

HALIFAX REGIONAL SCHOOL BOARD
Report: Dartmouth High School-Physical Plant Condition Report

PURPOSE: To provide building condition information pertaining to **Capital Projects Submission Draft 08/03/05-Project EC 6. Renovation Dartmouth High School** as requested by the Board on June 22, 2005.

BACKGROUND: On December 22, 2004, the Halifax Regional School Board approved Report No. 04-12-803 School Capital Construction Requirements List of New Construction and Additions/Alterations projects to be submitted to Department of Education. This report included recommendation of renovations to Dartmouth High School.

On June 22, 2005, the Halifax Regional School Board approved a motion that the Board clarify the list it submitted to Department of Education for school capital construction, and that Dartmouth High School's urgent need for capital repairs be given serious consideration and that a staff evaluation be conducted of the physical plant of Dartmouth High School.

On September, 21, 2005, the Halifax Regional School Board received a revised Capital Project Submission Draft 08/03/05. The report includes **Project EC 6. Renovation Dartmouth High School** for which the information below applies.

CONTENT: Building Description:

Dartmouth High School is a 13,289 square meter, two-level building of steel and masonry construction on concrete slab situated in a residential neighborhood on the corner of Victoria Road and Thistle Street in Dartmouth. The original building was constructed in 1959, with additions in 1961 and 1967. As noted, the school property is bordered on the east and south by Victoria Road and Thistle Street respectively. The remaining school property boundaries are adjacent to a soccer field and "commons" park land that formerly included Nantucket Avenue.

This school has 4 wings that surround two central courtyards. The main courtyard is accessible by vehicle on the west side and contains a green house, storage shed, and the above ground fuel storage tank. The second smaller courtyard is completely enclosed and houses a garden accessible from an interior hallway door.

The four wings are identified by the hallway locations. The *Nantucket* wing (adjacent to the former Nantucket Ave.) is the north wing of the

building and contains the cafeteria, library, art room, family studies lab, “new” gym, administration area and main entrance foyer on the first floor. There are 4 technology labs, an art room, 5 classrooms and a music room located on the second floor of this wing.

Adjacent to the Nantucket wing at the main entrance foyer is the east section of the building with two hallways on two levels. The front hall is the *Victoria* hall facing Victoria Road and contains the audio visual room, student services offices, health center, mechanical room, access to the old gym and NSSBA administration offices on the first floor. The second floor of the Victoria hall contains the upper area of the AV room and the staff room. There is an elevator in this wing adjacent to student services that provides wheelchair access to the second floor. As noted, there is also an administration area connected to this wing which is located on the Victoria Road side of the building. This section contains spaces currently leased to Nova Scotia School Boards Association.

The rear hall of this wing is identified as the *Center* Hall and contains 5 classrooms each on the first and second floors.

The *Thistle Street* wing is the south section of the building and is the original structure facing Thistle Street. This wing contains 2 chemistry labs, a physics lab, 4 classrooms, washrooms, special needs rooms, caretakers room and the “old” gym on the first floor. On the second floor there are nine classrooms, a biology lab, washrooms, mechanical ventilation room and department offices. The distinguishing feature of this section is the exterior stonework framing the original main entrance.

The *Harbour* wing is at the west side of the building facing Halifax Harbour and contains seven classrooms and the boiler room on the first floor, and 8 classrooms on the second floor.

There is a soccer/football field on the west side of the property. The south side of the property is landscaped with shrubs, hedges, mature trees and grassed areas. There are paved parking areas on the east and west sides accessible by Victoria Road and Thistle Street respectively.

Building Envelope Conditions:

The building *roof* is a flat built-up (tar and gravel) system throughout with seventeen sections. The roof contains many rooftop fixtures including more than 30 exhaust ventilation units, 10 skylights, roof drains, plumbing vents and a masonry chimney with a stainless steel extension. This roof system was partially replaced in 1991 and another small section was replaced in 2005. **A survey was completed in 2004 that recommended replacement of the roof system by 2009 at an estimated cost of \$465,000.00.**

The *exterior walls* are steel frame with concrete block interior and brick veneer exterior. The masonry is generally sound and in good condition. However, **there are several locations on the Harbour wing that**

require masonry repair due to spalling, settling, mortar degradation, etc.

There are *hardboard panels* that contain asbestos along the exterior roof line at the top of each elevation around most of the building. **This architectural feature is showing signs of deterioration and must be further assessed for consideration for replacement.**

The *windows* are fixed aluminum frame single and double pane with operable “hoppers” throughout. **Most of the windows are original to the building construction and require upgrade by replacement.** Many panes at various locations are held in place with “site engineered” diagonal supports located inside. There are “new” windows (approximately 10 years) located on the Thistle Street elevation of the building and on the rear of the Thistle Street wing facing the quad area.

Most exterior entry/exit *doors* have been replaced within the past ten years and are in good condition. **One set of doors on the Victoria Road access to the “old” gym are original wood doors and require replacement. The steel doors at the rear of the Nantucket wing are also recommended for replacement.**

Mechanical Systems Conditions:

The school *space heating* is hot water radiation throughout. The heating loops are fed by two oil-fired Cleaver Brooks Hot water boilers. These are both located in the boiler room which is in the south end of the Harbour wing and exits out to the main courtyard. These boilers are dated as being installed in 1979, have been maintained annually and were retrofitted with two new burners within the past year. **To meet ventilation heating requirements as noted below, boiler capacities should be investigated and upgraded as required.**

The classrooms and other interior spaces are heated with wall mounted slant fin radiation cabinet heaters that are controlled separately by pneumatic thermostats and valves located in each room. The exception to this configuration is the classrooms in the Harbour wing (2 level 16 room wing at rear of building facing the Harbour) which are heated by wall mounted ventilator cabinets with hot water heat coils fed from the boilers. These cabinets originally contained ventilators, heat coils, filters and dampers that allowed fresh supply air to be provided directly to each classroom from supply air grilles located in the exterior wall behind the cabinet. It is evident from the exterior masonry that these supply air grilles have been removed and blocked. The cabinets now function as heater units with fans that circulate the heated air.

Domestic hot water is provided by several electric 40 gallon hot water tanks located throughout the building.

The *fuel storage* and supply system for the boilers was replaced during summer 2005. The former 22, 730 litre underground steel fuel storage tank was excavated from the vault and results of soil and ground water sampling for hydrocarbons determined there was no contamination. The vault was backfilled. The new tank is an above ground steel fuel storage tank which is located outside in the quad adjacent to the boiler room. New fuel supply lines were installed and connected to the boilers.

The *ventilation* to most of the spaces in the building is provided by three mixed air ventilation systems which are in mechanical rooms situated in the Victoria wing, Thistle wing and the “old” gym. These units provide filtered supply air to most of the building. **This supply air is mixed with return air from the spaces as a means of reclaiming heat from the space and tempering the cooler supply air. There is no other means of heat recovery or supplementary heat evident in the air handling equipment rooms. It would be recommended that ventilation systems be upgraded to provide heat recovery, treatment of air (i.e. heat coils, filtration) and to ensure flow rates current meet ASHRAE standards.**

There are rooftop and sidewall mounted exhaust fans throughout the building that serve as dedicated exhaust for washrooms and other special use spaces such as labs, family studies and former technical education spaces. These are controlled by time clocks and/or manual toggle switches located in the ventilated space.

The leased administration offices are ventilated by a rooftop ventilation unit with cooling capacity.

The *building system controls* are original pneumatic actuated controls throughout the building. There is a Johnson DDC energy management system that was installed 10+ years ago but this appears to be non-functional and requires upgrade or replacement.

There is a *sprinkler system* providing fire protection to the entire building. This is supplied by municipal water source and the sprinkler tree room is located in the “old” gym change room at the Victoria Rd. gym entrance. This system is tested and inspected twice annually with reports provided to Operations Services. The sprinkler system is connected to the fire alarm system which is monitored for alarm signals.

Electrical Systems Conditions:

The *electrical power and lighting systems* are fed by a three phase service which is located adjacent to the transformer vault in the Victoria Wing across the hall from the elevator. The electrical distribution power and lighting panel covers in hallways, classrooms, storage rooms and mechanical rooms throughout the building are secured by means of steel bars screwed over the access doors to prevent access by occupants.

The *lighting* throughout the building is provided by four-foot fluorescent single and multi-tube fixtures. Many of these fixtures are missing shades which are not available for replacement or for which replacement shades are more costly than new fixtures. None of the fixtures appear to be electronic ballast type. Exit lighting is currently scheduled to be upgraded from incandescent to LED type fixtures. Exterior lighting of various wattage capacities and styles are mounted on the building exterior and controlled by time clocks. **Lighting should be considered for replacement throughout.**

The *communications and data* cabling infrastructure is mostly Board installed and maintained. Some infrastructure exists from previous school initiated installations. There are 6 computer labs and 4 wiring panels. They labs are located in 226, 227, 228, 229, 230 and 115. Rooms 226 and 227 are perfect with designed computer counters with drops. The cabling in room 230 and 115 is below standard.

There is a *fire alarm* system and *security* alarm system that is monitored full time for fire alarm, intrusion and system trouble conditions. The fire alarm system is tested, inspected and maintained annually with reports submitted to Operations Services.

Interior Finishes Conditions:

The floors throughout the hallways, classrooms, washrooms as well as the “old” gym are various styles and ages of vinyl composite floor tiles (VCT) and/or terrazzo. **The “new” gym is a hardwood strip floor in need of replacement.**

The interior walls are mostly painted concrete block but also include areas where there is painted gyproc and/or stained wood panel over concrete block.

The ceilings are suspended ceiling grids with drop in ceiling tiles in the “newer” wings of the building. The Thistle Street and Harbour wings ceilings are plaster.

Classrooms are fitted with chalkboards throughout. White boards have been installed in some selected rooms.

There are finishes in the building that contain asbestos content above 1% which requires that they be handled as asbestos containing materials. These include some floor tiles, heating pipe cladding, plaster ceiling in the leased space, fume hood liners and the exterior transite panels located between the masonry sections and at the top of the exterior walls. An audit was completed in 1999 listing all asbestos containing materials. **Any capital refresh should take into consideration a “refurbishment” of the interior finishes.**

COST: N/A (Cost is requested through the capital requests to DOE)

APPENDICES: N/A

RECOMMENDATIONS: This information was used in preparing the revised capital project submission as approved by HRSB at the September 28, 2005 Board meeting. It is recommended that the Halifax Regional School Board, accept this report as information pertaining to the current condition of the building and plant at Dartmouth High School, as requested on June 22/05.

COMMUNICATIONS:

From: Ron Heiman, Coordinator-Central Services, 464-2000, ext 5118,
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To: Audit and Operations Committee October 5, 2005
Committee of the Whole October 12, 2005

Filename:

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