SP DUMARESQ ARCHITECT LTD

South Shore Regional School Board

Elementary Schools Assessment March 2009

- *Hebbville*
- *Newcombeville*
- *Pentz*
- *Petite Riviere*

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Executive summary

Acting for the South Shore Regional School Board, SP Dumaresq Architect (SPDA) examined four primary schools in Hebbville, Pentz, Petit Riviere, and Newcombeville. The study recorded the current physical condition of each school and its related systems, determined what remedial actions would be required to permit it to continue to function for another five years and what would be needed to extend its useful life for another 25 years.

Methodology

SPDA toured each school extensively, measured the building against the provided plans, redrew the plans to scale, and considered and noted the condition of each element of its construction. SPDA also noted any deficiencies of the surrounding grounds and parking areas. Dumac Energy was engaged to examine the electrical, heating, ventilation and water supply systems, Able Engineering examined the sewage disposal systems, and Brad Woodworth Roofing Consultant studied the roofs. SPDA sorted and ranked the findings for each school and determined an estimated cost for each item. The results of these investigations are recorded in this study.

General Observations:

For their approximate 40 year age, the four schools are in relatively good condition. Problem areas are noted below. Underlined items should receive immediate attention.

	Hebbville	Newcombeville	Pentz	Petit Riviere
Water	Water treatment needs attention		Water treatment needs attention	Water treatment needs attention
Site conditions	Paving in poor condition	Paving in poor condition	Paving in poor condition	Paving in poor condition
Sewage disposal	Regular Maintenance and Pumping required	Regular Maintenance and Pumping required	Regular Maintenance and Pumping required	**Provide New Sewage plant**
Building envelope	Repair Roof Repoint Bricks	**Replace roof**	Repair Roof Replace windows and doors	Repair Roof Replace windows and doors
Electrical	Replace emergency lights New service required	New service required	New service required	**New service required** **Abandon basement electrical room**
Mechanical	**Replace furnace oil feed lines** General repairs	Plumbing repairs	Replace boiler plant	**Relocate fuel tanks** **Fill in old coal cellar basement** **Keep buses off cellar roof**

These are the estimated costs to keep the schools in operation:

	Hebbville	Newcombeville	Pentz	Petit Riviere
For five more years	$113,000	$195,000	$188,000	$221,000
For twenty-five more years	$999,500	$1,226,000	$1,017,000	$1,086,000

The four schools appear to function very well as is, however there are various spaces missing from the schools which would be provided in new schools. The following table identifies these spaces by school and the sizes and approximate costs for their addition. Blank spaces indicate that existing areas are fulfilling the function. Renovation of these areas is estimated in the individual school report.

Area	Hebbville	Newcombeville	Pentz	Petit Riviere
Learning Centre - 900 sq ft.	Add to school	Add to school	Add to school	Add to school
Music - 900 sq ft.	Add to school			
Library - 750 sq ft.	Add to school			
Arts - 900 sq ft.	Add to school	Add to school	Add to school	Add to school
Resource/Guidance - 250 sq ft.			Add to school	Add to school
Teachers Work Area - 400 sq ft.	Add to school		Add to school	Add to school
Teachers Staff Rm. - 400 sq ft.	Add to school		Add to school	Add to school
Cafeteria	Current practice of children eating in their classrooms is reported as satisfactory			
Gymnasium	Existing gymnasiums reported acceptable as is			
Storage - 400 sq ft.	Add to school	Add to school	Add to school	Add to school
Net Area	4650 sq. ft.	2200 sq. ft.	3250 sq. ft.	3250 sq. ft.
Gross area (net x 1.5)	6975 sq ft.	3300 sq. ft.	4875 sq. ft.	4875 sq. ft.
Estimated cost @ $230/sq.ft.	**$1,600,000**	**$760,000**	**$1,120,000**	**$1,120,000**

March 12, 2009.

SP DUMARESQ ARCHITECT LTD

South Shore Regional School Board
Elementary School Assessment
Hebbville - Newcombeville - Pentz - Petite Riviere
Master Cost Spreadsheet - March 2009

Hebbville

Projects for 5 Year Use

#	Project	Cat	Amount
HEB21	Repair Dripping Faucets	1	$500.00
HEB 55	Provide Combustion air for furnace	1	$2,000.00
HEB09	Replace floor tiles as needed	1	$2,000.00
HEB54	Relocate coat hooks and shelves away from gym	1	$2,000.00
HEB06	Repair roof as needed	1	$15,000.00
HEB40	Replace fuel feed lines to furnace	1	$5,000.00
HEB44	Provide motorized dampers on existing system	1	$5,000.00
HEB01	Repair and crack fill asphalt as needed	1	$10,000.00
HEB31	Supply and install 30 new emergency lighting units and associated wiring	1	$40,000.00
HEB19	Provide New Water treatment plant or connect to the Middle School	1	$20,000.00
HEB24	Maintain sewage system	1	Unknown

Projects for 25 Year Use

#	Project	Cat	Amount
HEB10	Replace floor tiles as needed	1	$5,000.00
HEB03	Repair and crack fill concrete walks as needed	1	$10,000.00
HEB05	Provide 1 new set playground equipment	1	$40,000.00
HEB02	Replace all asphalt surfaces	1	$50,000.00
HEB46	Install opener on front door	2	$5,000.00
HEB47	Make student washrooms accessible	2	$8,000.00
HEB49	Install accessible ramp and opener	2	$8,000.00
HEB48	Make staff washrooms accessible	2	$10,000.00
HEB29	Supply and install new panelboards and related feeders	2	$40,000.00
HEB28	Supply and install a new electrical service entrance switchboard and related equipment	2	$45,000.00
HEB27	Replace Rainwater drainage system	4	$15,000.00

Newcombeville

Projects for 5 Year Use

#	Project	Cat	Amount
NEW31	Video inspection of underground sewage lines	1	$500.00
NEW05	Replace floor tiles as needed	1	$2,000.00
NEW01	Repair and crack fill asphalt as needed	1	$10,000.00
NEW20	Supply and install 12 new emergency lighting units and associated wiring	1	$15,000.00
NEW42	Replace kitchen stove exhaust hood	1	$15,000.00
NEW37	Replace storage tank and feed lines to boiler	1	$20,000.00
NEW03	Replace roof	1	$130,000.00
NEW34	Add venting to staff sink and sump basin	2	$1,000.00
NEW28	Replace custodial sink trim	2	$2,000.00
NEW27	Install Grease interceptor in kitchen sink	2	$2,500.00
NEW16	Maintain sewage diposal plant	2	$10,000.00

Projects for 25 Year Use

#	Project	Cat	Amount
NEW06	Replace floor tiles as needed	1	$10,000.00
NEW02	Replace all asphalt surfaces	1	$80,000.00
NEW46	Install front door electric opener	2	$4,000.00
NEW47	Make student washrooms accessible	2	$6,000.00
NEW49	Make Portable building accessible	2	$8,000.00
NEW48	Make staff washrooms accessible	2	$10,000.00
NEW45	Install new general Fire alarm system	2	$25,000.00
NEW17	Supply and install a new electrical service entrance switchboard and related equipment	2	$45,000.00
NEW18	Supply and install new panelboards and related feeders	2	$50,000.00
NEW33	Replace Rainwater drainage system	4	$15,000.00
NEW21	Supply and install new Wiring devices and associated branch circuit wiring modifications	4	$25,500.00

Pentz

Projects for 5 Year Use

#	Project	Cat	Amount
PEN31	Replace domestic water heater	1	$1,000.00
PEN08	Replace floor tiles as needed	1	$2,000.00
PEN43	Provide adequate combustion air intake	1	$2,000.00
PEN01	Repair and crack fill asphalt as needed	1	$5,000.00
PEN30	Upgrade water supply and treatment plant	1	$8,000.00
PEN24	Supply and install 12 new emergency lighting units and associated wiring	1	$15,000.00
PEN60	Supply and Install a PA system	1	$20,000.00
PEN52	Replace air compressor Receiver	2	$1,000.00
PEN34	Replace custodial sink trim	2	$2,000.00
PEN33	Install Grease interceptor in kitchen drain	2	$2,500.00
PEN29	Replace well head	2	$4,000.00

Projects for 25 Year Use

#	Project	Cat	Amount
PEN09	Replace floor tiles as needed	1	$6,000.00
PEN02	Replace asphalt	1	$70,000.00
PEN61	Supply and install a Security system	1	$7,500.00
PEN60	Supply and install a PA system	1	$20,000.00
PEN53	Install front door opener	2	$4,000.00
PEN54	Make student washrooms accessible	2	$6,000.00
PEN55	Make staff washrooms accessible	2	$6,000.00
PEN21	Supply and install a new electrical service entrance switchboard and related equipment	2	$45,000.00
PEN22	Supply and install new panelboards and related feeders	2	$40,000.00
PEN38	Replace Rainwater drainage system	4	$5,000.00
PEN46	Replace vestibule Force Flow heaters	4	$7,500.00

Petite Riviere

Projects for 5 Year Use

#	Project	Cat	Amount
PET10	Replace floor tiles	1	$2,000.00
PET45	Replace washroom exhaust fans	1	$4,500.00
PET01	Repair and crack fill asphalt as needed	1	$5,000.00
PET20	Supply and Install 12 new emergency lighting units and associated wiring	1	$15,000.00
PET39	Relocate Oil Tanks and feeds - Demolish and fill in coal bunker.	1	$60,000.00
PET33	Replace sewage disposal system	1	85000
PET31	Replace custodial sink trim	2	$2,000.00
PET41	Provide adequate combustion air intake	2	$2,000.00
PET52	Construct handicap ramp to gym stage	2	$6,000.00
PET40	Install firestop as needed	2	$10,000.00
PET53	Add door seals and acoustic materials to gym and nearby classrooms	3	$5,000.00

Projects for 25 Year Use

#	Project	Cat	Amount
PET03	Pave graveled area	1	$15,000.00
PET11	Replace floor tiles	1	$15,000.00
PET18	Supply and install new panelboards and related feeders	1	$60,000.00
PET02	Replace asphalt	1	$70,000.00
PET17	Construct new elctrical room on exterior of building. Supply and install a new electrical service entrance switchboard and related equipment	1	$95,000.00
PET49	Install electric front door opener	2	$4,000.00
PET50	Make student washrooms accessible	2	$6,000.00
PET51	Make staff washrooms accessible	2	$6,000.00
PET48	Install new Fire alarm system	2	$20,000.00
PET30	Replace water closets	4	$1,500.00
PET28	Replace Urinals	4	$5,000.00

South Shore Regional School Board
Elementary School Assessment
Hebbville - Newcombeville - Pentz - Petite Riviere
Master Cost Spreadsheet - March 2009

Hebbville

Projects for 5 Year Use

#	Project	Cat	Amount
HEB37	Install firestop in furnace room as needed	2	$1,000.00
HEB50	Add door seals and acoustic materials to gym area and classes.	3	$5,000.00
HEB25	Video inspect sewage pipes	4	$500.00
HEB38	Secure boiler piping leaks & insulate	4	$2,000.00
HEB39	Replace Boiler Room Floor Drains	4	$2,000.00
HEB33	Expand existing Category 5 network for voice and data	4	$5,000.00
HEB41	Replace Force Flow heaters	4	$7,500.00
HEB35	Supply and install a CATV system with LCD projectors	4	$27,500.00
HEB04	Provide topsoil for sports field	5	$2,000.00
HEB22	Clean up Urin	6	$1,000.00
	TOTAL		$155,000.00

Projects for 25 Year Use

#	Project	Cat	Amount
HEB36	Supply and install a CCTV system	4	$19,500.00
HEB32	Supply and install new Wiring devices and associated branch circuit wiring modifications	4	$25,500.00
HEB26	Replace Sanitary Drainage	4	$40,000.00
HEB07	New Roof capsheet to extend life 12-14 yrs.	4	$45,000.00
HEB42	Replace heating mains	4	$45,000.00
HEB34	Supply and install a Category 6 network for voice and data	4	$55,000.00
HEB30	Supply and install new light fixtures and associated wiring	4	$75,000.00
HEB45	Replace remaining Pneumatic controls	5	$4,500.00
HEB52	Create meeting rooms from existing space	5	$5,000.00
HEB53	Create storage rooms from existing space	5	$5,000.00
HEB51	Relocate offices to other space	5	$10,000.00
HEB08	Repoint bricks	5	$20,000.00

Newcombeville

Projects for 5 Year Use

#	Project	Cat	Amount
NEW50	Add door seals and acoustic materials to gym and nearby classrooms	3	$5,000.00
NEW26	Upgrade plumbing faucets	4	$1,000.00
NEW36	Replace	4	$1,000.00
NEW38	Seal piping & complete insulation	4	$2,000.00
NEW40	Replace Force Flow heaters	4	$4,000.00
NEW04	Repaint Spandrels	4	$5,000.00
NEW24	Supply and install a CCTV system	4	$19,500.00
NEW23	Supply and install a CATV system with LCD projectors	4	$27,500.00
NEW54	Divide visiting specialist room in two	5	$3,000.00
NEW44	Replace remaining Pneumatic ventilation system controls	5	$4,500.00
NEW41	Provide motorized dampers on existing ventilation system etc.	5	$5,000.00
NEW12	Replace Ceiling tiles as needed	6	$1,000.00

Projects for 25 Year Use

#	Project	Cat	Amount
NEW25	Replace Domestic Water Piping	4	$35,000.00
NEW22	Supply and install a Category 6 network for voice and data	4	$38,000.00
NEW32	Replace Sanitary Drainage system	4	$40,000.00
NEW39	Replace heating distribution system mains	4	$45,000.00
NEW19	Supply and install new light fixtures and associated wiring	4	$85,000.00
NEW35	Replace Boiler plant c/w controls	4	$200,000.00
NEW52	Create meeting rooms from existing space	5	$5,000.00
NEW53	Create storage rooms from existing space	5	$5,000.00
NEW51	Relocate offices to other space	5	$10,000.00
NEW43	Provide Modern building Ventilation system c/w controls and building mods	5	$360,000.00
NEW11	Clean and Refinish Doors	6	$5,000.00
NEW13	Replace Ceiling tiles as needed	6	$5,000.00

Pentz

Projects for 5 Year Use

#	Project	Cat	Amount
PEN48	Replace current kitchen exhaust system	2	$15,000.00
PEN56	Add door seals and acoustic materials to gym and nearby classrooms	3	$5,000.00
PEN35	Video inspection of sewage pipes	4	$500.00
PEN03	Repair roof as needed.	4	$5,000.00
PEN28	Supply and install a CCTV system	4	$19,500.00
PEN27	Supply and install a CATV system with LCD projectors	4	$27,500.00
PEN26	Supply and install a Category 6 network for voice and data	4	$38,000.00
PEN32	Upgrade washroom faucets	5	$500.00
PEN47	Provide motorized dampers on existing ventilation system	5	$2,500.00
PEN36	Maintain sanitary drainage	5	$5,000.00
PEN51	Replace remaining heating system Pneumatic controls	5	$5,500.00
PEN13	Clean Urinals	6	$1,000.00

Projects for 25 Year Use

#	Project	Cat	Amount
PEN25	Supply and install new Wiring devices and associated branch circuit wiring modifications	4	$25,500.00
PEN06	Replace doors	4	$30,000.00
PEN37	Replace Sanitary Drainage	4	$32,000.00
PEN04	New Roof capsheet to extend life 12-14 years yrs.	4	$40,000.00
PEN05	Replace windows	4	$42,000.00
PEN23	Supply and install new light fixtures and associated wiring	4	$75,000.00
PEN39	Replace Boiler plant c/w DDC Control system	4	$180,000.00
PEN58	Create meeting rooms from existing space	5	$5,000.00
PEN59	Create storage rooms from existing space	5	$5,000.00
PEN57	Relocate offices to other space	5	$10,000.00
	Replace Domestic Water Piping	5	$28,000.00
PEN50	Provide Modern building Ventilation system c/w DDC control system and building modifications	5	$317,000.00

Petite Riviere

Projects for 5 Year Use

#	Project	Cat	Amount
PET22	Supply and Install a PA system	3	$20,000.00
PET26	Replace well and water treatment system	3	$28,000.00
PET32	Video inspection of underground sewage system	4	$500.00
PET36	Replace ABS piping	4	$1,000.00
PET38	Replace boiler circulation pumps	4	$1,500.00
PET43	Add Force Flow heaters in vestibules	4	$4,000.00
PET37	Insulate boiler pipes	4	$5,000.00
PET08	Scrape replace and repaint shingles	4	$15,000.00
PET09	Replace cladding	4	$15,000.00
PET25	Supply and install a CCTV system	4	$19,500.00
PET24	Supply and install a CATV system with LCD projectors	4	$27,500.00
PET44	Add motorized dampers to ventilation system	5	$1,500.00

Projects for 25 Year Use

#	Project	Cat	Amount
PET29	Replace Lavatories	4	$8,000.00
PET35	Replace Rainwater drainage system	4	$15,000.00
PET21	Supply and install new Wiring devices and associated branch circuit wiring modifications	4	$25,500.00
PET34	Replace Sanitary Drainage system	4	$35,000.00
PET23	Supply and install a Category 6 network for voice and data	4	$38,000.00
PET42	Replace heating system main distribution pipes	4	$38,000.00
PET19	Supply and install new light fixtures and associated wiring	4	$95,000.00
PET55	Create meeting rooms from existing space	5	$5,000.00
PET56	Create storage rooms from existing space	5	$5,000.00
PET54	Relocate offices to other space	5	$10,000.00
PET27	Replace Domestic Water Piping	5	$30,000.00
PET05	New Roof capsheet and high roof flashing to extend life 12-14 yrs.	5	$45,000.00

Hebbville

Projects for 5 Year Use

#	Project	Cat	Amount

Projects for 25 Year Use

#	Project	Cat	Amount
HEB20	Replace Domestic Water Piping	5	$35,000.00
HEB43	Provide Modern Ventilation system c/w controls (60K) and building modifications (50K)	5	$360,000.00
HEB11	Power clean terrazzo and reseal	6	$3,000.00
HEB17	Repaint Radiators	6	$3,000.00
HEB12	Repair wall tiles in washrooms	6	$5,000.00
HEB15	Refinish Doors	6	$5,000.00
HEB16	Replace ceiling tiles as needed	6	$8,000.00
HEB13	Paint interior walls as needed	6	$10,000.00
HEB18	Refurbish Radiators	6	$10,000.00
	TOTAL		$1,024,500.00

Note: With these areas added, the school would meet 2009 NSBE standards.

Area
Learning Centre - 900 sq ft.
Music - 900 sq ft.
Library - 750 sq ft.
Arts - 900 sq ft.
Teachers Work Area - 400 sq ft.
Teachers Staff Rm. - 400 sq ft.
Storage - 400 sq ft.

Net Area	4650 sq. ft.
Gross area (net x 1.5)	6975 sq ft.
Estimated cost @ $230/sq.ft.	$1,600,000.00

Newcombeville

Projects for 5 Year Use

#	Project	Cat	Amount
NEW29	Clean Urinals	6	$1,000.00
NEW07	Power clean and reseal terrazzo	6	$3,000.00
NEW14	Repaint Radiators	6	$3,000.00
NEW08	Repair wall tiles in washrooms	6	$5,000.00
NEW09	Paint walls as needed	6	$10,000.00
	TOTAL		$308,500.00

Projects for 25 Year Use

#	Project	Cat	Amount
NEW15	Refurbish Radiators	6	$10,000.00
NEW30	Replace Urinals	6	$10,000.00
NEW10	Clean and Refinish woodwork and trim	6	$15,000.00
	TOTAL		$1,146,500.00

Note: With these areas added, the school would meet 2009 NSBE standards.

Area
Learning Centre - 900 sq ft.
Arts - 900 sq ft.
Storage - 400 sq ft.

Net Area	2200 sq. ft.
Gross area (net x 1.5)	3300 sq. ft.
Estimated cost @ $230/sq.ft.	$760,000.00

Pentz

Projects for 5 Year Use

#	Project	Cat	Amount
PEN17	Replace ceiling tiles as needed	6	$1,000.00
PEN07	Repaint knee walls	6	$2,000.00
PEN10	Power clean and reseal terrazzo floors	6	$3,000.00
PEN19	Repaint Radiators	6	$3,000.00
PEN11	Repair wall tiles in washrooms	6	$5,000.00
PEN12	Paint walls as needed	6	$10,000.00
	TOTAL		$211,500.00

Projects for 25 Year Use

#	Project	Cat	Amount
PEN16	Clean and Refinish doors	6	$5,000.00
PEN18	Replace ceiling tiles as needed	6	$5,000.00
PEN14	Replace Urinals	6	$6,000.00
PEN15	Clean and Refinish woodwork and trim	6	$15,000.00
PEN45	Replace heating main distribution pipes		$35,000.00
PEN20	Refurbish Radiators		$10,000.00
	TOTAL		$1,084,500.00

Note: With these areas added, the school would meet 2009 NSBE standards.

Area
Learning Centre - 900 sq ft.
Music - 900 sq ft.
Library - 750 sq ft.
Arts - 900 sq ft.
Teachers Work Area - 400 sq ft.
Teachers Staff Rm. - 400 sq ft.
Storage - 400 sq ft.

Net Area	4650 sq. ft.
Gross area (net x 1.5)	6975 sq ft.
Estimated cost @ $230/sq.ft.	$1,600,000.00

Petite Riviere

Projects for 5 Year Use

#	Project	Cat	Amount
PET46	Provide additional heating Zone control	5	$5,000.00
PET04	Repair roof as needed	5	$15,000.00
PET13	Clean stained Urinals	6	$500.00
PET12	Paint walls	6	$10,000.00
	TOTAL		$365,500.00

Projects for 25 Year Use

#	Project	Cat	Amount
PET47	Provide Modern building Ventilation system c/w DDC controls and building mods	5	$347,000.00
PET15	Clean and Refinish doors	6	$5,000.00
PET14	Clean and Refinish woodwork and trim	6	$15,000.00
PET16	Install suspended ceiling througout	6	$15,000.00
PET07	Replace doors		$35,000.00
PET06	Replace windows		$80,000.00
	TOTAL		$1,144,000.00

Note: With these areas added, the school would meet 2009 NSBE standards.

Area
Learning Centre - 900 sq ft.
Arts - 900 sq ft.
Resource/Guidance - 250 sq ft.
Teachers Work Area - 400 sq ft.
Teachers Staff Rm. - 400 sq ft.
Storage - 400 sq ft.

Net Area	3250 sq. ft.
Gross area (net x 1.5)	4875 sq. ft.
Estimated cost @ $230/sq.ft.	1120000

SP DUMARESQ
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PENTZ ELEMENTARY SCHOOL

1. GENERAL COMMENTARY
2. ROOFING REPORT
3. MECHANICAL REPORT
4. ELECTRICAL REPORT
5. SEWAGE DISPOSAL REPORT
6. PICTURE LOG
7. FLOOR PLANS
8. SUMMARY SPREADSHEET

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SP DUMARESQ
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1. GENERAL COMMENTARY
PENTZ ELEMENTARY SCHOOL

March 11, 2009

In preparation for this study, Syd Dumaresq and Rich Knowles of S P Dumaresq Architect Ltd. met with:

Barry Butler – Dir. Of Operations, SSRSB
Hal Corkum - Custodial Manager, SSRSB
Susan Lohnes – Grade 5/6 Teacher and a student at Pentz when the school opened
Gail Grace – Administrative Assistant
Boyd Huey – Custodian

1.0 GENERAL COMMENTARY

1.1 This eight classroom elementary school designed by Phil Dumaresq and constructed by Acadia Construction opened in 1965.

1.2 The 8 original classrooms are currently utilized as:

- Six classrooms
- One music room
- One library

1.3 There is a portable classroom which provides space for

- Program support
- Guidance
- Reading recovery

1.4 It appears that the school functions very well with this amount of space and is able to provide all the required programs. There are additional spaces which a newer school would provide such as:

- Learning Centre
- Arts room
- Resource/Guidance
- Staff Room
- Teacher prep room
- Cafeteria
- Larger gym
- Storage
- Meeting spaces

1.5 Instead of a cafeteria, students eat in their classrooms and can bring their own lunches. One day a week hot food is cooked in the school kitchen by volunteers. On Tuesdays pizza is ordered from Boston Pizza.

1.6 The structure of the school provides a cathedral ceiling for the interior spaces with laminated wood beams supporting a cedar plank deck. The

wood is left exposed in the gym/multi-purpose room and the classrooms and provides a lovely warm feeling in these areas.

2.0 SITE

2.1 Paving: The paving in front of the school needs replacing. The paving at the sides and rear of the school appears fine but needs replacing and regrading as the sloped roof drains unto the paved areas.
2.2 Playground equipment – all new and in excellent condition.
2.3 The sports field is in good condition. Wet areas in the springtime only are reported.
2.4 Site drainage – very good except a few low spots in the sports field.

3.0 WATER & SEWER

3.1 The drilled well appears to have adequate quantity. There is a high iron content however the treatment system is working well and providing clear water. (see also mechanical section of this report.)
3.2 Sewage Disposal– see site services section of this report.

4.0 BUILDING ENVELOPE

4.1 Roof – The roof is in good condition. A few minor repairs are required. Consideration could be given to applying a new modified cap sheet membrane over the existing to extend the life of the present roof system. See roofing portion of this report.
4.2 Exterior walls – The front wall is a masonry cavity wall faced with brick, with large areas of windows. The brick joints are in good condition. The rear wall and the walls enclosing the boiler room are masonry cavity walls faced with 4" thick concrete block. The exposed concrete blocks are in surprisingly good condition.
4.3 The side elevations consist of continuous areas of windows supported on the foundation wall, which extends approximately 24" above the floor. This concrete need scraping and painting.
4.4 The windows and doors are original and are therefore 44 years old. Some of the operable windows are single glazed. All the windows and doors need to be replaced.

5.0 INTERIOR FINISHES

5.1 Floor tile – Some classrooms have the original 9"x9" VAT tiles which are being replaced by the Board as time and money allow.
5.2 The terrazzo in the entrance vestibules and washrooms is in very good condition.

6.0 **FUNCTIONAL COMMENTARY**

6.1 Four classrooms open directly to the gym/multi-purpose area. This creates noise and disruption during gym classes and when students exit the building. Adding acoustic door seals to classroom doors and more sound absorbing material in the gym would help diminish this problem.

6.2 The entire administration area consists of one shared office for the Principal and an administration support person. There is no privacy for the Principal. There are no offices for guidance, visiting specialists etc. There is no obvious solution to this space problem other than an addition to the building.

6.3 There are no meeting rooms.

6.4 As in all schools storage is lacking.

7.0 **NATIONAL BUILDING CODE OF CANADA COMMENTS**

7.1 The stage is not wheelchair accessible; however it appears to be used mainly for storage, so this is not an issue at this time.

7.2 The staff washrooms are not wheelchair accessible.

7.3 The student washrooms are partially accessible in that larger toilet stalls have been provided in the boy's washroom only, however the doors to these washrooms do not meet the code for clearances around the doors.

7.4 The front entrance requires an automatic door opener.

SOUTH SHORE REGIONAL SCHOOL BOARD

March11, 2009

Roofing Report

Prepared by: Brad Woodworth, Roofing Consultant

BRAD WOODWORTH ROOF INSPECTION AND CONSULTING SERVICES

1) Pentz Elementary School – February 27,2009

Make-up of roof system (Total roof area 13,543 square feet)

Wood deck
1 ½" fibreboard insulation
3 ½' Truefoam insulation
Two layers of ½ " fibreboard insulation
Two ply modified membrane roof system

Two cut test samples were taken of the main roof roof area

Cut test results: Main roof area

The cut test samples taken revealed the 1 ½" of fibreboard insulation to be dry and in good condition.

The Truefoam insulation and fibreboard overlay to be dry and in good condition.

The modified base sheet which is the bottom layer of the two-ply roof membrane system was found to be dry and in good condition.

The modified cap sheet, which is the top layer of the two-ply membrane system, was found to be in fair condition. The granule surface of the cap is beginning to deteriorate due to weathering.

COMMENTS:

a) The 1 ½" fibreboard insulation (noted in the roof system make-up), I believe to be the original roof insulation left in place when the present roof system was installed.
b) The main roof area has a profound slope and water drains off the roof edge. There are no roof drains in this roof area.
c) Some water ponds at the edge due to the gravel stop type metal flashing.
d) Some minor ridging was noted in a few areas.
e) Some deterioration of the granule surface of the cap sheet membrane was noted in a few areas. Some of the damage to granules has been caused by foot traffic.
f) The furnace room roof located at the back of the school has some ridging occurring near the roof drain. The roof drain strainer is missing.

SUMMARY:

1) A strainer should be installed on the furnace room roof drain as soon as possible.
2) The chimney requires minor repairs.
3) The main roof area is in fair to good condition for its age. There is some deterioration to the granules of the cap sheet membrane occurring and some minor ridging in a few areas.

4) Consideration could be given to applying a new modified cap sheet membrane over the existing to extend the life of the present roof system. This should occur in good summer weather conditions to avoid trapping moisture under the new membrane.

Photos:

1 & 2 – Roof cut tests

3 & 4 – Furnace room at rear of school

5 & 6 – Showing slope of roof

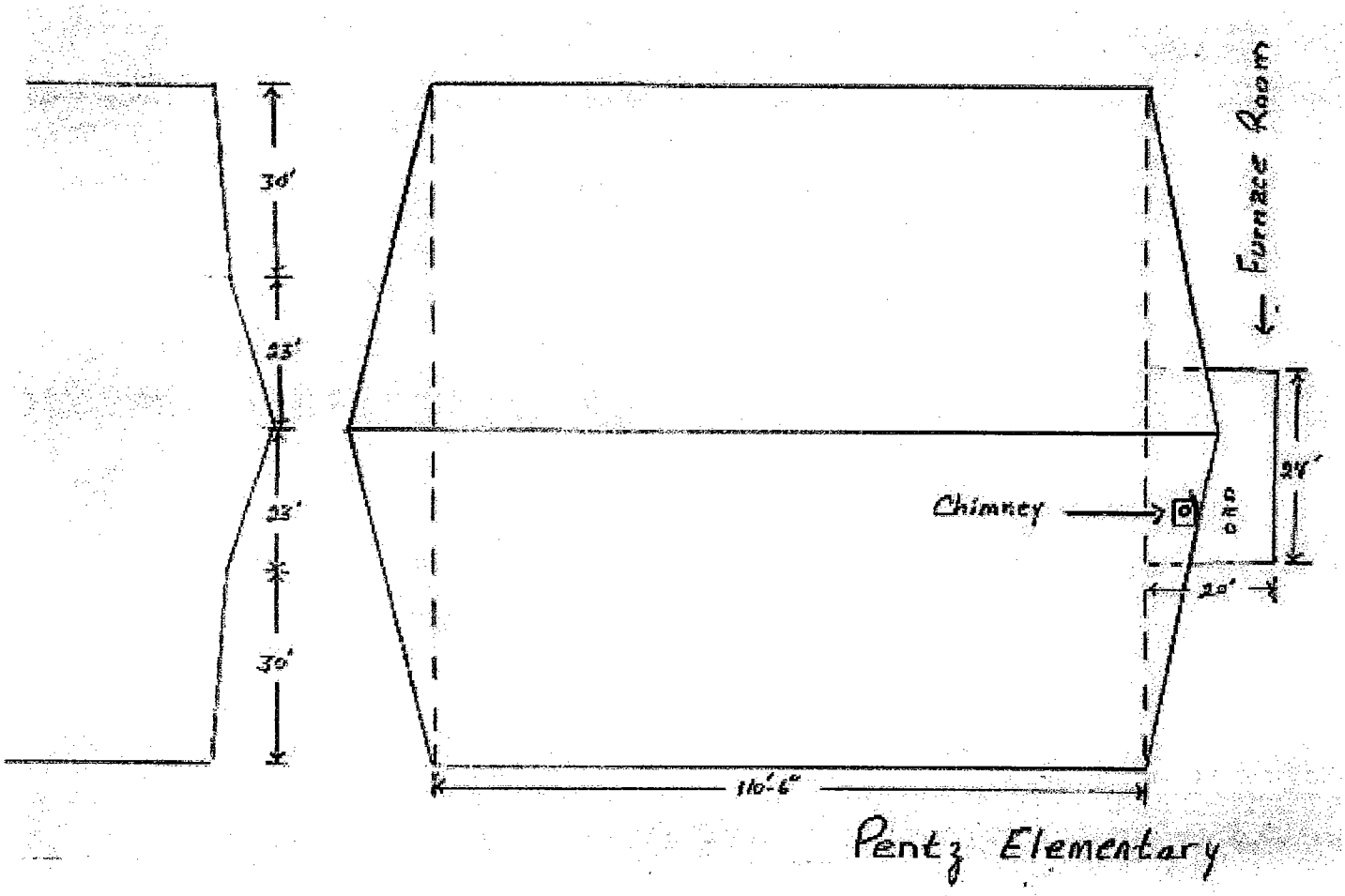
7 – Furnace room roof showing area at roof drain

13 & 14 – Damage to roof cap sheet caused by traffic on roof

Remaining photos are general shots of the roof area.

NOTE: Repairs to the main roof area could be put off for two to three years. I would suggest the roof be inspected once each year if the owner decides to go this route.

End of report



Pentz Elementary

Pentz Roof

SOUTH SHORE REGIONAL SCHOOL BOARD

March11, 2009

Mechanical Report

Prepared by: Dumac Energy

D Services

D20 PLUMBING

This section covers plumbing fixtures, domestic water piping, domestic water systems, sanitary drainage and rainwater systems.

D2010 Plumbing Fixtures

The majority of the original plumbing fixtures in both the staff and public washrooms have been replaced in the past 4 years.

Water closets are flush tank, 6.0 Liters per flush (LPF) manufactured by Crane Canada and were installed approximately 4 years ago. Lavatories are stainless steel in counter basins with commercial grade 4" centre set double handle faucets and were installed when the water closets were replaced. Several faucets were dripping at the time of the review and had to be tourqued tight to stop the flow. Urinals are original cast in place units and are equipped with a flush tank. There is one cast iron custodial sink with separate hot and cold faucets located in a dedicated room off of the corridor. The cold water faucet was noted to be connected to a chemical cleaner dispensing unit with no noted means of backflow prevention installed.

The kitchen adjacent the multi-purpose room is equipped with a two compartment stainless steel sink with 8" centre set taps for dishwashing and a separate single compartment stainless steel sink for hand washing. The fixtures are not original and were installed when the kitchenette was added. There are ceramic drinking fountains located in each classroom corridor.

The useful life of plumbing fixtures is based on the amount of usage and abuse. The majority of the upgraded plumbing fixtures noted appeared to be in good condition and well maintained; however, there were no fixtures noted that would meet current barrier free requirements. The following upgrades and replacements are recommended:

1. The faucets on the custodial sink should be replaced with trim that is equipped with a vacuum breaker suitable for continuous pressure service to comply with the requirements of the current National Plumbing Code of Canada. This upgrade should be undertaken within the next year.
2. The lavatory faucets which drip should be rebuilt or replaced within the next year.
3. The urinals are nearing the end of their expected service life and should be considered for replacement within the next 5-10 years.

Barrier free fixtures should be added based on the Architects recommendations.
Reference Mechanical Picture #1 & #2.

D2010	**Replacement of custodial sink trim** **Repair of dripping faucets**	**$2,000.00** **$500.00**

Plumbing Fixtures	**Replacement of Urinals**	**$6,000.00**

D2020 Domestic Water Piping and Equipment

Domestic water for the building is supplied from a drilled well on site. The well head is located in a crock at the back of the building and is capped with a sanitary well seal which does not comply with regulations respecting the construction of water wells in the Province of Nova Scotia. The crock was filled with surface water during the time of the review which may result in surface contamination of water supply. The deep well pump is a Gould's model 13EM10412 and has been in service for approximately 18 years. Water treatment consists of a new water softener and brine tank manufactured by F.E. Myers. A water meter is installed in the domestic cold water main to provide an indication of the water consumption for the facility.

A chemical analysis of the treated water (raw water sample not available) was provided by the school board. The analysis report provided covers samples taken in 2006, 2007, and 2008. The results indicate turbidity, manganese, iron and color exceed the recommended limit as set by the Canadian drinking water quality guide. Iron was noted to be below the guideline in 2006, and both iron and manganese only marginally exceeded the guideline in 2007 and 2008. Manganese, iron, and color limits are based on aesthetic objectives; therefore, the guideline does not consider them to have a health based impact. Turbidity; however, must be maintained below the maximum acceptable concentration (MAC). Because the results provided are for treated water, it is unclear if high turbidity is a source issue or if it is being generated by the plumbing system in the building. The report indicates the levels of turbidity have steadily increased from 2006.

Based on a preliminary review of the system the following recommendations should be considered:

1. Additional water filtration should be installed to reduce turbidity level below the MAC. As iron and manganese are only marginally above the guideline, additional treatment should not be required unless staining of the fixtures is an issue. The water softener is capable of removing limited quantities of iron and should be verified for proper operation. A raw water sample should also be taken and analyzed by a qualified water treatment expert to determine exactly what additional treatment measures are required.
2. Extend the existing well head above grade; install a pittless adapter and a vermin proof well cap to comply with current well construction regulations. Replace the existing well pump.
3. A potable water disinfection system should be installed (chlorine or UV light) in accordance with the authority having jurisdiction.

We recommend immediate action be taken to provide a treatment system to supply water that meets the requirements of the Guideline for Canadian drinking water quality. These recommendations are based on the treated water, a more accurate recommendation could only be provided based on a raw water sample from the supply.

Bacterial analysis was not provided and therefore not included in this review.

Domestic hot water is generated by an 80 gallon stone lined electric hot water heater located in a storage room off of the corridor. The tank was manufactured by SEPCO and is original equipment. A new temperature and pressure relief valve has been added in addition to the original pressure relief located on the cold water supply. Based on past experience a tank of this vintage would be near the end of its useful service life, therefore replacement should be anticipated within the next 5 years.

The domestic water distribution system is primarily copper piping with soldered joints; the new sinks in the kitchenette have been connected to the domestic water mains with PEX (cross linked polyethylene) piping. The majority of the isolation valves are gate style; many have been replaced with ball valves on an "as required" basis. The distribution system is insulated with the exception of the water system piping in the boiler room and the new PEX piping. Maintenance staff have indicated that loss of pressure is an issue when multiple fixtures are in use.

The life expectancy of a copper plumbing system is typically 40+ years under ideal conditions. The condition of the domestic water piping is difficult to discern without examining sections of the piping; however, loss of pressure when multiple fixtures are in use, is an indication the system is undersized or partially plugged. The piping should be reviewed for replacement within the next 5 years if the building is to remain in operation.

Reference Mechanical Picture #3

D2020 **Domestic Water Piping**	• **Upgrade of domestic water supply system** • **Replacement of domestic water piping** • **Replacement of domestic water heater**	**$8,000.00** **$28,000.00** **$1,000.00**

D2030 Sanitary and Rainwater Drainage

Sanitary sewer for the building extends to an on site treatment system.

The sanitary drainage system for the building is a mixture of copper and hub and spigot cast iron piping. There are no reported problems with the system at this time; however, cast iron sanitary of this vintage may be deteriorated making repairs and upgrades difficult. The life expectancy of a cast iron drainage system is dependent on the soil and waste water conditions and the quality of the initial installation. The exact condition of the sanitary should be determined using video inspection before a decision is made on whether replacement is necessary.

The rain water drainage system for the building is limited to the boiler room flat roof area. The rainwater drainage extends to an unknown location. Sections of the rainwater leader in the boiler room were reportedly replaced due to an obstruction. Again, the exact condition of the piping should be determined by video inspection.

The estimated replacement cost of the sanitary and rainwater drainage system has been included in the event system replacement becomes necessary.

Reference Mechanical Picture #4

D2030 **Sanitary & Rainwater Drainage**	• **Video inspection of underground drainage:** • **Replacement cost of sanitary drainage:** • **Replacement cost of rain water drainage system**	**$500.00** **$32,000.00** **$5,000.00**

D30 HEATING VENTILATION AND AIR CONDITIONING SYSTEMS (HVAC)

Hot water for space heating is generated by a Weil McLain Model B-882 cast iron sectional boiler with a retrofit Riello M-15 oil burner. The boiler is original equipment with no reported operational issues. The capacity of the boiler plant is reportedly capable of meeting the heating requirement of the building.

There are two circulator pumps which feed the hydronic distribution system; one operates as the lead pump with the other as standby. One circulator is an original close coupled centrifugal manufactured by the Arthur S. Lietch Company; the other is a Grundfos in line circulator. The original expansion tank has been replaced with a hydro pneumatic unit.

Although there are no reported operational problems with the boiler system, the equipment has been in service for over 40 years and is near the end of its expected service life. Upgrade of the boiler plant should be considered in the next 5 years. Additional boiler plant capacity would be required if a mechanical ventilation system is installed for the building.

Fuel oil for space heating is stored in two (2), 250 gallon Roth double wall oil tanks located in the boiler room. The tanks were installed within the past several years and should provide an additional 15 to 20 years of service life.

Reference Mechanical Pictures #5 thru #7

D3010/3020	• **Estimated cost of the new boiler plant**	**$180,000.00**

D3040 HVAC Equipment and Distribution

Heating distribution for the building is steel piping with gate and ground key stop valves for isolation and radiator valves at each heating terminal. Many of the valves are original and may not hold, and valve stems may break when closed. The condition of heating mains is difficult to determine without removing and examining several sections of piping. We estimate the heating mains have been in service for over 40 years with no noted means of water treatment; however, there have been no reported leaks in the system.

Typically, a hydronic distribution system will provide 50+ years of service under ideal conditions; therefore, replacement should be reviewed in 10 years. Original gate valves which are leaking should be replaced; others should be replaced as a part of preventative maintenance.

Piping penetrations at the boiler room wall should be fire stopped. Additional penetrations may require fire stopping based on the Architect's recommendations.

Heating for classrooms is provided by flat top wall fin radiation located along the perimeter walls of the space. The multi-purpose room and vestibules are heated by small force flow cabinet heaters. Several internal spaces and the corridors are heated by cabinet convectors.

All of the radiation and force flow heaters noted are original to the building. The wall fin radiation and cabinet convectors are in fair-to-good condition and should provide additional service life if cleaned and maintained. The force flow heaters were manufactured by the Penn Boiler and Burner Corporation and are no longer available. Replacement parts for these heaters would be difficult to source; therefore, replacement should be anticipated within the next 5 years or when the units begin to fail.

Reference Mechanical Pictures #8 to #10

D3040 **HVAC Equipment and Distribution**	• **Replace force flow heaters** • **Replace the heating mains**	**$7,500.00** **$35,000.00**

The building is equipped with an exhaust only ventilation system. There are two fans which serves the centre core of the building, including the washroom facilities. There was no mechanical exhaust for the multi purpose room. Both fans appear to be original; however, one has been damage by vandalism and is scheduled for replacement. The ductwork connecting to the fans was not equipped with motorized dampers which may allow significant volumes of outside air to infiltrate into the building when the fans are not in use.

Although common for a school of this age, exhaust only ventilation systems such as described above would not comply with the current ASHRAE Standard 62, Ventilation for Acceptable Indoor Air Quality. Typically, a modern facility would be equipped with mechanical ventilation systems to supply conditioned outside air to the volumes required by the ASHRAE Standard. Therefore, if major building renovations are being undertaken, consideration should be given to installing a new air handling system and associated ductwork sized to meet the requirements of ASHRAE Standard 62.

The existing exhaust system is functioning at the current time could remain in service until it is feasible to install a modern ventilation system; however, motorized dampers should be installed at the duct connections to each fan.

In addition, if the cooking equipment in the kitchen is used to provide daily meals for the students and staff, a commercial exhaust hood and exhaust system may be required to comply with NFPA 96 Standard for the Ventilation Control and Fire Protection of Commercial Cooking Operations. An exhaust hood with an integral fan should be installed over the electric range in the staff room.

Combustion air for the boiler plant is provided by a louver near the bottom of the entry door to the boiler room. The B-139 Standard for the installation of oil burning equipment states that the combustion air intake must be a minimum of 12" above grade, or the snow line for that location. For this reason, it is recommended that a new combustion air intake be installed at a higher elevation and ducted to within 12" of the finished floor.

Reference Mechanical Picture #11

D3040 **HVAC Equipment and Distribution**	• **Provide mechanical ventilation systems as described above:** • **Addition of motorized dampers on existing exhaust fans.** • **NFPA 96 kitchen exhaust system** • **Provide new combustion air for boiler room**	**$220,000.00** **$2,500.00** **$15,000** **$1,500.00-$2,000.00**

D3040 HVAC Instrumentation and Controls

The building is equipped with a modest pneumatic system for room temperature control. A typical classroom is has a pneumatic thermostat located near the door and a pneumatic zone valve located at the radiation. Many of the original zone valves and several pneumatic thermostats appear to have been replaced as part of regular maintenance. Compressed air for the pneumatic controls is generated by an air compressor located in the boiler room. The compressor tank is equipped with an automatic drain. The air is piped though a moisture separator and then to a pressure regulating valve. The compressor was operational at the time of the review. Building staff has indicated there are no reported operational issues with the pneumatic systems, however, the following upgrades and replacements should be undertaken if the system is to remain in operation.

1. Replacement of the remaining pneumatic valves and thermostats should be anticipated within the next 5 years.
2. The pressure tank for the air compressor is original and should be replaced with the next 5 years.

There are few controls for the boiler plant. There is a mechanical alternator for control of the circulator pumps and a White Rogers indoor/outdoor control for supply water temperature reset. A programmable thermostat is located in the office area at the front of the school which is used to shut down the circulators for night setback.

Control of the roof top exhaust fans is by a time clock located in the custodial closet. The time clock was noted to be out of calibration at the time of the review.

A modern facility of this nature would be equipped with a DDC building automation system to control space temperature, air handling equipment, fans and the boiler plant etc. We recommend that a DDC system be installed when the boiler plant upgrade is undertaken. The system would be capable of expanding to replace current pneumatic room controls and would provide control of any future mechanical ventilation systems installed.

Reference Mechanical Pictures #12

D3040 **HVAC Equipment and Distribution**	• **Replacement of remaining original pneumatic valves and Thermostats** • **DDC control system as described above.** • **Replacement of Air Compressor Pressure Tank**	**$5,500.00** **$47,000.00** **$1000.00**

Mechanical Picture #1
Custodial Sink with chemical dispenser

Mechanical Picture #2
Lavatories stained from dripping faucets

Mechanical Picture #3
Domestic water system

Mechanical Picture #4
Repaired rain water leader

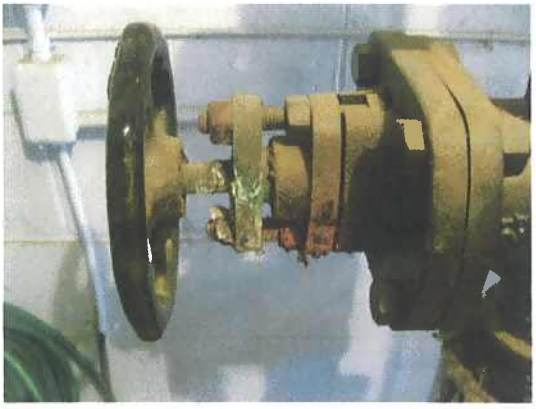
Mechanical Picture #5
Hot water heating boiler

Mechanical Picture #6
Original circulator pump

Mechanical Picture #7
Furnace oil tanks

Mechanical Picture #8
Original force flow heater

Mechanical Picture #9
Typical wall fin radiation



Mechanical Picture #10
Original gate valve (boiler room)

Mechanical Picture #11
Typical roof top exhaust fan.

Mechanical Picture #12
Original pneumatic thermostat

SOUTH SHORE REGIONAL SCHOOL BOARD

March11, 2009

Electrical Report

Prepared by: Dumac Energy

D Services

D50 ELECTRICAL SYSTEMS

D5010 Electrical Service and Distribution

This subsection covers electrical utility entrance, service entrance equipment, feeders, panel boards and motor starters.

The school is serviced overhead from a single phase pole mounted transformer installed on a utility pole located in the rear of the building. The service entrance equipment consists of a 120/240 volt single phase, three wire, 400 amp main fusible. The building electrical system neutral appears to be connected to ground in a manner not consistent with current code. The service entrance equipment includes a main fusible disconnect switch, utility metering equipment and a splitter trough which feeds fusible disconnect switches which in turn feed branch circuit wiring panels located in the building. The main switch and feeder fusible switches were manufactured by Amalgamated Electric. We estimate this equipment has been in service since 1965 (43+ years). The service is metered by NSPI (meter # 569975). A review of the billing history indicates that the maximum demand of 24.0 kW occurred in December 2008. This translates to a maximum current of approximately 118 amps using an estimated power factor of 0.85.

The electrical service entrance equipment is located in Boiler room of this facility. The Nova Scotia Department of Environment and Labour requires that an electrical service entrance with a main over current device rated for 250 amps or greater must be housed in a separate electrical room used for no other purpose and containing no other equipment (Electrical Bulletin 2000-02, revised January 2008).

This bulletin also states that existing electrical service entrances of this ampacity that are not contained within a separate room because it was installed prior to 1974 may, at the discretion of the electrical inspector, remain as is. The electrical inspection department could be contacted for an interpretation of this Bulletin, however due to the age and serviceability of the equipment and concerns that a mechanical failure (pipe leak, boiler problem, etc) could cause an electrical outage, a dedicated electrical room is recommended.

This work should be carried out within the next five years.

D5010 Electrical Service and Distribution	• **Supply and install new service entrance switchboard and related equipment:**	**$45,000.00**

Branch circuit panelboards generally consist of original (1965) circuit breaker type manufactured by Amalgamated Electric and Federal Pioneer. A load centre, manufactured by Siemens was installed when the kitchen equipment was added.

Panelboards are generally mostly assigned, with several equipped with "mini-breakers" due to lack of available breaker space. Panel directories are incomplete, breaker locks are not installed where required, and bonding conductors do not appear to be present in feeder conduits. Computer and other sensitive electronic equipment circuits are not segregated from motor and miscellaneous loads. The following table is a summary of branch circuit wiring panels.

Panel Location	**Manufacturer**	**Rating (Amps)**	**Rating (Volts/Phase)**	**Total Circuits**	**Spare Positions**
Boiler Room	Amalgamated Electric	210 Amperes	120/240V 1 Ph/3Wire	42	22
Corridor 102 Panel "A"	FPE	200 Amperes	120/240V 1 Ph/3Wire	40	5
Corridor 126 Panel "B"	FPE	200 Amperes	120/240V 1 Ph/3Wire	40	4
Corridor 126 Panel "N/A"	Siemens	125 Amperes	120/240V 1 Ph/3Wire	12	4

Due to the age, serviceability and lack of spare capacity to handle electrical load growth, consideration should be given to replacement of these panelboards. This work should be carried out within the next five years.

D5010 Electrical Service and Distribution	• **Supply and install new panelboards and related feeders:**	**$40,000.00**

The original mechanical equipment is controlled by magnetic starters manufactured by AB. Recent motor additions are controlled by equipment manufactured by Square D. This equipment appears to be operating satisfactorily.

Refer to electrical pictures 1 and 2.

Total estimated probable cost associated with Subsection D5010: **$85,000.00**

D5020 Lighting and Branch Wiring

This subsection covers the building lighting system, exit lighting, emergency lighting, branch circuit wiring and wiring devices.

The main lighting system for this building consists of several types and vintages of fluorescent fixtures. There are also a few incandescent light fixtures in washrooms, mechanical rooms and utility rooms. Classrooms typically utilize two lamp, pendant mounted fixtures equipped with steel louvers. The Multi-Purpose room is lit using four lamp, surface mount fixtures complete with acrylic lenses and wire guards. The school corridors are generally lit using surface mount single lamp lensed fixtures, some with missing lenses. The lighting system equipment generally incorporates T12 lamps and magnetic ballasts. The condition of the lighting system is generally poor, with light levels below recommended levels in some areas. Line voltage switching is provided locally. The stage area is equipped with track lighting with incandescent lamps.

Teaching spaces require high quality visual environments. Lighting affects the ability of students to perform visual work, impacts their aesthetic sense and underlies their feelings of comfort and well-being. Important design criteria for lighting classrooms include the type of lighting system, luminaire layout, illuminance, colour rendering, electrical controls and energy efficiency. The Pentz elementary classrooms utilize a pendant mounted lighting system, with most of the light directed downward. Luminaires are arranged in three evenly spaced groups, parallel to the window wall with a forth row at the front of the room parallel to the board. The row closest to the windows is separately switched to take advantage of day lighting. The luminaires do not have diffusers, but rely on a system of steel louvers to reduce glare from the exposed lamps. The lamps employed in these fixtures are a assortment of 34 watt, T12, cool white and some warm white type with varying colour temperatures and colour rendering indexes.

The lighting system, while typical for school classrooms of the time, is not consistent with current design standards. The light fixtures are beyond their useful life and should be replaced with modern energy efficient luminaries. The manufacture of T12 lamps is being phased out by the Federal Government over the next few years in favor of more energy efficient lamps.

Recent educational facilities designed for the Nova Scotia Department of Education utilize a lighting system incorporating energy efficient electronic ballasts and T8 lamps with a colour temperature of 3500 K and a colour rendering index (CRI) of 85. This system provides a superior lighting environment while conserving energy consumed by the artificial lighting system.

D5020 Lighting and Branch Wiring	• **Supply and install new light fixtures and associated wiring: $75,000.00**

The exterior of the building is equipped with several types and vintages of luminaries. Wall mounted light fixtures use high intensity discharge (HID) lamps and incandescent lamps. Control appears to be a through a time clock located in the Boiler room.

Emergency lighting consists of battery packs and remote heads. Based on the observed quantity and location, it is unlikely that there will be sufficient illumination produced during power interruptions to comply with the requirements of the National Building Code.

Exit lights appear to be in good condition.

D5020 Lighting and Branch Wiring	• **Supply and install 12 emergency lighting units**	**$15,000.00**

The majority of the branch circuit wiring would have been in service for approximately 43 years. At the time of our site visit, there were no reported problems with the wiring system. A review of the ceiling spaces indicate that wiring has in many cases been installed without benefit of proper supports to the requirements of Section 12 of the Canadian Electrical Code. Wiring devices (receptacles and switches) in most of the building are original equipment. Generally, the receptacles are old and many were noted to have damaged faces. A typical teaching area is equipped with only two receptacles. The use of extension cords is required to provide power for computers and other equipment.

The number of receptacles should be increased, consistent with a modern educational facility. This work should be carried out within the next five years.

D5020 Lighting and Branch Wiring	**Replacement of wiring devices and associated branch circuit wiring:**	**$25,500.00**

Refer to electrical pictures 3 through 9.

Total estimated probable cost associated with Subsection D5020: **$115,500.00**

D5030 Communications and Security

This subsection covers the public address system, building voice and data system, television distribution system, fire alarm system, intrusion alarm system and closed circuit television system.

Communication service to the building consists of a several small telephone cables which feed overhead from a terminal pole in the rear parking lot to a terminal located in the Boiler Room.

The building is equipped with a public address system that includes a Telecor 1 head end and a Telecor MCC-1 administrative telephone located in the Principal's office and speakers located throughout the building. The classrooms are equipped with speakers and call back buttons. The class dismissal system is incorporated into the public address system and controls exterior horns. The system was upgraded in about 1988. There are no reported problems with the system; however, this equipment is no longer manufactured and is no longer supported. A system replacement should be budgeted for within the next five years.

D5030 Communications and Security	• **Supply and install a Public Address System in this facility :**	**$20,000.00**

The building contains a modest structured wiring system, which typically provides two communication outlets per classroom via a Category 5 cable. There is no dedicated telecommunications Server room in the building however there is an equipment wall rack containing patch panels, switches and a server located in a room above Janitor/Storage. The wiring for the network has been retrofitted throughout the building. This system appears to meet the needs of this facility.

There is no multimedia system installed in the building to facilitate the distribution of audio/ visual signals to the teaching areas.

The building did not appear to be equipped with a television distribution system.

The building did not appear to be equipped with a central telephone system.

No closed circuit television system (CCTV) was evident.

A significant building renovation would be the opportune time to upgrade the existing structured wiring system, consistent with a modern educational facility. This would include a dedicated Server room to house wiring racks, patch panels, switches and head end equipment. The installation of a Category 6 structured wiring system incorporating voice and data horizontal distribution and backbone cabling is standard in all recently constructed educational facilities.

The following communication outlets are proposed for a typical classroom:
1. One dual data outlet at teacher's desk.
2. Two dual data outlets for general use.
3. One data outlet in ceiling space for future LCD projector.

D5030 Communications and Security	• **Supply and install a Category 6 network to carry voice and data throughout the facility :**	**$38,000.00**

A television distribution system is standard in all recently constructed educational facilities and is recommended for this school. A CATV main terminal equipment rack will be required capable of housing the head end equipment. A video distribution system would be installed, including coaxial cable and television outlets in all teaching areas, cafeteria, gymnasium and selected common areas. The infrastructure to accommodate video/data LCD projectors in each teaching area will be provided. A multimedia outlet will be installed at the teacher's desk connected to the projector location. Each teaching area will have one CATV outlet located at the teacher's desk. All CATV outlets will be capable of operating up to 1000 MHZ and will be bi-directional.

D5030 Communications and Security	• **Supply and install a complete CATV system throughout the facility (LCD Projectors NIC):**	**$27,500.00**

The building has been recently retrofitted with a fire alarm system with the control panel located in Corridor 102. The system monitors three zones and includes fire detectors, pull stations and bells. The system, manufactured by Edwards (Model FS), is a conventional type (non addressable) and appears to be in good condition. An annual system verification is required and any maintenance would normally be carried out at that time, such as device replacement.

The building is equipped with an intrusion alarm system including a control panel and motion sensors strategically located near entrances, corridors and in selected rooms. The system was manufactured by DSC (Model 2550). The control panel resides in a closet off Corridor 102. The security system keypad is located at the main entrance. A visual inspection of the system motion detectors indicates replacement should be considered. There are no reported problems with the system; however, this equipment is no longer supported. A total system replacement should be budgeted for within the next five years.

D5030 Communications and Security	**Supply and install Security System**	**$7,500.00**

Typically, an educational facility would be equipped with a complete video surveillance system, including interior and exterior coverage of all entrances and circulation spaces. The system would include digital colour cameras, digital recording device, power over Ethernet (PoE) switches, wiring and appropriate software.

D5030 Communications and Security	• **Supply and install a modest CCTV system :**	**$19,500.00**

Refer to electrical Pictures 10 through 12

Total estimated probable cost associated with Subsection Total D5030: **$112,500.00**

Electrical Picture #1
Electrical Service Entrance Equipment in Boiler Room.

Electrical Picture #2
Typical Electrical Panel

Electrical Picture #3
Typical Classroom Lighting

Electrical Picture #4
Typical Corridor Lighting

Electrical Picture #5
Typical Classroom Light Fixture

Electrical Picture #6
Multi-Purpose Room Lighting

Electrical Picture #7
Typical Emergency Lighting Unit

Electrical Picture #8
Typical Classroom Extension Cords

Electrical Picture #9
Typical Ceiling Space Wiring

Electrical Picture #10
Data Rack and Switches

Electrical Picture #11
Typical Ceiling Space
Data Wiring Installation

Electrical Picture #12
Typical Classroom Data
Outlet

SOUTH SHORE REGIONAL SCHOOL BOARD

March11, 2009

Sewage Disposal Report

Prepared by: Able Engineering

Pentz:

This school has a large on-site sewage raised bed disposal field as shown in figures 7 and 8. It is probably a C-3 but may be a higher C2-R. The system was installed 7 years ago and the bed has not been showing signs of malfunction (smells, breakout, etc.) The system is pump fed and it all seems to be working correctly. There was no record of when the septic tanks were pumped out last, or if the pumps have been checked and serviced.

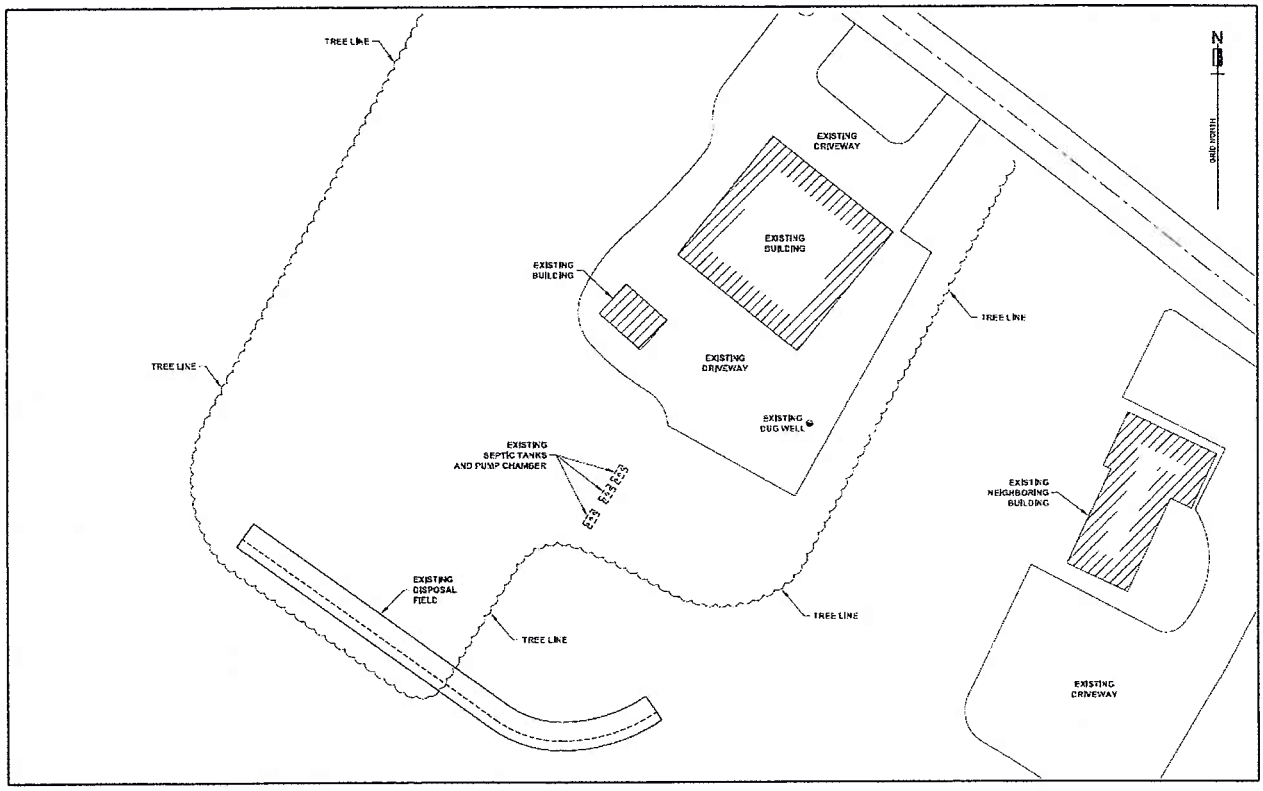


Figure 7 – Site sketch showing location of disposal field for Pentz school

Figure 8 - Pentz School sewage disposal field bed

The water supply for this school is a well about 100' from the tanks and pump chamber. The well has a steel hatch that isn't locked and is easy to remove. **This represents a significant risk to child safety and should be addressed immediately (see figure 9).**

Figure 9 – Well at Pentz School. Septic tanks and pump chamber shown in background (fenced area)

No records were available of the quality of the water. Presumably the Board is following the required water supply testing for public supplies and this information is available somewhere.

Recommendation -> Find and make copies of the original design drawings, locate all buried structures, initiate a maintenance program and schedule. Service pumps.

SOUTH SHORE REGIONAL SCHOOL BOARD

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Picture Log

3. Picture Log

Figure 1 Pentz Elementary. Masonry is in very good condition.

Figure 2 Front Entrance

Figure 3 Inside Front Door – Original Doors.

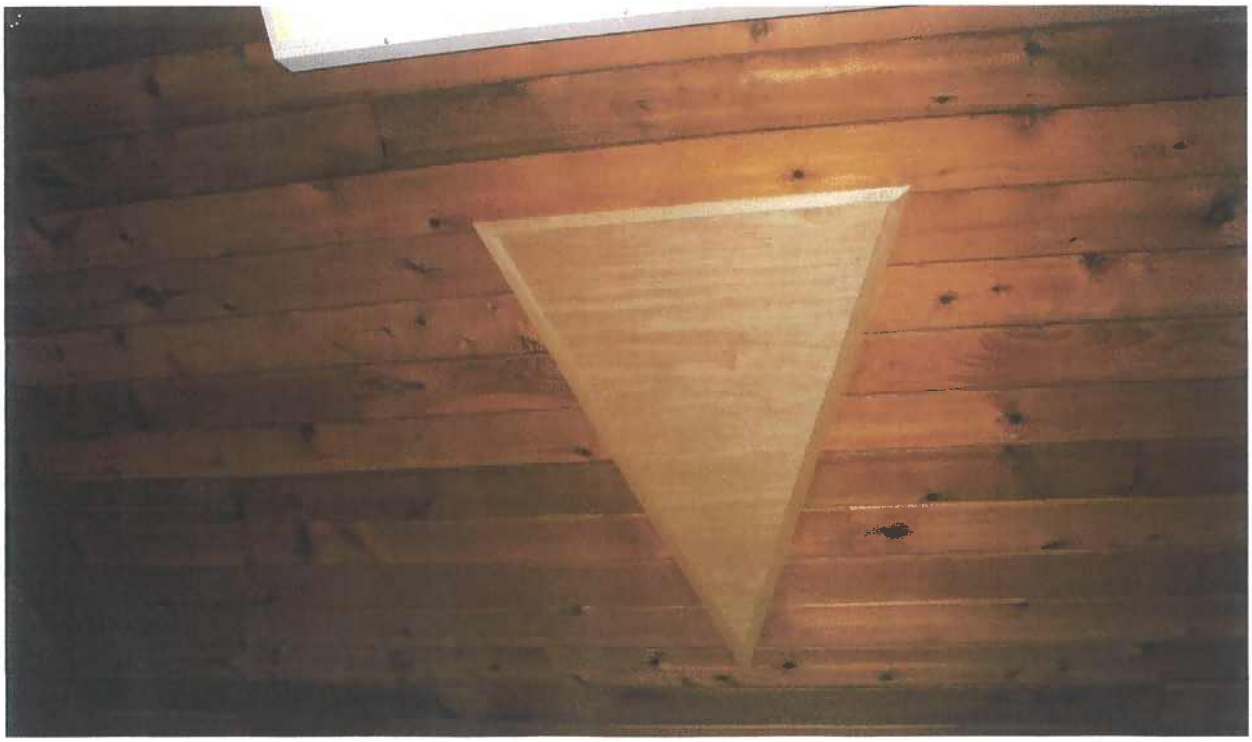

Figure 4 Exposed wood offers a lovely warm feeling. The plywood covers an original sky light, removed when the roof was replaced.

Figure 5 Exposed beams.

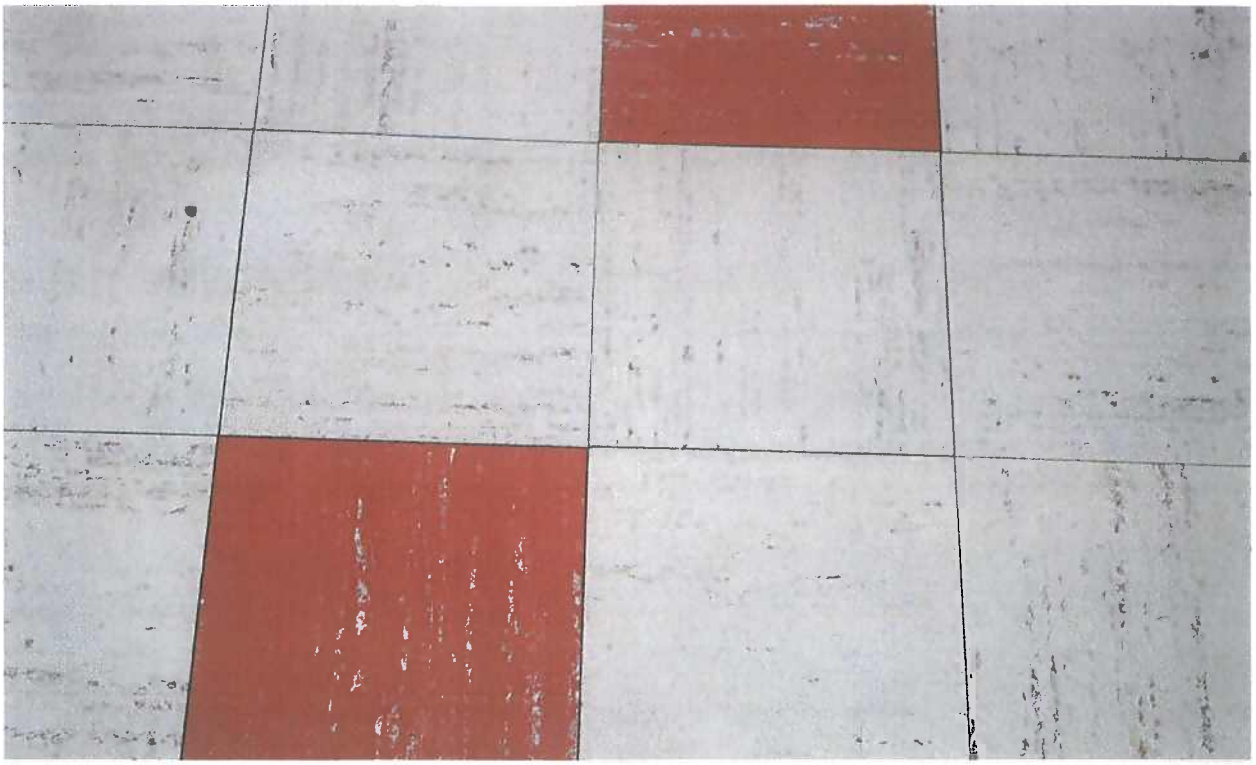

Figure 6 Original VAT tiles – replacement plan is on-going.

Figure 7 Typical classroom.

Figure 8 Exposed wood in Cathedral Ceiling in the Gym

Figure 9 Ceiling Beams

Figure 10 School Kitchen

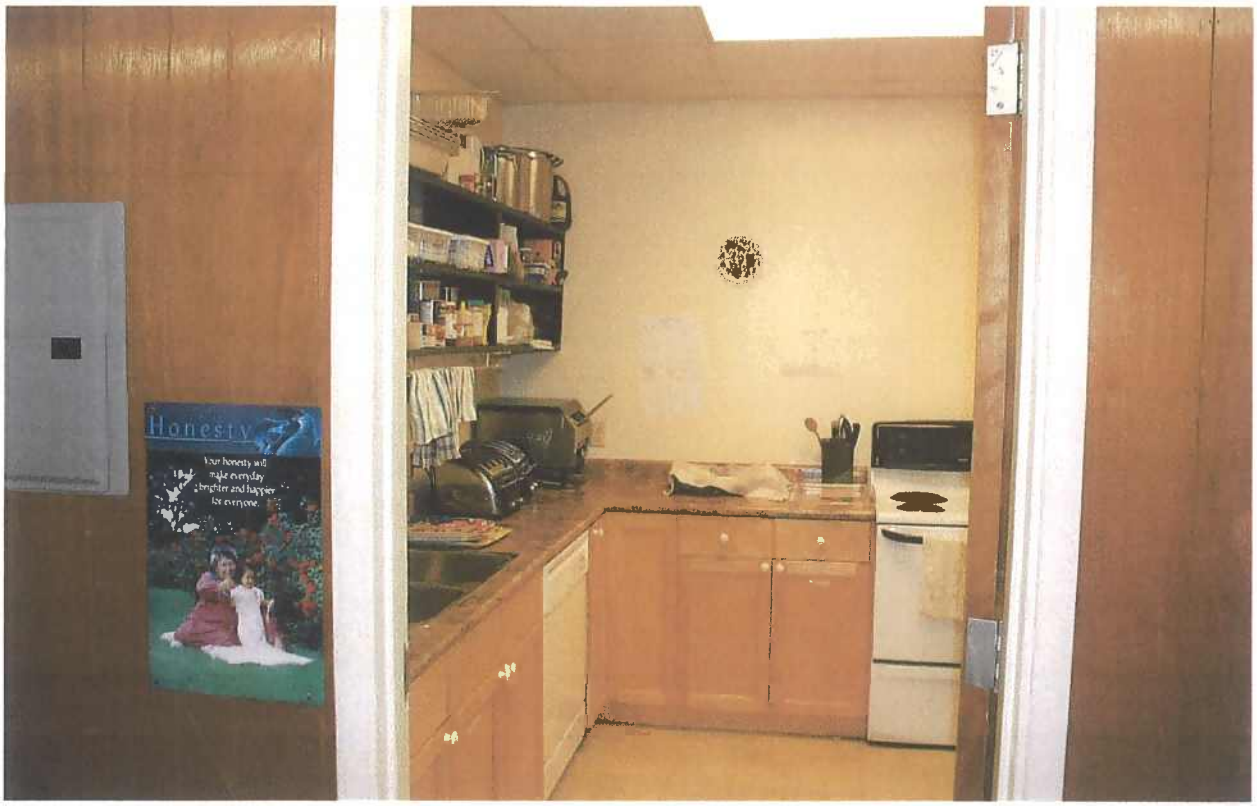

Figure 11 One day a week volunteers cook hot food for students.

Figure 12 Computer stations

Figure 13 Open space to Gym

Figure 14 Original windows

Figure 15 Windows are 44 years old.

Figure 16 Exterior Windows

Figure 17 School washroom

Figure 18 Boy's bathroom.

Figure 19 Playground Equipment is in excellent condition

Figure 20 Sports field is in good condition.

Figure 21 The Canadian flag flies proudly.

SOUTH SHORE REGIONAL SCHOOL BOARD

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Floor Plans

PAVING

WATER WELL

Music Room 114

Primary 115

1st Grade Classroom 116

2nd Grade Classroom 117

27'-6"

PAVING

Vestibule 101

Corridor 102

103

107

108

109

Vestibule 118

Principal's Office 105

104

106

110

Janitor St. 112

113

15'-8"

1'-7"

GRAVEL

Boy's Washroom 132

Girl's Washroom 111

Kitchen 133

Staffroom 134

Kitchen 128

Gymnasium 119

Stage 120

26'-0"

20'-0"

130

129

Corridor 126

Vestibule 127

Vestibule 121

27'-6"

PAVING

25'-6"

3rd Grade Classroom 125

4th/5th Grade Classroom 124

Library 123

5th/6th Grade Classroom 122

PAVING

PAVING

10'-0"

KEY PLAN

LOGO

SP DUMARESQ ARCHITECT LTD

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GRAPHIC SCALE

DATE | MARK | ISSUE

STAMP

REGISTERED MEMBER S.P. DUMARESQ N.S. ASSOCIATION OF ARCHITECTS

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CHECKED BY:	SPD
REVIEWED BY:	
APPROVED BY:	
AS-BUILT CHECK	
DATE:	JANUARY 2009

PROJECT
PENTZ ELEMENTARY SCHOOL

YARMOUTH COUNTY NS

PROJECT NO: 09

SHEET TITLE
EXISTING FLOOR PLAN

INTERNAL NO:

303

SHEET OF

Additional Noted Areas

103	Alcove Principal's Office
104	Closet??
106	Staff Washroom
107	Staff Washroom
108	Janitor's Closet
109	Alcove Girl's Washroom
110	Washroom
129	Closet–Coats
130	Alcove Boy's Washroom
131	Washroom

KEY PLAN

LOGO

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GRAPHIC SCALE

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STAMP

REGISTERED MEMBER N.S. ASSOCIATION OF ARCHITECTS S.P. DUMARESQ

SCALE	1/8" = 1'-0"
DRAWN BY:	STAFF
CHECKED BY:	SPD
REVIEWED BY:	
APPROVED BY:	
AS-BUILT CHECK	
DATE:	JANUARY 2009

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SOUTH SHORE REGIONAL SCHOOL BOARD

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Summary Spreadsheet

Categories	
1 - Urgent - Health and Safety	4 - Preserve Building Value
2 - Code Requirement	5 - Occupants' Comfort
3 - Support Educational Process	6 - Appearance or Convenience

#	Item	Current Condition	Project	Cat.	Cost to extend building life 5 Years	Cost to extend building life 25 Years
	EXTERIOR					
PEN01	Asphalt	Poor	Repair and crack fill asphalt as needed	1	$5,000.00	
PEN02	Asphalt	Poor	Replace asphalt	1		$70,000.00
	BUILDING ENVELOPE					
PEN03	Roof	Fair	Repair roof as needed.	4	$5,000.00	
PEN04	Roof	Fair	New Roof capsheet to extend life 12-14 years yrs.	4		$40,000.00
PEN05	Windows	Original	Replace windows	4		$42,000.00
PEN06	Doors	Original	Replace doors	4		$30,000.00
PEN07	Concrete knee walls	Good	Repaint knee walls	6	$2,000.00	
	INTERIOR FINISHES					
PEN08	Floors - VAT Tile	Good-Fair	Replace floor tiles as needed	1	$2,000.00	
PEN09	Floors - VAT Tile	Good-Fair	Replace floor tiles as needed	1		$8,000.00
PEN10	Floors - Terrazzo in Washrooms	Good - Stained	Power clean and reseal terrazzo floors	6	$3,000.00	
PEN11	Ceramic tiles	Good - Fair	Repair wall tiles in washrooms	6	$5,000.00	
PEN12	Walls	Good - Fair	Paint walls as needed	6	$10,000.00	
PEN13	Washrooms	Severe staining of urinals	Clean Urinals	6	$1,000.00	
PEN14	Washrooms	Severe staining of	Replace Urinals	6		$6,000.00
PEN15	Woodwork and trim	Good - Fair	Clean and Refinish woodwork and trim	6		$15,000.00
PEN16	Doors	Good - Fair	Clean and Refinish doors	6		$5,000.00
PEN17	Ceilings	Good - Fair	Replace ceiling tiles as needed	6	$1,000.00	
PEN18	Ceilings	Good - Fair	Replace ceiling tiles as needed	6		$5,000.00
PEN19	Radiators	Good - Fair	Repaint Radiators	6	$3,000.00	
PEN20	Radiators	Good - Fair	Refurbish Radiators	1		$10,000.00

	Electrical (see attached reports for details)					
PEN21	Service entrance	Original	Supply and install a new electrical service entrance switchboard and related equipment	2		$45,000.00
PEN22	Panelboards and feeders	Original	Supply and install new panelboards and related feeders	2		$40,000.00
PEN23	Light fixtures	Original	Supply and install new light fixtures and associated wiring	4		$75,000.00
PEN24	Emergency Lights	Original	Supply and install 12 new emergency lighting units and associated wiring	1	$15,000.00	
PEN25	New Outlets and wiring	Original	Supply and install new Wiring devices and associated branch circuit wiring modifications	4		$25,500.00
PEN26	Cat 6 Data service		Supply and install a Category 6 network for voice and data	4	$38,000.00	
PEN27	CATV system		Supply and install a CATV system with LCD projectors	4	$27,500.00	
PEN28	CCTV surveillance sytem		Supply and install a CCTV system	4	$19,500.00	
PEN60	PA System	Original	Supply and install a PA system	1		$20,000.00
PEN61	Security system		Supply and install a Security system	1		$7,500.00
	Water, Plumbing and Sewage (see attached					
PEN29	Well head	Not to Code	Replace well head	2	$4,000.00	
PEN30	Water supply	Adequate supply but very rusty appearance	Upgrade water supply and treatment plant	1	$8,000.00	
PEN31	Water heater	Original	Replace domestic water heater	1	$1,000.00	
	Water Piping	Original	Replace Domestic Water Piping	5		$28,000.00
PEN32	Plumbing fixtures	Dripping	Upgrade washroom faucets	5	$500.00	
PEN33	Kitchen sink drain	No grease interceptor	Install Grease interceptor in kitchen drain	2	$2,500.00	

PEN34	Custodial sink	Not to code	Replace custodial sink trim	2	$2,000.00	
PEN35	Underground Drainage	Unknown	Video inspection of sewage pipes	4	$500.00	
PEN36	Sewage disposal	See Able Engineering report	Maintain sanitary drainage	5	$5,000.00	
PEN37	Sanitary drainage	Unknown	Replace Sanitary Drainage	4		$32,000.00
PEN38	Rainwater drainage	Unknown	Replace Rainwater drainage system	4		$5,000.00
	HVAC (see attached reports for details)					
PEN39	Boiler	Original	Replace Boiler plant c/w DDC Control system	4		$180,000.00
PEN43	Combustion air intake		Provide adequate boiler combustion air intake	1	$2,000.00	
PEN45	Heating distribution system		Replace heating main distribution pipes	1		$35,000.00
PEN46	Vestibule heating	Fair	Replace vestibule Force Flow heaters	4		$7,500.00
PEN47	Ventilation	Poor	Provide motorized dampers on existing ventilation system	5	$2,500.00	
PEN48	Kitchen exhaust system	Poor	Replace current kitchen exhaust system	2	$15,000.00	
PEN50	General ventilation	Limited in scope	Provide Modern building Ventilation system c/w DDC control system and building modifications	5		$317,000.00
PEN51	Heating Controls	Fair	Replace remaining heating system Pneumatic controls	5	$5,500.00	
PEN52	Air compressor	Fair	Replace air compressor Receiver	2	$1,000.00	
	BUILDING CODE					
PEN53	Front Entrance	No automatic door opener	Install front door opener	2		$4,000.00
PEN54	Washrooms - Student	Not accessible	Make student washrooms accessible	2		$6,000.00
PEN55	Washrooms - Staff	Not accessible	Make staff washrooms accessible	2		$6,000.00

	BUILDING FUNCTIONS					
PEN56	Gym Multi/Purpose area	Acoustic problems for surrounding rooms	Add door seals and acoustic materials to gym and nearby classrooms	3	$5,000.00	
PEN57	Offices -	Too small - Lack of privacy	Relocate offices to other space	5		$10,000.00
PEN58	Meeting rooms -	No Meeting rooms	Create meeting rooms from existing space	5		$5,000.00
PEN59	Storage	Insufficient	Create storage rooms from existing space	5		$5,000.00
	TOTAL				$191,500.00	$1,084,500.00

Note: These areas should be provided to meet 2009 NSBE standards.

	Area
	Learning Centre - 900 sq ft.
	Arts - 900 sq ft.
	Resource/Guidance - 250 sq ft.
	Teachers Work Area - 400 sq ft.
	Teachers Staff Rm. - 400 sq ft.
	Storage - 400 sq ft.
Net Area	3250 sq. ft.
Gross area (net x 1.5)	4875 sq. ft.
Estimated cost @ $230/sq.ft.	**$1,120,000**