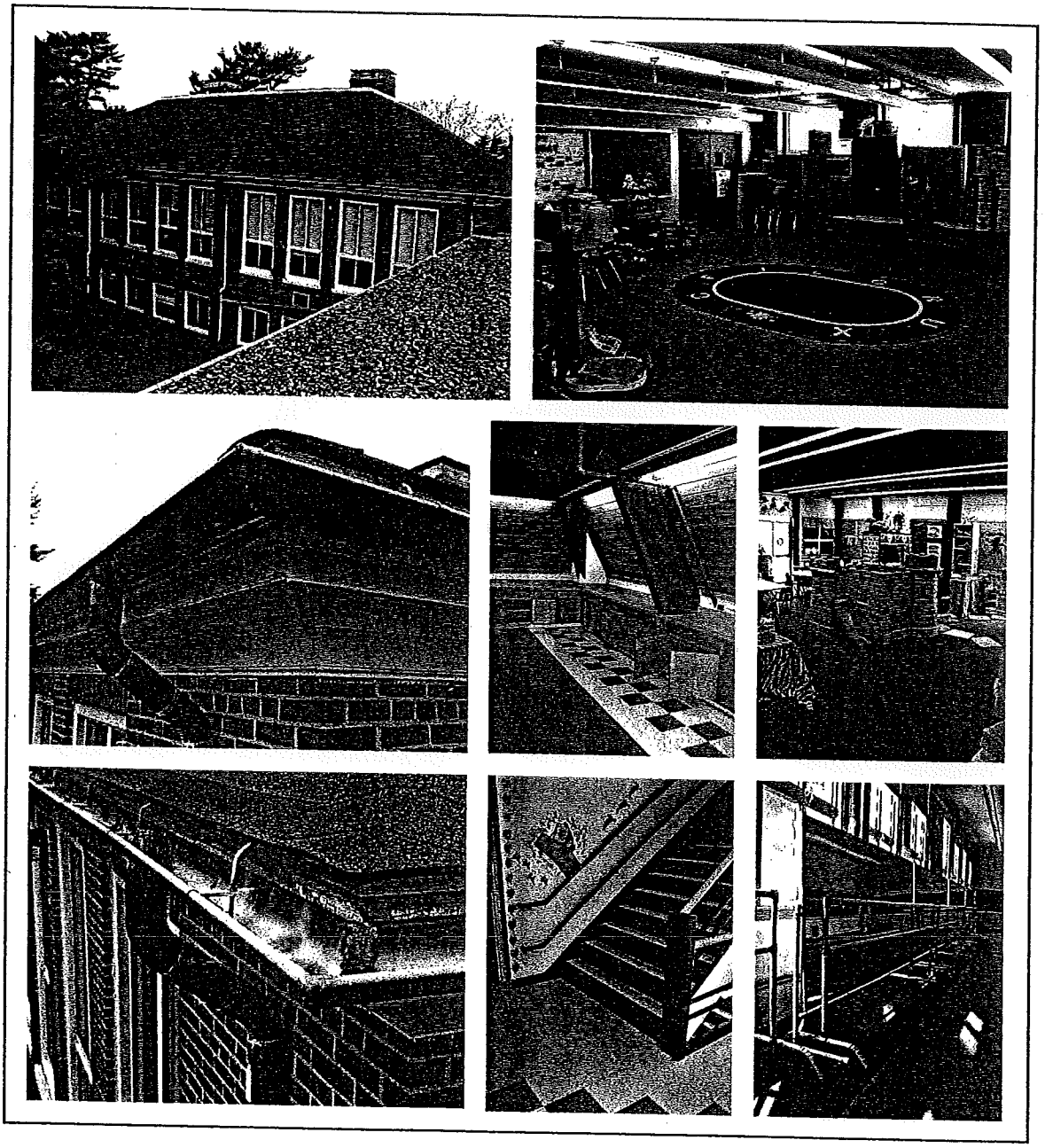
DEFERRED MAINTENANCE STUDY

Caryl School
4 Springdale Avenue
Dover, Massachusetts



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EXECUTIVE SUMMARY

The Dover Caryl School facility is a two-story brick building of approximately 41,300 square feet. The facility was constructed in three phases during the years 1910, 1931 and 1971. In the fall of 2001, a new elementary school was constructed in Town and the building became available for use by a variety of community activities. In the spring of 2002, an adaptive reuse study was completed that prescribed extensive renovations to the building including modifications for elderly housing units and community uses. This reuse proposal was rejected at Town meeting. In 2003, during the second year of operation since the school moved on, the Town commissioned this deferred maintenance study in order to determine the viability of retaining the existing building for ongoing uses by the community.

Existing conditions of the building were evaluated during the time period of January through April of 2003. Four professional firms that were retained individually by the Town of Dover performed the assessment. Mills Whitaker Architects served as the prime professional and coordinator of the study. Assisting the architect were Structures North Consulting Engineers, S. L. Forte Engineering (mechanical) and Johnson Engineering & Design (electrical). This professional team has extensive experience with the evaluation and phased renovation of existing institutional facilities.

The activities involved during this study included the review of available drawings, interviews with people familiar with the facility, visual observation and documentation of conditions, development of recommendations and preliminary budgeting for repairs. Consideration of future remodeling or adaptive reuse was not included in the study. Also, the review of site-related issues such as parking, landscaping, drainage and septic systems were not included. The focus of this study was to develop an understanding of the costs and priorities related to properly maintaining the existing building.

This report describes various components of the facility, notes their conditions and provides recommendations for their repair. Note that the recommendations are preliminary and are not intended to substitute for more detailed evaluation, planning and documentation prior to the implementation of any specific repairs.

The Dover Caryl School facility is in reasonable condition but is in need of some fairly significant maintenance over the coming years. As the new school was being planned, certain repair needs that allowed water infiltration were only temporarily addressed in anticipation of abandoning the building and leaving the problems for others. The Town is now faced with planning repairs to items such as aging roof systems, deteriorated sections of masonry and other maintenance needs. None of the items identified during this study are unusual or require excessive expenditures in order to retain this facility as a viable structure for housing an ongoing variety of community uses.

A preliminary cost matrix that establishes "order-of-magnitude" budgets for recommended repairs has been developed and is included herein. The budgets are for planning purposes only and do not represent detailed cost estimates. Each of the recommendations within the report has been prioritized into one of three categories: *Critical, Short-Term and Long-Term.* Within each prioritized category, a range of costs from *Minimal* to *Optimal* has been established when appropriate. The range of costs reflects variations in work scope or in anticipated contractor prices for each work item.

The criteria used for assigning a priority for each work item was based on the following guidelines:

CRITICAL: *(1-2 Years)*	Items that pose a potential threat to the life safety of occupants; Items causing water infiltration of the exterior building envelope; Items requiring very frequent, ongoing maintenance.
SHORT-TERM: *(2-5 Years)*	Items that are not critical but should be addressed within 2-5 years; Items that will reduce frequent maintenance needs of the facility; Upgrades or improvements necessary for operation of the facility.
LONG-TERM: *(5-10 Years)*	Items that will likely require corrective work within 5-10 years; Items that will further reduce maintenance needs of the facility; Upgrades or improvements that will enhance the facility's operation.

Repair items that have been identified in the Preliminary Cost Matrix as being *Critical* should be addressed as soon as possible, preferably within the next one or two years. *Short-Term* items should be repaired within the next 2 to 5 years while *Long-Term* repairs should be addressed within the next 5 to 10 years. Items with a longer shelf life than 10 years were not addressed. Note that this prioritization of items is intended to serve as a planning tool as opposed to being a prescriptive work list requiring strict adherence. Over time, needs can change and some items that have not yet been identified could become important while other items already listed may become less important.

A summary of the budget ranges described in the Preliminary Cost Matrix is as follows:

Critical Items:	$ 224,676	to	$ 263,998 (Over Two-Year Period)
Short-Term Items:	$ 639,561	to	$ 936,462 (Over Three-Year Period)
Long-Term Items:	$ 790,329	to	$ 1,092,233 (Over Five-Year Period)
Grand Total:	$1,654,566	to	$ 2.292,693 (Over Ten-Year Period)

This preliminary budget translates into an average annual expenditure ranging from approximately $165,000 to $230,000. During some years, this amount may be higher than the average while during other years it may be lower. The budgeted items do not include annual operating expenses and routine expenditures. Also, the budgeted items do not include site-related issues since they were not included as part of the study.

In general, it appears that the Dover Caryl School is a sound building and a valuable resource. With proper management and attention to addressing deferred maintenance items in a timely fashion, this facility can continue to provide a place for housing a variety of space needs for the Town of Dover and surrounding communities.

PROJECT TEAM & METHODOLOGY

This *Deferred Maintenance Study* was performed by a project team consisting of four professional firms with extensive experience in the repair and renovation of existing facilities. Each of the firms was retained individually by the Town of Dover. The project team members and their brief role descriptions are as follows:

ARCHITECT: Mills Whitaker Architects LLC served as the prime professional for this project. The role of the architect included: assessment of existing architectural conditions, interviewed town and school staff familiar with the building, photographed the building, guided the work of the project team, distributed 1971 construction documents to the project team, developed recommendations, prepared cost estimates for architectural items and produced the report.

STRUCTURAL ENGINEER: Structures North Consulting Engineers, Inc. assessed existing conditions of the structure, assessed conditions of existing masonry and concrete, examined attic spaces and interior spaces, reviewed 1971 drawings, interviewed town and school staff familiar with existing conditions, developed structural assessment, recommendations and costs.

MECHANICAL ENGINEER: S. L. Forte Engineering assessed existing conditions of plumbing and HVAC systems, examined utility areas and interior spaces, reviewed 1971 drawings, interviewed town and school staff familiar with existing conditions, developed mechanical assessment, recommendations and costs.

ELECTRICAL ENGINEER: Johnson Engineering & Design, Inc. assessed existing conditions of power, lighting and fire alarm systems, examined utility areas and interior spaces, reviewed 1971 drawings, interviewed town and school staff familiar with existing conditions, developed electrical assessment, recommendations and costs.

The work of assessing the conditions and establishing this study report for deferred maintenance items included the following tasks:

RESEARCH:

- Researched the various dates of the building by contacting the Town Library to determine that the original school was constructed in 1910 followed by subsequent additions that were built in 1931 and 1971.
- Reviewed 1971 drawings that indicated the construction of the latest addition to the building along with modifications to the 1910 and 1931 portions of the facility.
- Reviewed 1989 Asbestos Management Plan and 1990 Asbestos Abatement project documents followed by 3-year inspection reports maintained by the school.
- Reviewed "Facility Summary" of December 14, 1999 performed by The Garland Roof Company for Ralph Kelly of the Dover Caryl School.
- Reviewed letter of January 10, 2000 from Charles E. York (Licensed Construction Supervisor) to Ralph Kelley (sic) regarding an evaluation of previously performed structural repairs following fire damage.
- Reviewed "Structural Evaluation" of March 13, 2001 performed by Mr. Robert Cotta, PE of Linea 5 for Graham/Meus Architects regarding considerations for adaptive reuse.
- Reviewed assessment report prepared by "AssessPro" of Patriot Properties originally prepared in 1995 and updated annually through 2003.

- Developed an understanding of current uses of the facility. For the purposes of this study, it was assumed that the existing uses of the building will remain unchanged.
- Developed an understanding of perceived needs and existing problems that are known by the former school maintenance staff and the current town maintenance staff.

ASSESSMENT:

- Reviewed existing conditions of the walls, windows, doors, flooring, ceilings, finishes and roofing systems.
- Reviewed existing conditions of visible structural, mechanical and electrical system elements. Identified areas of deterioration, water penetration and other prominent maintenance issues.
- Identified building components that require repair or replacement.
- Observations were made from the ground, from floor levels within the building and from accessible roof areas. We did not employ the assistance of ladders or an articulating lift. Observations were limited to visible components of the building and its systems since no destructive or invasive work was performed.
- The assessment did not include reviews of features beyond the building envelope such as the site, grounds, landscaping, exterior paving and septic system. Also, there was no review of any hazardous materials.

RECOMMENDATIONS:

- Based on the research and assessment, determined the extent of repairs for deferred maintenance that should be performed in order to maintain the existing, ongoing uses of the facility.
- Prioritized the repairs into three categories: *Critical (1-2 years), Short-Term (2-5 years)* and *Long-Term (5-10 years)*.
- Established a preliminary cost matrix that provides "order-of-magnitude" budgetary information for each prioritized repair item.
- Assistance with designing repairs, providing construction documents and implementing the recommendations were beyond the scope of the study. Similarly, the implications of possible alterations to the facilities were not part of the assessment.

REPORT:

- Prepared this report with executive summary, methodology statement, description of existing conditions, and recommendations for deferred maintenance.
- The report includes the preliminary cost matrix and photographs of existing conditions.

EXISTING CONDITIONS & RECOMMENDATIONS

GENERAL DESCRIPTION

The Dover Caryl School is a facility consisting of three interconnected buildings. The overall size of the facility is approximately 41,300 square feet. The original portion of the building, which faces Springdale Avenue to the north, is a two-story, colonial-revival brick structure that was constructed in 1910. In 1931, a two-story brick addition and link were added behind the original school to the south. In 1971, a second, modern-styled addition was constructed to the east of the original school. The 1971 addition incorporated a flat-roofed link that tied all three phases of the construction together. The 1931 link appears to have been substantially demolished at that time, with the probable exception of its west façade.

The elementary school usage of the building was recently terminated when the Town opened the Chickering School in the fall of 2001. Since that time, the Town has converted the building to a variety of community uses, including its temporary use as an elementary school for Needham, a neighboring town, while their school was being re-constructed. Currents uses of the facility include a daycare center, dance school, council on aging activities and various types of recreational uses. A portion of the office areas is serving as temporary space for the Charles River School while their existing facility is being expanded.

EXTERIOR WALLS, WINDOWS & ENTRANCES

The exterior walls of the 1910 and 1931 portions of the building consist of common bond red brick masonry bearing walls. The outside corners and base of the 1910 building are articulated with brick quoins. Both the 1910 and 1931 portions of the facility incorporate a projecting brick base with a molded brick water table transition to the main body of the exterior wall above. The exterior walls of the 1971 addition are red brick veneer with concrete masonry unit infill between a structural system of glue-laminated timber framing. In general, the masonry is in good condition with the exception of some areas of mortar loss due to water infiltration at the water table areas of the building. Also, some limited cracks in the exterior walls and foundation areas need to be addressed. The masonry work required is limited to the 1910 and 1931 portions of the facility; the 1971 portion does not exhibit any deterioration with the exception of missing mortar (or sealant) at the end joints of Second Floor window sills. The specific conditions and subsequent recommendations related to the exterior masonry walls are discussed in the Structural Engineer's Report.

Window openings in the 1910 and 1931 portions of the facility are rectangular masonry openings with steel lintels, brick jack arches and stone sills. The east and west walls of the 1910 building incorporate brick infill panels and do not include windows. The north façade of the 1910 building, along with the major facades of the 1931 addition, incorporate large, closely spaced window openings that provide significant daylight to the interior spaces. In the 1971 portion of the building, window openings at the First Floor are floor-to-ceiling intermittently spaced vertical rectangular openings while the Second Floor incorporates modern, continuous ribbon windows.

The ribbon windows are awkwardly arranged in that they originate at the floor and terminate at approximately four-and-one-half feet above the floor. Above the windows, the roof and ceiling slope upward quite steeply. This configuration results in bringing light in at floor level and severely limiting the penetration of daylight into the building. While the design intent of

this configuration may have been geared toward matching the window head height with the height of an average elementary school child, the end result lends the feeling of being in attic space instead of the Second Floor of a voluminous school building. The head height of an average elementary school child usually exceeds 54" fairly early in their school years, thus making the windows seems short even to them. Although no recommendations have been put forth in this report for modifying the existing design of the building, the incorporation of skylights in the steep roof area could be a relatively simple change that could have a positive impact on the feeling of the space and the penetration of natural light into the building.

All of the windows of the facility appear to be aluminum replacement windows that are in relatively good condition. These windows were probably replaced about ten years ago. The sealant joints at the exterior, where observed, appear to be in sound condition. The primary maintenance problem related to aluminum windows will be to make certain that the sash balances remain in good working order. The school maintenance staff did not indicate that they were having any problems with the windows up through the end of their stay. If the replacement windows are of reasonable quality, then they should last another ten years or longer. No funds have been included in the cost matrix for work related to the windows.

The primary, central entrance to the facility is located in the 1971 link at the north façade. This entrance has a pair of aluminum doors and is at grade, thereby providing an entrance that is handicap accessible. The original entrance to the facility, positioned in the center of the 1910 building, was removed in 1971. There are a variety of other entrances and exits in various locations around the perimeter of the facility. A central canopied exit at the east side of the 1971 addition provides direct egress from a central stairway. This door has some significant rust in the bottom member of sidelight framing and related rust in the canopy framing. This rust appears to have resulted from a flashing failure at the canopy.

A supplemental exit door in the southwest corner of the 1971 addition is reportedly very difficult to open and close. Although this door is not really required as an exit since there are already two means of egress from within the building, the door should either be repaired in order to operate easily or it should be abandoned as an exit.

Exit doors at the First Floor level of the east and west elevations of the 1910 building provide direct egress from a classroom area and from the "cafetorium" respectively. Several First Floor exits with areaways are located along the west façade and provide direct egress to the perimeter driveway. A Second Floor exit near the southwest corner of the 1931 addition provides egress from a classroom area via a metal stair that is located directly above the areaway exit from the Gymnasium. There is a deteriorated roof area below the metal stair that now provides ineffective waterproofing of the Gym areaway. This roof portion should be repaired in order to limit water infiltration to the exit stairs below. Also, the metal stair will require scraping and painting due to the presence of surface rusting.

An entrance at the south façade of the 1931 addition provides direct egress from a stairway to the rear yard and playground areas of the facility.

ROOFING SYSTEMS

Each portion of the facility, with the exception of the link, has a shingled hip roof. The 1910 portion terminates in a ridge while the subsequent additions terminate at central flat-roofed areas. The link area is a flat roof with short, pitched, shingled skirts at the north and south facades. The shingles on the 1910 and 1971 portions of the facility are single-tab composition shingles that are in poor condition. The south and east slopes of the 1910

building are in very poor condition evidenced by a significant loss of shingles. These two slopes have been slated for immediate replacement for several years running.

The remaining slopes containing the single-tab shingles have some shingle loss, some slipped shingles and some deteriorated portions. The shingles exhibit cupping at their edges and are nearing the end of their viability as a roof surface. The worst exposure appears to be the east slope of the 1971 addition. The service life of these remaining shingled surfaces is limited and should be addressed in the short-term. Some spot repairs may need to be accomplished in the interim period prior to full replacement.

The 1931 addition has three-tab shingles that appear to be in good condition and will probably not require attention for about ten years. The flat roof above this area, however, is surrounded by metal flashing that retains water on the surface of a membrane roof. There is no roof drain in the flat section. Scuppers should be cut into the perimeter edging, allowing the roof to drain down the shingles to the gutters below. The scuppers should be placed to align with the areas below the pitched roof where downspouts are located in order to target the drainage in an efficient manner. When this work is done, the integrity of the existing roofing membrane should be checked. At the least, the seams and perimeter of the membrane roofing should be re-sealed in order to extend the life of the system. Note that a roofing survey performed in 1999 by The Garland Company indicted that this roof had failed and that it should be replaced. According to our understanding, there are no roof leaks and the membrane is intact. Nonetheless, the system should be investigated further to see if more extensive work is required.

The other two flat roofs at the 1971 link and upper portion of the main roof are ballasted membrane systems over previously installed built-up roofing. The link area is in very bad condition and has been riddled with leaks during recent years. In fact, the school removed damaged acoustical ceiling tiles and replaced them with eggcrates to allow water to drip through them and facilitate collection of the leaks into buckets. The perimeter flashings are also in poor condition. There are currently no active leaks due to temporary patching, but the roof should be replaced as soon as possible. The upper area of the main roof was not visible during the site tour. According to the 1999 roofing survey, the conditions are a little better than at the link roof. The upper roof membrane system does not appear to require immediate attention but should be replaced within the next few years.

Copper gutters are located at the perimeter of the 1910 and 1931 pitched roof areas. These gutters appear to be in reasonable condition. These gutters should be routinely cleaned and the integrity of their joints and hangers should be checked. Downspouts from these copper gutters are a mixture of round copper, square copper and corrugated aluminum. Some of the joints are open or damaged including those at the offsets that are required due to the water table. Water deterioration of the brick masonry walls adjacent to downspouts is indicative of current or past problems.

The downspouts empty into cast iron rain leader boots that lead to underground drywells. The condition of the drywells is not known. At the east wall of the 1931 addition, one of the downspouts is not connected to its cast iron boot and the boot appears to be clogged. At the southwest corner of the 1931 addition, a newly installed corrugated aluminum downspout penetrates the driveway paving in an area that is highly vulnerable to damage from vehicular traffic. In fact, the bricks on this corner are nicked, indicating that this area has been damaged in the past. Presumably this repair was performed without extending the cast iron boot system above grade in order to provide a more durable rain leader system. Square copper downspouts at the southwest corner of the 1910 building are also exposed to damage and appear to have been crushed multiple times.

An aluminum gutter is located at steeply pitched roof above the central entrance of the 1971 link. Other pitched roof areas of the 1971 addition do not contain gutters but drip directly from the pitched roof onto a perimeter flagstone riprap system surrounding the building. Corrugated aluminum downspouts at each side of the entrance area bring water down to grade. The downspout to the east of the entrance lacks a transition piece and splash block at grade, resulting in charging the base of the wall with water. The downspout to the west of the entrance discharges adjacent to a window sill, leaving the window vulnerable to leaking.

INTERIOR LAYOUT & FINISHES

The three phases of the two-story construction are interconnected by a central corridor system and three interior stairways. A two-stop elevator is located adjacent to a central stair within the 1971 link area. The other two stairs are positioned at the south end of the 1931 addition and the east end of the 1971 addition. A fourth stairway provides access from the Second Floor to a loft area in the 1971 addition. All stairways have wall railings and guard rails. The guardrails do not meet current codes but that is not unusual since codes are routinely changed to be more restrictive. Note that guardrail systems are only required to meet current codes under certain circumstances that are regulated by the building code.

The finished flooring of the corridors and stairways generally consists of vinyl composition tiles that are in good condition with a few exceptions. There are some cracked tiles in the transition area between the 1931 addition and the 1971 link. There are also some cracked tiles over a trench cover plate in the 1971 addition. Small areas of cracked tiles are located here and there throughout the facility, but for the most part the flooring is in serviceable condition.

Some small closet areas and similar spaces within the 1910 and 1931 portions of the facility contain vinyl asbestos tile. Most of this flooring appears to be in good condition. Any areas that become loose or cracked will need to be removed as hazardous materials in accordance with regulatory procedures. Flooring in good condition can be retained as-is.

Ceilings in the corridors of the 1910 and 1931 portions of the facility are generally 2' x 4' exposed grid acoustical tile. Some of the tiles are sagging and should be replaced. As discussed under the roofing systems section, some of the tiles have been replaced with eggcrates due to severe leaking of the roof. Corridors in the link area are comprised of exposed wood tongue-and-groove structural floor and roof decking.

The First Floor of the facility contains some classroom space and specialty areas such as the gymnasium, art room, cafetorium and adjacent kitchen. The Second Floor contains mostly classroom space. The former school library is on the Second Floor of the 1971 addition. Finishes in most of the classrooms include carpeted floors, painted walls and 12" x 12" acoustical tile ceilings. Ceilings in the 1971 addition are exposed tongue-and-groove decking.

The carpet in classrooms is wrinkled and has some unraveled seams in places. The carpet in the First Floor of the 1971 addition is in good condition since the daycare tenant recently replaced it in that area. The classroom ceilings appear to be in good condition.

Some operable partitions or "folding walls" are located in various classrooms in order to provide some flexibility in the subdivision of space. It was noted, however, that some of these "flexible" walls have been stationary for some time since rigidly installed conduit has been placed at the floor alongside the base of the walls for the provision of electrical outlets. The condition of the folding walls is poor as evidenced by peeling finishes and damaged end

plates. Some of the walls are leaning and do not appear to be easily movable. All of the walls incorporate sliding tracks at the top and bottom, the latter of which creates a tripping hazard at the floor level when the walls are open or wherever passage doors are located.

The gymnasium, located in the southwest corner of the 1931 addition, has a painted plaster ceiling with exposed painted beams. Fibrous rigid acoustical panels have been placed on various surfaces to dampen the noise level of the gym. The flooring is composed of a floating maple floor system that appears to be in good condition although it should be refinished at some point in the future. The gym level is approximately five feet below the First Floor level and, along with the loft of the 1971 addition, is one of two areas that are not on the same floor level and are therefore not accessible to the disabled.

The cafetorium, a large multi-use area in the northwest corner of the 1910 building, has an acoustical tile ceiling (2' x 4') and vinyl composition tile flooring. Bleachers at the perimeter of the room provide some flexible seating for special events. The adjacent kitchen area has a ceramic tile floor and appears to be suitable for use as a warming or catering kitchen only.

Toilet rooms for students are located in the east side of the 1931 wing at the First Floor level and the west end of the 1971 link at the Second Floor. Staff toilet rooms are located on the First Floor of the link. Toilet rooms for students include shower areas that appear to be greatly underutilized. Finishes in these rooms generally consist of ceramic tile floors and dados with painted upper walls and ceilings. A wooden platform has been provided on a temporary basis below the urinals in the Boy's Room to effectively reduce the mounting height of these devices. Handicap stalls in the toilet rooms do not meet current regulations and do not contain two grab bars on adjacent walls

Support spaces include a boiler room and electrical room, both of which are discussed in the Mechanical and Electrical Engineer's reports respectively. Staff offices are located at both floor levels of the 1971 link adjacent to the central entrance area corridor.

CODE ISSUES RELATED TO DEFERRED MAINTENANCE

Repairs to the Dover Caryl School will be regulated the Massachusetts State Building Code (780 CMR) and the Massachusetts Architectural Access Board Regulations (521 CMR). The building is no longer functioning solely as an elementary school but continues to contain compatible use groups. The current use groups are mixed and none of the new uses have contributed to a change in the hazard index as described in the current building code.

Any repairs to the existing building will be required to conform with the requirements of 780 CMR Chapter 34 "Repair, Alteration, Addition, and Change of Use of Existing Buildings." In general, maintenance must meet one of the following two provisions of the code:

> **780 CMR 3404.4 New Building Systems:** Any new building system or portion thereof shall conform to 780 CMR for new construction to the fullest extent practical. However, individual components of an existing building system may be repaired or replaced without requiring that system to comply fully with the code for new construction unless specifically required by 780 CRM 3408 [Structural Requirements for Existing Buildings].
>
> **780 CMR 3404.4 New Building Systems:** Alterations or repairs to existing buildings which maintain or improve the performance of the building may be made with the same or like materials, unless required otherwise by 780 CMR 3408. Alterations or repairs which have the effect of replacing a building system as a whole shall comply with 780 CMR 3404.3.

The Architectural Access Board Regulations (521 CMR) prescribe compliance with access requirements based on certain thresholds of expenditure, some of which are relative to the value of the facility. Any work that is performed must comply with the accessibility code. If an expenditure of $100,000 or more is made, then an accessible entrance and toilet room must also be provided. If renovation work amounts to 30% or more of the full and fair cash value of the building, then the entire building must be brought into compliance with 521 CMR. These expenditure limits apply to work performed over a three-year period.

The 2003 assessment report indicates that the value of the building, exclusive of land, is currently $2,708,600. Thirty percent of this value $812,580. An expenditure of this amount or more over a three-year period would require the entire facility to comply with the accessibility regulations. Expenditures of less than this amount but more than $100,000 will require the Caryl School to upgrade its current accessible toilets to conform with current codes, along with the provision of an accessible public drinking fountain and, if any are provided, an accessible public telephone.

Certain expenses related to the repairs of an existing building are exempt from contributing toward the $100,000 threshold. Items that can be exempt include: roofing, windows, masonry repairs, electrical, mechanical, plumbing, site utilities and landscaping.

PRELIMINARY COST MATRIX

Based on our assessment of existing conditions, we have made a preliminary determination regarding the extent of deferred maintenance repairs that should be performed. Preliminary budget amounts for repairs have been based on "order-of-magnitude" pricing in order to assist the Town of Dover with future planning. The budget amounts presented in this report are preliminary costs only and do not represent detailed cost estimates. The Architect, Structural Engineer, Mechanical Engineer and Electrical Engineer have determined the budget amounts in each category of work based on their areas of discipline.

Each of the repair items has been prioritized into one of three categories: *Critical, Short-Term* and *Long-Term*. Within each category, a range of costs from *Minimal* to *Optimal* has been established when appropriate. This range of costs reflects variations in work scope or in anticipated contractor prices for each work item.

The criteria used for assigning a priority for each work item was based on the following guidelines:

CRITICAL: *(1-2 Years)*	Items that pose a potential threat to the life safety of occupants; Items causing water infiltration of the exterior building envelope; Items requiring very frequent, ongoing maintenance.
SHORT-TERM: *(2-5 Years)*	Items that are not critical but should be addressed within 2-5 years; Items that will reduce frequent maintenance needs of the facility; Upgrades or improvements necessary for operation of the facility.
LONG-TERM: *(5-10 Years)*	Items that will likely require corrective work within 5-10 years; Items that will further reduce maintenance needs of the facility; Upgrades or improvements that will enhance the facility's operation.

The preliminary cost matrix that follows has repair items identified by work category in accordance with the general sixteen-division format of the Construction Specifications Institute (CSI). Each work item listed in the matrix springs from discussions about existing conditions in the text written by the Architect, Structural Engineer, Mechanical Engineer and Electrical Engineer. The Architect's report immediately precedes this section while the reports of other disciplines immediately follow the matrix.

Since neither an Architect nor an Owner has control over construction costs or project phasing, this report does not warrant or represent in any way that actual repair costs will not vary substantially from those stated in the preliminary cost matrix.

Prepared for the Dover Caryl School Management Advisory Committee

PRELIMINARY COST MATRIX

Recommended Work Item Description	CRITICAL (1-2 yrs.) Minimal	R	Optimal	SHORT-TERM (2-5 yrs.) Minimal	R	Optimal	LONG-TERM (5-10 yrs.) Minimal	R	Optimal	TOTALS Minimal	Optimal
2 Sitework											
Trenching & paving for elect. service conduit repairs	$6,600	C1a	$7,500							$6,600	$7,500
Excavation & paving at SW corner downspout area	$750	C7	$1,250							$750	$1,250
										$0	$0
Site Subtotal	$7,350		$8,750	$0		$0	$0		$0	$7,350	$8,750
3 Concrete											
E-7: Expose and patch crack in foundation	$2,500	C4	$3,000							$2,500	$3,000
I-6: Stop foundation leak at electrical conduit	$500	C1b	$750							$500	$750
										$0	$0
Concrete Subtotal	$3,000		$3,750	$0		$0	$0		$0	$3,000	$3,750
4 Masonry											
E-1: Replace rusted, jacked lintels				$45,000	S6a	$65,000				$45,000	$65,000
E-2: Clean, protect rusted lintels				$40,000	S6b	$70,000				$40,000	$70,000
E-3: Selectively repoint exterior masonry				$15,000	S6c	$20,000	$35,000	L2a	$40,000	$50,000	$60,000
E-4: Selectively reconstruct watertables				$30,000	S6d	$40,000				$30,000	$40,000
E-5: Re-tooth exterior diagonal step cracks				$2,000	S6e	$3,000				$2,000	$3,000
E-6: Replace damaged windowsills							$3,000	L2b	$4,500	$3,000	$4,500
E-8: Reconstruct deteriorated chimney				$45,000	S6f	$55,000				$45,000	$55,000
E-9: Repoint and partially reconstruct vent stack				$20,000	S6g	$30,000				$20,000	$30,000
I-3: Investigate, repair possible exterior wall crack							$500	L2c	$2,500	$500	$2,500
										$0	$0
Masonry Subtotal	$0		$0	$197,000		$283,000	$38,500		$47,000	$235,500	$330,000
5 Metals											
Clean and paint exterior metal stairs and railing				$2,500	S8a	$3,000				$2,500	$3,000
										$0	$0
Metals Subtotal	$0		$0	$2,500		$3,000	$0		$0	$2,500	$3,000
6 Wood											
I-1: Install proper lateral ties at tops of exterior walls				$5,000	S7a	$7,500				$5,000	$7,500
I-2: Laterally block ends of attic floor joists							$4,500	L3	$6,000	$4,500	$6,000
I-4: Reinforce split, sagging hip rafters				$10,000	S7b	$15,000				$10,000	$15,000
I-5: Reinforce upper common rafter connections				$2,500	S7c	$3,500				$2,500	$3,500
I-7: Repair, reinforce spitting glue-lam members				$40,000	S7d	$55,000				$40,000	$55,000
										$0	$0
Wood Subtotal	$0		$0	$57,500		$81,000	$4,500		$6,000	$62,000	$87,000

this configuration may have been geared toward matching the window head height with the height of an average elementary school child, the end result lends the feeling of being in attic space instead of the Second Floor of a voluminous school building. The head height of an average elementary school child usually exceeds 54" fairly early in their school years, thus making the windows seems short even to them. Although no recommendations have been put forth in this report for modifying the existing design of the building, the incorporation of skylights in the steep roof area could be a relatively simple change that could have a positive impact on the feeling of the space and the penetration of natural light into the building.

All of the windows of the facility appear to be aluminum replacement windows that are in relatively good condition. These windows were probably replaced about ten years ago. The sealant joints at the exterior, where observed, appear to be in sound condition. The primary maintenance problem related to aluminum windows will be to make certain that the sash balances remain in good working order. The school maintenance staff did not indicate that they were having any problems with the windows up through the end of their stay. If the replacement windows are of reasonable quality, then they should last another ten years or longer. No funds have been included in the cost matrix for work related to the windows.

The primary, central entrance to the facility is located in the 1971 link at the north façade. This entrance has a pair of aluminum doors and is at grade, thereby providing an entrance that is handicap accessible. The original entrance to the facility, positioned in the center of the 1910 building, was removed in 1971. There are a variety of other entrances and exits in various locations around the perimeter of the facility. A central canopied exit at the east side of the 1971 addition provides direct egress from a central stairway. This door has some significant rust in the bottom member of sidelight framing and related rust in the canopy framing. This rust appears to have resulted from a flashing failure at the canopy.

A supplemental exit door in the southwest corner of the 1971 addition is reportedly very difficult to open and close. Although this door is not really required as an exit since there are already two means of egress from within the building, the door should either be repaired in order to operate easily or it should be abandoned as an exit.

Exit doors at the First Floor level of the east and west elevations of the 1910 building provide direct egress from a classroom area and from the "cafetorium" respectively. Several First Floor exits with areaways are located along the west façade and provide direct egress to the perimeter driveway. A Second Floor exit near the southwest corner of the 1931 addition provides egress from a classroom area via a metal stair that is located directly above the areaway exit from the Gymnasium. There is a deteriorated roof area below the metal stair that now provides ineffective waterproofing of the Gym areaway. This roof portion should be repaired in order to limit water infiltration to the exit stairs below. Also, the metal stair will require scraping and painting due to the presence of surface rusting.

An entrance at the south façade of the 1931 addition provides direct egress from a stairway to the rear yard and playground areas of the facility.

ROOFING SYSTEMS

Each portion of the facility, with the exception of the link, has a shingled hip roof. The 1910 portion terminates in a ridge while the subsequent additions terminate at central flat-roofed areas. The link area is a flat roof with short, pitched, shingled skirts at the north and south facades. The shingles on the 1910 and 1971 portions of the facility are single-tab composition shingles that are in poor condition. The south and east slopes of the 1910

building are in very poor condition evidenced by a significant loss of shingles. These two slopes have been slated for immediate replacement for several years running.

The remaining slopes containing the single-tab shingles have some shingle loss, some slipped shingles and some deteriorated portions. The shingles exhibit cupping at their edges and are nearing the end of their viability as a roof surface. The worst exposure appears to be the east slope of the 1971 addition. The service life of these remaining shingled surfaces is limited and should be addressed in the short-term. Some spot repairs may need to be accomplished in the interim period prior to full replacement.

The 1931 addition has three-tab shingles that appear to be in good condition and will probably not require attention for about ten years. The flat roof above this area, however, is surrounded by metal flashing that retains water on the surface of a membrane roof. There is no roof drain in the flat section. Scuppers should be cut into the perimeter edging, allowing the roof to drain down the shingles to the gutters below. The scuppers should be placed to align with the areas below the pitched roof where downspouts are located in order to target the drainage in an efficient manner. When this work is done, the integrity of the existing roofing membrane should be checked. At the least, the seams and perimeter of the membrane roofing should be re-sealed in order to extend the life of the system. Note that a roofing survey performed in 1999 by The Garland Company indicted that this roof had failed and that it should be replaced. According to our understanding, there are no roof leaks and the membrane is intact. Nonetheless, the system should be investigated further to see if more extensive work is required.

The other two flat roofs at the 1971 link and upper portion of the main roof are ballasted membrane systems over previously installed built-up roofing. The link area is in very bad condition and has been riddled with leaks during recent years. In fact, the school removed damaged acoustical ceiling tiles and replaced them with eggcrates to allow water to drip through them and facilitate collection of the leaks into buckets. The perimeter flashings are also in poor condition. There are currently no active leaks due to temporary patching, but the roof should be replaced as soon as possible. The upper area of the main roof was not visible during the site tour. According to the 1999 roofing survey, the conditions are a little better than at the link roof. The upper roof membrane system does not appear to require immediate attention but should be replaced within the next few years.

Copper gutters are located at the perimeter of the 1910 and 1931 pitched roof areas. These gutters appear to be in reasonable condition. These gutters should be routinely cleaned and the integrity of their joints and hangers should be checked. Downspouts from these copper gutters are a mixture of round copper, square copper and corrugated aluminum. Some of the joints are open or damaged including those at the offsets that are required due to the water table. Water deterioration of the brick masonry walls adjacent to downspouts is indicative of current or past problems.

The downspouts empty into cast iron rain leader boots that lead to underground drywells. The condition of the drywells is not known. At the east wall of the 1931 addition, one of the downspouts is not connected to its cast iron boot and the boot appears to be clogged. At the southwest corner of the 1931 addition, a newly installed corrugated aluminum downspout penetrates the driveway paving in an area that is highly vulnerable to damage from vehicular traffic. In fact, the bricks on this corner are nicked, indicating that this area has been damaged in the past. Presumably this repair was performed without extending the cast iron boot system above grade in order to provide a more durable rain leader system. Square copper downspouts at the southwest corner of the 1910 building are also exposed to damage and appear to have been crushed multiple times.

An aluminum gutter is located at steeply pitched roof above the central entrance of the 1971 link. Other pitched roof areas of the 1971 addition do not contain gutters but drip directly from the pitched roof onto a perimeter flagstone riprap system surrounding the building. Corrugated aluminum downspouts at each side of the entrance area bring water down to grade. The downspout to the east of the entrance lacks a transition piece and splash block at grade, resulting in charging the base of the wall with water. The downspout to the west of the entrance discharges adjacent to a window sill, leaving the window vulnerable to leaking.

INTERIOR LAYOUT & FINISHES

The three phases of the two-story construction are interconnected by a central corridor system and three interior stairways. A two-stop elevator is located adjacent to a central stair within the 1971 link area. The other two stairs are positioned at the south end of the 1931 addition and the east end of the 1971 addition. A fourth stairway provides access from the Second Floor to a loft area in the 1971 addition. All stairways have wall railings and guard rails. The guardrails do not meet current codes but that is not unusual since codes are routinely changed to be more restrictive. Note that guardrail systems are only required to meet current codes under certain circumstances that are regulated by the building code.

The finished flooring of the corridors and stairways generally consists of vinyl composition tiles that are in good condition with a few exceptions. There are some cracked tiles in the transition area between the 1931 addition and the 1971 link. There are also some cracked tiles over a trench cover plate in the 1971 addition. Small areas of cracked tiles are located here and there throughout the facility, but for the most part the flooring is in serviceable condition.

Some small closet areas and similar spaces within the 1910 and 1931 portions of the facility contain vinyl asbestos tile. Most of this flooring appears to be in good condition. Any areas that become loose or cracked will need to be removed as hazardous materials in accordance with regulatory procedures. Flooring in good condition can be retained as-is.

Ceilings in the corridors of the 1910 and 1931 portions of the facility are generally 2' x 4' exposed grid acoustical tile. Some of the tiles are sagging and should be replaced. As discussed under the roofing systems section, some of the tiles have been replaced with eggcrates due to severe leaking of the roof. Corridors in the link area are comprised of exposed wood tongue-and-groove structural floor and roof decking.

The First Floor of the facility contains some classroom space and specialty areas such as the gymnasium, art room, cafetorium and adjacent kitchen. The Second Floor contains mostly classroom space. The former school library is on the Second Floor of the 1971 addition. Finishes in most of the classrooms include carpeted floors, painted walls and 12" x 12" acoustical tile ceilings. Ceilings in the 1971 addition are exposed tongue-and-groove decking.

The carpet in classrooms is wrinkled and has some unraveled seams in places. The carpet in the First Floor of the 1971 addition is in good condition since the daycare tenant recently replaced it in that area. The classroom ceilings appear to be in good condition.

Some operable partitions or "folding walls" are located in various classrooms in order to provide some flexibility in the subdivision of space. It was noted, however, that some of these "flexible" walls have been stationary for some time since rigidly installed conduit has been placed at the floor alongside the base of the walls for the provision of electrical outlets. The condition of the folding walls is poor as evidenced by peeling finishes and damaged end

plates. Some of the walls are leaning and do not appear to be easily movable. All of the walls incorporate sliding tracks at the top and bottom, the latter of which creates a tripping hazard at the floor level when the walls are open or wherever passage doors are located.

The gymnasium, located in the southwest corner of the 1931 addition, has a painted plaster ceiling with exposed painted beams. Fibrous rigid acoustical panels have been placed on various surfaces to dampen the noise level of the gym. The flooring is composed of a floating maple floor system that appears to be in good condition although it should be refinished at some point in the future. The gym level is approximately five feet below the First Floor level and, along with the loft of the 1971 addition, is one of two areas that are not on the same floor level and are therefore not accessible to the disabled.

The cafetorium, a large multi-use area in the northwest corner of the 1910 building, has an acoustical tile ceiling (2' x 4') and vinyl composition tile flooring. Bleachers at the perimeter of the room provide some flexible seating for special events. The adjacent kitchen area has a ceramic tile floor and appears to be suitable for use as a warming or catering kitchen only.

Toilet rooms for students are located in the east side of the 1931 wing at the First Floor level and the west end of the 1971 link at the Second Floor. Staff toilet rooms are located on the First Floor of the link. Toilet rooms for students include shower areas that appear to be greatly underutilized. Finishes in these rooms generally consist of ceramic tile floors and dados with painted upper walls and ceilings. A wooden platform has been provided on a temporary basis below the urinals in the Boy's Room to effectively reduce the mounting height of these devices. Handicap stalls in the toilet rooms do not meet current regulations and do not contain two grab bars on adjacent walls

Support spaces include a boiler room and electrical room, both of which are discussed in the Mechanical and Electrical Engineer's reports respectively. Staff offices are located at both floor levels of the 1971 link adjacent to the central entrance area corridor.

CODE ISSUES RELATED TO DEFERRED MAINTENANCE

Repairs to the Dover Caryl School will be regulated the Massachusetts State Building Code (780 CMR) and the Massachusetts Architectural Access Board Regulations (521 CMR). The building is no longer functioning solely as an elementary school but continues to contain compatible use groups. The current use groups are mixed and none of the new uses have contributed to a change in the hazard index as described in the current building code.

Any repairs to the existing building will be required to conform with the requirements of 780 CMR Chapter 34 "Repair, Alteration, Addition, and Change of Use of Existing Buildings." In general, maintenance must meet one of the following two provisions of the code:

> **780 CMR 3404.4 New Building Systems:** Any new building system or portion thereof shall conform to 780 CMR for new construction to the fullest extent practical. However, individual components of an existing building system may be repaired or replaced without requiring that system to comply fully with the code for new construction unless specifically required by 780 CRM 3408 [Structural Requirements for Existing Buildings].
>
> **780 CMR 3404.4 New Building Systems:** Alterations or repairs to existing buildings which maintain or improve the performance of the building may be made with the same or like materials, unless required otherwise by 780 CMR 3408. Alterations or repairs which have the effect of replacing a building system as a whole shall comply with 780 CMR 3404.3.

The Architectural Access Board Regulations (521 CMR) prescribe compliance with access requirements based on certain thresholds of expenditure, some of which are relative to the value of the facility. Any work that is performed must comply with the accessibility code. If an expenditure of $100,000 or more is made, then an accessible entrance and toilet room must also be provided. If renovation work amounts to 30% or more of the full and fair cash value of the building, then the entire building must be brought into compliance with 521 CMR. These expenditure limits apply to work performed over a three-year period.

The 2003 assessment report indicates that the value of the building, exclusive of land, is currently $2,708,600. Thirty percent of this value $812,580. An expenditure of this amount or more over a three-year period would require the entire facility to comply with the accessibility regulations. Expenditures of less than this amount but more than $100,000 will require the Caryl School to upgrade its current accessible toilets to conform with current codes, along with the provision of an accessible public drinking fountain and, if any are provided, an accessible public telephone.

Certain expenses related to the repairs of an existing building are exempt from contributing toward the $100,000 threshold. Items that can be exempt include: roofing, windows, masonry repairs, electrical, mechanical, plumbing, site utilities and landscaping.

PRELIMINARY COST MATRIX

Based on our assessment of existing conditions, we have made a preliminary determination regarding the extent of deferred maintenance repairs that should be performed. Preliminary budget amounts for repairs have been based on "order-of-magnitude" pricing in order to assist the Town of Dover with future planning. The budget amounts presented in this report are preliminary costs only and do not represent detailed cost estimates. The Architect, Structural Engineer, Mechanical Engineer and Electrical Engineer have determined the budget amounts in each category of work based on their areas of discipline.

Each of the repair items has been prioritized into one of three categories: *Critical, Short-Term* and *Long-Term*. Within each category, a range of costs from *Minimal* to *Optimal* has been established when appropriate. This range of costs reflects variations in work scope or in anticipated contractor prices for each work item.

The criteria used for assigning a priority for each work item was based on the following guidelines:

CRITICAL: *(1-2 Years)*	Items that pose a potential threat to the life safety of occupants; Items causing water infiltration of the exterior building envelope; Items requiring very frequent, ongoing maintenance.
SHORT-TERM: *(2-5 Years)*	Items that are not critical but should be addressed within 2-5 years; Items that will reduce frequent maintenance needs of the facility; Upgrades or improvements necessary for operation of the facility.
LONG-TERM: *(5-10 Years)*	Items that will likely require corrective work within 5-10 years; Items that will further reduce maintenance needs of the facility; Upgrades or improvements that will enhance the facility's operation.

The preliminary cost matrix that follows has repair items identified by work category in accordance with the general sixteen-division format of the Construction Specifications Institute (CSI). Each work item listed in the matrix springs from discussions about existing conditions in the text written by the Architect, Structural Engineer, Mechanical Engineer and Electrical Engineer. The Architect's report immediately precedes this section while the reports of other disciplines immediately follow the matrix.

Since neither an Architect nor an Owner has control over construction costs or project phasing, this report does not warrant or represent in any way that actual repair costs will not vary substantially from those stated in the preliminary cost matrix.

PRELIMINARY COST MATRIX

Recommended Work Item Description	CRITICAL (1-2 yrs.) Minimal	R	Optimal	SHORT-TERM (2-5 yrs.) Minimal	R	Optimal	LONG-TERM (5-10 yrs.) Minimal	R	Optimal	TOTALS Minimal	Optimal
2 Sitework											
Trenching & paving for elect. service conduit repairs	$6,600	C1a	$7,500							$6,600	$7,500
Excavation & paving at SW corner downspout area	$750	C7	$1,250							$750	$1,250
										$0	$0
Site Subtotal	$7,350		$8,750	$0		$0	$0		$0	$7,350	$8,750
3 Concrete											
E-7: Expose and patch crack in foundation	$2,500	C4	$3,000							$2,500	$3,000
I-6: Stop foundation leak at electrical conduit	$500	C1b	$750							$500	$750
										$0	$0
Concrete Subtotal	$3,000		$3,750	$0		$0	$0		$0	$3,000	$3,750
4 Masonry											
E-1: Replace rusted, jacked lintels				$45,000	S6a	$65,000				$45,000	$65,000
E-2: Clean, protect rusted lintels				$40,000	S6b	$70,000				$40,000	$70,000
E-3: Selectively repoint exterior masonry				$15,000	S6c	$20,000	$35,000	L2a	$40,000	$50,000	$60,000
E-4: Selectively reconstruct watertables				$30,000	S6d	$40,000				$30,000	$40,000
E-5: Re-tooth exterior diagonal step cracks				$2,000	S6e	$3,000				$2,000	$3,000
E-6: Replace damaged windowsills							$3,000	L2b	$4,500	$3,000	$4,500
E-8: Reconstruct deteriorated chimney				$45,000	S6f	$55,000				$45,000	$55,000
E-9: Repoint and partially reconstruct vent stack				$20,000	S6g	$30,000				$20,000	$30,000
I-3: Investigate, repair possible exterior wall crack							$500	L2c	$2,500	$500	$2,500
										$0	$0
Masonry Subtotal	$0		$0	$197,000		$283,000	$38,500		$47,000	$235,500	$330,000
5 Metals											
Clean and paint exterior metal stairs and railing				$2,500	S8a	$3,000				$2,500	$3,000
										$0	$0
Metals Subtotal	$0		$0	$2,500		$3,000	$0		$0	$2,500	$3,000
6 Wood											
I-1: Install proper lateral ties at tops of exterior walls				$5,000	S7a	$7,500				$5,000	$7,500
I-2: Laterally block ends of attic floor joists							$4,500	L3	$6,000	$4,500	$6,000
I-4: Reinforce split, sagging hip rafters				$10,000	S7b	$15,000				$10,000	$15,000
I-5: Reinforce upper common rafter connections				$2,500	S7c	$3,500				$2,500	$3,500
I-7: Repair, reinforce spitting glue-lam members				$40,000	S7d	$55,000				$40,000	$55,000
										$0	$0
Wood Subtotal	$0		$0	$57,500		$81,000	$4,500		$6,000	$62,000	$87,000

PRELIMINARY COST MATRIX

Recommended Work Item Description	CRITICAL (1-2 yrs.) Minimal	R	 Optimal	SHORT-TERM (2-5 yrs.) Minimal	R	 Optimal	LONG-TERM (5-10 yrs.) Minimal	R	 Optimal	TOTALS Minimal	 Optimal
7 Thermal & Moisture Protection											
Replace 1971 link roof & 1910 E/S slopes	$77,000	C5	$82,000							$77,000	$82,000
Repair rain leaders & restore integrity of roof drainage	$1,600	C6	$2,400							$1,600	$2,400
Replace rain leaders							$9,000	L1a	$15,000	$9,000	$15,000
Replace 1971 main roof & 1910 N/W slopes							$117,000	L1b	$130,000	$117,000	$130,000
Provide scuppers at 1931 flat roof; retape seams				$2,500	S5	$3,500				$2,500	$3,500
Replace roof over Gym exit areaway				$5,000	S8b	$6,000				$5,000	$6,000
										$0	$0
Thermal & Moisture Protection Subtotal	$78,600		$84,400	$7,500		$9,500	$126,000		$145,000	$212,100	$238,900
8 Doors & Windows											
Repair exterior doors and frames	$2,500	C3	$4,500							$2,500	$4,500
										$0	$0
Doors & Windows Subtotal	$2,500		$4,500	$0		$0	$0		$0	$2,500	$4,500
9 Finishes											
Exterior painting of soffit areas				$5,000	S9	$7,500				$5,000	$7,500
Interior painting of common areas							$25,000	L5	$30,000	$25,000	$30,000
Interior painting of tenant areas (By Tenant)										$0	$0
Provide vinyl tile in classrooms (By Tenant)										$0	$0
Replace carpet in 1971 addition (By Tenant)										$0	$0
Repair finishes in gymnasium							$12,000	N.R.	$15,000	$12,000	$15,000
Replace sagging & stained acoustical ceiling tiles	$250	C14	$350							$250	$350
Remodel electric/generator room							$6,500	N.R.	$8,000	$6,500	$8,000
Repair sections of broken vinyl tile flooring	$1,500	C13	$1,800	$1,500	S10	$1,800	$1,500	L4	$1,800	$4,500	$5,400
Make improvements to accessible toilet stalls	$7,500	C8	$10,000							$7,500	$10,000
Renovate common toilet rooms in 1931 building							$75,000	N.R.	$125,000	$75,000	$125,000
Miscellaneous finish repairs allowance	$3,000	C15	$5,000	$4,500	S12	$7,500	$7,500	N.R.	$10,000	$15,000	$22,500
										$0	$0
Finishes Subtotal	$12,250		$17,150	$11,000		$16,800	$127,500		$189,800	$150,750	$223,750
10 Specialties											
Remodel toilet partitions & accesssories in bathrooms							$5,000	N.R.	$8,000	$5,000	$8,000
Replace operable partitions (1/2 fixed + 1/2 operable)							$73,000	N.R.	$85,000	$73,000	$85,000
										$0	$0
Specialties Subtotal	$0		$0	$0		$0	$78,000		$93,000	$78,000	$93,000
11 Equipment											
Not Included										$0	$0
Equipment Subtotal	$0		$0	$0		$0	$0		$0	$0	$0
12 Furnishings											
Not Included										$0	$0
Furnishings Subtotal	$0		$0	$0		$0	$0		$0	$0	$0

PRELIMINARY COST MATRIX

Recommended Work Item Description	CRITICAL (1-2 yrs.) Minimal	R	Optimal	SHORT-TERM (2-5 yrs.) Minimal	R	Optimal	LONG-TERM (5-10 yrs.) Minimal	R	Optimal	TOTALS Minimal	Optimal
13 Special Construction											
Not Included										$0	$0
Special Construction Subtotal	$0		$0	$0		$0	$0		$0	$0	$0
14 Conveying Systems											
Not Included										$0	$0
Conveying Systems Subtotal	$0		$0	$0		$0	$0		$0	$0	$0
15a Mechanical / Plumbing & Fire Protection											
Replace water heater with unit to existing				$4,000	S1					$4,000	$0
Replace water heater with optimal units								N.R.	$15,000	$0	$15,000
Replace plumbing fixtures							$15,000	N.R.	$40,000	$15,000	$40,000
Provide dedicated water line to Kitchen							$5,000		$8,000	$5,000	$8,000
Add solids interceptor to Art Room sink	$2,000	C9	$2,000							$2,000	$2,000
										$0	$0
Plumbing & Fire Protection Subtotal	$2,000		$2,000	$4,000		$0	$20,000		$63,000	$26,000	$65,000
15b Mechanical / HVAC											
Replace boiler plant				$170,000	S4	$250,000				$170,000	$250,000
Replace piping in trenches	$35,000	C10	$35,000							$35,000	$35,000
Replace deteriorating valves				$1,500	S2	$7,500				$1,500	$7,500
Replace/repair exhaust fans				$12,600	S3	$17,300				$12,600	$17,300
Replace temperature control air compressor	$4,000	C11	$9,000							$4,000	$9,000
										$0	$0
HVAC Subtotal	$39,000		$44,000	$184,100		$274,800	$0		$0	$223,100	$318,800
16 Electrical											
Replace underground service conduits & conductors	$10,000	C1c	$12,500							$10,000	$12,500
Replace Empire 800 Amp main cubicle							$6,000	N.R.	$8,000	$6,000	$8,000
Replace distribution equipment, panels & feeders							$65,000	N.R.	$80,000	$65,000	$80,000
Replace Generator & Automatic Transfer Switch							$40,000	N.R.	$60,000	$40,000	$60,000
New GFI Receptacles, circuits & childproof receptacles	$8,000	C2	$10,000							$8,000	$10,000
Add receptacles & circuit wiring if desired (By Tenant)										$0	$0
Lighting Upgrades	$5,000	C12	$10,000	$20,000	S11	$40,000	$30,000	N.R.	$50,000	$55,000	$100,000
Fire Alarm Upgrade							$70,000	N.R.	$95,000	$70,000	$95,000
Voice/Data/Intercom (By Tenant)										$0	$0
										$0	$0
Electrical Subtotal	$23,000		$32,500	$20,000		$40,000	$211,000		$293,000	$254,000	$365,500
Construction Cost Subtotal	$167,700		$197,050	$483,600		$708,100	$605,500		$836,800	$1,256,800	$1,741,950
Pre-Design Contingency (estimated at 15%)	$25,155		$29,558	$72,540		$106,215	$90,825		$125,520	$188,520	$261,293
CONSTRUCTION COST TOTAL	$192,855		$226,608	$556,140		$814,315	$696,325		$962,320	$1,445,320	$2,003,243

PRELIMINARY COST MATRIX

Recommended Work Item Description	CRITICAL (1-2 yrs.) Minimal	R	Optimal	SHORT-TERM (2-5 yrs.) Minimal	R	Optimal	LONG-TERM (5-10 yrs.) Minimal	R	Optimal	TOTALS Minimal	Optimal
Approx. Cost per Sq. Ft. (Exist. Building Approx. 41,251 SF)	*$4.68*		*$5.49*	*$13.48*		*$19.74*	*$16.88*		*$23.33*	*$35.04*	*$48.56*
Related Costs											
Architectural & Engineering Fees	$28,928		$33,991	$75,079		$109,933	$83,559		$115,478	$187,566	$259,402
Permit Costs	$2,893		$3,399	$8,342		$12,215	$10,445		$14,435	$21,680	$30,049
Related Costs Subtotal	$31,821		$37,390	$83,421		$122,147	$94,004		$129,913	$209,246	$289,451
GRAND TOTAL	$224,676		$263,998	$639,561		$936,462	$790,329		$1,092,233	$1,654,566	$2,292,693
APPROX. AVG. COST OF DEFERRED MNTCE. PER YEAR	*$112,338*		*$131,999*	*$213,187*		*$312,154*	*$158,066*		*$218,447*	*$165,457*	*$229,269*
	over two-year period			*over three-year period*			*over five-year period*			*over ten-year period*	

NOTES:

1. These costs are based on preliminary estimates of recommended repairs and are intended to represent order of magnitude pricing only, not detailed cost estimates.
2. "Related Costs" indicated are also order of magnitude estimates and may be higher or lower than the amounts indicated.
3. These costs do not include any implications for possible future renovations or reconfigurations of the existing facility.
4. The costs budgeted above do not include any costs for site improvements nor recurring operating expenses for the facility.
5. The approximate square footage of the building has been taken from the 1971 drawings of the facility. Note that the assessment information indicates an area of 39,806 SF.
6. No allowances have been included for inflation or construction cost escalation.

TIME PERIODS:

CRITICAL: Work that should be undertaken within the next year or two; work that affects life safety, structural integrity and watertightness of the building.
SHORT TERM: Work that should be undertaken in the next two to five years.
LONG TERM: Work that should be undertaken (or that would be good to consider) within five to ten years.

BUILDING DEMOLITION OPTION:

The approximate cost to demolish the existing building is $300,000. This cost does not include any related sitework or removal of hazardous materials.

R - EXPLANATION OF RANKING NUMBERS:

The ranking numbers attempt to further prioritize the various items in each category for planning purposes.
The viability of this ranking system is limited due to the potential for changing conditions, budgetary constraints or shifting priorities.
Items are ranked in order of priority by numbering sequentially: C1, C2, C3, etc.
Items that are listed individually but share the same priority are labeled thus: C1a, C1b, C1c, etc. in their order of appearance.
N.R. = Not Ranked. This category applies to certain "Long-Term" items that may be optional depending upon changing conditions, building use and regulations.

CONSULTANT REPORTS

The Town of Dover retained three separate consulting engineers for this review of existing structural, mechanical and electrical conditions. Their separate reports are included in the following pages and are color-coded. Each consultant developed budget figures for work related to their specific area of expertise. The consultants' budget figures are included in the Preliminary Cost Matrix that immediately precedes these reports.

Structural Conditions (Yellow Paper)
Structures North Consulting Engineers, Inc.
April 25, 2003
7 Pages

Mechanical Conditions (Orange Paper)
S. L. Forte Engineering
April 3, 2003
6 Pages

Electrical Conditions (Purple Paper)
Johnson Engineering & Design, Inc.
March 14, 2003 / REV: April 28, 2003
6 Pages

STRUCTURES NORTH
CONSULTING ENGINEERS, INC.

April 25, 2003

Mills Whitaker Architects, LLC
PO Box 750089
Arlington, MA 02475

Attention: Don Mills

Reference: The Caryl School
Dover, MA

Dear Don:

On Friday, March 21, 2003 I visited the Caryl School in Dover, MA to make a general assessment of structure's condition. The following is a summary of my observations and recommendations.

General Description

The Caryl School consists of three structures that were constructed in three phases.

The Original School was built in 1910 as a two-story, Colonial Revival-style hipped roof structure with wood-framed floors and roof and perimeter walls of load-bearing, multi-wythe brick masonry with a concrete foundation. This structure burned, requiring that the first floor, attic floor, roof and eaves be rebuilt in 1971 using dimensional lumber and steel beam construction. The exterior walls have divided windows that are spanned by the brick wall construction on steel angle lintels. The tops of the walls were reconstructed following the fire with concrete block back-up and brick veneer. Sometime after the original construction (most likely in 1971) the entrance to the school which was once on the north wall, was closed in with new brickwork when the main entrance was relocated away from this structure.

The First Addition was built in 1931, also in the Colonial Revival-style with multi-wythe load bearing brick masonry perimeter walls and steel assisted, wood framed roof and interior construction. This addition included a truncated hip-roofed classroom section to the extreme south of the site, connected by a flat-roofed link to the original school. There are two brick masonry vent stacks and one brick masonry chimney, projecting from the roof. Like the original school, the exterior walls have divided windows that are spanned by the brick wall

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construction on steel angle lintels. This structure also suffered a fire, however, according to an engineering report dated January 10, 2000 and as confirmed by our visit, the members that were significantly charred were strengthened or replaced and the remainder of the structure was not critically affected.

The Second Addition was built in 1971 in the modernist style as a three-level structure of glued laminated timber and timber plank deck construction. This structure is constructed of glued-laminated timber frames projecting upward from a concrete foundation in an arched fashion and support a full second floor level, a partial third floor or mezzanine, and a flat roof, all of which hang from the curved timbers. There is an interior stairwell structure of load-bearing concrete block masonry which supports the interior of the structure and helps laterally brace the building, along with the brick-faced concrete block walls that run around the perimeter. Modifications to the original school (see above) were also made at this time.

Noted Conditions and Recommendations

During my survey, I noted the following items and have the following recommendations:

Original School Exterior-

- Several steel lintels that support brick masonry over window and door openings are sagging due to the combined effects of rusting, rust jacking, and under-design. *These should be removed along with the directly supported masonry and replaced with new, properly sized galvanized steel lintels and new masonry which is flashed and wept (item **#E-1**). Four of these occur on the east elevation and six occur on the north at the watertable level.*

- Other steel lintels have rusted but have not sagged or significantly jacked between themselves and the supported masonry. *The joint between the top of the flat legs of the lintels and the supported brickwork should be incrementally cut, the steel should be cleaned and rust inhibitive paint- protected, and the joints should be flashed and re-filled with mortar with weep holes (item **#E-2**). There are at least six such locations at the north elevation, two locations at the west elevation, and three locations at the south elevation.*

- Approximately one third of the east elevation's and one third of the west elevation's watertable along the bottom of the brick wall construction have weathered and the mortar joints have deteriorated. *The affected masonry should be cut and repointed with a compatible mortar (item **#E-3**).*

- The are also other areas where the mortar joints have deteriorated and are in need of cutting and repointing. These occur at three lintel-supported "jack

arches" on the north elevation and in other isolated patches scattered about the exterior *(under item #E-3).*

- There are also significant lengths of watertable that have deteriorated to the point that they must be totally re-built due to internal ice-jacking of water that has infiltrated the masonry through deteriorated joints. *Most of the north elevation's watertable must be rebuilt (item **#E-4**).*

Original School Interior-

- The lateral ties within the attic level at the east half of the north wall and the attic floor structure were installed in a bent fashion that negates their effectiveness. *These should be supplemented with new, properly installed ties (item **#I-1**).*

- None of the other walls on this structure have ties at the attic floor level. *These should be provided (under item #I-1).*

- There is no lateral bracing provided for the attic floor framing bearing on the interior support beam. Because of this, a large portion of the attic floor joists have rotated. *Solid blocking must be installed between the joists to stop this rotation (item **#I-2**).*

- There is a crack in the interior plaster finishes at the west edge of the westernmost window of the north wall at the basement level. This crack may indicate damage or shifting at the foundation. *The plaster should be removed here to expose the foundation construction and repairs made as needed (item **#I-3**). There are other cracks in the interior plaster wall and VCT floor finishes that appear to be due to normal building movements.*

First Addition Exterior-

- Several steel lintels are showing distress and need replacement with new, flashed galvanized steel lintels *(under item #E-1).* Two of these occur on the west elevation, two occur at the south elevation, five locations at the east elevation, and three locations at the link to the original school.

- Other steel lintels have only partially rusted and can be cleaned and re-protected *(under item E-2). There are two such locations at the north elevation, ten locations at the west elevation, two locations at the south elevation, and eighteen locations at the east elevation.*

- Much of the watertable masonry along the bottoms of the brick first floor walls has deteriorated and are in need of repointing *(also under item #E-3)*. This occurs along the entire west elevation, one third of the south elevation, and one half of the east elevation.

- The are also other isolated patches scattered about the exterior where the mortar joints have deteriorated and are in need of cutting and repointing *(also under item #E-3)*.

- A significant portion of the watertable is in need of partial or complete reconstruction *(also under item #E-4)*. This occurs over one half of the east elevation.

- There are diagonal step cracks in the exterior brickwork. These need to be sequentially excavated, grouted, and re-toothed with new brick to be knit back together *(item **#E-5**)*. *This occurs at two locations on the east elevation.*

- Several of the stone windowsills are damaged and must be replaced *(item **#E-6**)*. *One occurs at the west elevation and one occurs at the east elevation.*

- There is a foundation crack at the east elevation that must be excavated and sealed as water is entering the structure and damaging the interior *(item **#E-7**)*.

- The chimney at the north eave of the First Addition's main roof is severely deteriorated and there is a long vertical crack ascending most of its height. *The entire chimney needs to be reconstructed (item **#E-8**)*.

- The vent stack at the north end of the upper flat roof is in need of repointing *(also under item #E-3)*.

- The vent stack at the south end of the flat roof is in need of some repointing *(item #E-3)* and possibly some localized reconstruction *(item **#E-9**)*.

- The hips of the main roof sag noticeably more than is typical for this type of construction *(see item #I-4 below)*.

First Addition Interior-

The interior spaces are visibly free of any structural defects other than for the items noted below. There was a fire in 1972 that gutted a portion of this structure and smoke-damaged and minorly charred a portion of the structure that remained.

- The hip rafters that frame the roof are relatively small for a "ridge beam"-type roofing system and have deflected considerably, as is visible on the exterior. Also, these bear on the ridge beams that ring the flat upper roof with notched "birds mouth" cuts, below which a stress concentration occurs due to the condition's physical geometry. There is a check in at least one of these locations (the Southwest hip), that has weakened the member. *The ridge beams should be analyzed as "spanning members" and reinforced accordingly. The shear connections at the upper ends should be improved (item **#I-4**).*

- The common rafters are only toe-nailed to the hip rafters, which is usually satisfactory, except that at several locations gaps have formed between the common rafter ends and the hips. *These connections should be improved (item **#I-5**).*

- There is a wide crack in the interior finishes and an active foundation leak at the basement level along the east wall of the structure. The wide crack in what appears to be "Homasote" on the inside of the foundation corresponds to a narrower crack in the concrete foundation wall itself (the larger width of the interior crack was most likely created by repeated wet and dry cycles in the very expansive Homasote itself). *The foundation should be exposed and the crack filled with urethane grout which should successfully plug the leak (item #E-8). There are other cracks in the interior plaster wall and VCT floor finishes that appear to be due to normal building movements.*

- Water apparently enters the boiler room through the electrical conduit which passes through the foundation. *This condition should be corrected (item **#I-6**).*

Second Addition Exterior-

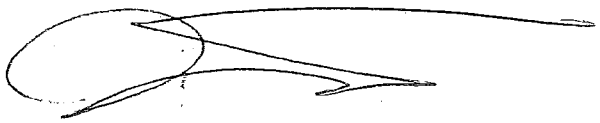
I noted no visible structural defects on the exterior of this structure.

Second Addition Interior-

- There are longitudinal splits along the glue-lines of the arched glue-lam members that support the roof and upper floor of the structure. These are the widest and most apparent in the members along the sides of the building and do not appear to be present in the members at the corners of the structure. This means that the splits may be stress-related, rather than just material related. *A thorough stress analysis of the affected members should be done to determine the proper level of reinforcement. At a minimum, the splits should be pinned and injected with epoxy (item **#I-8**).*

I trust that the preceding information will be useful in understanding deficiencies and improvement needs the Caryl School. Please contact me if you have any questions or if I may be of further assistance.

Respectfully yours,



Structures North Consulting Engineers, Inc.
John M. Wathne, P.E., President

PRELIMINARY COST MATRIX

Recommended Work Item Description	CRITICAL (1-2 yrs.) Minimal	 Optimal	SHORT-TERM (2-5 yrs.) Minimal	 Optimal	LONG-TERM (5-10 yrs.) Minimal	 Optimal	TOTALS Minimal	 Optimal
3 Concrete								
E-7: Expose and patch crack in foundation	$2,500	$3,000					$2,500	$3,000
I-6: Stop foundation leak at electrical conduit	$500	$750					$500	$750
							$0	$0
Concrete Subtotal	$3,000	$3,750	$0	$0	$0	$0	$3,000	$3,750
4 Masonry								
E-1: Replace rusted, jacked lintels			$45,000	$65,000			$45,000	$65,000
E-2: Clean, protect rusted lintels			$40,000	$70,000			$40,000	$70,000
E-3: Selectively repoint exterior masonry			$15,000	$20,000	$35,000	$40,000	$50,000	$60,000
E-4: Selectively reconstruct watertables			$30,000	$40,000			$30,000	$40,000
E-5: Re-tooth exterior diagonal step cracks			$2,000	$3,000			$2,000	$3,000
E-6: Replace damaged windowsills					$3,000	$4,500	$3,000	$4,500
E-8: Reconstruct deteriorated chimney			$45,000	$55,000			$45,000	$55,000
E-9: Repoint and partially reconstruct vent stack			$20,000	$30,000			$20,000	$30,000
I-3: Investigate, repair possible exterior wall crack					$500	$2,500	$500	$2,500
							$0	$0
Masonry Subtotal	$0	$0	$197,000	$283,000	$38,500	$47,000	$235,500	$330,000
6 Wood								
I-1: Install proper lateral ties at tops of exterior walls			$5,000	$7,500			$5,000	$7,500
I-2: Laterally block ends of attic floor joists					$4,500	$6,000	$4,500	$6,000
I-4: Reinforce split, sagging hip rafters			$10,000	$15,000			$10,000	$15,000
I-5: Reinforce upper common rafter connections			$2,500	$3,500			$2,500	$3,500
I-7: Repair, reinforce spitting glue-lam members			$40,000	$55,000			$40,000	$55,000
							$0	$0
Wood Subtotal	$0	$0	$57,500	$81,000	$4,500	$6,000	$62,000	$87,000
STRUCTURAL COST SUBTOTAL	$3,000	$3,750	$254,500	$364,000	$43,000	$53,000	$300,500	$420,750

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April 3, 2003

Mr. Donald W. Mills
Mills Whitaker Architects, LLC
P.O. Box 750089
Arlington, MA 02475

Re: Caryl School

Dear Don:

We provide, herein, the following building assessment report for the Caryl School, Dover, MA.

Building Description

The Caryl School is located on Springdale Ave. in the Town of Dover, MA. The original school was constructed circa 1910 and was expanded in 1931. A renovation and addition in 1971 brought the building to its current size and configuration. The building consists of a Ground floor, First floor, Mezzanine and Attic. The total square footage of the building is now 41,300 sq.ft.

Assessment Objectives

Review the existing conditions of the mechanical systems in the building and identify the cost of repairs and improvements that may be required over time. The intent is to provide the Town with a deferred maintenance plan for the future utilization of the building, while retaining the current occupancy classification.

HVAC Systems:

General Discussion

The building is heated via unit ventilators with some perimeter fin-tube radiation in the classrooms, and convectors in corridors, stairs and similar locations. As the building was designed for use as a typical school, the use of unit ventilators is necessary and appropriate in providing the needed volume of fresh air. Other uses with a lower population density, if contemplated, may not require such high levels of fresh air. The correct volume of ventilation air should be determined, based on the projected use, since a reduction in overall operating expenses could be realized. It should be noted that, while substantial portions of the building are now

unoccupied, the unit ventilators are operating to maintain heat in the building. There is an energy penalty for operating these units when the room is unoccupied due to the introduction of fresh air normally needed for 30 people. If, in rooms that have both unit ventilators and baseboard radiation, as some do, the fans could be manually turned off, there would be energy savings owing to the unnecessary heating of fresh air.

Exhaust fans, which are part of the ventilation system, are located on the roof or in the attic and are reported to be in poor condition. Replacement is necessary for many of these fans; however, ventilation requirements need to be evaluated when selecting replacements.

The existing boiler plant provides hot water for distribution throughout the facility. Hot water is supplied to the unit ventilators, radiation and convectors. The two existing boilers appear to pre-date the 1971 renovation. These boilers are cast iron, sectional type (16 sections), model 44 Mills type as manufactured by H.B. Smith and are provided with Ray Burner Co. burners rated for 2.5 million to 4.18 million Btu capacity. These boilers will need to be replaced in the near future, as they appear to be at least 50 years old and may have been converted from steam to hot water in 1971. The burners were likely new in 1971. The boilers are oil fired utilizing no. 2 fuel. There are two oil tanks located underground adjacent to the boiler rm., one tank is 6000 gallons and is dedicated to the heating system, the other tank is 500 gallons and is dedicated to the diesel generator. A leak detection system has been provided for the storage tanks.

Hot water circulating pumps are scheduled as 230 gpm and 63 ft. head on the 1971 renovation drawings. Two pumps are provided, one standby and one on-line. These pumps are a part of the overall boiler plant along with the normally required expansion tank(s), air separators, oil pumps, breeching, piping, controls, PRV and water make-up supply.

Controls for the HVAC system are pneumatic type, the original system vendor was Powers, now owned by Siemens Tech. All unit ventilators, baseboard radiation, convectors and/or other terminal devices are provided with local thermostats within the spaces that they control. The existing air compressor on the system may be in need of replacement in the near future.

HVAC Recommendations

Unit ventilators

These units are generally in good condition and have received regular maintenance in the past. Recently maintenance has been neglected. These units require, once a year; replacement of filters, grease bearings, clean coils and inspect and verify operation of dampers and valves. Occasionally the replacement of a motor will be necessary; however with regular maintenance these units can continue to be dependable. Consider replacement of these units on a case by case basis. We would expect that occasionally a unit could require replacement.

Boilers

The Boiler Rm. or Boiler Plant encompasses all the required components that make up the hot water generating system. The replacement of the boilers, as recommended below, assumes that all components i.e. pumps, piping, expansion tank(s), etc. will be replaced.

The existing boilers have exhausted their useful life. The replacement of these boilers with units of higher fuel efficiency and lower maintenance requirements will reduce the overall operating

and maintenance cost for the facility. We feel that it would be more beneficial to do this as soon as possible; however, due to the cost of this work we recognize that it may take a number of years to obtain the funds to make this upgrade. We are identifying this as short-term upgrade; however we do not expect that the failure of the boilers is eminent. The minimal category assumes that one boiler will be replaced. The optimal category assumes that both boilers will be replaced.

Heating piping

Some of the heating distribution piping runs in trenches throughout the building. It has been found that piping in the trenches has been subject to accelerated corrosion and sections have had to be replaced in the recent past. The piping that has been replaced was found to be in good condition on the interior, but has been attacked on the exterior. Therefore, it can be expected that eventually all of the piping within the trenches will need replacement. We observed some deterioration on valves in other areas of the system; however, this is not enough of a concern to warrant extensive replacement of piping, valves, etc. in the system. We recommend that only the piping that is in the trenches be replaced, and we classify this as a critical term item. The replacement of deteriorating valves as observed can be handled as on-going maintenance or scheduled as a short-term item, we have included a cost under this category. The minimal approach is to replace valves as necessary, the optimal approach is to replace all affected valves.

Related to heating piping is the aspect of pipe insulation. Any new piping installed will require insulation according to the current provisions of the Mass. Building Code – Chapter 13 Energy Conservation. It is our understanding that the existing pipe insulation has been previously evaluated for asbestos and was appropriately abated in 1990. The indicated costs for replacement of piping includes the cost of new pipe insulation.

Exhaust fans

Exhaust fans either serve toilets, or provide exhaust in the classrooms. There are six roof mounted fans and three 'vent set' fans in the attic. The attic fans appear to serve the ventilation exhaust for the classrooms in the original portion of the building. All fans are considered to be in poor condition and are recommended to be replaced. As we are not aware of any fans that are not operating, we have identified the replacement of these fans as a short-term item. The minimal category assumes that the roof mounted fans are to be replaced while the attic mounted fans can more readily be repaired (bearings, motors, belts, etc.). The optimal category assumes replacement of all fans.

Controls

Components of the control system include thermostats, automatic valves, dampers, PE switches, connecting tubing and the main air supply, which includes the compressor, air dryer and regulators. With the exception of the compressor and air dryer we are not recommending replacement of the control system components; however, on an as needed, or case by case basis it may be necessary to do so. This is expected within the normal maintenance needs of the system. Since the main enemy of the control system is dirt and moisture, we feel that an optimally operating system requires a clean and dry air supply. To this end we are recommending replacement of the air compressor and air dryer. We have identified this as a critical item because of some ongoing difficulties that the maintenance staff is experiencing with the existing compressor. The minimal approach would be to replace only the tank-mounted compressor. The optimal approach would be to replace the whole unit.

Plumbing Systems

General Discussion

Sanitary sewer drainage runs by gravity from the building to the septic system to the rear of the site. As the system flows by gravity, there are no mechanical equipment, and associated maintenance requirements, with which to be concerned. The interior roof drainage system flows by gravity East of the site to Centre St. There are no reported problems with this system except that blockages of the roof drain inlets occur when not regularly inspected and cleaned. Keeping the drains free and clear on a ballast roof may be difficult; however, it is important to do so due to the potential damage from pooling of water on the roof. There is no evidence of interior roof drain piping leakage within the building. In general drainage piping is of cast iron material, with an expected life for such piping in the range of 70 – 80 years.

Domestic water is supplied to the building from the Town's water main. This is also a system that does not require maintenance of mechanical equipment, as water pressure from the town's supply suffices. Hot water is generated by an 80-gallon electric water heater located in the Boiler room. Hot water distribution provides a single temperature throughout the building and includes a recirculation line. The large hot water users are; the Warming Kitchen, and the Shower facilities. Water temperature in the kitchen should be higher (140 F minimum is required for sanitizing) in order to meet health codes. Due to energy code restrictions water temperature can not be simply raised. Only the Kitchen should receive the higher temperature water. Therefore, running a dedicated hot water supply line from the Boiler rm. to the Kitchen would be necessary.

Our inspection of toilet room facilities indicated that the plumbing fixtures are generally in good to very good condition. If desired, we have identified two possible modifications/improvements. Firstly, mounting heights of plumbing fixtures may not meet future use and/or accessibility (i.e. handicapped) requirements. Secondly, fixtures do not meet the current water saver requirements, this should only apply to the flush valve type fixtures, which are the waterclosets and urinals. The lavatories are provided with self-closing faucets that do provide a water saver feature. Water saver requirements may be "grandfathered", however; if full occupancy of the building is contemplated, they may prove to be economically advantageous.

Plumbing Recommendations

Water Heating

Replacement of the existing, storage type, 80 gal., electric water heater is expected to be frequent with this type of unit – approximately every 5 – 7 years. This type of unit is an expedient replacement for the original (1970's) unit, which was sized to provide sufficient hot water for the kitchen and showers. We are indicating the replacement cost of the existing unit in the short-term time frame, under the minimal category. Under the optimum category, we are recommending the replacement of the existing water heater with one sized for the actual connected load (which includes the showers and kitchen), and one, which will have a greater longevity (10-15 years). Since the use of the showers and kitchen may not be immediate, the timing of this recommendation is dependent on the use of the building, we have therefore indicated that this be a long-term time frame rather than short-term.

A dedicated hot water supply and return line to the kitchen is needed to provide the proper water temperature for cleanliness and sanitizing. This supply line typically provides 140 degree water as is required by health Codes. The time frame for the installation of this work is dependent on the time frame for use of the kitchen. We are identifying this in the long-term time frame. The minimal solution would be to provide a small pipe (3/4" size) for the pot wash spray unit. An optimal solution would be to size the pipe for a potential future dishwasher (approx. 1" or 1-1/4" size).

Plumbing fixtures

Replacement of existing urinals and waterclosets with new water saver type fixtures could be classified as a short-term or a long term work item. The deciding factor may be the overall projected water usage based on the partial vs. full occupancy of the building. This is unclear at this time and we have therefore classified this recommendation as a long-term work item. The minimal solution is to replace the fixtures while retaining the existing rough-ins, carriers and associated piping (thereby maintaining the existing mounting heights). The optimal approach is to replace the fixtures and the rough-ins, this allows resetting the mounting heights as appropriate to meet architectural programmatic requirements.

Miscellaneous

The sink in the existing Art Room should be provided with a solids interceptor. The interceptor will protect the drainage system from the possibility of foreign objects entering the drainage system. We have identified this as a critical term item since the cost is relatively small.

We noticed that the bubbler in the cafeteria is out of adjustment, making it difficult to use. This is a simple adjustment and can be performed by the maintenance staff.

If you have any questions or require further information, please don't hesitate to call.

Very truly yours,

Steven L. Forte P.E.
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cc:
file

	Critical		Short-Term		Long-Term		Total	
Plumbing	Minimal	Optimal	Minimal	Optimal	Minimal	Optimal	Minimal	Optimal
Replace water heater			4000			15000	4000	15000
Replace Plumbing Fixtures					15000	40000	15000	40000
Run dedicated water line to kitchen					5000	8000	5000	8000
Add solids interceptor to Art Rm. sink		2000						2000
HVAC								
Replace boiler plant			170000	250000			170000	250000
Replace piping in trenches		35000						35000
Replacement of deteriorating valves			1500	7500			1500	7500
Replace/repair exhaust fans			12600	17300			12600	17300
Replace control air compressor	4000	9000					4000	8000
Total Plumbing & HVAC	4000	46000	188100	357800	20000	48000	212100	382800

JOHNSON ENGINEERING AND DESIGN, INC.

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(Revised April 28, 2003)
March 14, 2003 JE-896

Caryl Building
Dover, MA

Analysis Report

Description

The Caryl School Building, located at 4 Springdale Avenue, Dover, MA, is a brick, concrete, wood and steel building, which was used formerly as a school but now serves as a multi-use facility. The original school of approximately 8,750 sq. ft. was constructed in 1910. The first addition of approximately 13,650 sq. ft. was made in 1931. The last addition of approximately 18,900 sq. ft. was made in 1971. The total square footage of the building is approximately 41,300 and consists of two levels throughout with a small mezzanine above the library.

Objectives

Review all of the building's electrical power, lighting and fire alarm system for deferred maintenance needs and any other deficiencies. Make recommendations for remedial work, which is critical (1-2 years), short term (2-5 years) and long term (beyond 5 years), make recommendations that can be planned for during future renovations to meet code requirements and/or which may be desirable by the town.

Review

A. Power

- Service - The existing service to the building is currently an underground feeder from an existing pole mounted transformer bank, to a junction box located in a conference room adjacent to the main electric room. From this point, the service feeds a switchgear in the adjacent room. The electric meter is located in the second floor janitor's room. The size of the service is 800 amps, 120/208 volts, 3 phase, 4 wire.
- Service Equipment - There is an existing Empire Electric Manufacturing 800 amp main circuit breaker and CT compartment located on a wall in the electric room. The disconnecting means then feeds an 800 amp Empire Electric Manufacturing Distribution Panel.

- Distribution Equipment - The 800 amp panel MDP has eight (8) distribution circuit breakers:

  1. A 3 pole, 90 amp circuit breaker feeds panel P1.
  2. A 3 pole, 100 amp circuit breaker feeds panel L3.
  3. A 3 pole, 150 amp circuit breaker feeds panel L4.
  4. A 3 pole, 150 amp circuit breaker feeds panel P2.
  5. A 3 pole, 100 amp circuit breaker feeds panel L2.
  6. A 3 pole, 100 amp circuit breaker feeds new computer panel.
  7. A 3 pole, 150 amp circuit breaker feeds panel L1.
  8. A 3 pole, 200 amp circuit breaker feeds panel DE via the automatic transfer switch.

  All panels, with the exception of the new computer panel, are made by Empire Electric Manufacturing. The new computer panel is a Square D panel. In addition to the above, panel DE also feeds panels EA, EB, EC and ED. These panels are all manufactured by Empire Electric Manufacturing.

- Emergency Generator - The existing generator is 60 KW/75 KVA diesel generator, manufactured in December 1971 by Demco Products, Inc. It is rated at 200 amps, 120/208 volts, 3 phase, 4 wire. The generator has a day fuel tank and pump located in a closet in an adjacent conference room. The main tank is located outside the building, underground. The generator, automatic transfer switch (ATS) and emergency panels are located in the Main Electric Room. The generator feeds emergency power and lighting throughout the building via panels DE, EA, EB, EC and ED.

- Space About Equipment - In most cases, the clear space requirements in front of electrical equipment are compromised by boxes, storage material or other electrical equipment.

- Branch Circuits & Receptacles - In general, there is a lack of receptacles through all classrooms. In some areas of the 1971 addition, receptacles may be mounted above current ADA height requirements. It also appears as though the receptacles in the daycare areas are not childproof types. Most circuits which could be visually inspected appear to be installed in conduit, MC or bx cables. Wiring can be reasonably deduced to be between 30-50 years old. There are no gfi receptacles in the elevator machine room, the restrooms, kitchen and above counters in various areas.

B. Lighting

Lighting, for the most part, is up to date fluorescent fixtures, after a recent power company energy audit and retrofit. There are a few closets and storage areas that still have older fluorescent fixtures. There is local switching in each room, although not always conveniently located. The exterior of the building has HID fixtures on the side and rear of the building, controlled by time clock. There are several non-illuminated exit signs throughout. In addition, there are exit signs that are part of the fluorescent fixtures, which offer general lighting. All emergency lighting is backed up by generator power.

There is one (1) double head battery powered emergency light in the rear stairwell. There are no elevator cab light circuits.

C. Fire Alarm

The current fire alarm system is a 12-zone conventional system manufactured by FCI Corp. The main fire alarm panel is located in the main electric room. The system is connected to a third party monitoring company, which contacts the fire department via a digital dialer which is also located in the electric room, adjacent to the telephone backboard. The entire building has smoke detection, heat detection and pull stations in close proximity to exits. There are standard horn/light audiovisual units scattered about. There are no audio or visual devices in any of the restrooms. Recently door hold open devices have been installed on selected doors, as per fire department requests. It is impossible to comment on conditions or type of wiring used for the fire alarm design, as all wiring was concealed.

D. Voice/Data/Intercom

The existing building has a main telephone backboard located in the main electric room. There are phones located in most classrooms, in an intercom/clock/telephone console. There are no data outlets in any of the classrooms. There appears to be voice and data jacks located in the first and second floor offices.

Conclusions/Remediation

Let me say that, as the building stands today, it is exempt from meeting current code requirements, as it is grandfathered and it met code requirements at one time. If there are no significant renovations planned and if the use of the facility does not change, there is no need to do any remedial work. However, this being said, the following are our recommendations:

A. Power

- Service - The service for this building, based on a square footage of 41,300 sq. ft., should be 800 amps (41,200 x 6W/sq. ft. ÷ $\sqrt{3}$ x 208 = 688 amp, next size service) for a non-airconditioned building. Therefore, the existing service size is acceptable and does not need to be changed. The grading of the existing underground service appears to have been sloped toward the building and/or has been compromised underground, as water infiltrates the school through the junction box located in the conference room adjacent to the main electric room. The cause of this condition has to be immediately identified and corrected.
- Service Equipment - The existing 800 amp main circuit breaker and CT compartment section has outlived its useful life. Although this equipment is functional, the Empire Electric Company is no longer in business and replacement parts are going to be very hard, if not impossible, to find. We would suggest that this equipment be replaced in about 5 years or sooner, if electrical needs change.

- Distribution Equipment - The 800 amp distribution panel, along with panels P1, L3, L4, P2, L2, L1, DE, EA, EB, EC and ED, all manufactured by Empire Electric Company, have exceeded their useful life. For the same reasons as stated above, the panels should be replaced in about 5 years or sooner, if electrical needs change.

- Emergency Generator - The existing generator has outlived its useful life. In addition, Demco Products, Inc., the manufacturer, is no longer in business. This generator has been and will continue to be hard to maintain. The size of the generator will have to be determined based on anticipated load. When the generator is replaced, it will need to be located separately from the room containing normal electrical power since this violates current codes. Since space is limited, the generator should be located outside the building in a sound attenuated weatherproof enclosure, with double wall base mounted tank. This will eliminate some issues with space about equipment.

- Space About Equipment - For safety reasons, all boxes and materials in front of all electrical panels, disconnects and equipment should be removed. During the replacement of panels, rearrangement and consolidation of sub-electric rooms should be addressed. The code violation which exists with the generator in the same room as the electric equipment, as well as the pump located in a closet that is not 2-hour rated, and emergency panels should be addressed. The generator and pump issues could be solved by a new generator as indicated under the "Generator" section. This would leave the ATS switch, which could be replaced and put in a 2-hour rated closet, along with replaced panel DE. All of the remaining emergency panels EA, EB, EC and ED could be relocated upon replacement and consolidated into an area, which could be 2-hour rated. All emergency circuits could then be spliced and brought to the new emergency sub-electric room. The autodialer for fire alarm/security is encroaching on the clear area of the main service cubicle. This has to be relocated in the long term.

- Branch Circuits & Receptacles - In general, gfi circuits/receptacles need to be installed in all restrooms, all areas of classrooms with counters, especially counters with sinks. Gfi also have to be installed in kitchen and at areas of mechanical equipment. Gfi's are needed in elevator machine room and within elevator shaft, if there is not one there now. We recommend all gfi receptacle work be done immediately. There is an immediate need to replace receptacles in the daycare areas with childproof devices. The lack of receptacles and their spacing within classrooms is not a violation, but is unsuitable for a modern school environment with the current technology requirement. This is a long term upgrade, depending on tenant requirements. We would suggest that, as new circuits or receptacles are added, they be done in EMT conduit or MC type cable. Eventually, all older circuits should be replaced over the long term.

B. Lighting

The present fluorescent lighting is acceptable as it has been recently retrofitted to make it more energy efficient. The lighting also appears to provide adequate light levels. The remainder of older T12 type fluorescent and all incandescent fixtures should be changed for energy efficiency and to limit required lamp inventories. This should be done in the short term. The switching within areas needs to be rethought and properly laid out to

allow easy access at entrances to all rooms. In addition, some areas such as restrooms, storage areas, mechanical spaces...etc. should be fitted with motion sensory switches to further cut energy use. It may also be desired to have a master switch, whereby all lighting can be turned on or off at beginning and end of day.

The type of emergency and exit lighting (part of fluorescent fixture) is acceptable. However, it may not meet current ADA height requirements. In addition, the exit light relies on the fluorescent fixture lamp to provide illumination of the exit letters. If you lose a lamp or fixture for any reason, then you have likewise lost your exit sign as well. We would suggest separate illuminated exit signs at all exit doors and in all egress paths.

Furthermore, we would suggest providing emergency lighting of two (2) fixtures per bathroom to meet code. We could not readily determine if this is the current state of the fixtures. If it is not the current state, then it needs to be immediately rectified.

C. Fire Alarm

The present fire alarm panel is a 12-zone FCI Panel with four (4) zones used. This panel is still usable. In the future, if substantial renovations are undertaken, an addressable system would be better suited for this building. The location of system detection devices are in all areas and provide excellent coverage of the building. New door hold open devices were recently installed on selected doors, per fire department request. The pull stations do not meet current ADA requirements, nor do the audio/visual and visual only alarm devices. All restrooms and conference rooms require strobe only devices. All other areas should be covered by horn/strobe devices. We believe that the existing panel should be able to accommodate new audio/visual and visual only devices. We would normally recommend that these be added and replaced immediately, as well as new pull stations placed at ADA heights and within 5' of all exit doors. However, since the existing system has been approved for the current use, we have budgeted for these items in the long term category. The system should also be checked to verify elevator recall, and if not present, it should be added.

D. Voice/Data/Intercom

The voice and data cabling to the offices, in most areas, is hanging outside the walls and from the ceiling. This should be concealed and protected, although it is not a requirement. In addition, with the growing use of technology, all classrooms should be outfitted with multiple voice/data locations, for computer use by teachers and students. Once again, this is not a requirement. The clock/intercom-telephone console, which is located in each classroom, is outdated and much of the head end equipment is missing and/or old and not functioning. If the school were to be used as such, this system would require extensive repair or replacement. Once again, it is not a requirement for code compliance.

16 Electrical	Critical ($)		Short Term ($)		Long Term ($)		Total ($)	
	Minimal	Optimal	Minimal	Optimal	Minimal	Optimal	Minimal	Optimal
◆ Replace underground service conduits & conductors (no trenching)	10,000	12,500					10,000	12,500
◆ 800 amp main cubicle					6,000	8,000	6,000	8,000
◆ Distribution equipment & feeders including panels MP, P1, P2, L1, L2, L3, L4, DE, EA, EB, EC & ED					65,000	80,000	65,000	80,000
◆ Generator & ATS (does not include new 2-hour rated room)					40,000	60,000	40,000	60,000
◆ New gfi receptacles, circuits and child proof receptacles	8,000	10,000					8,000	10,000
◆ Added receptacles and new circuit wiring (depending on use – by tenant)			0	0	0	0	0	0
◆ Lighting	5,000	10,000	20,000	40,000	30,000	50,000	55,000	100,000
◆ Fire Alarm					70,000	95,000	70,000	95,000
◆ Voice/Data/Intercom (by tenant)					0	0	80,000	120,000
TOTAL	**23,000**	**32,500**	**20,000**	**40,000**	**211,000**	**293,000**	**254,000**	**365,500**
PER SQUARE FOOT	**0.56**	**0.79**	**0.49**	**0.97**	**5.10**	**7.10**	**6.15**	**8.85**

APPENDIX A
EXISTING CONDITIONS PHOTOGRAPHS

EXTERIOR

General Views

P1010355.JPG

North Elevation of 1971 Addition;
Main Entrance to Facility in Center of 1971 Link

EXTERIOR

General Views

P1010354.JPG

North Elevation of Original School of Circa 1910;
Original Main Entrance to Facility was in Center of Building

EXTERIOR

General Views

P1010386.JPG

Southeast Corner of 1971 Addition

EXTERIOR

General Views

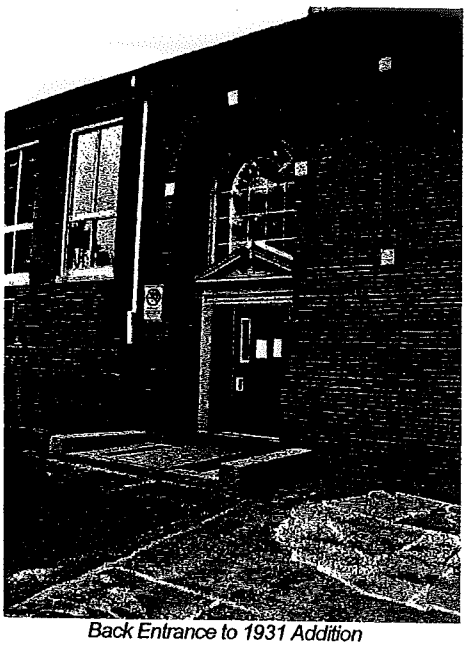
P1010385.JPG

Rear Yard Area of School;
1931 Addition to Left - 1971 Addition to Right

EXTERIOR

General Views

P1010342.JPG

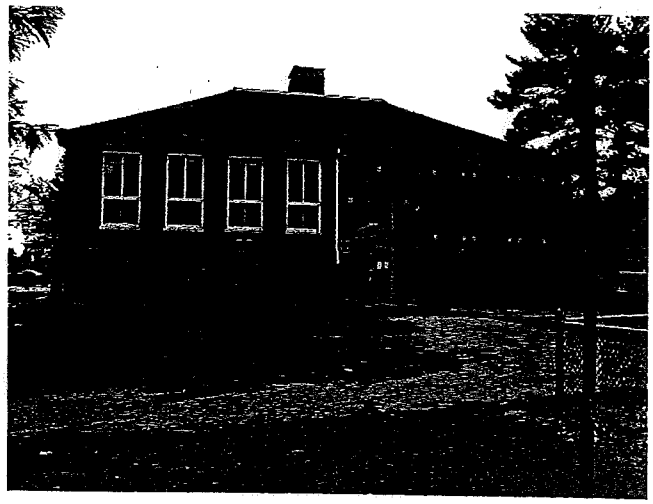


Back Entrance to 1931 Addition

EXTERIOR

General Views

P1010390.JPG

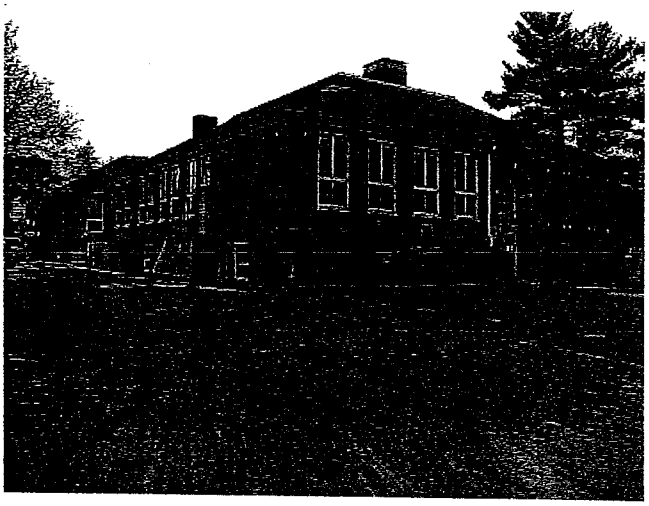


South Elevation of 1931 Addition

EXTERIOR

General Views

P1010391.JPG



Southwest Corner of 1931 Addition

EXTERIOR

General Views

P1010347.JPG

West Elevation of School;
1910 Building at Left - 1931 Addition at Right

EXTERIOR

General Views

P1010346.JPG

Second Floor Exit Door & Stair from Classroom on West Elevation of 1931 Addition; Enclosure Below Stair Covers Exit from Gymnasium

EXTERIOR

General Views

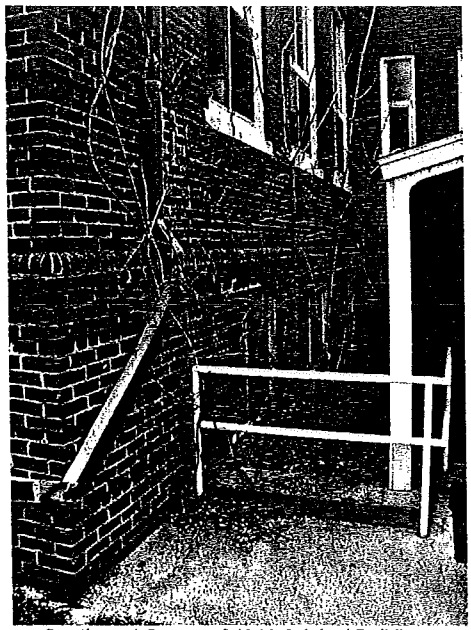
P1010345.JPG

Detail of Exit Stair at West Elevation of 1931 Addition; Roof of Gymnasium Exit is Below Stair

EXTERIOR

General Views

P1010348.JPG

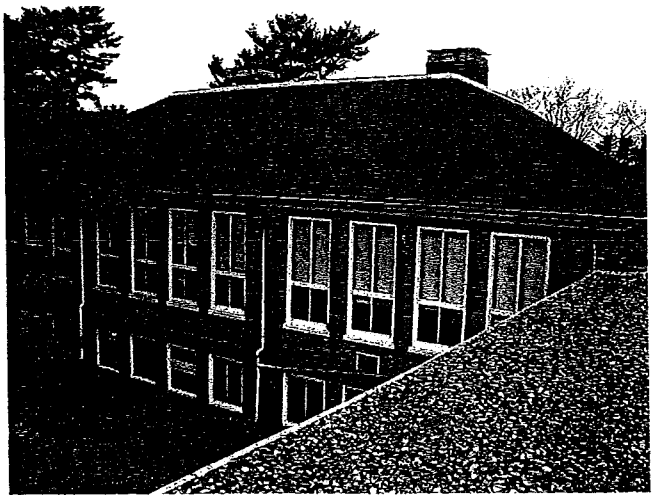


Southwest Corner of 1910 Original Building; Overgrown Vegetation in Link Yard Area

EXTERIOR

General Views

P1010376.JPG



East Elevation of 1931 Addition from Roof of 1971 Link

EXTERIOR

General Views

P1010387.JPG

Intersection of 1931 Addition (left) and 1971 Addition (right)

EXTERIOR

General Views

P1010322.JPG

Northwest Corner of 1971 Addition Adjacent to Entrance

EXTERIOR

General Views

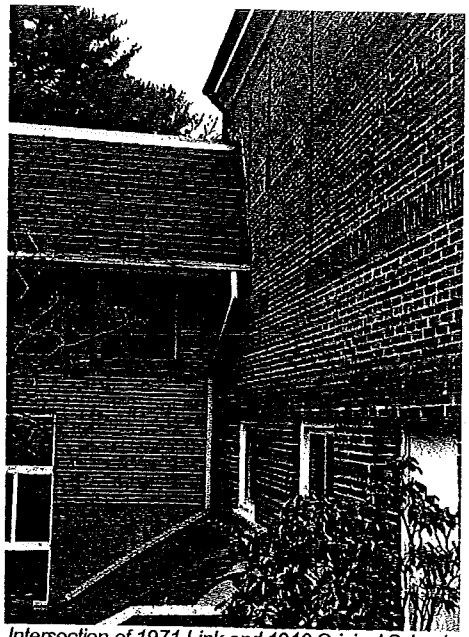
P1010323.JPG

Central Entrance to Facility on North Side of 1971 Link

EXTERIOR

General Views

P1010324.JPG

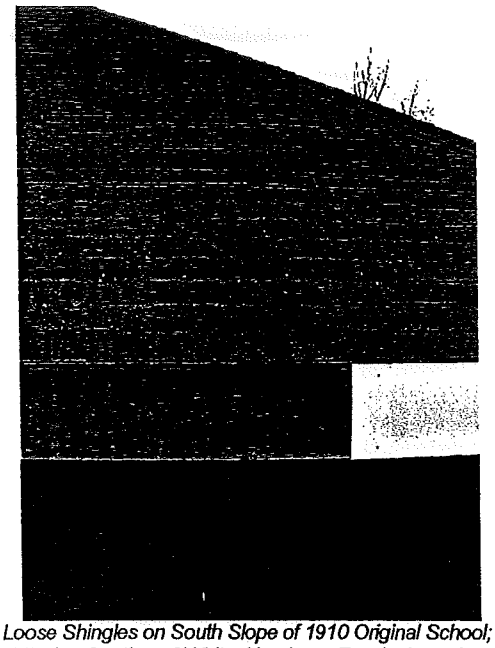


Intersection of 1971 Link and 1910 Original School Adjacent to Entrance

EXTERIOR

Roofing & Drainage

P1010357.JPG

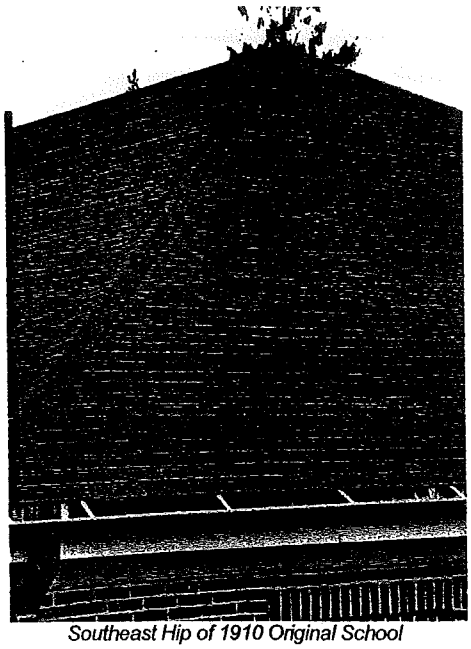


Loose Shingles on South Slope of 1910 Original School; Missing Section of White Aluminum Fascia Covering

EXTERIOR

Roofing & Drainage

P1010373.JPG

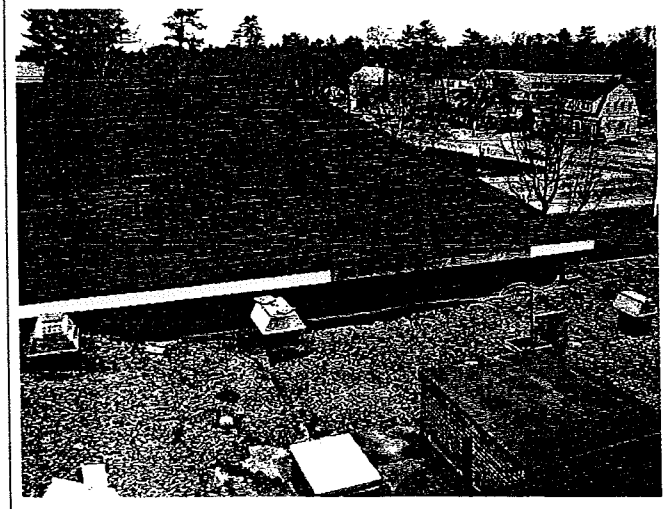


Southeast Hip of 1910 Original School

EXTERIOR

Roofing & Drainage

P1010365.JPG



1971 Link Roof in Foreground of 1910 South Roof Slope

EXTERIOR

Roofing & Drainage

P1010360.JPG

Detail of 1971 Link Roof Intersection with 1910 South Slope

EXTERIOR

Roofing & Drainage

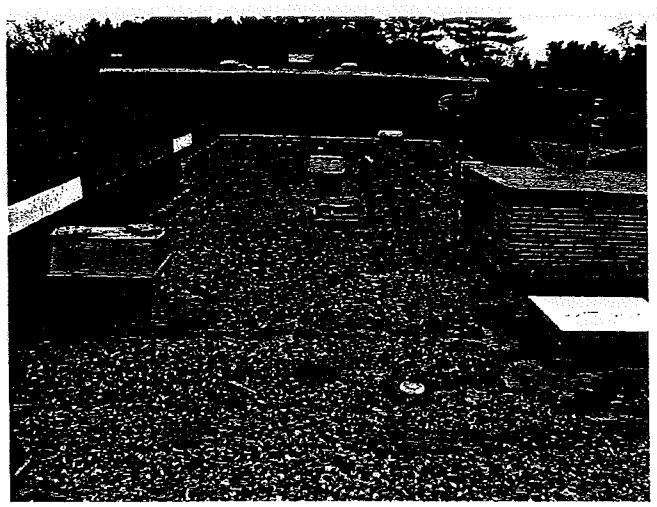
P1010358.JPG

Ballasted Membrane Roofing at 1971 Link

EXTERIOR

Roofing & Drainage

P1010359.JPG

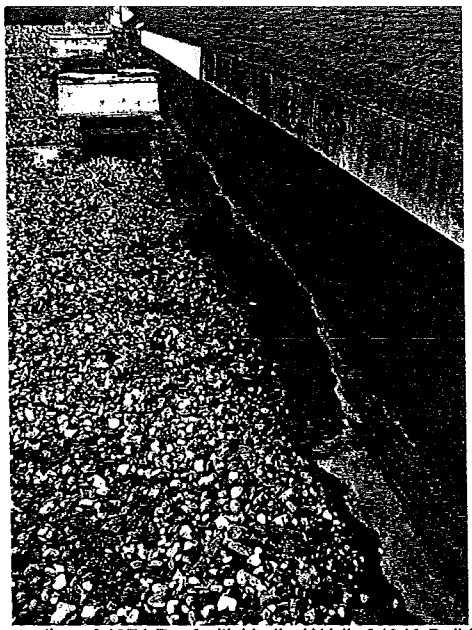


Looking East Across 1971 Link Roof;
Ballasted Membrane over Built-Up Tar & Gravel Roofing

EXTERIOR

Roofing & Drainage

P1010377.JPG

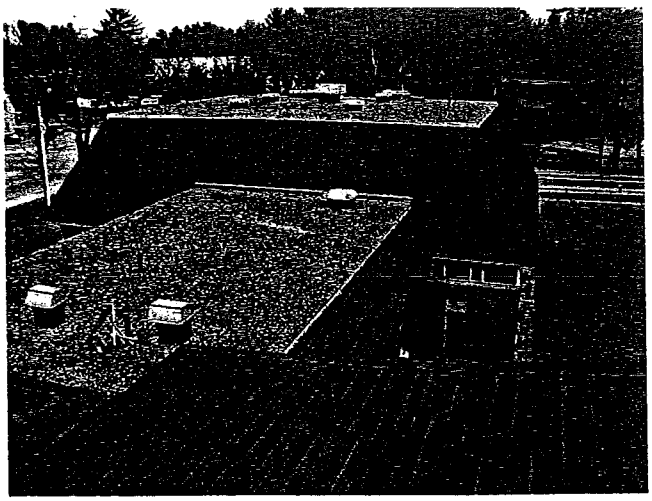


Intersection of 1971 Roof with Vertical Wall of 1910 Building

EXTERIOR

Roofing & Drainage

P1010364.JPG

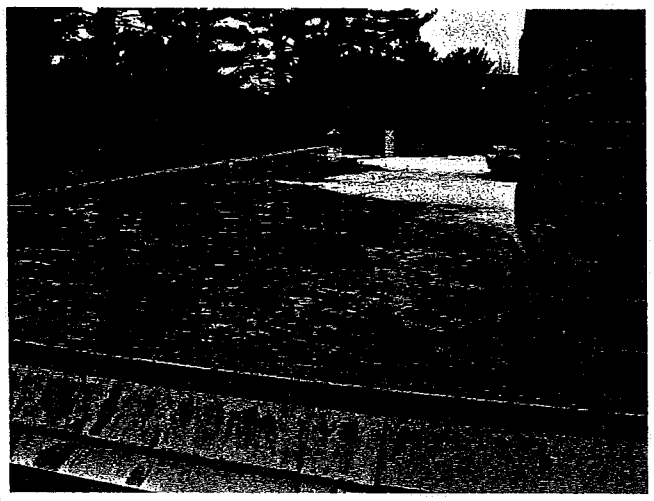


View of 1971 Link and Addition Roof from 1931 Addition

EXTERIOR

Roofing & Drainage

P1010363.JPG



Ponded Water on Eastern Half of Upper Flat Portion of Roof at 1931 Addition

EXTERIOR

Roofing & Drainage

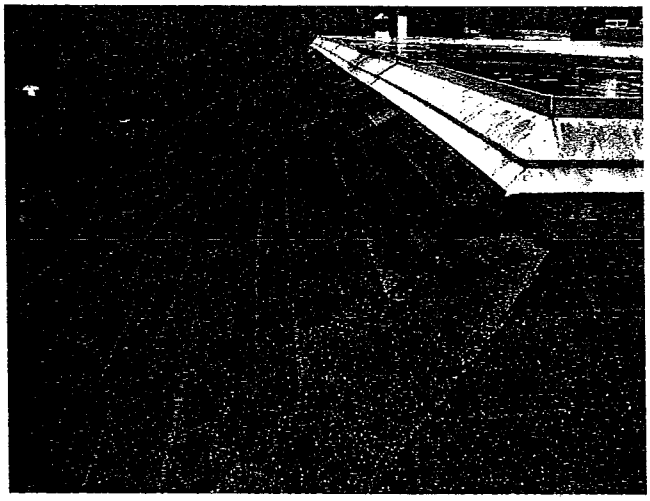
P1010361.JPG

Ponded Water on Western Half of Upper Flat Portion of Roof at 1931 Addition

EXTERIOR

Roofing & Drainage

P1010366.JPG

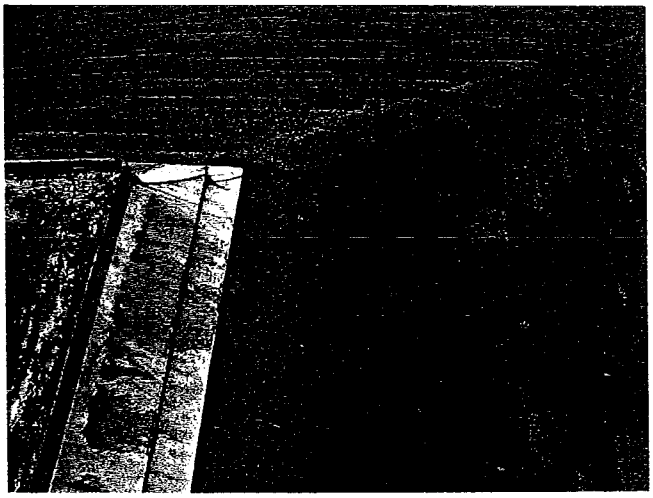


Eastern Shingled Roof Slope of 1931 Addition

EXTERIOR

Roofing & Drainage

P1010367.JPG

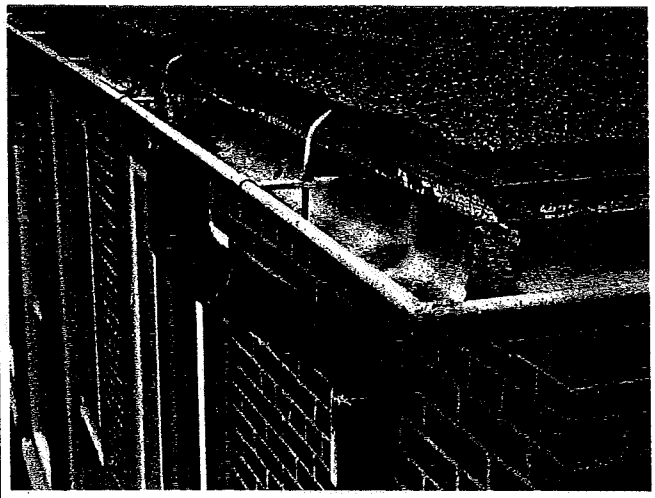


Northwest Hip Area of Shingled Roof Slope at 1931 Addition

EXTERIOR

Roofing & Drainage

P1010368.JPG

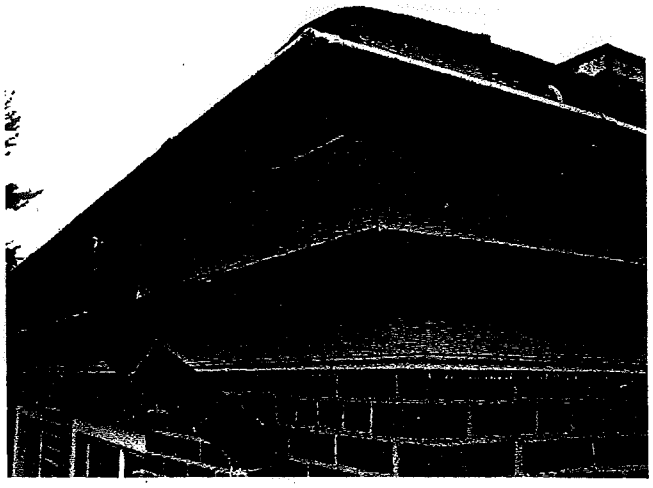


Northeast Corner of 1931 Addition;
Asphalt Shingles, Wood Fascia, Copper Gutter

EXTERIOR

Roofing & Drainage

P1010369.JPG



Northeast Corner of 1931 Addition;
Copper Gutter; Copper Downspout, Wood Eaves

EXTERIOR

Roofing & Drainage

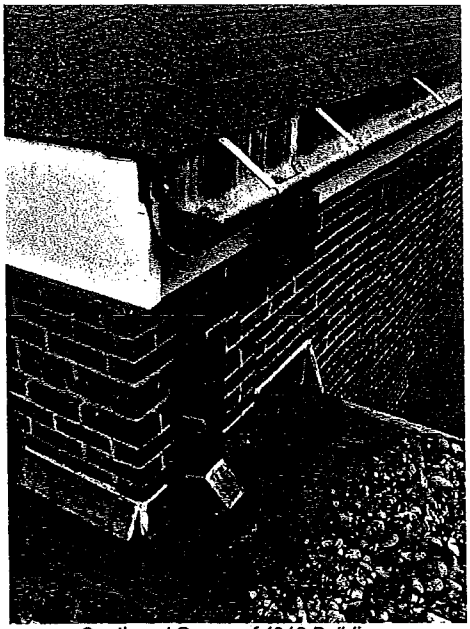
P1010370.JPG

Copper Gutter Outlet with Strainer at 1931 Addition

EXTERIOR

Roofing & Drainage

P1010371.JPG

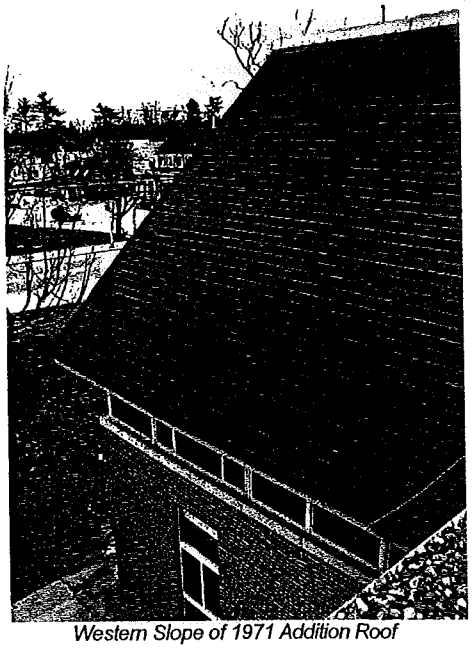


Southeast Corner of 1910 Building;
Aluminum Fascia Cover, Copper Gutter & Downspout;
Water Drains Onto Ballasted Membrane of 1971 Addition

EXTERIOR

Roofing & Drainage

P1010372.JPG

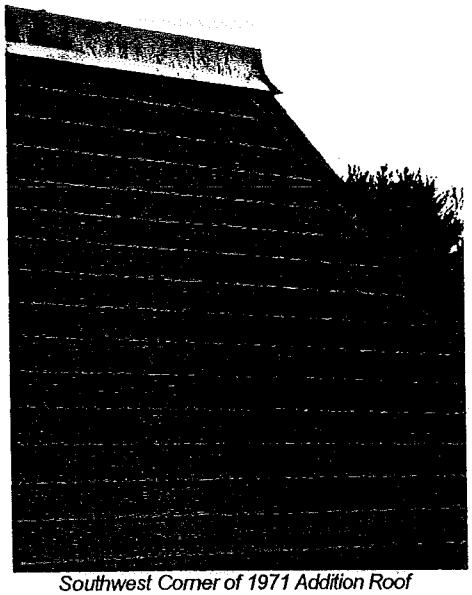


Western Slope of 1971 Addition Roof

EXTERIOR

Roofing & Drainage

P1010375.JPG

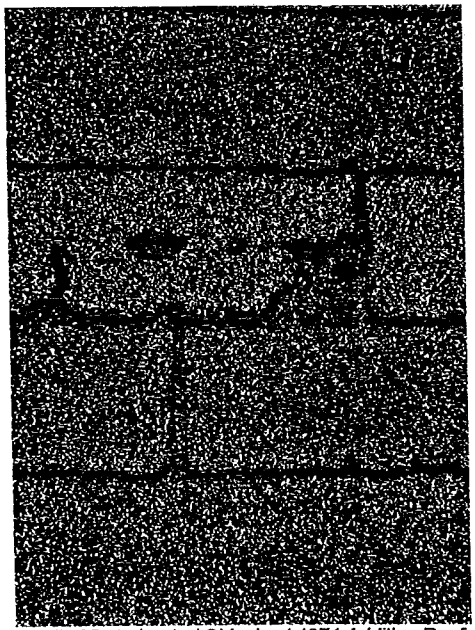


Southwest Corner of 1971 Addition Roof

EXTERIOR

Roofing & Drainage

P1010374.JPG

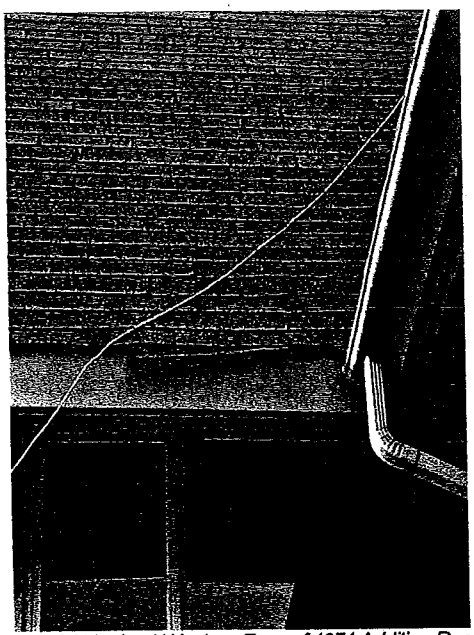


Detail of Deteriorated Shingle at 1971 Addition Roof

EXTERIOR

Roofing & Drainage

P1010356.JPG

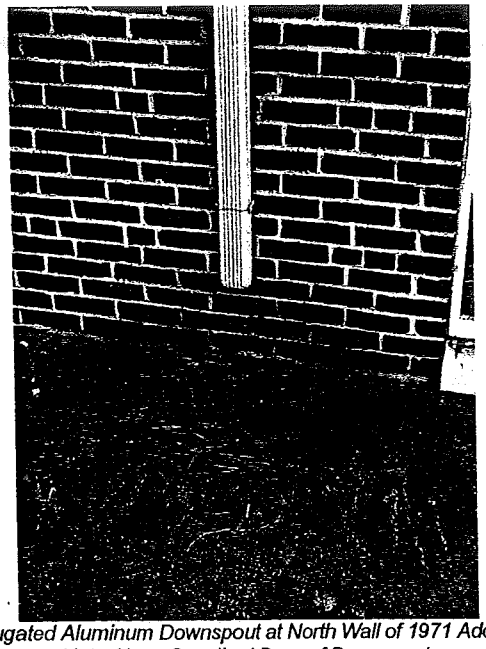


Slipped Shingle at Western Eave of 1971 Addition Roof

EXTERIOR

Roofing & Drainage

P1010325.JPG

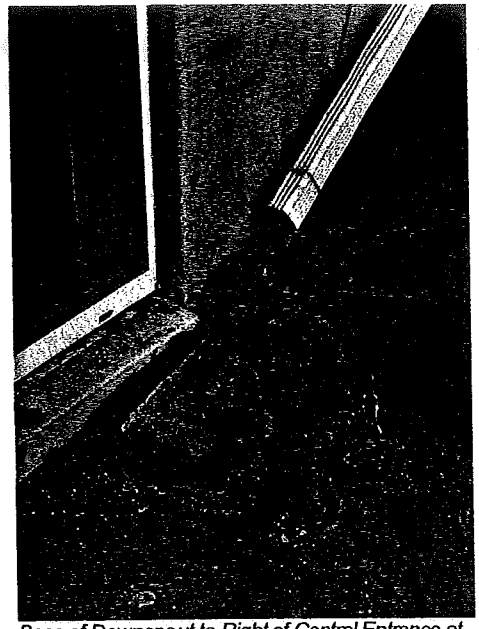


Corrugated Aluminum Downspout at North Wall of 1971 Addition; Note Algae Growth at Base of Downspout

EXTERIOR

Roofing & Drainage

P1010326.JPG



Base of Downspout to Right of Central Entrance at North Wall of 1971 Link Adjacent to Window Sill

EXTERIOR

Roofing & Drainage

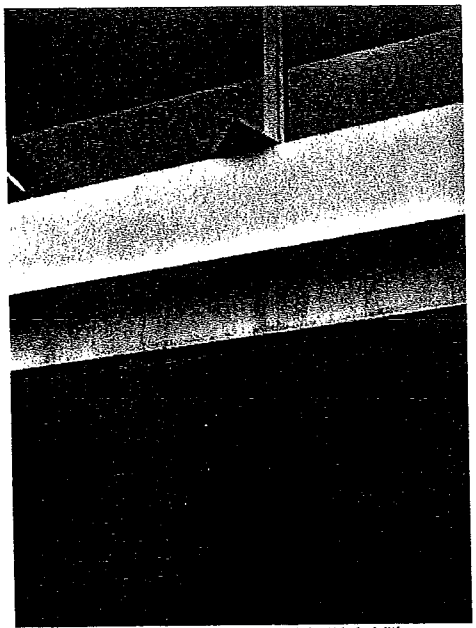
P1010329.JPG

Rusted Roof Canopy at East Exit of 1971 Addition

EXTERIOR

Roofing & Drainage

P1010331.JPG



Roof Canopy at East Exit of 1971 Addition; Fallen Shingle from Upper Roof Visible at Edge

EXTERIOR

Roofing & Drainage

P1010340.JPG

Downspout Array at East Elevation of 1931 Addition

EXTERIOR

Roofing & Drainage

P1010335.JPG

Missing Counter Flashing at Intersection of 1971 Roof with East Wall of 1931 Addition

EXTERIOR

Roofing & Drainage

P1010337.JPG

Detail of Downspout Array at East Elevation of 1931 Addition; Note Loose & Missing Mortar from Water Damage

EXTERIOR

Roofing & Drainage

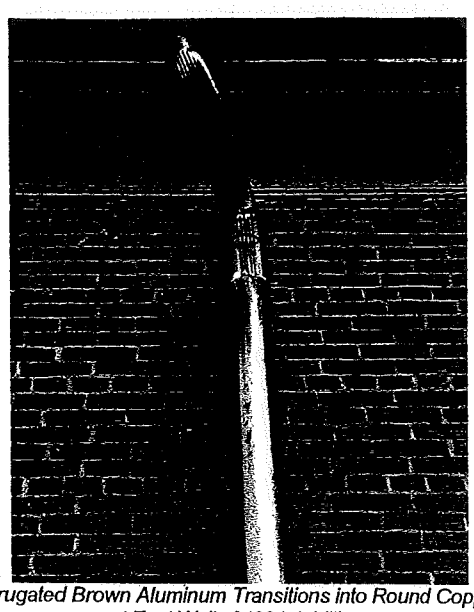
P1010338.JPG

Detail of Water Table at 1931 Addition; Copper Downspout Has Large Hole in Bottom of Offset

EXTERIOR

Roofing & Drainage

P1010339.JPG



Corrugated Brown Aluminum Transitions into Round Copper at East Wall of 1931 Addition

EXTERIOR

Roofing & Drainage

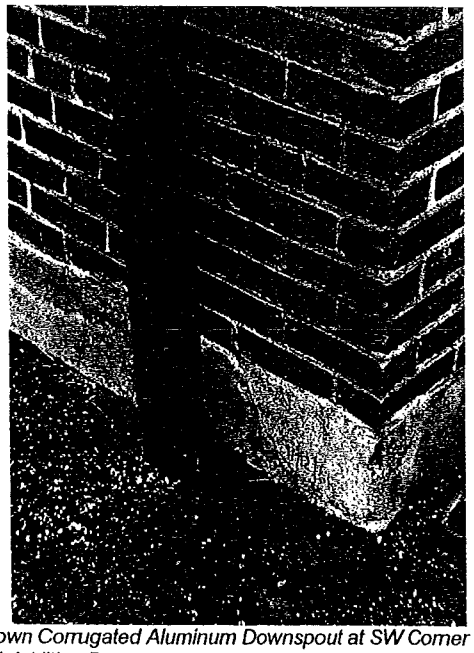
P1010341.JPG

White Corrugated Aluminum Not Seated Into Cast Iron Boot at East Wall of 1931 Addition

EXTERIOR

Roofing & Drainage

P1010343.JPG



Brown Corrugated Aluminum Downspout at SW Corner of 1931 Addition Penetrates Pavement; No Visible Cast Iron Boot

EXTERIOR

Roofing & Drainage

P1010327.JPG

Flagstone Rain Drip Skirt at Perimeter of 1971 Addition

EXTERIOR

Roofing & Drainage

P1010349.JPG

Crushed Rectangular Copper Downspout at SW Corner of 1910 Original Building

EXTERIOR

Roofing & Drainage

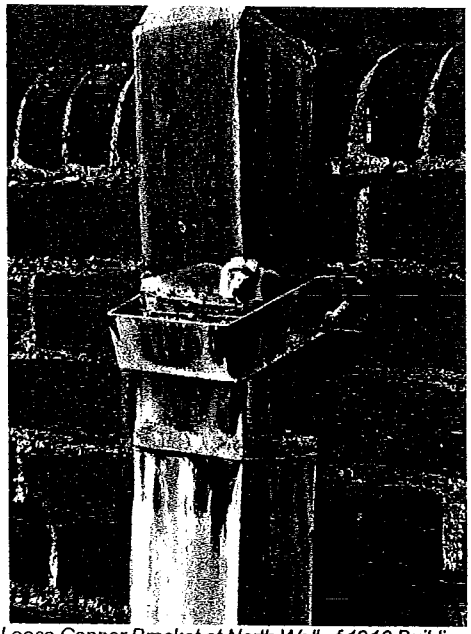
P1010350.JPG

Crushed Rectangular Copper Downspout at SW Corner of 1910 Original Building

EXTERIOR

Roofing & Drainage

P1010318.JPG

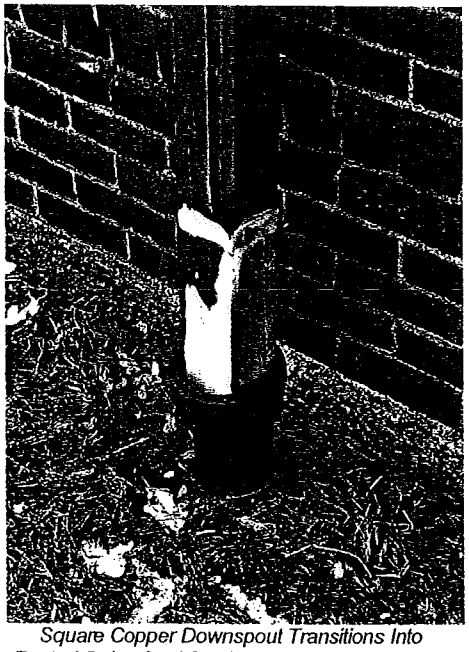


Loose Copper Bracket at North Wall of 1910 Building

EXTERIOR

Roofing & Drainage

P1010315.JPG

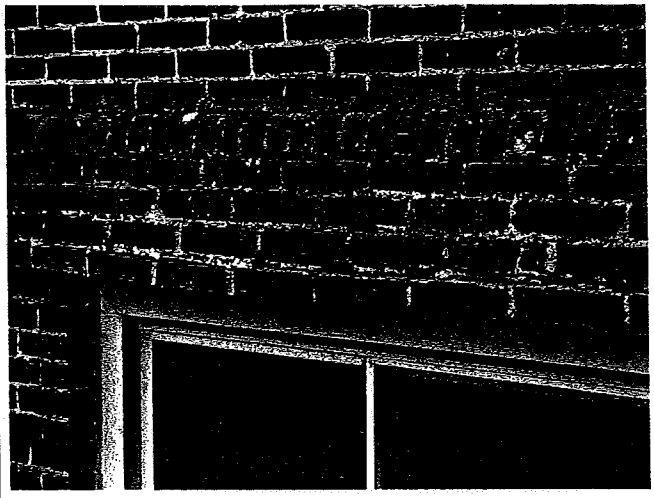


Square Copper Downspout Transitions Into Rusted Galvanized Section Above Cast Iron Boot at North Wall of 1910 Original Building

EXTERIOR

Walls, Windows & Doors

P1010314.JPG



Loose and Missing Mortar at Water Table Brick Coursing of 1910 Original Building Above First Floor Window Opening

EXTERIOR

Walls, Windows & Doors

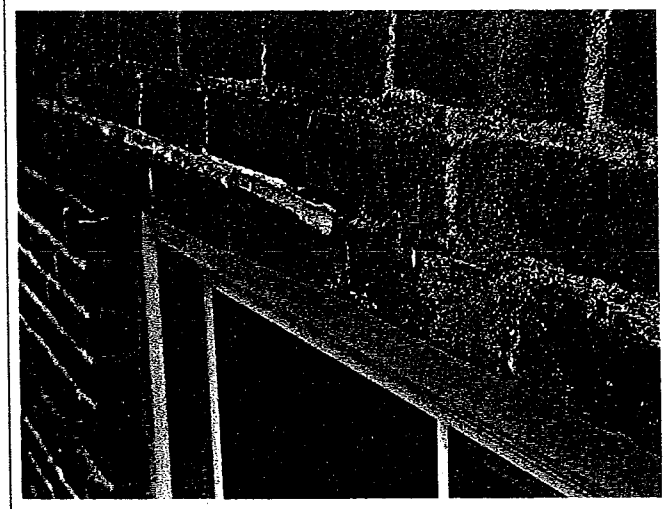
P1010319.JPG

Algae Growth at Water Table of 1910 Original Building

EXTERIOR

Walls, Windows & Doors

P1010353.JPG

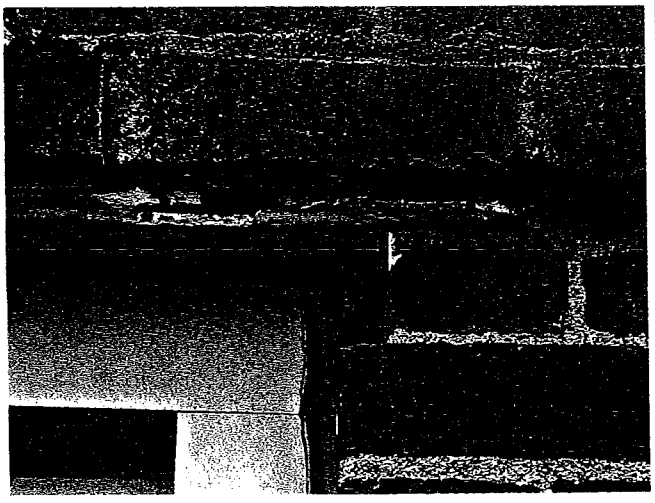


Displaced Mortar at Water Table Brick Coursing of 1910 Original Building Above First Floor Window Opening

EXTERIOR

Walls, Windows & Doors

P1010316.JPG



Detail of Rusted Lintel at First Floor Window Opening of 1910 Original Building

EXTERIOR

Walls, Windows & Doors

P1010317.JPG

Infilled Masonry at Original School Entrance on North Wall

EXTERIOR

Walls, Windows & Doors

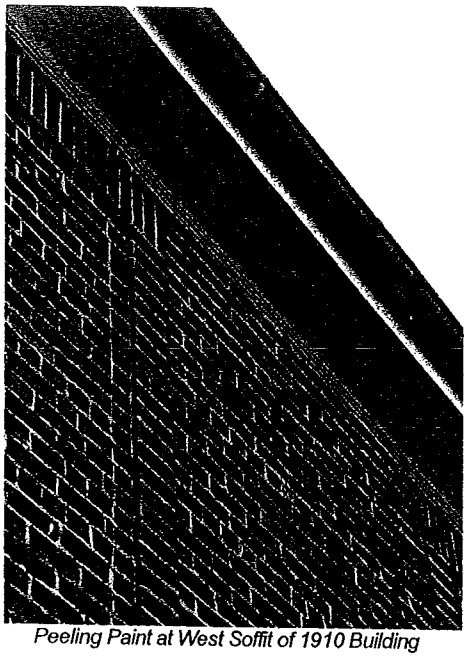
P1010352.JPG

Algae Growth at Depressed Area Adjacent to Foundation Wall of 1910 Building

EXTERIOR

Walls, Windows & Doors

P1010351.JPG

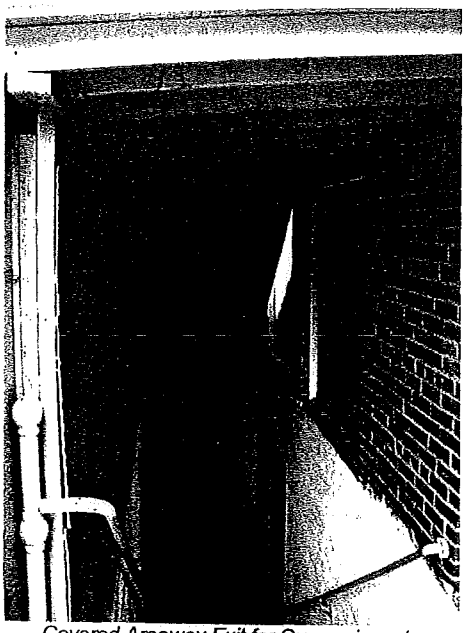


Peeling Paint at West Soffit of 1910 Building

EXTERIOR

Walls, Windows & Doors

P1010344.JPG

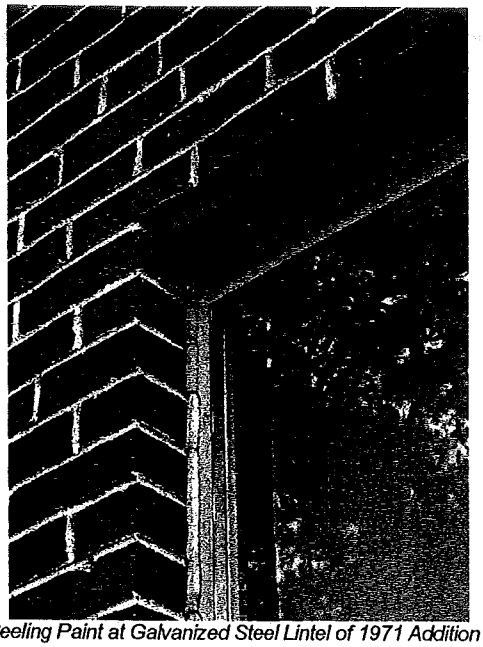


Covered Areaway Exit for Gymnasium at West Elevation of 1931 Addition

EXTERIOR

Walls, Windows & Doors

P1010333.JPG

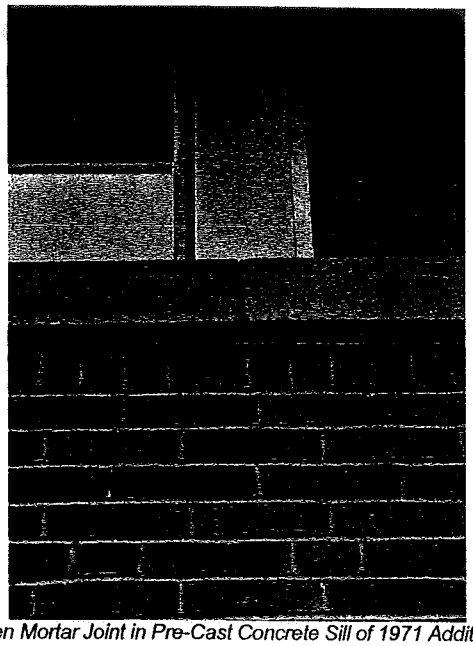


Peeling Paint at Galvanized Steel Lintel of 1971 Addition

EXTERIOR

Walls, Windows & Doors

P1010332.JPG

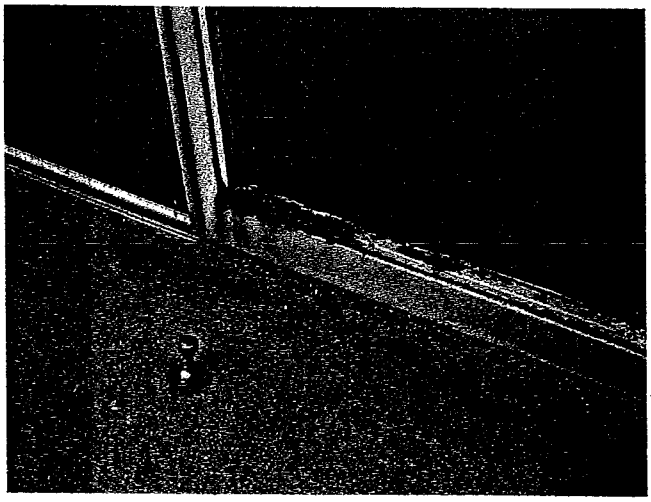


Open Mortar Joint in Pre-Cast Concrete Sill of 1971 Addition

EXTERIOR

Walls, Windows & Doors

P1010330.JPG

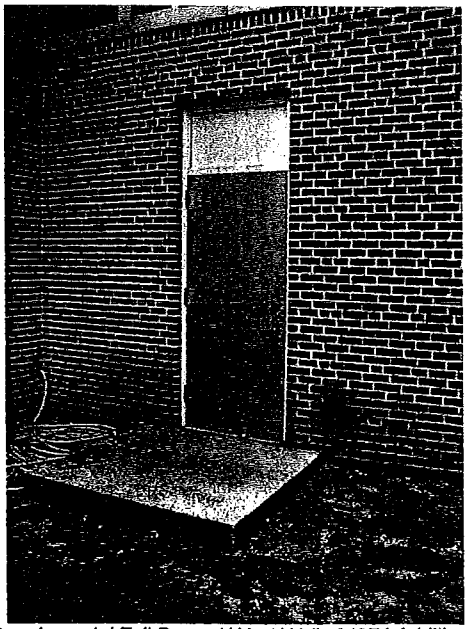


Rusted Sidelight Frame at East Exit of 1971 Addition;
See Rusted Roof Canopy Steel Above on Page A-10

EXTERIOR

Walls, Windows & Doors

P1010388.JPG

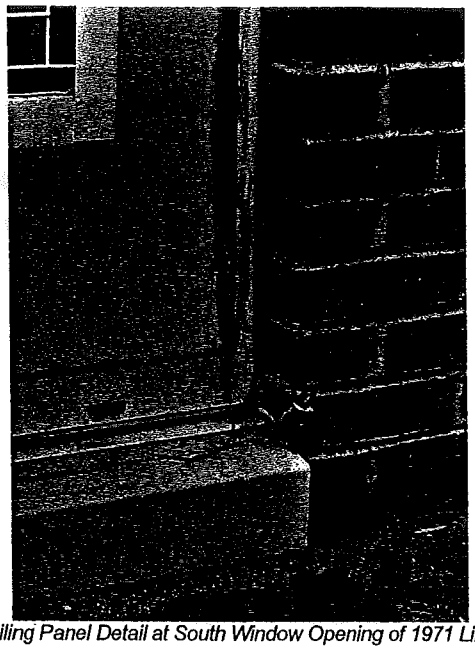


Supplemental Exit Door at West Wall of 1971 Addition;
Door is Very Difficult to Open and Close

EXTERIOR

Walls, Windows & Doors

P1010334.JPG

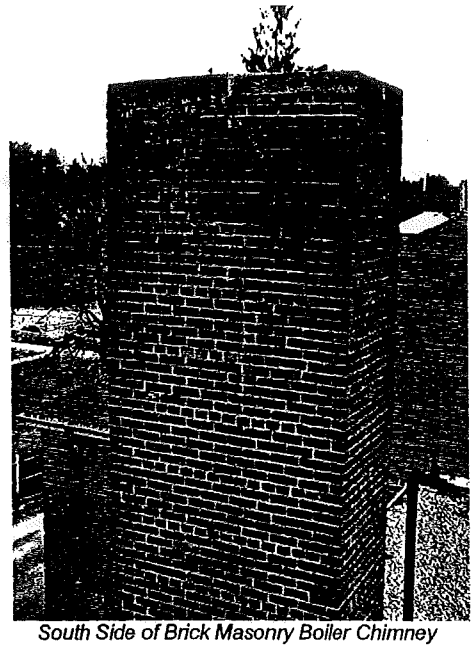


Falling Panel Detail at South Window Opening of 1971 Link

EXTERIOR

Walls, Windows & Doors

P1010362.JPG

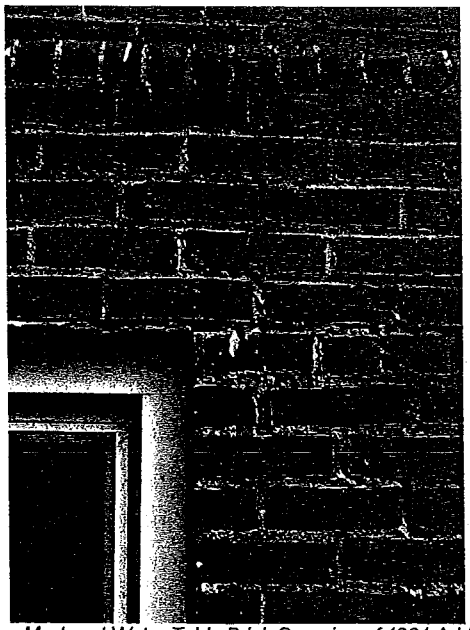


South Side of Brick Masonry Boiler Chimney

EXTERIOR

Walls, Windows & Doors

P1010389.JPG

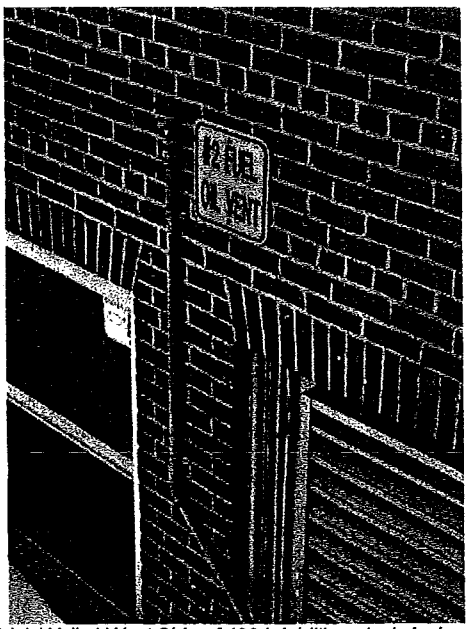


Missing Mortar at Water Table Brick Coursing of 1931 Addition; Rusted Lintel Over First Floor Window Opening

EXTERIOR

Walls, Windows & Doors

P1010089.JPG



Brick Wall at West Side of 1931 Addition; Jack Arches; Fuel Oil Vent to Underground Storage Tanks

INTERIOR

General Views

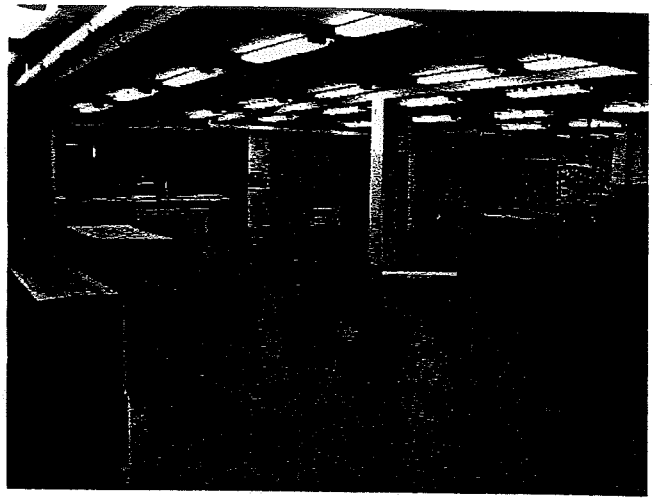
P1010123.JPG

North-Facing Classroom Area on Second Floor of 1910 Building; Central Portion was Original Entrance & Central Stair

INTERIOR

General Views

P1010115.JPG

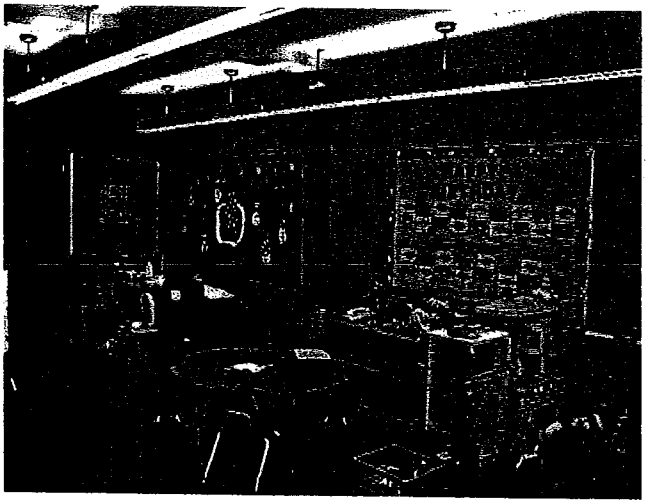


Area on First Floor of 1910 Building Designated as "Cafetorium" During 1971 Renovations

INTERIOR

General Views

P1010117.JPG

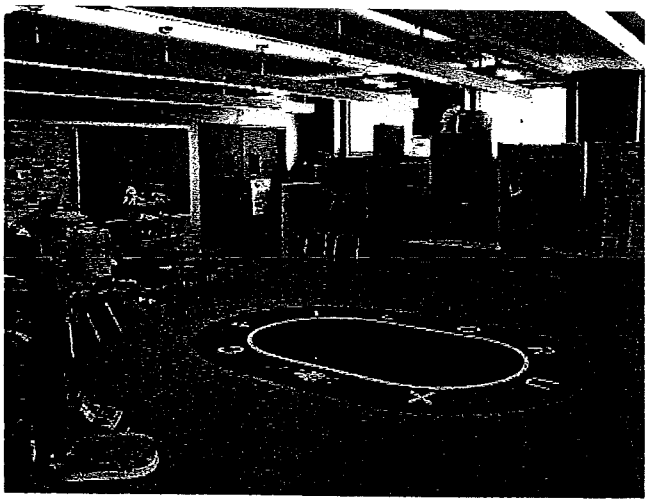


First Floor Classroom Adjacent to Cafetorium in 1910 Building

INTERIOR

General Views

P1010116.JPG

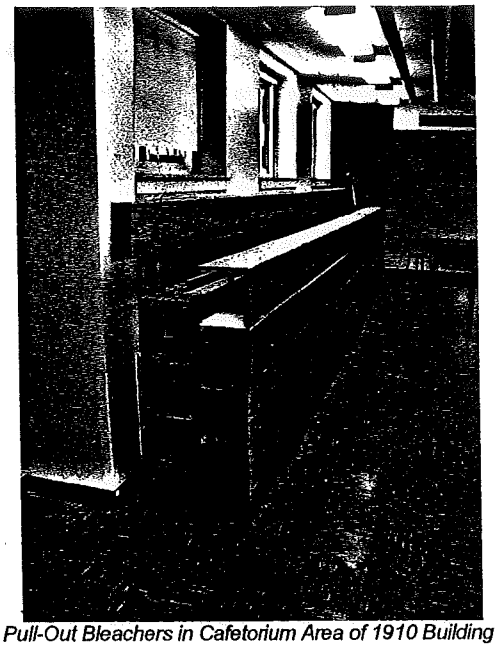


First Floor Classroom Adjacent to Cafetorium in 1910 Building

INTERIOR

General Views

P1010112.JPG

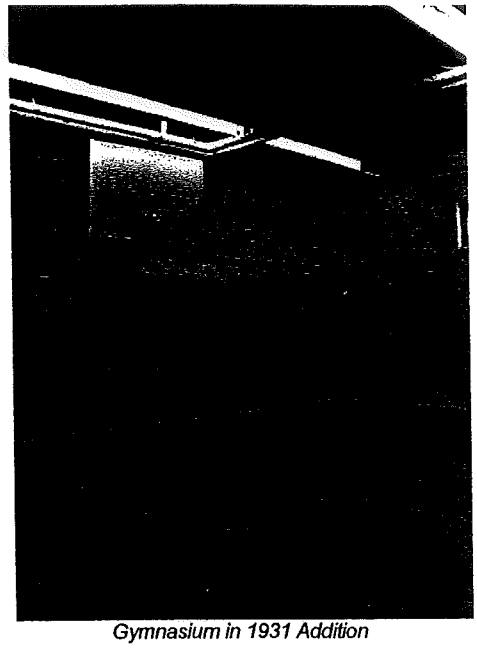


Pull-Out Bleachers in Cafetorium Area of 1910 Building

INTERIOR

General Views

P1010097.JPG



Gymnasium in 1931 Addition

INTERIOR

General Views

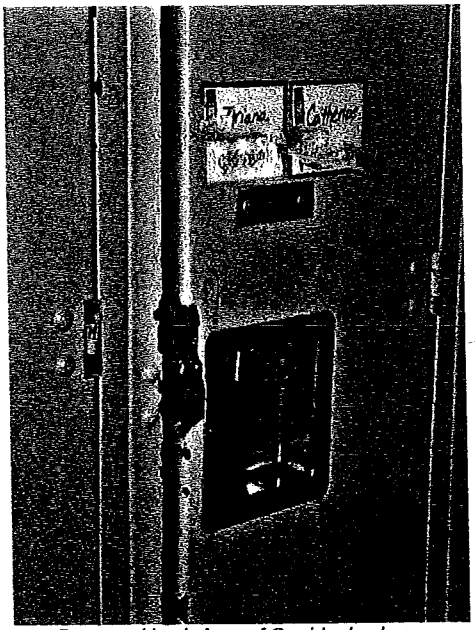
P1010092.JPG

Built-In Lockers in Corridor of 1931 Addition

INTERIOR

General Views

P1010091.JPG



Damaged Lock Area of Corridor Lockers

INTERIOR

General Views

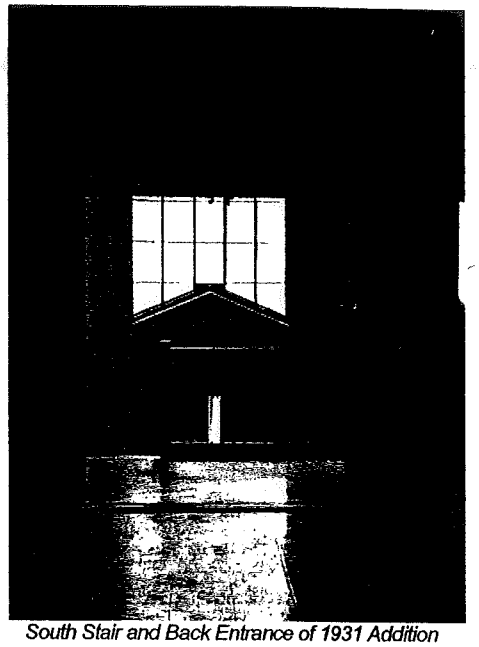
P1010086.JPG

South-Facing Classroom Above Gym in 1931 Addition

INTERIOR

General Views

P1010090.JPG



South Stair and Back Entrance of 1931 Addition

INTERIOR

General Views

P1010078.JPG

Eastern Classroom at Second Floor of 1931 Addition;
Folding Partition Subdivides Space into Two Classrooms

INTERIOR

General Views

P1010081.JPG

Dance Studio Currently Using East Classroom;
Vinyl Mats Cover Carpet; Moveable Bars & Mirrors

INTERIOR

General Views

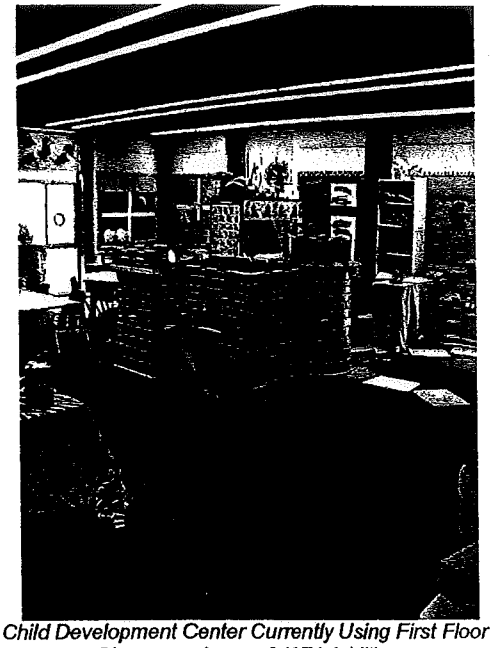
P1010155.JPG

Looking West in First Floor Corridor of 1971 Link; Vinyl Composition Tile Flooring; Stained Wood Deck Ceiling

INTERIOR

General Views

P1010382.JPG



Child Development Center Currently Using First Floor Classroom Areas of 1971 Addition

INTERIOR

General Views

P1010151.JPG

Sink and Cabinet Area of First Floor in 1971 Addition

INTERIOR

General Views

P1010133.JPG

Looking East in Second Floor Corridor of 1971 Link Area

INTERIOR

General Views

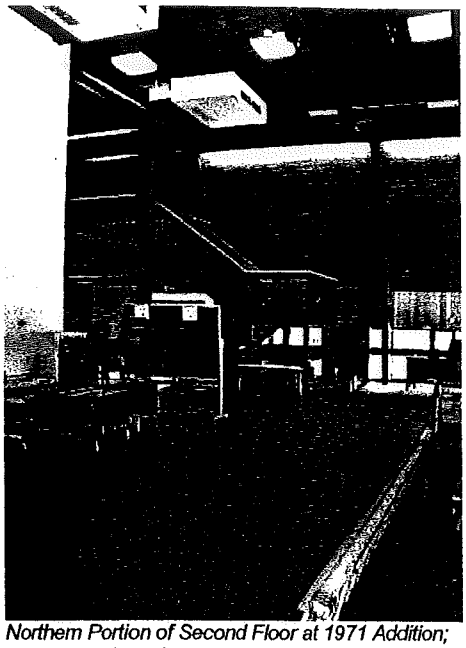
P1010136.JPG

Southern Portion of Second Floor at 1971 Addition;
Folding Partition Subdivides Space into Two Classrooms

INTERIOR

General Views

P1010140.JPG

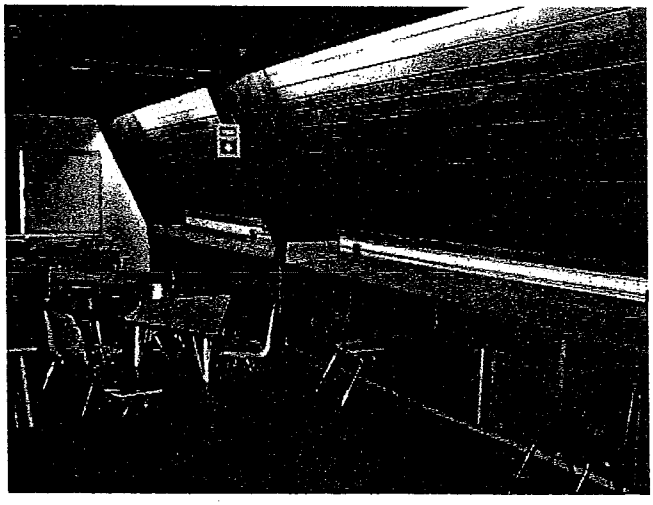


Northern Portion of Second Floor at 1971 Addition;
Stairs to Loft Area in Background

INTERIOR

General Views

P1010143.JPG

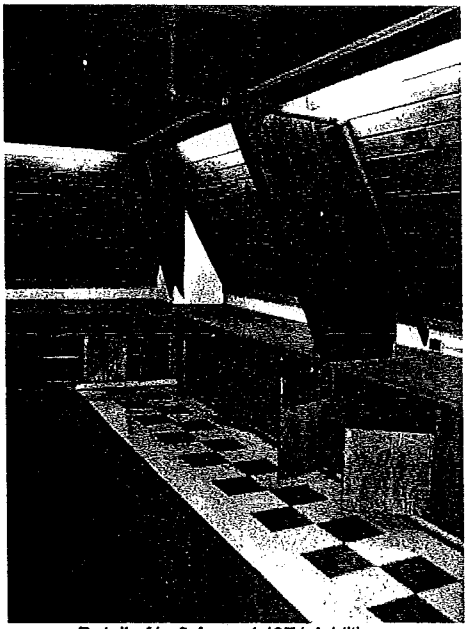


Loft Area of 1971 Addition; Glue-Lam. Beams & Wood Decking;
Carpeted Floors; Built-In Counters & Cabinets

INTERIOR

General Views

P1010142.JPG

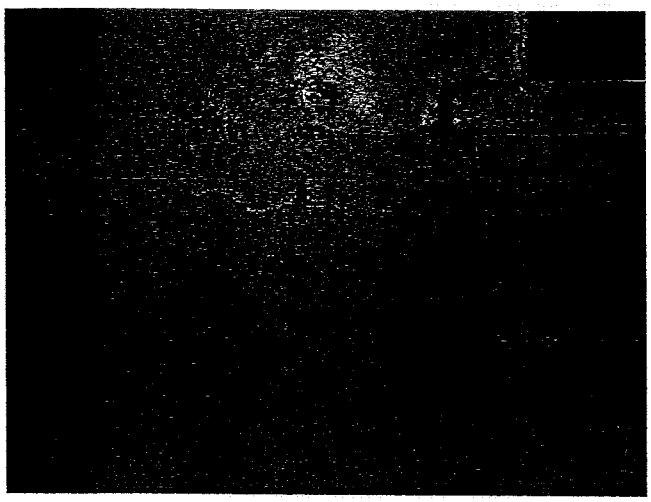


Detail of Loft Area at 1971 Addition;
Perimeter Lighting Accents Beams & Decking;
Vinyl Composition Tile Border Accent

INTERIOR

Walls, Windows & Doors

P1010114.JPG

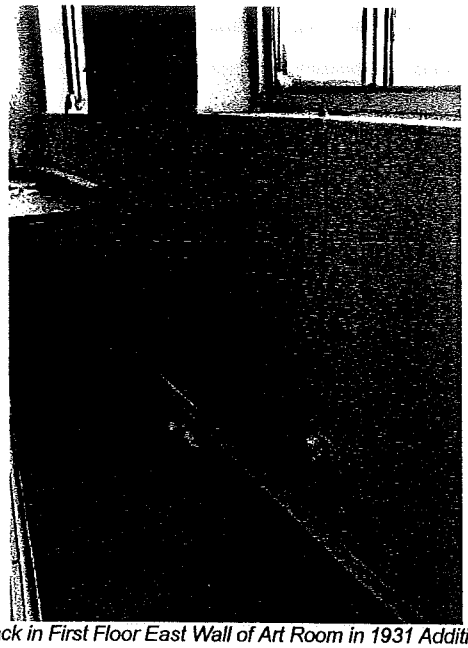


Horizontal Crack in Plaster at North Wall of 1910 Building Indicating Joint Between Foundation Wall and Brick Above

INTERIOR

Walls, Windows & Doors

P1010101.JPG

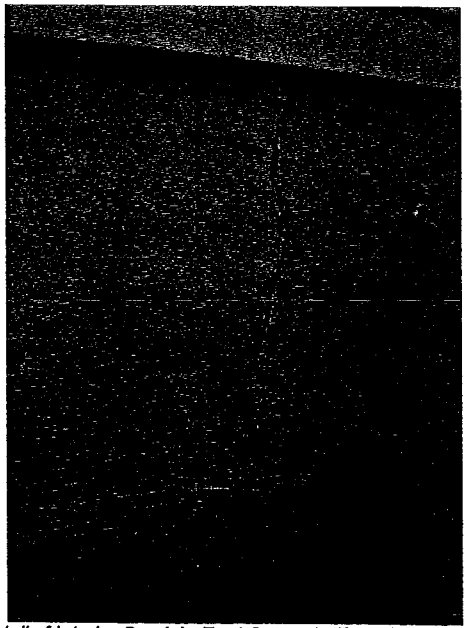


Crack in First Floor East Wall of Art Room in 1931 Addition

INTERIOR

Walls, Windows & Doors

P1010103.JPG

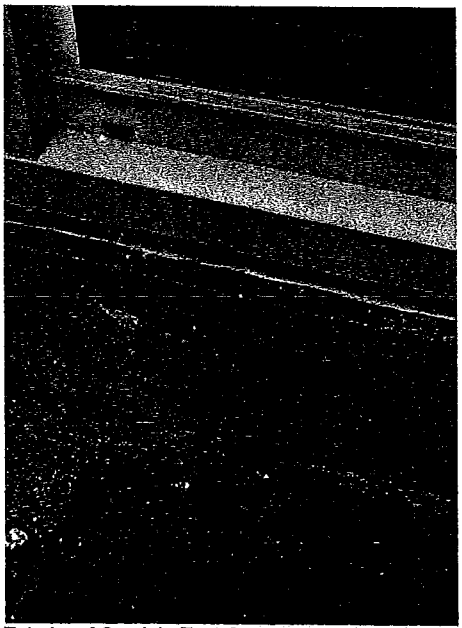


Detail of Interior Crack in East Concrete Foundation Wall of 1931 Addition

INTERIOR

Walls, Windows & Doors

P1010336.JPG

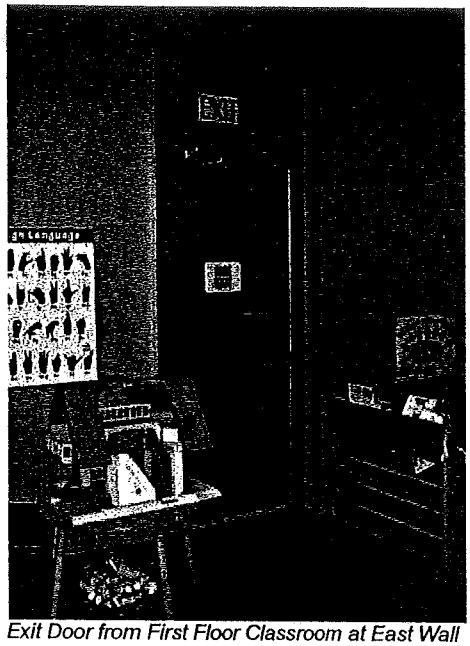


Exterior of Crack in East Concrete Foundation Wall of 1931 Addition; Aluminum Replacement Window

INTERIOR

Walls, Windows & Doors

P1010118.JPG



Exit Door from First Floor Classroom at East Wall of 1910 Building

INTERIOR

Walls, Windows & Doors

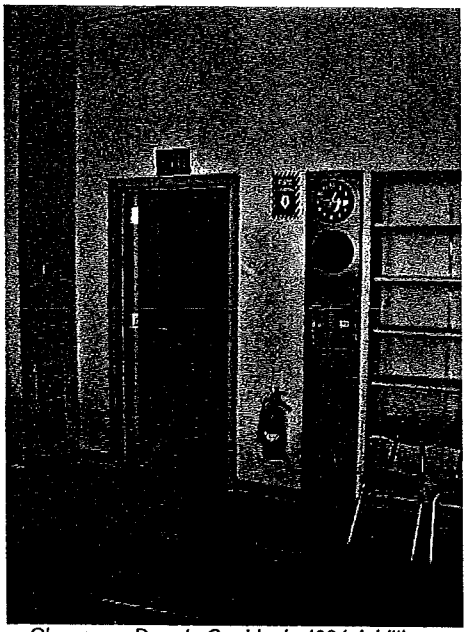
P1010096.JPG

Exit Door from Second Floor Classroom at West Wall of 1931 Addition

INTERIOR

Walls, Windows & Doors

P1010085.JPG

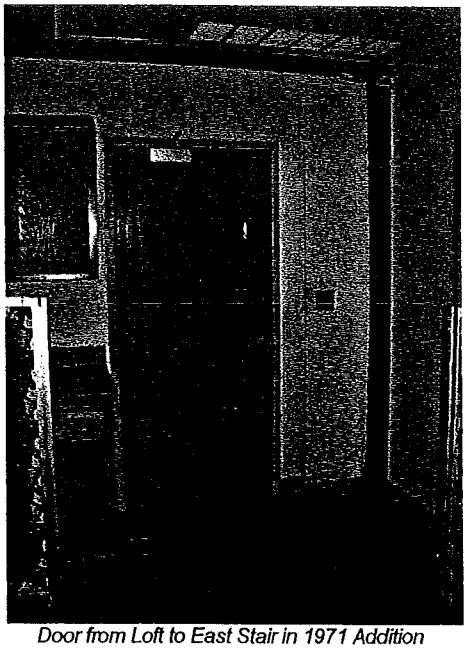


Classroom Door to Corridor in 1931 Addition; Master Clock System with Phone to Right of Door

INTERIOR

Walls, Windows & Doors

P1010145.JPG

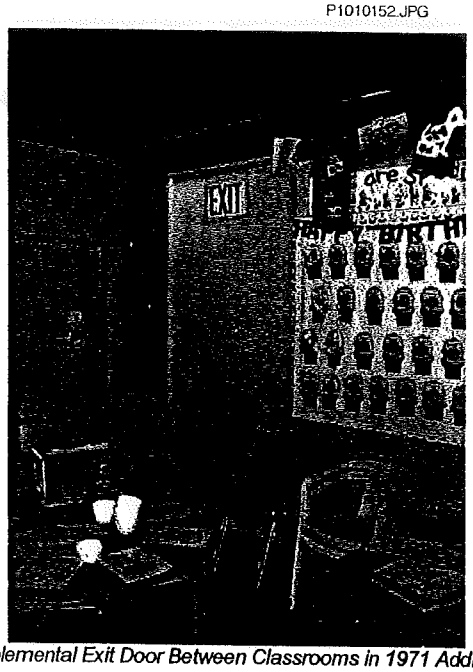


Door from Loft to East Stair in 1971 Addition

INTERIOR

Walls, Windows & Doors

P1010152.JPG

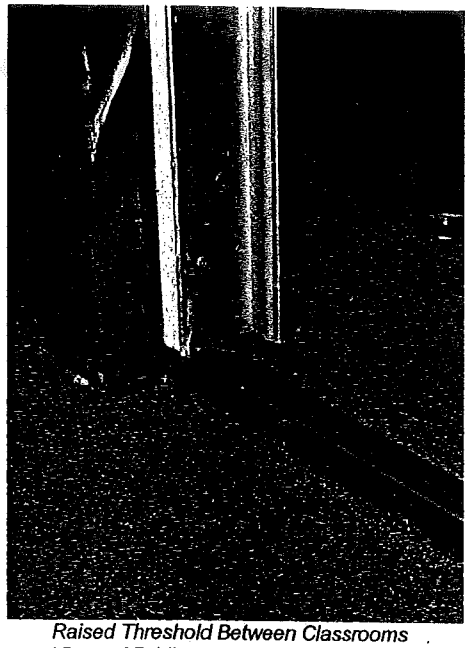


Supplemental Exit Door Between Classrooms in 1971 Addition

INTERIOR

Walls, Windows & Doors

P1010379.JPG

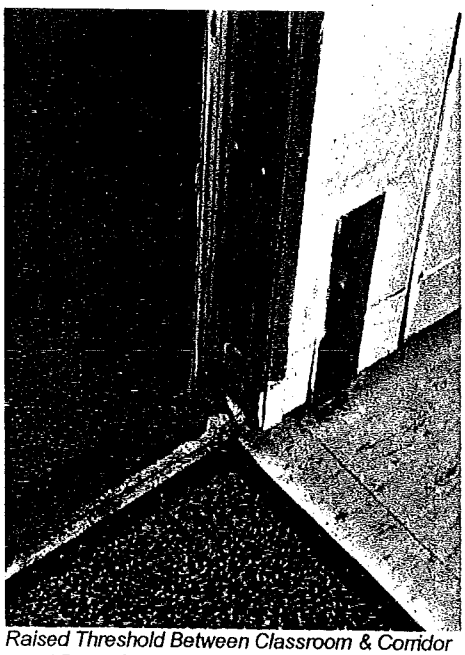


Raised Threshold Between Classrooms at Door of Folding Partition in 1931 Addition

INTERIOR

Walls, Windows & Doors

P1010150.JPG

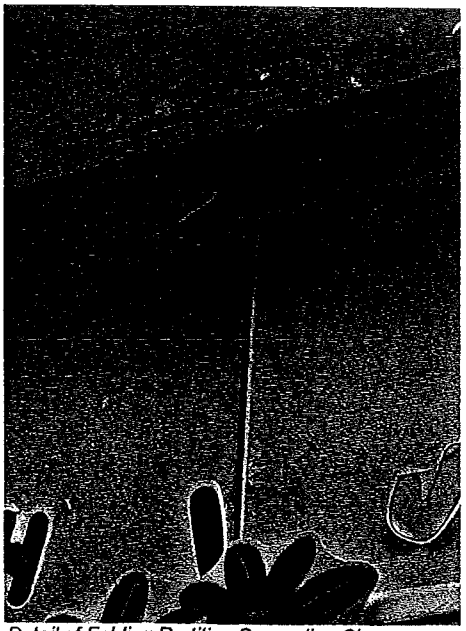


Raised Threshold Between Classroom & Corridor at Door of Folding Partition in 1971 Addition

INTERIOR

Walls, Windows & Doors

P1010383.JPG



Detail of Folding Partition Separating Classrooms in 1971 Addition; Stained Plywood Soffit Above

INTERIOR

Walls, Windows & Doors

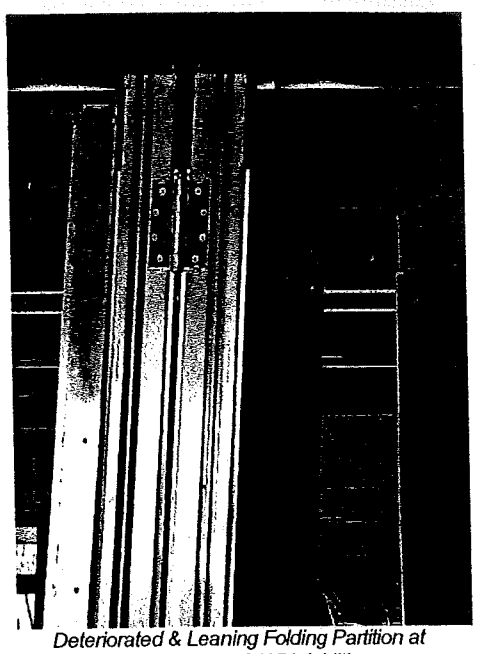
P1010380.JPG

Deteriorated & Leaning Folding Partition at Second Floor of 1971 Addition

INTERIOR

Walls, Windows & Doors

P1010138.JPG

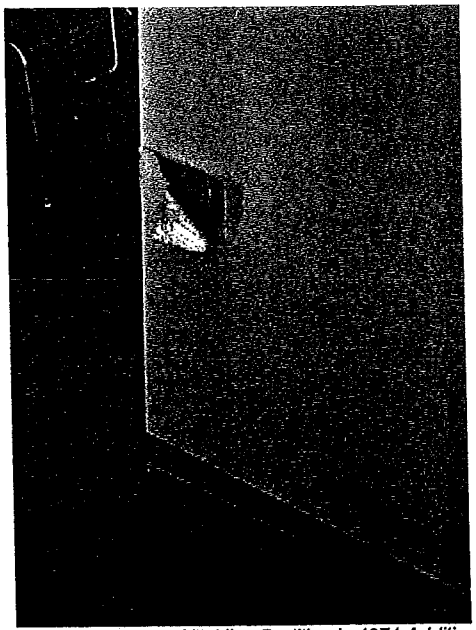


Deteriorated & Leaning Folding Partition at Second Floor of 1971 Addition

INTERIOR

Walls, Windows & Doors

P1010137.JPG

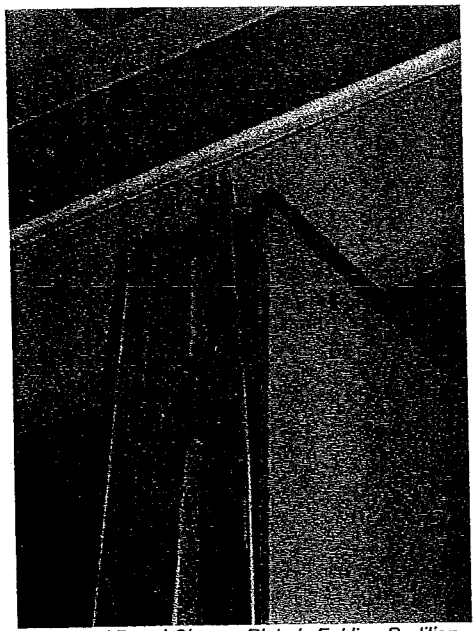


Damaged Surface of Folding Partition in 1971 Addition

INTERIOR

Walls, Windows & Doors

P1010079.JPG

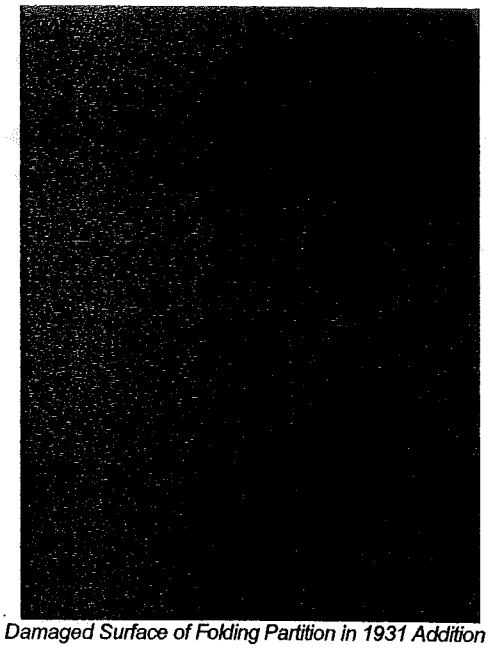


Damaged Panel Closure Plate in Folding Partition of Classroom in 1931 Addition

INTERIOR

Walls, Windows & Doors

P1010082.JPG

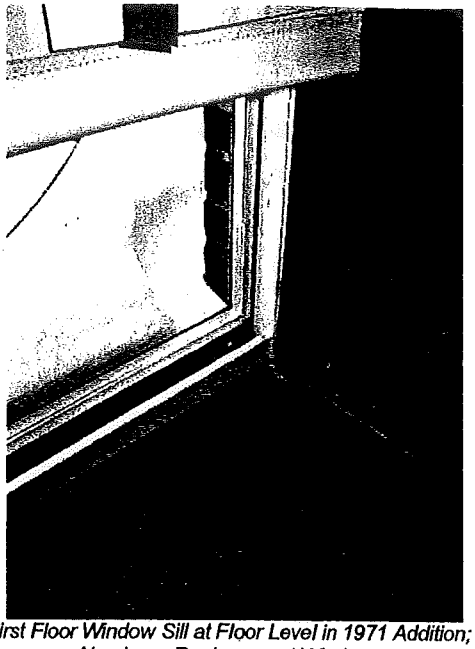


Damaged Surface of Folding Partition in 1931 Addition

INTERIOR

Walls, Windows & Doors

P1010149.JPG

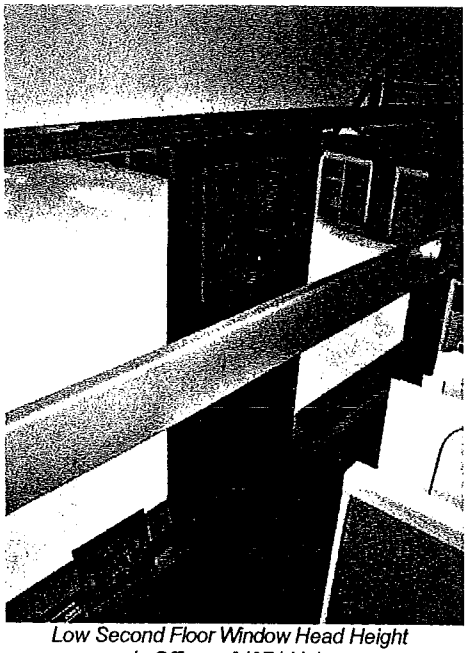


First Floor Window Sill at Floor Level in 1971 Addition; Aluminum Replacement Windows

INTERIOR

Walls, Windows & Doors

P1010134.JPG

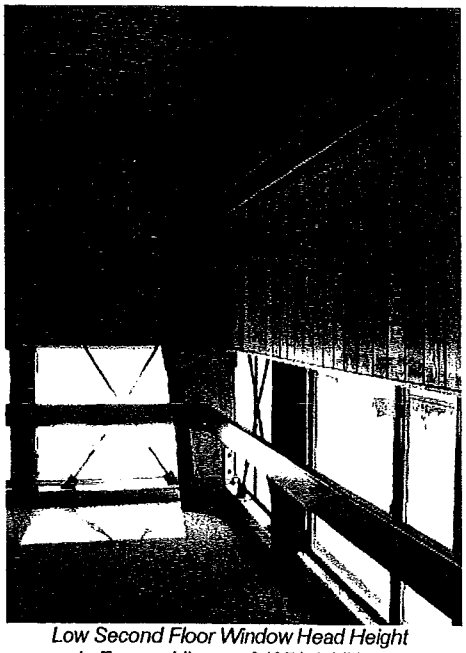


Low Second Floor Window Head Height in Offices of 1971 Link

INTERIOR

Walls, Windows & Doors

P1010135.JPG

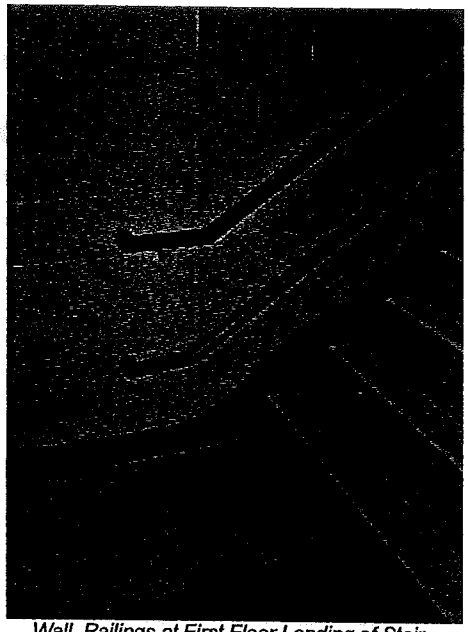


Low Second Floor Window Head Height in Former Library of 1971 Addition

INTERIOR

Stairways

P1010075.JPG

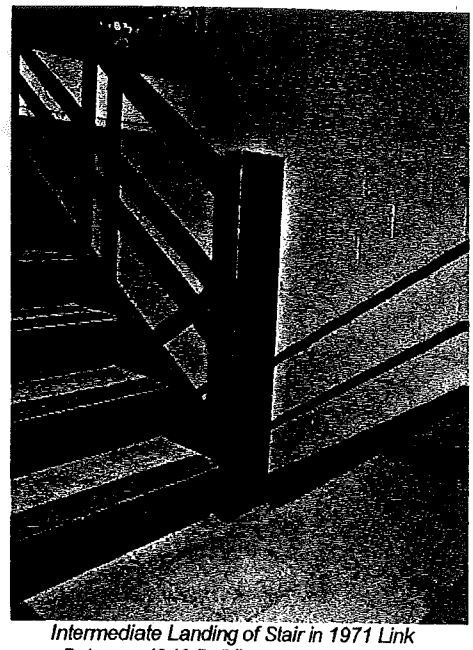


Wall Railings at First Floor Landing of Stair in 1971 Link Between 1910 Building & 1931 Addition

INTERIOR

Stairways

P1010076.JPG

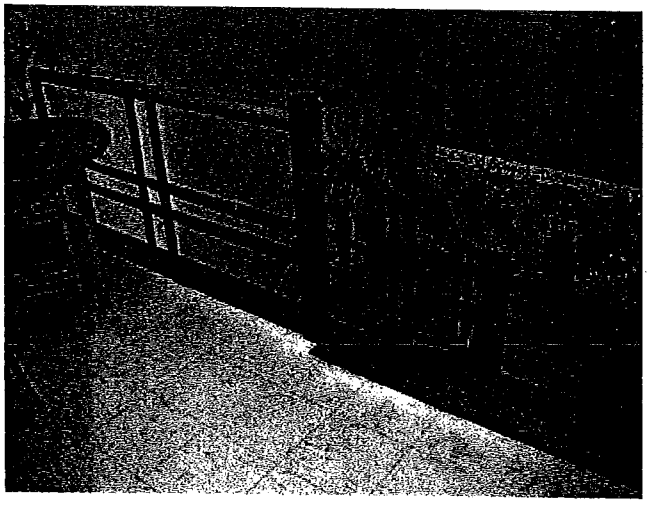


Intermediate Landing of Stair in 1971 Link Between 1910 Building & 1931 Addition

INTERIOR

Stairways

P1010074.JPG



Second Floor Landing of Stair in 1971 Link Between 1910 Building & 1931 Addition

INTERIOR

Stairways

P1010094.JPG

Second Floor Landing of South Stair in 1931 Addition

INTERIOR

Stairways

P1010095.JPG

Wall Railing at South Stair in 1931 Addition

INTERIOR

Stairways

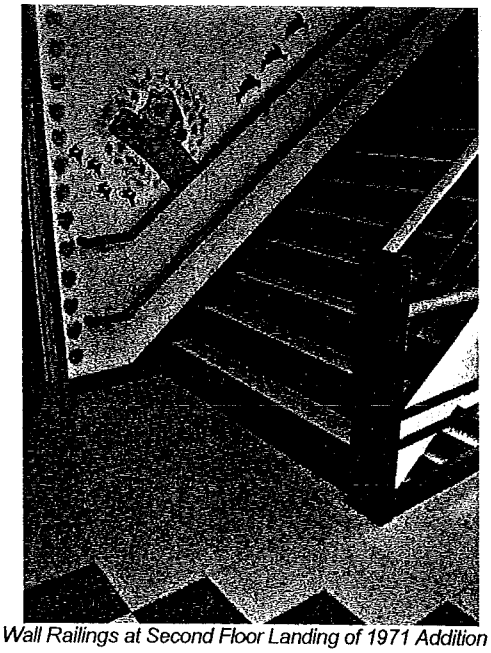
P1010146.JPG

Stair to Loft in 1971 Addition

INTERIOR

Stairways

P1010139.JPG

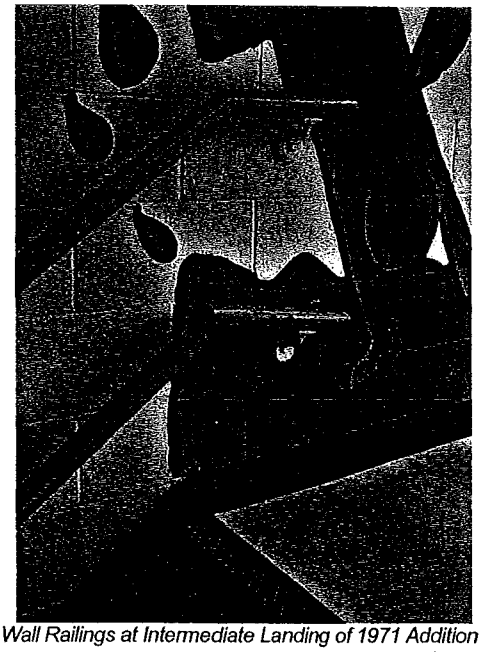


Wall Railings at Second Floor Landing of 1971 Addition

INTERIOR

Stairways

P1010381.JPG

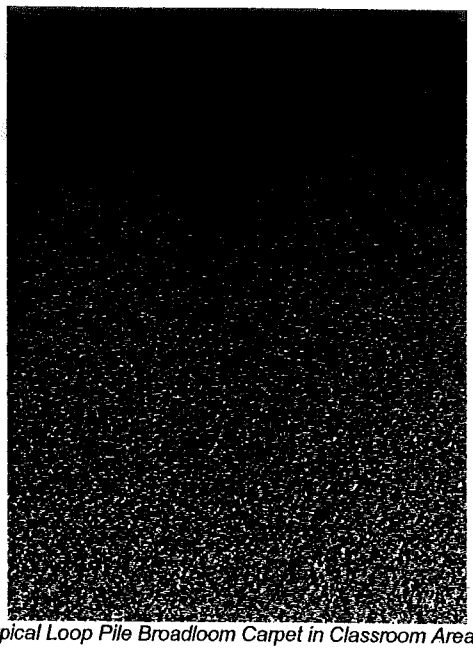


Wall Railings at Intermediate Landing of 1971 Addition

INTERIOR

Finishes

P1010087.JPG

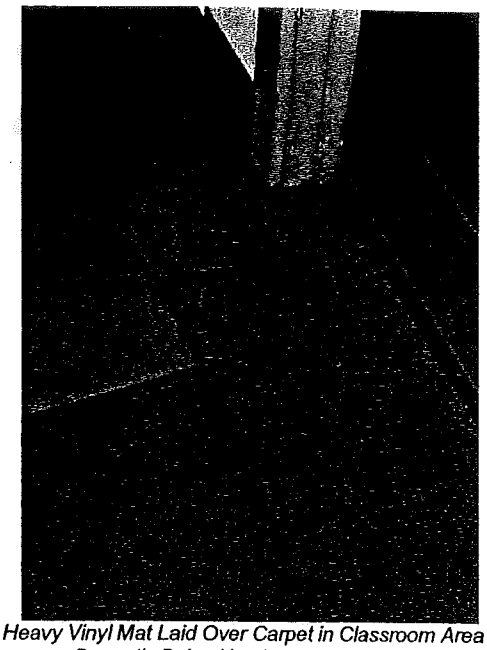


Typical Loop Pile Broadloom Carpet in Classroom Areas

INTERIOR

Finishes

P1010080.JPG

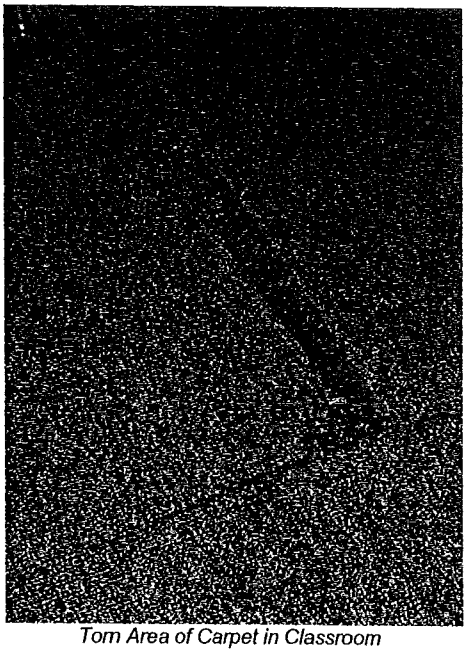


Heavy Vinyl Mat Laid Over Carpet in Classroom Area Currently Being Used as Dance Studio

INTERIOR

Finishes

P1010127.JPG

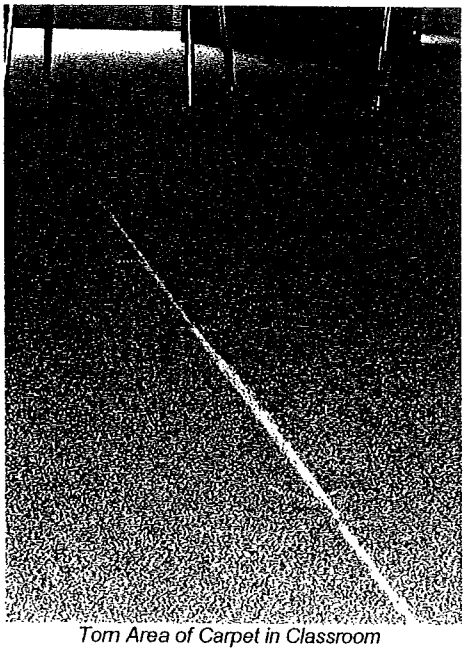


Torn Area of Carpet in Classroom

INTERIOR

Finishes

P1010378.JPG

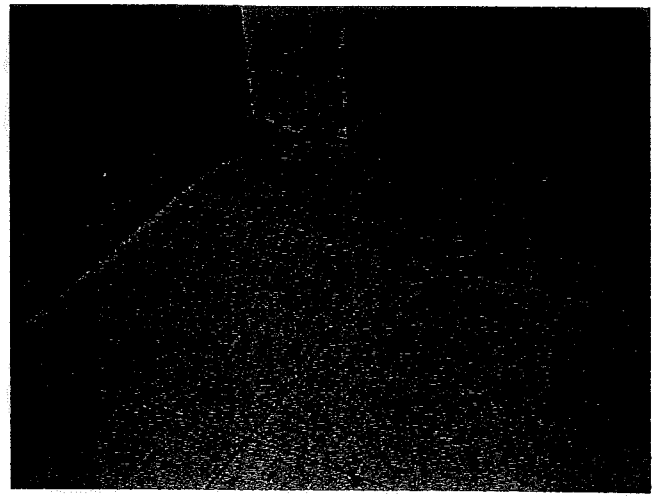


Torn Area of Carpet in Classroom

INTERIOR

Finishes

P1010126.JPG

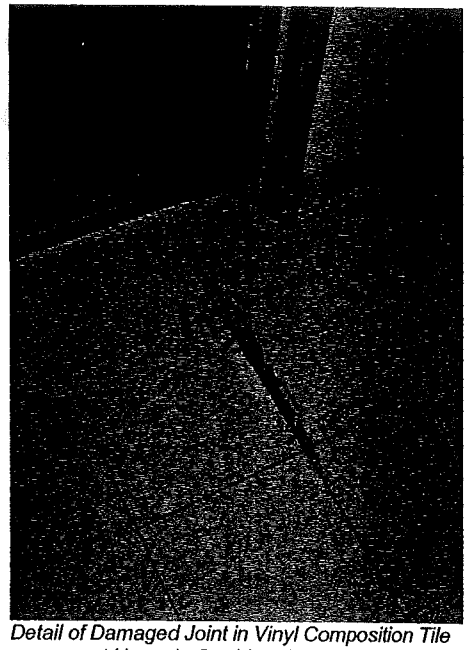


Damaged Joint in Vinyl Composition Tile Flooring in 1910 Building at Hump in Corridor Floor Level

INTERIOR

Finishes

P1010122.JPG

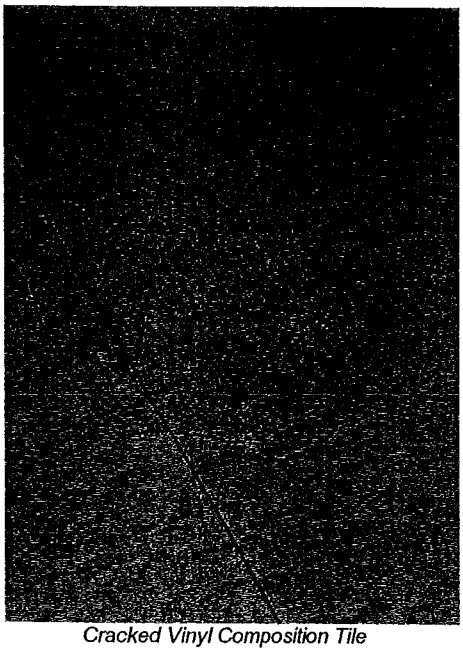


Detail of Damaged Joint in Vinyl Composition Tile at Hump in Corridor Floor Level

INTERIOR

Finishes

P1010130.JPG

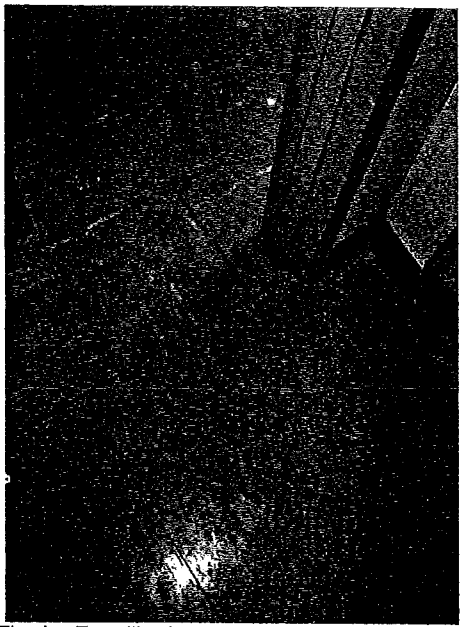


Cracked Vinyl Composition Tile

INTERIOR

Finishes

P1010104.JPG

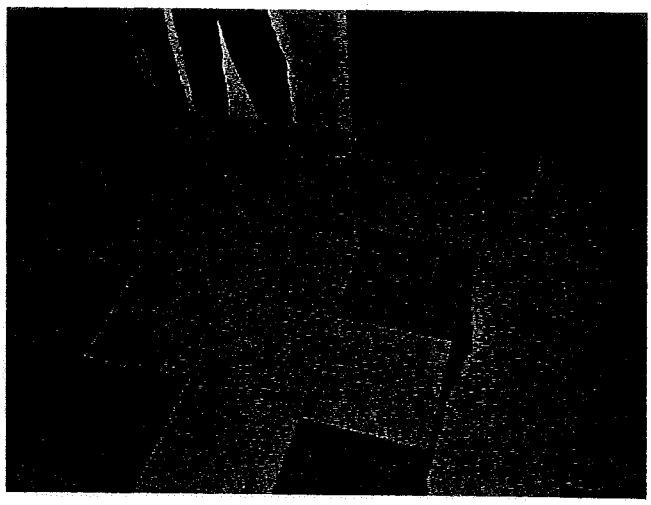


Flooring Transition in Second Floor of 1910 Building; 9" x 9" Vinyl Asbestos Tile to 12" x 12" Vinyl Composition Tile

INTERIOR

Finishes

P1010077.JPG

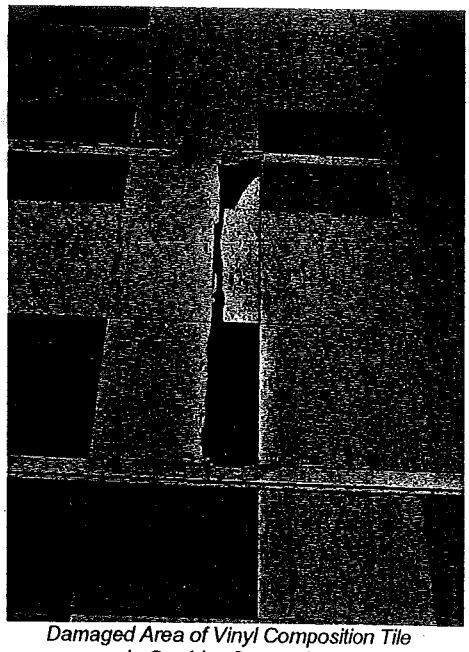


Damaged Inset of Vinyl Composition Tile in Corridor of 1931 Addition

INTERIOR

Finishes

P1010384.JPG

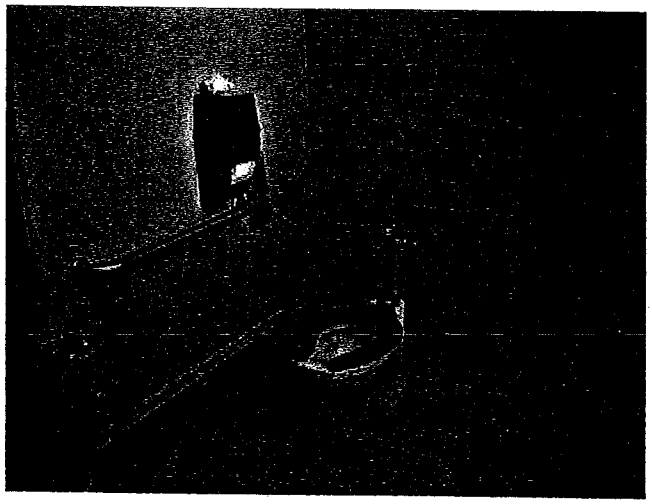


Damaged Area of Vinyl Composition Tile in Corridor Cover Plate

INTERIOR

Finishes

P1010109.JPG

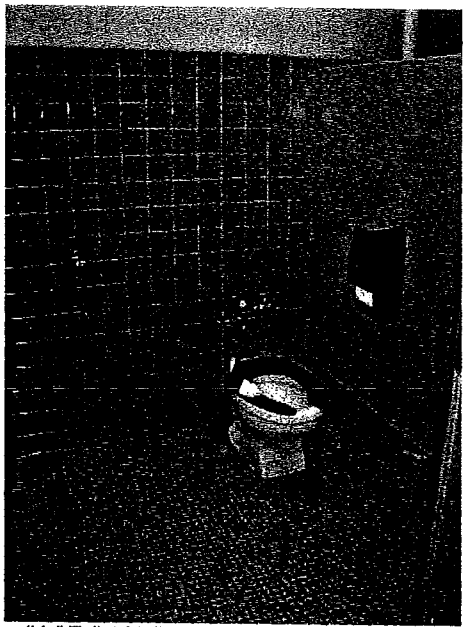


"Accessible" Toilet Stall in Girl's Toilet Room of 1931 Addition; Only One Grab Bar in Stall

INTERIOR

Finishes

P1010100.JPG

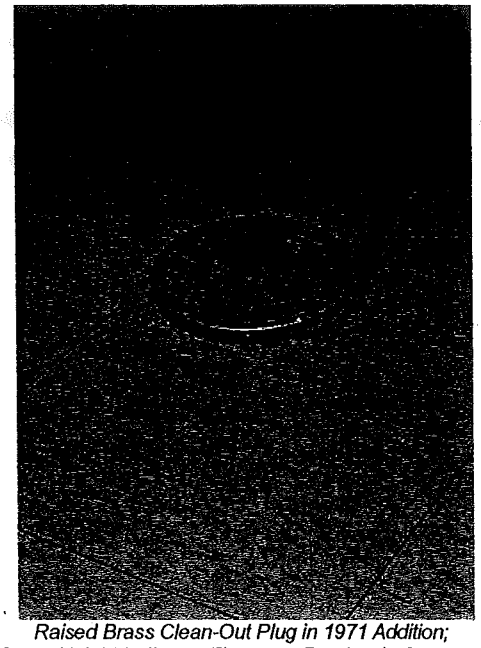


"Accessible" Toilet Stall in Boys Toilet Room of 1931 Addition; No Grab Bars in Stall

INTERIOR

Finishes

P1010154.JPG

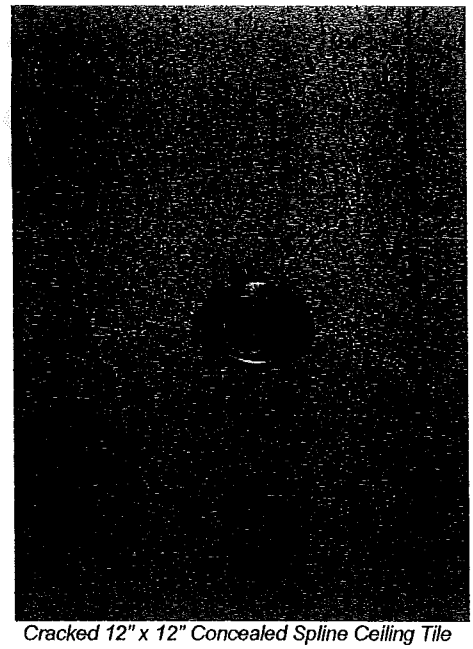


Raised Brass Clean-Out Plug in 1971 Addition;
Cover Height Indicates Floor was Previously Carpeted

INTERIOR

Finishes

P1010131.JPG

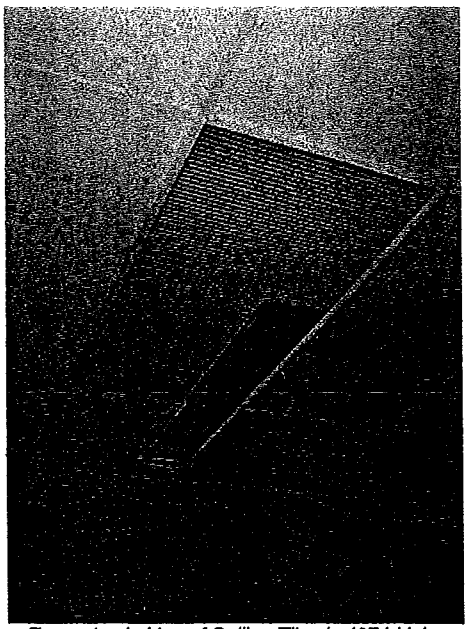


Cracked 12" x 12" Concealed Spline Ceiling Tile

INTERIOR

Finishes

P1010120.JPG

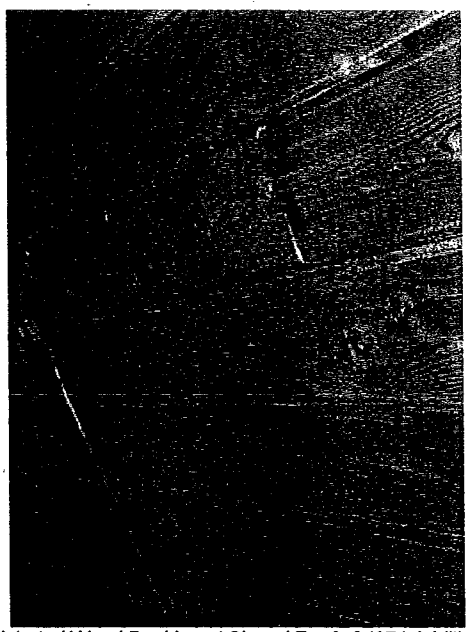


Eggcrates in Lieu of Ceiling Tiles in 1971 Link;
Installed to Facilitate Catching Drips From Leaking Roof

INTERIOR

Finishes

P1010144.JPG

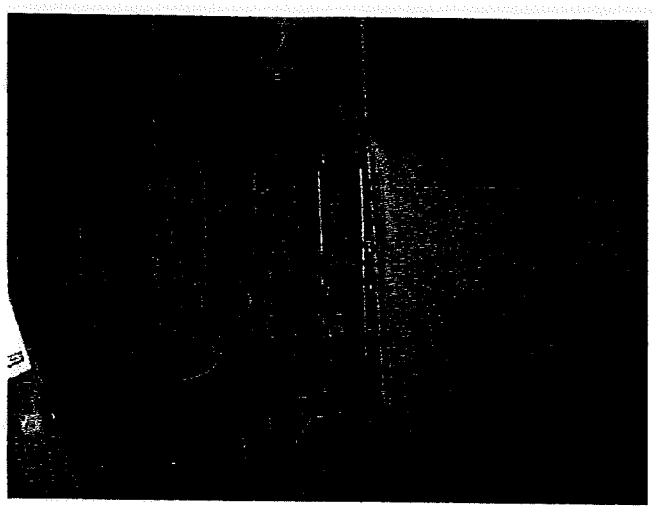


Distorted Wood Decking at Sloped Roof of 1971 Addition

INTERIOR

Mechanical & Electrical

P1010105.JPG

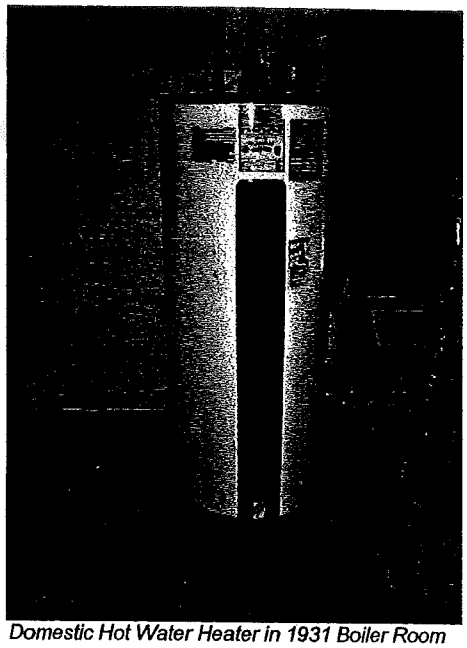


Twin Boilers in 1931 Addition

INTERIOR

Mechanical & Electrical

P1010106.JPG

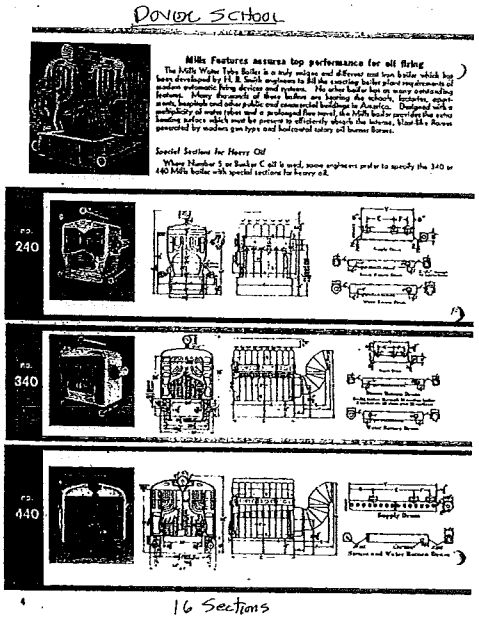


Domestic Hot Water Heater in 1931 Boiler Room

INTERIOR

Mechanical & Electrical

P1010395.JPG

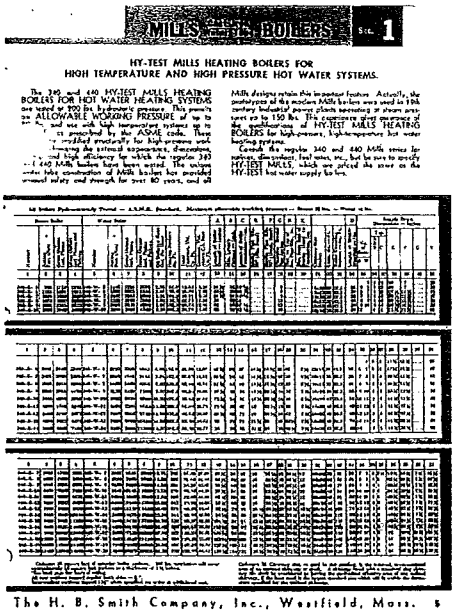


Boiler Catalogue Information

INTERIOR

Mechanical & Electrical

P1010396.JPG

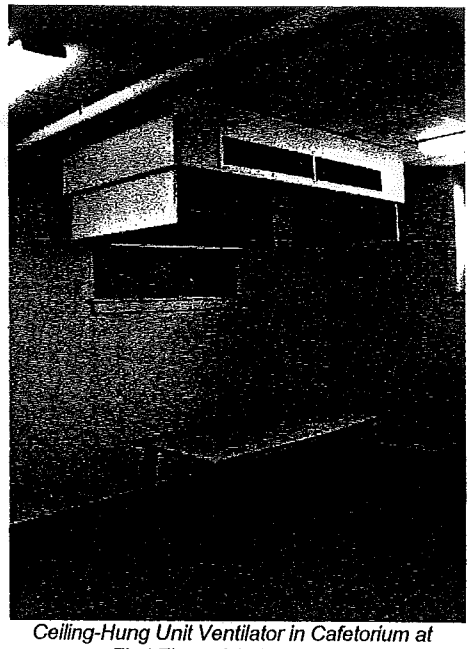


Boiler Catalogue Information

INTERIOR

Mechanical & Electrical

P1010113.JPG

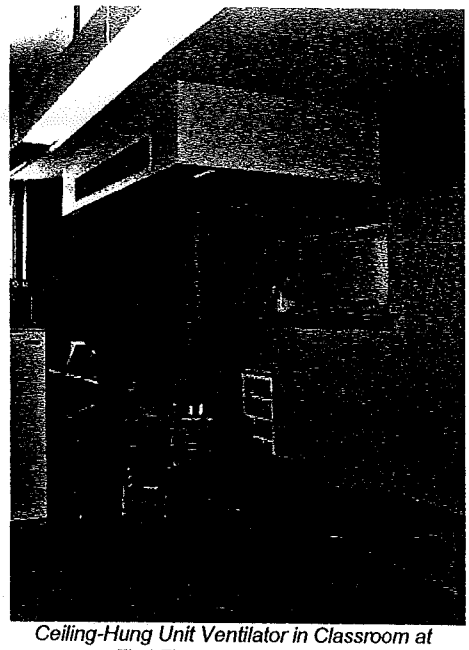


Ceiling-Hung Unit Ventilator in Cafetorium at First Floor of 1910 Building

INTERIOR

Mechanical & Electrical

P1010119.JPG

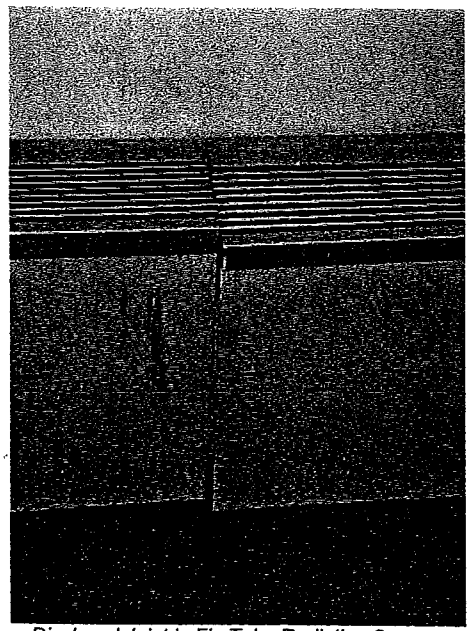


Ceiling-Hung Unit Ventilator in Classroom at First Floor of 1910 Building

INTERIOR

Mechanical & Electrical

P1010088.JPG

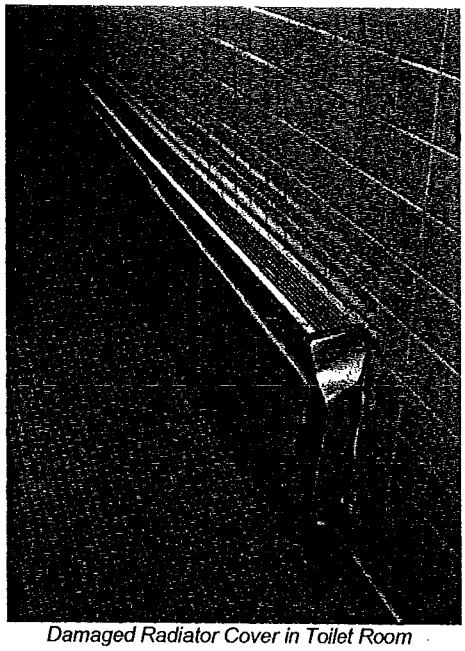


Displaced Joint in Fin Tube Radiation Covers

INTERIOR

Mechanical & Electrical

P1010121.JPG

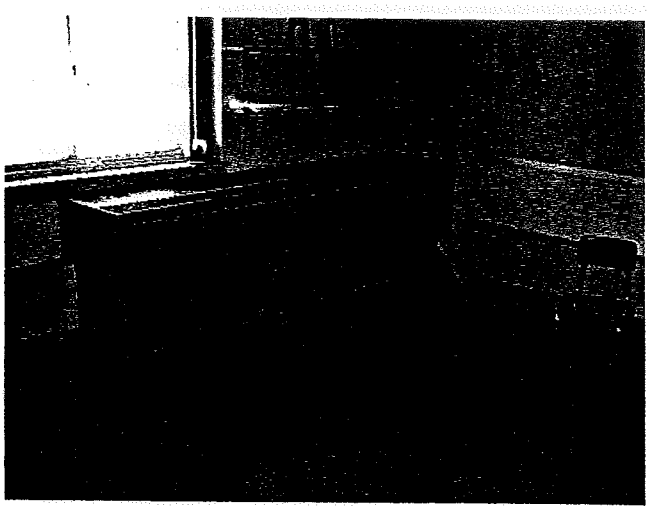


Damaged Radiator Cover in Toilet Room

INTERIOR

Mechanical & Electrical

P1010128.JPG

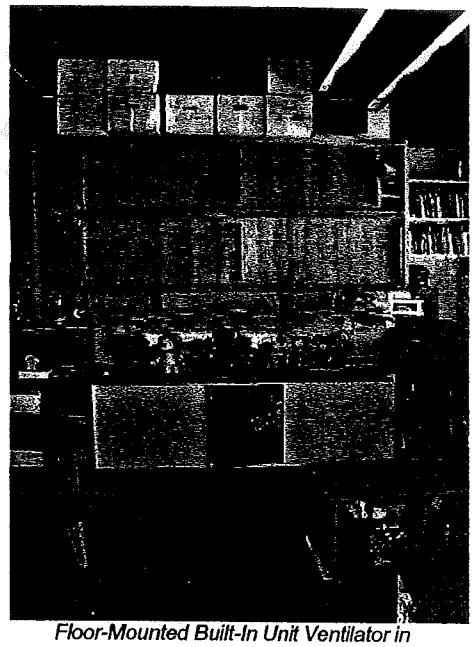


Floor-Mounted Unit Ventilator in Classroom at Second Floor of 1910 Building

INTERIOR

Mechanical & Electrical

P1010153.JPG



Floor-Mounted Built-In Unit Ventilator in First Floor of 1971 Addition

INTERIOR

Mechanical & Electrical

Return-Piping-1.jpg

Caryl School Piping

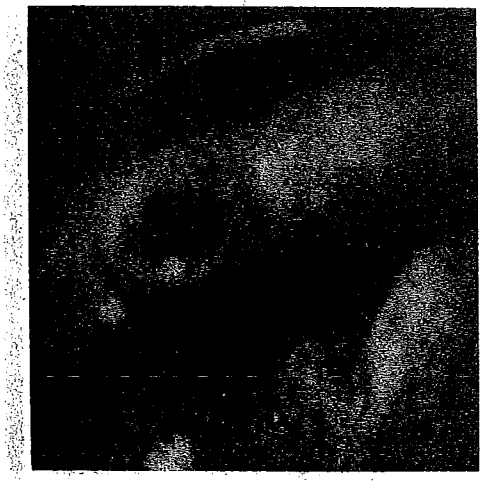
10/31/00

Section of Corroded Return Piping from Trench in 1971 Addition; Replaced in 2000 (Courtesy of Karl Warnick)

INTERIOR

Mechanical & Electrical

Return-Piping-2.jpg



Caryl School Piping

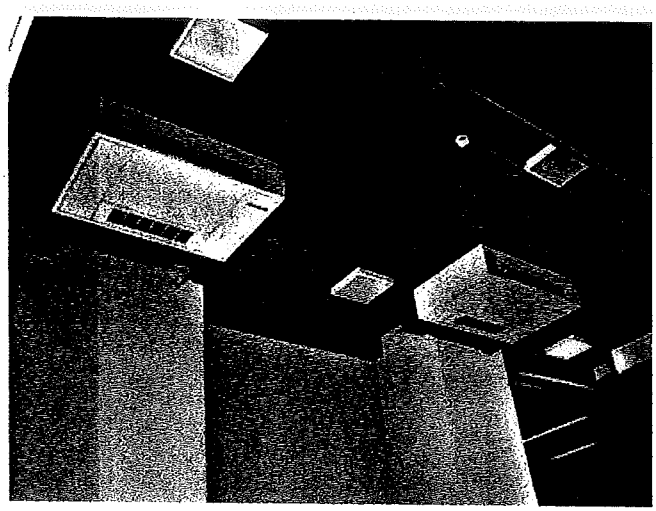
10/31/00

Detail of Corroded Return Piping from Trench in 1971 Addition; Replaced in 2000 (Courtesy of Karl Warnick)

INTERIOR

Mechanical & Electrical

P1010141.JPG

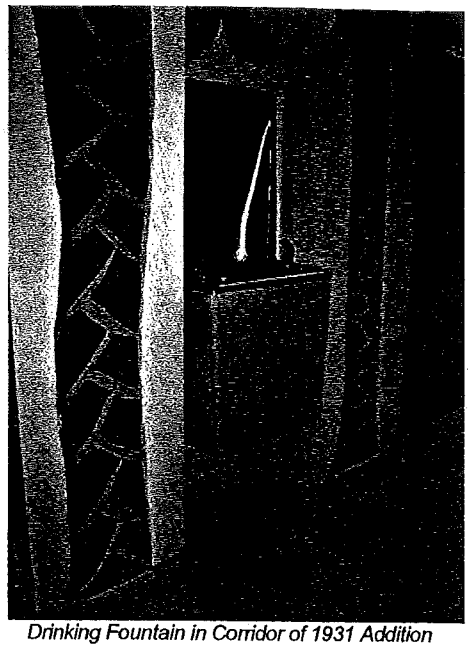


Ceiling-Hung Unit Ventilators in Second Floor Former Library Area of 1971 Addition

INTERIOR

Mechanical & Electrical

P1010111.JPG

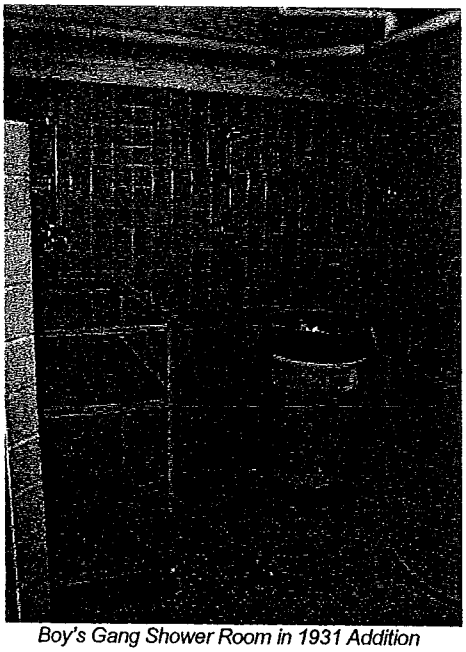


Drinking Fountain in Corridor of 1931 Addition

INTERIOR

Mechanical & Electrical

P1010099.JPG

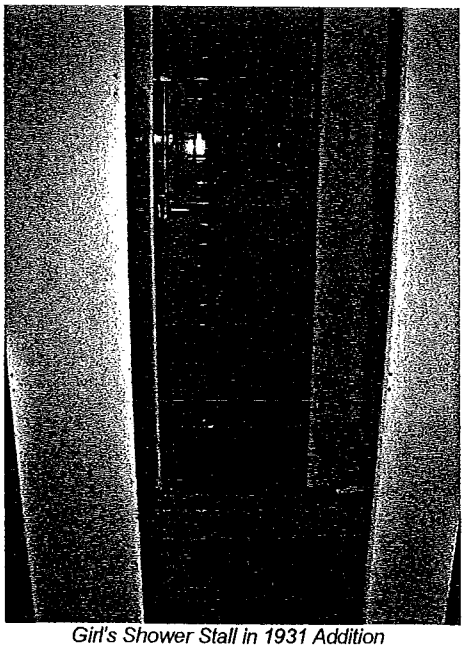


Boy's Gang Shower Room in 1931 Addition

INTERIOR

Mechanical & Electrical

P1010110.JPG

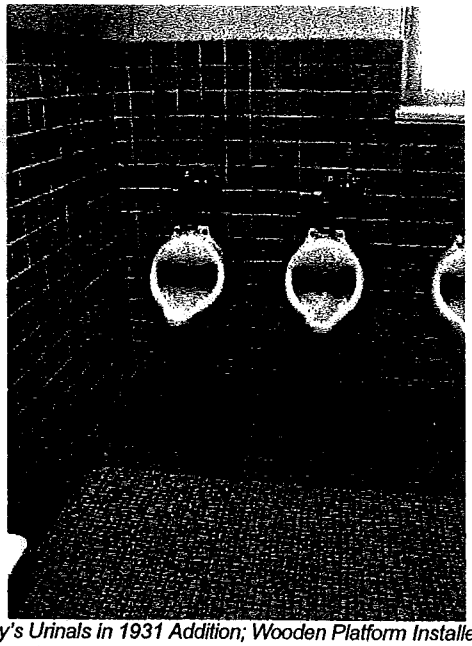


Girl's Shower Stall in 1931 Addition

INTERIOR

Mechanical & Electrical

P1010098.JPG

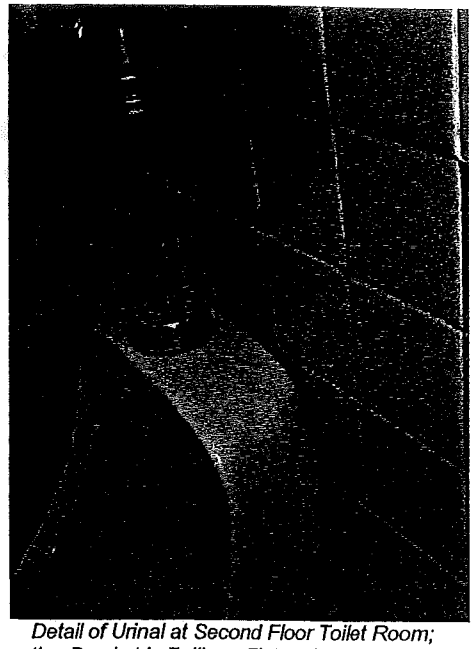


Boy's Urinals in 1931 Addition; Wooden Platform Installed to Temporarily Lower the Effective Mounting Height

INTERIOR

Mechanical & Electrical

P1010129.JPG

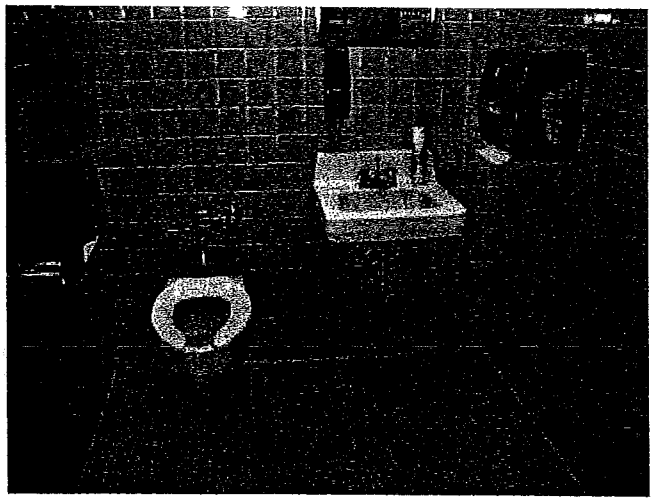


Detail of Urinal at Second Floor Toilet Room; Mounting Bracket is Failing - Fixture is Pulling from Wall

INTERIOR

Mechanical & Electrical

P1010132.JPG

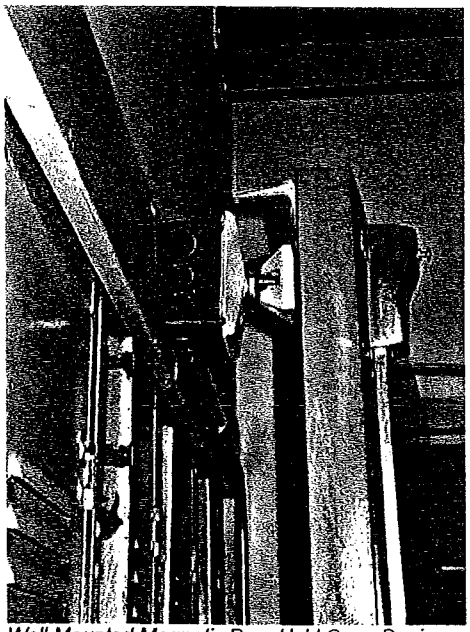


Staff Toilet Room in 1971 Link

INTERIOR

Mechanical & Electrical

P1010093.JPG

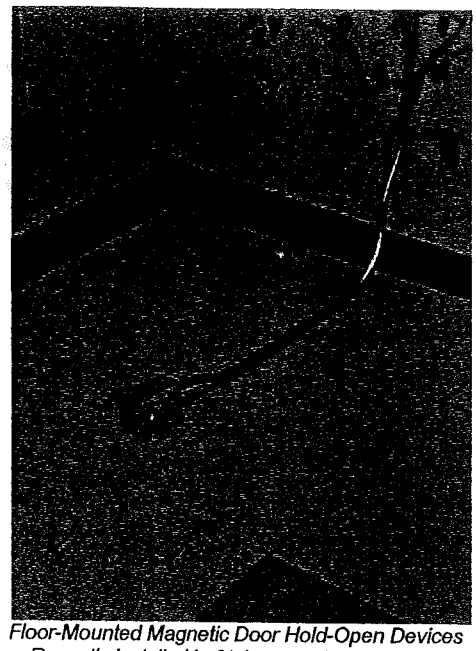


Wall-Mounted Magnetic Door Hold-Open Devices Recently Installed in Corridor of 1931 Addition

INTERIOR

Mechanical & Electrical

P1010147.JPG

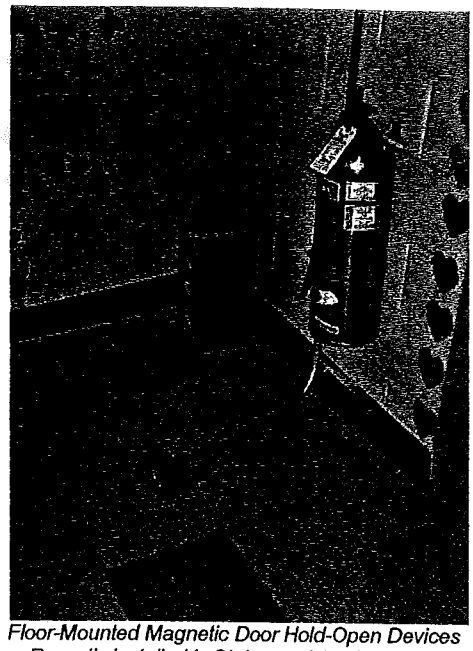


Floor-Mounted Magnetic Door Hold-Open Devices Recently Installed in Stairway of 1971 Addition

INTERIOR

Mechanical & Electrical

P1010148.JPG

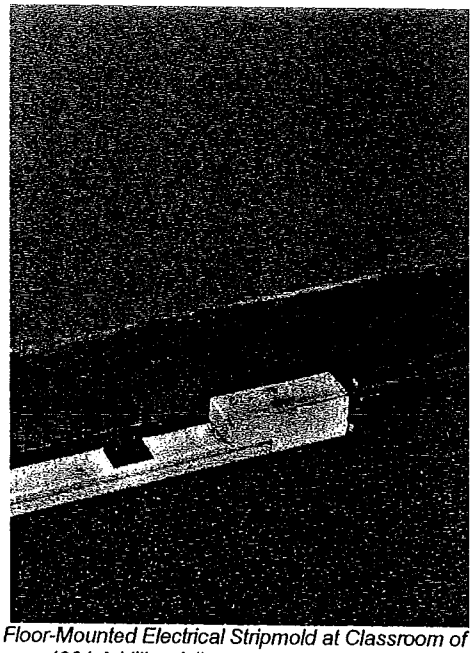


Floor-Mounted Magnetic Door Hold-Open Devices Recently Installed in Stairway of 1971 Addition

INTERIOR

Mechanical & Electrical

P1010083.JPG

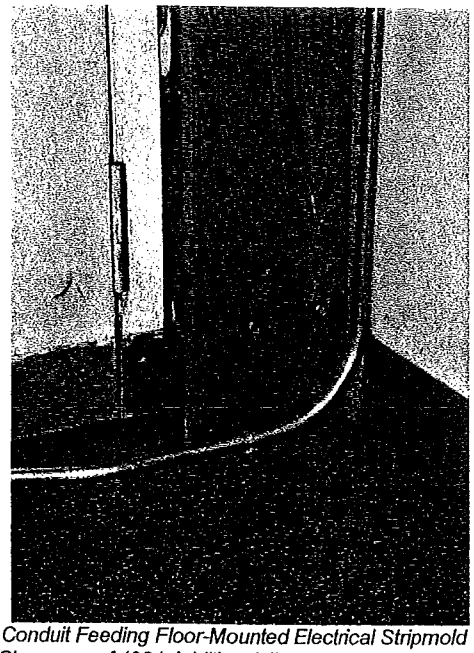


Floor-Mounted Electrical Stripmold at Classroom of 1931 Addition Adjacent to Folding Partition

INTERIOR

Mechanical & Electrical

P1010084.JPG

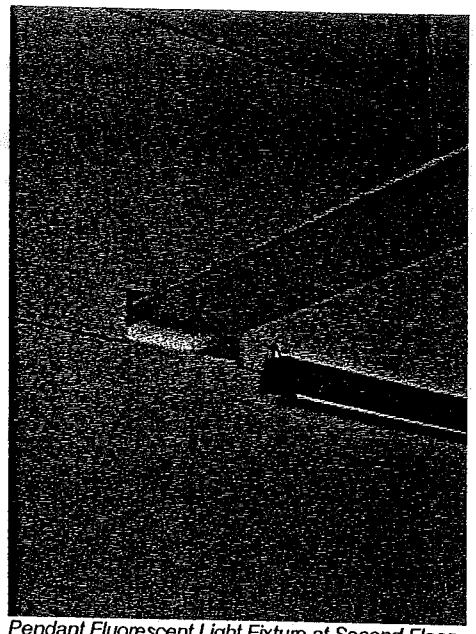


Conduit Feeding Floor-Mounted Electrical Stripmold at Classroom of 1931 Addition Adjacent to Folding Partition

INTERIOR

Mechanical & Electrical

P1010124.JPG

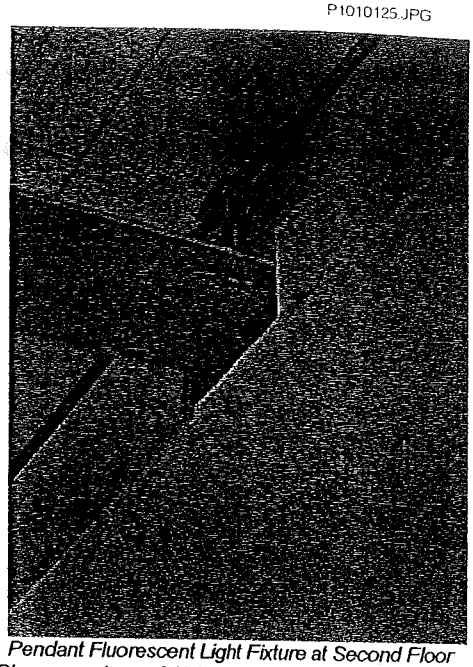


Pendant Fluorescent Light Fixture at Second Floor Classroom Area of 1910 Building Penetrates Partition

INTERIOR

Mechanical & Electrical

P1010125.JPG

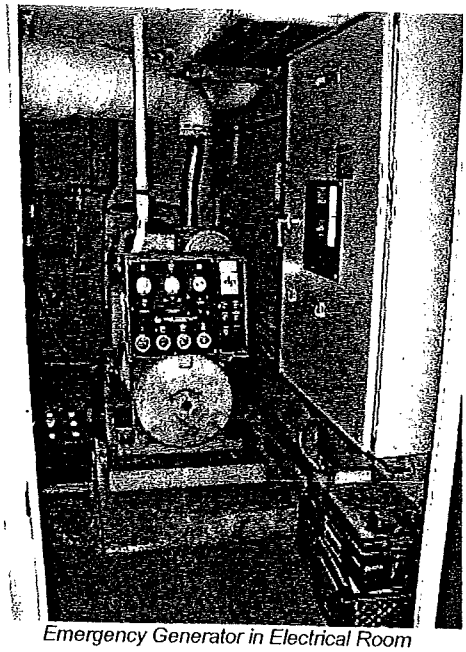


Pendant Fluorescent Light Fixture at Second Floor Classroom Area of 1910 Building Penetrates Partition

INTERIOR

Mechanical & Electrical

P1010107.JPG

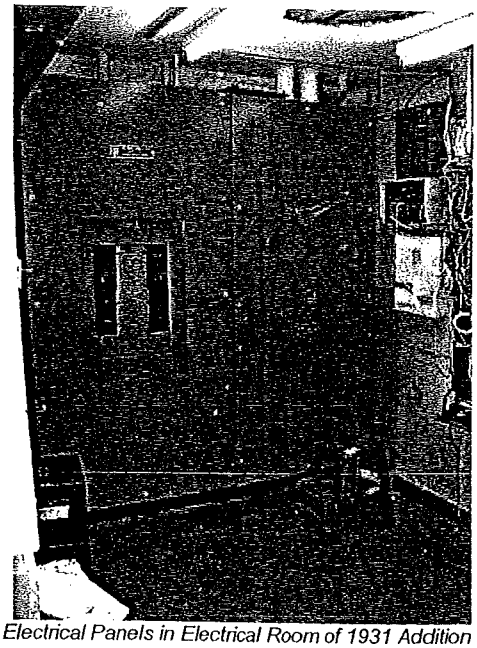


Emergency Generator in Electrical Room

INTERIOR

Mechanical & Electrical

P1010108.JPG

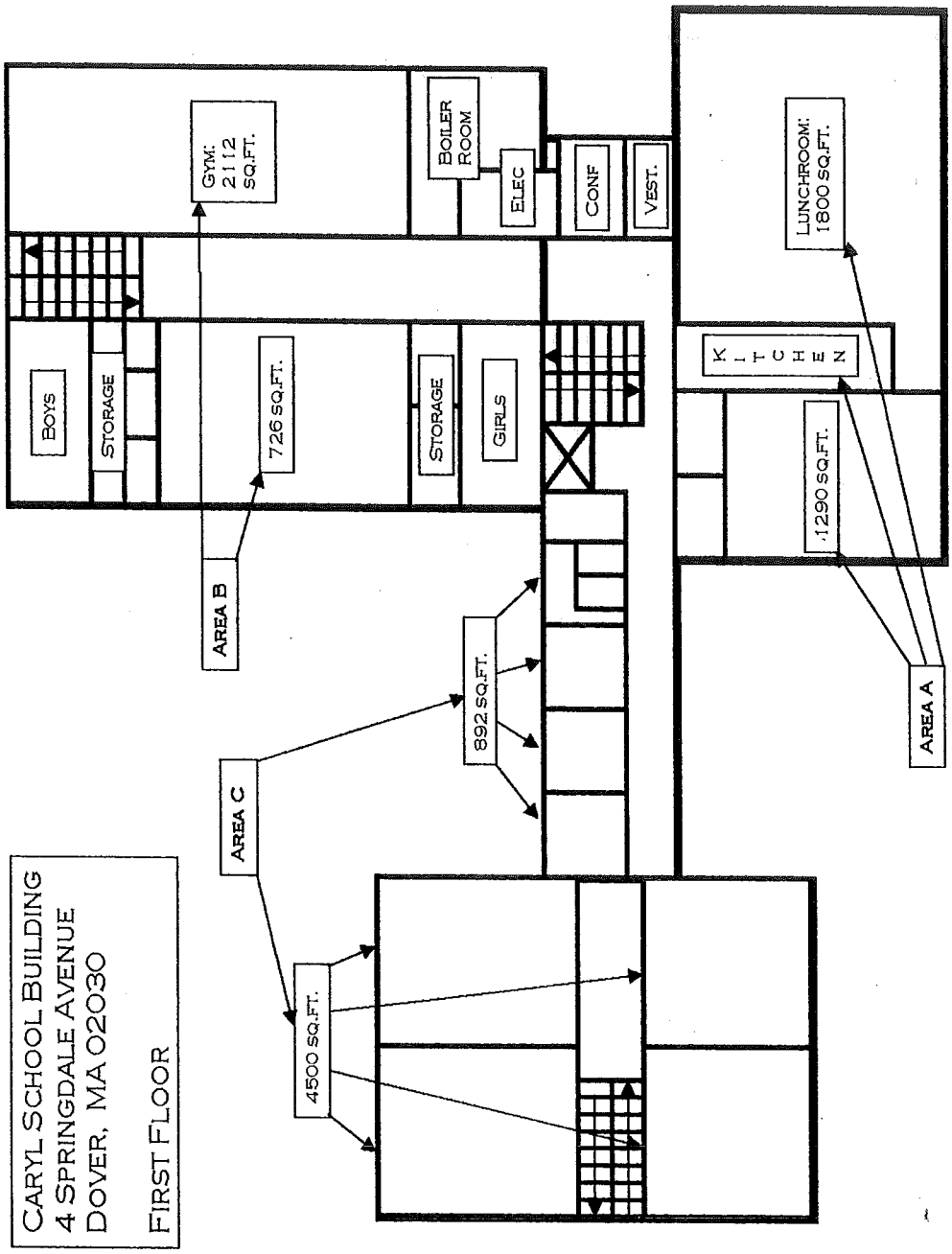


Electrical Panels in Electrical Room of 1931 Addition

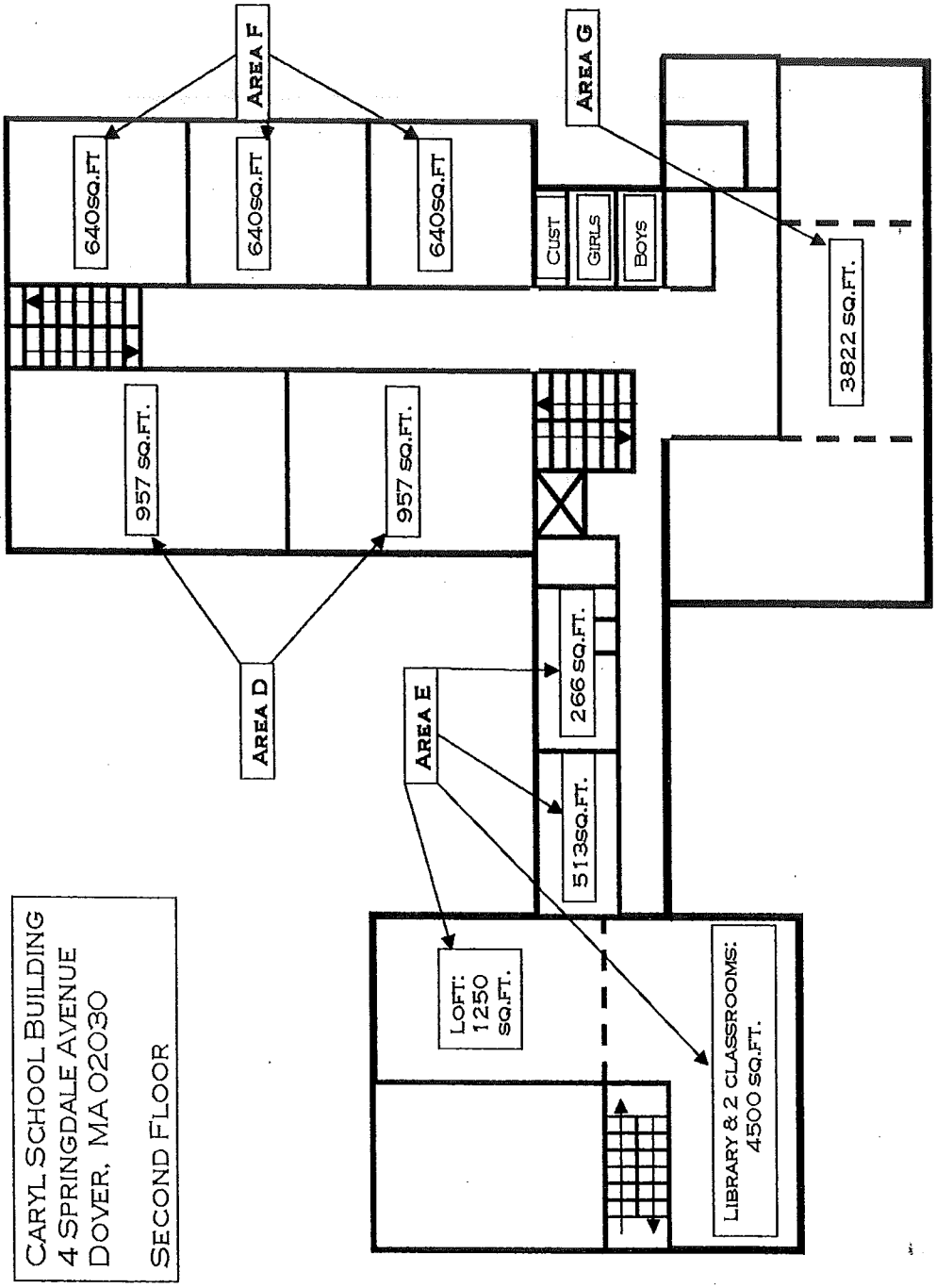
APPENDIX B
EXISTING LAYOUT DIAGRAMS

B-1 FIRST FLOOR LEVEL

B-2 SECOND FLOOR LEVEL

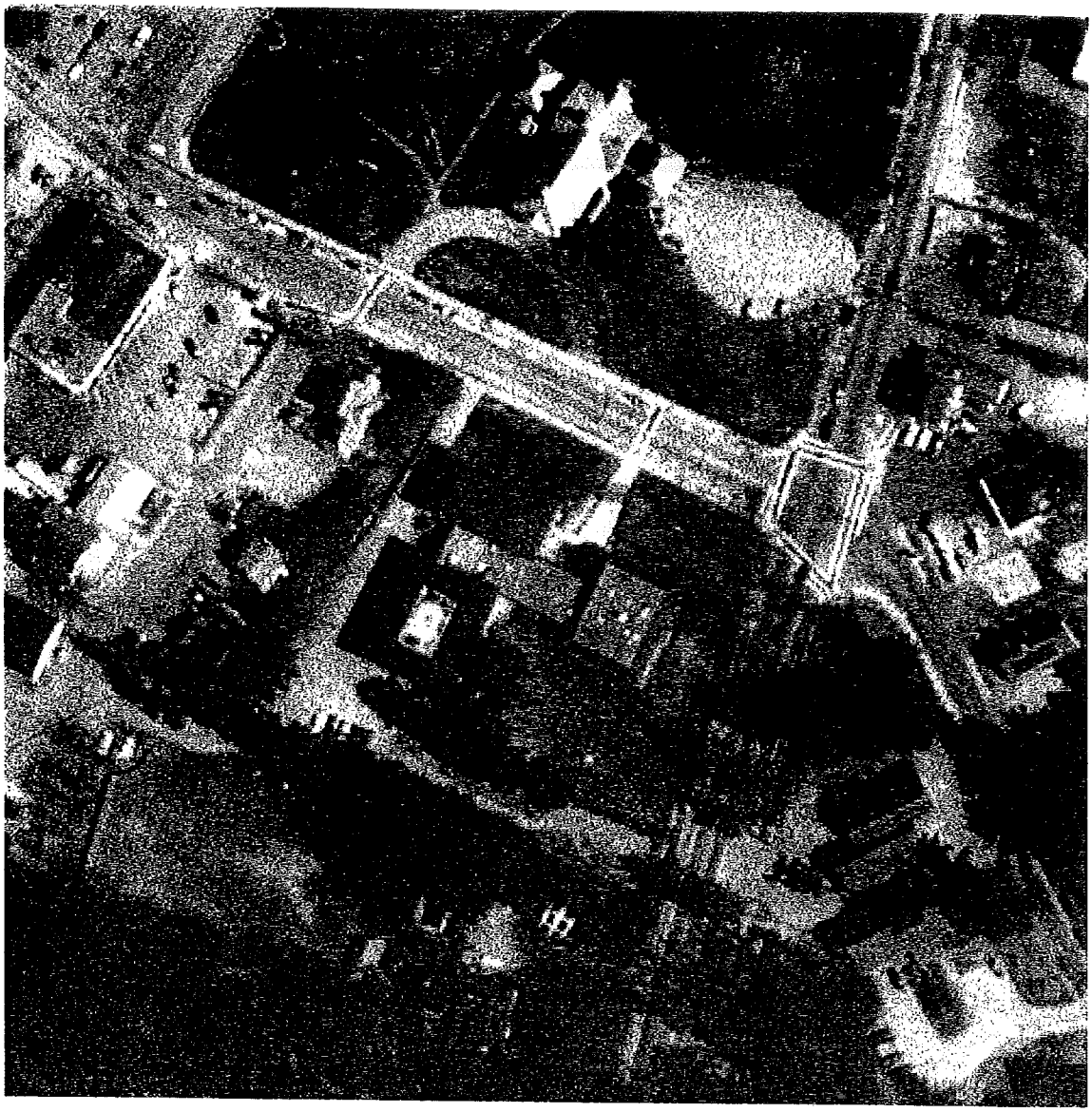


Dover Caryl School Management Advisory Committee's Diagram of FIRST FLOOR LEVEL



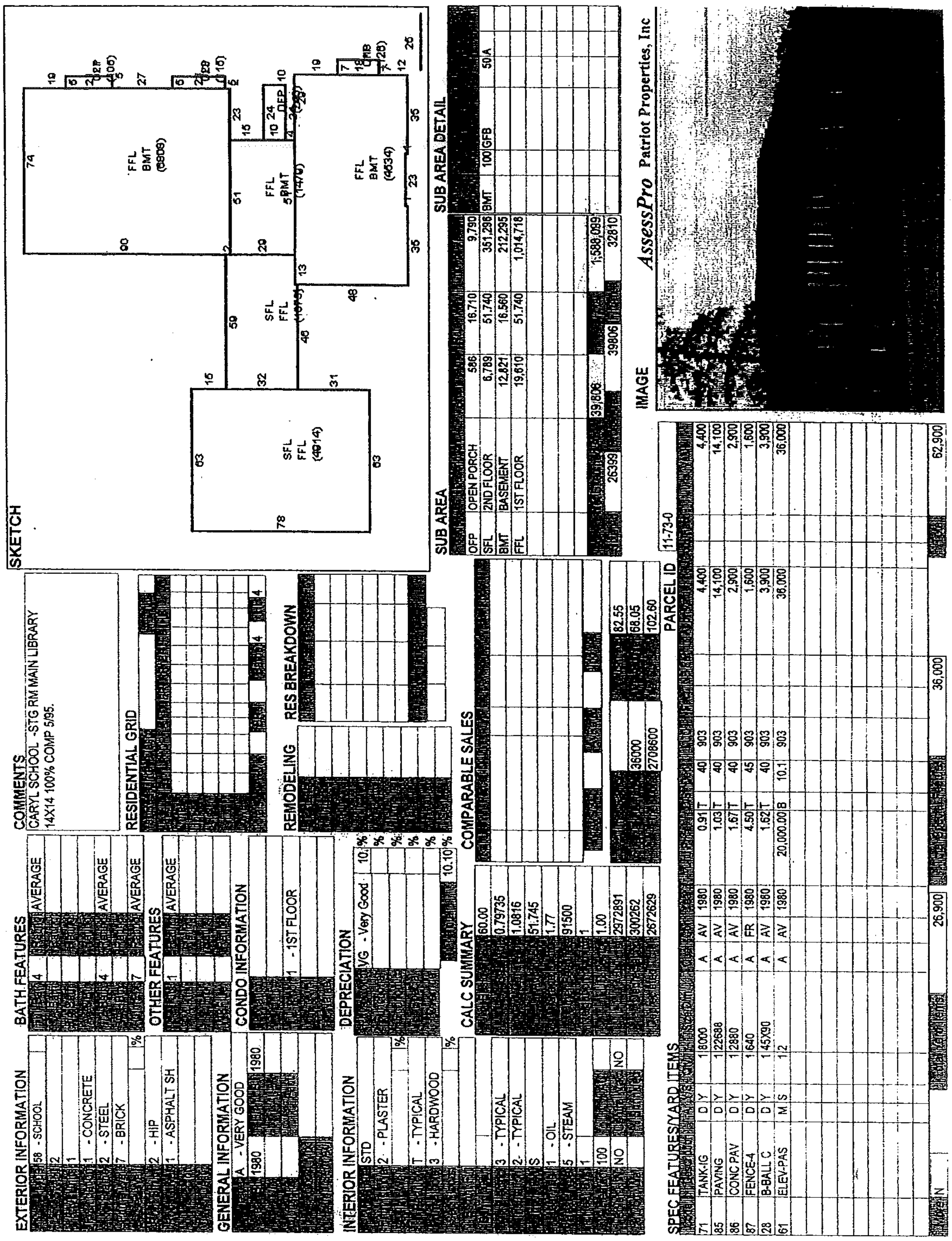
Dover Caryl School Management Advisory Committee 's Diagram of SECOND FLOOR LEVEL

APPENDIX C
MISCELLANEOUS DOCUMENTS



Satellite Image of Site

Courtesy of MIT Ortho Browser – MassGIS Orthophoto No. 221886



EXTERIOR INFORMATION

58 - SCHOOL	
2	
1	
1 - CONCRETE	
2 - STEEL	
7 - BRICK	
	%
2 - HIP	
1 - ASPHALT SH	

GENERAL INFORMATION

A - VERY GOOD	
1980	1980

INTERIOR INFORMATION

STD	
2 - PLASTER	%
T - TYPICAL	
3 - HARDWOOD	%
3 - TYPICAL	
2 - TYPICAL	
S	
1 - OIL	
5 - STEAM	
1	
100	
NO	NO

BATH FEATURES

4	AVERAGE
4	AVERAGE
7	AVERAGE

OTHER FEATURES

1	AVERAGE

CONDO INFORMATION

1 - 1ST FLOOR

DEPRECIATION

VG - Very Good	10.%
	%
	%
	%
	%
	10.10 %

CALC SUMMARY

60.00
0.79735
1.0816
51.745
1.77
91500
1
1.00
2972891
300262
2672629

COMMENTS

CARYL SCHOOL -STG RM MAIN LIBRARY
14X14 100% COMP 5/95.

RESIDENTIAL GRID

REMODELING

RES BREAKDOWN

COMPARABLE SALES

		82.55
36000		68.05
2708600		102.60

SKETCH

SUB AREA

OFP	OPEN PORCH	586	16.710	9,790
SFL	2ND FLOOR	6,789	51.740	351,296
BMT	BASEMENT	12,821	16.560	212,295
FFL	1ST FLOOR	19,610	51.740	1,014,718
		39,806		1,588,099
	26399		39806	32810

SUB AREA DETAIL

BMT	100	GFB	50 A

PARCEL ID 11-73-0

SPEC FEATURES/YARD ITEMS

71	TANK-IG	D	Y	1	8000	A	AV	1980	0.91	T	40	903	4,400		4,400
85	PAVING	D	Y	1	22686	A	AV	1980	1.03	T	40	903	14,100		14,100
86	CONC PAV	D	Y	1	2880	A	AV	1980	1.67	T	40	903	2,900		2,900
87	FENCE-4	D	Y	1	640	A	FR	1980	4.50	T	45	903	1,600		1,600
28	B-BALL C	D	Y	1	45X90	A	AV	1980	1.62	T	40	903	3,900		3,900
61	ELEV-PAS	M	S	1	2	A	AV	1980	20,000.00	B	10.1	903	36,000		36,000

N	26,900	36,000	62,900

IMAGE

AssessPro Patriot Properties, Inc

Assessment Form of Caryl School
By "AssessPro" of Patriot Properties, Inc.

11 Map | 73 Block | 0 Lot | 1 of 1 CARD | GOVERNMENT | TOTAL ASSESSED: 3,375,800

Town of Dover

PROPERTY LOCATION

4	SPRINGDALE AV

OWNERSHIP

TOWN OF DOVER/CARYL SCHOOL
4 SPRINGDALE AV
DOVER
MA
02030

PREVIOUS OWNER

NARRATIVE DESCRIPTION

This Parcel contains 2. ACRES of land mainly classified as MUNICPL with a(n) SCHOOL Building Built about 1980, Having Primarily BRICK Exterior and ASPHALT SH Roof Cover, with 1 Units, 4 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Rooms, and 0 Bdrms.

OTHER ASSESSMENTS

PROPERTY FACTORS

0	0	100

IN PROCESS APPRAISAL SUMMARY

903	2,708,600	26,900	2.000	640,300	3,375,800
	2,708,600	26,900	2.000	640,300	3,375,800
	2,708,600	26,900	2.000	640,300	3,375,800
	Market Adj Cost		102.89		102.89

PREVIOUS ASSESSMENT

2003	903	TB	2,708,600	26900	2.	640,300	3,375,800	3,375,800		12/27/02
2002	903	TB	2,708,600	26900	2.	571,700	3,307,200			1/18/02
2001	903	FV	1,996,800	31400	2.	356,800	2,385,000		FY 2001 COMMITMENT	12/28/00
2000	903	FV	1,996,800	31400	2.	356,800	2,385,000		COMMITMENT	12/8/99
1999	903	FV	1,994,200	31400	2.	356,800	2,382,400		COMMITMENT	12/4/98
1998	903	FV	1,791,000	31400	2.	343,700	2,166,100		COMMITMENT	11/18/97
1997	903	FV	1,791,000	31400	2.	343,700	2,166,100		COMMITMENT	12/5/96
1996	903	FV	1,791,000	31400	2.	343,700	2,166,100		COMMITMENT	10/19/95

Parcel ID: 11-73-0
PRINT: 02/19/03 11:41:37
LAST REV: 02/13/03 16:10:39
PAT ACCT.: 231

USER DEFINED

SALES INFORMATION

BUILDING PERMITS

12/31/02	2002-302W	MANUAL		O		ELEC: LTS
9/1/02	2002-199W	MANUAL		O		ELEC: 5 OUTLETS
4/30/02	2002-085W	MANUAL	1,500	O		ELEC: 30A FOR STRG
8/22/01	2001-218W	MANUAL		O		ELEC: ISNT 120 VOL
8/6/01	2001-093P	MANUAL		O		PLU: 2-1ST FL
8/12/96	96-115A	MANUAL	23,965	C	10/30/96	ALTER
7/1/93	93-73A	MANUAL	3,500	C		PART
6/23/92	92-82A	MANUAL		C		PART

ACTIVITY INFORMATION

10/30/96	PERMIT VISIT	197	MIKE CASSIDY
5/23/95	PERMIT VISIT	197	MIKE CASSIDY

VERIFICATION OF VISIT NOT DATA __/__/__

LAND SECTION (First 7 lines only)

903	MUNICPL	87120	SQUARE FE	SITE	0	7.	1.050	EG	USE	50	640,332	640,300

2	87120.00	903	MUNICPL	EARLY GD	640,332		640,300

Disclaimer: This Information is believed to be correct but is subject to change and is not warranted.

2003 Town of Dover Assessment Information for Caryl School
Building Value = $2,708,600
Building + Land = $3,375,800