2020 NYCECC Tabular Analysis
Commercial Building in compliance with ECC

Energy Code Scope of Work

Scope of work includes the replacement of existing mechanical systems, the addition of new DX split IT unit and new general exhaust fans.

Note for ALTERATION job application:
For each altered element where ALTERATION-specific exception/allowance is applied, create a row in the table to cite the applicable code section and to report the Supporting Documentation location. For examples of ALTERATION-specific exceptions/allowances, refer to 101.2.5, CS03.1, CS03.6, and CS04.2.

NYCECC Citation	Provision	Item Description	Code Prescriptive Value (ECC)	Proposed Design Value	Supporting Documentation
C403.1.1	**Calculation of heating and cooling loads (Mandatory)**	*Load calculations for HVAC systems*	*Determined in accordance with ANSI/ASHRAE/ACCA Standard 183 HVAC Systems and Equipment Handbook*	*Design loads are determined in accordance with the procedures described in the ANSI/ASHRAE/ACCA Standard183.*	*Signed and sealed statement from Engineer certifying compliance with Energy Code*
C403.2.1	**Zone isolation required (Mandatory)**	*Zone isolation*	*HVAC systems serving zones that are over 25,000 ft^2 in floor area or that span more than one floor and are designed to operate or be occupied nonsimultaneously shall be controlled independently and divided into isolation areas where each area has isolation devices and controls configured to automatically shut off the supply of conditioned and outdoor air to and exhaust air from the isolation area.*	*N/A - no zones over 25,000 sf.*	*N/A - no zones over 25,000 sf.*
C403.2.2	**Ventilation (Mandatory)**	*Ventilation cfm and Outdoor air control*	*Where mechanical ventilation is provided, systems shall be capable of reducing outdoor air to the minimum requirements from Chapter 4 of the NYC MC*	*Motorized dampers shall have ability to operate at minimum required ventilation rates, per requirements - list minimum CFM per space type*	*Refer to floor plans. Existing MD at 6th floor & new MD at 7th floor to regulate OA.*
C403.3.1	**Equipment sizing (Mandatory)**	*HVAC systems sizing based on load calculations*	*Heating and cooling equipment shall not exceed calculated loads*	*Specified equipment sized within load calculation limits*	*Signed and sealed statement from Engineer certifying compliance with Energy Code*
C403.4.1	**Thermostatic controls (Mandatory)**	*Thermostats/humidistats for mechanical zones*	*Minimum one thermostat/humidistat required per zone*	*One thermostat is provided for each zone*	*Thermostats shown on mechanical plans, M-101, M-102.*
C403.4.1.3	**Set point overlap restriction (Mandatory)**	*Sample text: Heat pump, split unit thermostats*	*Zone thermostat operation shall have minimum 5 °F dead band between heating and cooling*	*Each thermostat will be programmed as required*	*See - EN-001 for thermostat control notes*
C403.4.2	**Off-hour controls (Mandatory)**	*All zones*	*All zone thermostat shall be operated via thermostatic setback controls operated via an automatic time clock or a programmable control system*	*Each thermostat will be programmed as required*	*See - EN-001 for thermostat control notes*
C403.4.2.1	**Thermostatic setback (Mandatory)**	*All zones*	*Controls shall have ability to setback temperatures down to 55 °F (13°C) , or up to 85 °F*	*Each thermostat will be programmed as required*	*See - EN-001 for thermostat control notes*
C403.4.2.2	**Automatic setback and shutdown (Mandatory)**	*All zones*	*Controls shall be capable of automatically starting and stopping the systems for seven different daily schedules per week, capable of having settings saved in memory for 10 hours during a loss of power, and a manual system "on" override for up to two hours, or an occupancy sensor*	*Each thermostat will be programmed as required*	*See - EN-001 for thermostat control notes*
C403.4.2.2	**Automatic start (Mandatory)**	*All zones*	*Controls shall be provided for each HVAC system and automatically adjusting the daily start time of the HVAC in order to bring each space to the desired temperature.*	*Each thermostat will be programmed as required*	*See - EN-001 for thermostat control notes*
C403.5	**Economizers (Prescriptive)**	*Economizer on AC units*	*Air Economizer required for all cooling systems, unless an exception is met*	*Waterside Economizer provided integral to unit.*	*See mechanical schedule M-600*
C403.5.1	**Integrated economizer control**	*Economizer on AC units*	*Economizer systems shall be integrated with the mechanical cooling system and be capable of providing partial cooling even where additional mechanical cooling is required to provide the remainder of the cooling load. Controls shall not be capable of creating a false load in the mechanical cooling systems by limiting or disabling the economizer or any other means, except at the lowest stage of mechanical cooling.*	*Waterside Economizer provided integral to unit.*	*See mechanical schedule M-600*
C403.5.4	**Water-side economizers**	*Water-side economizer*	*Water economizers shall be configured to cool supply air and provide 100% of expected cooling load at outdoor air temp <50Fdb, <45Fwb.* *Water economizer system shall have water-side pressure drop of < 15 feet OR a secondary loop*	*Water economizer systems controls provided as per requirements.*	*See mechanical schedule M-600*
C403.5.5	**Economizer fault detection and diagnostics (Mandatory)**	*Economizer fault detection and diagnostics*	*Air-cooled unitary direct-expansion units and VRF units which have an economizer must include a fault detection and diagnostics system which complies with items 1-7 listed in Section C403.5.5*	*Units includes economizer with fault detection and diagnostic controls, per requirements*	*See mechanical schedule M-600*
C403.7.7	**Shutoff dampers (Mandatory)**	*Exhaust openings*	*Each outdoor supply air and exhaust air ducts shall be provided with motorized dampers to shut off or open as required by this section. Class I motorized damper with a maximum air leakage rate of 4cfm/ft^2 of damper surface area at 1.0 inch water gauge.*	*Class I motorized damper with a maximum air leakage rate of 4cfm/ft^2 of damper surface area at 1.0 inch water gauge*	*See EN-001*
C403.11.1	**Duct and plenum insulation and sealing (Mandatory)**	*All ductwork*	*Supply and return ducts and plenums in shall have a minimum of R-6 where located in unconditioned spaces and R-8 minimum where located outside the building. Where located within a building envelope assembly, the duct or plenum shall be separated from the building exterior or unconditioned or exempt spaces by a minimum of R-8.*	*Unconditioned spaces: R-6* *Conditioned spaces: None, exterior wall insulated >R-8*	*See mechanical floor plans.*
C403.11.2	**Duct Construction (Mandatory)**	*Ductwork*	*Shall be constructed and erected in accordance with the NYCMC*	*Ductwork must be constructed and erected in accordance with the NYCMC*	*See mechanical floor plans.*
C403.11.2.1	**Low-Pressure Duct Systems (Mandatory)**	*Ductwork*	*All low pressure ducts, operating at 2" of W.G. or less shall be properly sealed with approved methods*	*All low pressure ducts properly sealed as per requirements*	*See mechanical floor plans.*
TABLE C403.11.3	**Minimum Piping Insulation Thickness**	*Refrigerant insulation*	*Refrigerant insulation: <40F, < 1" diameter = 0.5 inches*	*Refrigerant insulation: 0.5 inches*	*See mechnical floor plans.*
C403.11.3.1	**Protection of piping insulation (Mandatory)**	*Sample text: Piping located outdoors*	*All piping insulation is protected from damage, including that due to sunlight, moisture, equipment maintenance and wind. Adhesive tape is not permitted.*	*All outdoor piping insulation is protected from damage by using piping jackets*	*See mechanical floor plans.*

ENERGY CONSERVATION CODE OF THE CITY OF NEW YORK
TO THE BEST OF MY KNOWLEDGE AND PROFESSIONAL JUDGMENT, THESE PLANS ARE IN COMPLIANCE WITH THE 2020 ENERGY CONSERVATION CODE OF THE CITY OF NEW YORK, CHAPTER C4.

THERMOSTATIC CONTROL NOTES

1. THERMOSTATIC CONTROLS 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 SYSTEMS SERVE MORE THAN ONE ZONE, AT LEAST ONE CONTROL SHALL NOT FEWER THAN ONE HUMIDITY CONTROL DEVICE SHALL BE PROVIDED FOR EACH HUMIDIFICATION CONTROL SYSTEM.

2. HEAT PUMP SUPPLEMENTARY HEAT: WHERE HEAT PUMPS ARE PROVIDED WITH SUPPLEMENTARY ELECTRIC RESISTANCE HEAT, CONTROLS SHALL BE PROVIDED THAT, EXCEPT DURING DEFROST, PREVENT SUPPLEMENTARY HEAT OPERATION WHERE THE HEAT PUMP CAN PROVIDE THE HEATING LOAD.

3. DEADBAND: WITH THE EXCEPTION OF OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION INDOOR CONTROL AS APPROVED BY THE CODE OFFICIAL, THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A DEADBAND OF AT LEAST 5°F DEADBAND WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

4. SETPOINT OVERLAP RESTRICTION: 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 TO PREVENT THE HEATING AND HEATING SETPOINT FROM EXCEEDING THE COOLING SETPOINT AND TO MAINTAIN A DEADBAND IN ACCORDANCE WITH ABOVE.

5. OFF-HOUR CONTROLS: OFF-HOUR CONTROLS SHALL BE PROVIDED FOR COMMERCIAL SPACES WITH OPERATING HOURS WHICH INCLUDE SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.

6. THERMOSTATIC SETBACK: THERMOSTATIC SETBACK CONTROLS SHALL BE CONFIGURED TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F OR UP TO 85°F.

7. AUTOMATIC SETBACK AND SHUTDOWN: AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEMS FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND SHALL RETAIN THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR NOT FEWER THAN 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS. A MANUALLY OPERATED TIMER CONFIGURED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS. OR AN OCCUPANCY SENSOR.

8. AUTOMATIC START: AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE CONTROLS SHALL BE CONFIGURED TO AUTOMATICALLY ADJUST THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

HEATING & COOLING LOADS
ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.

SPECIAL INSPECTIONS		REQUIRED
MECHANICAL SYSTEMS	BC 1705.21	x
POST INSTALLED AXCHORS	BC 1705.37	x
FIRE RESISTANT PENETRATIONS AND JOINTS	BC 1705.17	x
CHIMNEYS AND VENTS	BC 1705.33	
EMERGENCY AND STANDBY POWER SYSTEMS (GENERATOR)	BC 1705.36	
FUEL-OIL STORAGE AND FUEL-OIL PIPING SYSTEMS	BC 1705.22	
HEATING SYSTEMS	BC 1705.31	
HIGH-PRESSURE FUEL-GAS PIPING (WELDING)	BC 1705.24	
PRIVATE ON-SITE STORM WATER DISPOSAL SYSTEMS AND DETENTION FACILITIES	BC 1705.27.2	
SPRINKLER SYSTEMS	BC 1705.29	
STANDPIPE SYSTEMS	BC 1705.30	

PROGRESS INSPECTIONS	REQUIRED
MECHANICAL AND SERVICE WATER HEATING INSPECTIONS	
SHUT-OFF DAMPERS	x
HVAC/R, COMMERCIAL KITCHEN EQUIPMENT, AND SERVICE WATER HEATING EQUIPMENT	x
HVAC/R AND SERVICE WATER HEATING SYSTEM CONTROLS	x
HVAC/R AND SERVICE WATER PIPING DESIGN AND INSULATION	x
DUCT LEAKAGE TESTING, INSULATION AND DESIGN	x

DUCTWORK INSULATION SCHEDULE PER NYCECC 403.11.1

DUCTWORK TYPE	INSULATION THICKNESS (IN)	R-VALUE
SUPPLY DUCTWORK CONCEALED (INDOOR)	1.5	R-6
RETURN DUCTWORK CONCEALED (INDOOR)	1.5	R-6
SUPPLY DUCTWORK EXPOSED (INDOOR)	1.5	R-6
RETURN DUCTWORK EXPOSED (INDOOR)	1.5	R-6
ACOUSTICAL DUCT LINER	1.5	R-6
OUTSIDE AIR DUCTWORK CONCEALED (INDOOR)	2	R-8
OUTSIDE AIR DUCTWORK EXPOSED (INDOOR)	2	R-8
SUPPLY / RETURN DUCTWORK (OUTDOOR)	2	R-8
INDOOR, CONCEALED OUTSIDE AIR INTAKE/EXHAUST DUCTWORK BETWEEN ISOLATION DAMPER AND PENETRATION OF BUILDING EXTERIOR.	2	R-8

PIPING INSULATION SCHEDULE PER NYCECC C403.11.3

PIPING TYPE	INSULATION THICKNESS (IN)
REFRIGERANT PIPING 1 INCH AND SMALLER (INDOOR) (7/4OºF AND BELOW)	1
REFRIGERANT PIPING 1-1/8 INCH AND LARGER (INDOOR) (7/4OºF AND BELOW)	1-1/2
REFRIGERANT PIPING (OUTDOOR)	1-1/2
CONDENSATE DRAIN PIPING	1
DOMESTIC HOT AND RECIRCULATED WATER PIPING (1-1/2 INCH AND SMALLER)	1-1/2
DOMESTIC HOT AND RECIRCULATED WATER PIPING (LARGER THAN 1-1/2 INCH)	2

PROJECT:

EBC Case Study #1

OWNER:

NYC Buildings | ICC INTERNATIONAL CODE COUNCIL

ARCHITECT:

FIRM NAME

[Address1]
[Address2]

MEP ENGINEER:

STRUCTURAL ENGINEER:

FACADE ARCHITECT:

DOB APPROVAL STAMP:

DOB JOB NUMBER/STICKER:

SEAL:

DRAWING TITLE:

MECHANICAL
ENERGY ANALYSIS

PROJECT #: XX-XX | DATE: 03.05.2021

SHEET TITLE :

PAGE: OF XX

EN-001.00

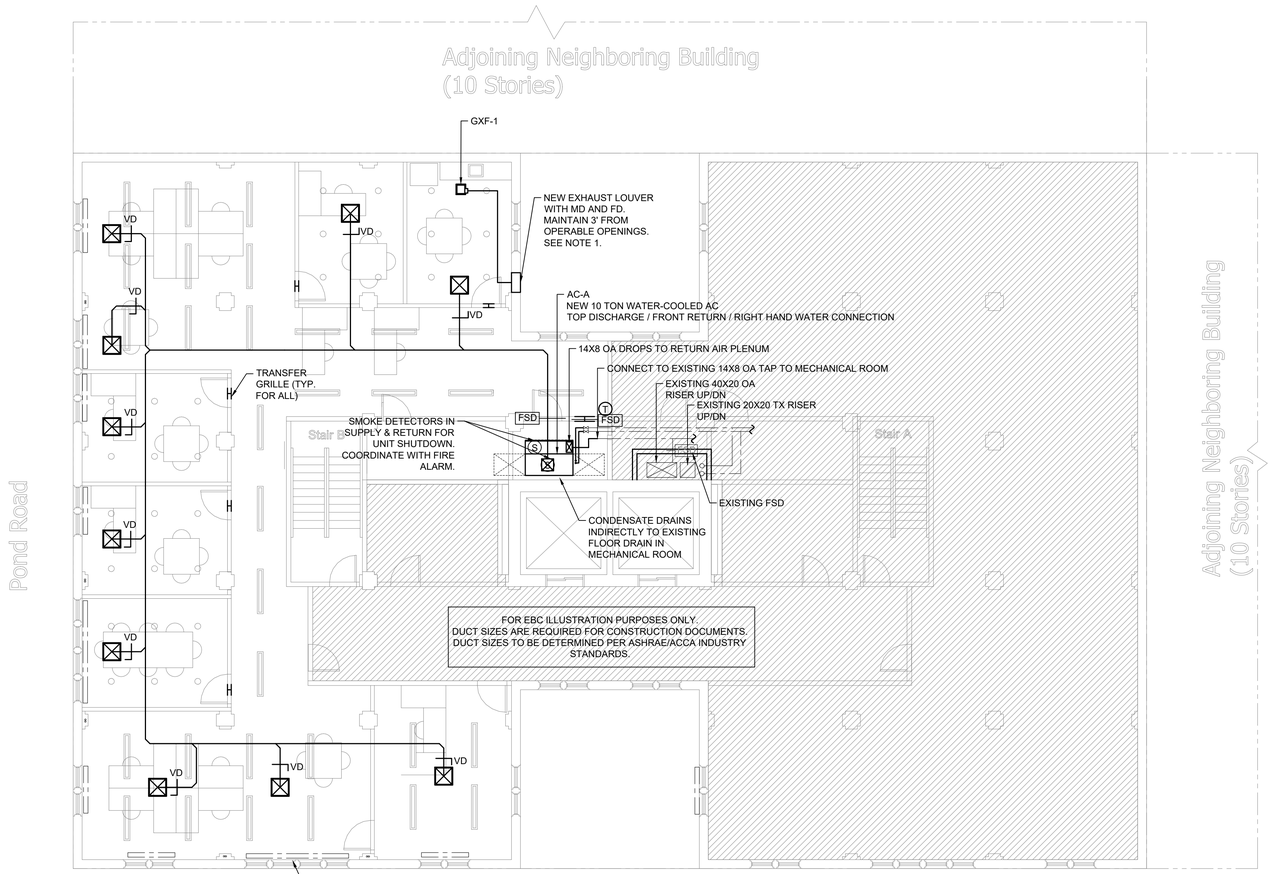
SUMMARY	
PROJECT TYPE:	INTERIOR ALTERATION
JOB DESCRIPTION / SCOPE OF WORK	PARTIAL 6TH FLOOR INTERIOR FIT OUT OF GROUP B OCCUPANCY OFFICE TENANT SPACE. NO CHANGE TO USE, EGRESS, OR OCCUPANCY. 6TH FLOOR IS OCCUPIED BY TWO TENANTS. TENANT OUTSIDE OF SCOPE OF WORK TO REMAIN AS IS. NEW HVAC SYSTEM IS PROVIDED.
STORIES	9 STORIES + CELLAR (HIGH- RISE)
OCCUPANCY	B, OFFICE
CONSTRUCTION CLASS	1968 CODE, CONSTRUCTION CLASS I-C, FULLY SPRINKLERED
EXISTING BUILDING AREA (SF) INCLUDING SUBGRADE LEVELS	88,000 (10 fIOORS AT 8,800 SF EACH)
PRIOR CODE BUILDING (Y/N)?	Y, 1968 CODE

EBC CONSIDERATIONS	
WORK AREA (SF)	3,465 SF ON 6TH FLOOR
WORK AREA / EXIST. BUILDING AREA %	12.89%
WORK AREA RELATIVE TO BUILDING AREA	<50%
EBC ALTERATION LEVEL (LEVEL 1 OR LEVEL 2)	LEVEL 1
CHANGE OF OCCUPANCY (Y/N)?	N
ADDITION (Y/N)?	N
RELOCATION, RAISING OR MOVING OF BUILDING (Y/N)?	N
TENANT/OCCUPANT PROTECTION PLAN REQUIRED?	BUILDING IS OCCUPIED BY NON-RESIDENTIAL TENANTS, OPP REQUIRED.
APPLICABLE EBC CHAPTERS	CHAPTER 3 – GENERAL APPLICABLE PROVISIONS / CHAPTER 7 - STRUCTURAL CHAPTER 8 – ALTERATION LEVEL 1 / CHAPTER 15 – SAFETY IN OCCUPIED BUILDINGS
CERTIfICATE OF OCCUPANCY REQUIRED (AC 28-118) (Y/N)?	N

MECHANICAL

SECTION	SUBJECT	REQUIREMENTS	APPLIES?	COMPLIANCE
809.1.1	COMPLIANCE OF AN ENTIRE MECHANICAL SYSTEM AS NEW CONSTRUCTION.	AN ENTIRE MECHANICAL SYSTEM SHALL BE REQUIRED TO COMPLY WITH THE NYC MC FOR NEW CONSTRUCTION WHEN EITHER: 1. THE WORK AREA EXCEEDS 50% OF THE AREA SERVED BY THAT SYSTEM; OR 2. 50% OF THE CAPACITY OF TERMINAL DISTRIBUTION ELEMENTS CONNECTED TO THAT SYSTEM IS ALTERED OR REPLACED.	Y	COMPLIES. A NEW MECHANICAL SYSTEM IS PROVIDED FOR THE AREA OF WORK.
809.3	VENTILATION	VENTILATION SHALL COMPLY WITH MC CHAPTER 4 WITH EXCEPTION FOR CONNECTION TO EXISTING OUTDOOR AIR INTAKE OPENINGS.	Y	COMPLIES. BUILDING HAS EXISTING VENTILATION RISER.
809.4	EXHAUST SYSTEMS	EXHAUST SYSTEMS SHALL COMPLY WITH CHAPTER 5 OF THE NEW YORK CITY MECHANICAL CODE.	Y	COMPLIES. GENERAL EXHAUST SYSTEMS IN THE PANTRY VENTS TO EXTERIOR. ALL CLEARANCES PER MC CHAPTER 5.
809.5	DUCT SYSTEMS	DUCT SYSTEMS SHALL COMPLY WITH MC CHAPTER 6 AND THIS SECTION WITH EXCEPTION FOR REPLACEMENT OF EXISTING FANS OF THE SAME CAPACITY AND MOTOR HORSEPOWER.	Y	COMPLIES. DUCT SYSTEMS COMPLY WITH MC CHAPTER 6.
809.6	FIRE DAMPERS	NEW AND EXISTING FIRE DAMPERS IN THE WORK AREA, OR IN THE ROOM OR SPACE IN WHICH WORK ON A STAND-ALONE SYSTEM WHICH INCLUDES DUCT ALTERATIONS OCCURS, SHALL BE OPERATIONALLY TESTED IN ACCORDANCE WITH NFPA 80.	Y	COMPLIES. NEW FIRE DAMPERS IN AREA OF WORK SHALL BE OPERATIONALLY TESTED IN ACCORDANCE WITH NFPA 105. A FIRE DAMPER SHALL BE PROVIDED FOR EVERY PENETRATION THROUGH A RATED ENCLOSURE WHERE REQUIRED BY NYCMC.
809.7	SMOKE DAMPERS	NEW AND EXISTING SMOKE DAMPERS IN THE WORK AREA, OR IN THE ROOM OR SPACE IN WHICH WORK ON A STAND-ALONE SYSTEM WHICH INCLUDES DUCT ALTERATIONS OCCURS, SHALL BE OPERATIONALLY TESTED IN ACCORDANCE WITH NFPA 105.	Y	COMPLIES. NEW FIRE SMOKE DAMPERS IN AREA OF WORK SHALL BE OPERATIONALLY TESTED IN ACCORDANCE WITH NFPA 105. A FIRE SMOKE DAMPER SHALL BE PROVIDED FOR EVERY PENETRATION THROUGH A RATED ENCLOSURE WHERE REQUIRED BY NYCMC.

MECHANICAL ABBREVIATIONS	
AC	AIR CONDITIONING UNIT
ACCU	AIR COOLED CONDENSING UNIT
CD	CONDENSATE
CFM	CUBIC FEET OF AIR PER MINUTE
DN	DOWN
FD/AD	FIRE DAMPER W/ACCESS DOOR
FSD/AD	FIRE SMOKE DAMPER W/ACCESS DOOR
GXF	GENERAL EXHAUST FAN
MD	MOTORIZED DAMPER
OAI	OUTSIDE AIR INTAKE RISER
REF	REFRIGERANT PIPING
TX	TOILET EXHAUST RISER
VD	VOLUME DAMPER



NOTES:

1. MOTORIZED DAMPERS TO BE CLASS I MOTORIZED DAMPER WITH A MAXIMUM AIR LEAKAGE RATE OF 4CFM/FT2 OF DAMPER SURFACE AREA AT 1.0 INCH WATER GAUGE.

WORK NOTES:

1. EXISTING WATER COOLED HVAC SYSTEM TO BE REMOVED AND REPLACED WITH NEW, AS REQUIRED BY NYC EBC SECTIONS 308 AND 809. WORK AREA EXCEEDS 50% OF THE AREA SERVED BY THE EXISTING SYSTEM.
2. DISCONNECT CUT BACK EXISTING CONDENSER WATER PIPING BETWEEN EXISTING SHUTOFF VALVE AND EXISTING UNIT.
3. DISCONNECT AND CUT BACK EXISTING OUTSIDE AIR DUCTWORK BETWEEN PENETRATION INTO EXISTING MECHANICAL ROOM AND EXISTING UNIT. EXISTING FIRE SMOKE DAMPERS AND MOTORIZED DAMPERS ARE LOCATED OUTSIDE OF THE WORK AREA AND ARE TO BE MAINTAINED.

1 6TH FLOOR PLAN
SCALE: 1/8" = 1'-0"

PROJECT:

EBC Case Study #1

OWNER:

NYC Buildings | ICC INTERNATIONAL CODE COUNCIL

ARCHITECT:

FIRM NAME

[Address1]
[Address2]

MEP ENGINEER:

STRUCTURAL ENGINEER:

FACADE ARCHITECT:

DOB APPROVAL STAMP:

DOB JOB NUMBER/STICKER:

SEAL:

DRAWING TITLE:

MECHANICAL
6TH FLOOR PLAN

PROJECT #: XX-XX | DATE: 03.05.2021

SHEET TITLE :

PAGE: OF XX

M-100.00

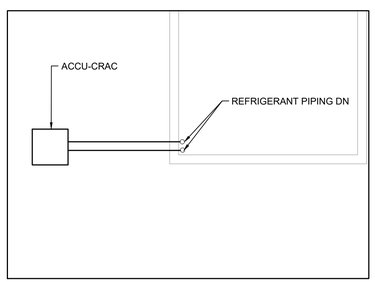
SUMMARY	
PROJECT TYPE:	INTERIOR ALTERATION
JOB DESCRIPTION / SCOPE OF WORK	7TH FLOOR INTERIOR FIT OUT OF GROUP B OCCUPANCY OFFICE TENANT SPACE. NO CHANGE TO USE, EGRESS, OR OCCUPANCY. EXISTING TWO TENANTS ARE BEING COMBINED INTO A SINGLE TENANT. REMOVE TWO EXISTING HVAC UNITS. PROVIDE ONE NEW HVAC UNIT.
STORIES	9 STORIES + CELLAR (HIGH- RISE)
OCCUPANCY	B, OFFICE
CONSTRUCTION CLASS	1968 CODE, CONSTRUCTION CLASS I-C, FULLY SPRINKLERED
EXISTING BUILDING AREA (SF) INCLUDING SUBGRADE LEVELS	88,000 (10 FLOORS AT 8,800 SF EACH)
PRIOR CODE BUILDING (Y/N)?	Y, 1968 CODE

WORK AREA (SF)	7,878 SF ON 7TH FLOOR
WORK AREA / EXIST. BUILDING AREA %	12.89%
WORK AREA RELATIVE TO BUILDING AREA	<50%
EBC ALTERATION LEVEL (LEVEL 1 OR LEVEL 2)	LEVEL 1
CHANGE OF OCCUPANCY (Y/N)?	N
ADDITION (Y/N)?	N
RELOCATION, RAISING OR MOVING OF BUILDING (Y/N)?	N
TENANT/OCCUPANT PROTECTION PLAN REQUIRED?	BUILDING IS OCCUPIED BY NON-RESIDENTIAL TENANTS, OPP REQUIRED.
APPLICABLE EBC CHAPTERS	CHAPTER 3 – GENERAL APPLICABLE PROVISIONS / CHAPTER 7 - STRUCTURAL CHAPTER 8 – ALTERATION LEVEL 1 / CHAPTER 15 – SAFETY IN OCCUPIED BUILDINGS
CERTIFICATE OF OCCUPANCY REQUIRED (AC 28-118) (Y/N)?	N

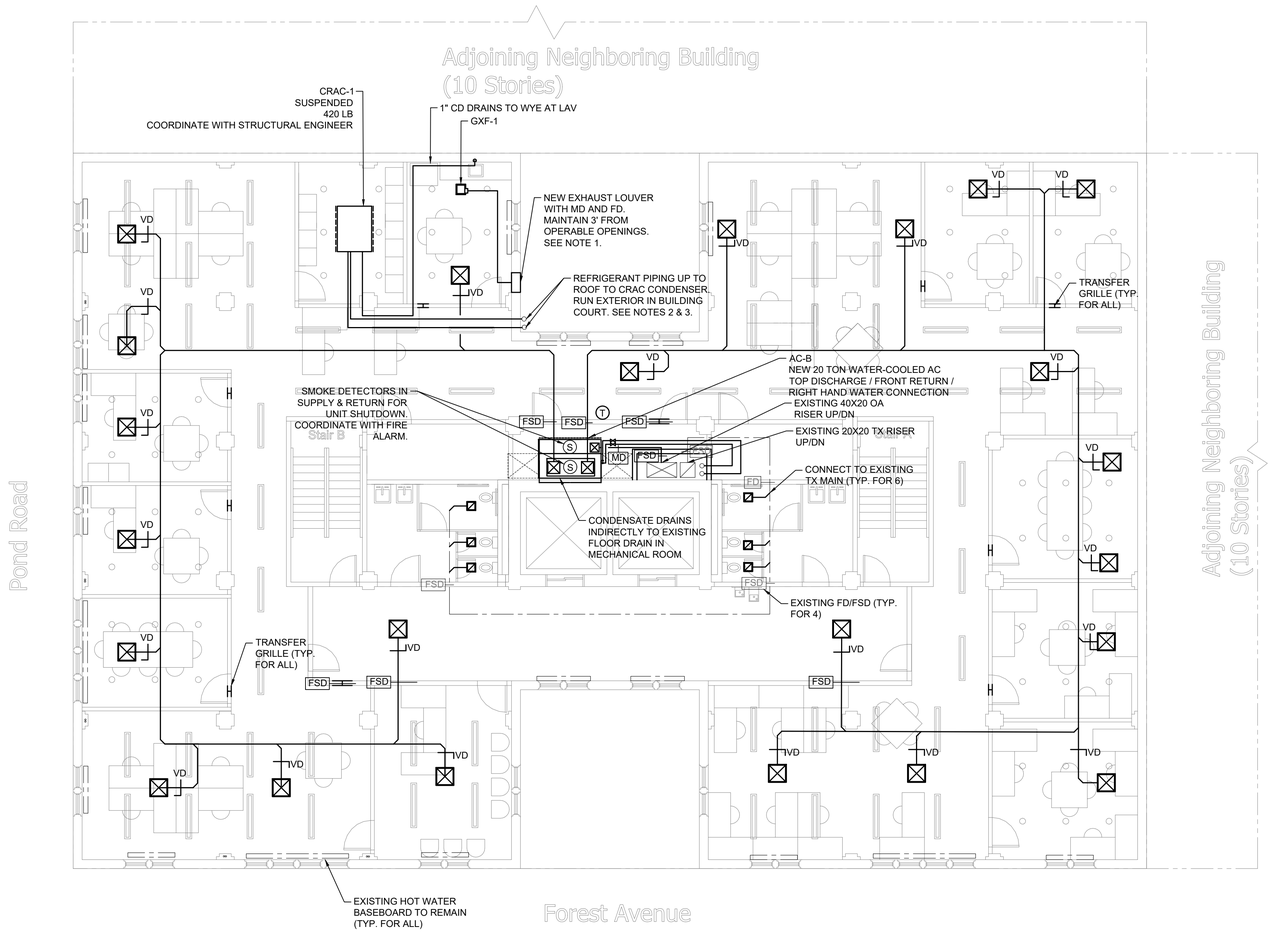
MECHANICAL

SECTION	SUBJECT	REQUIREMENTS	APPLIES?	COMPLIANCE
809.1.1	COMPLIANCE OF AN ENTIRE MECHANICAL SYSTEM AS NEW CONSTRUCTION.	AN ENTIRE MECHANICAL SYSTEM SHALL BE REQUIRED TO COMPLY WITH THE NYC MC FOR NEW CONSTRUCTION WHEN EITHER: 1. THE WORK AREA EXCEEDS 50% OF THE AREA SERVED BY THAT SYSTEM; OR 2. 50% OF THE CAPACITY OF TERMINAL DISTRIBUTION ELEMENTS CONNECTED TO THAT SYSTEM IS ALTERED OR REPLACED.	Y	COMPLIES. A NEW MECHANICAL SYSTEM IS PROVIDED FOR THE AREA OF WORK.
809.3	VENTILATION	VENTILATION SHALL COMPLY WITH MC CHAPTER 4 WITH EXCEPTION FOR CONNECTION TO EXISTING OUTDOOR AIR INTAKE OPENINGS.	Y	COMPLIES. BUILDING HAS EXISTING VENTILATION RISER.
809.4	EXHAUST SYSTEMS	EXHAUST SYSTEMS SHALL COMPLY WITH CHAPTER 5 OF THE NEW YORK CITY MECHANICAL CODE.	Y	COMPLIES. GENERAL EXHAUST SYSTEMS IN THE PANTRY VENTS TO EXTERIOR. ALL CLEARANCES PER MC CHAPTER 5.
809.5	DUCT SYSTEMS	DUCT SYSTEMS SHALL COMPLY WITH MC CHAPTER 6 AND THIS SECTION WITH EXCEPTION FOR REPLACEMENT OF EXISTING FANS OF THE SAME CAPACITY AND MOTOR HORSEPOWER.	Y	COMPLIES. DUCT SYSTEMS COMPLY WITH MC CHAPTER 6.
809.6	FIRE DAMPERS	NEW AND EXISTING FIRE DAMPERS IN THE WORK AREA, OR IN THE ROOM OR SPACE IN WHICH WORK ON A STAND-ALONE SYSTEM WHICH INCLUDES DUCT ALTERATIONS OCCURS, SHALL BE OPERATIONALLY TESTED IN ACCORDANCE WITH NFPA 80.	Y	COMPLIES. EXISTING FIRE DAMPERS IN AREA OF WORK SHALL BE OPERATIONALLY TESTED IN ACCORDANCE WITH NFPA 105. A FIRE DAMPER SHALL BE PROVIDED FOR EVERY PENETRATION THROUGH A RATED ENCLOSURE WHERE REQUIRED BY NYCMC.
809.7	SMOKE DAMPERS	NEW AND EXISTING SMOKE DAMPERS IN THE WORK AREA, OR IN THE ROOM OR SPACE IN WHICH WORK ON A STAND-ALONE SYSTEM WHICH INCLUDES DUCT ALTERATIONS OCCURS, SHALL BE OPERATIONALLY TESTED IN ACCORDANCE WITH NFPA 105.	Y	COMPLIES. EXISTING FIRE SMOKE DAMPERS IN AREA OF WORK SHALL BE OPERATIONALLY TESTED IN ACCORDANCE WITH NFPA 105. A FIRE SMOKE DAMPER SHALL BE PROVIDED FOR EVERY PENETRATION THROUGH A RATED ENCLOSURE WHERE REQUIRED BY NYCMC.
809.12	REFRIGERATION	REFRIGERATION SHALL COMPLY WITH CHAPTER 11 OF THE NEW YORK CITY MECHANICAL CODE.	Y	COMPLIES. NEW REFRIGERANT PIPING TO COMPLY WITH MC 1107.

MECHANICAL ABBREVIATIONS	
AC	AIR CONDITIONING UNIT
ACCU	AIR COOLED CONDENSING UNIT
CD	CONDENSATE
CFM	CUBIC FEET OF AIR PER MINUTE
DN	DOWN
FD/AD	FIRE DAMPER W/ACCESS DOOR
FSD/AD	FIRE SMOKE DAMPER W/ACCESS DOOR
GXF	GENERAL EXHAUST FAN
MD	MOTORIZED DAMPER
OAI	OUTSIDE AIR INTAKE RISER
REF	REFRIGERANT PIPING
TX	TOILET EXHAUST RISER
VD	VOLUME DAMPER



2 **PARTIAL ROOF PLAN**
SCALE: ⅛" = 1'-0"



FOR EBC ILLUSTRATION PURPOSES ONLY.
DUCT SIZES ARE REQUIRED FOR CONSTRUCTION DOCUMENTS.
DUCT SIZES TO BE DETERMINED PER ASHRAE/ACCA INDUSTRY STANDARDS.

NOTES:

1. MOTORIZED DAMPERS TO BE CLASS I MOTORIZED DAMPER WITH A MAXIMUM AIR LEAKAGE RATE OF 4CFM/FT2 OF DAMPER SURFACE AREA AT 1.0 INCH WATER GAUGE.
2. PROVIDE WEATHERPROOF JACKETING ON ALL EXPOSED REFRIGERANT PIPING.
3. PROVIDE REFRIGERANT PIPING INSULATION PER 2020 NYCECC.

1 **7TH FLOOR PLAN**
SCALE: ⅛" = 1'-0"

WORK NOTES:

1. TWO EXISTING WATER COOLED HVAC SYSTEMS TO BE REMOVED AND REPLACED WITH NEW, AS REQUIRED BY NYC EBC SECTIONS 308 AND 809. WORK AREA EXCEEDS 50% OF THE AREA SERVED BY THE EXISTING SYSTEMS.
2. DISCONNECT CUT BACK EXISTING CONDENSER WATER PIPING BACK TO RISER.
3. DISCONNECT AND CUT BACK EXISTING OUTSIDE AIR DUCTWORK BACK TO EXISTING OUTSIDE AIR RISER. REMOVE EXISTING FIRE SMOKE DAMPER.
4. EXISTING TOILET EXHAUST AIR OUTLETS AND BRANCH DUCTS TO BE REMOVED. PATCH EXISTING DUCT WHERE REQUIRED UPON INSTALLATION OF NEW TAPS AS SHOWN. EXISTING FIRE DAMPERS AND FIRE SMOKE DAMPERS TO REMAIN AND BE OPERATIONALLY TESTED PER NFPA 80.

PROJECT:

EBC Case Study #1

OWNER:

NYC Buildings | ICC INTERNATIONAL CODE COUNCIL

ARCHITECT:

FIRM NAME

[Address1]
[Address2]

MEP ENGINEER:

STRUCTURAL ENGINEER:

FACADE ARCHITECT:

DOB APPROVAL STAMP:

DOB JOB NUMBER/STICKER:

SEAL:

DRAWING TITLE:

MECHANICAL
7TH FLOOR PLAN

PROJECT #: XX-XX | DATE: 03.05.2021

SHEET TITLE :

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M-101.00

DX SPLIT (CEILING MOUNTED INDOOR UNIT W/ REMOTE AIR-COOLED CONDENSER) – UNIT SCHEDULE															
MARK	LOCATION	AREA SERVED	INDOOR UNIT TYPE	NOMINAL TONS	NOMINAL COOLING (MBH)	SUPPLY AIRFLOW (CFM @ ESP)	ESP (IN.W.G.)	INDOOR REFRIG. CONN. (SUC/LIQ, IN.)	FILTERS	INDOOR UNIT WEIGHT (LB)	REMOTE CONDENSER / CONDENSING UNIT MODEL	CONDENSER AIRFLOW (CFM)	CONDENSER REFRIG. CONN. (HOT GAS / LIQ, IN.)	CONDENSER WEIGHT (LB)	CONDENSER ELECTRICAL (MCA / MAX FUSE)
AC-1	7TH FLOOR	IT ROOM	CEILING MOUNTED – W/ CONDENSATE PUMP	4	48	2200 @ 0.5	0.5	7/8 / 1/2	20x16, QTY 2 (1" THROWAWAY)	270	AIR-COOLED CONDENSER, R-454B, SPLIT-AMBIENT (SA) HEAD PRESSURE CONTROL, LOW-AMBIENT OPERATION TO 0°F, 208/3/60	4750	5/8 / 5/8	139	208-230/3/60: 3.8 A / 15 A (SA HEAD PRESSURE CONTROL)

GENERAL MECHANICAL NOTES

1. PROVIDE DX SPLIT SYSTEM WITH CEILING-MOUNTED INDOOR UNIT AND REMOTE AIR-COOLED CONDENSER.
2. CONDENSER SHALL BE FACTORY EQUIPPED WITH SPLIT-AMBIENT (SA) HEAD PRESSURE CONTROL PACKAGE SUITABLE FOR LOW-AMBIENT OPERATION DOWN TO 0°F.
3. SYSTEM SHALL BE DESIGNED FOR YEAR-ROUND COOLING OPERATION. PROVIDE ALL ACCESSORIES REQUIRED FOR PROPER OPERATION AT DESIGN CONDITIONS.
4. PROVIDE FACTORY-INSTALLED CONDENSATE PUMP WITH SAFETY SHUTOFF. ROUTE CONDENSATE DISCHARGE TO APPROVED DRAIN LOCATION.
5. REFRIGERANT PIPING SIZES SHOWN ARE MINIMUM. CONTRACTOR SHALL VERIFY FINAL SIZES BASED ON ACTUAL EQUIVALENT LENGTH AND MANUFACTURER REQUIREMENTS.
6. PROVIDE VIBRATION ISOLATION, SEISMIC RESTRAINTS (WHERE REQUIRED), AND WEATHERPROOFING FOR ALL OUTDOOR EQUIPMENT.
7. COORDINATE ELECTRICAL CHARACTERISTICS, DISCONNECTS, AND OVERCURRENT PROTECTION WITH ELECTRICAL DRAWINGS.
8. INSTALL SYSTEM IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ALL APPLICABLE CODES.

WATER COOLED UNIT SCHEDULES														
MARK	LOCATION	TON	COOLING MBH	HEATING MBH	EER	COP	CFM	GPM	ESP	ECONOMIZER (MBH)	WATER CONNECTION (IN.) ENT/LVG	MCA (A)	MOCP	WEIGHT (LB)
AC-A	6TH FL MECH RM.	10	111	153	12	4.6	4000	30	1.82	111	1-1/4" / 1-1/4"	47.2	60	845
AC-B	7TH FL MECH. RM.	20	218	306	13	5.2	8000	60	0.75	218	2" / 2"	85.7	110	1225

NOTES:

A. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.
B. PROVIDE WITH MANUFACTURER'S FAN SPEED CONTROLLER FOR BALANCING PURPOSES.
C. PROVIDE VIBRATION ISOLATION AND FLEXIBLE CONNECTIONS.
D. CAPACITIES SHOWN ARE NOMINAL MBH.
E. UNITS INCLUDE INTEGRAL WATERSIDE ECONOMIZER.
F. ESP SHOWN IS EXTERNAL STATIC PRESSURE (IN. WG).
G. WEIGHT SHOWN IS OPERATING WEIGHT.

FAN SCHEDULE							
MARK	LOCATION	AREA SERVED	TYPE	CFM	TOTAL ESP	FAN RPM	V/C/P
GXF-1	SEE PLANS	PANTRIES	CEILING MOUNTED	200	0.5	1241	208/60/1

NOTES:

A. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.
B. PROVIDE WITH MANUFACTURER'S FAN SPEED CONTROLLER FOR BALANCING PURPOSES.
C. PROVIDE VIBRATION ISOLATION AND FLEXIBLE CONNECTIONS.

FOR EBC ILLUSTRATION PURPOSES ONLY.
BRANDS AND MODELS OF EQUIPMENT ARE NORMALLY REQUIRED
FOR PLAN APPROVAL AND CONSTRUCTION PURPOSES.

PROJECT:

EBC Case Study #1

OWNER:

NYC Buildings | ICC INTERNATIONAL CODE COUNCIL

ARCHITECT:

FIRM NAME

[Address1]
[Address2]

MEP ENGINEER:

STRUCTURAL ENGINEER:

FACADE ARCHITECT:

DOB APPROVAL STAMP:

DOB JOB NUMBER/STICKER:

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MECHANICAL SCHEDULES

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