BRUCE MONROE AT PARK VIEW ELEMENTARY SCHOOL MODERNIZATION

PHASING SUBMISSION

March 2, 2012

submitted to:

District of Columbia Public Schools

Department of General Services

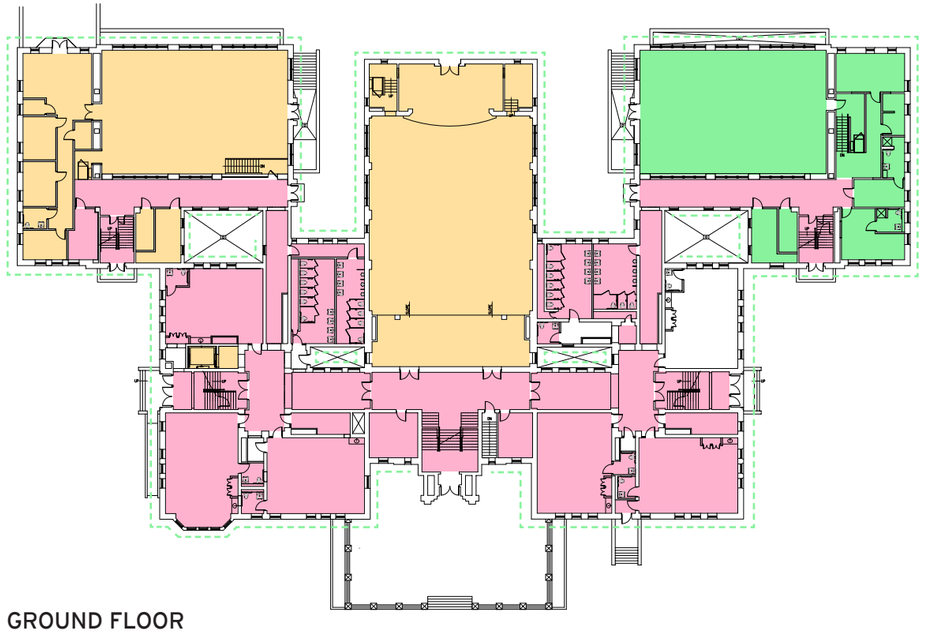
SHW ARCHITECTS

BRUCE MONROE AT PARK VIEW ELEMENTARY SCHOOL MODERNIZATION

NORTHWEST WASHINGTON DC

PROPOSED BLOCKING AND STACKING

MARCH 2, 2012

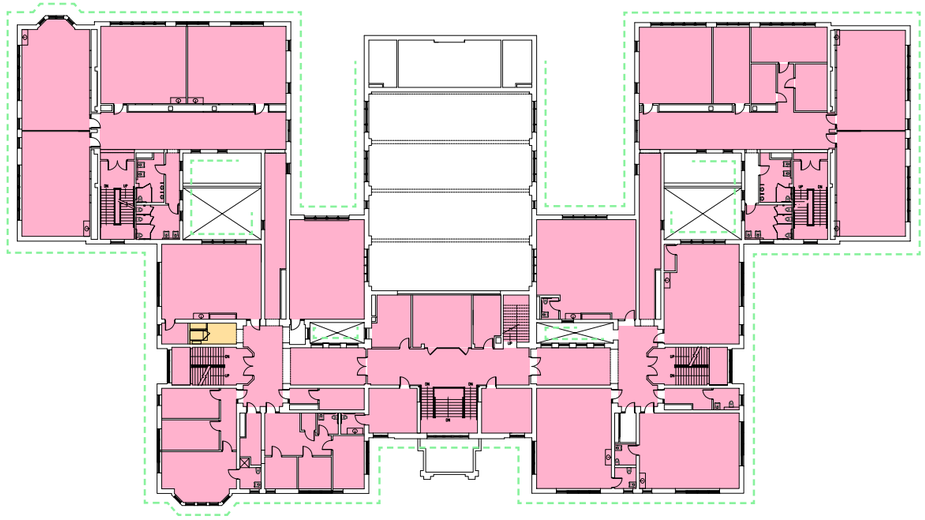


GROUND FLOOR

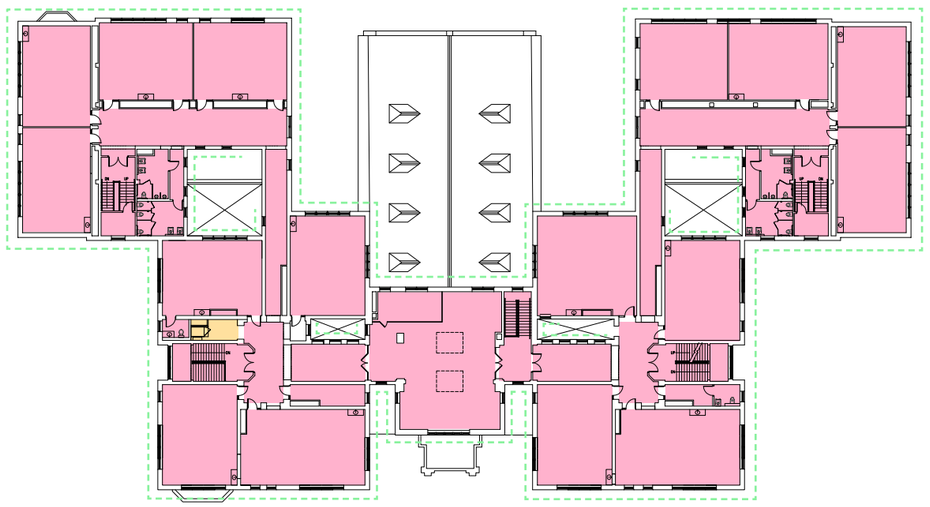
NOTE: ALL CORRIDORS
INCLUDED IN PHASE I

LEGEND

- PHASE I
- PHASE II
- PHASE II WINDOWS
- PHASE III



FIRST FLOOR



SECOND FLOOR

ARCHITECTURAL PHASING NARRATIVE

The following improvements are proposed by the design team, organized by phase and area of affect. For all non-architectural items, refer to the MEP & IT Phasing Narrative.

PHASE 1

1. **Academic Core Spaces**

   A. Pre-K through 5th Grade

   - Re-distributed classrooms throughout the ground, first, and second floors to create groupings per the dual language curriculum.
   - Floors: New Resilient flooring
   - Ceilings: New floating 2x2 ACT with linear indirect lighting.
   - Walls: Teaching wall to be furred out to allow for wiring and blocking associated with installation of new smart boards. Existing decorative woodwork and plaster on all other walls to be repainted.
   - Doors: Existing doors and frames to be repainted. All existing hardware to be repaired as required, creating like-new condition.
   - Millwork and FF&E: New built-in casework and furniture to meet the DCPS furniture standards.
   - Typical Classroom Technology: 13 data drops; two at teachers desk, two for wireless (one at front of class and one at rear), one for printer, five for PCs, one for IP clock, one for a projector and one for Promethean or Smart Board.

2. **Media Center Spaces**

   A. Reading/Learning/Circulation/Other – Phase 1 Alternate

   - Existing Library and Multi-Purpose room combined on the second floor into a new Media Center.
   - Floors: New Carpet.
   - Ceiling: New floating 2x2 ACT with linear indirect lighting.
   - Walls: Select existing walls to be furred out as necessary to allow for new wiring and blocking. All existing walls to be painted.
   - Doors: Existing doors and frames to be repainted. All existing hardware to be repaired as required, creating like-new condition.
   - Millwork and FF&E: New built-in casework and furniture to meet the DCPS furniture standards.
   - Media Center Technology: 12 data drops; two for wireless (one at front of the room and one at rear), one for printer, five for PCs, two for IP clock, one for a projector and one for Promethean or Smart Board.

3. **Visual Arts Spaces**

   A. Art/Music Rooms

   - New Music and Art Classrooms centrally located on the first floor.
   - Floors: New Resilient flooring
   - Ceiling: New floating 2x2 ACT with linear indirect lighting.
   - Walls: Teaching wall to be furred out to allow for wiring and blocking associated with installation of new smart boards. Existing decorative woodwork and plaster on all other walls to be repainted.
   - Doors: Existing doors and frames to be repainted. All existing hardware to be repaired as required, creating like-new condition.
   - Millwork and FF&E: New built-in casework and furniture to meet the DCPS furniture standards.
   - Art Room Technology: 13 data drops; two at teachers desk, two for wireless (one at front of class and one at rear), one for printer, five for PCs, one for IP clock, one for a projector and one for Promethean or Smart Board.
   - Music Room Technology: 8 data drops; two at teachers desk, two for wireless (one at front of class and one at rear), one for printer, one for IP clock, one for a projector and one for Promethean or Smart Board.

4. **Additional Academic Areas**

   A. Computer Lab

   - New Computer Lab adjacent to upper grade level classrooms.
   - Floors: New Resilient flooring.
   - Ceiling: New floating 2x2 ACT with linear indirect lighting.
   - Walls: Existing walls to be furred out as necessary to allow for new wiring and blocking. Impact resistant drywall to be painted.
   - Doors: Existing doors and frames to be repainted. All existing hardware to be repaired as required, creating like-new condition.
   - Millwork and FF&E: New built-in casework and furniture to meet the DCPS furniture standards.
   - Technology: 30 data drops for PC's/printer, one data drop for voice.

   B. Resource Room/Speech /Student Services

   - New rooms centrally located on the first floor.
   - Floors: New Resilient flooring.
   - Ceiling: New floating 2x2 ACT with linear indirect lighting.
   - Walls: Existing walls to be furred out as necessary to allow for new wiring and blocking. Impact resistant drywall to be painted.
   - Doors: Existing doors and frames to be repainted. All existing hardware to be repaired as required, creating like-new condition.
   - Millwork and FF&E: New built-in casework and furniture to meet the DCPS furniture standards.
   - Resource Room Technology: 13 data drops; two at teachers desk, two for wireless (one at front of class and one at rear), one for printer, five for PCs, one for IP clock, one for a projector and one for Promethean or Smart Board.
   - Speech/Student Services Technology: 4 data drops per room; two for PC's, two for voice.

5. Administrative Spaces

A. Welcome Center

- New Welcome Center located on the first floor at the top of the main entry stairs with view of main building entry.
- Floors: New Carpet.
- Ceiling: New painted drywall ceiling with down lights.
- Walls: Floor to ceiling glass wall at Corridor side and overlooking existing Auditorium, other walls to be new painted drywall.
- Doors: New laminated glass storefront system, ADA Accessible.
- Millwork and FF&E: New built-in casework and furniture to meet the DCPS furniture standards.
- Welcome Center Technology: 3 data drops; two for PC's, one for voice.
- Parent Resource Room Technology: 4 data drops; two for PC's, one for voice, one for a projector.

B. Conference Rooms/Offices/Workrooms/Staff Lounge

- New administrative suite created at front of building adjacent to new Welcome Center.
- Floors: New Carpet.
- Ceiling: New 2x2 ACT with lay-in direct/indirect lighting.
- Walls: Existing walls furred out to allow for new wiring. New impact resistant drywall to be painted.
- Doors: New painted wood doors with painted metal frames.
- Millwork and FF&E: New built-in casework and furniture to meet the DCPS furniture standards.
- Conference Room Technology: 4 data drops; two for PC's, one for voice, one for A/V.
- Typical Office Technology: 3 data drops; two for PC's, one for voice.
- Workrooms/Staff Lounge Technology: 3 data drops; two for PC's, one for voice

C. Health Suite – Phase 1 Alternate

- Health Suite to be relocated from the southwest corner of the building to an area adjacent to the new administrative function.
- Floors: New Resilient Flooring
- Ceiling: New 2x2 ACT with lay-in direct/indirect lighting.
- Walls: Existing walls to be furred out to allow for new wiring. New impact resistant drywall to be painted.
- Doors: New painted wood doors with painted metal frames.
- Millwork and FF&E: New built-in casework and furniture to meet DCPS furniture standards.
- Health Suite Office, Exam Room, Cots: 2 data drops per room; one for a PC, one for voice.

6. Student Dining and Food Services

A. Student Dining – Phase 1 Alternate

- Reconfigure serving line area to improve circulation and student interaction.
- Floors: New Resilient flooring
- Ceiling: New 2x2 ACT with linear indirect lighting.
- Walls: Existing wall tile to be covered with new ceramic tile.

7. Building Services Spaces

A. Group Restrooms

- Existing restrooms throughout are configured with a single sex on either side of the building. These existing restrooms are reconfigured to provide facilities for each sex on each side of the building.
- Floors: New ceramic tile.
- Ceiling: New 2x2 ACT with lay-in direct/indirect lighting.
- Walls: New ceramic tile and painted drywall.
- Doors: New painted wood doors with painted metal frames.
- Toilet Room Technology: one data drop for speaker.

B. Corridors and Stairs

- Floors: New terrazzo tile.
- Ceiling: New floating 2x2 ACT with down lights.
- Walls: Where existing tile wainscot is existing, install new ceramic tile over existing. Paint existing painted brick at the Ground Floor and existing plaster walls elsewhere.
- Doors: Existing doors and frames to be repainted. All existing hardware to be repaired as required, creating like-new condition.
- Corridor Technology: 44 data drops for speakers throughout.

8. Site Improvements

A. ADA Accessible Entrance

- New exterior ADA ramp at south building entrance. Ramp to have masonry walls to match the existing building.
- Re-grade sidewalk at south end of site to accommodate new ADA entrance.

B. Play Areas

- New age appropriate play areas with rubberized surfacing, adjacent to the north and south building entries.

PHASE 2

1. Physical Education Spaces

A. Gymnasium

- Excavate portion of Corridor adjacent to existing Gymnasium to provide for new access stair and ADA Accessible lift.
- New interior windows from Corridor into Gymnasium providing visual link from Corridor into Gymnasium.
- Floors: New wood or synthetic/rubberized athletic flooring
- Ceiling: New 2x2 ACT with direct/indirect lay-in lighting.
- Walls: New ceramic tile installed over existing wall tile to height of door openings.

- Doors: New painted wood doors with painted metal frames.
- Gymnasium Technology (part of Phase 1 work): 9 data drops; two for wireless, two for data, two for IP clocks, one for PA horn, two for A/V.

B. PE Office/Storage

- New PE office created in area adjacent to Gymnasium.
- Floors: New Resilient flooring
- Ceiling: New 2x2 ACT with direct/indirect lay-in lighting.
- Walls: Existing walls furred out to allow for new wiring. New impact resistant drywall to be painted.
- Doors: New painted wood doors with painted metal frames.
- Millwork and FF&E: New built-in casework and furniture to meet the DCPS furniture standards.
- PE Office Technology: 3 data drops; two for PC's, one for voice.

2. Engineering and Custodial Services

A. Supply Storage/Receiving/Custodial

- New engineering area adjacent to west side of building entrance.
- Floors: Sealed concrete.
- Ceiling New 2x2 ACT with direct/indirect lay-in lighting.
- Walls: Existing walls furred out to allow for new wiring. New impact resistant drywall to be painted.
- Doors: New painted wood doors with painted metal frames.
- Millwork and FF&E: New built-in casework and furniture to meet the DCPS furniture standards.
- Engineering/Custodial Services Technology: 4 data drops; two for PC's, two for voice.

3. Building Envelope Improvements

A. Cladding

- Cleaned, re-pointed, and repaired existing brick and stone.
- New insulated, thermally broken, low-e glazed replacement windows, in kind to existing configuration (laminated impact-resistant glass at Ground Floor and areas accessible from low roofs.)

PHASE 3

1. Auditorium

- Floors: Refinished existing wood floors or new wood floors to match existing.
- Ceiling: Repair existing wood trusses as necessary. Install new Tectum panels between wood trusses.
- Walls: Repair and repaint existing walls:
- Doors: New painted wood and glass doors with painted metal frames.
- Millwork and FF&E: Refinish existing Auditorium seating and replace existing curtains.
- Auditorium Technology (part of Phase 1 work): 10 data drops; two for wireless, four for data, two for IP clocks, two for A/V.

2. Student Dining and Food Services

A. Student Dining

- Remove kitchen equipment and replace existing serving line equipment.
- See Phase 1 work above for finishes if work is not done in Phase 1
- Remove existing stairs within the Corridor and install new monumental metal stair within the Cafeteria.
- New interior windows from Corridor into Cafeteria providing visual link from Corridor into Cafeteria.
- Student Dining Technology (part of Phase 1 work): 9 data drops; two for wireless, two for data, two for IP clocks, two for A/V, one for PA horn.

B. Kitchen

- Excavate the area south of the existing Cafeteria to create a new full kitchen at the same elevation as the Cafeteria.
- Floors: New quarry tile.
- Ceiling: New 2x2 ACT with direct/indirect lay-in lighting.
- Walls: Painted masonry
- Doors: New painted wood and glass doors with painted metal frames.
- Provide new kitchen equipment as required to create a fully functional kitchen.

3. Building Services Area

A. New elevator adjacent to existing stair

4. Building Envelope Improvements

A. New high albedo roofing and flashing.

5. Site Improvements

A. Excavate area between building and existing parking area to create additional expanded parking area and new loading area adjacent to the new kitchen.

ENGINEERING NARRATIVE

MECHANICAL

Existing Conditions

The existing building was built into two sections; the first is the main front structure and the latter additions were the two "wings" in the back of the main front structure. The existing building is being heated using five natural gas fired boilers providing low-pressure steam located in the basement mechanical room. Boiler combustion air comes through an areaway and louvers. The existing boilers flues have fan-assist vent system and are ducted though an existing chimney up through the roof. There were also recently installed electric unit heaters in the classrooms providing heat. Cooling is achieved mainly via window mounted package type air conditioning (ac) units. Relatively new ductless-type direct expansion split (dx) system provides cooling and heating on few support offices and the Auditorium. The outdoor condensing units for these dx type units are located inside the smaller two of four existing light wells. The existing building has three tunnel system and duct chases conveying ductwork and piping. The main tunnel runs from the main mechanical room and branches out under the main front structure, including the Auditorium. The other two tunnels run from both sides of the main mechanical room, and below grade outside the building, and enters back into the two additions.

Ventilation air for the front structure is achieved via two intake openings in the main entrance vestibule. Ventilation air is preheated and reheated via low-pressure steam coils. An existing fan room with a 30 horsepower (hp) fan motor and variable frequency drive (vfd), located in the main mechanical room, distributes the ventilation air through ductwork in the main tunnel, and up through existing duct chases and out to wall mounted grilles in each space. The air then relieves to a wall mounted grille that is ducted up to two relief ventilators on the roof. The other two "wings" structures have the same relief air scheme with one roof ventilator for each structure but do not have any ventilation supply air.

Steam and condensate return piping for the building runs through the tunnels and penetrates above the floor structure as exposed insulated pipe. This pipe then serves the entire building steam radiators and unit ventilators, located inside each classroom, support space, corridor and common area.

Both the existing Cafeteria and Gym were heated by ceiling hung unit ventilators with steam heating coils. Ventilation air enters through existing walls while window mounted air-conditioning units provide cooling.

Two ceiling hung unit ventilators with steam heating coils heats the existing Auditorium Stage with ventilation air coming from the Stage area back walls. Heated ventilation air from the main mechanical room, through duct tunnels and up through duct chases, also enters the Auditorium through wall mounted grilles and relieves through ducts up to roof ventilators. Relatively new wall mounted ductless dx type heat pump units were installed to provide heating and cooling. The existing outdoor condensing unit is located on grade just outside the Auditorium exterior wall.

Existing natural gas fired emergency generator provides emergency power for few emergency lights. Radiator exhaust is ducted from the generator and up to the areaway. Generator engine exhaust is piped through the areaway through the front face of the building and up.

An existing fuel oil storage tank that previously served oil-fired boilers is abandoned in place.

Phase 1

Existing Building Demolition Work

Remove two of the non-operational boilers to make room for the new AHU. Associated existing boiler piping and venting system will be reworked to accommodate the modification. The main steam and condensate return piping will remain in place. Existing radiators and associated accessible piping serving spaces renovated under Phase 1 will be removed and piping will be capped. All existing window mounted A/C units and electric unit heaters serving spaces renovated under Phase 1 will be removed. Window panels will need to be replaced.

New Work - Existing Building

Ventilation Air. The existing 30 hp fan motor located in the main mechanical room and associated supply and relief ductwork will be reused to provide outside air for the main structure. A written report on the existing fan and ductwork condition will need to be submitted to the engineer for review and to the Owner for approval for reuse. A new air-cooled AHU will be added to provide dehumidified neutral air during the cooling season for the main front structure. This new AHU will provide approximately 11,000 CFM of outside air. The neutral air will be ducted from the new AHU through the existing fan room wall, the fan room will serves as a plenum, and the existing fan will then deliver the conditioned air though the existing ductwork to areas renovated under Phase 1. Ventilation air for the new AHU can be drawn from the existing areaways through new louvers. The AHU is required to be an energy recovery ventilation system to be in compliance with the International Energy Conservation Code (IECC). However, the unit will be equipped with a series style energy recovery coil (heat pipe) wrapped around the cooling coil to be in compliance with the IECC via an exception in the code.

Install new motorized dampers on the existing intake openings in the main mechanical room and interlock with the new AHU to close off the intake during cooling mode. The existing fan room will be sealed airtight to keep conditioned air from mixing with the rest of the mechanical room and escaping through the tunnels. New fire dampers and volume control dampers will be installed at each existing supply and relief grilles in all spaces renovated under Phase 1. New ductwork will be installed at the third floor attic space to connect the existing duct risers to the new roof mounted fans. Existing ductwork that extends to spaces not included in Phase 1 work will be capped airtight. The school maintenance personnel will need to manually changeover the heating and cooling of the ventilation system.

Cooling & Heating

A new simultaneous heating and cooling, ductless type, variable refrigerant volume (VRV) system with ceiling mounted indoor units will provide heating and cooling for all spaces renovated under Phase 1. Approximate cooling capacity is 160 tons. Install factory provided central control system that will monitor system status and adjust system operation. Provide thermostat in each classroom and space with indoor unit. Indoor units shall be selected for sound levels below or equal to the Ed Specs' requirement. Outdoor condensing units will be located on the two larger light wells and on the roof.

Exhaust Air

New roof mounted exhaust fans with roof curb will be installed and ducted down to each toilet room with exhaust registers. There will be six direct driven exhaust fans with varying capacity; 1700 CFM, 1500 CFM, 1400 CFM, 1200 CFM, 700 CFM and 300 CFM, all sized @ 0.5 inches H2O static pressure. One new inline exhaust fan will be sized at 1500 CFM @ 0.35 inches H2O static pressure to provide ventilation for the main electrical room, which will be located in the main mechanical room. One roof mounted fan will be sized at 300 CFM @ 0.35 inches H2O static pressure and ducted to serve the electrical room on the ground floor.

New Work – Addition

Two roof mounted air-cooled packaged type Dedicated Outdoor Air System units (DOAS) sized for 4000 CFM of outside air @ 1.25 inches H2O static pressure, will provide dehumidified neutral ventilation air to the addition. The existing relief duct risers will be modified to serve as supply and return through existing grilles. New ductwork will be installed at the third floor attic space to connect the existing duct risers to the DOAS units. New fire dampers and volume control dampers will be installed at each existing grilles in all spaces renovated under Phase 1.

Phase 2

An air-cooled dx type split heat pump system will serve the Gymnasium, PE Office/Storage, Engineering and Custodial Services.

Demolition Work

Remove all unit ventilators, electric unit heaters, radiators and window
A/C units. Replace window panels and patch exterior walls. Remove accessible piping serving removed unit ventilators, radiators and cap piping.

New Work

There will be two new AHU's to serve the Phase 2 work.

The Gym will be served by a dx type heat pump AHU with 7000 CFM of supply air, 3000 CFM of outside air and sized at 0.75 inches H2O static pressure. The AHU will be located inside a dedicated mechanical room and the outdoor condensing unit will be located inside the areaway. The new AHU will have supplemental electric heat. Supply ductwork will be routed above the exposed Gym ceiling with supply registers. Return grilles will be ducted back to the new AHU. New roof mounted outside air intake and relief hoods will be installed. Intake and relief air will be drawn from the hoods and new ductwork will be added above the third floor attic space and connected to the existing relief duct risers. Provide motorized damper on the outside air intake duct to the AHU.

The Offices will be served by a dx type heat pump AHU with 2000 CFM of supply air, 300 CFM of outside air and sized at 0.5 inches H2O static pressure. The AHU will be located inside a dedicated mechanical room and the outdoor condensing unit will be located on the roof. The new AHU will have supplemental electric heat. Supply and return ductwork will be routed to each space with ceiling mounted supply diffusers and return grilles. Outside air for the unit will be tapped from the Gym intake riser with a motorized damper.

Emergency Generator

Provide ducted radiator to the outside through existing areaway via louver. Provide new engine exhaust pipe with 2-hour insulation and pipe up through areaway to the exterior of building.

Phase 3

Auditorium, Student Dining and Kitchen

Demolition Work

Remove one gas-fired boiler with two boilers remaining to serve the fan room pre-heat and reheat coils. Rework existing piping, venting and combustion air system to accommodate the changes. Remove all ductless dx type ac units, unit ventilators, electric unit heaters, radiators and window ac units. Replace window panels and cap exterior walls. Remove accessible piping serving removed unit ventilators, radiators and cap piping.

New Work Auditorium

There will be two new, equally sized, dx type heat pump air-handling units to serve the existing Auditorium. The Auditorium AHU will provide 5500 CFM of supply air, 2000 CFM of outside air and sized at 0.75 inches H2O static pressure. The AHU's will be located inside the existing light wells and the outdoor condensing unit will be located on grade outside the Auditorium. The new AHU will have supplemental electric heat. Supply ductwork will be routed above the entire length of the exposed Auditorium ceiling with supply registers. Return grilles will be ducted back to the new AHU. New roof mounted outside air intake and relief hoods will be installed. Intake and relief air will be drawn from the hoods and new ductwork will be added above the third floor attic space and connected to the existing relief duct risers. Provide motorized damper on the outside air intake duct to the AHU.

New Work Cafeteria

The Cafeteria will be served by a new dx type heat pump AHU with 6800 CFM of supply air, 3000 CFM of outside air and sized at 0.65 inches H2O static pressure. The AHU will be located inside a dedicated mechanical room and the outdoor condensing unit will be located inside the areaway. The new AHU will have supplemental electric heat. Supply ductwork will be routed above the exposed Cafeteria ceiling with supply registers. Return grilles will be ducted back to the new AHU. New roof mounted outside air intake and relief hoods will be installed. Intake and relief air will be drawn from the hoods and new ductwork will be added above the third floor attic space and connected to the existing relief duct risers. Provide motorized damper on the outside air intake duct to the AHU.

New Work Kitchen

The Kitchen will be served by a new dx type heat pump AHU with 3200 CFM of supply air, 600 CFM of outside air and sized at 0.5 inches H2O static pressure. The AHU will be located inside a dedicated mechanical room and the outdoor condensing unit will be located on the roof. The new AHU will have supplemental

electric heat. Supply and return ductwork will be routed to each space with ceiling mounted supply diffusers and return grilles. Outside air for the unit will be tapped from the Cafeteria intake riser with a balancing damper.

Roof mounted kitchen exhaust fan will be sized to provide adequate exhaust for the kitchen hood and will be ducted down through existing duct chases. Ductwork will have 2-hour duct wrap.

Gas-fired make-up air unit will be mounted on roof and ducted down to provide make up air for the kitchen exhaust hood.

PLUMBING

The existing domestic cold water, domestic hot water and gas piping systems serving the building will remain operational until the new systems come on line. Once the new systems are operational, the existing systems will be tied into the new systems and/or demolished.

Phase 1

Sanitary Systems

The existing building has multiple combined sanitary and storm sewer laterals including two eight inch combined sewer laterals at the East and one eight inch combined sewer lateral at the South of the building, which discharge into the existing public sewers to remain. Existing combined below grade sewers shall remain and will be separated under future phases of work. All new work requiring sanitary systems will be separated from the storm system at a point of connection just below the slab to the stack vent through the roof.

All plumbing fixtures, floor drains, and equipment shall be piped for gravity flow to the public sanitary sewer system.

Interior below grade piping within the structure shall be service weight, hub and spigot cast-iron with cast iron fittings and compression type neoprene gaskets. Interior sanitary, waste and vent piping above the lowest level within the structure shall be service weight, no-hub cast-iron with cast iron heavy-duty fittings and neoprene gaskets with stainless steel clamp and shield assemblies or DWV copper at contractor option.

Domestic Water Systems

A fire flow test, with the available static and residual pressure from the existing public water main, shall be required to determine if a domestic water booster pump will be required due to the addition of a code required backflow preventer.

The existing 4 "service and meter shall remain. A new 4" domestic water main shall run in the tunnel to the main boiler room where a new 4" domestic water backflow preventer shall be installed. Existing domestic water mains within the tunnels to be removed and replaced with new piping. If required, a new domestic water booster pump package shall consist of duplex, vertical close-coupled, centrifugal, cast iron, bronze mounted pumps with all required piping and controls. The package shall include a hydro-pneumatic expansion tank. A minimum water pressure of thirty PSI shall be provided at the highest most remote fixture. All interior above grade piping material shall be type L copper. All interior cold, hot, and hot water recirculation piping shall be insulated in accordance with applicable standards. All piping shall be run within concealed spaces or above the ceiling. Water piping to island sinks shall be fed from the floor below or in an accessible trench in the floor with a removable cover for access. Where subject to freezing, piping shall be heat traced and insulated.

Domestic hot water is supplied by (2) existing gas fired water heaters that appear to be in good condition and shall remain and reconnected. New cold, hot and hot water recirculation piping shall be supplied to all plumbing fixtures and equipment via piping utilities tunnels with vertical risers within the building. Piping serving the kitchen shall be sized for future Phase 3 kitchen. The recirculation system shall include a prepackaged mixing valve and dual recirculation pump system preassembled in a cabinet for installation.

Natural Gas System

The existing natural gas service meter and piping shall remain.

Phase 2

Sanitary and domestic water

All new plumbing work under Phase 2 shall be new with connection to the existing combined sewer below grade as outlined under Phase 1.

Fire Protection Systems

A fire flow test, with the available static and residual pressure from the existing public water main, shall be required to determine if a fire pump and/or storage tank is required.

The entire new facility shall be protected in accordance with NFPA and designed with a complete automatic wet sprinkler/standpipe system, utilizing the available water pressure and supply from the public mains and a thousand gallon per minute fire pump. A new eight-inch fire service will be provided. The eight-inch fire service will be provided with an approved double check detector assembly. A water storage system may be required as a result of insufficient water flow and pressure from the existing street main. Estimated required storage tank sized shall be based on supplying the system demand of one thousand gallon per minute for thirty minutes; therefore, a thirty thousand gallon tank will be required. The thirty thousand gallon fire protection water storage tank shall be installed underground and a one thousand gallon per minute vertical turbine fire pump shall be located above the tank in a fire pump house. A seven hundred and fifty gallons per minute horizontal split case fire pump shall be used in lieu of the one thousand vertical turbine pump if approved by DCRA.

Combination standpipe/sprinkler risers will be designed in each egress stairwell as required. All standpipes will be interconnected at the basement or first floor level and shall be provided with control valves with tamper switches and flow alarm switches. 2-1/2" Fire hose valves shall be provided at each floor level on each standpipe and two 2-1/2" fire hose valves shall be provided at the most remote standpipe. Final ap-

proval of hose valve locations shall be by DCRA. Remote fire hose valves will be provided throughout the facility where required to meet hose stream coverage. A sprinkler system control valve with tamper switch, flow alarm switch and check valve will be provided at each connection to the standpipe.

Sprinklers shall be quick response type and located in the center of ceiling tiles. Areas subject to freezing will be protected with dry sprinkler systems or dry pendent type sprinkler heads. A water curtain with rated sprinklers shall be provided as required by NFPA 13 for enclosed courtyards and atrium areas. Sprinklers systems at these locations shall be fed from an independent sprinkler control valve assembly and all atrium systems shall be interlocked with the fire alarm and mechanical smoke control system as required by code. Elevator shafts shall be sprinklered in accordance with NFPA 13.

The entire attic space shall be fully protected by a dry pipe sprinkler system in accordance with NFPA 13.

A new siamese connection will provided with four 2-1/2" connections at the address side of the building, within one hundred feet of a fire hydrant. A new fire pump test manifold will be provided in order to facilitate fire pump testing.
Material to be used shall be Schedule 40 standard weight black steel pipe. Dry pipe systems shall use Schedule 40 standard weight galvanized steel pipe.

Natural Gas Systems

A new separate natural gas service, meter and pressure regulator will need to be installed next to the existing gas meter at exterior face of the building to serve the new natural gas emergency generator. This meter shall connect to the existing high-pressure gas service before the gas meter servicing the building.

A gas pressure regulator shall be provided for each piece of equipment, and gas pressure regulator vents shall be provided as required. The piping materials will be selected based on longevity. All interior gas piping shall be Schedule 40 black steel with welded fittings.

Phase 3

Sanitary and domestic water

All new plumbing work under Phase 3 shall be new with connection to the existing combined sewer below grade as outlined under Phase 1.

Elevator sump pumps shall be provided in each elevator pit and shall be tied-in to the sanitary system.

Kitchen

Grease waste from all grease-laden fixtures and all three compartment sinks in the food service area shall be piped to an exterior below grade 1,500-gallon grease interceptor, located in an area that is convenient for cleaning preferably in the West parking lot adjacent to the existing cafeteria per DCPS Design Guidelines.

Domestic hot water shall be supplied from two new high efficiency natural gas-fired, 200-gallon storage type, water heaters replacing the existing water heaters. Estimated gas input for each water heater shall be 300 CFH with a recovery rate of 140 GPH at 100°F. Hot water calculation shall be based on District of Columbia Public Schools design guideline maximum consumption rate of 0.6 gallon per student per hour. Domestic hot water shall be heated to and stored at a temperature of not less than 140° F. 110° F. hot water shall be supplied to all plumbing fixtures and equipment via piping utilities tunnels with vertical riser within the building. Public hand washing lavatories and sinks shall be supplied with a point-of-use mixing valve complying with ASSE1070. Food service equipment requiring higher temperature water shall be provided with 140°F.

Natural Gas Systems

Natural gas distribution system will be designed and sized for the new domestic water heating, food service equipment. The local gas company shall determine if the existing service piping and meter can handle the new building demand capacity. It is anticipated that the existing gas service piping, gas meter and regulator shall remain in service. A gas pressure regulator shall be provided for each piece of equipment, and gas pressure regulator vents shall be provided as required. Gas supply in the cafeteria kitchen equipment shall be interlocked with the Ansul fire protection system and mechanical fume hood exhaust fan as required.

The piping materials will be selected based on longevity. All interior gas piping shall be Schedule 40 black steel with welded fittings.

ELECTRICAL

Existing Conditions

1) Normal Power:

The existing 800A C.T. and the existing (3) 100 KVA PEPCO transformers feed the existing 800A, 208Y/120V main distribution panelboard. The panelboard and meter are located in the existing boiler room in the basement level. There are three taps to the incoming service, which feed a 400A panel, a 100A emergency panelboard, and a 200A panel. The 800A distribution panel feeds all the lighting and the receptacle loads throughout via the sub panels on different floors. The 800A distribution panelboard and the sub panels (and feeders) fed from the distribution panel do not have a separate and dedicated ground bus bar. The 400A panelboard, which feed all HVAC units, has the proper ground bas bar, and all branch circuits have the ground wires.

2) Emergency Power:

The existing 15 KW, 208Y/120V indoor, gas-fired generator, which is located in boiler room, is not functional. The existing 100A, 240V, 3 pole Automatic Transfer Switch (ATS) in not connected to any load. The existing emergency and exit lights do not have emergency backup.

3) Fire Alarm System:

The existing Fire Alarm Control Panel, which is a Notifier #AFP 200W, is located in the existing engineer's office with one Fire Alarm transponder in the same room. The system does not have the required smoke detection system or complete notification devices throughout the building.

Phase 1

Normal Power

A new 3,000A, 208Y/120V, 3 phase, 4 wire service will be fed from a new pad mounted PEPCO transformer. The transformer will be at the southeast corner of the existing building. The 3,000A at 208V switchboard with emergency tap section, and two distribution sections, will be located at the southeast corner of the existing boiler room with all headroom, clearances, and workspaces required per NEC 110.26. Any existing pipes, ducts, platform column, and equipment, which conflicts with the NEC requirements, shall be removed or relocated. The existing normal power service, which are the incoming service lateral, the 800A C.T. cabinet, and the PEPCO meter, will be demolished per coordination between the contractor and PEPCO. The exiting wire trough at the location of the existing 800A service will be fully wired, with new 600A feeder, to feed the existing distribution system. The existing wire trough will be fed from a 600A breaker at the new switchboard. All power distribution systems, as shown in the power riser diagram, will be part of this phase. The existing branch circuits, which feed only the Phase I areas specified in the architectural narrative, have to be demolished. Then, any existing panelboard without any existing circuit has to be demolished from the job site along with its feeder. The existing conduit may remain with a new fish wire. The contractor has to provide circuit and feeder tracing to satisfy these requirements. All existing light fixtures, receptacles located in phase I areas have to be demolished. Rooms where the walls are furred out, will have recessed receptacles. Rooms with walls that are not furred out in classrooms, media center, and visual arts, will have wire mold 4000 for combination of power outlets, and data drops. The wire mold will be fed from the floor and not from the ceiling. In addition to line voltage switch, local ceiling mounted dual technology occupancy sensors, except in the media center, utility rooms, small rooms, stairs and corridors, will control the new lighting circuits. The media center will have a small relay panel with time clock above the drop ceiling and low voltage switches to control the lights in this area. The utility rooms, such as electrical, IT, and mechanical rooms, will have the low voltage switch with local small relay panel to schedule the lighting shut down requirements per IECC. The corridors will have ceiling mount ultra sonic occupancy sensor to shut the lights down. The stair lights will be on 24/7 without any lighting control devices. The offices, and small rooms will have wall sensor switch. The new HVAC loads will be fed from dedicated panelboards for mechanical loads, and large units will be fed directly from switchboard.

Emergency Power

The existing emergency generator, and the existing ATS is to be demolished. The emergency life safety lights, and exit lights will have integral battery backup to satisfy life safety, and IBC codes. The emergency battery backup light fixtures will have the small ATS (GTD or ETS) to control the light fixture by local lighting control devices during normal power, and switch to battery source during power failure. The emergency lights will illuminate all corridors, large bathrooms, stairs, PRE-K, and Kindergarten bathrooms, and exterior wall sconces for doors, which are part of egress path .

Fire Alarm

The existing fire alarm system with associated devices, and wiring will be demolished. A new fire alarm system with all initiating and notification devices will be designed for the entire building during this phase. Space smoke detectors will be required throughout the entire building since the building does not have, and will not have, a sprinkler system at this phase.

Phase 2

The power distribution equipment provided under Phase I construction will be sufficient to feed loads in Phase 2 areas. The existing branch circuits, which feed only the Phase 2, have to be demolished. Then, any existing panelboard without any existing circuits has to be demolished along with its feeder. The existing conduit may remain with a new fish wire. The contractor has to provide circuit and feeder tracing to satisfy these requirements. All existing light fixtures and receptacles located in Phase 2 areas have to be demolished. Rooms where the walls are furred out will have recessed receptacles. Rooms where the walls are not furred out, like the gymnasium, will have surface mounted receptacles with surface raceways. The new HVAC loads will be fed from dedicated panelboards for mechanical loads, and large units will be fed directly from the 1,200A mechanical distribution panel in the basement.

Emergency Power

The emergency life safety lights and exit lights for areas renovated under
Phase 2, will have integral battery backup to satisfy life safety and IBC codes. The emergency battery backup light fixtures will have the small ATS (GTD or ETS) to control the light fixture by local lighting control devices during normal power, and switch to battery source during power failure.

Fire Alarm

The newly installed fire alarm system will service new fire alarm devices. The newly installed fire alarm circuits will be extended to feed new fire alarm devices.

Phase 3

Normal Power

The power distribution equipment provided under Phase I construction will be sufficient to feed loads in Phase 2. The existing branch circuits, which feed only the Phase 3 areas, have to be demolished. Then, all existing panelboards, the existing 800A main distribution panelboard with associated feeders have to be demolished. The existing conduit may remain with a new fish wire. All existing light fixtures and receptacles located in Phase 3 areas have to be demolished. Surface mounted receptacles with surface raceways will serve the area. The new HVAC loads will be fed from dedicated panelboards for mechanical loads, and large units will be fed directly from the 1,200A mechanical distribution panel in the basement.

Emergency Power

A new gas fired generator will be sized to provide emergency back up for the fire pump and the elevator, under Phase 3 construction. A dedicated 2-hour fire resistive rated room will be required to house the Emergency Power Supply System (EPSS). The EPSS will be designed to satisfy minimum code requirements.

Fire Alarm

The newly installed fire alarm system will service new fire alarm devices. The newly installed fire alarm circuits will be extended to feed new fire alarm devices.

TECHNOLOGY

Existing Conditions

The existing technology systems in the school include communications systems, intercom systems, analog clock system, voice systems (utilizing ISDN type phones), CCTV systems (analog type cameras), and wireless systems. All existing technology systems will be removed in their entirety.

PHASE 1

General Technology Narrative: All new technology systems shall be installed as part of the Phase 1 work. The proposed technology system shall consist of Communication Systems (data & phone), Television System, Security System, Intercommunications and Program Systems (Paging and Clock System), Classroom Sound Enhancement/Sound Reinforcement System, and Audio Visual System. These systems shall comply with the latest applicable codes and program requirements of the Phase 1 renovation project for the school.

Communication Systems

The communications system shall include the infrastructure to support voice and data communications within the building including but not limited to: conduit from outlet box to nearest accessible ceiling and/or basket tray, rough-ins, basket tray, telco tray, outside plant optical fiber cable, plenum rated optical fiber cable, outside plant copper cable, plenum rated copper backbone cable, horizontal cabling (UTP), patch panels, 110 blocks, fiber distribution units, racks, vertical wire managers, horizontal wire manager, patch cords, etc.. The connectivity to available communications service providers and DC Net is by owner. The following are some requirements for the Communications System:

Equipment Rooms

- Demarcation Point (Head End Room 005) located on the Ground Floor where the incoming data and voice services currently enter the building. Provide racks, vertical wire managers, horizontal wire managers, plywood, telecom grounding, service entrance protection, fiber distribution units, patch panels, 110 blocks, telco tray, etc. in this room.
- MDF/Server Room (Information Technology 139) on First Floor is where the head end equipment for the Network, Phone System, Security System, Paging System, etc. will reside. Backbone optical fiber and copper to IDF Room and Demarc and horizontal cabling for half the building (West Side) Ground Floor, First Floor and Second Floor will be terminated in this room. Provide racks, vertical wire managers, horizontal wire managers, plywood, telecom grounding, fiber distribution units, patch panels, 110 blocks, telco tray etc. in this room.
- IDF Room (Information Technology 203) on Second Floor is where equipment for connection to building backbone and horizontal cabling for half the building (East Side) Ground Floor, First Floor and Second Floor will be terminated in this room. Provide racks, vertical wire managers, horizontal wire managers, plywood, telecom grounding, fiber distribution units, patch panels, 110 blocks, telco tray etc. in this room.

Building Pathways

- Provide all Basket Trays, Conduits, Sleeve/Slots, etc. as required to allow cabling to be routed between Telecom Rooms, telecommunications outlets, equipment. Etc.
- Basket Trays shall be sized adequately to handle telecommunications cabling (horizontal and backbone) as well as security cabling, paging/clock system cabling, television cabling, etc. If Basket Tray is not installed then appropriately sized j-hooks on 4' centers maximum shall be installed.
- Provide single gang rough-in with 1" EMT conduit to above accessible ceiling or to nearest basket tray with pull string and protective bushing on end of conduit at each telecommunications outlet location.

Backbone Cabling

- From the Demarc 12 strand of Armor Cladded Plenum Rated 62.5 Multi-Mode Optical Fiber, 6 strand of Armor Cladded Plenum Rated Single-Mode and 25 pair plenum rated category 3 copper shall be ran to the MDF/Server Room (Information Technology 106) on First Floor.
- From MDF/Server Room (Information Technology 139) on First Floor 12 strand of Armor Cladded Plenum Rated 62.5 Multi-Mode Optical Fiber, 6 strand of Armor Cladded Plenum Rated Single-Mode and 25 pair plenum rated category 3 copper shall be ran to IDF Room (Information Technology 203) on Second Floor.
- Fiber, Fiber Distribution Units, Fiber Connectors, Copper and 110 Blocks shall meet or exceed the requirements as provided in the OCTO School Technology Standards.

Horizontal Cabling

- From MDF/Server Room (Information Technology 139) on First Floor, Category 6 UTP cable(s) shall be routed via building pathways (basket tray, conduit, etc.) to Telecommunications Outlets (TO) on (West Side) of Building on Ground, First and Second Floor. See Plan Drawings for (TO) locations.
- From IDF Room (Information Technology 203) on Second Floor, Category 6 UTP cable(s) shall be routed via building pathways (basket tray, conduit, etc.) to Telecommunications Outlets (TO) on (East Side) of Building on Ground, First and Second Floor. See Plan Drawings for (TO) locations.
- A typical classroom shall have approximately 13 data drops: two at teachers desk, two for wireless (one at front of class and one at rear), one for printer, five for PCs, one for IP clock (See Intercommunications and Program Systems - Paging and Clock System), one for a projector and one for Promethean or Smart Board (See Audio Visual Systems), if Promethean or Smart Board is close to teachers desk then one cable is not needed.
- Category 6 Horizontal Copper Cabling (UTP) shall be terminated on Category 6 patch panel(s) in each dedicated Server/MDF or IDF Room.
- Cable and Jack for Data shall be color Blue.
- Cable and Jack for Voice shall be color White.
- Cable and Jack for Wireless shall be color Yellow.

- Cable and Jack for Video (Promethean Board or Smart Board or Projector) shall be color Green.
- Provide Category 6 channel compliant 3' and 7' patch cord per each drop as an Add Alternate.
- Category 6 Horizontal Copper Cabling (UTP), patch panels, patch cords, etc. shall meet or exceed the requirements as provided in the OCTO School Technology Standards.

Network Electronics

- Network Switches, Hubs, Routers, Servers, etc. provided and installed by owner's representative (OCTO).
- Uninterruptible Power Supplies (UPSs) and/or DC Inverters provided and installed by owner's representative (OCTO).

Telecommunications Grounding

- A dedicated grounding system shall be provided to allow standards compliant grounding of communications equipment per EIA/TIA 607 and NEC.

Security Systems

Security systems will be comprised of IP based CCTV cameras, access control components and intrusion detection, and will have local monitoring capabilities, and be interfaced with remote monitoring provided by an independent security contractor.
Monitoring of facility CCTV, access control and intrusion detection will be provided at the Main Office and at any transaction points.

CCTV System

The building perimeter will incorporate surveillance cameras to allow monitoring of all activity immediately surrounding the building as well as the adjacent streetscape. Points of ingress and egress will be equipped with cameras allowing local monitoring of activity/traffic. Cameras will be located in every Corridor and each level of every Stairwell. Additional cameras may be added, as the program develops, to provide monitoring of additional areas as designated by the end-user. These are some requirements of the CCTV System:

- CCTV system shall be IP Based
- Digital Video Server shall be Cisco System VS Media Server model CIVS-MSp-2U (12 Terabyte) and shall be sized based on owner's requirements as provided in the OCTO School Technology Standards.
- Fixed IP cameras shall be Axis 225FD Dome and shall be wall mounted unless secure ceiling tile can be provided.
- Pan, Tilt, Zoom IP cameras shall be Axis 232D+.
- Category 6 Horizontal Copper Cabling (UTP) shall be terminated on Category 6 patch panel(s) in each dedicated Server/MDF or IDF Room.
- Cable and Jack for CCTV shall be color Orange.
- Power over Ethernet (POE) switches shall be Cisco and shall be provided by OCTO.
- The district standardizes on a Vision Security Software Interface Server Model (V-IP-AW32-500), contact Victoria H. Newsome for questions.
- See Plan Drawings for camera location and types.
- Refer to OCTO School Technology Standards for additional requirements.

Card Access System

Proximity card readers and required door hardware/accessories will be provided to control all exterior doors and interior doors as need is identified. These are some requirements of the Card Access System:

- Card Access Controllers shall be centrally located in MDF/Server Room (Information Technology 139) on First Floor and/or in IDF Room (Information Technology 203) on Second Floor.
- Provide card readers on Front Entrance and additional doors as identified.
- See Plan Drawings for card access locations.
- Refer to OCTO School Technology Standards for additional requirements.

Intrusion Detection

Motion detectors will be required to provide intrusion detection in corridors, stairwells, spaces that have exterior windows accessible by ground levels and other areas identifying needs for intrusion detection. These are some requirements of the Intrusion Detection System:

- Intrusion Detection Controller/Communicator shall be centrally located in MDF/Server Room (Information Technology 1XX) on First Floor and/or in IDF Room (Information Technology 203) on Second Floor.
- See Plan Drawings for motion sensor, door contact, key switches and keypad locations.
- Refer to OCTO School Technology Standards for additional requirements.

Video Intercom/Door Entry

These are some requirements of the Video Intercom/Door Entry System:

- Video Intercoms shall be provided at main entry door and other key doors as indicated. Video Intercoms shall be connected into master control station at security desk or other location as determined by Schools Security Representative. See Plan Drawings for video intercom/door entry locations
- Refer to OCTO School Technology Standards for additional requirements.

X-Ray Equipment and Metal Detectors

- Provided by others

Television System

A television signal will be provided from a private CATV service provider and distributed to TV outlets located in the following areas as designated by the end-user: Welcome Center, Media Center and Lobby.

- Provide RG6 coaxial cable from each television outlet location to nearest Server/MDF Room or IDF Room.
- Provide RG-59 from each Server/MDF Room and IDF Room to Demarc and terminate on taps.
- Provide splitters, amplifiers, taps, etc. as required.
- See Plan Drawings for television locations
- Refer to OCTO School Technology Standards for additional requirements.

Intercommunications and Program Systems (Paging and Clock System)

Provide a school wide IP based public address and clock system. Specific requirements as provided by the end-user shall include a building-wide system capable of providing announcements and paging, as well as music. This system should be provided as an overhead paging system, with tie in capabilities to the facility phone system. This system would be controlled locally within the admin area.

- Clocks shall be provided in all corridors, classrooms, cafeteria, Conference and Meeting Rooms, and other spaces where students or faculty congregate.
- See Plan Drawings for head end equipment, speaker, call station, volume control and clock locations.
- Category 6 Horizontal Copper Cabling (UTP) shall be terminated on Category 6 patch panel(s) in each dedicated Server/MDF or IDF Room.
- Cable and Jack for Intercom/PA shall be color Grey.
- Refer to OCTO School Technology Standards for additional requirements.

Classroom Sound Enhancement/Sound Reinforcement System

Local sound systems to be used for presentations or lecture should be provided in each classroom. A typical system would provide ceiling mounted speakers, a local amplifier, and input capability from microphones and AV devices (projector, laptop, VCR, CD/DVD player, TV set). Sound Enhancement may be part of the Smart Board or Promethean Board. Coordinate Final requirements with OCTO.

- See Plan Drawings for amplifier and speaker locations.
- Actual speaker quantities and locations shall be based on sound requirements for the space.

Audio Visual Systems

Promethean or Smart Boards will be provided in classrooms by others. Provide cabling between Promethean/Smart Board and teacher's desk as indicated on drawings.

Conference/Meeting rooms will be provided with LCD displays or projection screens and ceiling projectors by others. Provide cabling as indicated on drawings. Projectors provided per DGS request.

Mobile Projector cart and screen for all pre school kindergarten classrooms, special education rooms, music rooms and art lab rooms will be provided. Ceiling mounted digital projector or digital white board will be provided in computer lab. Conference/meeting rooms will be provided with plasma displays or projection screens and ceiling projectors.

Consideration should be given to providing digital announcement boards to identify and locate events being held throughout the building. These displays would be located at the main entrance points, lounge areas, and other high traffic areas.

BRUCE MONROE AT PARK VIEW ELEMENTARY SCHOOL MODERNIZATION

NORTHWEST WASHINGTON DC

PROPOSED CAFETERIA - INTERIOR RENDERING

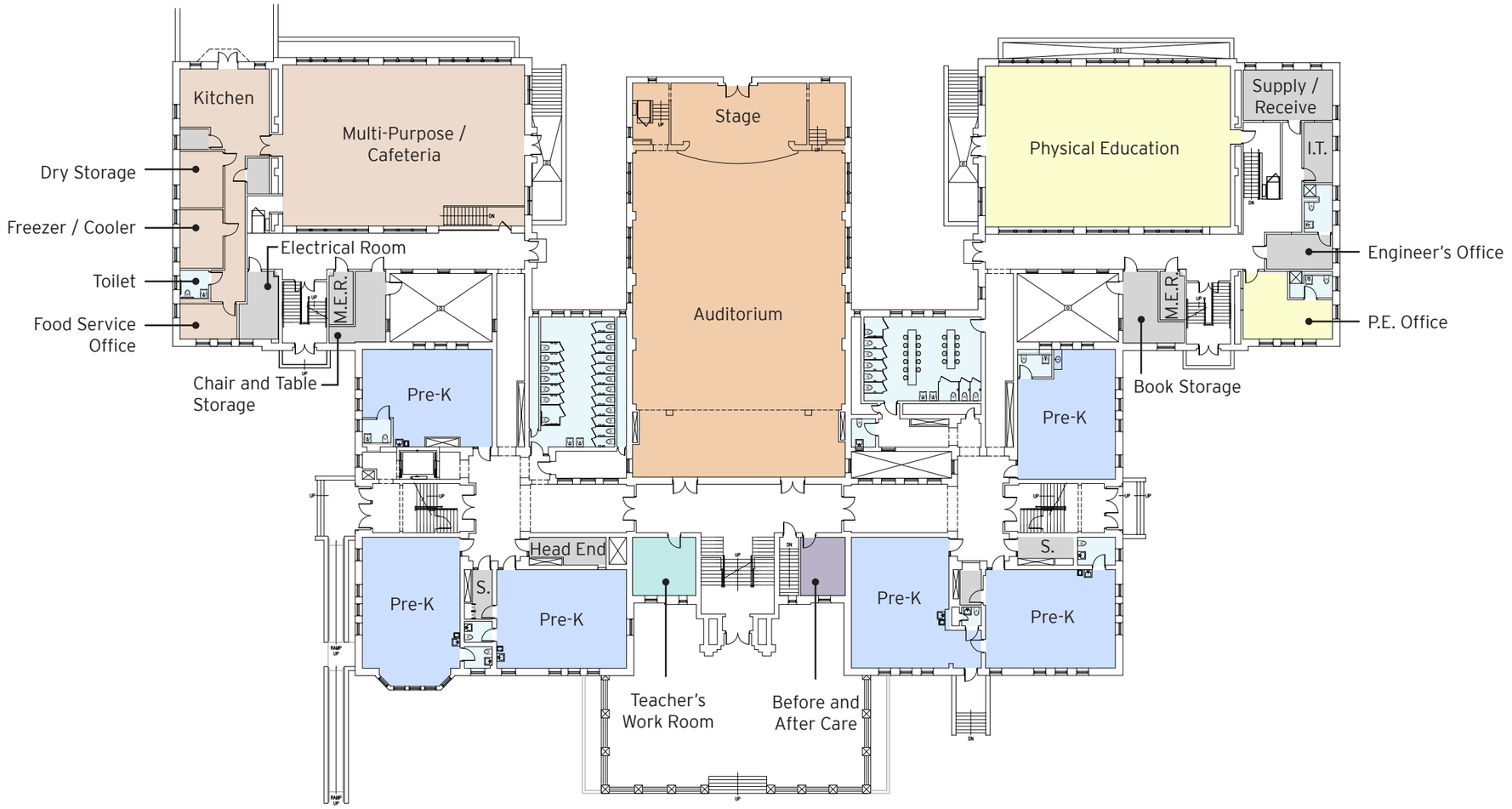
MARCH 20, 2012

BRUCE MONROE AT PARK VIEW ELEMENTARY SCHOOL MODERNIZATION

NORTHWEST WASHINGTON DC

PROPOSED BLOCKING AND STACKING

MARCH 20, 2012



LEGEND

- Administration/Health
- Auditorium
- Physical Education
- Cafeteria
- Pre-School/Pre-K
- Kindergarten
- Classroom 1-5
- Computer Lab
- Media Center
- Music/Art
- Other Core Academic Areas
- Special Ed
- Teacher Support/Workroom
- Restrooms
- Building Support
- Unassigned

0 16 32

PROPOSED GROUND FLOOR PLAN

BRUCE MONROE AT PARK VIEW ELEMENTARY SCHOOL MODERNIZATION

NORTHWEST WASHINGTON DC

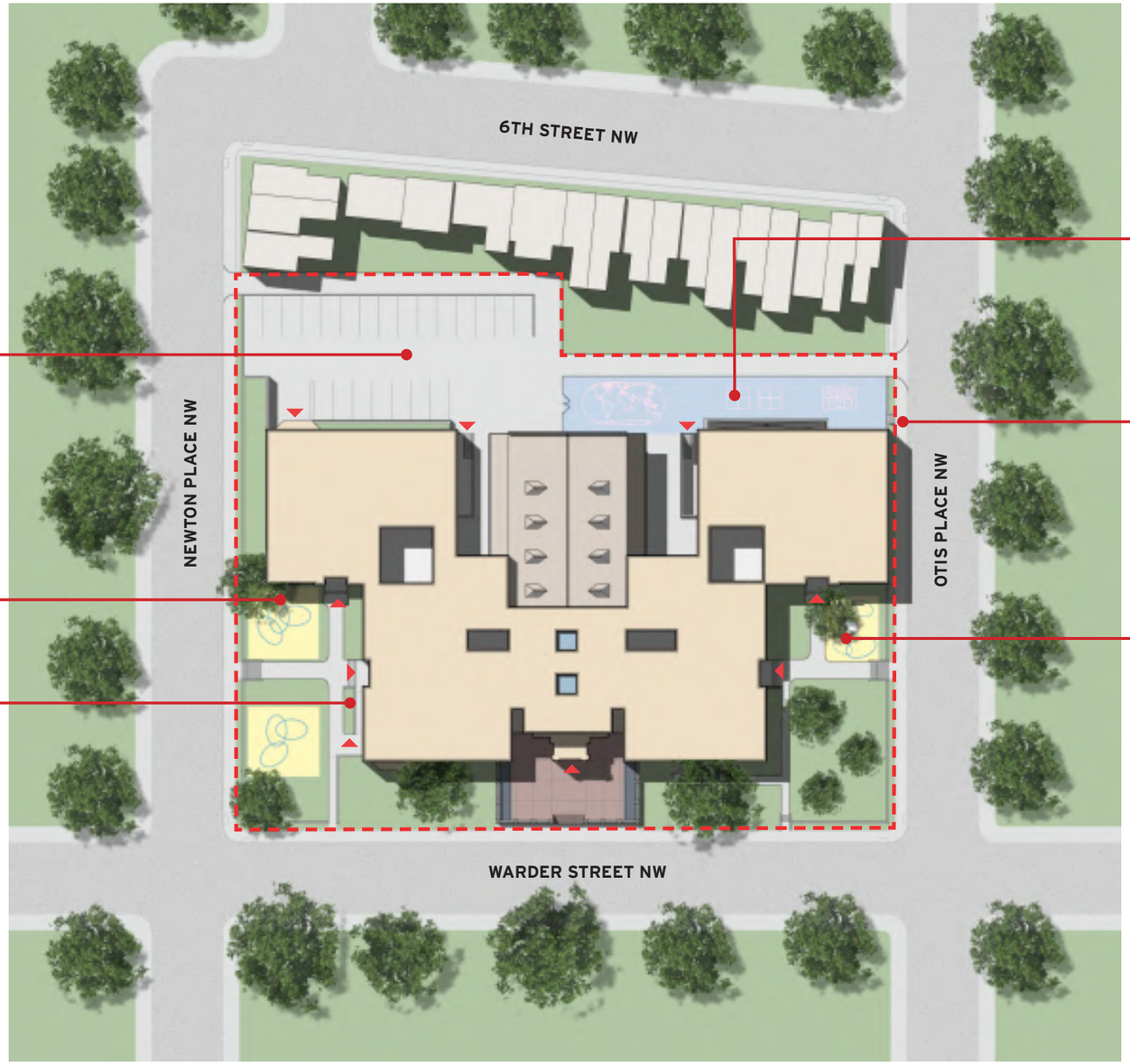
PROPOSED SITE PLAN

MARCH 20, 2012

ADDITIONAL PARKING
With kitchen loading area and secured with new fencing

ADDITIONAL PLAY AREAS
Sized to accommodate 3 distinct age group play structures

NEW ADA RAMP
Accessible ramp & sloped walk



IMPROVED PAVED AREA
Varied materials and play graphics, separation between vehicular service & student play area.

NEW STAIR
Provides pedestrian access from Improved Play Area to sidewalk

ADDITIONAL PLAY AREAS
Sized to accommodate 3 distinct age group play structures

▲ ENTRY POINT