THE CONSERVATION OF BUILDING PLANS PROJECT

By Angela McGing and Anne Picot

This article describes the establishment of the Conservation of Building Plans Project by the Archives Section of the Council of the City of Sydney. The project involves sentencing and microfilming all the plans in Council's series spanning 1909 to the present day, totalling run than one million sheets. The article describes those procedures and the methods used for conserving the plans of permanent value. It discusses the successful application of conservation techniques to a large volume of records using unskilled workers.

Introduction and Background to the Project

In 1986, in an old converted woolstore in Ultimo, the Archives Section of the Council of the City of Sydney, began a massive conservation project in an attempt to deal with its collection of building plans.

Since 1909 Council has been required to keep a copy of every plan lodged with a building application. In 1986 the plans numbered more than one million sheets and occupied 800 shelf metres in the Archives Repository, almost half of the available temporary records storage space. The size of the series also meant that retrieval of the plans was time consuming and inefficient, inconveniencing both Council and the members of the public who needed to view the plans.

Apart from these problems with storage space and retrieval, the plans were also being damaged by the poor storage conditions. They had been kept rolled up in shelving open to damage from dust, rain leaks, flood and fire. The older plans had become very brittle and some could not be unrolled without risk of the paper's cracking into pieces. The practice over the years of applying sticky tape to tears in the plans had compounded the problem.

Microfilming the plans was the obvious answer to the storage and retrieval problems as the microfilm would take up only a fraction of the space and could be stored in the offices at Town Hall House, making retrieval much easier. However, there was still the question of preserving the plans themselves. Not every plan needed to be kept in its original paper format as many were plans of minor alterations and additions, but there was a percentage worthy of permanent retention for a number of reasons.

The plans are of invaluable administrative and evidential value to Council in providing details of previous approvals, foundation information, details of existing buildings and structural details for extension and demolition, and other proposed works.

The plans are also of immense historical and architectural significance as they provide a complete record of building in the city since 1909. While institutions such as the Mitchell Library have collections of plans, it has been the practice of many private architectural firms to destroy their records after a number of years or when partnerships change. The plans in Council's custody are consequently often the only extant copies. Council's plans series is frequently used by property owners, developers, architects, structural engineers, architectural historians and students.

In 1984, the Archives & Documentation Services Branch developed a strategy for reducing the volume of paper records, preserving the plans identified for permanent retention and microfilming all plans to retain the information. From this an application for funding the project, now entitled "The Conservation of Building Plans", was made to the Community Employment Program (CEP). The objectives of the project were finalised as:

(i) reduction in the volume of paper-based plans;
(ii) identification of the retention periods of plans in paper format;
(iii) conservation measures for plans deemed of permanent value;
(iv) provision of greater access to the plans and the information they hold.

The Community Employment Program provided funds for the employment of 6 unskilled workers and 1 professional supervisor for the project. Council funds paid for the equipment, materials, the microfilming and the services of a specialist paper conservator. It was proposed that the unskilled workers would be trained as conservation assistants by the conservator to undertake preparation of the plans for microfilming and basic cleaning, repairs and encapsulation of permanent plans. CEP funding operated on a 6 month cycle. In the second round of funding, it was anticipated that the second group of conservation assistants would also be involved in data entry for the computerised index to the plans.

In summary, the project's strategy consisted of: preservation of all

information by microfilming; provision of access by creating a computerised index; identification and destruction of plans not required in paper format; full conservation treatment for plans identified as permanent. The scale of the project, both as a disposal task and as a conservation exercise, posed substantial logistical problems which give the project some general significance.

Approval for the commencement of the Project was finally given by the Deputy Town Clerk on 11th February, 1986.

Setting Up

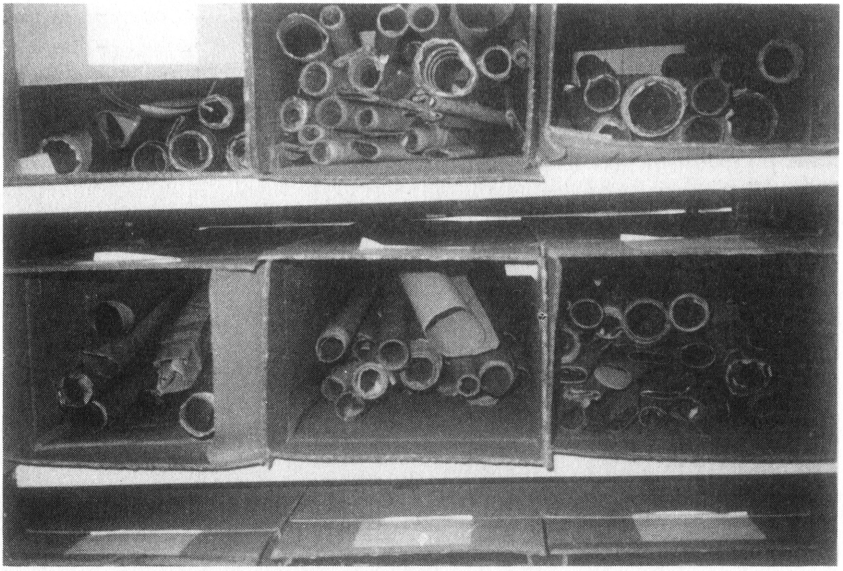
Once the Project had been approved the technical staff had to be appointed, the premises had to be equipped, and all the conservation supplies had to be ordered.

Gunnel Bellviken, one of the archivists on Council's staff, was made responsible for the overall management of the Project at Ultimo. Kay Soderlund, an experienced paper conservator, was contracted to work on the Project and began work in April 1986. She was responsible for training staff and organising the actual conservation work on the plans. A second archivist, Rosemary Coombs, was later employed under the CEP scheme as the professional supervisor for the unskilled workers. Angela McGing was involved in the early stages of the Project when the main task was getting the equipment and supplies. She took over as Project Manager when Gunnel Bellviken went on maternity leave in May 1987.

The Project was to be located in the existing repository in Jones Street, Ultimo. The building itself is far from perfect—it is hard to keep clean, it leaks in wet weather, is subject to plagues of mice and to extremes of temperature in summer and winter—but it does have the ample space needed for the Project. The plans were already stored there, rolled up in long boxes on shelving double the depth of normal archival shelving.

When Kay Soderland first arrived at Jones Street, the only thing there apart from the plans and temporary records, were some worktables which had been designed by Janet Howse, the Manager of Archives and Documentation Services. These tables proved ideal for the conservation work. They were large enough to accommodate the biggest plan, were an ideal working height and could be moved around the Repository at will because they were on castors.

The most time-consuming, and at times frustrating part of setting up was getting all of the technical equipment and conservation supplies together. Council's workshops and stores were utilised as much as possible, and the carpenters, electricians, plumbers and engineers of the City Engineer's Department proved invaluable. The engineers constructed the



Before — how the plans are stored before treatment.

large washing sink needed to wash the permanent plans. The carpenters constructed a humidity tent (for treating brittle plans) to the conservator's specifications and this works brilliantly.

The conservator was essential at this stage because she was able to provide names and addresses for suppliers as well as phoning around to find unusual items. A complete list of the equipment and materials and their suppliers is available. Delays were constantly experienced at this stage and they always seemed to affect items which were vital for that stage of the Project. Things that were not needed as desperately always managed to turn up in plenty of time.

This is not a situation unique to this project, and we suspect that similar problems will always be experienced when a large project is first set up. We required a large number of different items which meant dealing with a lot of different suppliers.

One of the valuable lessons we learned from this exercise was that it is possible to acquire some items for very little money. We use an old Pinnock sewing machine found on an excursion to Council's Bulk Store to encapsulate the plans. The Bulk Store also provided the Project with card-drawers, desks, tables and chairs. For flattening the plans, we bought large pieces of board, G-clamps and pieces of 4″×2″ timber from a hardware store.

We also found that everyday items could be used as conservation tools in ways their makers would never have envisaged. A hand-held steamer intended to iron wrinkles out of upholstery is perfect for removing the backings from plans. Probably the quirkiest example of this is the use of souvenir letter-openers acquired from Miniland, an amusement park in Coonabarabran, complete with life-size replicas of dinosaurs. The letter-openers have a thin, teflon blade which proved excellent for making repairs on plans with Japanese paper. The letter-openers are adorned by a miniature dinosaur scene from Miniland Coonabarabran.

The ordering of these supplies is an ongoing process and has to be monitored closely to ensure that we do not run out of anything. We are currently awaiting delivery of an ultra-sonic welder, the state of the art technology for the encapsulation of documents.

Microfilming and Storage

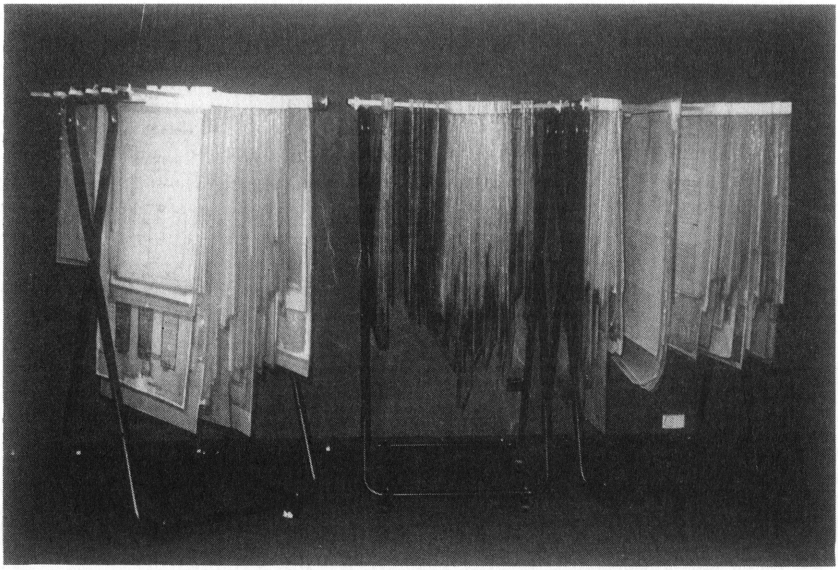
Council has its own Reprographics section in the City Engineer's Department. The Reprographics Officer estimated that approximately 210 sheets per day could be filmed, once they had been cleaned and flattened. On the basis of this estimate it was decided that the microfilming would be done in-house, thereby saving the Project a great deal of money, as well as eliminating some of the handling problems arising from sending records out for microfilming.

To ensure that the microfilms of the plans could be used as evidence in any litigation Council was involved in—and this happens frequently—the Town Clerk had to be notified as an approved person under the *Evidence (Reproductions) Act, 1967.* The approved person has to sign a certificate stating that any document to which the certificate may relate is a document that was under the control of that person at the time the microfilm record was made. This certificate is photographed as part of the microfilm record of the plan.

Storage of the finished plans was something else considered at this stage of the project. It had been decided early in the planning stages to encapsulate the plans which had had full conservation treatment, to protect them from future handling and preserve them in a stable micro-environment. Encapsulation also made storage easier. We selected mobile hanging storage units which take up to 600 sheets each and provide easy access. A polyester hanging strip is attached to the encapsulated sheet which is then hung on brackets in a free standing unit.

Appraisal of the Plans

Appraisal of the plans to establish sentencing guidelines was one of the most important tasks of the early stages of the Project. It was estimated that 90% of the plans were of temporary value, which reduced the number of plans needing full conservation treatment to a manageable level.



After — conserved, encapsulated, permanent plans in hanging storage.

Adelaide City Council and the Council of the City of Dunedin had experienced problems with their building plans, similar to Council's, although on a smaller scale. The archivists at both organisations kindly provided Council with the guidelines they had devised.

We consulted officers from the Council's City Planning and Building Department, as well as representatives from the Royal Australian Institute of Architects (RAIA), the Heritage Council of NSW, the National Trust and the Mitchell Library. Large numbers of plans from the early years and the modern period were examined, particularly with the aim of setting a monetary value as one disposal class. The disposition schedule developed from this process is included as Appendix A.

The basic premise of the schedule is that no information is destroyed because *all* plans are microfilmed regardless of their disposal status. As a safeguard, any plans which cannot be microfilmed successfully (because of their poor state of preservation) are retained in paper format. In summary, the classes attempt to define significant buildings, work of notable architects, precedent material in terms of building, engineering or architectural developments and significant drawing and reproduction techniques for permanent retention. After 10 years retention, other plans are authorised for destruction after they have been microfilmed.

There was no existing list of notable architects so one had to be compiled using various reference books suggested by the RAIA. Once compiled,

the list was shown to the RAIA, who recommended certain additions and deletions. The $2 million value set as a floor in entry 3 of the schedule (see Appendix A) was intended to cover large buildings or major alterations which would not necessarily be included in the other classes.

The disposition schedule was approved by the Director of City Planning and Building Department, after discussion with departmental officers, in February 1987, some seven months after the Project began.

Drafting Procedures

Before the Community Employment Program people actually started working on the plans we needed to establish procedures to ensure that we had control over each individual piece of paper and that the work ran smoothly and effectively. This required careful analysis of what would happen to the plans from the minute they were taken out of the box to the point where conservation work had finished and they were hung up in the storage units. The problem was to track the progress of every sheet from preliminary cleaning, flattening, sorting into sizes for microfilming, sentencing, to washing, repairs and encapsulation for anything up to 500 sheets at a time.

A numbering system was developed that would enable each sheet of a plan to be controlled individually as it moved through the system. Each plan is controlled by the annual single number given to each Building Application. A sheet number was added to this, so that each sheet has a number like this: 3/67 (2/14). This number designates the third plan lodged in 1967, the second sheet out of a set of 14 sheets.

The work control system is based on a small blue workcard that records each process the plan has been through and shows what stage it has reached. The cards show where every plan is at any given time. A general work register is also kept that records the plan's number, the initials of the person who worked on it, whether any plans are missing, the approval date of the plan, its sentence, and whether it has been microfilmed or not.

Staffing

Apart from the archivist in charge of the Project and the conservator, all of the staff of the Project have been funded under the Community Employment Program (CEP) recruited through the Commonwealth Employment Service (CES).

Under the Scheme people were selected from various target groups set by the CES. The target groups included women unemployed for more than a year, migrants whose first language was not English, Aboriginal people and disabled people. The terms of the CEP scheme limited employment to six months, which meant that after six months we would lose a group of fully trained people and have to start again from scratch

with a new group. However, without the funding the project would never have got off the ground. We tried to select people who were used to working with their hands and who had the patience to cope with finicky work. An interest in architecture or history was seen as a bonus, but not a necessity.

The training of the conservation assistants was the Conservator's responsibility and she established a six to eight week training program:

Week One —covering of weights with Japanese paper to secure plans; learning the history and structure of paper; surface cleaning and flattening of plans;

Week Two —identification of different types of plans; documentation of the plans' condition; discussion of pH (acidity) of plans; numbering the plans;

Week Three —tape removal; washing, deacidification, paste-making;

Week Four —repairs;

Week Five —encapsulation;

Week Six —more difficult repairs and backing

Weeks Seven to Eight —staff can carry out most work without supervision.

One of the successes of this Project is that it has shown that conservation work on a limited field of materials on a large scale can be carried out by unskilled workers after training by a professional conservator. In a report prepared for Council Kay Soderlund stated that:

> "Since working with this project I have changed my attitude concerning unskilled people carrying out conservation work. I thought there would have to be constant supervision and that the likelihood of mistakes was enormous. However, it is evident from our results that with careful selection of staff . . . and a practical basic approach to the conservation procedures and their teaching, it is more than possible to achieve a high standard of work coupled with efficiency".

There is no doubt that Council has gained from the CEP scheme but have the employees gained anything from it? At the very least it is an opportunity to get back into the workforce, and for some it was their first experience of working. It gave some a chance to improve their English and a few have discovered they have a real talent for conservation work.

Sentencing the Plans

Once work on the plans had begun, sentencing according to the disposition schedule could also begin, and it has proved to work quite well. After the plans have been sentenced by the archivist, they are checked by Howard Tanner and Scott Robertson from the RAIA, who have recommended

the permanent retention of some of the plans that have been rejected by the archivist. Ian Bowie, from the Institute of Engineers, checks the plans for any new trends in engineering. The help of these experts has been invaluable to the Project. Our estimate of 10% permanent value plans was proved accurate in sentencing the 1909-1910 plans.

When we began sentencing the modern plans (1975 and onwards) the percentage identified as permanent was found to be much lower, about 1%. This is due in part to the fact that most of the plans for these years are for office partitions and minor alterations. Work began on the modern plans because they require far less treatment and progress with them is rapid, compared to the old plans. It has been estimated that ten years of modern plans can be treated in a year.

The disposal classes have worked for both the older and modern plans, but some amendments have been made when sentencing the modern plans. It was intended originally to keep only architectural plans, but due to the complexity of modern buildings, it has been decided to keep the engineering plans as well. This decision was supported by the architects.

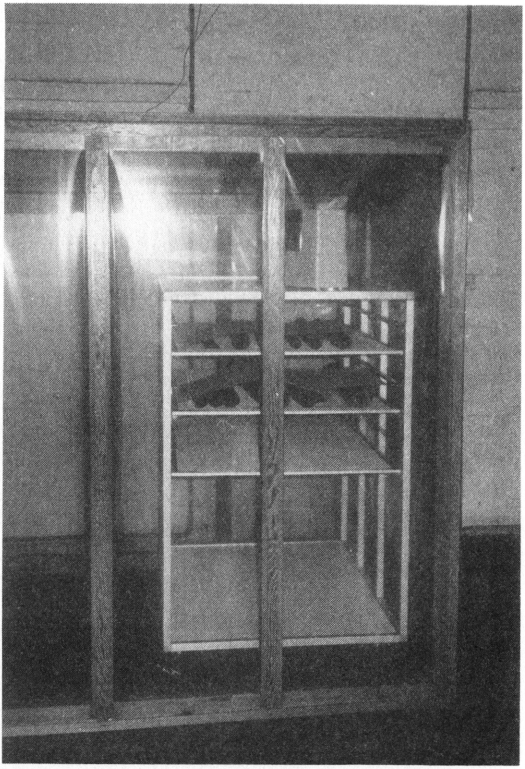
Conservation Production Line

The system developed for handling the plans is a production line one. What follows is an abbreviated description of a plan's progress through the system based on the detailed description given in Kay Soderlund's report to Council of September 1987.

Numbering

As a rule, one full box of plans is numbered at a time. One box will generally hold 50 plans (controlled by the annual single numbering system of the Building Applications), rolled up separately. Of course 50 plans may be made up of more than 200 sheets. While the early plans often consist of one sheet, modern plans run to hundreds—for example, a 1977 hospital building plan had more than 800 sheets.

Numbering begins with carefully unrolling each roll of plans, using long rectangular glass weights to slip in the open side of the roll. At this point the worker decides if the plans are too brittle to risk unrolling. If he/she determines they are too brittle, they are put aside for humidification. If the sheets can be unrolled without damage, the worker proceeds and cleans (with a Staedtler Mars Plastic 526.50 eraser) a small area on the top right corner of this sheets, on which the number is written with an HB pencil. The plan numbers are also recorded in the work register with the initials of the worker to whom the plan is allocated. The plans put aside for humidification are also recorded in the work register and annotated with "humidification". A work card is raised for plans awaiting humdidication at this point.



Humidity "tent".

Cleaning plans with eraser.

Humidifying
The humidifying "tent" was beautifully constructed by the Carpenters of the Sydney City Council according to our specifications. It is made from varnished pine and polyethylene, held together with brass nails. The roof is sloping, to avoid drips, and the interior is divided into two areas with the option of removing the central division to create a larger chamber. The whole construction measures approximately 5′ × 10′ × 6′ high.

The racks designed to hold the plans in the tent were made by A.B.C.O.L. Engineering, also to our specifications. They consist of aluminium frames holding removable racks which are constructed from a polyethylene mesh, "Polygon" supplied by Ure Pacific, stretched in an aluminium frame. The entire rack is on wheels.

The ultrasonic humidifier used is the Corona model purchased in the United States—humidifiers have since become available in Australia. Ultrasonics disperse the water in vapour form—extremely fine particles rather than droplets. The humidifier sits on top of the rack and produces a regular column of vapour, enough to keep the chamber in a constant 100% relative humidity.

Fragile plans are placed, while still rolled, under blotters on the racks and kept in the humidity tent for at least one and a half days. The time needed in the humidifier varies for each plan according to the paper's ability to pick up moisture, but usually it is about two days. By then the plan is limp enough to be unrolled without causing any damage. Once unrolled it is placed between blotters which are then weighed with the long glass weights. The piles of plans and blotters then go back into the humidity tent to relax in a flattened state for about one day. They are then removed and left to acclimatise to the regular environment. They are not distributed to the workers until they are relatively "dry".

Cleaning
Before being microfilmed each sheet must be cleaned, at which point a blue work card is raised for each sheet. The sheet is given a light brush with a shaving brush front and back, and particularly dirty areas on the front are cleaned with a Staedtler Mars eraser. The cleaning at this stage is perfunctory and taken only to the stage of making it easier to microfilm. Tiny pieces of "Magic Tape" are placed on the back of the plan to secure any major tears that the worker feels may worsen during microfilming. This is not an ideal solution to the problem but it is an acceptable compromise.

Flattening
Once the plans have been cleaned they must be flattened before being sent off to microfilming. This is not necessary for those plans that have been humidified as they have already been flattened. The procedure

involves at least two people—one to unroll the plan carefully, face down, and the other to spray the back lightly with de-ionised water. The plan is then placed between two felts and included in the pile ready for flattening under a pressing board for at least 4 hours—enough time to let the moisture penetrate and relax the plan. The plan is then removed from the felts and put between blotters to dry—also under boards—overnight. Once dry, the plans are sorted according to size and placed in the specially made wooden trays to be taken to Town Hall House for microfilming.

Microfilming

Each tray is treated as a separate bach with a batch control number. The sheets in each batch are listed by their plan and sheet number on a microfilm log sheet (triplicate form). Two copies go with the plans and one is retained as our control. Between two and four hundred sheets make up a batch, sorted into small, medium, large and oversize groups.

Four microfilm copies, held in aperture cards are made—one preservation master, one duplicate, an Archives reference copy and a reference copy for the City Planning and Building Department. The plans are returned with the sets of aperture cards and one copy of the microfilm log sheet. Any difficulties such as missing sheets or problems encountered with filming were noted on the log sheet by the Reprographics officer. The aperture cards (which have been stamped with the sheet numbers by the Reprographics section) are checked against the log sheet to ensure all plans in the batch have been microfilmed and returned to Jones Street.

After returning from microfilming the plans have to be resorted into their original numerical order for sentencing. The plans identified for destruction are put aside for review by representatives of the Royal Australian Institute of Architects and the Institute of Engineers. The permanent plans are put away in a cabinet to await full conservation treatment. Once the plans sentenced for destruction are actually destroyed the work cards for those plans are discarded.

Conservation of Permanent Plans

When a worker selects a permanent plan for full conservation work, the work card is annotated and a conservation treatment form is raised. An example of a completed conservation treatment form is an Appendix B. All testing and treatment is recorded on the treatment form. pH and solubility tests are conducted before any treatment is begun.

The first stage of treatment consists of thorough cleaning and tape removal, the latter being the most time-consuming and often the most difficult part of the treatment. Cleaning is begun with erasers. Any "Magic Tape" used by the Project workers is removed, using scalpel and tweezers. Older yellowed adhesive tape is removed by various combinations of patient scalpel and tweezer work and use of solvents (preferably by indirect

application). Direct application of solvents is a last resort as it is difficult to guard against staining the paper and the solvents themselves are a health hazard.

Plans are then washed and de-acidified if it is judged necessary. Ordinary tap water, buffered with a small amount of calcium hydroxide solution to a pH level of 7.5 is used for washing the plans. If a plan is de-acidified, a bath of de-ionised water to which is added enough filtered, saturated calcium hydroxide to raise the pH to 8.5, never higher, is used. In both washing and de-acidifying, the plan is supported with a sheet of Reemay, a polyester non-woven fibre which allows full movement of all solvents. When the plan is removed from the bath it is lifted by the sheet of Reemay, thus eliminating any stress on the paper and avoiding damage. If the plan is in no need of repairs, the excess water is removed using acid free blotting paper. The plan (still between sheets of Reemay) is then placed between felts in a pile under a pressing board and left overnight to dry. The next day it is placed between blotters and pressed. If a plan cannot be washed, because it includes water-soluble media, it is spray de-acidified and pressed. The de-acidifying spray is applied directly to the back of the plan or to blotters which are then pressed with the plan, depending on the solubility of the media.

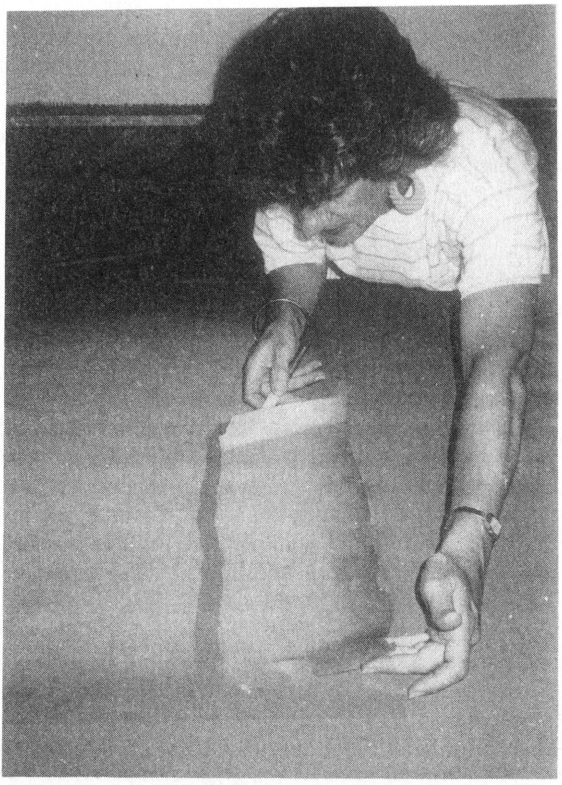
A plan is repaired if it has tears greater than 1.5cm in length. Dry repairs using Crompton tissue (Archival Aids) are made if it is not possible to wash the plan because of water-soluble media.

Wet repairs are the preferred method as they are much stronger than dry repairs and have proved reversible over hundreds of years of Japanese traditional use. Japanese paper is used as it is a high quality paper with a high percentage of cellulose, unbleached and has long fibres which bond well with the paper being repaired. Wheat starch paste is used as the adhesive, as it also has proved to be totally reversible in water and stable over hundreds of years and is a very easy paste to use.

Dry repairs are done after the plan has had its final pressing before encapsulation, while wet repairs are done following removal from the final bath.

Usually individual repairs on the major tears are the only repairs carried out. However, sometimes the plan is in such a weakened state with many tears, or in pieces, that the whole plan will be backed onto one large sheet of Japanese paper. Another method of repair is to strip line, which involves using a strip of Japanese paper running the full length of the edge of a plan that is particularly damaged.

The final stage before encapsulation is pressing with the aim to get the plan as flat as possible. The plan is placed between two sheets of Reemay and either felts or blotters to dry it and placed under boards and clamped. Drying and pressing can take up to a week. When it is

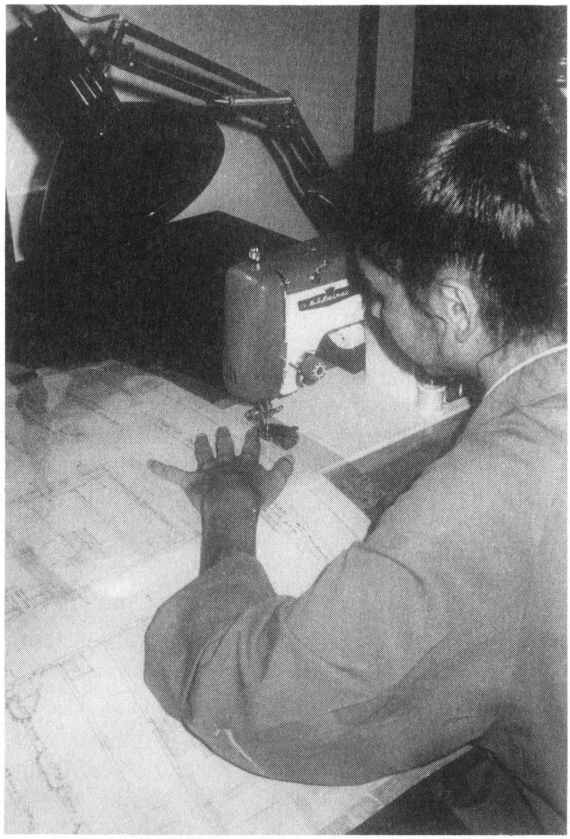


Repairs using Japanese paper.

removed from the press, the plan is left exposed for about 15 minutes. If the edges do not begin to curl—indicating moisture still in the paper is reacting to the environment, the plan is considered dry and ready for encapsulation.

The plan is encapsulated with Mylar (proprietary name for a high quality polyester film) which is secured using Nylon thread sewn on a sewing machine. The stitch length is kept as long as possible to guard against creating a perforated edge and the line of stitching is kept very close to the plan, ensuring little movement once the plan is hung in the vertical storage racks. It is intended to replace the sewing machine with an Ultrasonic Welder, now on order, not received at the time of writing.

Each plan is encapsulated with a sheet of Archive Text placed behind it, which helps neutralise any acids further produced by the plan. Once encapsulated and trimmed, a hanging strip is attached to one end of the plan with the number on the strip. It is then hung in the storage racks.



Encapsulating the plans using sewing machine.

The final step is to complete the conservation treatment form and work card which are then put away in numerical order.

The procedures detailed above relate to the treatment of the older plans, starting at the beginning in 1909. The procedures for dealing with the modern plans differ markedly because they are nowhere near as fragile nor as dirty.

Modern plans

The modern plans are flattened using a technique learned from Council's Plans Custodians. They are unrolled, rolled back the opposite way, the ends are secured with rubber bands and left overnight. The next day when the rubber bands are removed the plans are flat enough to be numbered, sentenced and prepared for microfilming. When the plans are returned from microfilming, the permanent plans are separated out, and

if necessary, repair work is carried out. Archival Aids Document Repair Tape is used on any tears and further flattening is carried out if necessary. These plans are not encapsulated unless they are too weak to be hung without the support of the mylar.

Statistics

By the end of May 1988, when the Project had been running for 2 years, 1,971 sheets had been fully conserved. This is out of a total of 27,068 sheets that had been treated. 95 metres of shelving have been cleared by the sentencing program (primarily the modern plans). We have completed work on the plans for the years 1909-1913 and 1974-1977.

In the last 18 weeks of the Project (January to May 1988), with 5 full time conservation assistants, full conservation treatment was completed on approximately 40 sheets per week. Apart from the fact that all processes were running smoothly in a well established routine, the reasons for the high productivity were the greater variety of work which made it more interesting for the workers and the greater number of modern plans (which require far less work) being treated.

Conclusion—Problems and Successes

It took approximately twelve months to get the Project up and running smoothly. During that period of time there were considerable changes in our attitude towards the work and also in the procedures.

Kay Soderland outlined the main changes in her report to Council in September 1987. She recounted how idealistic she had been at the beginning, wanting to treat every sheet, permanent or temporary, by the rule-book. When it was realised, after four months, that at the current rate of work the Project would take nearly 300 years, processes were streamlined. The amount of documentation was cut down. The tendency to overtreat each sheet was countered by setting up simple, clearly defined processes, more suitable for unskilled workers and large quantities of items. However, it is recognised that those first few months were part of the necessary learning process. Until we came to know the collection, to establish a body of data about how the various types of plan reacted to conservation treatments, streamlining was not possible.

When the Project first began the plans were thoroughly cleaned front and back, measured and documented, before being microfilmed and sentenced. This was eventually seen as a waste of time and now the plans are only cleaned to a stage where they can be filmed adequately.

We have changed the place of sentencing the old plans in the process, and now sentence them when they are unrolled and numbered. This eliminates the time-consuming re-sorting into numerical order after microfilming. It also means that preparation for microfilming can take into account the sentence given to each sheet.

One process which had to be dropped in the early stages was the computerised indexing of the plans. The existing index is the street cards index to development and building applications, which is based on the address of the property. People wanting to see original plans are generally interested in particular architects or builders, in buildings in a particular suburb or types of buildings. We proposed indexing the plans by names of applicants, builders, architects and/or engineer, by description and date and suburb of the buildings.

This information proved time-consuming to gather and establishing the correct address was often very difficult. The promised computer link has not eventuated, so the indexing of all plans was dropped. Since then, it has been resumed for the permanent plans only. We still hope to enter the indexing data into a computer at some later date.

The biggest problems encountered in the beginning of the Project were waiting for all the equipment and conservation supplies. This held up progress for some months. There were also problems experienced trying to get a full complement of staff. The structure of the Community Employment Program limited employment of each group to six months. So after six months, we lost one trained group and would have to train a whole new group of people. However, the first two groups of people seemed to reach a "burn out" stage after about six months anyway due to the repetitive nature of the work. Before processes were developed and stream-lined, the work of the first two groups was confined to cleaning and minor repairs until quite late in the Project. The last group of CEP employees has been employed for nine months, but they have undertaken major repairs on the older plans and the greater variety of work made it less tedious for them.

Since the early stages of the Project, the main delays we have experienced have been in the microfilming. Council's Reprographics officer has other commitments, and our microfilming has often been delayed, to the point that finding space for the batches of sheets has been a problem. This bottleneck has slowed down every other part of the Project. It would clearly be preferable to have someone appointed to work on the microfilming of plans exclusively. The delay with the microfilming has prompted consideration of whether all plans (particularly the post 1970 plans) need to be microfilmed. Sentencing the post 1970 plans has revealed that approximately one third of them are of minor alterations. Deciding not to microfilm such a category would help reduce the impact of the bottleneck, but this has not been formally raised with the City Planning Department.

Despite these problems, the Project has proved a great success. The scale of the problem, which made attacking it seem such a daunting prospect, has been overcome by establishing a routine of (now) smoothly running processes and by the very substantial reduction in the volume

of plans achieved by the sentencing program. Setting up the conservation production line has demonstrated that it is possible to compromise between the approach of archivists who treat records in bulk and that of conservators, who work on individual items. The Project has shown that bulk conservation work using unskilled workers under expert supervision is feasible, once the basic problems have been identified and appropriate procedures devised. Most important, the Project is achieving its objectives of identifying and preserving the plans of permanent value while providing greatly improved access to the significant body of information contained in the series as a whole.

APPENDIX A—PLANS DISPOSITION SCHEDULE

Description of Records & Classes	Retention Period	Custody Arrangements
1. Architectural drawings of whole building or major alterations to buildings listed by the National Trust, The Heritage Council of NSW, The Royal Australian Institute of Architects or in any of Council's approved conservation plans (This also includes the works of significant architects)	Retain Permanently	To archives after filming, or in case of new applications filmed after 13.11.86—ten years after application was lodged with Council.
2. Architectural drawings of whole public buildings or major alterations to public buildings, including—schools, universities, hospitals, theatres, cinemas, hotels, banks.	Retain Permanently	"
3. Architectural drawings of whole buildings or major alterations (partitions excluded) to buildings where the contracted cost of the construction was estimated to be more than $2 million in 1986 monetary value.	Retain Permanently	"
4. Architectural drawings of whole buildings or major alterations to buildings lodged by the Council of the City of Sydney	Retain Permanently	"

5.	Plans drawn on, or in non-standard media or techniques.	Retain Permanently	"
6.	Engineering drawings which are evidence of new building trends or techniques.	Retain Permanently	"
7.	Drawings which cannot be filmed adequately for physical reasons—inadequate contract, seriously faded ink etc.	Retain Permanently	"
8.	Plan of alterations to partitions only	Destroy after filming and 10 years after being lodged	Hold in Dept. pending filming and destruction
9.	Reference copies (duplicates)	Destroy before filming	Destroy when of no further use for department
10.	Other plans not covered by entries 1-9	Destroy after filming and 10 years after being lodged	Hold in dept. pending filming and destruction

APPENDIX B

THE COUNCIL OF THE CITY OF SYDNEY

ARCHIVES – CONSERVATION TREATMENT REPORT

SERIES 126: Building Application Plans

ITEM Nos.: B.A. 85/12 Sheet 1/6

DIMENSIONS: Length: 495 mm. Width: 382 mm. Diagonal: 620 mm.

DESCRIPTION:

Blueprint	☐	Drawing	☐
Tracing	☐	Diazotype	☑ – Colour:
Xerograph	☐	Other:	
Hand-Coloured	☐		

SUPPORT:

Paper	☑	Cloth-backed	☐
Tracing Paper	☐	Other:	

CONDITION: SUPPORT –

Folded/Rolled	☑	Staining	☐	Insect Damage	☐
Surface Dirt	☑	Abrasions on tears	☑	Mould Damage	☐
Creases	☑	Oxidation	☑	Glue/Paste	☐
Tears	☑	Rubber Band	☐	Embrittlement	☑
Losses Bottom left corner	☑	Cockling	☐	Discolouration	☐
Damaged Edges	☐	Foxing	☑	Adhesive Tape	☐
pH –	4	Accretions	☐	Staples/Clips holes on corners	☑
Other:					

MEDIA –

Faded Red ink	☑	Abraded	☐	Other:	
Spills	☐	Smudged Red ink	☑		

Solubility:

	H_2O	$Ca(OH)_2$			H_2O	$Ca(OH)_2$
Approval red ink	IS	IS	‖	image	IS	IS
Blue stamp	SS	SS	‖	Background	IS	IS

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APPENDIX B *(continued)*

TREATMENT: **MATERIALS/METHOD USED:**

Humidified	☐	
Staple/Clip Removal	☐	
Surface Cleaned	☑	Shaving brush & Mars staedtler plastic
Adhesive Tape Removal	☐	Mechanical ☐
		Solvent:
Flattened	☑	
Microfilmed	☑	
Washed	☑	pH 7.5 (x 3)
Deacidified	☑	pH 8.5 (x 1)
Solvent Cleaned	☐	
Stain Reduction	☐	
Repaired	☑	Sekishu Japanese Paper & Wheat starch paste
Backed	☐	
Strip Lined	☐	
Pressed	☑	
pH	6	
Encapsulation	☑	Mylar Thickness: 0.004 mil.
		Nylon Thread ☑
Other:		Archive Text Inclusion ☑

Treated by: S. Rodriguez

Date began: 11.1.88

Date finished: 22.1.88

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