NYC Buildings

EN1: Energy Cost Budget Worksheet

Must be typewritten.

Do Not Submit Separately.
Must be incorporated in the drawing set.

1	**Location Information** *Required for **all** applications.*
	House No(s) 221 — Street Name West 57th Street
	Borough Manhattan — Block 1029 — Lot 14 — BIN 1080870 — CB No. 105
	Work on Floor(s) SC3 thru 93 — Apt/Condo No(s) n/a

2	**Applicant Information** *Required for **all** applications.*
	Last Name McHugh — First Name Christopher — Middle Initial
	Business Name AKF Group — Business Telephone 646-758-0900
	Business Address 1501 Broadway, Suite 700 — Business Fax
	City New York — State NY — Zip 10036 — Mobile Telephone
	E-Mail — License Number 73130

Energy Model Inputs

NYS approved energy model software: eQUEST v3.64

Envelope	Proposed Design Input	Budget (Standard Design) Input
Above-grade wall U-factor	0.182	0.054
Below-grade wall U-factor	0.04	0.04
Roof construction U-factor	0.05	0.048
Exterior floor U-factor	0.04	0.04
Slab-on-grade construction (yes/no)	No	No
Window-to-gross wall ratio	0.405	0.397
Average fenestration assembly U-factor	0.411	0.508
Average fenestration assembly SHGC	0.314	0.4
Fixed shading devices (yes/no)	No	No
Automated movable shading devices (yes/no)	No	No
Lighting		
Average ambient lighting power density (W/SF)	0.8837	0.9271
Lighting occupant sensor controls (yes/no)	No	No
Automatic daylighting controls (yes/no)	No	No
Exterior lighting power (tradable surfaces) (kW)	6.00	6.10
Exterior lighting power (non-tradable surfaces) (kW)	55.56	55.56
Heating, Ventilating & Air Conditioning		
Refrigeration equipment type	Retail: VAV units w Air Cooled Chillers / BOH, Amenities: Pkgd VAV units w Water Cooled Condenser / Residential: PTHP units and Heat Recovery Ventilation Units	Retail: Pkgd VAV units w Air Cooled Condenser / BOH, Amenities: VAV units with Chillers / Residential: PTHP units and Heat Recovery Ventilation Units
Heating equipment type	Retail: Boilers / Amenities, BOH: Pkgd units w Heat Pump Heating / Residential: PTHP units, HW baseboard and Heat Recovery Ventilation Units	Retail: Boilers / Amenities, BOH: Pkgd units with Heat Pump Heating / Residential: PTHP units, HW baseboard and Heat Recovery Ventilation Units
Demand controlled ventilation (yes/no)	No	No
Economizer type (air or water)	Air	Air
Domestic hot water heating source	Retail - Electric / Residential - Hot Water	Retail - Electric / Residential - Hot Water

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Unregulated Energy	Proposed Design Input	Budget (Standard Design) Input
Average Receptacle equipment power density (W/SF)	0.397	0.397
Average Unregulated lighting power density (W/SF)	N/A	N/A
Other process loads	Elevators - 209 kW fluctuating with anticipated occupancy throughout day	Elevators - 209 kW fluctuating with anticipated occupancy throughout day

Energy Cost Budget Conformance	Proposed Design Output	Budget (Standard Design) Output
Annual Regulated Energy Cost ($)	3,278,658	3,573,947
Annual Regulated Energy Use (BTU/GSF)	70,116	71,769
Annual Regulated Energy Cost Per Sq. Ft. ($/GSF)	2.746	2.993

Energy Model Output Breakdown

Energy Use Breakdown	Proposed Design Output (% BTU/yr)	Budget (Standard Design) Output (% BTU/yr)
Heating	24	33
Cooling	12	15
Heat rejection	0	0
Fans	15	9
Pumps	16	11
Lighting	16	15
Unregulated loads (e.g., plug loads, elevators, escalators, kitchen, process equipment, exterior lighting)	16	16
Total	100%	100%

Falsification of any statement is a misdemeanor under § 26-124 of the NYC Administrative Building Code and is punishable by a fine or imprisonment, or both. It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both.

Name (please print)
Christopher McHugh

Signature

STATE OF NEW YORK — CHRISTOPHER O. McHUGH — No. 073130 — LICENSED PROFESSIONAL ENGINEER

P.E. / R.A. Seal *(apply seal, then sign and date over seal)*

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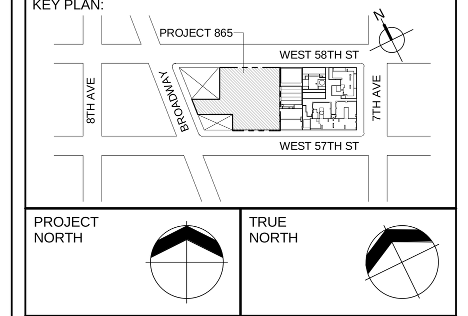
	Inspection/Test	Periodic (minimum)	Reference Standard (See ECC Chapter 6) or Other Criteria	ECC or Other Citation	This Inspection Required YES	NO
IIA	**Envelope Inspections**					
IIA1	**Protection of exposed foundation insulation:** Insulation shall be visually inspected to verify proper protection where applied to the exterior of basement or cellar walls, crawl-space walls and/or the perimeter of slab-on-grade floors.	As required during foundation work and prior to backfill	Approved construction documents	303.2.1; ASHRAE 90.1 – 5.8.1.7	●	○
IIA2	**Insulation placement and R-values:** Installed insulation for each component of the conditioned space envelope and at junctions between components shall be visually inspected to ensure that the R-values are marked, that such R-values conform to the R-values identified in the construction documents and that the insulation is properly installed. Certifications for unmarked insulation shall be similarly visually inspected.	As required to verify continuous enclosure while walls, ceilings and floors are open	Approved construction documents	303.1, 303.1.1, 303.1.2, 502.1, 502.2; ASHRAE 90.1 –5.5, 5.6 or 11; 5.8.1	●	○
IIA3	**Fenestration thermal values and product ratings:** U-factors and SHGC values of installed fenestration shall be visually inspected for conformance with the U-factors and SHGC values identified in the construction drawings by verifying the manufacturer's NFRC labels or, where not labeled, using the ratings in ECC Tables 303.1.3(1), (2) and (3). Where ASHRAE 90.1 is used, visible light transmittance values shall also be verified.	As required during installation	Approved construction documents; NFRC 100, NFRC 200	303.1, 303.1.3, 502.3; ASHRAE 90.1 –5.5; 5.6 or 11; 5.8.2	●	○
IIA4	**Fenestration and door assembly product ratings for air leakage:** Windows and sliding or swinging door assemblies, except site-built windows and/or doors, shall be visually inspected to verify that installed assemblies are listed and labeled by the manufacturer to the referenced standard. For curtain wall, storefront glazing, commercial entrance doors and revolving doors, the testing reports shall be reviewed to verify that the installed assembly complies with the standard cited in the approved plans.	As required during installation; prior to final construction inspection	NFRC 400, AAMA/WDMA/CSA 101/I.S.2/A440 ASTM E283; ANSI/DASMA 105	502.4; ASHRAE 90.1 –5.4.3.2	●	○
IIA5	**Fenestration areas:** Dimensions of windows, doors and skylights shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents	502.3; ASHRAE 90.1 – 5.5.4, 5.6 or 11	●	○
IIA6	**Sealing:** Openings and penetrations in the building envelope, including site-built fenestration and doors, shall be visually inspected to verify that a continuous air barrier around the envelope forms an air-tight enclosure. The progress inspector shall visually inspect to verify that materials and/or assemblies have been tested and meet the requirements of the respective standards, or that the building is tested and meets the requirements of the standard, in accordance with the standard(s) cited in the approved plans.	As required during construction	Approved construction documents; ASTM E2178, ASTM E2357, ASTM E1677, ASTM E779, ASTM E283.	502.4.3, 502.4.7; ASHRAE 90.1 – 5.4.3.1	●	○
IIA7	**Projection factors:** Where the energy analysis utilized a projection factor > 0, the projection dimensions of overhangs, eaves or permanently attached shading devices shall be verified for conformance with approved plans by visual inspection.	Prior to final construction inspection	Approved construction documents, including energy analysis	502.3; ASHRAE 90.1 – 5.5.4, 5.6 or 11	○	●
IIA8	**Loading dock weatherseals:** Weatherseals at loading docks shall be visually verified.	Prior to final construction inspection	Approved construction documents	502.4.5; ASHRAE 90.1 – 5.4.3.3	●	○
IIA9	**Building entrance vestibules:** Required entrance vestibules shall be visually inspected for proper operation.	Prior to final construction inspection	Approved construction documents	502.4.6; ASHRAE 90.1 – 5.4.3.4	●	○
IIB	**Mechanical and Service Water Heating Inspections**					
IIB1	**Fireplaces:** Provision of combustion air and tight-fitting fireplace doors shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents; ANSI Z21.60 (see also MC 904), ANSI Z21.50	303.1.5; BC 2111; MC Chapters 7, 9; FGC Chapter 6	○	●
IIB2	**Outdoor air intakes and exhaust openings:** Dampers for stair and elevator shaft vents and other outdoor air intakes and exhaust openings integral to the building envelope shall be visually inspected to verify that such dampers, except where permitted to be gravity dampers, comply with approved construction drawings. Manufacturer's literature shall be reviewed to verify that the product has been tested and found to meet the standard.	As required during installation	Approved construction documents; AMCA 500D	502.4.4; ASHRAE 90.1 – 6.4.3.4	●	○
IIB3	**HVAC, service water heating and pool equipment sizing and performance:** Equipment sizing, efficiencies and other performance factors of all major equipment units, as determined by the applicant of record, and no less than 15% of minor equipment units, shall be verified by visual inspection and, where necessary, review of manufacturer's data. Pool heaters and covers shall be verified by visual inspection.	Prior to final plumbing and construction inspection	Approved construction documents	503.2, 504.2, 504.7; ASHRAE 90.1 – 6.3, 6.4.1, 6.4.2, 6.8; 7.4, 7.8	●	○
IIB4	**HVAC system controls and economizers and service hot water system controls:** No less than 20% of each type of required controls and economizers shall be verified by visual inspection and tested for functionality and proper operation. Such controls shall include, but are not limited to: ▪ Thermostatic ▪ Set point overlap restriction ▪ Off-hour ▪ Shutoff damper ▪ Snow-melt system ▪ Demand control systems ▪ Outdoor heating systems ▪ Zones ▪ Economizers ▪ Air systems ▪ Variable air volume fan ▪ Hydronic systems ▪ Heat rejection equipment fan speed ▪ Complex mechanical systems serving multiple zones ▪ Ventilation ▪ Energy recovery systems ▪ Hot gas bypass limitation ▪ Temperature ▪ Service water heating ▪ Hot water system ▪ Pool heater and time switches ▪ Exhaust hoods ▪ Radiant heating systems. **Controls with seasonally dependent functionality:** Controls whose complete operation cannot be demonstrated due to prevailing weather conditions typical of the season during which progress inspections will be performed shall be permitted to be signed off for the purpose of a Temporary Certificate of Occupancy with only a visual inspection, provided, however, that the progress inspector shall perform a supplemental inspection where the controls are visually inspected and tested for functionality and proper operation during the next immediate season thereafter. The owner shall provide full access to the progress inspector within two weeks of the progress inspector's request for such access to perform the progress inspection. For such supplemental inspections, the Department shall be notified by the approved progress inspection agency of any unresolved deficiencies in the installed work within 180 days of such supplemental inspection.	After installation and prior to final electrical and construction inspection, except that for controls with seasonally dependent functionality, such testing shall be performed before sign-off for issuance of a Final Certificate of Occupancy	Approved construction documents, including control system narratives; ASHRAE Guideline 1: The HVAC Commissioning Process where applicable	503.2.4, 503.2.5.1, 503.2.11, 503.3, 503.4, 504.3, 504.6, 504.7; ASHRAE 90.1 – 6.3, 6.4, 6.5, 6.7.2.4, 7.4.4, 7.4.5	●	○
IIB5	**Duct, plenum and piping insulation and sealing:** Installed duct and piping insulation shall be visually inspected to verify proper insulation placement and values. Joints, longitudinal and transverse seams and connections in ductwork shall be visually inspected for proper sealing.	After installation and prior to closing shafts, ceilings and walls	Approved construction documents; SMACNA Duct Construction Standards, Metal and Flexible	503.2.7, 503.2.8, 504.5; ASHRAE 90.1 – 6.3, 6.4.4.2, 6.8.2, 6.8.3; 7.4.3	●	○
IIB6	**Air leakage testing for high-pressure duct systems:** For duct systems designed to operate at static pressures in excess of 3 inches w.g. (746 Pa), representative sections, as determined by the progress inspector, totaling at least 25% of the duct area, per ECC 503.2.7.1.3, shall be tested to verify that actual air leakage is below allowable amounts.	After installation and sealing and prior to closing shafts, ceilings and walls	Approved construction documents; SMACNA HVAC Air Duct Leakage Test Manual	503.2.7.1.3; ASHRAE 90.1 – 6.4.4.2	●	○
IIC	**Electrical Power and Lighting Systems**					
IIC1	**Electrical metering:** The presence and operation of individual meters or other means of monitoring individual apartments shall be verified by visual inspection for all apartments.	Prior to final electrical and construction inspection	Approved construction documents	505.7	●	○
IIC2	**Lighting in dwelling units:** Lamps in permanently installed lighting fixtures shall be visually inspected to verify compliance with high-efficacy requirements.	Prior to final electrical and construction inspection	Approved construction documents	505.5.3	●	○
IIC3	**Interior lighting power:** Installed lighting shall be verified for compliance with the lighting power allowance by visual inspection of fixtures, lamps, ballasts and transformers.	Prior to final electrical and construction inspection	Approved construction documents	505.5; ASHRAE 90.1 –9.1, 9.2, 9.5, 9.6; 1RCNY §101-07(c)(3)(v)(C)4	●	○
IIC4	**Exterior lighting:** Installed lighting shall be verified for compliance with source efficacy and/or the lighting power allowance by visual inspection of fixtures, lamps, ballasts and relevant transformers.	Prior to final electrical and construction inspection	Approved construction documents	505.6; ASHRAE 90.1 – 9.4.4, 9.4.5; 1RCNY §101-07(c)(3)(v)(C)4	●	○
IIC5	**Lighting controls**: Each type of required lighting controls, including: ▪ occupant sensors ▪ manual interior lighting controls ▪ light-reduction controls ▪ automatic lighting shut-off ▪ daylight zone controls ▪ sleeping unit controls ▪ exterior lighting controls shall be verified by visual inspection and tested for functionality and proper operation.	Prior to final electrical and construction inspection	Approved construction documents, including control system narratives	505.2, 505.2.2.2; ASHRAE 90.1 – 9.4.1, 9.4.1.2 (as modified by section ECC A102)	●	○
IIC6	**Exit signs:** Installed exit signs shall be visually inspected to verify that the label indicates that they do not exceed maximum permitted wattage.	Prior to final electrical and construction inspection	Approved construction documents	505.4; ASHRAE 90.1 – 9.4.3	●	○
IIC7	**Tandem wiring:** Tandem wiring shall be tested for functionality.	Prior to final electrical and construction inspection	Approved construction documents	505.3; ASHRAE 90.1 – 9.4.2	●	○
IIC8	**Electric motors (including but not limited to fan motors):** Where required by the construction documents for energy code compliance, motor listing or labels shall be visually inspected to verify that they comply with the respective energy requirements in the construction documents.	Prior to final electrical and construction inspection	Approved construction documents	503.2.10; ASHRAE 90.1 – 10.4	●	○
IID	**Other**					
IID1	**Maintenance information:** Maintenance manuals for mechanical, service hot water and electrical equipment and systems requiring preventive maintenance shall be reviewed for applicability to installed equipment and systems before such manuals are provided to the owner. Labels required for such equipment or systems shall be inspected for accuracy and completeness.	Prior to sign-off or issuance of Final Certificate of Occupancy	Approved construction documents, including electrical drawings where applicable; ASHRAE Guideline 4: Preparation of Operating and Maintenance Documentation for Building Systems	303.3, 503.2.9.3; ASHRAE 90.1 – 4.2.2.3, 6.7.2.2, 8.7.2	●	○

COMPLIANCE WITH ECCC-NYS NOTE:

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2011 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE, USING THE ASHRAE 90.1 ALTERNAIVE (LISTED IN NYCECC, 501.2).

KEY PLAN:



PROJECT NORTH — TRUE NORTH

DEVELOPER:
EXTELL DEVELOPMENT COMPANY
805 THIRD AVENUE, 7TH FLOOR
New York, NY 10022 USA
TEL: 212 712 6000 FAX: 212 712 6100

DESIGN ARCHITECT: Base Building Shell & Core
ADRIAN SMITH + GORDON GILL ARCHITECTURE
111 WEST MONROE STREET SUITE 2300
CHICAGO IL 60603
TEL: 312 920 1888 FAX: 312 920 1775

INTERIOR DESIGNER: Residential
Rottet Architecture and Design Studio, PLLC
298 Fifth Ave, 7th Floor
New York, NY 10001
TEL: 646 998 7000 FAX:

ARCHITECT OF RECORD: Base Building Shell, Core, & Residential
AAI ARCHITECTS, P.C.
401 Wellington St. W., 3rd Floor
Toronto, ON M5V 1E7 Canada
TEL: 416 967 1500 FAX: 416 967 7150

STRUCTURAL ENGINEERS:
WSP CANTOR SEINUK
228 EAST 45th Street
New York, NY 10017 USA
TEL: 212 687 9888 FAX: 646 487 5501

MEP ENGINEERS:
AKF GROUP
One Liberty Plaza, 165 Broadway, 22nd Floor
New York, NY 10006 USA
TEL: 212 354 5656 FAX: 212 354 5668

GEOTECHNICAL ENGINEERS:
Langan Engineering & Environmental Services
21 Penn Plaza - 360 West 31st Street, 8th Floor
New York, NY 10001-2727
TEL: 212 479 5400 FAX: 212 479 5444

CODE CONSULTANTS:
Construction Consulting Associates
100 Church Street
New York, NY 10007
TEL: 212 385 1818 FAX: 212 385 1911

CURTAINWALL CONSULTANT:
AJLP Consulting
40 Worth Street. Suite 826
New York, NY 10013
TEL: 212 757 5659 FAX: 646 219 8508

LANDMARK/PRESERVATION CONSULTANT:
Jan Hird Pokorny Associates, Inc.
39 West 37th Street, 12A
New York, NY 10018
TEL: 212 759 6462 FAX: 212 759 6540

No.	DESCRIPTION	DATE
1	DOB SUBMISSION	19 DEC 2014
2	DOB SUBMISSION	27 APR 2015
3	DOB AMENDMENT 2	18 SEP 2015

0 4' - 0" 8' - 0" 16' - 0"

NOT FOR BID / CONSTRUCTION

ALL DIMENSIONS ARE SHOWN IN IMPERIAL.

CONSULTANT: AKF
ONE LIBERTY PLAZA, 165 BROADWAY, 22nd FLOOR
NEW YORK, NY 10006
T: 212.354.5656 F: 212.354.5668
Arlington / Boston / Mexico City / Minneapolis / New York
Philadelphia / Princeton / Puebla / Rochester / Stamford

PROJECT:
217 WEST 57TH STREET
NEW YORK, NY

DRAWING TITLE:
ENERGY CODE COMPLIANCE & TR-8 ENERGY CODE PROGRESS INSPECTION

SEAL & SIGNATURE: STATE OF NEW YORK — CHRISTOPHER O. McHUGH — No. 073130 — LICENSED PROFESSIONAL ENGINEER

DATE:	12/16/14
PROJECT No:	Y130747-000
DRAWN:	Author
CHK:	Checker
SCALE:	12" = 1'-0"
REV:	1
DWG No:	**EN-100.01**
DOB PAGE No:	1 of 1

DOB EMPLOYEE STAMP: — DOB B-SCAN: