

## Examples of Hazardous Incidents in Schools:

Many of these hazards were specifically identified as such in the June, 1994 Bulletin written by the Department of Education's Indoor Air Quality Committee. This Bulletin was supposed to go to all principals in the Province.

1. Mould consultants advised that a mouldy gymnasium ceiling should be replaced, but school board employees decided it would be acceptable to install a false ceiling below it instead. Parents alerted officials and had it stopped.
2. A storage room was converted into a classroom while industrial strength floor stripper and cleaning materials were left stored behind a partition, and with a non-functioning air delivery system. A parent alerted officials, and minimum improvements were done. The previously healthy teacher was using a puffer after a few months, and was unable to teach the following year.
3. Tiles of one side of a classroom floor were replaced with glue while the class was being conducted in the other half of the room. Several maintenance people went home ill, but the children stayed. One child stayed home for two weeks after being made ill by this exposure, and has suffered from chronic ill health ever since.
4. A school yard was paved during school hours, thereby exposing children and staff to breathable harmful fumes.
5. Roofs are routinely tarred while school is in session. In at least one case the indoor walls of a school were painted while the roof was being tarred. It was impossible to escape from the fumes, and some school occupants have become chronically ill as a result.
6. Asbestos was removed from schools over the summer and without the stringent cleanup required by the Department of Labour. In some schools it has been reported that workers wearing protective suits worked while children sat unprotected in nearby classrooms.
7. Asbestos-bearing floor tiles (as defined by Labour Standards) were removed from a classroom in the manner as had been done for 20 or so years in the school system. That is, without protection of children or workers from the dust and debris. A parent alerted officials, but Department of Labour intervention was finally required to correct the situation and ensure the writing of proper Safe Work Practices. It is unclear whether these are always being followed in subsequent work.
8. Stripping and varnishing of a gym floor was done while school was in session. A note went to parents informing them, but parents tend to trust school officials will protect their children if there is any real possible harm. In another incident a gym was refinished with urethane days before school opened in September '96. Four months later some children were still experiencing asthma, headaches, and other symptoms when in or near the gym.
9. Schools are painted indoors and out while school is in session, and children breath the fresh paint fumes. Even the less toxic Latex paint fumes can trigger asthma and worse. Informed principals are now rescheduling this and other hazardous work.
10. Scraping was done of old paint which likely contains lead, without testing for lead, and while children were present, and without cleanup required by law. Lead is known to be highly dangerous to children in particular, and it is strictly regulated by government.
11. Outdoor staging was reported unsupervised and with no fencing where elementary children could run underneath or climb.
12. Pesticide treatment outside perimeter of school and indoor crack and crevice treatments. Done after hours, but without other precautions recommended by National Pest Line or IWK Poison Control Dept. Each year children are hospitalized from such exposures. For many, however, health changes due to exposure to pesticides are not easy to associate with pest control because parents don't know that pest treatments have happened.
13. Officials denied there was an oil leak for two months while teachers and children complained of ill health. Government intervention was required. Over 1000 litres had spilled, and the school had to be closed for 4 months for cleanup. Teachers and children state having been sensitized or made sicker by the exposure. More than \$500,000 were spent on cleanup and an air system.
14. Schools with children who are known to be Chemically Sensitive deal with the Scent-Free Schools issue differently from site to site. Chemical Reduced and Scent free policies are hard to establish and to maintain when there is no school board policy to help. In all cases the parents have struggled to convince officials of their child's condition, and have had mixed results. Often, even when successful, parents must constantly monitor the school environment and continue to remind all involved in order to keep their child in school. One staff member commented to a child, who was on the floor after having been incapacitated by a teacher's perfume, that the staff member doesn't "like the smell of tuna", and that the child should just "get used to the smell of perfume". It is often not recognized that this is a physical problem, not an attitude or mental problem. This is changing.

15. PCB ballast lights were removed during class time and stored in the furnace room. These are not harmful if not leaking but have been known to leak, or even spray PCB laden oil when disturbed.

PCB ballast lights are still present in some schools although they were slated for removal several years ago. In one school, lightning hit the building and caused the ballasts to spray PCB-laden oil all over the classrooms. Fortunately the school was unoccupied, but we understand it is being gutted carefully and shipped to Alberta's toxic disposal site.

16. A mouldy Teachers Resource Centre was once a relatively healthy building. Improper renovations were done, it is believed, causing mould to grow inside walls. Almost all staff became ill from this site, which has now been permanently closed. The costs of this in dollars, not to mention staff's loss of health, have not been made public. Interestingly, this building was declared a mould free building by the mould testing of Jan '94.

17. Air quality tests done in Jan. '94 found that virtually every school in one district had significant indoor air quality problems.

- Some classrooms with elevated CO2 levels well over 1000 ppm.

- 24 of 47 buildings contained unacceptable moulds or fungus.

- 23 contained fungal species that are notorious mycotoxin producers and that are "unacceptable occupants of indoor air".

(Seven of these included the *Stachybotrys Chartarum*, formerly known as *Stachybotrys Atra*, a particularly dangerous fungus.)

- One school contained a fungus which is a known human pathogen.

- 13 contained higher levels of "acceptable" moulds which indicated chronically wet environments.

- Only 10 buildings were determined to have minimal fungal contamination.

Parents were generally not informed of the tests or their implications, and as the clean up process slowly proceeds(?), in most cases children and staff have continued to use the contaminated areas.

18. Carpets are removed with questionable (or no) Safe Work Practices (SWP) due to a disagreement over what constitutes a mouldy carpet. Mouldy carpet removal requires strict precautions according to government regulations. Research has shown that the Sink Effect allows harmful substances to collect in the carpet fibres to be released when disturbed. (In the Kings County and Pictou County school board districts all carpets are removed using strict SWP. They prefer to err on the side of caution.)

19. In at least two schools, over March break, parents frustrated my the level of cleanliness in their schools cleaned their children's classrooms. In one the curtains were so stiff from visible mould and dirt that they had to be stood upon to bend and force them into transportable size. It took six washings before the fabric colour was evident. Compacted dirt coated the rafters, lights, door frames, etc., and huge sections would float down as the parents cleaned. The windows were believed to be the aged, yellowed plexiglass, but were discovered, after much scrubbing, to be clear glass.

20. The brickwork of a school's outer walls was to be repointed by a subcontractor. Teachers were warned to park their cars well away from the school building because the resulting dust could damage the paint jobs. The workers were well equipped with safety suits and breathing protectors as clouds of dust rose up, engulfing the school. Dust drifted into the classrooms through the open windows, covered every surface, and contaminated the breathing space. Floors were slippery from the layer of dust underfoot, and computers were reported to be "ruined". Students were seen entering and leaving the school with their coats pulled over their heads. When asked about this by a parent a worker replied that they just wear protective gear because "they like to", and not to worry. In this case, after nearly two weeks of trying to have school officials and maintenance managers change the situation, frustrated teachers and parents called on government officials. Then, the method of working is quietly altered to remove further risk of harm from inhaling the fine dust - silica dust. Parents, staff, and students were relieved that the "nuisance" dust had been stopped. No one was informed of the seriousness of the situation. As with asbestos, exposure to silica dust is closely controlled by the Department of Labour and Health Officials because of the known risk of silicosis of the lungs developing even after moderate exposures and often not until years after the exposure. These examples of recent incidents in the school system are not isolated examples, although details vary from district to district. These examples show the need for protection of not only the workers, but of the staff and students as well. CASLE calls them "Hit and Run" renovations.

21. The list could go on and on. In one somewhat humorous incident, pigeon's nesting over a school entry caused the Health inspection section of the Dept of Environment to require they be removed. However another section of the same department insisted they be left undisturbed until the baby pigeons left the nest. In the end, the pigeons welfare won out over the children's.

And much surely happens without being seen. Such incidents still go on throughout the year and across the Province, but we are seeing major improvements in some districts. The Departments of Educaton together with other government departments and CASLE are working on prevention. We can not go on "putting out fires", because by then the harm has already been done.

1999, Citizens for A Safe learning Environment

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**BULLETIN  
INDOOR AIR QUALITY**

Nova Scotia Department of Education

June 1994

At the request of the Deputy Minister of Education, an Indoor Air Quality Committee has been established to make recommendations concerning how the government can establish an effective and coordinated approach to dealing with concerns about air quality in schools. The work of this committee is on-going; however, the experience and knowledge gained to date has prompted the committee to issue this interim bulletin.

As the majority of indoor air quality problems within schools are associated with inadequate and/or lack of maintenance, we would recommend the following:

1(a) In buildings with mechanical ventilation, it is essential to ensure that the systems are functioning and are being properly maintained. Common problems which have been found are lack of or inadequate changing/cleaning of filters; broken fan belts; burned out motors; blocked duct work, inoperative dampers and/or linkages; controls being by-passed, out of calibration, missing, etc.

1(b) In buildings without mechanical ventilation, it is important to establish a protocol to ensure outdoor air is being supplied by the use of windows, doors, etc.

2(a) Where water infiltration is discovered, it must be dealt with immediately. Clean up any standing water, control further water leaks and take remedial action to prevent future water entry. Water damaged materials such as ceiling tiles should be replaced. Special attention is required when dealing with carpets. Prompt drying of carpets is extremely important. Those carpets which have been subjected to prolonged or repeated water damage must be removed. Failure to deal with such problems promptly and effectively may lead to mould and fungal problems.

2(b) Ensure that the daily cleaning procedures within your schools have a provision to report any mould/fungus encountered and that the appropriate cleanup protocol is carried out.

2(c) Emphasize the importance of keeping

desks and lockers free of any left-over food or other materials which could affect air quality.

2(d) Ensure carpets are cleaned regularly and appropriately. The recommended method is steam cleaning and quick drying. School boards are cautioned to consult with their local Nova Scotia Environmental Health Inspector prior to the use of anti-fungal and/or anti-microbial projects.

3. Become aware of the chemicals being used in the school by teachers and janitors, and how they are being used. The use of deodorizers is discouraged.

4. Restrict school maintenance activities which are known to generate contaminants within the schools (i.e. asbestos removal, painting, finishing of gym floors) to times when staff and students are not present. Adequate controls should be implemented to not only protect the employees conducting the work but to prevent contamination of the school and to prevent staff and students from being exposed to such contaminants when they enter the school.

It is recognized that a properly developed and executed maintenance program costs money. However, the lack of maintenance has resulted in substantial costs to school boards for remedial action and such costs have tended to be far in excess of any "savings" realized by not performing proper maintenance.

The main lessons learned in managing indoor air quality problems have been that those who work and study in schools must be involved and fully informed. This interim report is intended to assist in that process.

Complaints about indoor air quality should be addressed promptly and with empathy. Have an Occupational Health and Safety Committee which is knowledgeable about its role and authority. Staff, students and parents must be kept informed about the investigations and discussions. A protocol responding to indoor air quality complaints is enclosed for the use of such a committee.

All school boards are to forward this protocol to each principal within their school system.