ASBESTOS IN THE SYNAGOGUE

By:

Miriam S. Goone
So you're concerned about the asbestos scare? Should you have your building inspected for its presence? Where do you begin? How do you proceed? Hopefully, this article will give you some direction.

Our synagogue was built in 1969. At that time, only the lower level which contained the classrooms, offices and library were completed. However, because the building has a poured cement dome exterior, finishing of the interior of that dome was necessary for purposes of insulation. A spray-on material was chosen for that purpose as well as for its esthetic and acoustical qualities.

In 1974, the upper level which was to house the sanctuary, kitchen, social hall and gift shop was completed. As part of that completion, a second layer of spray-on was added to the interior of the dome.

During 1973, the Environmental Protection Agency prohibited the use of asbestos in fire proofing materials. The use of asbestos in acoustical and decorative materials, however, was not prohibited by the EPA until 1978. At that later date, asbestos was prohibited for all uses. Being assured that the spray-on used in each of the layers of our building was asbestos-free, we did nothing more about it---that is, until 1983, when a related event occurred and a congregant offered his assistance.
In December, 1979, we were the victims of arson which took place on the lower level. The smoke travelled through the ventilation system and caused severe smoke damage to the ceiling on the upper level. We investigated the possibility of painting over the spray-on ceiling. We found that it would be very costly and that no painting contractor would guarantee that the paint would adhere to the two layers of covering already on the ceiling or that the additional weight would not, in fact, pull down the entire ceiling. On the other hand, loss of acoustical value was almost certainly a possibility. With this good news, we decided to wait until we could afford to replace the entire surface.

At the end of 1983, we began to notice some discoloration and flaking of the ceiling. We suspected the cause to be water leakage since the outer dome had not been inspected for some time. One of our congregants, a roofing consultant, offered to inspect the dome for possible damage. In conjunction with that inspection, he suggested that we have the spray-on tested for asbestos content. His suspicions were proven by the laboratories who analyzed both layers of the material. They discovered that, in fact, each layer contained asbestos in different amounts.

Knowing that we were faced with a potential hazard, our first step was to have the air tested to determine whether asbestos fibers were becoming airborne. Air samples were collected in four different areas of the upper level. To be on the safe side, two were also collected on the lower level. No asbestos fibers were detected in any of those samples.
Although no airborne asbestos was detected, a fine dusting of the acoustical material was found on flat, undisturbed surfaces such as light soffits and the tops of the tiles in the dropped ceiling areas. That indicated that the material was friable and fibers could become airborne. Of most concern was the fact that the asbestos-containing material covered two sides of the return air plenum in the ventilation system. The area between the dome roof and the dropped ceiling serves as the return air plenum. The dome and the outer wall were covered with the original layer of asbestos-containing material. A fine dusting of the sprayed-on material covered the upper surface of the dropped ceiling. Thus, there was a great potential for entrainment and distribution of asbestos fibers through the ventilation system.

We were advised that these conditions would in time lead to dispersal of asbestos fibers in the air. Should that occur, we would be exposed to a definite risk of developing asbestosis, lung cancer and other asbestos-related diseases. We were further advised that although asbestos was not detected in the air samples, those samples represented only one point in time and that only a finite volume of air was sampled. The potential for fiber release would be present as long as the asbestos-containing materials were present. Because the dropped ceiling serves as the return air plenum for the ventilation system, the potential for distribution of the fibers was greatly enhanced. Only by removing those materials under controlled conditions could the safety of the staff and congregation be ensured.
With this information, an ad hoc committee was formed to consider our alternatives. We found that there were two—ENCAPSULATION and TOTAL REMOVAL. For assistance in our decision we relied upon the environmental health consultants who had done our air sampling.

Their opinion was that encapsulation would not be a suitable alternative to removal in our situation. They quoted the EPA Guidance Document entitled "Asbestos-Containing Materials in School Buildings, Part 2, Section 3.2:

'The integrity of an encapsulated surface depends upon bonding between a sprayed asbestos material and supporting structural members. A sprayed asbestos ceiling, for example, with initially poor adhesion to a smooth, hard, structural ceiling surface will result in shearing and failure of the full thickness of sprayed material and the applied sealant.'"

Their opinion was based upon the visual inspections they had done in the building. They had found the material too thickly applied and friable to accept an encapsulant without the risk of system failure. Pieces of the sprayed-on material were observed to have fallen to the floor in several areas, most notably in the ventilation system. Given the questionable suitability of encapsulation, they strongly recommended against the use of any alternative system other than 100% removal.
The committee, taking that advice, then had some serious decision making ahead. Some felt that since the EPA has published material available with asbestos removal specifications, there was no need to hire an architect. BUT, who among us knew enough about this specialized area to oversee the project? Who had the time to learn? Sure, we have architects among our congregants; BUT, how much experience did they have with asbestos? We asked the health consultants about the possibility of their taking on the project. They informed us that writing specifications is best left in the hands of professionals. Rather, they urged us to retain an architect; if quality assurance was a concern, they would offer a proposal to fulfill that function. Since asbestos removal without adequate safety precautions can produce severe negative ramifications, their suggestion had a great deal of merit. We asked them to provide us with a list of architectural firms whose reputation and integrity they respected. From that list we retained an architect.

The next step was to formalize the working relationship between the architect and the health consultants. The following is an outline of the services proposed by the health consultants.

1. Assist the congregation in selection of the abatement method. (This had already been completed)
2. Review of specification documents and provide specification language.
3. Conduct monitoring at a minimum of two days per
week during removal. Additionally, post removal testing will be conducted to determine final conditions.

. Review contract proposals.

. Assist in the selection of the contractor.

During the removal project, air sampling which is proposed will serve to document the adequacy of the procedures followed by the contractor. It was recommended that the contractor be required to stringently abide by the procedures and specifications as outlined in the bidding document. Sampling results serve only to confirm what is expected based on the observations of the contractor.

The industrial hygienist who would conduct the monitoring will review other information while on site. This monitoring will include activities of the contractor, work practices, personal protective equipment usage, sufficiency of control techniques and observations regarding the adequacy of decontamination. The purpose of such monitoring is to ensure contaminant containment in accordance with the specifications."

The above was accepted in toto by the congregation and the architect. We had hoped to begin the removal project that summer of 1984. However, by the time the professionals were hired and the specifications approved, it was April of that year---we were too late! While we had been seeking the best qualified firms we could find, time was melting away. Our local school districts had beat us to the punch! Rather than hire a contractor
who did not meet the high standards we had set for ourselves, the project was delayed until the following summer.

Concerned about the deteriorating condition of the ceiling and the possibility of the asbestos fibers becoming airborne, an interim monitoring program was set into motion to assure the protection of the congregation staff and members.

Beginning August, 1984, bi-monthly visual inspections examined the sprayed-on condition for signs of deterioration, disturbance and integrity. Every other inspection included air sampling to determine concentrations of asbestos fibers in the air. The monitoring continued until July, 1985, when at last the removal project began.

By February, 1985, we had hired a contractor and began to make final preparations for the removal project. One major decision still remained. Through all the discussions concerning the project, a question remained unanswered; was it safe for the building to remain open during the removal? Though we had been assured by the health consultants that the lower level would be protected from contamination, the doubt remained. Congregants were concerned about attending Shabbat services which we had planned on holding on the lower level, as well as allowing their children to attend B'nai Mitzvah classes. Employees were even more disturbed considering the amount of hours they would be in the building each day. We asked the industrial hygienist who would be overseeing the project to attend a meeting to which we invited the members of the now named Ceiling Committee, our
employees and their spouses, and anyone else from the congre-
gation who wished to attend.

A comprehensive explanation detailing the extent to which
they were obligated to provide protection was presented by the
hygienist and her associate. We were told that special pre-
cautions for preventing contamination of the lower level included
sealing doors, windows and the supply-side ventilation ductwork
with plastic; covering floors and walls with plastic; sealing pipe
chases and other connections between floors; removal personnel
wearing respirators and disposable coveralls; cleaning all equip-
ment before removing it from the work area; and wetting asbestos-
containing materials, to prevent them from becoming airborne,
before and during removal. In addition, a video-tape was shown
depicting an actual removal project in progress to help us under-
stand what had been explained. We also were shown and able to
handle a pair of disposable coveralls and a respirator in order to
further familiarize ourselves with what would take place. Our
questions, and there were many, were answered with candor, perhaps
too much so. If those attending that meeting wanted a guarantee
that there could be no slip-ups that was not the case. As in all
things, there is always a margin for error. In this case, a great
deal of fear was exhibited by some of the people in attendance. At
the end of the meeting the group was polled to determine what our
decision would be. The concensus of their opinions made the de-
cision for us. The Temple would be closed from the time the re-
moval began until all the asbestos was safely out of the building!
The original work schedule contemplated three to four weeks for the asbestos removal; another three to four weeks was needed to install the replacement ceiling and to complete the clean-up. From the end of June to nearly the end of July our office has traditionally been rather quiet. Since we had to close down the Temple, this was the best possible time it could have happened. Knowing a year ahead that the project would be taking place, we had kept the calendar clear until the first weekend in September, thus allowing eleven weeks for the entire project.

Never having had to halt operations totally, even at the time of our fire some years earlier, a plan was set into motion which would allow us to continue serving our congregants. We arranged to have phone calls forwarded to my home and the home of our assistant rabbi. Our senior rabbi had just left for Israel with a group of Temple members; upon his return he would be at Olin-Sang-Ruby Union Institute doing his yearly three week Chalutzim session, so he'd be unavailable during this time. Arrangements were made with a nearby church to hold Shabbat services; B'nai Mitzvah classes were held at the tutor's home.

The secretaries packed up their typewriters and enough work to keep them busy at home. We looked upon this period as a good opportunity to get a head start on the new year.

"The best laid plans..." that's right, it didn't happen that way at all. It was eight weeks before we were able to return to our building! The contractor left two weeks later. We were left with one week to completely reassemble what had taken two weeks
to disassemble prior to the beginning of the project. The entire upper level had been cleared out down to the bare walls! Please keep in mind that we are a "full-service" congregation nearing one thousand members. During the High Holydays, we are able to seat fifteen hundred in that upper level which measures twenty-two thousand square feet. We own equipment to serve a banquet to three hundred people from our caterers' equipped kitchen. We have a large fully stocked gift shop. With the addition of a second rabbi and a cantorial soloist we added two fully equipped offices after the original construction. We have a pipe organ and a piano in the sanctuary and a second piano which is used by our soloist and is kept in her office. A normal Shabbat service is attended by close to three hundred people; a large inventory of paper goods is always on hand for use at Oneg Shabbat. This will give you an idea of the enormous task that befell us. Remembering the effort and the number of people involved in getting everything back in order is like a recurring nightmare. The finishing touches were completed only hours before that first Shabbat service. I don't think I'll ever understand how we were able to coordinate and accomplish it all.

As I write this article, it is one month after the High Holydays; eight weeks since the "completion" of the project. We still have a problem. An extremely pungent odor persists on the upper level. We originally thought it was the mineral spirits we had used to remove the tape marks from the walls and carpet which had been used to hold the plastic in place during the removal and replacement of the ceiling. We have since learned that the odor is emanating
from the replacement material. We are consulting with the manufacturer of that material to find a way to solve this situation. It most likely will end up that by leaving doors and windows open, it will eventually disappear. With the weather now getting colder, I anticipate that we'll have to live with it until next spring. In addition, there are some areas that are esthetic eyesores. Due to the late completion there was no time left to correct these errors. We hope to be able to schedule the necessary time during our winter break. This additional work will take us into next year.

By the time all the work is completed to our satisfaction, we will have spent over two years ridding ourselves of our asbestos problem! But---the decisions were all right ones; we did all that we could do to provide a safe environment for our congregants and their families. Isn't that what it's all about anyway?