



STATE OF NEW JERSEY

# SCHOOLS DEVELOPMENT AUTHORITY

Facilities Conditions Assessment Report  
Orange High School  
400 Lincoln Avenue

As of April 2013

**For purposes of public disclosure certain information that has been deemed critical to the safety of the school and its occupants has been redacted from the report**

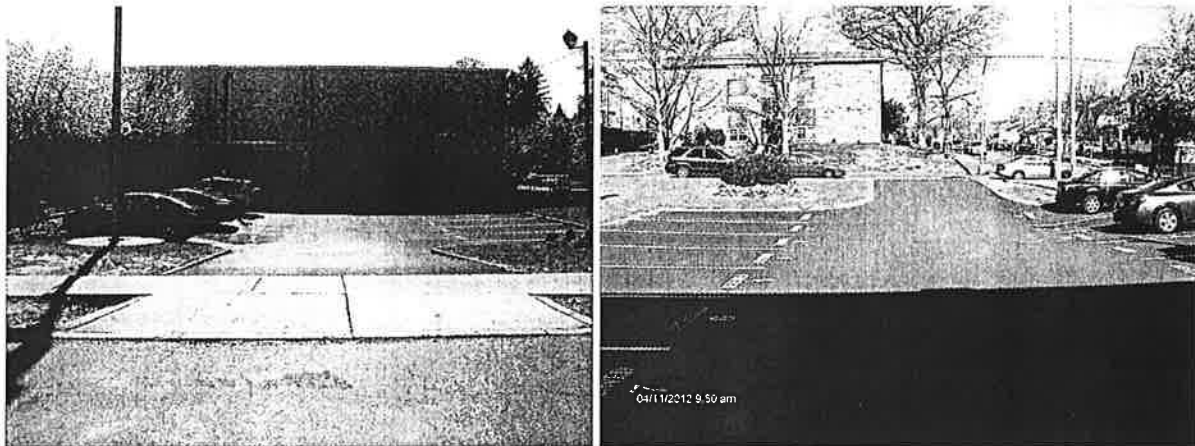


**OVERVIEW** – Orange High School is a two- story 111,314 square foot school located at 400 Lincoln Avenue in Orange, NJ. Constructed in 1974, the school houses approximately 783 students in grades 9-12 on a 3.6 acre lot. There do not appear to have been any additions built onto the school since the original construction. The first floor of the school contains the administrative offices, gymnasium, locker rooms, cafeteria, kitchen, specialized instructional spaces and restrooms. The second floor contains the media center, general classrooms, science labs and restrooms. The school does not have an auditorium or stage. The configuration of the building is a square with an open court yard in the middle and four (4) staircases that are located in each corner of the building. Two (2) sets of parallel corridors run north and south on both the east and west sides of the building. These parallel corridors result in a number of windowless interior rooms.

### **BUILDING EXTERIOR**

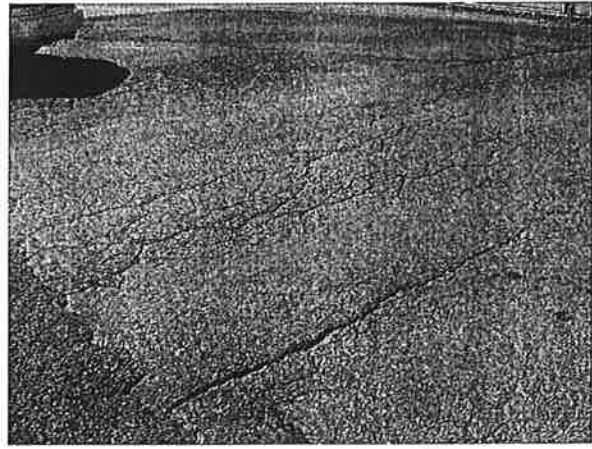
- **Site** - Located on the corner of Lincoln Avenue and Clarendon Place, Orange High School occupies approximately 3.6 acres with a large paved parking lot behind the school and four (4) double wide temporary classroom units (TCUs) located on the front lawn. The front lawn containing the TCU's, the south side of the property and the large parking lot behind the school have a 4' high chain link fence on the outside perimeter and a 8' high fence along common borders with neighboring properties.

In front of the school at the main entrance off of Lincoln Avenue is a small parking lot with 13 parking spaces (10 reserved, 2 visitor and 1 handicap). All parking spaces are clearly marked.



**Main Entrance Parking Lot**

The paved parking area behind the school is accessed from Clarendon Place. This area is fully fenced in with a chain link fence and contains approximately 100 parking spaces. This area has numerous cracks, patches and areas of unevenness. Utility poles surrounding the parking lot support exterior lighting fixtures that provide night time illumination. The effectiveness of the exterior lighting could not be determined during the day time site visit.



**Rear Parking Lot**

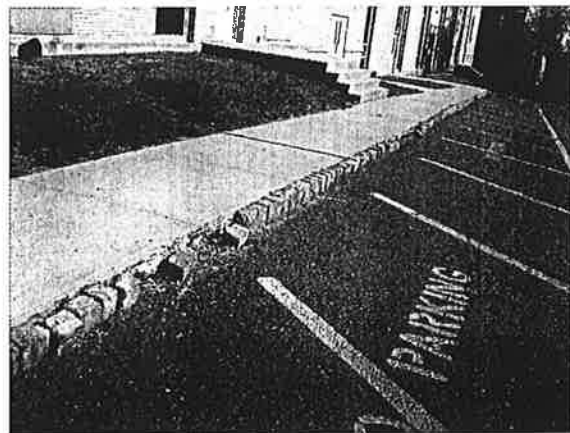


Several metal conex boxes used for storage are located in the rear corner of the parking area.

Painted parking space markings are faded or have been removed as result of patching causing a random parking pattern.

No outdoor recreation areas or athletic fields for student use were observed on the school property.

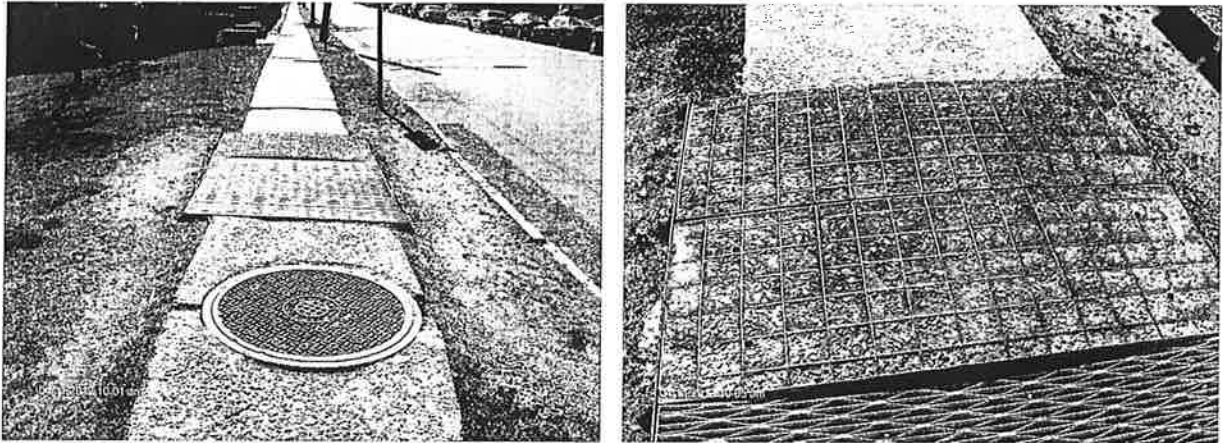
- **Curbs and Sidewalks** - The parking lot curbing around the school is Belgian block. Approximately 60 lineal feet of numerous sections of curbing along the rear of the school have broken, loose or missing blocks.



**Belgian Block Curbing**

The sidewalks and flatwork around the school are poured concrete and have some areas of cracking and displacement. This condition was observed at the rear walkway to the gym entrance and on the south side sidewalk.

The sidewalk on the on the south side of the property along Clarendon Place has a 5'x5' section of expanded metal grating and an adjoining 5'x5' section of concrete filled grating that is uneven and humped. This condition is next to a Public Service manhole also in the sidewalk.



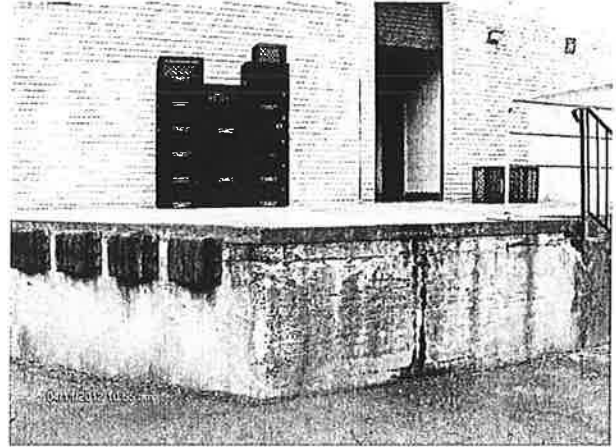
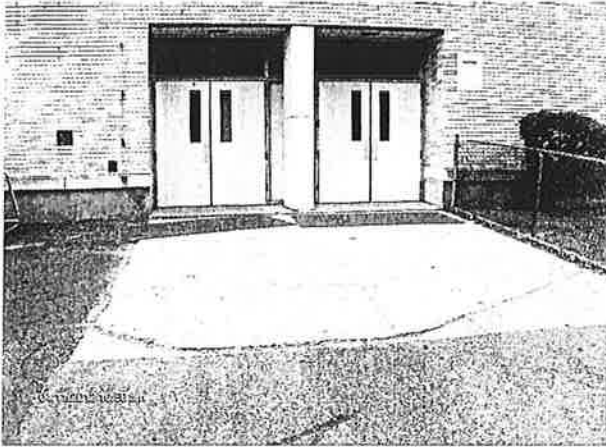
**South Sidewalk**

The concrete walkway from the rear parking lot to the gym is spalling with crumbling joints.

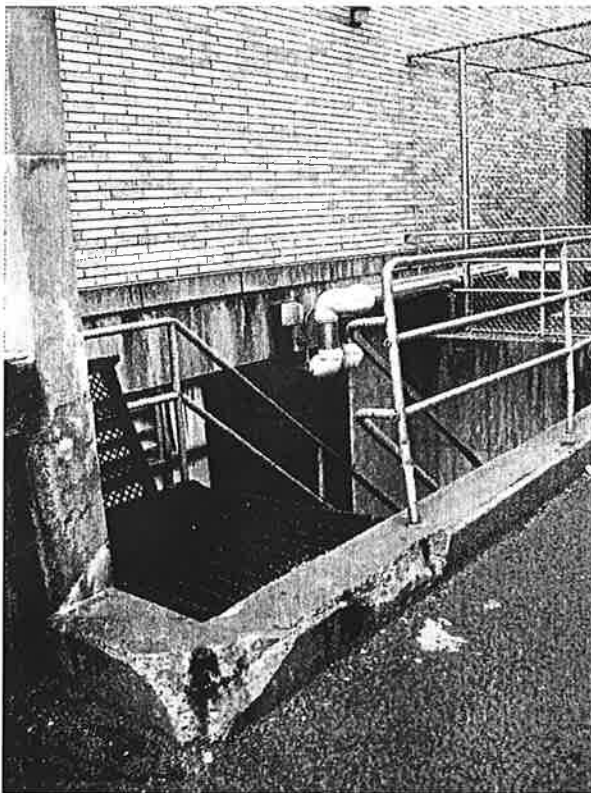


**Walkway From Rear Parking Lot To Gym**

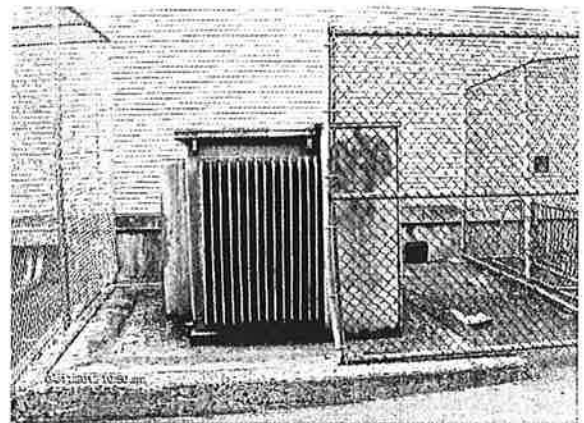
On the north side of the building, a common driveway running between the high school and the middle school was observed. This driveway serves as a narrow passageway for school bus traffic and truck traffic when accessing the kitchen and loading dock,. Concrete flatwork, curbing and ramp walls along this driveway appeared broken in numerous locations.



The concrete apron outside the building's north side doors is cracked and spalling. The loading dock wall has areas of concrete breaking away along the top and around the staircase.

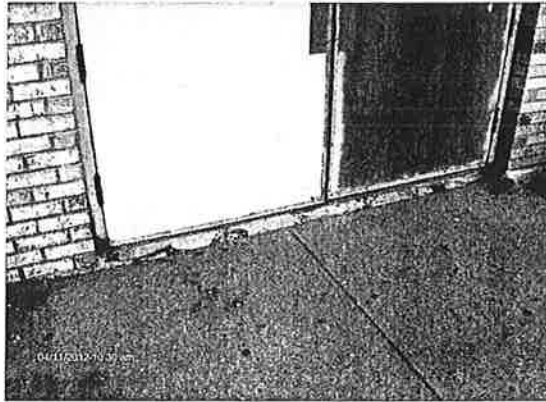


The curbing lip surrounding the staircase leading from the north side driveway to the basement has large edge and corner sections broken off exposing the internal rebar.

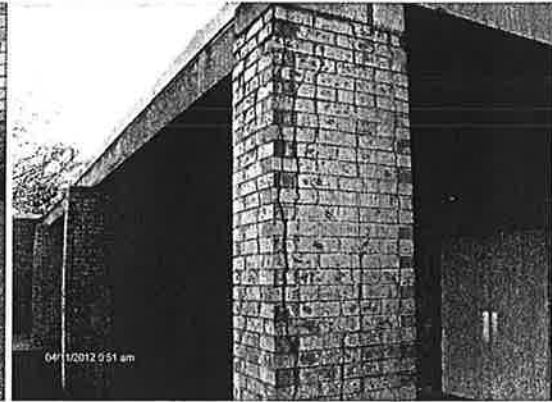


A section of chain link fencing around the transformer pad located in the north side drive way is missing.

- **Building** - The concrete saddles under the five (5) exterior double doors on the east and west sides of the Gym are breaking up and crumbling.

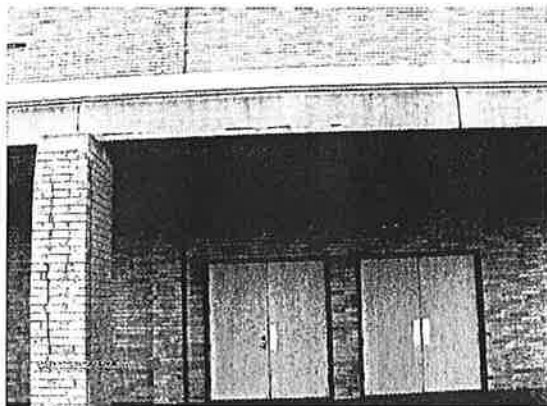


**Saddles Under Gym Doors**



**Canopy Columns**

A one (1) story high exterior canopy, running on the west side of the building from the gym to the main entrance of the school, is supported by three (3) brick surrounded columns. This brick veneer casing has numerous vertical cracks. The concrete lintels above these columns are spalling, exposing rusting steel beneath. This spalling condition also exists at the base of the second floor Media Center outside wall facing the interior courtyard.



**Lintels above Columns**



**Media Center**

The school has structural steel framing with load bearing concrete masonry units (CMU) walls and an exterior 4" brick veneer. The overall condition of the exterior brick appears to be in good condition with no significant areas of concern. The condition of the mortar appears good and no areas of displacement were observed.

- **Roof** - There are two (2) types of roofing systems on the school, a built up roof (BUR) with marble chip covering estimated to be approximately 15 years old and a single ply .060 Ethylene Propylene Diene Monomer (EPDM) roof estimated to be approximately 10 years old. Both roofs appear to be in fair condition. Access to the roof is provided by two (2) metal ladders via ladders located in 2<sup>nd</sup> floor janitor closets. There were no signs of delaminating joints and seams on the EPDM roof and the insulation underneath did not feel spongy or feel to be holding water.

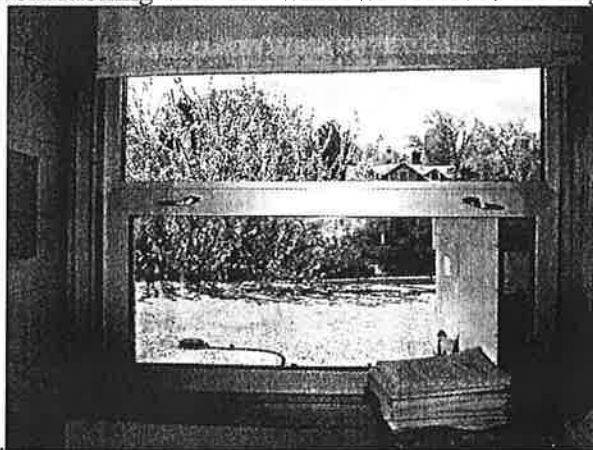
The district did not report any significant roof leaks on either roof system other than a concealed drain leak in the lower BUR roof at the south east corner of the school that affects the corridor below.



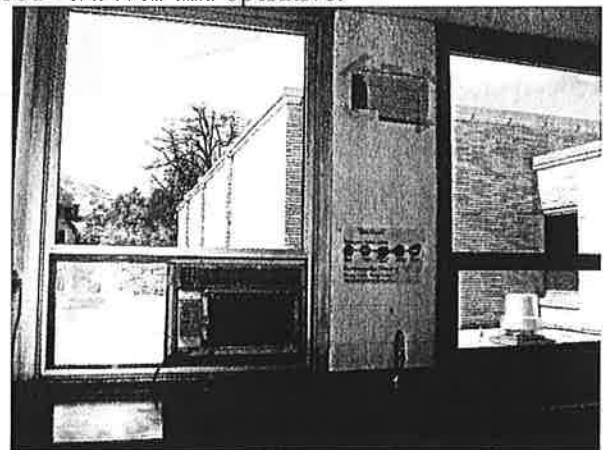
Both of the roof surfaces have numerous penetrations to accommodate various pieces of heating, ventilating and air conditioning (HVAC) equipment and internal roof drains. In addition to the internal roof drains the EPDM roof also has perimeter overflow outlets with no down spouts.

- **Doors, Windows and Louvers** - Exterior doors are white fiberglass reinforced plastic with panic bars and closers. All the doors and hardware appear to be less than 10 years old and are in good condition.

The windows which appear to have been replaced within the last ten years are double pane hopper type with large stationary glass panels above the tilt in section. In many rooms the hopper section of the window has been removed or modified to accommodate the installation of a window air conditioning unit. The windows observed are in good condition and operative.



**Typical Window**

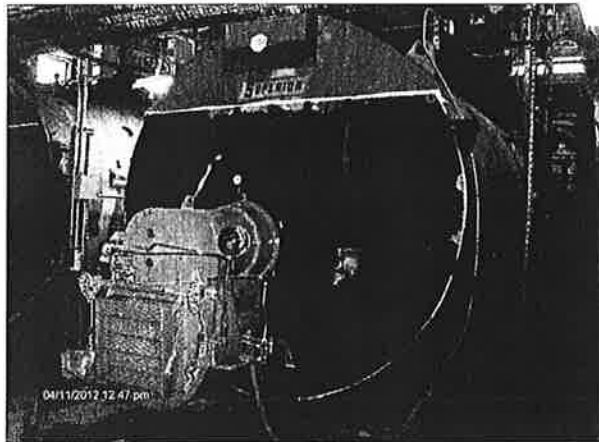


**Modified Window with Air Conditioner**

The exterior louver and door frame assembly at the base of the stairwell is severely rotted. It does not appear that this assembly was replaced when the other exterior doors were changed. The steel frame work surrounding the fresh air louvers and doors has rotted completely through in several places.

The louvers providing fresh air to the schools unit ventilators though out the building are in acceptable conditions with no report problems.

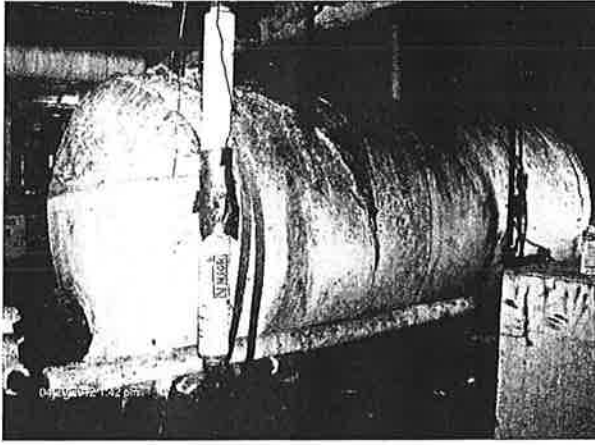
**HEATING VENTILATING & AIR CONDITIONING (HVAC):** The schools HVAC is comprised of a number of different components, boilers, exchangers, unit ventilator, chiller, exhaust fans and ventilators. Heat is provided by two (2) 1971 Superior gas fueled fire tube steam boilers located in the Middle School located next to the High School on the north side. Steam is delivered to the high school via underground piping.



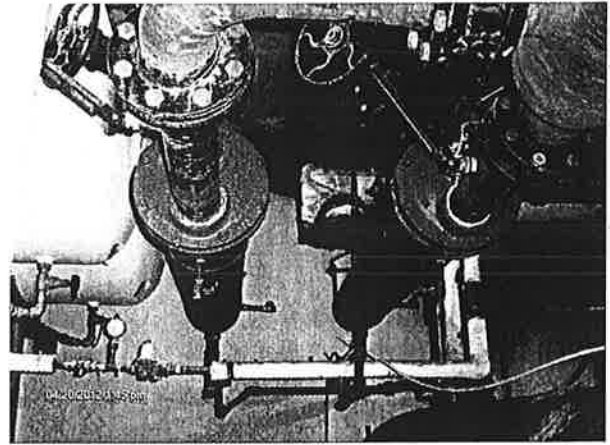
**Middle School**

In the High School are three (3) steam to hot water heat exchangers. Two (2) of the exchangers provide hot water heat to the schools unit ventilators and the third exchanger provides domestic hot water. Since there is no domestic hot water heater in the high school, one (1) of the two (2) Middle School boilers must be run year round to provide steam to the domestic hot water heat exchanger which makes the domestic hot water. Two (2) AO Smith domestic hot water heaters were installed in the Middle School in 2003 and piping was subbed out to run to the High School but never completed. An explanation as to why the piping was not run to the high school could not be provided by the districts representative participating in the walk through.



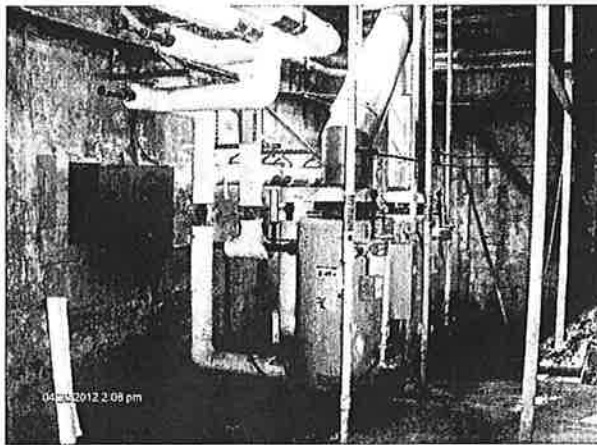


**Domestic Hot Water Exchanger**

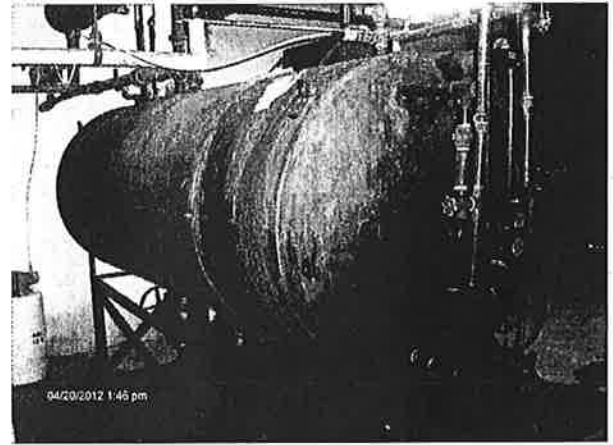


**Heating Water Exchangers**

A condensate return tank and three (3) steam condensate return pumps are located in the High School. The condensate return tank show signs of previous leaks and numerous patches and may be nearing the end of its useful life.



**Domestic Hot Water Heaters in MS**

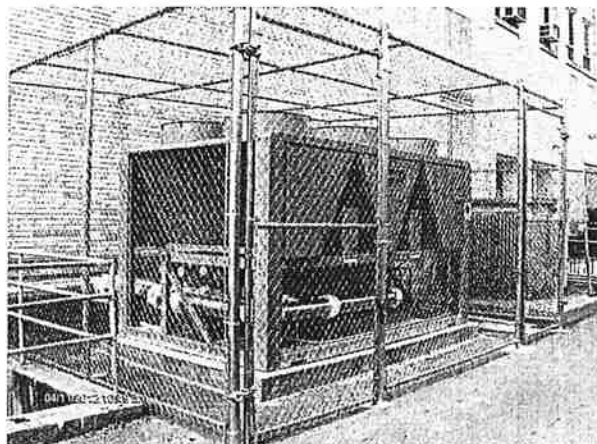


**Condensate Return Tank**

The district reports no significant problems with the two (2) Superior boilers which require normal annual maintenance and periodic tube replacement. Current Certificates of Inspection were not posted or available in the boiler room. The most current certificate expired August 19, 2010.

- **Ventilation – SECTION REDACTED**

- **Heating** - The majority of the school is heated by unit ventilators (UV) that are supplied with hot water from the basement steam to hot water heat exchangers. These UVs are supplemented by fan coil units, fin tube radiation and cabinet heaters throughout the building. Some of the UVs in the interior windowless classrooms have recently been replaced and provide heating, ventilation and air conditioning. The gymnasium has four (4) ceiling mounted air handlers with hot water heating coils and four (4) ceiling mounted hot water fan coil units. A number of the 1<sup>st</sup> floor UVs with fresh air vents have had their outside air intakes covered over for winter thereby eliminating the fresh air component of these unit. The district reports that there is currently no central operational HVAC control system in the school and that equipment is controlled manually.
- **Air Conditioning** – In 2010 district received SDA Grant GB-0183 to replace existing cooling tower, chiller and condenser pumps and other equipment including classroom ventilators. The recently installed Carrier 100 ton air cooled liquid chiller provides cold water air conditioning to interior windowless classrooms and the Media Center via new unit ventilators. The chiller is located on a fenced in concrete pad located in the north side driveway. Additional air conditioning is provided by a combination of forty-eight (48) window units, split systems with condensing sections on the roof (for 2<sup>nd</sup> floor rooms) and ground (for 1<sup>st</sup> floor rooms) and package unit and Trane Intellipak air-cooled chiller (for Main Office area).



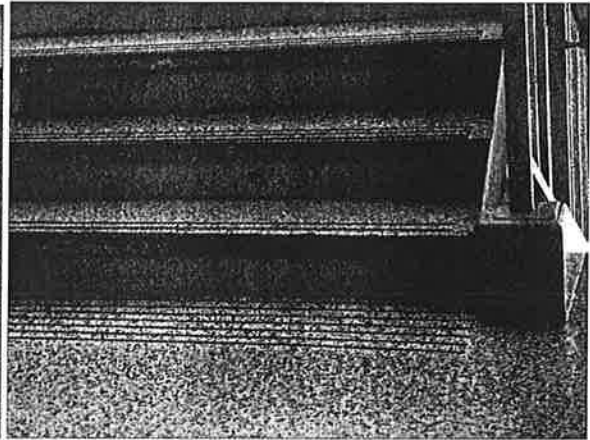
**Air-Cooled Chiller**

## **BUILDING INTERIOR**

- **Floors** – The school has a variety of different floor coverings including terrazzo, carpeting, wood, vinyl composition tile (VCT), quarry tile and ceramic tile. The first floor corridors and all of the steps and landings in the four (4) stair towers are terrazzo. Several of the terrazzo stair tread noses are broken and chipped. The corridor terrazzo flooring has some cracks but is in relatively good condition.

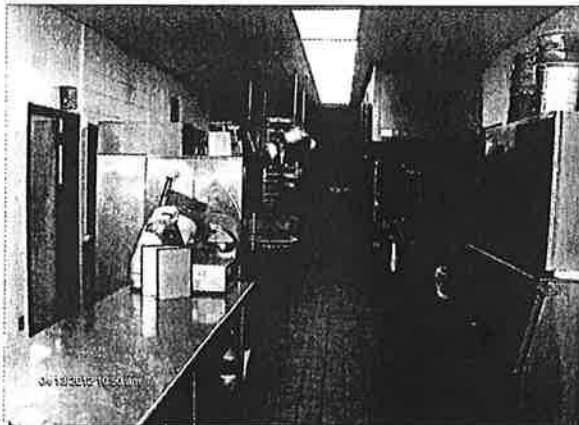


**1<sup>st</sup> Floor Terrazzo Corridor**

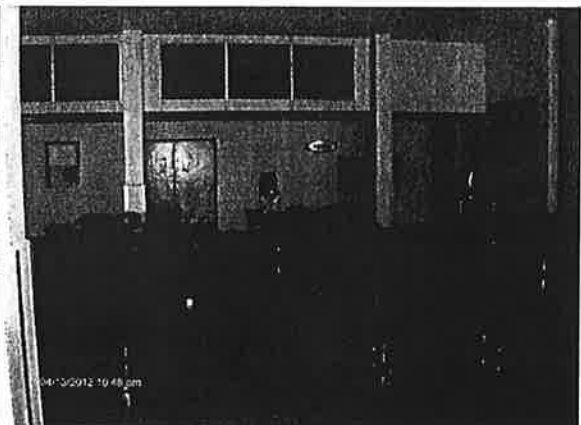


**Broken Terrazzo Stair Tread Nose**

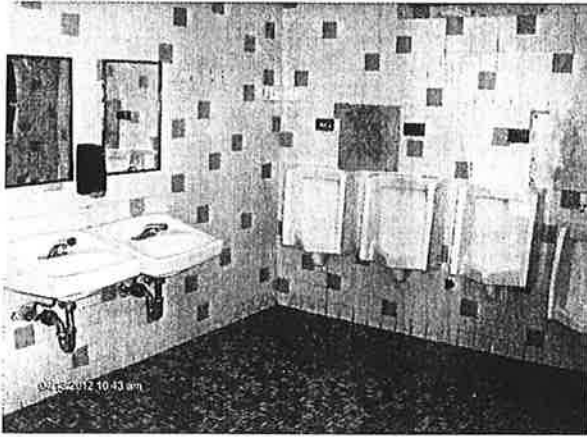
The floors on the 2nd floor corridors and classrooms on the 1<sup>st</sup> and 2<sup>nd</sup> floors are covered in 12"x12" VCT. This floor appears to be original and areas of replaced tiles were observed. The kitchen floor is 4"x 4" quarry tile and is good condition. The locker rooms are a combination of terrazzo and ceramic tile, with terrazzo in the locker area and sheets of 1"x1" ceramic tile in the shower and restroom areas. A crack running the entire length of the girls shower floor does not appear to pose a structural problem. The gang student restrooms floors are covered in 1"x 1" ceramic tile and appear to be original.



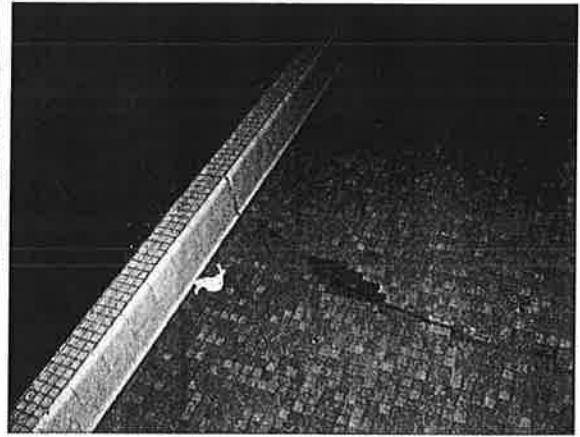
**Kitchen Quarry Tile**



**Cafeteria VCT**

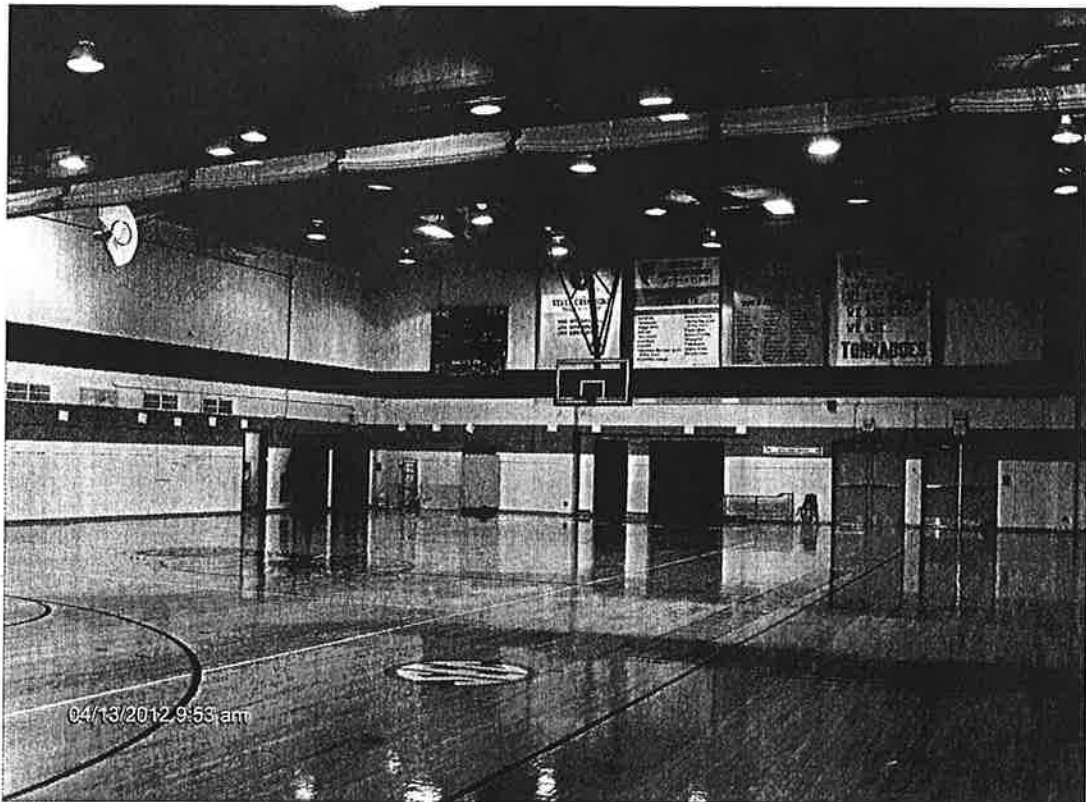


**Group Restroom**



**Girls Locker Room**

The Gymnasium floor is a light colored hardwood that appears to be well maintained. Several rooms in the school are carpeted; these include the Media Center, Band and Music Rooms, Lounge and miscellaneous offices.

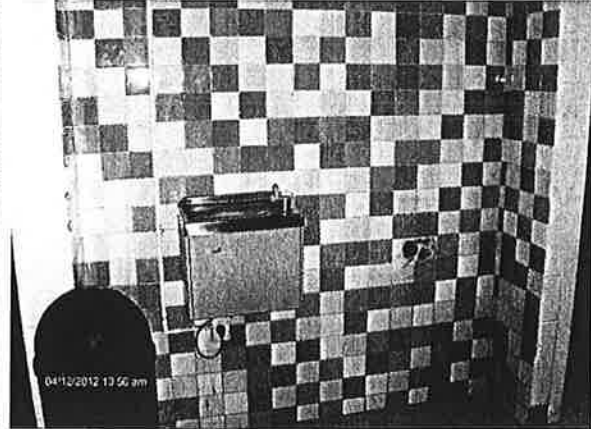


**Gymnasium**

- **Walls** – Classroom, hallway and specialty room walls throughout the school are primarily painted CMU. The hallway walls are lined with metal student lockers on both the 1<sup>st</sup> and 2<sup>nd</sup> floors. The restroom walls and the hallway water fountain recesses are covered in 4”x 4” glazed ceramic tile.



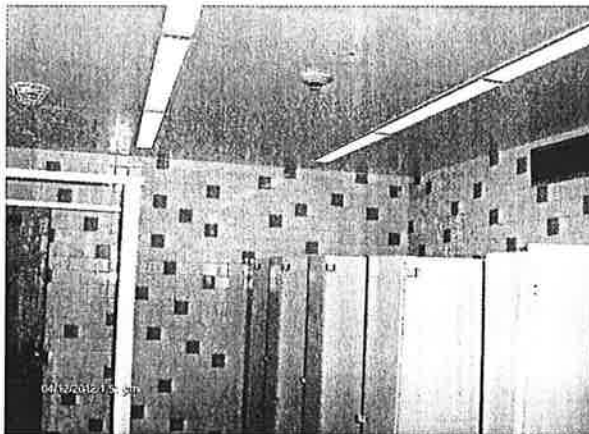
**Hallway Student Lockers**



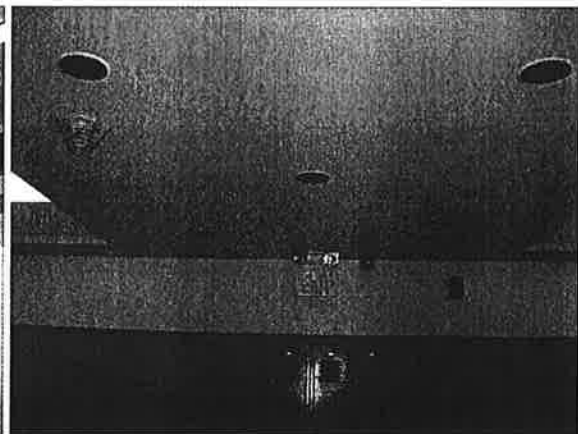
**Hallway Water Fountain Recess**

The walls are in good condition and well maintained. Several rooms have been subdivided and reconfigured with drywall (gypsum board) partitions creating addition smaller rooms (115 & 123).

- **Ceilings** – The ceilings throughout the school, classrooms, hallways, offices, Media Center, cafeteria, kitchen and specialty rooms are acoustical ceiling tile (ACT). The ACT are a combination of 2’x4’ and 2’x2’ set into a suspended grid system. The gymnasium ceiling has exposed structural steel under the precast roof planks. Water stained ceiling tiles were observed in approximately half of the rooms on the second floor. It was felt that these stains were likely the result of condensation from mechanical pipes above the ceiling and previous active water leaks. The restroom ceilings are painted drywall. Hallway ceilings have a drywall soffit along perimeter and drywall ceiling at hallway intersections that are in good condition.



**Restroom Ceiling**



**Hallway Intersection Ceiling**

- **Doors & Miscellaneous Hardware** – Classroom doors are original wooden with vision panels and an assortment of hardware. The vision panels are of varying sizes and material, while the door handles are predominantly round knobs and not lever type. Many of the classroom doors have deadbolts that are keyed on one side. The door hardware is not uniform throughout the

building and in some rooms various components are missing. The interior corridor doors leading to the staircases may not be fire rated.



**Interior Door**



**Corridor Doors**

- **Elevator** – The school does not have an elevator, stair chair lift or other mechanical personnel lifting device. A dumbwaiter is located in the north corridor outside the Media Center on the 2<sup>nd</sup> floor and the Cafeteria on the 1st. A portion of the west corridor is ramped next to the open court yard to transition between different elevations of the first floor.



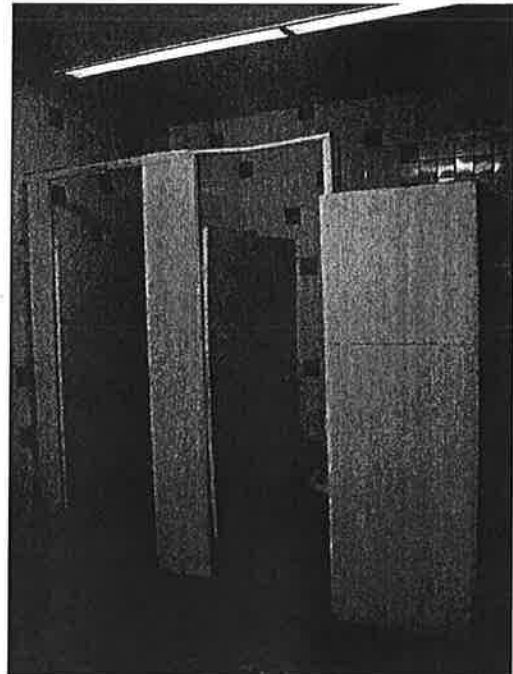
**Dumbwaiter**



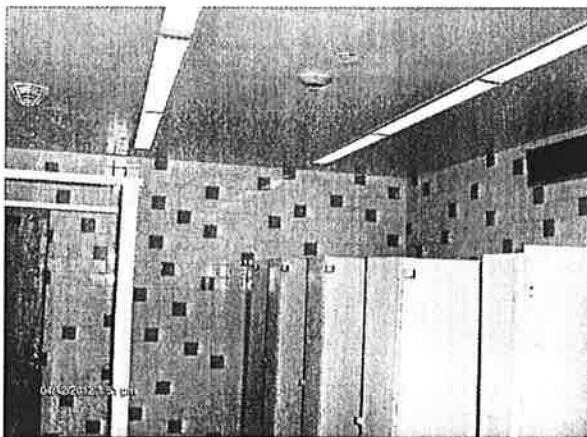
**1<sup>st</sup> Floor West Corridor Ramp**

There is no handicap access between different floors or levels of the school. The operational status of the dumbwaiter was not confirmed during the site visit.

- **Plumbing** – There are a total of eight (8) group restrooms, two (2) Girls and two (2) Boys on each floor. The rest rooms have ceramic tile floors and walls, drywall ceilings and surface mounted fluorescent lighting fixtures. All of these restrooms are interior rooms with UVs providing heat and no windows. The status of the ventilation could not be determined as it is part of a larger ventilation question detailed in the HVAC section of this report. None of the group restrooms are barrier free and many of the fixtures are over thirty years old.

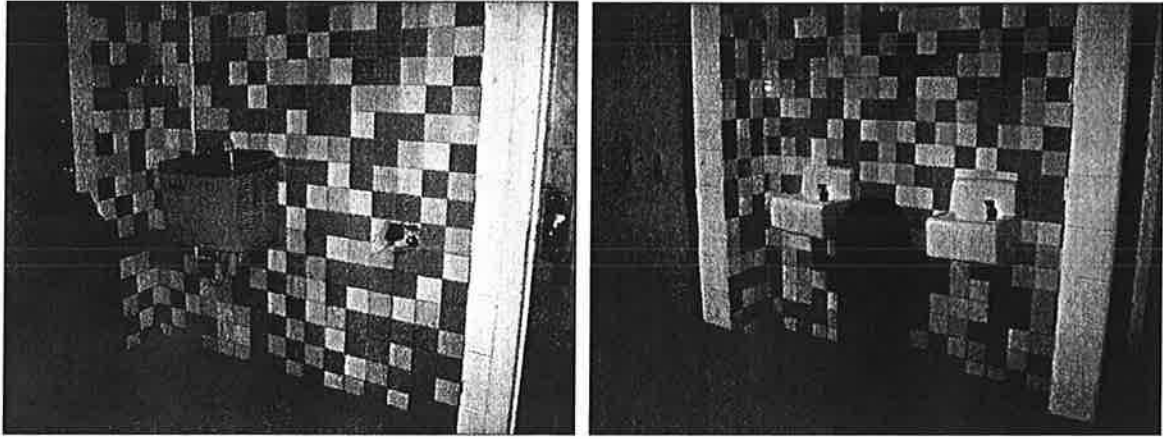


**Group Restrooms**



**Group Restrooms**

A combination of porcelain and electric stainless steel drinking fountains are located hallways throughout the school. The porcelain fountains appear to be original from 1974 and the stainless steel fountains are over 10 years old. Several fountains are missing from their wall mount locations and none are handicap accessible.



**Hallway Drinking Fountains**

- **Electric** – Interior lighting is primarily provided by a combination of 2' x 4' lay-in and parabolic recessed fluorescent fixtures in the suspended ceilings. Hallway intersections have recessed high-hats in the drywall ceilings. Group restrooms have recessed fluorescent fixtures. Overall, illumination appears to be good with the exception of the restrooms which appeared to be dim.



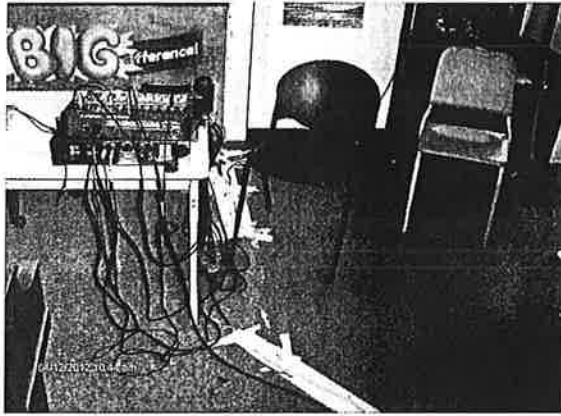
**Lay-in Fluorescent**



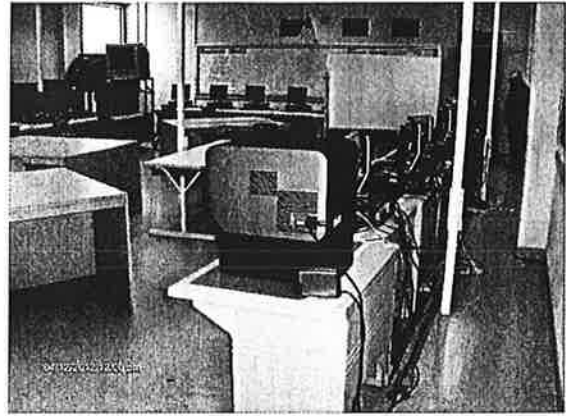
**Parabolic Recessed Fluorescent**

Most rooms appeared to have sufficient number of electrical outlets either wall or wiremold. Computer rooms and computer areas have power poles and floor boxes. The Music Room (Room #246), containing numerous pieces of equipment, had wire and power cords taped to the carpet floor causing a potential safety hazard.



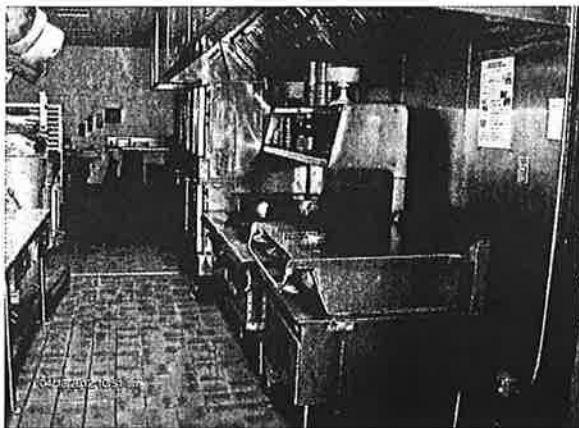


Music Room 246



Computer Room 225

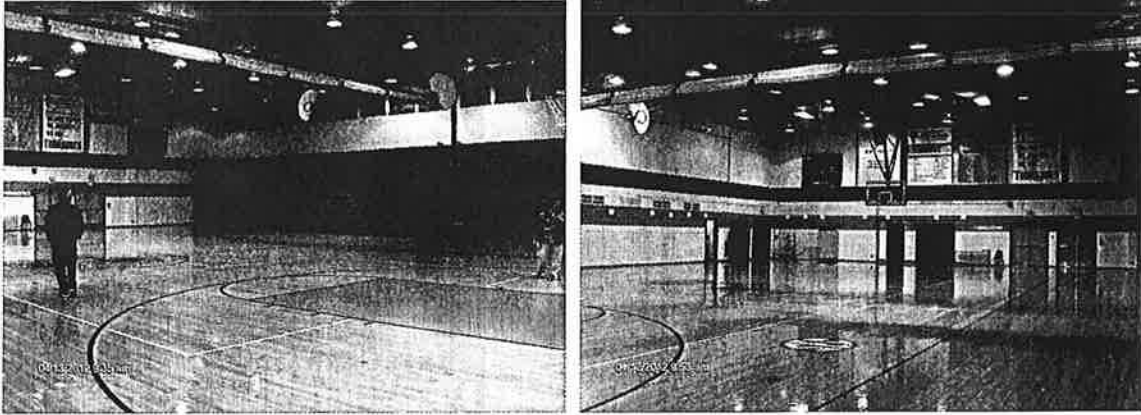
- **Kitchen** – The first floor 2,500 SF kitchen/serving line is a full service cooking kitchen that also services the adjacent Middle School. The kitchen has quarry tile floors, a suspended grid ceiling with ACT and 2' x 4' lay-in fluorescent light fixtures. Heat is provided by one (1) ceiling mounted fan coil and there is no air conditioning. The kitchen and service area is fully appointed however some of the equipment is old or broken.



### Kitchen & Serving Line

It was reported that the slicer, fryer and one of the two walk-in refrigerators were broken. As with the rest of the school, the exhaust ventilation system the status of the kitchen system could not be determined.

- **Cafeteria** – The 5,080 SF student cafeteria has a 13'4" ceiling, painted CMU walls and 12' x 12' VCT floor. The Cafeteria opens out to the interior open court yard. Six (6) new UV's were recently installed that supply heat only; there is currently no air conditioning in the cafeteria.
- **Gymnasium** - The Gym is 9,520 SF and has a 28'4" ceiling, painted CMU walls and hardwood flooring. The gym can be divided in half with the use of a drop down separation screen.



**Gymnasium**

There are retractable power operated bleachers on the south side of the gym and Boys and Girls Locker Rooms located on the north side. Direct access to the outside is available on both the east and west sides of the room. Overall the gymnasium appears to be well maintained. The Boys and Girls locker rooms are located next to the gym. The Girls shower room has a crack in the ceramic tile floor running the entire length. The room also has two toilets and a water fountain that does not work. The Boys locker room has broken locker doors, benches have been removed but floor anchors still remain.

- **Auditorium** – The school **DOES NOT** have an auditorium.
- **Fire Protection** – SECTION REDACTED
- **Security** – SECTION REDACTED
- **Technology, Telecom, Security, and PA System** – SECTION REDACTED.