

COMcheck Software Version 4.0.0

Mechanical Compliance Certificate

Project Information

Energy Code: 2014 New York Energy Conservation Construction Code
Project Title: K884-CHARTER SCHOOL, Ph.2 FY2017 Occupancy
Location: New York County, New York
Climate Zone: 4A
Project Type: Alteration

Constructor/Builder:
15 Snyder Ave.
Brooklyn, NY 11216

Owner/Agent:

Designer/Contractor:
270 Incorporated
223 York Ave. South
New York, NY 10003

Mechanical Systems List

Quantity System Type & Description

HVAC Systems 1 (Single-Zone)

Heating: 1 each - Hydrolic or Steam Coil, Hot Water, Capacity = 148 MBtu/h

No minimum efficiency requirement applies

Cooling: 1 each - Split System, Capacity = 165 MBtu/h, Air-Cooled Condenser, Air Evaporator

Proposed Efficiency = 11.0 EER, Required Efficiency = 10.60 EER

Fan System: Supply Return Fan AHJ-B - Compliance (Break HP method) - Pases

Fans:

FAN 1 Supply, Constant Volume, 4000 CFM, 7.4 motor nameplate hp, 4.8 brake hp

FAN 2 Return, Constant Volume, 3600 CFM, 5.0 motor nameplate hp, 2.8 brake hp

Pressure Drop Estimate:

Fully rated return indoor exhaust air systems, 0.4641 cfm

Particulate filtration credit: MEIRV 8 through 12, 0.4641 cfm

Particulate filtration credit: MEIRV 8 through 12, 0.4641 cfm

High recovery device, other than on runaround loop, 1.1133 cfm

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical equipment project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2014 New York Energy Conservation Construction Code requirements in COMcheck Software 4.0.0 and to comply with the mandatory requirements listed in the Inspection Checklist.

Signature _____

DATE: 05/20/2016

NAME: SERDAN

Signature _____

DATE: 05/20/2016

NAME: _____

Project Title: K884-CHARTER SCHOOL, Ph.2 FY2017 Occupancy
Data filename: C:\Users\jessica.donovan\Documents\COMcheck\K884-CHARTER SCHOOL, Ph.2 FY2017 Occupancy

Report date: 05/20/2016
Page 1 of 8



COMcheck Software Version 4.0.0

Inspection Checklist

Energy Code: 2014 New York Energy Conservation Construction Code

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is identified in a separate table, a reference to that table is provided.

2014 New York Energy C103.2 FYS217	Plan Review	Complies?	Comments/Assumptions
	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. List calculations per acceptable engineering standards and handbooks.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	

Additional Comments/Assumptions:

1 | High Impact (Tier 1)
2 | Medium Impact (Tier 2)
3 | Low Impact (Tier 3)

Project Title: KIRBA-CHARTER SCHOOL Ph.2 FY2017 Occupancy

Report date: 05/20/16

Data File name: C:\Users\investor\Documents\COMcheck\KCSA 13 Snyder.cck

Page 2 of 8

2014 New York Energy	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C403.2.4.5 [FOF?]	Freeze protection and snow/ice melting system sensors for future connection to controls.	☐ Complies ☐ Does Not ☐ Not Observable ☒ Not Applicable	

Additional Comments/Assumptions:

1 | High Impact (Tier 1)
2 | Medium Impact (Tier 2)
3 | Low Impact (Tier 3)

Project Title: K884-CHARTER SCHOOL Ph. 2 FY2017 Occupancy
 Data Filename: C:\Users\restaris\Documents\COHcheckK8CA 15 Snyder.zck

Report date: 05/20/16
 Page 3 of 8

Section & Req ID	Mechanical Rough-in Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
CA63.3 [ME53]	HVAC equipment efficiency verified	Efficiency 100	Efficiency 100	Complies Does not Not Observable	See the Mechanical Systems list for values
CA63.2.5 [ME59]	Demand control ventilation provided for spaces >500 R2 and >25 people/1000 R2 occupant density and served by systems with all-side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm			Complies Does not Not Observable	
CA63.2.7 [ME60]	HVAC ducts and plenums insulated where ducts or plenums are installed in or under a slab; verification may need to occur during Foundation Inspection.	R ₁	R ₁	Complies Does not Not Observable	
[ME61]	HVAC piping insulation thickness where piping is installed in or under a slab; verification may need to occur during Foundation Inspection.	R ₁	R ₁	Complies Does not Not Observable	
CA63.3.6 [ME47]	Thermally ineffective panel surfaces of ceiling heating panels have insulation >R-3.5.			Complies Does not Not Observable	
CA63.3.7 [ME50]	Ducts and plenums sealed based on static pressure and location.			Complies Does not Not Observable	
CA63.2.7 [ME51]	Ductwork operating > 3 in. water column requires air leakage testing			Complies Does not Not Observable	
CA63.3.1, [ME62]	For economizers provided where required, meet the requirements for design capacity, control, and verification. Verify minimum limit shut-off, integrated reheat/cool control, and means to relieve excess sensible air during operation.			Complies Does not Not Observable	
CA63.4.3 [ME50]	Three-phase hydraulic systems using a common return for hot and chilled water are not used.			Complies Does not Not Observable	
CA68.2.2 [ME33]	Air outlets and zone terminal devices have means for air balancing.			Complies Does not Not Observable	
CA68.2.2 [ME47]	HVAC hydraulic heating and cooling coils have means to balance and have pressure test connections.			Complies Does not Not Observable	

[1] High Impact (Tier 3)
[2] Medium Impact (Tier 2)
[3] Low Impact (Tier 3)

Project Title: K864-CHARTERS SCHOOL, Ph. 2 FY2017 Occupancy
 Data Filename: C:\CHARTERS\DOCUMENTS\CORNHESKUS15.bryder.cck

Report date: 05/05/16
 Page 4 of 8

Section & Req ID	Mechanical Rough-in Inspection	Plans Verified	Field Verified	Complete?	Comments/Assumptions
C403.4.2 [MECH62]	WAV fan motors >=5.0 hp to be driven by variable speed drives, have a variable axial fan with variable pitch blades, or have controls to limit fan motor demand.	☒ VSD ☐ Vane axial fan ☐ Other	☒ VSD ☐ Vane axial fan ☐ Other	☒ Complete ☐ Does Not ☐ Not Observable ☐ Does Applicable	
C403.4.3 [MECH62]	Reduce flow in pumping systems >=4.0 hp to multiple outlets or boilers when others are shut down.		☒ Does Not ☐ Does Not Observable ☐ Does Applicable	☒ Complete ☐ Does Not ☐ Not Observable ☐ Does Applicable	
C403.2.6 [MECH37]	Exhaust air energy recovery on systems meeting Table C403.2.6		☒ Does Not ☐ Does Not Observable ☐ Does Applicable	☒ Complete ☐ Does Not ☐ Not Observable ☐ Does Applicable	
C403.2.11 [MECH17]	Unoccupied spaces that are heated use only radiant heat.		☒ Does Not ☐ Does Not Observable ☐ Does Applicable	☒ Complete ☐ Does Not ☐ Not Observable ☐ Does Applicable	
C403.4.7 [MECH34]	Hot gas bypass limited to: <=240 kWh/yr - 50% >240 kWh/yr - 25%		☒ Does Not ☐ Does Not Observable ☐ Does Applicable	☒ Complete ☐ Does Not ☐ Not Observable ☐ Does Applicable	
C403.3.4 [MECH35]	Swaking points in Group 1 automatically controlled HVAC systems and energy consumption during unoccupied periods. Coils are designed to raise cooling and heating temperature set points by at least 4°F when room is unoccupied.		☒ Does Not ☐ Does Not Observable ☐ Does Applicable	☒ Complete ☐ Does Not ☐ Not Observable ☐ Does Applicable	
C403.3.3 [MECH37]	All air-conditioning equipment and air-handling units with direct expansion cooling and a cooling capacity of at least 10 kWh/yr have WAF supply fans. Supply fan controls are configured to reduce the airflow to no more than the larger of the following at cooling demands no larger than 50% of the cooling capacity: 1. one-third of the full fan speed, or 2. the volume of outdoor air required to meet ventilation requirements.		☒ Does Not ☐ Does Not Observable ☐ Does Applicable	☒ Complete ☐ Does Not ☐ Not Observable ☐ Does Applicable	
Additional Comments/Assumptions:					
1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)					
Project Title: 4884-CHARTERED SCHOOL PH.3 FY2021 Occupancy				Report date: 05/20/16	
Data Reference: C:\Users\sternson\Documents\CH04\CH04\CS15A 15 Snyder.ccc				Page 5 of 8	

President & CEO
Lorraine Grillo

Board of Trustees
Chancellor Carmen Fariña, Chairperson
Curtis A. Harris
Emily A. Youssouf


SCA
New York State
School Construction Authority

Architecture & Engineering

E. Bruce Barrett, R.A. LEED A.P., Vice President
Elan R. Abneri, P.E., Senior Director, Design Consultant Management
Stanley Dohir, R.A., Director, Quality Control & Construction Support
Maria A. Gómez, P.E., LEED A.P., Director, A&E In-House Design
George D. Rousez, P.E., LEED A.P., Director, Technical Standards
Stacey Spann-Thom, Director, Operations Support

Consultants:

 **STV Incorporated**
architects/engineers/planners/interior designers
225 Park Avenue South New York, NY 10003
Tel. (212) 777-4400 Fax No. (212) 473-2780

2014 New Energy	Final Inspection	Complies?	Comments/Assumptions
C409.2.2 (F147)	Heating and cooling to each zone is controlled by a thermostat control, minimum air humidity control device per installed temperature/humidity control system.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2.4 (F148)	Thermostatic controls have a 5°F deadband.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2.4 (F120)	Temperature controls have setback override restrictions.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2.4 (F139)	Each zone equipped with setback controls using automatic time set or programmable control system.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2.4 (F140)	Automatic Controls: Setback to 55°F (wall and 55°F ceiling). Peak load, 2-hour acceptance, 10-hour backup.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2.5 (F17)	Furnished HVAC as built drawings submitted within 90 days of system acceptance.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2.6 (F140)	Furnished GMA manuals for HVAC systems within 90 days of system acceptance.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2.3 (F143)	An air and/or hydronic system balancing report is provided for HVAC systems.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2.3 (F110)	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2.3 (F127)	HVAC systems and equipment capacity does not exceed calculated loads.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2 (F129)	Commissioning plan developed by registered design professional or approved agency.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	
C409.2 (F129)	Preliminary commissioning report completed and certified by registered design professional or approved agency.	☒ Complies ☐ Does not ☐ Not Observable ☐ Not Applicable	

[1 High Impact (Tier 1)]
[2 Medium Impact (Tier 2)]
[3 Low Impact (Tier 3)]

Project Title: K884-CHARTER SCHOOL, Ph.2 FY2017 Occupancy
 Data Filename: C:\BMS\insrdocs\Documents\CH8K84S15 5trder cchd

Report date: 05/01/16
 Page 6 of 8

2014 New York Energy	Final Inspection	Complies?	Comments/Assumptions
C408.2.5 4 (F302)	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C408.2.3 1 (F312)	HVAC equipment has been tested to ensure proper operation.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C408.2.3 3 (F322)	Economizers have been tested to ensure proper operation.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C409 1 (F342)	Efficient HVAC performance, efficient lighting system, or on-site supply of renewable energy consistent with what is shown the approved plans.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	

Additional Comments/Assumptions:

1 | High Impact (Tier 3)

2 | Medium Impact (Tier 2)

3 | Low Impact (Tier 3)

Project Title: K884-CHARTER SCHOOL Ph.2 FY2017 Occupancy
 Report date: 05/20/16
 Data filename: C:\pennstestors\documents\COMCHECKSCSA 15 Snyder.cck
 Page 7 of 8

Project Title: KIBRA-CHARTER SCHOOL Ph-2 FY2017 Occupancy
Data Filename: C:\Users\merson\Documents\CDM\KIBRA-SCA 15 Snyder.cdk

Report date: 08/20/16
Page: 8 of 8

ENERGY COMPLIANCE PERIODIC INSPECTIONS						
	INSPECTION/TEST	REFERENCE STANDARD (SEE NYECC CHAPTER 4) OR OTHER CRITERIA	NYECC OR ASHRAE CITATION	DESIGN VALUES	MIN. PERIODIC INSPECTION FREQUENCY	INSPECTION DESCRIPTION
IIB	MECHANICAL AND SERVICE WATER HEATING INSPECTIONS					
IIB2	SHUTOFF DAMPERS	APPROVED CONSTRUCTION DOCUMENTS; AMCA 500D	C403.2.4.4.2	AHU-B OUTDOOR AND EXHAUST DAMPERS SHALL BE: CLASS 1 MOTORIZED DAMPER WITH MAX LEAKAGE RATE 4 CFM/SQFT AT 1.0" W.G. IN ACCORDANCE WITH AMCA 500D	AS REQUIRED DURING INSTALLATION	DAMPERS FOR 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.
IIB3	HVAC HEATING EQUIPMENT	APPROVED CONSTRUCTION DOCUMENTS	C403.2, C404.2, C406.2	AHU-B/ACC-B EER = 11.2	PRIOR TO FINAL PLUMBING AND CONSTRUCTION INSPECTION	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.
IIB4	HVAC HEATING SYSTEM CONTROLS CONTROLS WITH SEASONALLY DEPENDENT FUNCTIONALITY	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING CONTROL SYSTEM NARRATIVES; ASHRAE GUIDELINE 1: THE HVAC COMMISSIONING PROCESS	C403.2.4, C403.2.5.1, C403.2.11, C403.3, C403.4	AHU-B/ACC-B -INDOOR AIR TEMPERATURE SET: HEATING 72°F COOLING 75°F -OUTDOOR AIR INTAKE AND EXHAUST AIR DAMPER OPERATE WHEN UNIT IS INDEXED ON THREE WAY TEMPERED CONTROL VALVE. INDEXES OPEN ON HEATING COIL WHEN SPACE HEATING THERMOSTAT CALLS FOR HEATING AND CLOSERS TO BYPASS WHEN HEATING SET POINT IS MET	AFTER INSTALLATION AND PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION, EXCEPT THAT FOR CONTROLS WITH SEASONALLY DEPENDENT FUNCTION, SUCH TESTING SHALL BE PERFORMED BEFORE SIGN-OFF FOR ISSUANCE OF A FINAL CERTIFICATE OF OCCUPANCY	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 DAMPERS; ECONOMIZERS; SINGLE ZONE COOLING SYSTEMS; HYBRONIC SYSTEMS; HEAT REJECTION EQUIPMENT FAN SPEED; ENERGY RECOVERY SYSTEMS; HOT GAS BYPASS LIMITATION; RADIANT HEATING SYSTEMS. 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.
IIB5	HVAC INSULATION AND SEALING	APPROVED CONSTRUCTION DOCUMENTS, OMAGNA DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE	C403.2.7, C403.2.8, MC 603.9	ALL SUPPLY AND RETURN DUCTS SERVING AHU-B SHALL BE INSULATED: IF LOCATED IN UNCONDITIONED SPACE (EXISTING EGRESS CORRIDOR AT COLUMN 4 - 1ST FLOOR); R-B IF LOCATED IN CONDITIONED SPACE (EXISTING SPACE AT COLUMN C-3 - 1ST FLOOR AND CAFETERIA - BASEMENT): R-3.5	AFTER INSTALLATION AND PRIOR TO CLOSING SHAFTS, CEILINGS AND WALLS	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.
IID	OTHER					
IID1	MAINTENANCE INFORMATION COMMISSIONING OF MECHANICAL SYSTEMS	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING ELECTRICAL DRAWINGS WHERE APPLICABLE; ASHRAE GUIDELINE 4 - PREPARATION OF OPERATING AND MAINTENANCE DOCUMENTATION FOR BUILDING SYSTEMS	C303.3, C408.2.5.2	PROVIDE MAINTENANCE INSTRUCTIONS: - AHU-B/ACC-B - UH-1 - FTR CONTROL VALVE	PRIOR TO SIGN-OFF OR ISSUANCE OF FINAL CERTIFICATE OF OCCUPANCY	MAINTENANCE MANUALS FOR MECHANICAL 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.

NOTE: Drawing may be printed at reduced scale

IT IS A VIOLATION OF THE STATE EDUCATION LAW SECTION 7209 (2) FOR ANY PERSON TO ALTER AN ITEM IN ANY WAY UNLESS SUCH PERSON IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, AND THE ENGINEER STAMPS SUCH CHANGES

05/23/16		DOB SUBMISSION
No.	Date	Revision

Key Plan:

5089

CHURCH AV

5104

ERASMUS ST

15 SNYDER AVE.

5103

5107

5102

5109

SNYDER AV

FLATBUSH AVENUE

KENMORE TER

ALBE-MARBLE TER

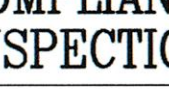
Block #5103

Lot #101

SCA Design Manager:	EMAD ASSAD, AIA		
Project Architect/Engineer:	SRDJAN NESTOROV, PE		
Discipline Lead:	PAUL LOPEZ, PE		
Designer:	SRDJAN NESTOROV, PE		
Drawn by:	INESSA NIKOLAYEVA		
Checked by:	PAUL LOPEZ, PE		
LLW No.:	Facility Code:	Date:	
104246	K884	05/23/16	

Project:
K884 - CHARTER SCHOOL
PHASE-2 FY2017 OCCUPANCY

Address:
15 SNYDER AVENUE
BROOKLYN, N.Y. 11226

Drawing Title: HVAC ENERGY CODE COMPLIANCE PROGRAM INSPECTIONS	
	Drawing No.: EN001.00 Sheets in Contract Set: 05 of 80 Sheets in DOB Set: 05 of 34