FIRE DETECTION & ALARM SYSTEM SYMBOL LIST

SYMBOL	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL MOUNTED CENTER LINE 4'-0" AFF.
FARA	FIRE ALARM REMOTE ANNUNCIATOR MOUNTED 4'-0" AFF.
FAPR	FIRE ALARM PRINTER.
TS	FIRE ALARM TAMPER SWITCH.
WF	FIRE ALARM WATER FLOW SWITCH.
F	FIRE ALARM PULL STATION WITH FALSE STOPPER COVER MOUNTED MIN 3'-6" AND MAX 4'-0" FROM THE FLOOR LEVEL TO THE ACTIVATING HANDLE.
G	FIRE SIGNAL STROBE. STROBES SHALL BE WALL-MOUNTED SUCH THAT THE ENTIRE STROBE LENS IS LOCATED NOT GREATER THAN 96" ABOVE THE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER. SUBSCRIPT 'G' DENOTES WITH GUARD.
WP G,Lo	FIRE SIGNAL HORN WITH FIRE SIGNAL STROBE. HORN WITH FIRE SIGNAL STROBES SHALL BE WALL-MOUNTED SUCH THAT THE ENTIRE STROBE LENS IS LOCATED NOT GREATER THAN 96" ABOVE THE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER. SUBSCRIPT 'G' DENOTES WITH GUARD. "WP" INDICATES WEATHERPROOF. "Lo" INDICATES HORN SHALL BE ADJUSTED TO LOW dB SETTING.
S	CEILING MOUNTED SMOKE DETECTOR
D	DUCT MOUNTED SMOKE DETECTOR
H	CEILING MOUNTED HEAT DETECTOR.
CO	CEILING MOUNTED CARBON MONOXIDE DETECTOR.
S_{EXP}	CEILING MOUNTED SMOKE DETECTOR. "EXP" INDICATE EXPLOSION PROOF TYPE.
CZ	CONTROL ZAM (DIGITAL CONTACT)
MZ	MONITORING ZAM (DIGITAL CONTACT)
CR	CONTROL RELAY
FD	FLAME DETECTOR
DACT	DIGITAL ALARM COMMUNICATOR TRANSMITTER FOR CENTRAL STATION NOTIFICATION
BPS	BOOSTER POWER SUPPLY
MFC	MULTIFUNCTION CABINET

FIRE ALARM GENERAL NOTES

1. LOCATION OF DEVICES AND EQUIPMENT ARE APPROXIMATE. FINAL LOCATIONS MUST BE DETERMINED ACCORDING TO THE SITE CONDITIONS.
2. VISUAL FIRE ALARMS (STROBES) SHALL HAVE MINIMUM 5'-0" CLEARANCE FROM ANY OBSTRUCTIONS AND SHALL BE RATED AT 75 CANDELA MINIMUM. ALL THE STROBES SHALL BE SYNCHRONIZED AT LINE OF SIGHT.
3. WALL MOUNTED HORNS AND VISUAL FIRE ALARMS (STROBES) SHALL BE MOUNTED SUCH THAT THE ENTIRE STROBE LENS IS LOCATED NOT GREATER THAN 96" ABOVE THE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER.
4. FIRE ALARM PULL STATIONS SHALL BE MOUNTED MIN 3'-6" AND MAX 4'-0" FROM THE FLOOR LEVEL TO THE ACTIVATING HANDLE.
5. ALL CONDUITS AND CONTROL PANELS SHALL BE GROUNDED TO THE WATER MAIN WITH A MINIMUM #8 CONDUCTOR.
6. EACH FIRE ALARM INITIATING AND INDICATING CIRCUIT SHALL BE ELECTRICALLY SUPERVISED.
7. EACH VISUAL FIRE ALARM CIRCUIT SHALL CONTAIN AT LEAST 20% SPARE CAPACITY.
8. ALL CONTROL PANELS AND FUSE CUTOUTS SHALL BE PROPERLY LABELED WITH MINIMUM 1/4" HIGH LETTERS.
9. FIRE ALARM VISUAL DEVICES MUST BE PLACED IN AREAS UNOBSTRUCTED BY OTHER BUILDING ELEMENTS. CEILING MOUNTED EQUIPMENT MAY NOT HAVE ANY APPURTENANCES WITHIN 5' RADIUS.
10. INSTALLATION SHALL COMPLY WITH THE 2008 NYC CONSTRUCTION CODES.
11. ELECTRICAL WORK SHALL COMPLY WITH 1 RCNY 4000-06.
12. ALL FIRE ALARM EQUIPMENT/DEVICES USED SHALL BE BY APPROVED MANUFACTURERS AND SHALL BE LISTED FOR ITS INTENDED USE.
13. SPECIAL INSPECTIONS SHALL BE CARRIED OUT IN ACCORDANCE WITH APPLICABLE BUILDING CODE SECTIONS AND SHALL INCLUDE THE FOLLOWING:

    THE "AUTHORITY" SHALL BE RESPONSIBLE FOR THE FOLLOWING SPECIAL INSPECTION:

    FIRESTOP, DRAFTSTOP, AND FIREBLOCK SYSTEMS BC 1704.25
14. RISER DIAGRAM IS FOR DESIGN PURPOSE ONLY. FIRE ALARM CONTRACTOR SHALL PROVIDE A COMPLETE RISER DIAGRAM WITH ACTUAL FIELD WIRING REQUIRED.
15. UPON REMOVAL OF ANY EXISTING EQUIPMENT AND DEVICES, CONTRACTOR SHALL REPAIR (PLASTER/TILE/PAINT) THE WALL TO MATCH EXISTING.

EXISTING FIRE DETECTION & ALARM SYSTEM SYMBOL LIST

SYMBOL	DESCRIPTION
FACP	EXISTING BUILDING FIRE ALARM CONTROL PANEL
FDS	EXISTING FIRE ALARM FUSE DISCONNECT SWITCH
FCO	EXISTING FUSE CUT OUT FOR FIRE ALARM SYSTEM
F	EXISTING FIRE ALARM SYSTEM PULL STATION.
⊗	EXISTING FIRE ALARM BELL

FIRE ALARM DRAWINGS LIST

DWG. NO.	DESCRIPTION
TFA001.00	COVER SHEET AND DRAWINGS LIST
FA001.00	FIRE ALARM SYSTEM SYMBOLS, NOTES AND DRAWING LIST
FA061.00	FIRE ALARM SYSTEM BASEMENT FLOOR REMOVAL PLAN
FA062.00	FIRE ALARM SYSTEM FIRST FLOOR REMOVAL PLAN
FA063.00	FIRE ALARM SYSTEM SECOND FLOOR REMOVAL PLAN
FA064.00	FIRE ALARM SYSTEM THIRD FLOOR REMOVAL PLAN
FA065.00	FIRE ALARM SYSTEM FOURTH FLOOR REMOVAL PLAN
FA066.00	FIRE ALARM SYSTEM FIFTH FLOOR REMOVAL PLAN
FA067.00	FIRE ALARM SYSTEM ROOF REMOVAL PLAN
FA101.00	FIRE ALARM SYSTEM BASEMENT FLOOR PLAN
FA102.00	FIRE ALARM SYSTEM FIRST FLOOR PLAN
FA103.00	FIRE ALARM SYSTEM SECOND FLOOR PLAN
FA104.00	FIRE ALARM SYSTEM THIRD FLOOR PLAN
FA105.00	FIRE ALARM SYSTEM FOURTH FLOOR PLAN
FA106.00	FIRE ALARM SYSTEM FIFTH FLOOR PLAN
FA107.00	FIRE ALARM SYSTEM ROOF PLAN
FA201.00	FIRE ALARM SYSTEM RISER DIAGRAM
FA301.00	FIRE ALARM SYSTEM SEQUENCE OF OPERATION
FA401.00	FIRE ALARM TYPICAL DETAILS

FIRE ALARM SCOPE OF WORK

1. THE EXISTING FIRE ALARM SYSTEM IS TO BE REPLACED WITH A COMPLETE NEW FIRE ALARM SYSTEM.
2. EXISTING FIRE ALARM SYSTEM MUST REMAIN OPERATIONAL UNTIL THE NEW FIRE ALARM SYSTEM IS INSTALLED, INSPECTED AND SIGNED OFF BY THE NYC FD.
3. ALL EXISTING FIRE ALARM DEVICES AND EXISTING FIRE ALARM PANEL IS TO ONLY BE REMOVED AFTER THE NYC FD APPROVES THE NEW SYSTEM.

SPECIAL INSPECTIONS:

SPECIAL INSPECTIONS REQUIRED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE 2008 NYC BUILDING CODE ARE LISTED IN THE FOLLOWING TABLES:

THE CONTRACTOR MUST NOTIFY THE ARCHITECT OR ENGINEER FOR SPECIAL INSPECTIONS AT LEAST 72 HOURS BEFORE THE SPECIFIC WORK COMMENCES.

THE "AUTHORITY" SHALL BE RESPONSIBLE FOR THE FOLLOWING SPECIAL INSPECTIONS:

FIRESTOP, DRAFTSTOP AND FIREBLOCK SYSTEMS BC 1704.25

NOTE: REQUIRED INSPECTIONS AND TESTS OF MATERIALS DESIGNATED FOR "SPECIAL INSPECTION" BY THE CONTRACTOR SHALL BE MADE UNDER THE DIRECT SUPERVISION OF A LICENSED ARCHITECT OR ENGINEER RETAINED BY OR ON THE BEHALF OF THE CONTRACTOR WHO SHALL BE ACCEPTABLE TO THE ARCHITECT OR ENGINEER WHO SUPERVISED THE PREPARATION OF THE PLANS.

NYC Buildings

Robert D. LiMandri
Commissioner

James P. Colgate, R.A., Esq.
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July 8, 2010

Mr. George Roussey, P.E.
Director, Technical Standards & Support Studio
NYC School Construction Authority
30-30 Thomson Avenue
Long Island City, NY 11101

Re: Proposal to address the installation of carbon monoxide detectors in school buildings classified under Occupancy Group E under the 2008 New York City Building Code.

Dear Mr. Roussey:

This is in reply to your letter dated March 12, 2010 in regards to the New York City School Construction Authority (SCA) request for clarification of BC 908.7 of the 2008 New York City Building Code in regards to the installation of carbon monoxide detectors in those school buildings classified under Occupancy Group E.

Please be advised that due to the fact that carbon monoxide alarms are listed under UL 2034 for use in residential occupancies and if there are no sleeping accommodations then the use of carbon monoxide alarms in school buildings is in violation of the UL listing. Based on the foregoing, the Department of Buildings has no objection to your proposal as outlined in Section B of your letter provided that activation of any carbon monoxide detector will actuation automatic shutdown of the fuel burning equipment.

Sincerely,

James P. Colgate, R.A., Esq.
Assistant Commissioner – Technical Affairs

JPC:DG:dg
C: Fatma Amer, P.E., DOB, First Deputy Commissioner
Donald Gottfried, P.E., Senior Electrical Engineer
Thomas Jensen, FDNY, Chief of Fire Prevention
Thomas Pigott, FDNY, Chief of Technology Management
Attachments

safety service integrity

SCA
NYC School Construction Authority
30-30 Thomson Ave
Long Island City, NY
11101

George D. Roussey, PE
Director
Technical Standards and
Support Studio

groussey@nycsca.org

March 12, 2010

James Colgate, RA
Assistant Commissioner of Technical Affairs and Code Development
New York City Department of Buildings
280 Broadway, 7th Floor
New York, NY 10007

RE: Proposed Memorandum of Understanding in relation to the Carbon Monoxide (CO) Detection to be installed under the 2008 Building Code in NYC Public School Buildings.

Dear Mr Colgate:

Upon consultation with our Fire Alarm Consultant Zygmunt Staszewski, P.E., who has been working weekly with the joint Building Department-FDNY committee on Fire Alarms, the following is our proposal to address the installation of Carbon Monoxide Detectors in Public School buildings, which we believe will meet the intent of the 2008 NYC Building Code as well as provide the intended benefit.

A. Background:

The 2008 NYC Building Code requires the following in relation carbon monoxide detection in Educational "E" occupancies:

§28.2-908.7 Carbon monoxide alarms and detectors. Carbon monoxide alarms and detectors shall be provided and installed in accordance with Sections 28.2-908.7.1 through 28.2-908.7.4.

§28.2-908.7.2 Group E, I-2 and I-4 occupancies. Listed carbon monoxide **alarms or detectors** shall be installed as follows:

1. Carbon monoxide **alarms** shall be installed within any occupied space containing carbon monoxide producing equipment and in all occupied spaces above and below the story where carbon monoxide producing equipment or enclosed parking is located.

2. Carbon monoxide **detectors** and audible notification appliances shall be installed within any unoccupied space containing carbon monoxide producing equipment. Such detector shall activate an audible alarm at a constantly attended location.

§28.2-908.7.3 Installation. Carbon monoxide **alarms and detectors** shall be listed in accordance with UL 2034 and UL 2075.

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Based on the above, it appears that CO alarms shall be installed in occupied spaces and CO detectors shall be installed in unoccupied spaces.

We believe there are the following potential problems with these code sections:

1. The code does not define "occupied spaces" in Educational occupancies.
2. CO Alarms are only UL listed for residential applications (R-1, R-2 and R-3) under UL 2034 and not for Educational occupancies. Installation of CO Alarms in schools may be in violation of the UL listing for the CO Alarms.
3. Since all new schools, and existing schools where a fire alarm system is to be replaced, are required to have Central Office Transmitters, it would seem reasonable that any CO detectors/alarms report to the panel. As per the code, the alarms would not. In addition, fire alarm replacement projects would not capture the installation of the carbon monoxide alarms, as they are not part of the fire alarm system.
4. The requirement for installation of individual alarms in every occupied space on the floor above and below would also seem to be potentially excessive, especially in terms of a school. Each floor has many classrooms, some of which maybe 100 to 200 feet away horizontally from the potential source of the carbon monoxide. In addition, schools are required to have rated floors and shafts, and thus any penetrations through the wall and junctures are firestopped.

B. Proposal:

Based on the above, we would like you to consider permitting the following in relation to CO detection in new schools/additions and replacement of existing fire alarm systems:

A. Only CO detectors will be installed in public schools. They will be UL listed under UL 2075 standard.

B. CO Detectors will have built-in sounder bases and upon activation of the detector, the respective sounder base will sound Code 4 locally. Fire alarm notification appliances throughout the school will not be activated.

C. All CO Detectors will be powered and fully supervised for sensor failure and end-of-life signal by the Fire Alarm Panel in low-rise schools and by the Fire Command Center in high rise schools.

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D. Upon activation of any CO Detector, there will be a visual and audible notification at the Fire Alarm Panel in low-rise schools, Fire Command Center in high rise schools and at the Remote Annunciator in the General Office.

E. Upon activation of any CO Detector, a CO Alarm Signal will be transmitted by the Central Station Transmitter to the FDNY approved Central Station for FDNY notification.

F. CO Detectors will be placed in rooms containing boilers, gas-fired water heaters, clothes dryers and other rooms with vented fuel burning equipment that can potentially create CO.

G. CO Detectors will not be installed in kitchens and labs. CO Detectors are not required by NFPA 720 to be provided in commercial kitchens and the Construction Code team of the Department of Buildings has already verified that they are not required for science labs. Carbon monoxide is typically created in small spaces where improper combustion occurs and oxygen is used up, for which small pilots in these ventilated spaces would not create the condition.

H. CO Detectors will be installed in all corridors on the floor where a fuel-burning equipment unit is located, as well as one floor above and one floor below. This will provide the benefit included in the code of providing detection on the floor above and below, as well as adding detection on the same level through the building.

I. CO Detectors will be installed in all corridors on the floor where enclosed parking is located, as well as one floor above and one floor below.

Please review the above and contact us to schedule a meeting to discuss this proposal. I can be reached by phone at 718-472-8541 or by e-mail at groussey@nycsca.org. Thank you for your cooperation.

George D. Roussey, PE
Director, Technical Standards and Support Studio

cc: Donald Gottfried, NYC Department of Buildings
Maria Gomez
Alexander Iskander
Zygmunt Staszewski P.E. - ZS Engineering PC

President & CEO
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Board of Trustees
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NYC School Construction Authority

Architecture & Engineering
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Elan R. Abneri, P.E., Director, Design Consultant Management
Stanley Dahir, R.A., Director, Quality Control & Construction Support
María A. Gómez, P.E., LEED A.P., Director, A&E In-House Design
George D. Roussey, P.E., LEED A.P., Director, Technical Standards
Stacey Spann-Thom, Director, Operations Support

Consultants:
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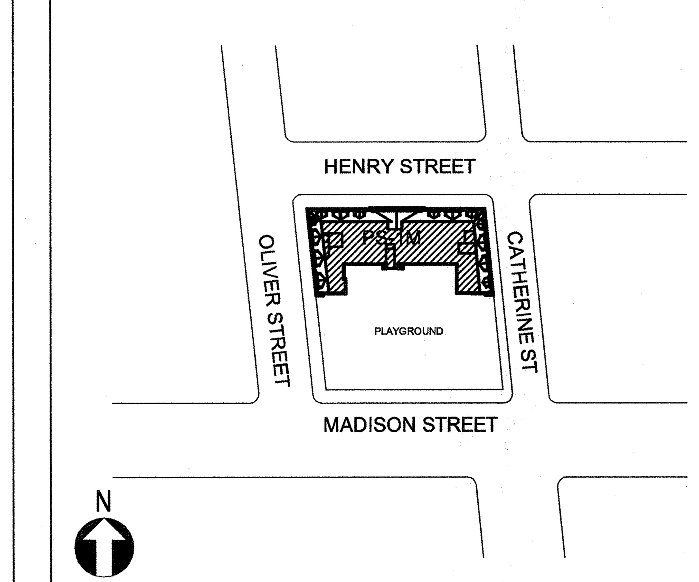
NOTE: Drawing may be printed at reduced scale

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

No.	Date	Revision
	06/05/15	ISSUE FOR BID

Key Plan:



BLOCK # 279 LOT # 40

SCA Design Manager:	R. GOIK
Project Architect/Engineer:	H. MENA, P.E.
Discipline Lead:	H. MENA, P.E.
Designer:	C. LARA
Drawn by:	C. LARA
Checked by:	H. MENA, P.E.

Design No :	Facility Code:	Date:
D015391	M001	06/05/2015

Project:
PS 001 MANHATTAN
FIRE ALARM SYSTEM
UPGRADE.

Address:
8 HENRY STREET
MANHATTAN, NY 10038

Drawing Title:
FIRE ALARM SYSTEM SYMBOLS, NOTES AND DRAWING LIST

Drawing No.: FA001.00

Sheets in Contract Set: 40 of 57

Sheets in DOB Set: of