REPORT OF A PRESERVATION SURVEY OF CROSSETT LIBRARY, BENNINGTON COLLEGE BENNINGTON, VERMONT

I. INTRODUCTION

Bennington College was founded as a progressive college for women in 1932. It became coeducational in the 1960s, and has a present enrollment of 550 students.

Crossett Library, constructed in 1959, was designed by architects Pietro Belluschi and Carl Koch. The collection consists of approximately 100,000 volumes, concentrating in the arts. The library is open 95 hours a week, including evenings and weekends. Library staff includes three full-time professionals, five full-time, and one part-time staff members. The library director is also responsible for the College archives, located in the basement of the Visual and Performing Arts (VAPA) building.

Crosset Library was the focus of a preservation survey conducted on August 29, 1986, by the writers of this report--Mildred O'Connell, Field Service Director, and Kim Cosgrove, Assistant Field Service Director, at the Northeast Document Conservation Center (NEDCC) in Andover, Massachusetts. Both the library building and the VAPA building were visited during the survey, with emphasis on the library building and its collections. This survey was partially funded by a grant to NEDCC from the National Endowment for the Humanities. Preservation surveys are designed to evaluate building and environment as they relate to the preservation needs of the collections, to examine storage conditions and handling procedures, and to assess the general condition of the collections themselves. Observations and recommendations formulated during the survey are presented in this report.

At the time of the survey, the library was in a transitional state. A new library director was slated to arrive in October. In addition, proposals had been developed for the construction of a new library building, adjacent to the present building. The general information regarding environmental, fire and security standards presented in this report should be incorporated into planning for the new building.

The administration and staff of Bennington College's Crossett Library have already accomplished much to benefit the preservation of the collections, but work remains to be done. We hope that our report will prove useful to them in continuing their good work and planning for the future preservation needs of the collections.

II. BUILDING AND ENVIRONMENT

A. The Crossett Library Building

Crossett Library is a three story cement and steel structure, with the first story partially below grade. The first floor houses book stacks and study areas. A sliding glass door leads to a garden outside, but that door has been chained shut for

some time. Emergency exit from this area is through the boiler room, which is set approximately three feet below the level of the first floor. The second floor of the library is the main floor, housing the circulation desk, the card catalog, reference area, and staff offices. The daytime public entrance is on the west side of this floor. The staff entrance is on the north side of the building and opens into the offices. The third floor holds ranges of books and study carrels, the closed shelf area, which is kept locked, the staff room, and an all-night study area, which consists of two rooms with study carrels. The all-night study area is accessible through a door from the main library during the library's open hours, and from outside when the library is closed, via an exterior staircase.

1. Protection of Collections from Water Damage

a. Background:

Basic to the preservation of library and archival materials is their protection from water damage. Even a minor water accident such as a leaky pipe can cause extensive and irreparable harm to collections.

The best insurance against possible water damage is to provide for regular inspection of roof covering and flashings, with repair and/or replacement as needed. Gutters and drains must be cleaned frequently. Storage of collections underneath water pipes, steam pipes, lavatories, air conditioning mechanical equipment, or other sources of water must be avoided. Collections should never be stored on the floor; storage in basements or in other areas where the threat of flooding is great must be avoided. If collections must be stored in areas where they are vulnerable to flooding, then water sensing alarms should be installed so that quick detection of flooding is assured. (See Attachment A.)

b. Observations and Recommendations

The original flat built-up roof and its 1970s replacement caused extensive leaks with significant damage. Four years ago, a single ply one inch urethane membrane with stone ballast was installed on top of the old roof. By leaving the old roof in place, additional insulation and moisture resistance were provided for the building. There have been no problems with water leaking through the new roof. A wind storm last spring lifted the new flashing at the edge of the roof, but it was noticed by the physical plant staff and repaired before any leakage ocurred. This was a good demonstration of the fact that regular inspection helps to prevent damage.

The roof is accessible only by a ladder from the ground, and is not walked on very often, which is good. Roof inspection takes place twice a year, during drain cleaning. Regular inspection and preventive maintenance must be continued.

The cement slab beneath the roof surface, is reported to

hold up to fifty pounds of snow per square foot. A six inch lip at the edge of the roof has a tendency to dam, but water has not been a problem with melting snow.

The library building is set on a natural slope and drainage is good. The cooling tower for the air conditioning system is located outside the building on the uphill side. During spring months there is some accumulation of water in the boiler room, but it has been minimal and does not affect the library itself.

The lavatories in the building are not stacked, but are isolated at one end of the library, not located over collections. This was good planning on the part of the architect. Most of the lavatories have floor drains. There have been no water problems from the lavatories or from the kitchen in the staff room, which is also located at that end of the building.

2. Temperature and Relative Humidity

a. Background:

Paper is a hygroscopic organic material and as such is greatly affected by the environment in which it is stored. Seasonal and daily fluctuations in humidity cause paper to expand and contract, weakening cellulose fibers and accelerating the deteriorative process. In winter, central heating often results in extremely dry conditions, causing paper and adhesives to dry out due to lack of moisture in the air. Even worse is excessive moisture, which can cause or encourage foxing or mold. Heat speeds the deterioration of paper, with the chemical rate of deterioration doubling with every ten degree F. increase in temperature.

The recommended compromise temperature for the storage of library materials and the comfort of people is 68 degrees F. +/- 2 degrees. Optimum relative humidity is 50% +/- 5%. These conditions should be maintained twenty-four hours a day, 365 days a year. If it is impossible to maintain these precise conditions, it is better to maintain stable conditions that are somewhat above or below the ideal than it is to allow conditions to fluctuate greatly. Further information about environmental standards is provided in Attachment B.

Remedial measures to improve environmental conditions for library and archival collections might include: (1) installation of central environmental controls; (2) use of portable air conditioning units, humidifiers and dehumidifiers; (3) removal of collections from attics, which tend to be hot, or basements, which are usually moist.

Temperature and relative humidity should be monitored on a daily basis wherever collections of permanent value are stored. This data will serve to (1) establish existing environmental conditions; (2) support the need for

environmental controls, should the need exist; and (3) indicate whether climate control equipment is operating optimally, if such equipment is already in place.

Environmental data should be recorded daily and monitoring conditions should become a regular part of the daily procedure. Temperature and relative humidity are best and most easily recorded automatically with a 24-hour recording hygrothermograph. Conditions can be less expensively monitored on an occasional basis (once or twice a day) with simple thermometers and hygrometers available from scientific supply houses. Because hygrometers are sensitive instruments which sometimes lose their accuracy, it is recommended that they be checked monthly with a sling psychrometer or, better yet, with a battery-operated psychrometer like the one in Attachment C. For this reason, a hygrometer that can be calibrated is recommended. Further information about thermometers and hygrometers may be found in Attachment D.

b. Observations and Recommendations

Crossett Library has a forced hot air heating system, with steam supplied by a central heating plant. The HVAC system utilizes the original equipment, which is maintained by the College maintenance staff, except for the refrigerant for the air conditioning, which is taken care of by a local contractor. Air conditioning is provided by a forty-two ton unit. The compressor and coil are located in the basement. Chiller and cooling tower are located on the ground outside the building. Algae and pH levels are monitored by the maintenance staff.

There is said to be little fluctuation of temperature in the library building, which is good. Temperatures in the library are comfortable and are kept between 68 degrees F. and 70 degrees F. year-round. Sometimes in summer, the third floor of the building is very warm in the morning. The librarians open the windows in that area just until the air conditioning system cools the space down. The air conditioning equipment is not shut off nights or weekends during the summer months, which is good since it prevents cycling.

In winter, the system is on a day-night cycle, where the night cycle is 55 degrees F., except during Field Work Term (FWT) when the temperature is kept at 50 degrees (Dec. 21-March). If the temperature in the library goes below 50 degrees, the building's own thermostat overrides the system, and kicks on the heat.

In Fall, the college heating system is ready to go on by September 15. The air conditioning is ready to go on by May or early June.

Warm or cool air is circulated through the library via

ductwork and air registers. Books in the cubicles and in boxes in the closed shelf room should be moved away from these registers to avoid "cooking" the books.

The security patrol makes two-hour rounds of the campus buildings, making energy checks, which are logged. This is a safeguard useful to prevent freezing pipes, etc.

Temperature and relative humidity have not been monitored in the building, but the building is said to be very dry in winter. There was a humidification unit in the HVAC system, but it has not been used since it caused condensation to form on the inside of the windows. It would be good to borrow a recording hygrothermograph from the Science department on campus, so that existing conditions in the library can be established and steps taken to modify them as needed.

There are large thermal windows throughout the library building, most of which are not shielded with curtains or drapes. Installing drapes, reflective films or sunscreens over the windows on the south and west sides of the building would help to keep the temperature down in those areas and it is recommended that this be done. Doing so would also help to conserve energy. The office windows do have drapes, which helps keep the temperature in those areas comfortable.

The closed shelf area is located on the west side of the building; windows there admit strong sunlight and lined drapes should be installed there to reduce temperature and prevent light damage to collections.

3. Protection from Light

a. Background:

Light not only causes yellowing of paper and/or fading of media, but it can act as a catalyst for oxidative changes, thereby accelerating the deterioration of paper. The intensity of the light as well as the length of exposure determine the total damage. Most dangerous is the ultraviolet energy associated with natural light and with artificial fluorescent light. Collections of permanent value are best stored in areas with no natural light under low levels of incandescent illumination.

A great deal can be done to control light through judicious and careful use of shades, drapes, blinds or shutters. This can also serve to minimize the amount of heat which builds up inside buildings during the day. Sunscreens applied to the outside of windows will help to control natural light in spaces where it is difficult to keep shades or blinds closed. (See Attachment E.)

Filters made of special plastics can be used to help control the most harmful component of light, which is ultraviolet

energy. All fluorescent tubes in areas where collections of special value are kept should be covered with ultraviolet-filtering fluorescent sleeves. (See Attachment F.)

Ultraviolet-filtering plastic films or Plexiglas can be applied to windows and exhibit cases, in order to control the amount of damaging ultraviolet energy to which collections are exposed. (See Attachments G & H.) It should be noted, however, that these filters do not give 100% protection against light. Valuable or irreplaceable materials should therefore be displayed for short periods only in subdued incandescent light. Paper artifacts should never be put on permanent display.

b. Observations and Recommendations

Some of the ranges of book shelves in the library are arranged parallel to the the building's large windows making them especially vulnerable to light damage. Installation of a window covering will help to protect the books from light damage, as well as reduce temperature in the library as mentioned above.

Lighting in the building is fluorescent, with cool-white tubes. No ultraviolet sleeves have been installed on the tubes, but the lights are housed behind a sort of grid work, with a cover of opaque glass. It is unclear to us whether this glass shields the books from ultraviolet rays; this would need to be tested with a UV meter.

It is good that the lighting in the closed stack area is incandescent. These lights produce less heat and virtually no ultra-violet rays. Unfortunately, until heavy drapes are installed in that room, both heat and UV rays will come in through the windows, causing considerable damage to these special collections. It is strongly recommended that these windows be covered.

A problem in the library is the fact that the study tables and work tables in the building have white surfaces. The fluorescent lights reflect off of the white surfaces producing a glare which causes staff members and students to develop headaches. We suggest that the tops of the tables be painted a dark color, which might reduce the glare.

4. Protection from Insects and Rodents

a. Background:

Library and archival materials are appetizing to insects and rodents, and all possible steps should be taken to control them. Because insects and rodents are attracted by food remains and clutter, eating and drinking should not be allowed in library buildings, especially not in collections storage areas. Clutter should not be allowed to accumulate for the same reason. Moist conditions may also encourage pests.

Members of the public who use these materials should be prohibited from eating and drinking inside the repository. Staff members should rigidly restrict their own use of food to a staff room. All food remains should be placed in covered containers and removed nightly from the building.

b. Observations and Recommendations:
The Crossett Library does not have a significant insect and rodent problem, although some gift books arrived infested with insects. The books which carried the insects were stored in the closed shelf room. This room was a poor choice for storage of those materials, because the insects could easily migrate to the most valuable books in the library's collection. In the future, gift books must be stored in another location, away from all library materials, at least until their value and condition can be assessed.

As a rule, no food is allowed in the library. Student workers, however, who are in charge of the library on Friday nights and weekends, do not enforce this rule very strenuously. Food must be forbidden in the library, and student workers must be urged to enforce the rules. If this is difficult for them to do, then the possibility of providing staff supervision during those time periods must be considered.

5. Protection from Fire
a. Background:
Preservation of library and archival materials becomes a moot point if collections are destroyed by fire or lost to theft or vandalism. It is for this reason that fire and security protection come under the purview of a preservation survey.

The issue of automatic sprinklers has traditionally been a controversial one in libraries. In the past there has been substantial anti-sprinkler feeling on the part of librarians, curators, and conservators. However, more and more fire safety professionals and people who care for collections are becoming convinced that library collections may actually be best protected from fire by sprinklers.

One survey indicates that 43 per cent of fires are extinguished by only one sprinkler head and that 70 per cent are extinguished by no more than three heads. Such limited sprinkler action would cause water damage to a relatively small portion of collections; this is contrasted with the devastating damage which might result to both building and collections, should a fire get out of control. (A recent example of this was the catastrophic Los Angeles Public Library fire which was out of control when the firemen arrived, in spite of good detection equipment and rapid response by the fire department. The rapid spread of that fire was, of course, exacerbated by the free-standing stack arrangement which acted like a natural chimney.)

These statistics, combined with the fact that we now have technologically sophisticated methods of drying water-damaged books (i.e. vacuum freeze drying), makes the installation of sprinklers in libraries less ominous than it might once have seemed. Installation of sprinklers in museums and archives is perhaps less clear cut than it is in libraries, given the nature of the collections. Some archival materials and works of art on paper may be irretrievably damaged by direct contact with water.

At the very least, all repositories which house collections of value must be equipped throughout with heat and smoke sensors which are wired directly to the local fire department or to another central monitor. Fixed temperature heat sensors by themselves are insufficient in that they will not detect smoldering fires; rate-of-rise sensors are better in that they are activated by a sudden, small increase in temperature. Smoke sensors alone are not ideal since they have a relatively high rate of mechanical failure. All detectors should be tested monthly.

Collections of very special value and collections which might be irretrievably damaged by water from a sprinkler system are best protected by a halon gas automatic extinguishing system, which extinguishes fire without water and without leaving a harmful chemical residue on collections. (See Attachment I)

Repositories should be equipped throughout with portable fire extinguishers and they must be updated annually. Portable halon fire extinguishers should be installed in all storage areas where collections of special value are kept. (See Attachment J)

Staff members should work with the local fire department to develop a fire safety program. All existing fire hazards should be eliminated and regular fire drills should be held. Staff should be trained in the use of portable fire extinguishers and in evacuation procedures. Staff should also prepare ahead for the possibility of fire or water damage to collections. Much valuable time can be lost during emergencies if staff members are unfamiliar with recovery methods. Disaster planning will help staff to respond quickly and efficiently to disasters; it can also avert potentially disastrous situations. The information in Attachments K & L should prove useful in disaster planning efforts.

b. <u>Observations and Recommendations</u>:
The Crossett Library at Bennington College has virtually no fire protection. There are fire dampers in the HVAC system, but they require high temperatures in order to shut the ventilation system down and certainly cannot be viewed as a fire protection system. The closed shelf room contains a single heat and smoke sensor which is not connected to any

central monitor, but rings an alarm in the building and a bell outside the building. This provides little, if any, real protection to the collections, especially since security does not always pay attention to these alarms. This alarm must be connected directly to the security office. The long term plan must include the installation of a heat and smoke detection system throughout the library building, connected directly to the Fire Department. The library administration should hire a qualified fire safety professional to provide guidance in this area.

There is no automatic extinguishing equipment in the library building. The portable fire extinguishers here are of two types: some are dry chemical ABC, and some are CO2, which extinguish only types B and C fires. While the fire extinguishers are inspected annually, the CO2 extinguishers should be changed to the dry chemical ABC type. Portable Halon extinguishers should be purchased for the OCLC terminal area and the closed shelf room.

The absence of both fire detection and automatic extinguishing equipment in this building is very dangerous. The problem is seriously compounded by the fact that students are allowed to smoke in various areas of the library. Cigarettes have been found stubbed out on the floor, on desks, and on ranges of bookcases. Smoking must be prohibited in this building. The Library represents the heart of the College, as well as a substantial financial investment. The College must protect this investment by installing an early warning fire protection system. Until this can be done, smoking must be prohibited and other fire hazards reduced.

The library has all new wiring, with 600 amp service, and appears to be in good condition, which is good.

The staff room is one particular area which poses a fire threat. There is a coffee machine in the staff room which has accidentally been left on in the past. The room also contains a kitchen with a stove. This room must be checked carefully each night by staff before closing the building. At times when students close the building, they must be required to make careful checks of the staff room, as well as areas such as the book repair room, where repair irons may be left plugged in. Heat and smoke detectors should be installed in the staff room, wired to the security shack, or, better yet, to the Fire Department.

Another room which could easily be the source of a fire is the all-night study area on the third floor. Students are allowed to smoke in this room. Also, some students bring their coffee makers into the study area, sometimes leaving them plugged in when they leave. Again, no smoking should be allowed anywhere in this unprotected building, and coffee makers should be forbidden. This room poses an especially

serious threat to the safety of the library since it is used nights when staff is not present.

The possibility of moving the all-night study area to another building should be seriously considered, since the fire threat here is so great. There is no need for it to be at the Library itself, since neither reference books nor books which have not been checked out are allowed in the all-night study. One alternative location is the VAPA building, which is already open twenty-four hours.

Further threatening the safety of the library is the fact that there have been several past incidents of arson on the Bennington campus. Up to this time, these incidents have been confined to the dorms, but the library is a prime candidate for arson, mainly because of poor security practices there, described below.

The fire department is located only one half mile away from the college campus, and arrives in five minutes, when called. Unfortunately, they are not always called immediately when an alarm rings. Reporting of fires appears to be problematic on a campus-wide basis, not just in the Library. The fire detection systems in the dorms are connected to the security shack. When a fire alarm rings, instead of calling the fire department immediately, the security shack sends a patrolman over to the site of the alarm to check on the situation. The patrolman then reports back to the shack, and the man in the shack calls the fire department, if necessary. The time lost in this process could have serious consequences in fire control. In addition, we were told that the security shack is not always manned, or is manned by a student. This fact poses a serious threat to the safety of the campus buildings and the students. If the security shack cannot be relied upon in an emergency, the entire campus is in danger. Campus-wide security must be reevaluated and a viable solution found for existing problems.

The library has no disaster plan, and the staff is not trained in emergency procedures, such as the use of fire extinguishers and the evacuation of people from the building. Staff must be impressed that the safety of the library and its collections lies in their hands, and that awareness on their part could prevent a serious fire. There are plans to work with the College's fire/safety director on getting a training program initiated, which is a step in the right direction.

Emergency exits in the Library must be better marked. The exit through the boiler room, on the first floor, is difficult to find. This is especially dangerous, since the sliding glass doors which exit into the garden area have been chained and padlocked shut. Keeping the garden door padlocked could have tragic consequences in case of emergency. This practice must be reevaluated.

Protection against loss of the collection to fire will be greatly improved if the building's security is tightened significantly, as explained below.

6. Protection from Theft and Vandalism

a. Background:

Repositories which house collections of permanent value must be well secured during hours when the building is closed to the public. It is best to install perimeter intrusion alarms and internal motion detectors, which are wired directly to the local police department or to another outside monitoring agency. These detectors must be tested regularly and frequently.

For the purpose of controlling access during working hours, as well as controlling loss of materials, it is desirable to have only one entrance which is used by patrons and staff alike. All other doors should be alarmed so that unauthorized use can be detected.

Building keys and keys to areas where special collections are kept should be strictly limited. A list of keyholders should be kept and staff members should be required to return keys when they leave the employ of the institution.

Use of valuable materials by researchers must be carefully controlled and strictly monitored. It is ideal for researchers to use collections in a room adjacent to the locked storage area in which those materials are kept. The researcher would never have direct access to these materials; there would be no browsing. The researcher would enter the room without personal possessions -- coats, bags and books would be left in a locker provided. S/he would be allowed to bring only a pencil and paper into the room. The researcher would sign a register, present an identification card, and leave that identification card in the hands of the staff person who would retrieve the object. One object at a time would be given to the researcher. If several objects needed to be used, then they would carefully be counted out by the staff member in front of the researcher before and after use. Staff would check the materials visually before and after use for evidence of vandalism (e.g. cutting out of plates, etc.). The identification card would be returned to the researcher only when the objects were returned to the staff member and when the staff member was satisfied that no damage had been done to the object.

b. Observations and Recommendations:

Crossett Library has no intrusion alarm system. One room in the building, the closed shelf room, has a contact switch on the door and windows and motion detectors. The boiler room door has a contact switch. But both of these systems only activate a local alarm inside and outside the building. In the past when the security system has been triggered, security has not responded, either because they were unaware

of the meaning of the alarm, or because the security shack was unmanned. We suggest educating the security staff as to the meaning of the alarms ringing in the library, and tying the security system into the security shack. At present, the librarians run to check the room if the alarm rings, but if the alarm were triggered when the building was unoccupied, the room and the collections would essentially be unprotected.

Keys to the library and its alarm systems are held by an unknown number of people: ex-staff members, ex-faculty members, members of the faculty who have been at the college since before they stopped giving out keys to all faculty, all security people, supervisors of the physical plant, housekeepers, electricians, carpenters, and plumbers. This wide dispersal of keys poses a serious threat to the building's security, because, combined with the absence of an intrusion alarm system, it means that all of these people have free access to the library at all hours. This subjects the building and its collections to theft, vandalism and arson. We strongly recommend changing the locks on the library doors, with strict limitation on the dispersal of new keys.

At this time, students are not given keys, because a key is not necessary in order to close the building. It would be best to continue the practice of withholding keys from student workers. Keys to the alarms in the boiler room and the closed shelf room are kept in a locked box, to which only library staff has access. The lock to the closed shelf room should be changed if key distribution is suspect.

There has been a problem at the library with staff members and students who close the building forgetting to turn on the alarm in the boiler room and in the closed stack room. Also, exterior doors have been left unlocked, and lights left on. Combined with the lack of response from the security shack, this human error presents a serious threat to the library's collections. People closing the building must carefully check each area of the library and remember to set alarms. A closing check-list should be initiated which includes fire safety checks, as previously described.

An intrusion alarm system must be part of the long-term plan for this library. A qualified security consultant should be employed to advise on this subject.

We were told that security patrols the library building as part of their nightly rounds, making checks every two hours. To the librarian's knowledge, no one has ever stayed inside the main library after closing. However, it is impossible to know for certain whether students have stayed behind after closing, since the library has no motion detection system. If someone were to stay in the main library after closing, it would be possible for them to

leave the building with anything they wanted, to cause arson or vandalism, or to allow others to gain access to the building.

The staff door is kept locked except during times when school is not in session. The lock on this door does not work well, and the door is hard to shut. It must be fixed. Maintenance and delivery people use this door during the day, but the office is not always staffed during those hours. The staff door should be kept locked while no one is in the office. It would be best to keep it locked at all times. Maintenance has keys to get in if the door is locked, and delivery people should be let in by staff. A doorbell should be installed there if one is not already in place.

The exterior boiler room door was not locked from the outside on the day of the survey. This door must be locked at all times, in order to control access to the library building and prevent possible vandalism.

The sliding glass doors that lead from the first floor into the garden area would need to be used for egress during an emergency. At the present time they are chained and padlocked, making emergency egress impossible. This door was padlocked as a means of controlling book loss. However, keeping it padlocked could cause serious problems in time of emergency, especially since the boiler room door, which is now considered to be the emergency exit, is hidden and unmarked. The locking and use of these doors must be reevaluated and the issue must be better resolved. It might be necessary to add an electronic book security gate on the first floor, and/or to assign a staff member or student to monitor the area near the garden door.

The windows on the second floor are kept locked, since the students have tossed books out the windows in the past.

The night study area is used day and night. Staff now has to go into the night study room when the library closes; they check each student's desk to see that all circulating books in the room are checked out and reference books removed before locking the door into the library. Students will sometimes sit on their books, or hide them in some way, to prevent the librarian from seeing them, and books have been lost. A good solution to this problem would be to insist that all students leave the building through the electronic book security gate when the library closes, re-entering the night study area from the outside door. Staff can then check the desk areas carefully while the students leave from the main entrance and return via the back entrance.

Another problem with the night study area, since the library has no motion detectors, is that students could stay behind

in the main library and open the door to the night study area for the other students. One way to solve this problem would be to install contact switches on the door to the night study area, connecting the alarm to the security shack.

Considering the serious security and fire issues raised by the all night study area, the best answer may be to move it to another building. The VAPA building, which is open twenty-four hours a day, may be the perfect location.

The solution to many of the library's security problems lies in changing the locks, restricting keys, installing contact switches on the exterior doors and the door into the all-night study area, and connecting all alarms to the security shack.

B. Bennington College Archives, Visual and Performing Arts Building

The Visual and Performing Arts building (VAPA) is of cement, steel and wood construction. It is fifteen years old, and is located across campus from the library. The building is open twenty-four hours a day, and houses both classrooms and studios.

The archives room is in the basement of the building. It is a long, narrow room, in which college records, student records and transcripts, and some artworks are stored in boxes and on shelves along the walls.

1. Protection from Water Damage

The roof of the VAPA building is partially covered by a membrane; the rest is a built up roof. There have not been any problems with leaks. The cement foundation has vapor barriers, good perimeter drainage, and a tar seal to help prevent water penetration.

Unfortunately, the archives is surrounded by water pipes. There are pipes overhead carrying water for the heating and sprinkler systems, and a shower room next door. The archives houses the main feed line to the sprinkler system in the building. There is a flow valve alarm, which sounds only inside the building if the sprinklers are set off. This alarm must be connected to an outside central station, such as the security shack, in order to alert those responsible to flooding in this vulnerable area. Should the sprinkler let go, several inches of water could accumulate on the floor of this room in a very short amount of time. All archival materials should be raised up off the floor as a precautionary measure. It would be best to move these materials to a safer space where they were not so endangered by water.

Fortunately, the studios, which contain sinks in which

dangerous chemicals are sometimes used, are not located directly over the archives area.

2. Temperature and Relative Humidity
The archives area is not air conditioned. It seemed relatively warm for a basement area on the day of the survey. It seems to be a damp room, possibly needing dehumidification. No mold has been noticed in this area, but the possibility of mold growth under such conditions is great. Environmental conditions in the archives should be monitored over the course of a year in order to either confirm or dispel our suspicion that the room is too damp. A recording hygrothermograph might be borrowed from the Science department for this purpose.

3. Protection from Insects and Rodents
The archives is very dirty, with cement dust and other dirt on top of documents and boxes. Insects and rodents are not thought to be in the building, but they cannot be ruled out in a building of this size and complexity. Every care must be taken to control them.

4. Protection from Light
The archives is an interior room with no natural light. Fluorescent lighting is not turned on very often, which is good.

5. Protection from Fire
The archives is protected with heat and smoke sensors. We are not certain whether they are connected to any outside monitor. This must be done, if it is not already the case. The automatic sprinkler system both protects and endangers these materials, as previously described.

6. Protection from Theft and Vandalism
The archives door is locked at all times, but many people have keys to that lock. This lock should be changed and keys restricted, just as in the library building.

The door is not wired to a security system. There has been an attempt to break into this room from the shower room, which is adjacent, but the attempt was unsuccessful. We suggest that both of the doors be wired into a security system in order to better protect the archival collection.

III. THE COLLECTIONS

A. The Crossett Library

The general collections in the library appear to be in generally good condition. A close examination of the general collection was not a part of the survey, but recommendations formulated during our superficial inspection of these materials follow.

One problem area seemed to be the book drop. The book drop gets

heavy use at the end of the term, with students returning books they have had out all semester. The drop box gets full to overflowing at these times, even with frequent emptying. A student should be hired during those heavy-use times solely to be the book drop emptier, and to prevent physical damage to books.

The drop is open all the time, which means that students can return books via the book drop during hours when the library is open as well as when it is closed. It is recommended that a sign be placed near the book drop asking students to return their books to the circulation desk when the library is open. It would be best to lock the book drop during open hours, if possible.

The book drop closet contained chemicals for the photocopy machine on the day of the survey. These should be removed.

The information below provides recommendations for housing, storage, handling, and treatment of different types of materials. Some of the information is general and can be applied to both special collections and general library collections, e.g. the information regarding shelving and handling of books. Some of the information is specific to materials which have special value.

A. Books

1. Shelving procedures often cause unnecessary damage to books. For example, books should never be shelved with the spine up since the weight of the pages will cause the text block to fall out of the cover. Books should not be allowed to tilt over onto each other because this too causes unnecessary strain on covers and binding. They should instead be shelved upright, standing on their tails, supported by each other and by bookends. The non-knifing variety of bookend, which has a lip, is preferred to the knifing variety, which allows books to get jammed onto its sharp edge (see Attachment M).

   Heavy, oversized volumes should be stored flat on shelves, not vertically, giving them the overall support which they require. They should be stacked only two or three high in order to facilitate safe handling. This will necessitate inserting additional shelves at narrow intervals. Shelves must be wide enough to support oversized volumes completely and books must not be allowed to protrude into aisles where they are subject to being bumped.

   Although the folios in the closed shelf area at Crossett Library are well supported upright, it would be better for them to be stored flat on folio shelving.

   Books were very neatly shelved on the stack ranges on the day of the survey, but it was explained to us that this was partially because the students had not arrived on campus

yet. Crossett Library should acquire more non-knifing bookends, since some of their books were unsupported and leaning on the day of the survey. We encourage the conscientious staff to maintain their vigilance in their care for the books during the semester.

Student theses have been placed in vertical files in the closed shelf room. These books are being distorted in shape because they do not receive enough support in the drawers. The theses should be removed from the drawers, placed in archival boxes and stored flat on shelves.

2. Handling procedures can also cause unnecessary damage to books. Books should not be pulled off the shelves by the headcap, a practice which causes the headcap to fail, tearing the back. Instead the books on either side of the desired book should be pushed in and the desired book pulled out gently with a finger on either side of the spine. Books should not be stacked too high when they are moved or carried, so that chances of dropping them are minimized.

   Books and archival materials are often unnecessarily damaged during photocopying. Photocopy machines which have flat copy platens necessitate jamming the binding flat in order to get a good image. Machines with edge platens allow a book page to be copied with the book open only to 90 degrees instead of 180 degrees. Photocopying of historical materials and volumes with permanent research value should be done only by staff members and not by researchers, and then only if it can be done without causing damage to the objects themselves.

   There should be a general cleaning of books and archival storage boxes at least once a year in order to prevent soiling and abrasion of paper. Feather dusters should not be used since they just rearrange the dust. Instead, heavy dust and dirt should be carefully vacuumed. If the dust is not heavy, One-Wipe or Stretch-N-Dust chemically-treated dust cloths may be used safely. A separate cloth should be used to clean the shelves. These cloths are available in local markets. Alternatively, a soft dust cloth sprayed with EnDust may be used. The Crossett Library has no annual cleaning program, and should institute such a program for their collection.

   Care should be taken to remove all acidic inserts like bookmarks, scraps of paper, etc. from books so that the acid they contain is not transferred to the book pages with resultant staining.

   Rubber bands which have been placed on periodicals in Crossett Library should be removed. Although the rubber bands used at the Crossett library are "all natural", as advertised, they still contain dangerous acids which will damage the journals. It would be best to box the journals

which now have rubber bands on them.

Call numbers should not be painted on books which have special value, nor should they be typed on labels which are taped to the volumes with pressure sensitive tape. Paint is unattractive and disfiguring; tape may discolor and stain the binding. Instead call numbers should be typed onto heavy acid-free paper flags placed inside the volume. The flags should be about 2" wide and 2-3" longer than the book is high.

There are several excellent A/V programs about the care and handling of books (See Attachment N). Bennington College should consider acquiring one of these, e.g. the Yale program, to use for training staff and student workers.

3. Treatment of individual volumes should be determined by their value to the collections and the availability of funds for conservation. The first step in treatment should be an assessment of importance; criteria to be considered include condition, monetary, historical or artifactual value, importance for research, and expected use. Volumes should then be treated accordingly either at a professional conservation facility, at a commercial bindery, or in-house. It is more important to treat books which are in fragile condition and which must be handled by researchers, than it is to treat books which are not handled at all.

   Treatment will vary from volume to volume and may consist of one of the following:

   a. Furbishing:
      Some volumes require only cleaning and, in the case of leather bindings, treatment of leather. While in the past we have recommended treatment of leather bindings with potassium lactate and leather dressing, this is no longer the case. Leather treatment is not the straightforward procedure it first appears to be and it has become evident that much damage has been done to bindings as a result. The most current opinion of book conservators is that librarians should cease treatment of leather bindings and concentrate instead on improving storage and housing of books, until more is known about treatment.

   b. Spray Deacidification & Furbishing:
      Sometimes the binding is in good condition, but the paper is not. Ground wood pulp paper was introduced generally in this country by the 1870's. Through the years impurities in wood pulp and unfavorable environmental conditions will cause acidic deterioration resulting in discoloration, embrittlement, and weakening of paper. Publisher's cloth case bindings date from this period, and even if the bindings are in good condition, often the paper is deteriorated. Deacidification usually needs to

be done professionally, unless an institution is equipped and staff trained to carry out this procedure.

c. Boxing:
Boxes constructed of conservationally-safe materials can be custom-made to fit a book's measurements. They provide both support for the volume and protection from dirt, dust, light and mechanical damage. Volumes with artifactual value, where the fragile binding is to be retained in its present condition, should be boxed. Volumes which, because of low value or lack of use, do not warrant treatment for repair of the binding, may also be boxed. Curatorial decisions will identify these volumes.

Phase boxes, which were developed by the Library of Congress for temporary storage of little-used rare books until treatment is possible (i.e. the first phase of treatment) can be made in-house for average sized books. Instructions for these boxes are included in Attachment O.

Custom-made phase boxes are now available commercially at very reasonable cost. Among the suppliers are Conservation Resources International and Bridgeport National Bindery. (See Attachments P & Q.)

There are fragile books in the collection at the Crossett Library for which phase boxing would be the appropriate treatment.

More permanent custom-made boxes can be made for books of special value by professional conservators. Such boxes should be clam-shell or drop-spine boxes, rather than slip cases, which tend to cause mechanical damage to books. They are available from NEDCC, among other sources.

d. Spray Deacidify & Box:
Some books have deteriorated paper and require support or protection from environment and/or handling. This category might include books which have extremely brittle paper and because of that cannot be rebound. The original should be withdrawn from access completely, deacidified non-aqueously, if the value warrants, and boxed. If the volume is used much, it would make good sense to have the volume photocopied onto archival quality paper, using a photocopier designed for copying book pages without damaging the book. It is the bound photocopy which should then be used by researchers.

There are a number of facilities which specialize in facsimile replacement of brittle books onto acid-free paper. Some of them are listed in Attachment R.

e. Restoration:

Leather rebacking: This treatment is appropriate for leather books where portions of the spine are missing and/or attachment of the covers is weak or broken.

Cloth rehinging: This treatment is appropriate for leather books with detached covers which require reattachment. It is a less costly alternative to rebacking.

Cloth rebacking: This treatment is for publisher's cloth case bindings which are in pieces. These bindings are often attractive and even charming period artifacts and should be retained whenever condition allows.

Recase using original sewing: This is a less expensive alternative to restoration of publisher's cloth case bindings and to rebacking leather bindings. It is a good alternative for sets of books. These volumes may be sent to a commercial library bindery to be recased retaining the original sewing, if guidelines are sent to the binder to insure the maintenance of conservation standards. The guidelines in Attachment S are recommended.

Full Treatment: Some few volumes may warrant this treatment, which involves disbinding, surface cleaning, washing, deacidifying, mending and guarding of pages, rebinding in any one of a variety of binding styles (cloth case binding, cloth split-board, leather laced-in structure), and titling.

Repairs and restoration including hand binding and deacidification are services available at conservation facilities like Northeast Document Conservation Center. Treatment proposals and cost estimates are available without charge from the conservators at NEDCC.

Fragile books which must be handled should be repaired first so that they do not incur further damage.

Library staff should limit themselves to boxing books which have special value. Simple repairs and cleaning of bindings with no special value may be done in-house. Carolyn Horton's book Cleaning and Preserving Bindings and Related Materials (American Library Association: Chicago, 1969) and Carolyn Clark Morrow's book Conservation Treatment Procedures (Libraries Unlimited, Inc.: Littleton, Colorado, 1982) both contain very useful information for planning and structuring an in-house book care program.

B. College Archives

The college archives are reported to be in a state of disorder at the present time. Sorting and organizing this collection will require the services of a professional archivist. Perhaps the introduction of a records management program is necessary. We suggest that Bennington College hire a consultant to evaluate the needs of the archival collection. The College might draw upon the experience of St. Michael's College, which received a grant for this purpose.

Materials in the college archives are stored both in boxes and loose on shelves. There are some materials in boxes on the floor, which is not good, especially since this room is so vulnerable to flooding. All materials should be raised up off the floor.

The archival materials in the VAPA building were especially dirty and must be kept clean.

Some of the large books in the archives collection were stored with their spines up, causing damage to the book structure. These heavy books should all be reshelved with their spines down, or flat, in order to prevent further damage.

Some documents, including artworks, scrap books, architectural drawings and miscellaneous papers, were stored loose on the tops of shelves in this basement area. They were subsequently very dirty, and some sheets had tears. These items should be stored more safely, in map folders and in drawers for oversized items as described below.

There are theses in the archives, which are older than those in the library, and which are stored in vertical files. They should be microfilmed.

The following general information will help Bennington College improve the condition and usefulness of its archival collection.

General recommendations for storage of archival collections are provided in Attachment T. When processing archival collections it should be kept in mind that some papers are inherently acidic due to the paper-making process. Many papers produced since the mid-nineteenth century have been made with wood pulp, which forms an acid called lignin. Other papers have been sized with alum-rosin size, which together with the water normally found in paper, forms an acid over time.

Unfortunately acid will migrate from inferior quality paper to any other papers with which it comes in direct contact. For this reason it is important to separate poor quality papers from those which have high rag content. Newsclippings and other obviously inferior quality papers must be removed from direct contact with historical documents and manuscripts on better quality paper. Information in newsclippings can be photocopied onto archival quality paper.

Those responsible for archival collections should use acid-free buffered file folders, boxes and other storage materials for all collections of permanent value. Archival quality storage materials are available from most conservation suppliers (see Attachment U). It is recommended that catalogues be obtained from a number of suppliers so that cost comparisons can be made and the full range of available supplies can be studied.

Librarians and curators should be careful to store objects with

like objects. Because of differences in bulk and weight and the potential for physical damage, it is not advisable to store single-sheeted documents in the same box with books or booklets. Generally speaking, heavy objects should be stored separately from lighter objects, as should bulky objects which cause uneven pressures inside boxes.

It is recommended that paper which has artifactual or permanent research value be mended using only conservationally-safe methods and materials. Pressure sensitive tapes have not been sufficiently tested to determine their long-term effect on paper. The only acceptable methods for repair of such papers are described in Attachment V.

Documents and manuscripts should be unfolded for storage; all foreign objects like staples, paper clips, and pins should be carefully removed and replaced with plastic clips, if they are needed at all. Documents should be stored in acid-free buffered file folders; approximately fifteen sheets can be placed in each folder. The folders should then be placed in archival quality document storage boxes, labeled to lie flat on shelves. This will give the documents overall support and will prevent edge crumbling, slumping, and other mechanical damage to which vertical storage might subject them. All folders inside a box should be of the same size and should conform to the size of the box. Boxes should be stacked only two high to facilitate handling.

Prints, maps, broadsides, and other oversized objects are best stored flat in the drawers of flat file cabinets or in large covered boxes of archival quality (available from conservation suppliers). The objects should be placed in acid-free folders cut to fit the size of the drawer or box; full-sized folders are preferable to small folders, which tend to get jammed at the back of the drawers. Several objects may be placed in a folder. Interleaving with acid-free tissue paper is desirable, especially if the object has special value or is handcolored.

Art works in the archives are now stored flat on top of files underneath plastic sheeting. They should be placed in large covered boxes of archival quality, as described above.

Any prints, drawings or other objects which have been matted or backed with acidic materials or wood should be removed from those mounts. They should be reframed in their original frames using museum quality materials, as described in Attachment W. Alternatively, they may be stored unframed in folders inside boxes or drawers, as described above.

Pamphlets and small booklets, like single-sheeted documents, are best stored in boxes of archival quality, labeled to lie flat on shelves. In this way they will receive the overall support which their soft covers require. All pamphlets -- but especially those of special value or those which are fragile -- should be first enclosed in individual enclosures made of either

acid-free buffered paper or a conservationally-safe plastic. Only polyester (e.g. Mylar), polyethylene, polypropylene or triacetate enclosures should be used; plastics containing polyvinylchloride should be avoided. All enclosures inside a box should be of the same size and should conform to the size of the box. Boxes should be comfortably filled and labeled to lie flat on shelves.

Newsprint which post-dates 1870 most often has a high acid content and its long-term preservation is difficult at best. It is possible to treat newsprint by deacidification in order to retard its future deterioration, but this treatment is usually impractical from a financial point of view. It should also be noted that deacidification after paper has become yellow and brittle will not make the paper white and flexible again. Microfilming is usually the preservation option of choice for newspaper collections.

For the most part, newsclippings are important because of the information they contain and not because of the value of the clippings themselves. For this reason, photocopying or microfilming are considered to be the most practical preservation options for collections of newsclippings. If photocopying is selected, then all copying should be done on archival quality paper and the original can be discarded. Alternatively, newsclippings with photographs which do not Xerox well may be physically separated from other papers in a folder by placing them inside an enclosure made of Mylar.

Photographic prints and negatives are best stored in individual enclosures, as described in detail in Attachment X. This reduces damage to the photograph by giving it physical support and protection. Acceptable enclosures can be made of either paper or plastic. Paper enclosures are opaque, making it necessary to remove the object from the enclosure when it is viewed; plastic enclosures have the advantage of allowing a researcher to view the image without handling it, thus reducing the possibility of scratching or abrasion.

Plastic materials suitable for photographic storage are polyester (e.g. Mylar), triacetate, polypropylene, and polyethylene. Plastic enclosures can be either envelopes or two-sided sleeves open at both ends. There are also sleeves which open up, being held together with a folded-over lip. Conservation suppliers of photographic storage materials are listed in Attachment Y.

Once they have been individually enclosed in paper or plastic, photographs are best stored flat in drop front boxes of archival quality. The boxes should be housed on shelves or in metal cabinets. All enclosures within a box should be the same size, fitting the size of the box. Acid-free file folders may be used to help organize photographs within the box.

Horizontal storage is preferable to vertical storage since it

provides over-all support and avoids mechanical damage such as bending or slumping. However, vertical storage can be successfully used. With vertical storage, protected photographs should be placed in acid-free file folders which are themselves placed in hanging file folders. Several photographs may be stored in each folder and several folders may be placed in each hanging file. The use of hanging file folders will prevent photographs from sliding down under each other in the drawer and will facilitate their handling.

Special care must be given to the storage of oversized photographic prints which have been mounted on cardboard. This cardboard is often acidic, causing the mounts to become brittle with age. Embrittlement of the support can endanger the image itself, should the cardboard break in storage or during handling. Such prints must therefore be carefully stored; they should be placed in individual folders in archival quality boxes of appropriate size, labeled to lie flat on shelves. They should be handled with great care.

IV. FINAL COMMENTS

The collections of Bennington College's Crossett Library are in good hands. Staff members are knowledgable and committed to the preservation of the collections. We hope that this report will help them and the incoming director to identify priorities, develop a long-term plan for preservation, and obtain necessary funding.

Of the recommendations in this report, the most important are:

1. To reevaluate security and fire protection coverage and reporting systems on a campus-wide basis. The fact that some fire and security alarms are not directly wired to the security shack, that the security shack is not always manned or sometimes manned by students, that security officers lose valuable time by investigating fires before calling the fire department, that security is not always responsive to calls for help from student workers at the library -- all of these are issues which might some day have tragic consequences.

2. To change locks in Crossett Library, limit key distribution, and control exits as soon as possible and to install an intrusion alarm system there eventually. Regaining tight security over the building is critical to the safety of the building and its collections. At the present time extremely lax security makes the building very vulnerable to the possibility of theft, vandalism and even arson. Although the College tries to foster a bucolic and informal atmosphere, the fact that there have already been incidents of arson on campus cannot be ignored. The possibility of arson is seriously compounded by the absence of a fire detection system in the library building.

3. To install heat and smoke sensors throughout the library building. Until this can be done it is most important to:
   a. Instruct staff in fire prevention measures, providing them with check-out procedures for closing the building, and making them aware of their responsibility in preventing fire;
   b. Teach staff emergency and evacuation procedures; provide for emergency exits and mark them;
   c. Eliminate the all-night study room because of the threat it poses to the safety of building and collections; unsupervised use of the all-night study by students makes the entire library building vulnerable to fire, arson, and vandalism.
   d. Prohibit smoking in the library building in order to reduce the fire hazard.

4. To reduce heat build-up, minimize light damage and conserve energy by installing sunscreens, drapes or shades, etc. on windows in stack areas which tend to get hot and on windows in the closed stack room.

5. To incorporate general environmental, fire and security standards presented in this report into the plans for the proposed library construction.

6. To provide a more suitable storage space for the College archives, removing them from a space which leaves them so susceptible to damage from water and other environmental problems.

7. To embark on a program of organizing and evaluating materials in the College archives with the assistance of a records management consultant; additional staff assistance will be needed to carry out that person's recommendations.

Implementation of these recommendations and others in our report, combined with continued hard work by the staff and the support of the administration, will help to preserve these valuable research collections for many future generations of students at Bennington College.

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November 5, 1986

V. ATTACHMENTS

A. Water Sensing Alarms
B. Environmental Standards
C. Battery-operated Psychrometer
D. Thermometers and hygrometers
E. Sunscreens
F. UV-filtering Fluorescent Sleeves
G. UV-filtering Plastic Film
H. UV-filtering Plexiglas
I. Halon Extinguishing System
J. Portable Halon Extinguishers
K. Disaster Planning
L. Information Needed for Disaster Planning
M. Non-Knifing Bookends
N. A/V Programs
O. Phase Box Instructions
P. Commercial Phase Boxes (CRI)
Q. Commercial Phase Boxes (Bridgeport)
R. Facsimile Replacement of Brittle Books
S. Guidelines for Library Binders
T. Archival Storage
U. Conservation Suppliers
V. Repairing Paper
W. Matting and Framing
X. Photographic Storage
Y. Photographic Conservation Suppliers