechanical systems, service water heating systems, and electrical power and lighting systems is required. HVAC systems shall be balanced in accordance with ASHRAE 111, "Testing, Adjusting, and Balancing of Building HVAC Systems" or other accepted engineering standards as approved by the department. Air and water flow rates shall be measured and adjusted to deliver final flow

rates within the tolerances provided in the product specifications. Test and balance activities shall include air system and hydronic system balancing.

Water Efficiency

Specify WaterSense fixtures for any fixture type that is eligible

- Water closet rate target is 1.1 GPF
- Urinal flow rate target is 0.125 GPF
- Pantry sink flow rate target is 1.0 GPM and include specification for an aerator
- Lavatory faucet flow rate target is 0.35 GPM.
- Shower flow rate target is 1.5 GPM.

Major water users are required to have submeters on water lines serving commercial cooking facilities, commercial laundry facilities, commercial gyms or spas, swimming pools, evaporative cooling towers and boilers serving buildings greater than six stories. All rooftop water tanks must be provided with a high water level alarm.

Materials and Resources

Per NYC Department of Sanitation, recyclable materials must include mixed paper, corrugated cardboard, glass, plastics, and metals. Take appropriate measures for the safe collection, storage, and disposal of two of the following: batteries, mercury-containing lamps, and electronic waste. All eligible materials must be properly disposed of in receptacles labeled per NYC Department of Sanitation regulations.

Any entity (other than residents) in a building which is generating waste must notify their employees, customers, clients, etc., about what and how to separate materials for recycling by:

- posting one or more signs in common areas routinely visited; and/or
- placing containers labeled with what to recycle.

Divert construction waste from landfills through aggressive recycling and donation programs. Develop and implement a construction demolition waste management plan. Include target recycling and diversion percentages (75%) in waste hauler contracts.

Post construction, provide dedicated clearly labeled areas for the collection and storage of recyclable materials.

Specify recycled content materials whenever possible, which may include, without limitation, gypsum board, acoustical tiles, carpet and carpet backing.

Specify regionally produced and extracted materials (within a 100 mile radius) whenever possible.

Specify rapidly renewable resources whenever possible, including, without limitation, bamboo, wool, linoleum and cork. Products must meet the Sustainable Agriculture Standard.

Specify and use wood products certified by the Forest Stewardship Council (FSC).

Indoor Environmental Quality

Monitor delivery of outside air to ensure indoor air quality and outdoor airflow compliance with ASHRAE 62.1-2016 and ASHRAE 55 requirements.

Smoking and vaping shall not be permitted indoors.

Implement Construction Indoor Air Quality Management Plans during performance of work and prior to occupancy to minimize the presence and spread of air pollutants.

Consider conducting indoor air quality testing after construction is complete and prior to occupancy to demonstrate that contaminant maximum concentrations are not exceeded.

Consider installing an air purification system and IEQ monitoring. An example is an air purification system designed to increase bi-polar ionization levels in the interior areas, which would provide cleaner air reducing particles, spores, odors and microorganism levels such as bacteria, mold and viruses. The monitoring system could be designed to measure and track the following parameters: CO₂, PM_{2.5}, TVOC, illumination, noise, temperature, and relative humidity. The monitoring system could ensure no or negligible ozone production.

Specify and install low-emitting (low or no Volatile Organic Compounds) adhesives, sealants, paints, coatings, flooring systems, ceiling systems, composite wood and agrifiber products, systems furniture and seating. Specify and install composite wood and agrifiber products and associated adhesives to contain no added urea-formaldehyde (NAUF).

Do not specify materials listed on the International Living Future Institute Red List.

Design and build to offer occupants control of lighting (task lights at workstations). For at least 90% of individual occupant spaces, provide individual lighting controls that enable occupants to adjust the lighting to suit their individual tasks and preferences, with at least three lighting levels or scenes. For all shared multioccupant spaces have in place multizone control systems that enable occupants to adjust the lighting to meet group needs and preferences, lighting for any presentation or projection wall must be separately controlled, and switches or manual controls must be located in the same space as the controlled luminaires.

Design and build to offer occupants control of temperature (for example. under-floor air diffusers). Provide individual thermal comfort controls for at least 50% of individual occupant spaces. Provide group thermal comfort controls for all shared multioccupant spaces.

Design and build to optimize daylight and views for occupants, which may be achieved through a design that includes interior rather than perimeter offices, or perimeter offices with glass fronts if perimeter offices are a design requirement.

Achieve a direct line of sight to the outdoors via vision glazing for 75% of all regularly occupied floor area.

Consider furniture partitions to be 42" or lower in height in order to allow for access to daylight and views. Additional privacy may be achieved through clear partition glass installed above the furniture panels.

For the avoidance of any doubt, nothing contained in these ESRT High Performance Design and Construction Guidelines shall be construed to modify the provisions of Article 1 of this Lease or impair any of Landlord's consent rights pursuant to Article 8 of this Lease.