



# OFFICE OF THE CONTROLLER

## CITY OF PHILADELPHIA PENNSYLVANIA

REVIEW OF  
CONDITIONS OF  
SCHOOL FACILITIES

SEPTEMBER 2006

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**City Controller**

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## EXECUTIVE SUMMARY

### Why the City Controller's Office Conducted the Facility Review

As part of the City Controller's on-going audit of the School District of Philadelphia's capital building program, where nearly \$900 million dollars was borrowed in fiscal years 2003 to 2005 to partially fund an overall Capital Program that will devote over \$2.8 billion dollars through fiscal year 2011 to improve major systems and structures, the Controller's Office sought to randomly inspect 23 schools.

Preliminary inspections of school buildings uncovered imminent health and safety violations. In the Martha Washington Elementary School, for example, the Controller's Office uncovered imminent structural problems which forced the School District to rope off a breezeway which is in danger of collapsing.

From August 21<sup>st</sup> through August 24<sup>th</sup>, the City Controller's Office attempted to conduct a facility conditions inspection of twenty-three randomly selected schools from different parts of the city. During the course of these inspections, Controller staff was granted access to 11 schools, permitted partial access to 2 schools and was denied entry to 10 schools.

The Controller's Office is troubled by the School District's failure to cooperate and in denying Controller inspectors access to 10 schools that had been randomly selected for inspection. In addition, the Controller's Office is deeply troubled by some of the findings it's inspectors uncovered in 11 of the schools they were permitted to inspect.

As part of our review, the Controller's Office staff asked for, but never received, work order requests for anticipated repairs to the identified problems.

The Controllers Inspection Teams included an auditor, an investigator, and a technical specialist all supervised by a licensed civil engineer.

## What the City Controller's Office Found by the Facility Review

Generally, the conditions identified at the thirteen schools included potential asbestos exposure, electrical hazards, fire hazards, heating and cooling problems, broken or nonfunctional equipment, structural issues, broken window panes, windows that do not open, cracked and peeling paint, hazards for tripping or falling and dirty or unsightly conditions for the school students, staff and surrounding residents.

Specific significant findings include:

- **G.W. Carver High School** -- Electrical hazards from open and exposed electrical wiring, fire hazards due to the lack of fire hoses in school fire stations, expired and uncertified fire extinguishers, and padlocked fire exit doors.
- **University City High School** -- Structural damage caused by failing, fallen and weakening of beams in the pool area. Due to inadequate ventilation the build up of humidity and moisture in this facility caused a section of the ceiling (4 feet x 15 feet) to collapse into the pool and onto the pool deck. Because of the lack of proper monitoring for bacteria and mold and mildew the pool area doors remain locked.
- **S.W. Mitchell Elementary School** -- Open electrical boxes presenting loose and exposed wires, and water leaks causing substantial damage in classrooms.
- **Boone Disciplinary School** -- Bathroom conditions are poor with leaking toilets and urinals, windows do not open and leak water into the school, and fire doors that are locked.
- **Solis-Cohen Elementary School** -- Substantial areas of exterior cement have disintegrated exposing structural reinforcement steel bars.
- **McDaniel Elementary School** -- Hazards from tripping and falling due to the faulty installation of floor tiles in this recently renovated school.

- Irregular and difficult to regulate broken heating or cooling systems are in many schools. For example, University City High School's library benefited from the creative use of a nurse's blood pressure pump rigged to control the temperature.

In addition to exposed electrical wires from open circuit boxes and missing outlet covers, many schools need Ground Fault Current Intercept (GFCI) outlets in areas near sinks and pipes as required by code. This specific threat of electrical shock is a persistent finding in all locations. A direct correlation can be discerned from the decrease in the School District's basic Cleaning Service Budget Line In School Year 2001/2002 the School District had 2,755 funded positions at a cost of \$109.3 million dollars in the Basic Cleaning Services budget line. Of this total there were 526 Building Engineers, 424 Maintenance and 1,805 Cleaning Service positions.

Also included in the School Year 2001/2002 budget was approximately \$4.5 million for Contracted Maintenance Services. In the School Year 2006/2007 budget the School District has reduced the number of requested positions in Basic Cleaning Services to 1,995 at a cost of \$100.5 million – a reduction of 760 positions or 27.6 percent of the workforce, a decrease of approximately \$9 million.

These reductions were across all three categories. In School Year 2006/2007 requested positions for Engineers are 428 a decrease of 98 positions or 18.6 percent, Maintenance 355 positions a reduction of 69 positions or a 16.2 percent, and Cleaning Positions 1,212 a reduction of 593 or a 32.8 percent loss of manpower. Also included in the School Year 2006/2007 is a request for an estimated \$2.5 million for contracted maintenance services, a \$2 million decrease or a 44.4 percent reduction from School Year 2001/2002.

# **SCHOOL FACILITY CONDITION INSPECTION**

## **BACKGROUND**

The Philadelphia School District has approximately 290 school buildings located throughout the city. The maintenance as well as the cleaning of these buildings is the responsibility of the School District. Yet the District has managed to continue to cut their budget in both these areas.

## **OBJECTIVES SCOPE AND METHODOLOGY**

As part of the City Controller's on-going audit of the School District of Philadelphia's capital building program, where nearly \$900 million dollars was borrowed in fiscal years 2003 to 2005 to partially fund an overall Capital Program that will devote over \$2.8 billion dollars through fiscal year 2011 to improve major systems and structures, the Controller's Office sought to randomly inspect 23 schools.

Preliminary inspections of school buildings uncovered imminent health and safety violations. In the Martha Washington Elementary School, for example, the Controller's Office uncovered imminent structural problems which forced the School District to rope off a breezeway which is in danger of collapsing.

From August 21<sup>st</sup> through August 24<sup>th</sup>, the City Controller's Office attempted to conduct a facility conditions inspection of twenty-three randomly selected schools from different parts of the city. However, we were only able to fully inspect 11 schools, partially inspect 2 schools and were denied access to the remaining 10 facilities (See matrix on page 37 for specific schools).

Our work consisted of inspecting school facilities at locations throughout the city; taking still pictures and video taping the observed conditions; and conducting interviews with available school district personnel.

<b>Location and Number of Schools Selected by Section of the City and Inspections Permitted and Performed</b>		
<b>Section of the City</b>	<b>Number of Schools Selected</b>	<b>Inspections Permitted</b>
North	3	2
South	4	1
East	5	2*
West	2	1
Northeast	1	1
Southwest	2	2*
Northwest	5	4
* One school in each of these areas was limited to a partial inspection by school district personnel.		

## **BUDGETARY CONCERNS**

As our limited inspections show, conditions at Philadelphia schools from elementary to high schools are less than desirable for students and teachers and in some cases pose a direct danger to the safety and well being of students, teachers and other school personnel.

Conditions found ranged from something as simple as missing door knobs to as complex as structural problems like falling support beams. Broken or inoperative toilets, vermin and insect infestation were noticed, yet the School District continues to decrease spending in the maintenance, engineering and cleaning budget lines.

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Positions 1,212 a reduction of 593 or a 32.8 percent loss of manpower. Also included in the School Year 2006/2007 is a request for an estimated \$2.5 million for contracted maintenance services, a \$2 million decrease or a 44.4 percent reduction from School Year 2001/2002.

While the School District can boast that these decreasing numbers have saved millions of dollars over this five year period, the lack of preventive and ongoing maintenance is not without cost. The resultant cost though cannot be measured in dollars. Rather the conditions discovered by the Controller's office personnel clearly show that we are putting the welfare of our children and teachers at risk. It is imperative that the School District provide the cleanest and safest learning environment for its students.

### **INSPECTIONS IDENTIFIED A NUMBER OF MAINTENANCE AND CUSTODIAL ISSUES**

From August 21<sup>st</sup> through August 24<sup>th</sup>, representatives of the Controller's Office inspected or attempted to inspect school buildings throughout the city. Our inspections noted various conditions as noted previously. The following is a list of definitions of conditions that were uncovered in a majority of the schools that were inspected. In addition, a matrix of conditions and facilities is on page 37 as well as photographs of some of our findings are attached at the end of this report.

**Water Damage** – Water damage includes stained ceilings, floor damage, cracked and peeling paint, plaster and dry wall deterioration, and mold and mildew infestation. Water damage can occur from a number of sources such as rain water, leaking pipes, and condensation.

**Electrical Hazards** – Exposed wires, uncovered junction boxes, haphazard wiring of fixtures and switches, lack of proper receptacles (Ground Fault Current Intercept-GFCI) in areas adjacent to water sources as required by building code, as well as electric panel boxes pulling away from walls pose a significant safety risk (shock or electrocution) as well as being a fire hazard.

**Plumbing Problems** – Toilets that don't flush, sinks that leak or are inoperative, broken urinals, and broken and clogged pipes are some of the problems encountered at most of the locations.

**Miscellaneous Safety Hazards** – Broken door checks, missing door knobs, loose and cracked floor tiles, cracked window panes, loose exposed wires, missing handrails, exposed floor receptacles, displaced radiator covers, and broken and loose steps are all safety hazards. Any or all of these conditions could be a source of potential injury to employees and students.

**Fire Hazards** – This condition includes unsafe storage facilities, missing fire exit signs, no fire hoses at fire stations, broken fire alarms, open and misaligned fire safety doors, and blocked and locked fire exit doors.

**Unightly Conditions** – Accumulating trash, missing ceiling tiles, broken door louvers, and worn floor tiles and unkempt lavatories are some of the conditions found at Philadelphia Schools.

**HVAC** – Old and leaking boilers, new parts on old boilers, inoperative thermostats, poor ventilation, lack of proper exhaust fans, improper air exchange, damaged and broken radiators, and overall poor heating systems are some of the problems discovered through our inspections.

**Structural Damage** – Cracks in masonry walls, rusted lentils and missing grout, falling ceilings, cracked and falling plaster walls, falling support beams, condemned rooms and windows that were misaligned or bolted shut were found in various locations.

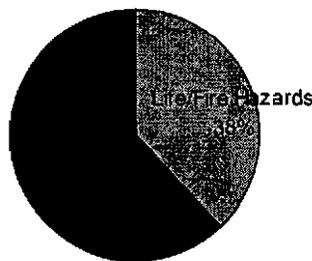
**Broken/Unusable Equipment or Facilities** – Some of the more prevalent findings were the use of facilities for other than what they were intended for. For example, locker rooms or showers used for storage, storage closets not used because of deteriorating conditions from other problems such as water leaks. In one school the elevators were inoperative.

**Exterior Problems** – We encountered broken and patched parking areas, clogged drains leading to pooling of water, exposed metal where play equipment had been and a deteriorating brick retaining wall.

## **KEY FINDINGS BY HAZARD CATEGORY:**

### **FIRE/LIFE HAZARDS**

Out of 11 completed inspections and 2 partial inspections, 5 schools or 38% had Fire/Life Hazard issues.



Controller staff inspectors visited **University City High School** where exit signs are broken throughout the building. Additional exit signs are incorrectly placed forcing students and faculty members to guess about safe ways out (see figure 18 University City). The investigator also discovered a leaking fire system standpipe and panic hardware with locking capability (see figure 23 University City, Page 43).

**Lankenau High School** has exit signs that are not installed at necessary doorways.

The **Daniel Boone School** had a pad locked fire door (see figure 39 Daniel Boone).

Due to the age of this building, there may exist a potential asbestos-related hazard next to an actively used girls' bathroom in the C wing of the **Solomon Solis-Cohen Elementary School**, where damage to the wall structure shows as peeling and bubbling paint. This paint damage appears to be coming from a breach in a steam line within the wall that may be covered with asbestos insulation. As the steam emits from this broken steam line and sprays vapors to the interior wall next to the girls' bathroom, the asbestos insulation may be flaking outward. Controller staff was unable to conduct further testing. However, due

to the seriousness of exposure to asbestos, this situation should be thoroughly examined immediately to determine if there is any cause for alarm, and if so, correct immediately.

The investigator also reported that there is a possible asbestos hazard in a school corridor commonly used by students where asbestos tiles have cracked and crumbed (see figure 36 Solis-Cohen). Again, due to the seriousness of exposure to asbestos, this situation should be thoroughly examined immediately to determine if there is any cause for alarm.

There are problems with fire doors that should remain closed at all times at the elementary school. For example, a fire door was fixed into an open position where a stairway leads between the boiler room and a prominent public foyer in the school.

In the event of a fire in the boiler, the fire could rapidly spread from the boiler room to this public foyer unless the fire door is properly closed (see figure 35 Solis-Cohen, Page 46). Investigators found exterior light poles that showed visible ground wires which could create a risk of electric shock (see figure 33 Solis-Cohen, Page 46).

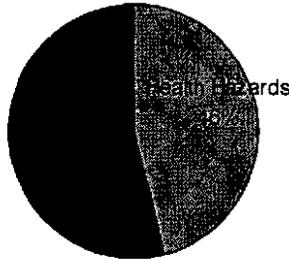
At **George Washington Carver High School** Controller staff found fire exit doors pad locked. This is a fire code violation. Exits should be barrier free. The office investigator also found outdated fire extinguishers. For example, one fire extinguisher was last inspected in February of 2000 (see figure 10 Carver, Page 40). Other fire extinguishers have certification dates in the 2003 calendar year.

Additional fire/life hazard issues at George Washington Carver high school included combustible materials stored next to the boiler room, and fire exit signs not lit or not in place (see figure 16 Carver, Page 41). Investigators discovered no fire hoses at the fire stations (see figure 17 Carver, Page 42).

There were no fire extinguishers with a current inspection date at **Thomas G. Morton Elementary School**. Many fire extinguishers did not have an inspection tag and investigators found combustible materials stored in the electric room creating a potential fire.

## HEALTH HAZARDS

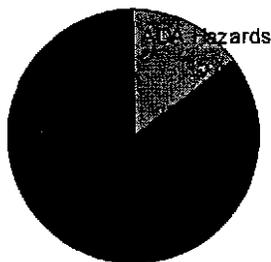
Out of 11 completed inspections and 2 partial inspections, 6 schools or 46% had Health Hazard issues.



- **Daniel Boone School** had inoperable and leaking urinals. This school also had leaking toilets.
- **Delaplaine McDaniel Elementary School** has a lower level gym storage area with a mildew/mold ceiling. City Controller's staff found mouse/rat feces on the generator floor.
- The bathroom conditions at the **Philadelphia Military Academy High School** are poor. The high school has damaged toilets and an insufficient number of toilets. The contaminated conditions are causing foul odors.
- **Walter B. Saul High School** had insufficient trash pick-up causing trash and rubbish accumulation.
- **George Washington Carver High School** had some signs of mold on a second floor office.
- During a partial investigation at the **William H. Hunter Elementary School**, City Controller's staff reported a rodent in the foyer of the school.
- **Thomas G. Morton Elementary School** had mold and water leakage (see figure 34 Morton).

## AMERICAN DISABILITIES ACT (ADA) HAZARDS

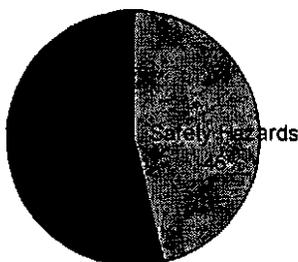
Out of 11 completed inspections and 2 partial inspections, 2 schools or 15% had ADA Hazard issues.



- **University City High School** had sink pipes without insulation potentially causing burns. The high school also had inadequate restrooms where the bathroom stalls are too small and no grab bars are provided.
- **Lankenau High School** had ductwork installed in a bathroom.

## SAFETY HAZARDS

Out of 11 completed inspections and 2 partial inspections, 6 schools or 46% had Safety Hazard issues.



A Controller's Office inspector visited **Lankenau High School** and found a gymnasium with uncovered low lying pipe and low lying light fixtures which are accessible to the students.

The inspector reported that these obstructions could easily be hit with a ball causing breakage of the item but more importantly, creating a potential safety hazard for the

students and faculty participating in class at the time. Insulation droppings in the gymnasium were also discovered on the gymnasium floor.

The high school has improperly installed windows that dangerously protrude into rooms. Lankenau has only a single water heater causing bathroom or drinking water to be too hot for students and faculty or forcing the water to be too cold. If used for cleaning, the cold water will not properly sanitize materials and equipment.

Controller staff also found emergency showers in science labs that have no drains; no railings on some exterior staircases; missing light poles; and the existence of an underground oil tank on the property.

At **University City High School** broken glass to entry ways and broken glass windows in classrooms was in evidence. The inspector found inadequate ventilation and loose tiles on ceilings. Cafeteria tables are broken and/or damaged. The students have unsecured access to janitorial closets, and the high school has exterior broken railings. Investigators reported broken light fixtures where pieces are falling down in the hallways (see figure 31 University City).

**Daniel Boone School** has windows that do not open and poorly ventilated windows that allow water into the building. This school is a disciplinary school for boys and girls ages 10-17. A City Controller's investigator found cracked glass in doors. Also, the gymnasium floors are warping causing potential injuries to students and faculty participating in gym class if an individual were to fall.

On the playground at the **Charles Henry Elementary School**, a metal pivot joint remains and protrudes from a removed iron fence gate causing a risk of injury and tripping. An inspector found a deteriorating brick retaining wall at the employee parking, causing a risk of injury to playing children and presenting an eye sore to the adjoining residents.

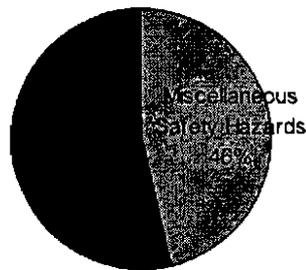
**Solomon Solis-Cohen Elementary School** has classrooms without air conditioning and many windows with protective grates are bolted shut due to the misalignment of the windows. In the gymnasium, fluorescent light fixtures are damaged so that when struck

by a ball, bulbs fall out of place, break, and fall to the floor (see figure 15 Solis-Cohen, Page 41).

At the gymnasium, broken window glass is accessible by students at the **Philadelphia Military Academy High School**.

### **MISCELLANEOUS SAFETY HAZARDS**

Out of 11 completed investigations and 2 partial investigations, 6 schools or 46% had Miscellaneous Safety Hazard issues.

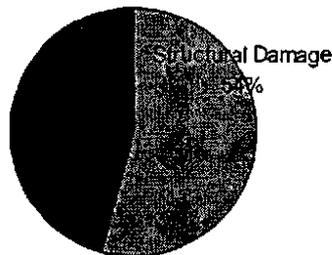


- **University City High School** had hallways, stairs, and common areas missing proper treading materials such as carpeting or tile flooring.
- **Lankenau High School** was missing proper treading materials such as carpeting or flooring (see figure 11 Lankenau High, Page 40). Investigators also discovered no railings for exterior stairs (see figure 13, Lankenau High, Page 41).
- **Delaplaine McDaniel Elementary School** had various miscellaneous hazards located throughout the school (see figures 25, 26 and 27 McDaniel, Page 44).
- **Charles Henry Elementary School** had numerous trip hazards. The City Controller's staff reported missing tile and damaged floors causing a hazard of tripping (see figure 38 Charles Henry, Page 47). On the school driveway and sidewalk, a cover for a utility valve is missing causing a hazard of tripping (see figure 40 Charles Henry, Page 47). Deteriorated stairs were discovered causing a tripping hazard (see figure 3 Charles Henry Elementary, Page 38). Boards covering pipes could be trip hazards.

- The cafeteria and kitchen area at the **Philadelphia Military Academy High School** have dangerous conditions including hard and sharp edged ceramic tiles falling as well as loose floor tiles and floor ducts that allow tripping.
- At the **George Washington Carver High School**, the surface of the schoolyard (asphalt with cement patches) is in deplorable condition. There are numerous cracks and the surface is uneven.
- **Thomas G. Morton Elementary School** has a radiator in the hallway posing a tripping hazard.
- **Franklin Smedley Elementary School** had tripping hazards (see figure 1 Franklin Smedley).

## STRUCTURAL DAMAGE

Out of 11 completed investigations and 2 partial investigations, 7 schools or 54% had Structural Damage issues.



**University City High School** has beams failing, beams fallen, and weakening beams due to insufficient exhaust systems in the school's pool area. The high school has closed this space due to the deteriorating pool. The pool area is beneath the cafeteria. Specifically, the concrete ceiling supports the cafeteria. This ceiling is the cafeteria floor. Because this area has not been maintained properly, it is damaging metal fixtures and creating corrosive materials including the reinforced steel within the concrete members. Structural cracks were also discovered by a City Controller investigator in and around the pool area (see figure 30 University City, Page 45).

Poorly ventilated windows that allow air and water into the building, and settlement cracks throughout the building especially on the first floor were discovered at **Lankenau High School**.

An investigator for the Office of the Controller reported structural damage issues at **Delaplaine McDaniel Elementary School**. Air-intake ducts and louvers are leaking from the attic to floors below, and significant cracks exist in the stairwell.

Major and substantial areas of cement have disintegrated and spilled around exterior windows at **Solomon Solis-Cohen Elementary School** exposing the structural reinforcement steel bars (see figures 8, Page 39 and 19 Solis-Cohen, Page 42).

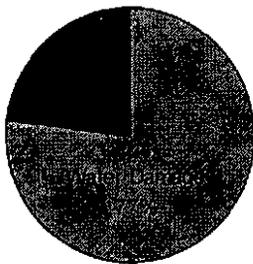
At **Franklin Smedley Elementary School**, a 25 square foot area of concrete slab in the auditorium roof was improperly repaired by failing to treat the underlying reinforcement steel. This existing roof problem requires repair before additional structural damage occurs to the elementary school building (see figure 28 Franklin Smedley, Page 44).

**Walter B. Saul High School** has misaligned windows, balances failings and cracking evident around the lenthil with grout erosion. Additionally, settlement cracks above the doors were reported by the City Controller's investigator (see figure 29 Saul, Page 45).

The investigator who visited the **Thomas G. Morton Elementary School** found numerous cracks in the block masonry especially in the stairwells.

## **WATER DAMAGE**

Out of 11 completed investigations and 2 partial investigations, 10 schools or 77% had Water Damage issues.



Rusted and corroded pipes in hallways to classrooms, water stained ceilings, parts of ceilings missing due to water leaks were discovered by Controller staff at **University City High School**. Inspectors also found water fountains becoming detached and water fountains broken and deteriorating in hallways. In addition, exposed pipes and holes in toilets were reported.

**Lankenau High School** needs waterproofing in order to prevent seeping of ground water into rooms including the gymnasium. Leaking back flow preventers on hot water tanks and domestic lines need to be fixed or replaced.

Inspectors who reviewed the **Daniel Boone School** discovered stained ceilings due to water leaks.

**Delaplaine McDaniel Elementary School** had water damage to drywall, ceiling, ceiling panels, and lights from water leaks (see figure 32 McDaniel, Page 45).

Investigators found many plumbing problems at **Franklin Smedley Elementary School** such as leaking drainage and water pipes. The leaking pipes have caused water damage and peeling paint in several classrooms.

The basement sump pump in the **Philadelphia Military Academy High School** does not properly function and allows water to potentially flood the electrical, heat, and boiler systems of the school.

At the **Walter B. Saul High School** an exterior water fountain was removed and the plumbing access holes were not patched.

When Controller staff inspected **George Washington Carver High School**, they reported that the gymnasium roof had water problems most noticeably around the windows and a pipe protruding from the ceiling was leaking onto the gym floor creating puddles (see figure 21 Carver). Numerous rooms on the third floor were found to have water damage at the entry of the classroom and along its outside walls. A possible cause for this condition was discovered in the closet of Room #323. A leaking pipe in the interior of the wall caused ceiling damage and exposed the re-bars leading to the eventual corrosion of the re-bars. Investigators also found broken faucets and rusty toilets.

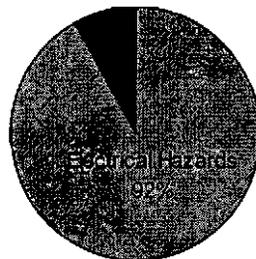
**Thomas G. Morton Elementary School** did not have a functioning second floor boy's room.

During a partial investigation of the **S. Weir Mitchell Elementary School** there was noticeable water damage in four of the classrooms along the third floor. Investigators also found a leaking and protruding pipe (see figures 5 and 6 Mitchell Weir, Page 39).

## **ELECTRICAL HAZARDS**

\*GFCI is defined as Ground Fault Current Intercept.

Out of 11 completed investigations and 2 partial investigations, 12 schools or 92% had Electrical Hazard issues.



When examining **University City High School**, investigators found numerous exposed items such as electrical panels, electrical boxes, and wires. The investigators discovered a roof drain running under a light fixture in a stair tower where the roof drain pipe leaks water out. Broken light diffusers and loose hanging light diffusers were common throughout the building. The investigators also reported that there were no GFCI outlets located near sinks in bathrooms.

**Lankenau High School** had no GFCI outlets near sinks in the cafeteria and throughout the building. In a classroom being utilized, investigators also cited improperly run IT wiring that could cause a potential trip hazard (see figure 2 Lankenau, Page 38).

The **Daniel Boone School** had exposed wiring.

An inspector reported that fire panel and fire annunciator “trouble light” signals were ON at the **Delaplaine McDaniel Elementary School**. Also, the timer for exterior lighting is not operable which causes lights to be on during the day.

In the kitchen at the **Charles Henry Elementary School** located behind a sink and water lines, investigators noticed a conventional outlet instead of a required shock protecting GFCI outlet.

Similar problems occurred at the **Solomon Solis-Cohen Elementary School** where required shock protecting GFCI outlets are not located in the kitchen (see figure 20 Solis-Cohen, Page 42).

At **Franklin Smedley Elementary School**, in a regularly used classroom, there is a live electrical socket with a broken cover on it allowing students’ fingers and objects to reach the live wiring (see figure 12 Franklin Smedley, Page 40). The Smedley School lacks a back up emergency electrical generator and various electrical problems also exist including broken and missing light fixture covers and outside exposed or hanging light fixtures.

The emergency generator is not working at the **Philadelphia Military Academy High School**.

Haphazard wiring was discovered throughout the buildings at the **Walter B. Saul High School**. The high school had no GFCI outlets in the kitchen as required by code (see figure 7 Walter Saul High, Page 39) and externally there were broken lights.

City Controller investigators found electrical panel boxes on the second and third floors easily accessible by students at **George Washington Carver High School**. Even though the panel was equipped with a locking door, the panel was separating from the wall and presented the potential for electrocution (see figure 22 Carver, Page 43). The investigators also found loose and exposed wiring in various places throughout the building (see figure 9 Carver, Page 40). Investigators discovered uncovered electrical switches (see figure 24 Carver, Page 43).

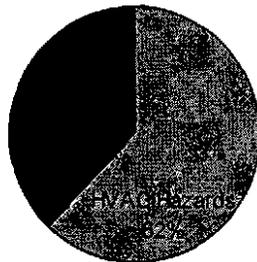
At the **Thomas G. Morton Elementary School** most of the rooms had operating sinks with an electrical outlet near by but none of the outlets were GFCI. One third floor room had an open electric box with exposed wires (see figure 14 Thomas Morton, Page 41).

During a partial investigation of the **S. Weir Mitchell Elementary School** electrical boxes were open. The open electrical boxes presented loose and exposed wiring. These conditions were located in second and third floor classrooms, a stairwell, a boy's room, and a girl's room (see figure 4 S. Weir, Page 38).

## HEATING VENTILATION AIR CONDITIONING (HVAC) HAZARDS

\*ATC is defined as Automatic Temperature Control

Out of 11 completed investigations and 2 partial investigations, 8 schools or 62% had HVAC Hazard issues.



Controller staff found at **University City High School** an ATC control rigged with a blood pressure pump in the library. The high school had no emergency shut off system

for the steam heat apparatus. Investigators also cited clogged diffusers and broken ATC systems.

The HVAC hazards identified at the **Lankenau High School** included twisted pipes at the boiler, an inoperable heat coil that causes cold air to flow into the classrooms, and broken exhaust fans.

The **Daniel Boone School** had exposed radiators.

**Delaplaine McDaniel Elementary School** had inoperable gas booster pumps.

The **Charles Henry Elementary School** had a broken ATC in the heating system causing irregular over and under heating in the school.

Fiberglass insulation is missing or damaged in several heating pipes at **Franklin Smedley Elementary School**.

Boilers at the **Philadelphia Military Academy High School** are in poor and dangerous condition with flames leaking outward and heat does not work for some areas of the school.

Investigators discovered that the heating plant is in poor condition at **Walter B. Saul High School**. A hole in the undercarriage of the boiler is evident. This condition may cause an explosion. At the high school there are two newly installed burners on severely inefficient and dilapidated boilers. No exhaust system exists in the boiler room leading to poor air quality. The high school has a combined auditorium/cafeteria with insufficient air-exchanges.

## **KEY FINDINGS BY SCHOOL:**

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary –**  
**George Washington Carver High School for Engineering & Science**  
**17<sup>th</sup> and Norris Streets**  
**Philadelphia, PA.**

**Findings:**

1. **Water Damage.** The Gym roof has water problems most noticeably around the windows. Additionally, a pipe protruding from the ceiling was leaking onto the gym floor during our visit. Numerous rooms on the third floor were found to have water damage at the entry of the classroom and along its outside walls. A possible cause for this condition was discovered in the closet of room #323. A leaking pipe in the interior of the wall caused ceiling damage and exposed the re-bars leading to the eventual corrosion of the re-bar.
  
2. **Electrical Deficiencies.** Electrical Panel Boxes on the second and third floors were easily accessible by students. Even though the panel was equipped with a locking door, the panel was separating from the wall and presented the potential for electrocution. Found loose and exposed wiring in various places throughout the building.
  
3. **Safety.** All the fire exit doors are pad locked. Fire extinguishers are outdated. One was last inspected in February of 2000, while most of the others had a certification date in 2003. Other safety issues included combustible materials stored next to the boiler room; no GFCI outlet next to the sink in classroom; fire exit signs not lit or not in place.
  
4. **Miscellaneous.** There were some broken faucets and rusty toilet issues. There was a dirty air handling unit and some signs of mold on a second floor office. The surface of the schoolyard (asphalt with cement patches) is in deplorable condition. There are numerous cracks and the surface is uneven.

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary - Daniel Boone Disciplinary School**  
**1435 N. 26<sup>th</sup> Street**  
**Philadelphia, PA.**

**Findings:**

1. **Inside Building.** There were several conditions that were prevalent throughout the building. On the main floor the elevators located across from the main office were out of order. The elevators had been inoperable for the last two months. The thermostats in most of the rooms had been vandalized, thus preventing temperature control.

Many of the Windows in the classrooms leak. An example was a leak in room 209 that resulted in the ceiling in the auditorium leaking. The gym has some deplorable conditions. Due to a backed up drain outside the gymnasium doors, water had seeped into the gym and caused extreme floor damage. The floor was warped and buckled in several areas thus causing a safety hazard.

The windows in the gym did not open to allow for ventilation. The cafeteria windows were inoperable. The teacher's lounge we also found that the windows would not open.

2. **Electrical.** The computer server closet did not have proper ventilation or any air conditioning.
3. **Plumbing.** The bathroom facilities had leaking or inoperable urinals in the boy's room. The girl's room also had a toilet that was severely leaking thus making it unavailable.
4. **HVAC.** One area on the first floor corridor had an exposed radiator.

**Special Audit – School District of Philadelphia  
Capital Programs  
School Visit Summary - Lankenau High School  
201 Spring Lane  
Philadelphia, PA.**

**Findings:**

1. **Water and Air Infiltration.** Auditors noted no seal (caulk) on exterior windows. Water seepage and air drafts through the windows, especially after rain and seepage of ground water through the front wall to a storage room.
  
2. **Deficient Air Conditioning System.** Received complaints of the uneven distribution of cool air in warmer months, and warm air in the colder months. Some rooms may be cold while others extremely hot. The ATC system does not work. It must be manipulated manually.
  
3. **Falling Glass Hazard.** The open spaces of the light guards in the gym allow broken florescent bulbs to fall to the floor. Because the gym room ceiling is so low, bulbs are likely to be broken by recreational objects, like balls. Auditors noted broken bulbs resting in the carriage of the light guard.
  
4. **No Drainage for Emergency Lab Showers.** Science labs do not have drains to catch water from the Emergency Shower. When used, the showers can cause a slippery floor surface in an emergency situation.

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary - S. Weir Mitchell Elementary School**  
**5500 Kingsessing Avenue**  
**Philadelphia, PA.**

**Findings:**

1. **Water Issues.** There was noticeable water damage in four (4) of the classrooms along the third floor. On the third floor we found a leaking and protruding pipe.
  
2. **Electrical Deficiencies.** Electrical boxes in second and third floor classrooms were open and presented loose and exposed wiring. A stairwell, a boy's room, and a girl's room had open electrical boxes containing loose and exposed wiring.
  
3. **Safety.** There was an exit sign that was not lit.
  
4. **Miscellaneous.** There was a damaged radiator outside of one of the classrooms.

*We were escorted from the building after completing a review of the third floor and a partial review of the second floor.*

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary - Philadelphia Military Academy High School at Elverson**  
**2118 N. 13<sup>th</sup> Street**  
**Philadelphia, PA.**

(Opened: 2005 – 2006 School Year)

**Findings:**

1. **HVAC.** The boilers are very old and in poor condition having several problems like no proper cover, flames leaking from the joints, and damaged insulation to boiler container and the pipes. Heating unit does not regulate temperature between rooms evenly and is not working at all in the Library and all classrooms above the Library on the Park Avenue side of the building.
  
2. **Electrical.** The emergency generator is not working in case of emergency. Small cables are needed to combine the two smaller replacement batteries provided by the School District when the original battery lost its charge.
  
3. **Safety.** Cafeteria is in a dangerous condition due to falling and loose ceiling ceramic tiles. Damaged floor tiles and the loosened service duct cover in front of the cafeteria (next to the kitchen galley entrance) were reported as the site of an earlier trip and fall accident. Also, two large areas of ceiling plaster in the gymnasium above heating units have fallen off.
  
4. **Miscellaneous.** This building was originally built as an elementary school and is now used for high school students. Some areas of the facility are not sufficient for high school children, for instance, there is no locker room to change in before and after gym class; the students' assigned storage lockers are small; the gymnasium is small with low ceilings; low ceilings are also a problem on the first floor where the students can reach overhead duct work; there is no chemistry or physics lab. The toilets are in poor condition and there are not enough of them. The changing rooms for the auditorium stage is abandoned and no longer used due to its poor condition because of leaks and cracks in beams and slabs of the room.

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary - Franklin Smedley Elementary School**  
**1790 Bridge Street**  
**Philadelphia, PA.**

**Findings:**

- 1. Water Damage/Issues.** The patio roof concrete slab above the auditorium/lunchroom/gymnasium was separating from the walls causing water to penetrate and accumulate above the auditorium in the ceiling. The gaps of separation in the patio were repaired with caulk. However, a large section of the ceiling below the patio became so waterlogged and compromised that it subsequently fell off the ceiling. Therefore, an area of approximately 25 square feet of ceiling was re-plastered. The re-plastering process failed to properly treat the underlying existing reinforcement steel for further corrosion. This omission increases the risk that the repaired plaster may fall off the ceiling again in the future. Several classrooms and locations were noted with paint peeling and water damage due to service line leaks and deteriorated or damaged caulking around windows.
- 2. Electrical Deficiencies.** Several lights were noted with missing covers in classrooms. All the covers are brittle and often break apart and fall while being removed when replacing florescent lights. Some electrical outlets in the classrooms are exposed because of broken covers. Some outside lights have no bulbs and some are not flush to the wall and are hanging away from the wall with wires exposed to elements. No emergency generator for the school in case of an emergency. Observed some battery powered emergency lighting in the hallways.
- 3. Safety Issues.** Fire exit door without exit sign. A 4” drain opening in the playground had no cover and the open pipe was exposed by an irregular shaped hole 2-3” wider than the pipe’s diameter and 1-2” below ground level.
- 4. Miscellaneous.** Insulation around heating pipes was damaged exposing fiberglass insulation.

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary - University City High School**  
**36<sup>th</sup> & Filbert Streets**  
**Philadelphia, PA.**

**Findings:**

1. **Risk of Environmental Hazard.** The opening of the doors to the swimming pool room has been prohibited for over six months, because of the potential environmental risks it poses. The lack of proper ventilation for such a large and *heated* body of water has resulted in extensive humidity damage to the school, particularly in the swimming pool area and the areas of the school directly above the pool.

Over six months ago, a section of the ceiling in the pool room (about 4' x 15') collapsed from this humidity damage and fell into the pool and onto the deck.

2. **Inadequate Maintenance of Common Hardware and Supplies.** Controller staff reported substantial amounts of damaged and missing property: door knobs, windows, latch guards, vandal lights, exit signs, ceiling tiles, and door closers. Work orders to the District have gone unanswered for years.
3. **Leak in Auditorium.** Controller staff reported water damage to the walls, seats, and floor of the auditorium and made note of a puddle of water on the auditorium floor.

**Special Audit – School District of Philadelphia  
Capital Programs  
School Visit Summary - Charles Henry School  
601 Carpenter Lane  
Philadelphia, PA.**

**Findings:**

1. **Work Delay.** The work on the Multi-Purpose Room (gymnasium/cafeteria) floor remains incomplete. Work did not begin until long after the project's scheduled completion date. This project involves the removal of old asbestos tiles and the laying of new, asbestos-free tile. Because school opening is imminent and completion of this project is required, auditors fear a "rush-job" may be applied, whereas the work's integrity would be jeopardized. Other delayed projects include boiler replacement, schoolyard paving, and electrical outfitting of the building.
  
2. **Deficient Air Conditioning System.** Air is not distributed evenly throughout the building and the temperature is never constant. Some rooms are too cold, and some are too hot. The boiler must be serviced every year. The air compressor and ATC system do not operate.
  
3. **Poor Masonry.** Controller staff reported numerous instances of spilling concrete and deteriorated brick work. The schoolyard retaining wall bulges, requiring massive pointing work. Significant settlement noted at concrete steps.

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary - William H. Hunter Elementary School**  
**2400 N. Front Street**  
**Philadelphia, PA.**

**Findings:**

1. **Rodent Infestation.** A mouse in the foyer of the school running from the foyer to the front doors, squeezing underneath the doors into the school and behind a vertical insulated pipe just inside the door along a wall.
  
2. **HVAC.** Observed a light fog inside the window of one of the closed classroom doors and stained ceiling tiles beneath areas of the temperature control piping in the ceiling. The fog and staining indicates uneven temperature control between rooms likely caused by insufficient insulation around the piping.

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary - Delaplaine McDaniel Elementary School**  
**1901 S. 23<sup>rd</sup> Street**  
**Philadelphia, PA.**

**Findings:**

1. **Inside Building.** There were several conditions that were prevalent throughout the building. On the third floor staff observed several instances of ceiling damage (stained ceilings) due to leaks from the attic. These leaks were caused by rainwater entering in through the open louvers in the attic. In most systems the louvers are automated or can be operated manually to open and close. However, these louvers do not have this capability, they are fixed.

These open louvers also attribute to substantial heat loss in the winter. Found to be common in many classrooms were loose floor tiles. In some of the rooms there were parts of the floor that were not level. Water leaks were found around windows in several rooms.

2. **Electrical.** Fire panel and annunciator trouble lights both illuminated; one located in the engineer's office and the other is located in the first floor lobby. The timer for the external lighting is not operable, requiring them to be operated manually thus causing the lights to be on during the day.
3. **HVAC.** The chiller pump panels (ATC system) malfunction and have to be operated manually. This does not allow the system to turn on or off automatically. The booster pumps in the mechanical room are inoperable.

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary - Thomas G. Morton Elementary School**  
**2501 S 63<sup>rd</sup> Street**  
**Philadelphia, PA.**

**Findings:**

1. **Building Issues.** There are numerous cracks in the block masonry especially in the stairwells. Condensation in the computer room caused noticeable water damage to the ceiling.
2. **Electrical Deficiencies.** Most of the rooms had operating sinks that also had an electrical outlet near by. None of the outlets were GFCI which presents a hazard especially around small children. Noted two (2) restrooms with no operating lights. One (1) third floor room had an open electric box with exposed wires.
3. **Safety.** There were no fire extinguishers with a current inspection date. Most did not have a tag. Found combustible materials stored in the electric room creating a potential fire hazard.
4. **Miscellaneous.** A radiator in the hallway posed a tripping hazard and a second floor boy's room did not work.

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary - Walter B. Saul High School of Agricultural Sciences**  
**7100 Henry Avenue**  
**Philadelphia, PA.**

**Findings:**

- 1. Waste Water Pond.** An inlet near the rear of a barn is swamped with stagnant waste water and debris. Because this area is used for loading and unloading, waste water may be tracked throughout the barn. The inlet is clogged and a work order is pending.
  
- 2. Inoperable Exhaust Units in Multi-Purpose Room.** The exhaust units on the ceiling of the Multi-Purpose Room do not operate. As a result, this room, among others, is not air conditioned. It is one of many rooms lacking proper air exchange. This room triples as a gymnasium, cafeteria, and auditorium. Controller staff were told by school employees that temperatures often reach dangerously high levels during the months of May through September. *Please note: Some students attend Walter B. Saul High School year-round.*

**Special Audit – School District of Philadelphia**  
**Capital Programs**  
**School Visit Summary - Solomon Solis-Cohen Elementary School**  
**7001 Horrocks Street**  
**Philadelphia, PA.**

**Findings:**

1. **Hazardous windows.** The spring/coil mechanism in dozens of windows has failed such that, when opened, windows may crash down at any given time under the force of gravity. Windows are extremely heavy, capable of breaking bones. To address the hazard, the school has bolted many of the windows shut.
  
2. **Risk of Asbestos Exposure.** Inspector reported that the steps to the basement were covered in dried mud that appeared to have been flowing before it dried. Staff also noted the crawlspace from which the mud flowed. It was also reported that a “Danger” sign was posted on the door because the crawlspace contains dangerous amounts of asbestos. When flooding occurs in the crawlspace, it carries asbestos down the steps, and into the basement. Personnel working in the basement often walk on this asbestos and then track it throughout the school.
  
3. **Bad Doors.** Many exterior doors and doorframes are rusted and eaten away at the bottom, posing security and infestation risks. Because the oxidation has gone unchecked for so long, many doors do not close properly.
  
4. **Dilapidated schoolyard grounds.** The surface of the schoolyard (asphalt with cement patches) is all cracked up and uneven.

## RECOMMENDATIONS

1. We are recommending that the School Reform Commission authorize the Office of the City Controller to complete an independent review and inspection of every school in the School District to complete within an immediate thirty day period. We believe the children of our city deserve no less. The Controller's Office began their sample inspection of 23 Schools as part of an ongoing review of the School District's Capital Building Program. Preliminary inspections of school buildings uncovered imminent health and safety violations. In the Martha Washington Elementary School, for example, the Controller's Office uncovered imminent structural problems in ---which forced the School District to rope off a breezeway which is in danger of collapsing.

Based on the results of its limited inspections, Controller's Office wanted to expand their assessment of conditions at school facilities. On August 21<sup>st</sup> the Controller's Office formulated a random sample of 23 schools to inspect. Shortly after the inspections started, the School District refused our office admittance to 11 of the selected schools and asked us to leave 2 of the schools during our inspection.

In prior audits and reviews, the School District authorized our employees to visit any schools where we were performing audits or inspections. We believe the refusal and any restrictions to allow Controller staff to continue the inspection and review prevented us from conducting a thorough, comprehensive and accurate assessment of school building facilities.

2. We recommend that the School District correct in one week or less the following issues raised in this report:

### Fire/Life Hazards

- ✓ Add, replace, and fix exit signs.
- ✓ Patch leaking fire system standpipes.
- ✓ Replace and/or inspect fire extinguishers.
- ✓ Remove pad locks from fire exit doors.

*(If fire exit doors are pad locked as a security measure, find alternative solutions so that faculty and students may be able to exit the buildings immediately and safely in case of a fire.)*

### Health Hazards

- ✓ Fix leaking toilets and urinals.
- ✓ Add mouse traps where necessary.
- ✓ Remove and properly dispose trash.

### Safety Hazards

- ✓ Add railings to exterior staircases.
- ✓ Replace broken glass in windows and doors.
- ✓ Replace or fix broken light fixtures.

### Miscellaneous Safety Hazards

- ✓ Repair, remove, and/or replace obstacles that may cause a tripping hazard.

### Water Damage

- ✓ Replace warped floor tiles or panels.
- ✓ Replace damaged drywall to ceilings and walls.
- ✓ Scrap and repaint damaged walls.

### Electrical Hazards

- ✓ Cover exposed wires.
- ✓ Replace or adhere electrical boxes and panels.
- ✓ Add GFCI outlets.
- ✓ Replace broken electrical outlet covers.

### HVAC

- ✓ Fix ATC controls.

Conditions Noted At Schools Where Controller's Staff Were Allowed to Inspect

Condition	District		W. B. Saul High School	T. G. Morton Elementary School	G.W. Carver High School	Solis Cohen Elementary School	University City High School	F. Smedley Elementary School	Philadelphia Military School	Charles Henry Military Academy	D. McDaniel Elementary School	Lankenau High School	Daniel Boone Disciplinary School	S.W. Mitchell Elementary School	Hunter Elementary School	O. Newlin Fell Elementary School	R.S. Key Elementary School	Southwark Elementary School	Ethan Allen Elementary School	G. Aretander Elementary School	Bridgburg Elementary School	Henry Lawton Elementary School	O. Barber Elementary School	Stearns Elementary School	Northborough High School	
Water Damage																										
Electrical Hazards			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Plumbing Problems			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Unsanitary Conditions			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Miscellaneous Safety Hazards			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fire Hazards			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Broken/Unusable Equip/Facilities																										
Clogged Air Vents or Diffusers																										
Exterior Problems			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HVAC			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Structural Problems			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Vermifursect Infestation			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

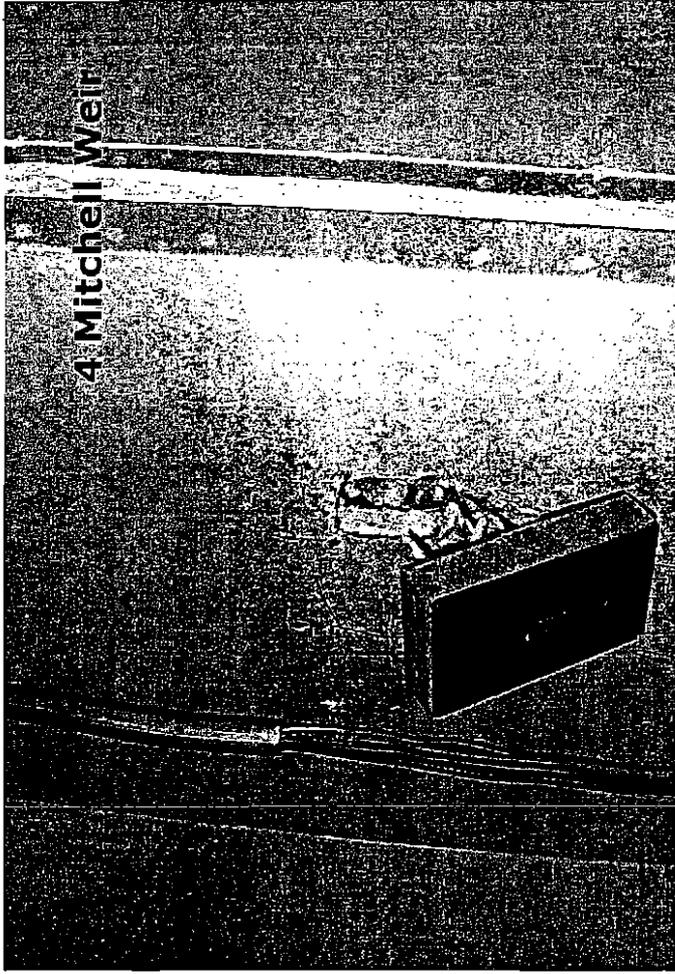
\* School was only partially inspected before Controller's Staff were asked to leave the building.

\*\* Access to building by Controller's Staff was denied by School District Personnel.

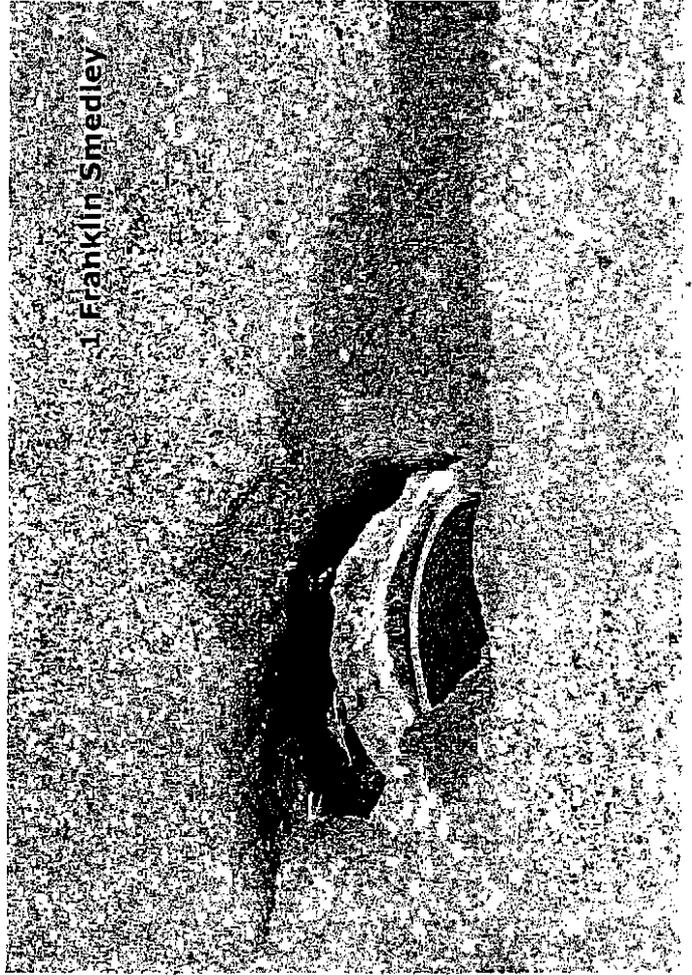
REFUSED ENTRANCE BY SCHOOL DISTRICT OFFICIALS



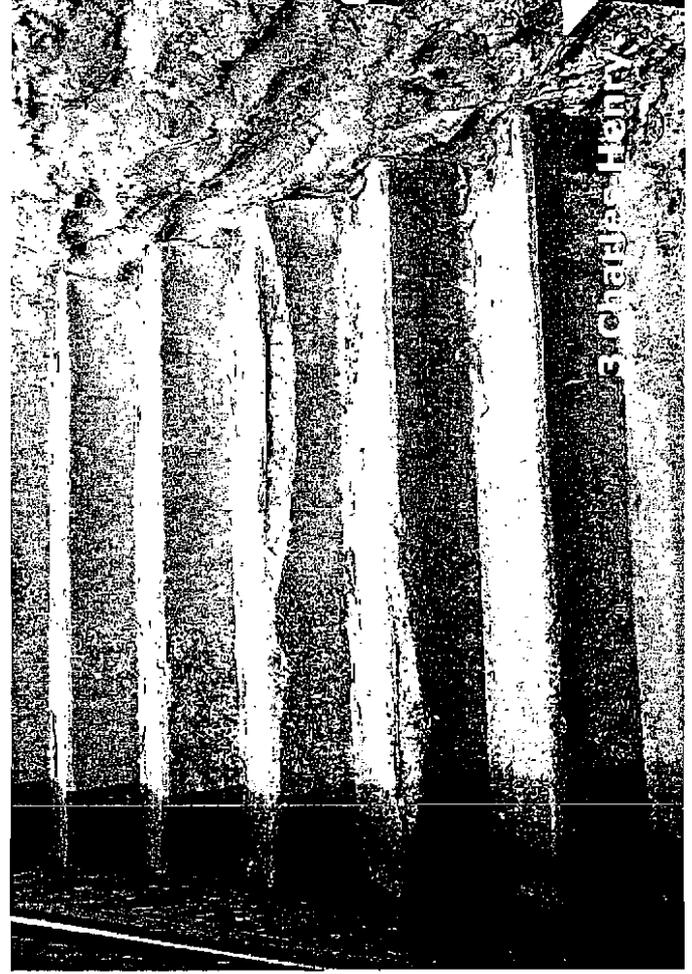
2 Lanckenau High



4 Mitchell Weir



1 Franklin Smedley



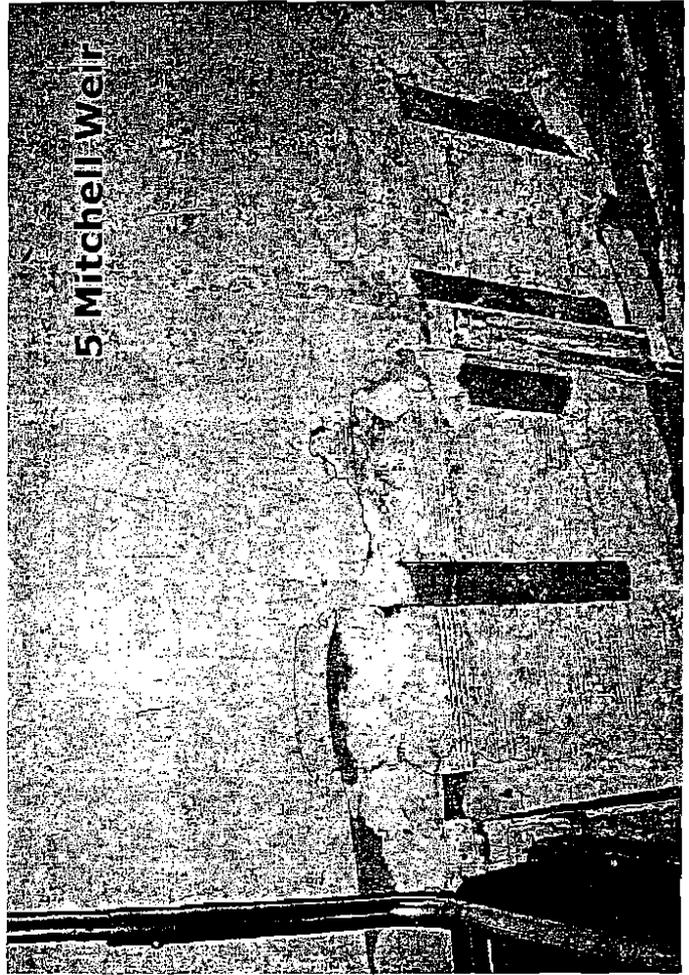
3 Charles Henry



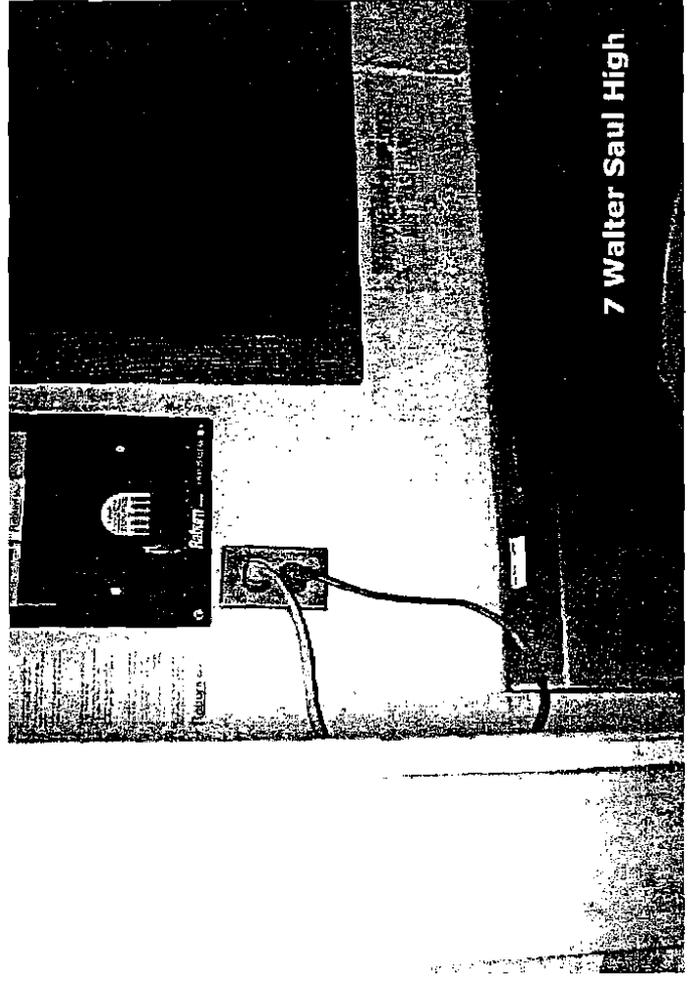
6 Mitchell Weir



8 Solis Cohen

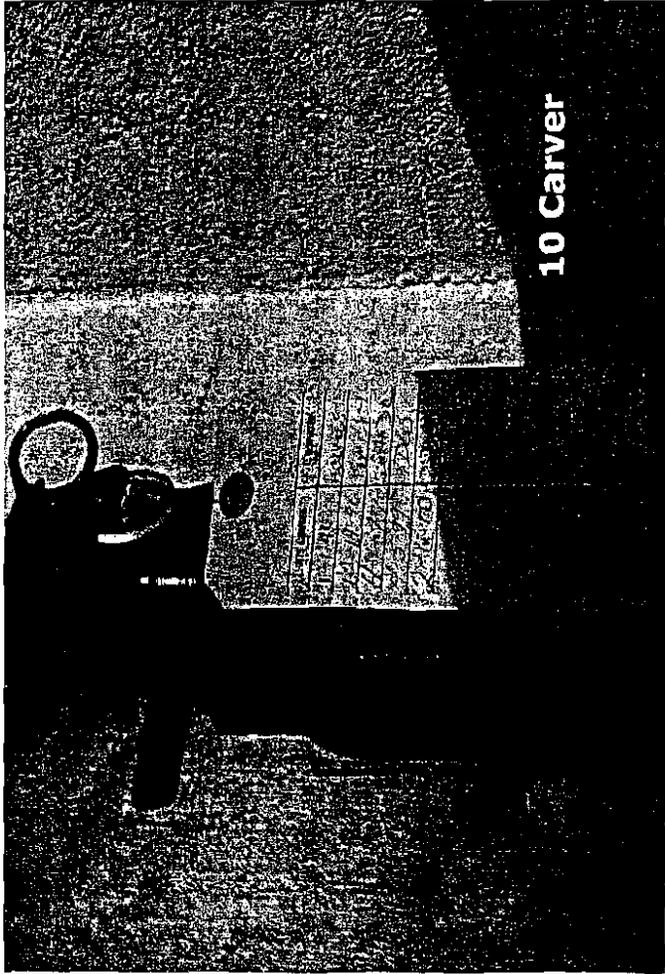
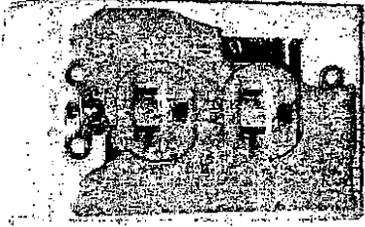


5 Mitchell Weir



7 Walter Saul High

12 Franklin Smedley



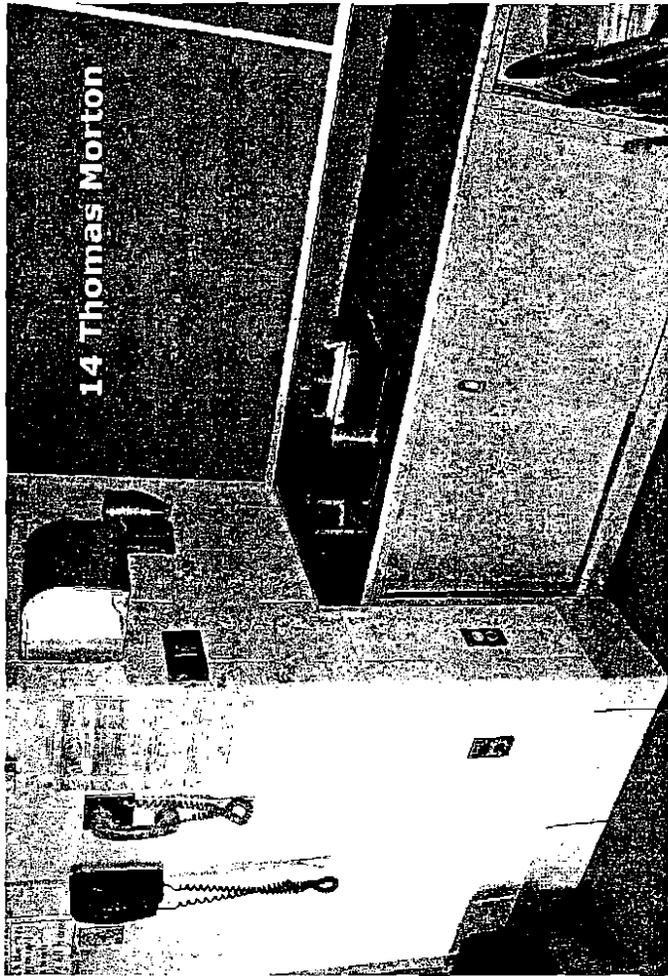
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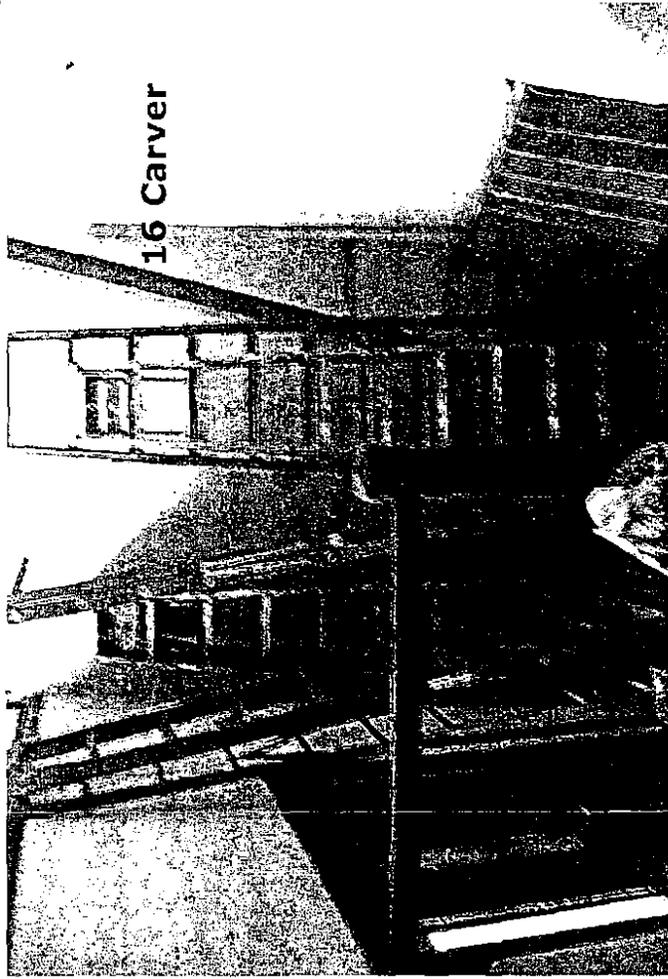
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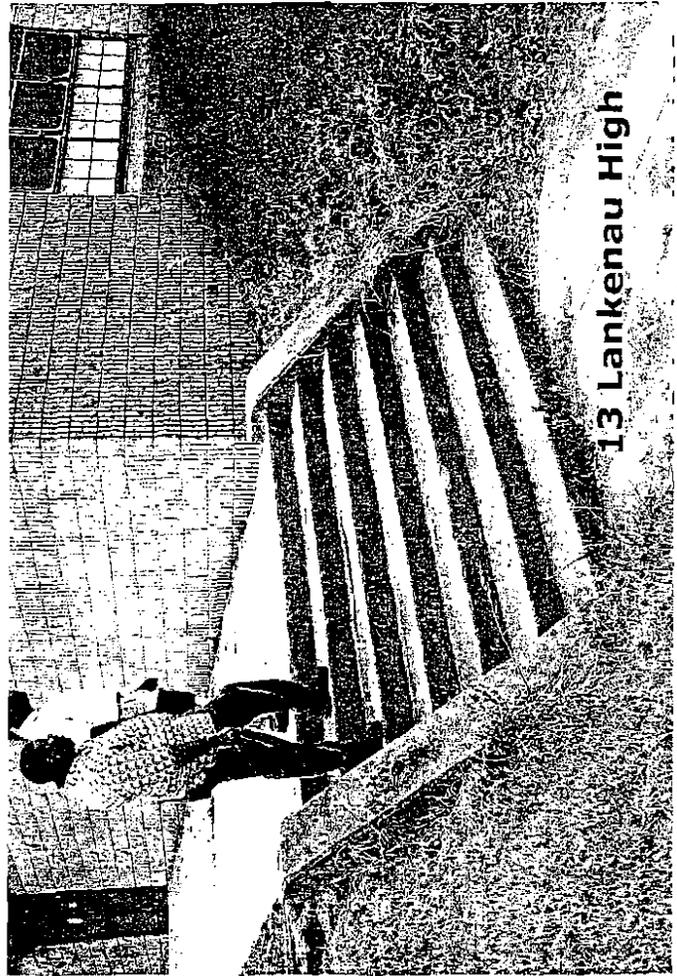
11 Lankenau High



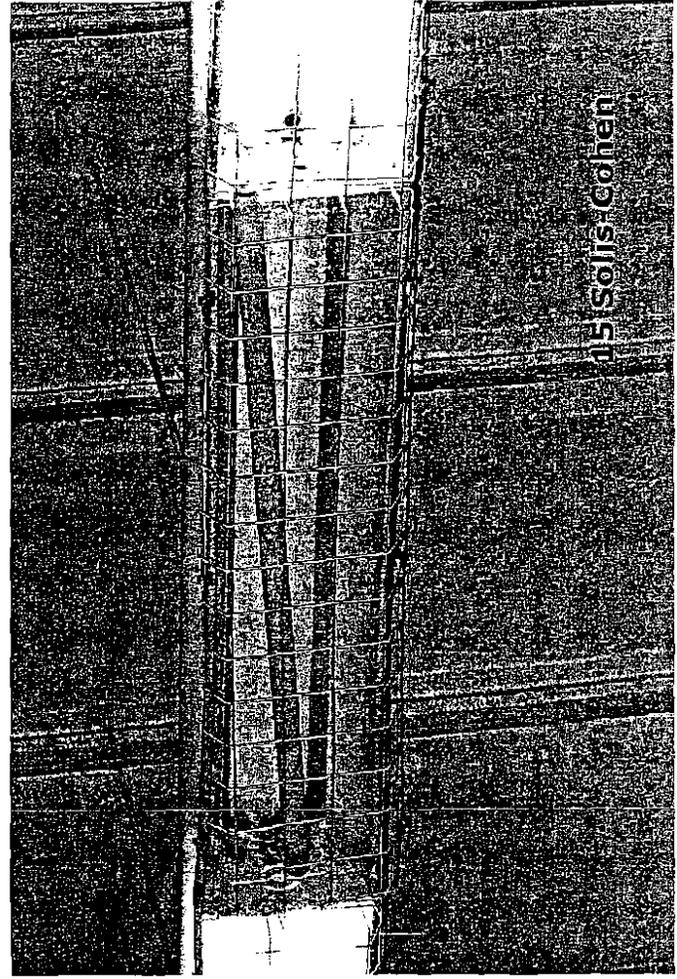
14 Thomas Morton



16 Carver



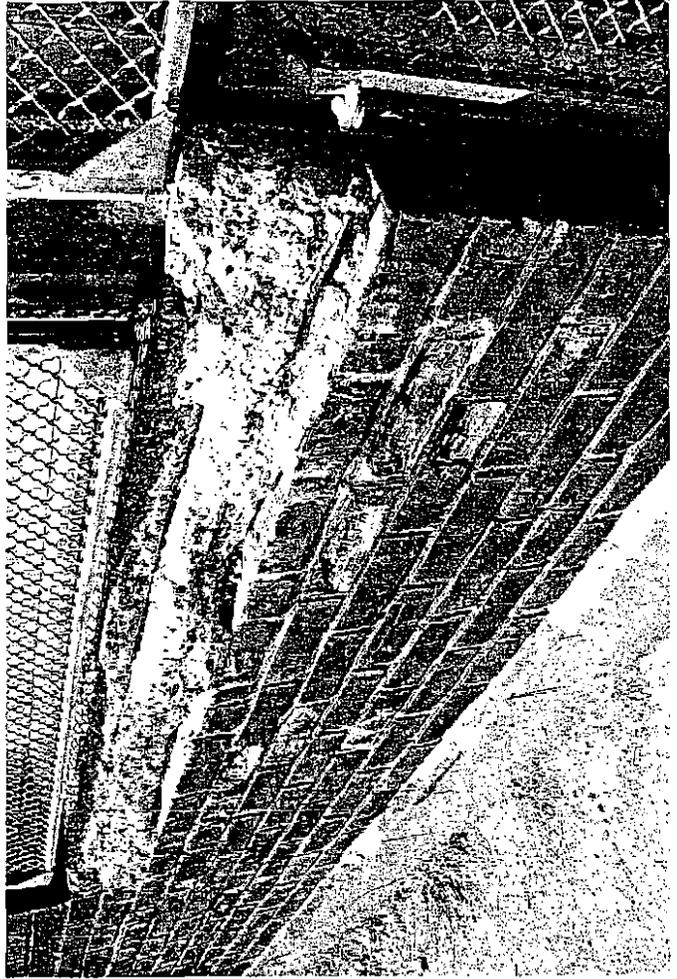
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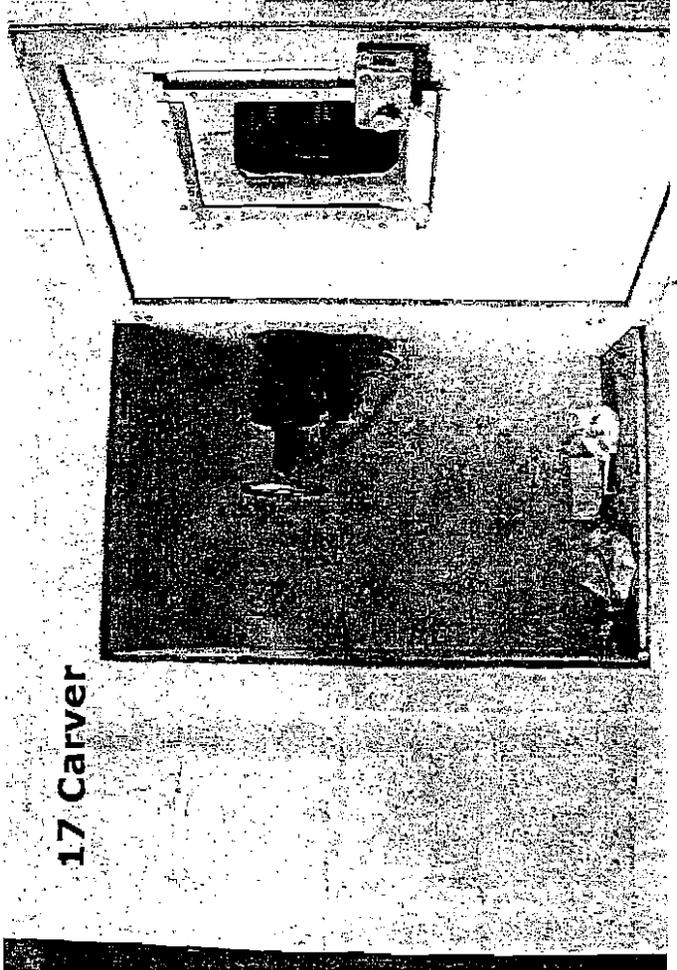
15 Solis-Cohen



20 Solis-Cohen

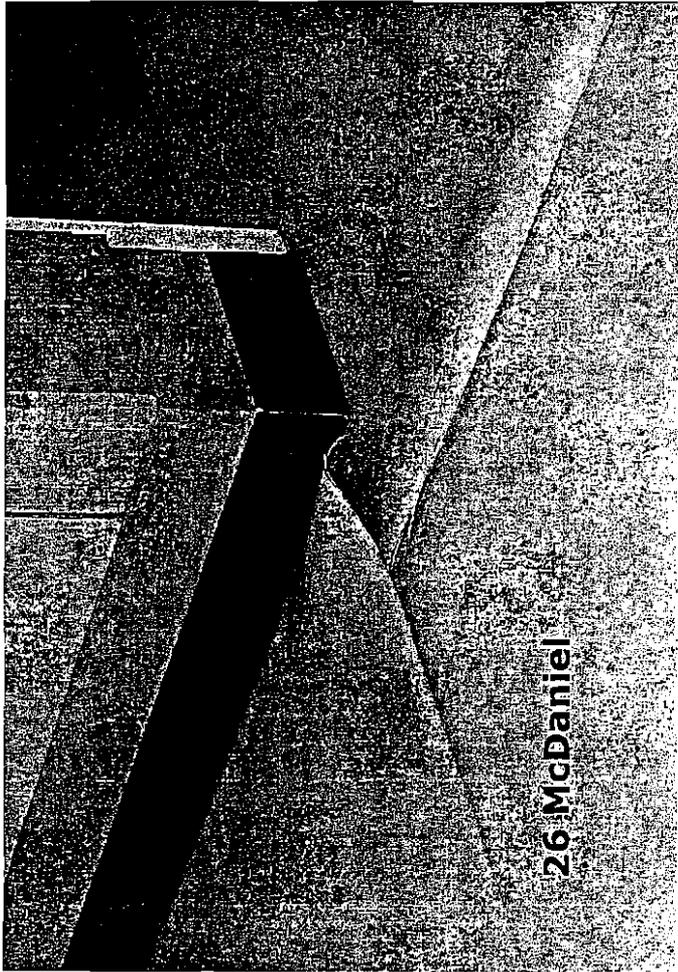


18 University City

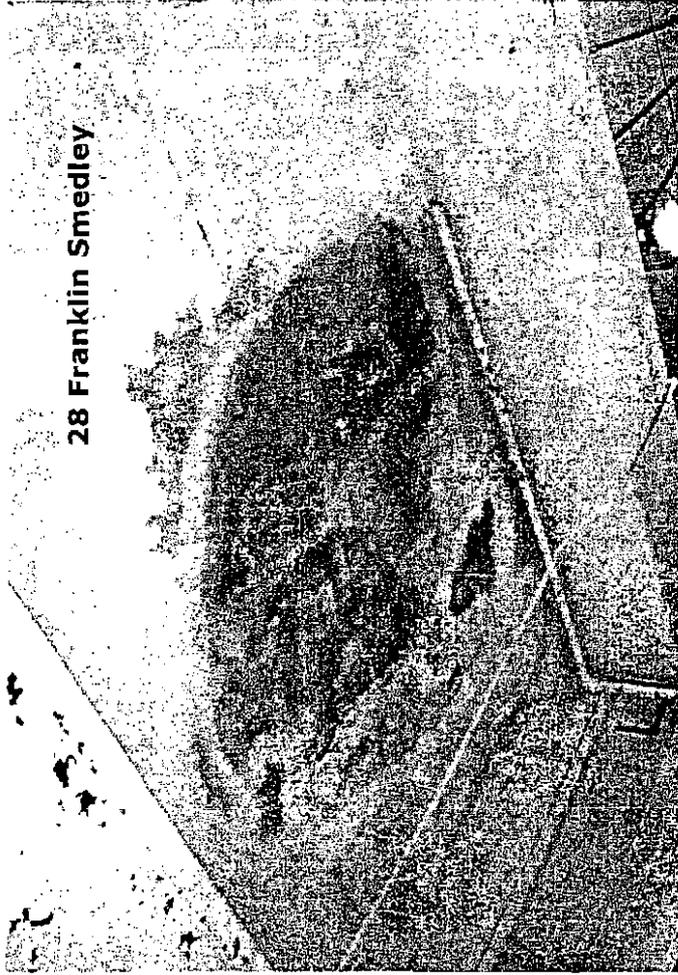


17 Carver

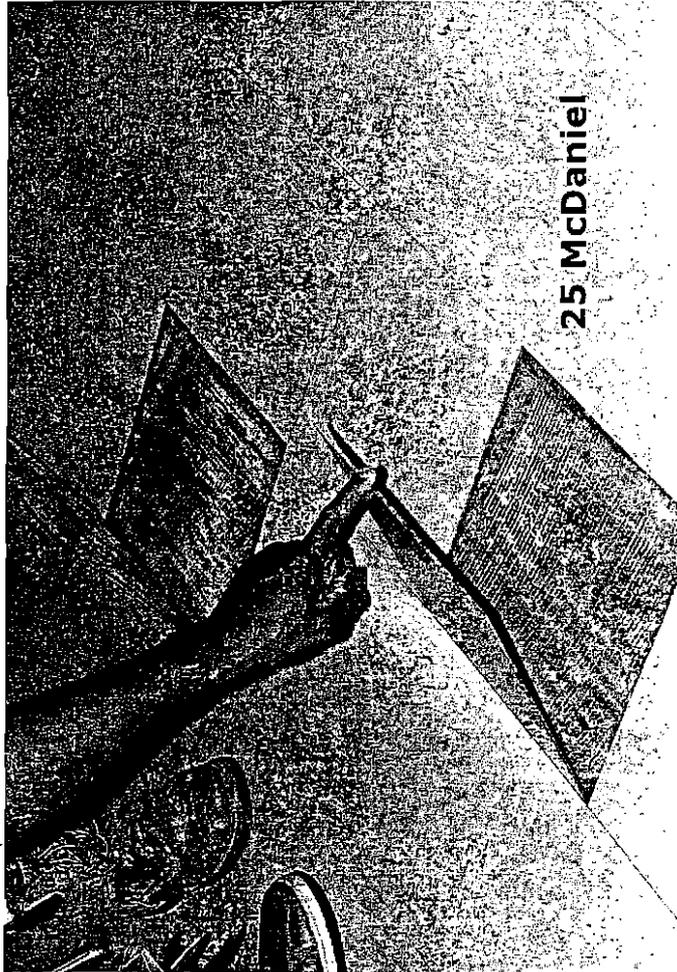




26 McDaniel



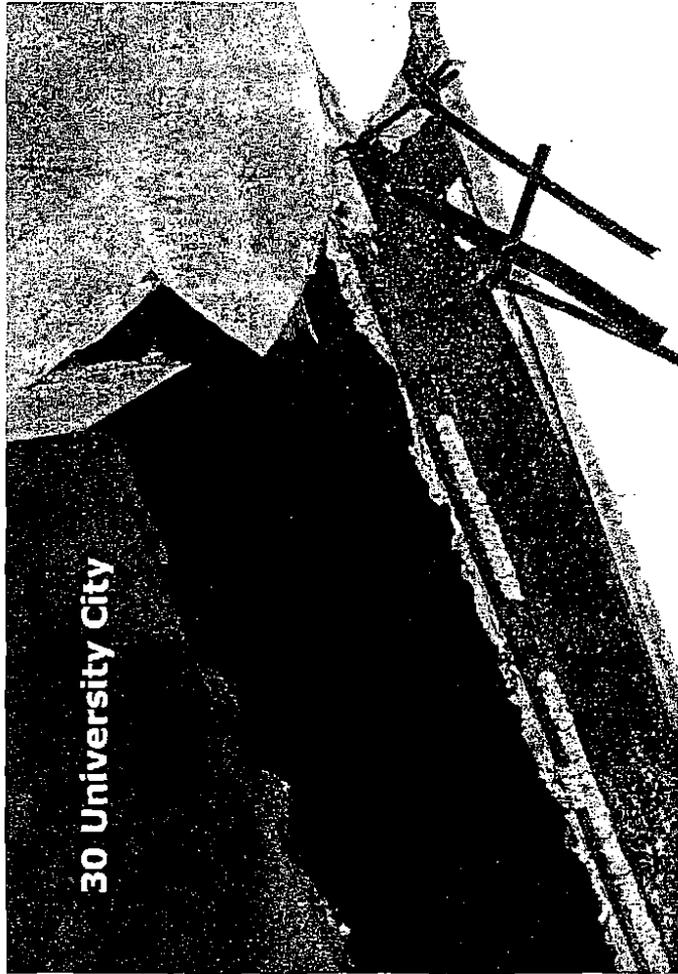
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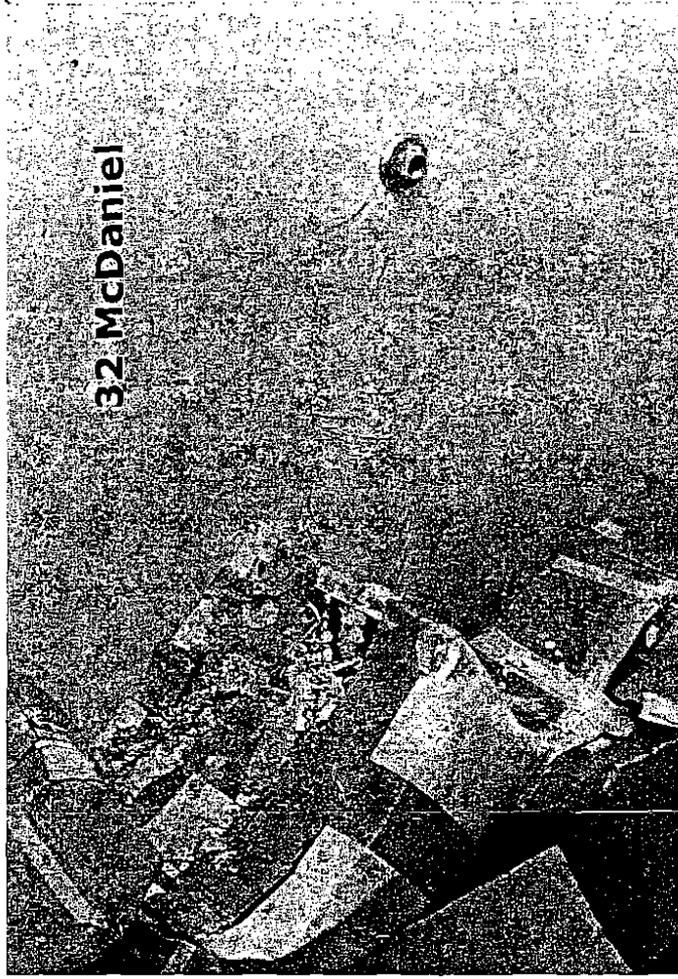
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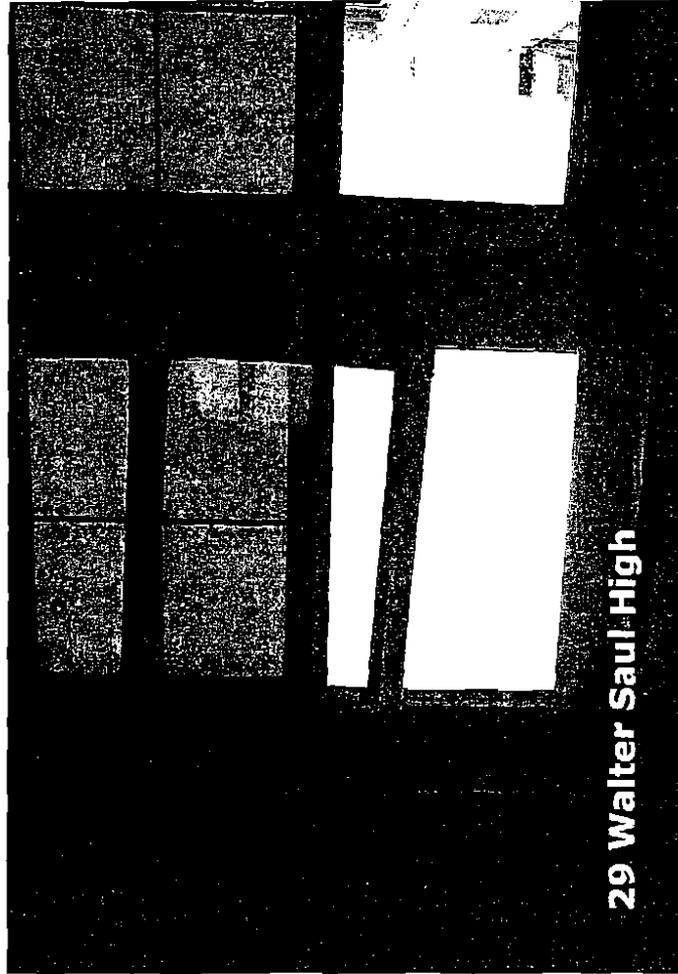
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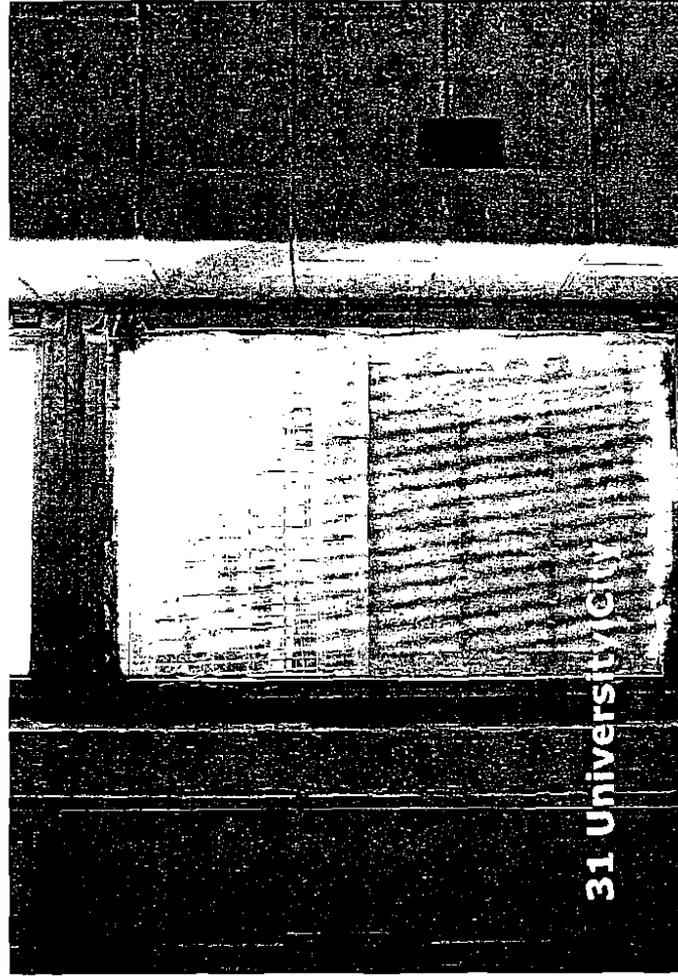
30 University City



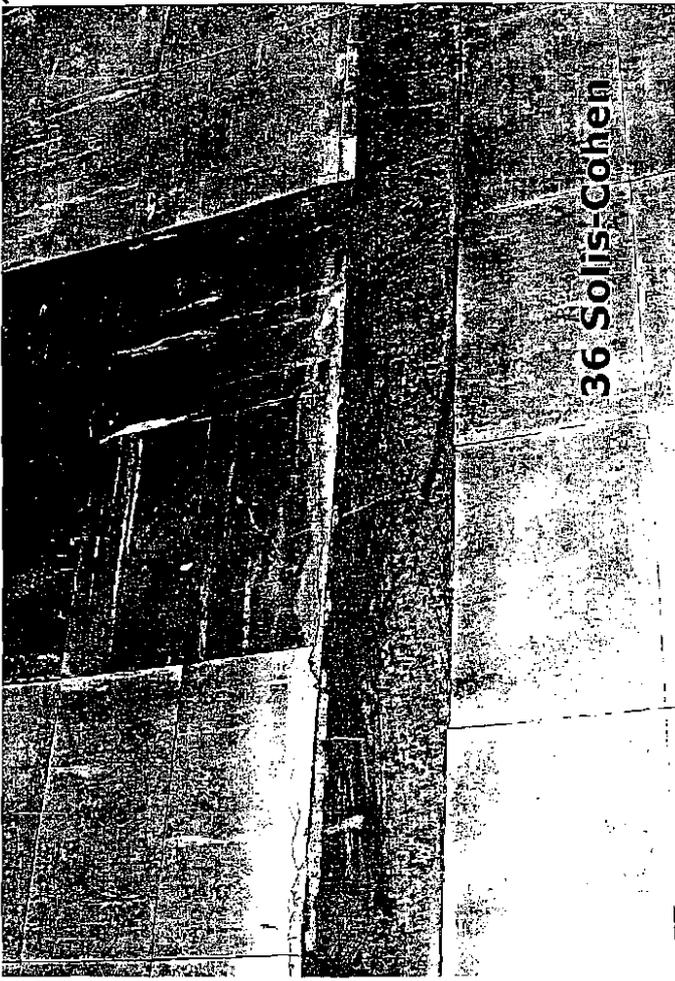
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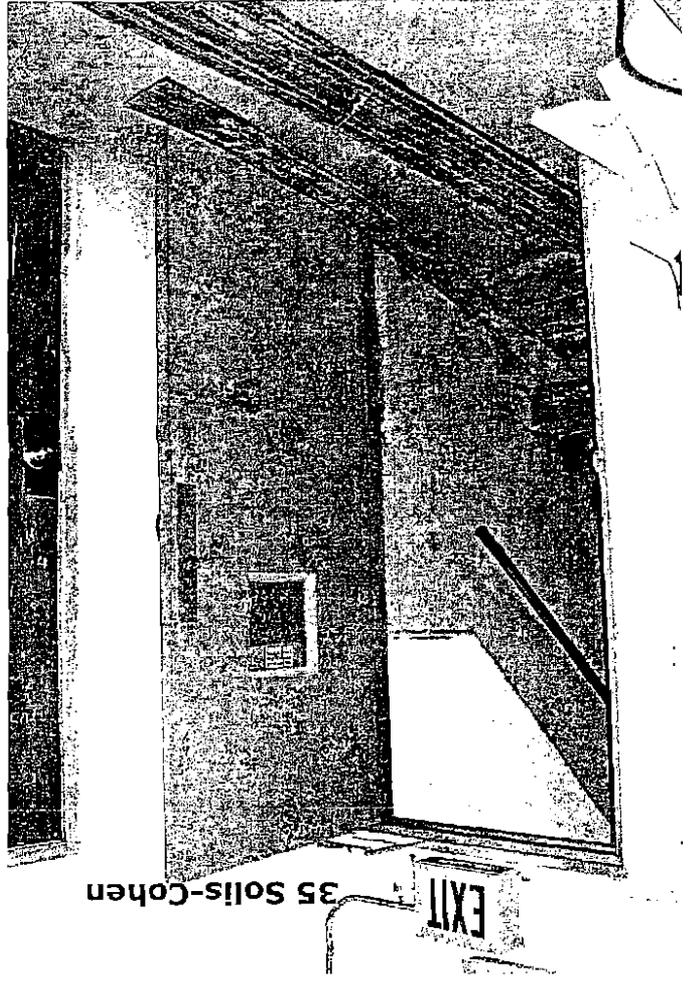
29 Walter Saul High



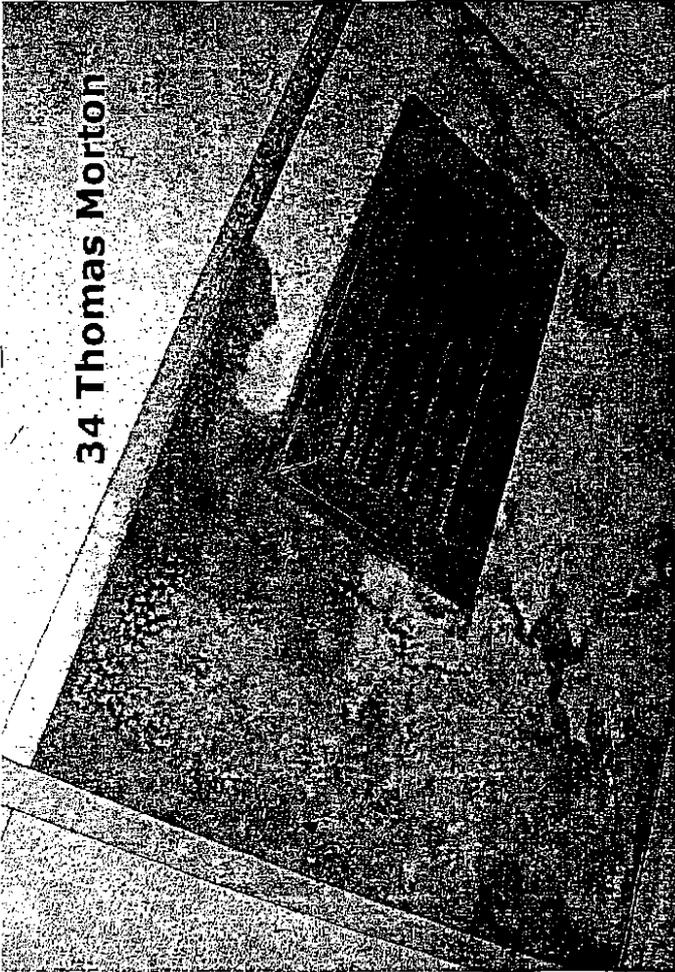
31 University City



36 Solis-Cohen



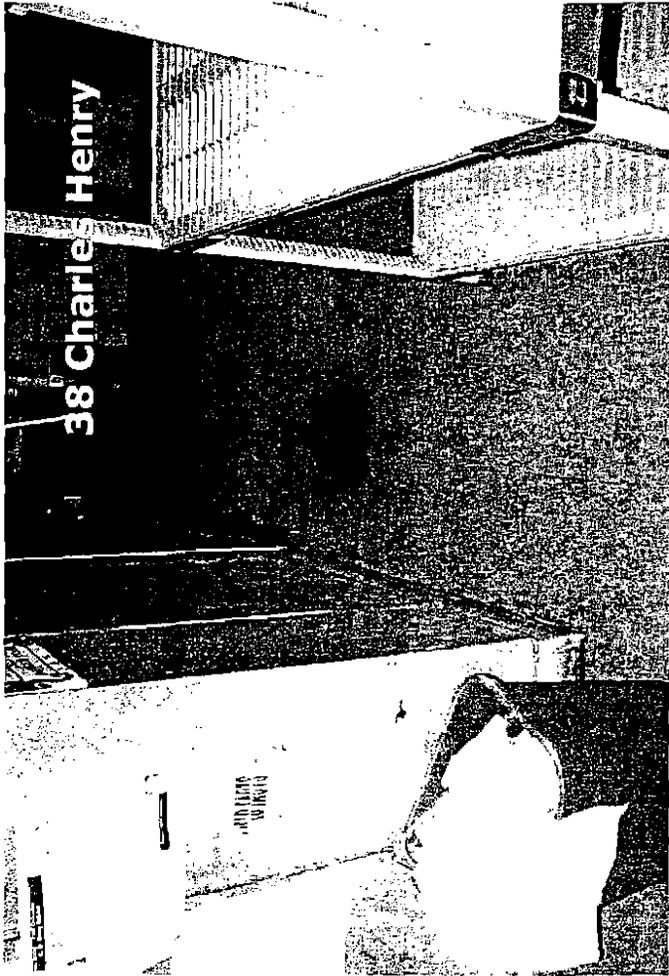
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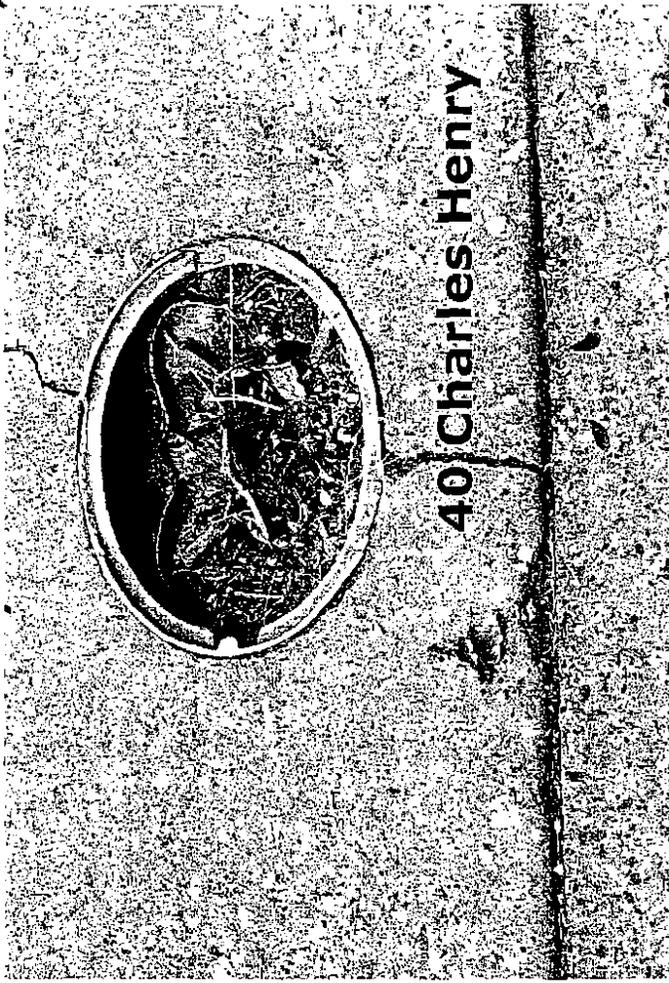
34 Thomas Morton



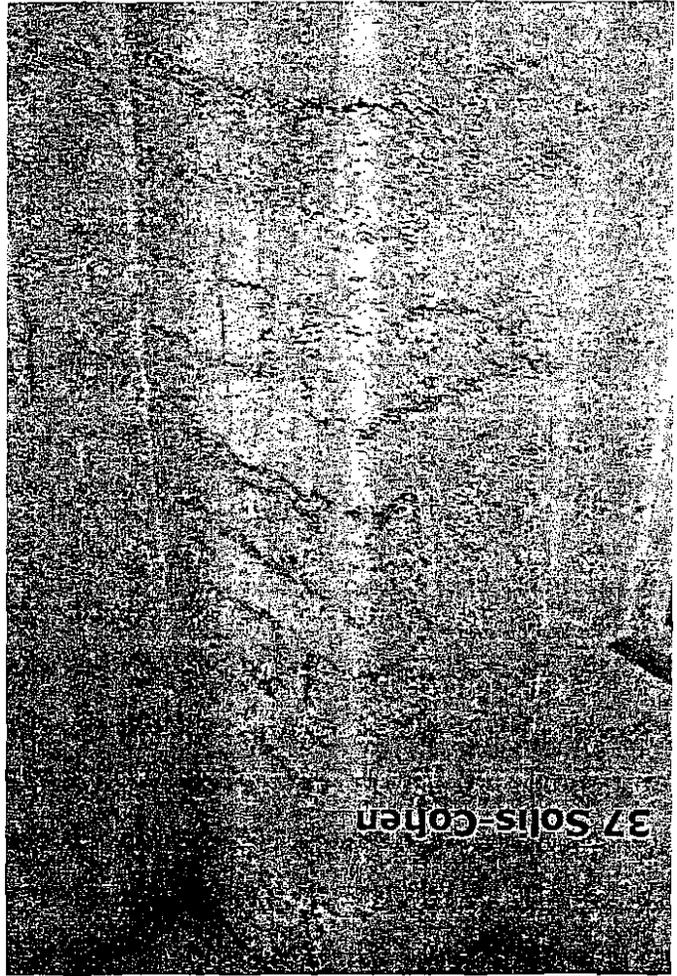
33 Solis-Cohen



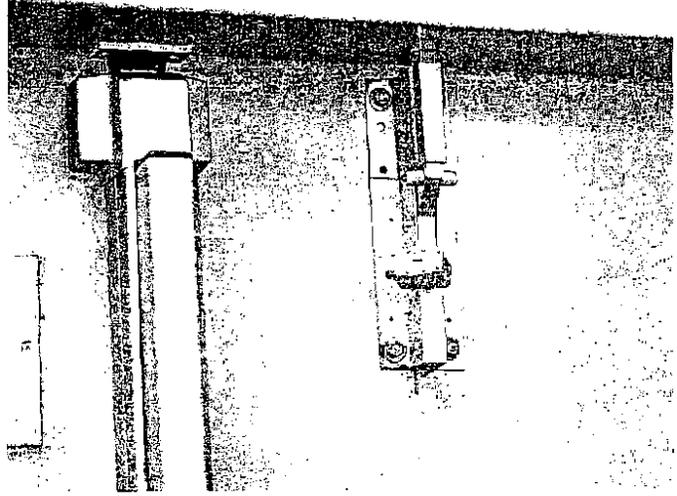
38 Charles Henry



40 Charles Henry



37 Solis-Cohen



39 Daniel Boone

# Location of Schools Selected for Inspection

