

PRESERVATION AND RESTORATION OF MUSEUM HOLDINGS

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At around the 6th century, the Emperor Justinian is quoted as decreeing that:

'throughout each and every province a public building be allocated in which the magistrate is to store the records, choosing someone to have custody over them so that they may remain uncorrupted and may be found quickly by those requiring them...'

Despite these good intentions, museums and libraries were slow to emerge. Twelve hundred years later, Alexis de Tocqueville writing on America noted that:

'the instability of the administration has penetrated into the habits of the people; it even appears to suit general taste and no one cares for what occurred before his Time. No methodical system is pursued; no archives are formed and no documents are brought together!... and yet today, this Nation's respect for its Past is manifested in many significant museums and libraries. There more money is made available in pursuit of the Past in one year, than Australia would probably see in a decade in respect of the same cause.'

Here in Australia, our various governments' indifference to our Past is but a reflection of the apathy shown by the average Australian for whom anything which calls forth the need for concentration and effort, is pushed into the background. Some people do care though nowhere near enough and those of you here today certainly think it more important to work collectively to preserve the Past at a Conference such as this than to waste this long-weekend at a race-track or whatever.

In my address to you today on the 'Preservation and Restoration of Museum Holdings', I will not only be drawing on my experiences at the Queensland State Archives and Newstead House but also I will be joined in the second half of the 45 minutes allocated by Mr T. Carter, the Archivist of the Brisbane Tramway Museum Society who will recount his personal experiences in the preservation and restoration of the Society's literary holdings. Shortly before this Conference got underway, I had the opportunity to view these records and can see the valuable accessioning that has been done as well as that which is proceeding.

Whether to preserve or to restore part of one's holding is a dilemma with which everyone here today is, no doubt, familiar - whether to maintain one's holdings at a static level or look beyond in order that you can look behind so to speak. Here the precise nature of the Collection is of cardinal importance. Let us consider for a moment this reference to 'the Collection' - it has become almost a reverential description to cover a variety of relics and records. The important thing of which to be acutely aware is that the Collection - your Collection - must remain at all times a relevant and necessary reflection of each museum's interest and the ability of its staff as well as their respect for a Collection that is, after all, their *raison d'etre*. Your literary and relic holdings must communicate information, and of greater importance, ensure that the information is accurate and presented

in such a way that it is easily understood both by the expert and layman alike.

As a consequence, the viewer or reader's interest will be stimulated - enough it is hoped, to tell his or her friends. Please do not covet other institutions' Collections or seek to add continuously to a Collection without providing that opportunity for it to be fully utilised. There is nothing more depressing than hearing a museum's representative speaking affectionately about their large Collection of 'whatever' when 'whatever' is slowly rotting away from lack of use and/or care.

Yesterday, you saw the inauguration of public electric tramway operations at Ferny Grove ... an opportunity was presented to Queenslanders by members of a dedicated Society to recreate part of a lifestyle that was - and still is - dear in the hearts of many people.

Your brief clearly then is primarily to restore the items in your charge. You are concerned that that part of the Past which is vested in your care should live and have a relevance and that is the most positive goal one can aspire to.

All of us should ensure that a Museum's objective is not to give people the impression that their forebears lived in ruins, using worn-out furniture and machines and dwelt in squalor; but to present all these things as nearly as possible in the condition they were in when people used them.

Unfortunately however, some things destined for restoration beyond that foremost responsibility of preservation do not make the transition at all well. Restoration should never be attempted on some items in the first place. Some of you will have visited Norfolk Island - the second oldest British Settlement in the South Pacific - where the gaunt remains of fine Georgian architecture stand as mute reminders of the harsh conditions once played out there. Unfortunately now, an ever-increasing number of buildings are being restored externally, yet modernised internally and used by the Island's fledgling government. Public access to, and involvement with, the buildings is being denied, which is wrong and a completely negative response.

In a situation where preservation or conservation versus restoration, the decision is ultimately 'influenced', as Robinson has noted, 'by the final aim of the display, the historical, technological or aesthetic uniqueness of the item and its condition when acquired.' (1)

Unless aims of the museum, and therefore, the limits of any Collection as such, are clearly defined in the early stages of development, how does one refuse or redirect a potential donation. A clearly defined set of aims in turn provides the additional argument for refusing those items which are peripheral to or useless for your purposes.

If an item is of great historical value, then conservation should be the aim. This would also apply to any item produced as a unique work of art, and also to rare technologically important items which retain a reasonable percentage of original components and finish. If an item is more common then restoration is valid when the final aim is to display the item in as close to original working condition as possible. If an item is in too poor a state of repair, restoration becomes impractical and cleaning and conservation are the only possibilities. If appropriate expertise and equipment are not available for restoration it should not be undertaken, and again, the item should be conserved without restoring it.

You will have already received pages detailing some of the major conservation and restoration techniques for both literary and relic records. This is based on information from professional restorers and conservators here in Brisbane and certainly in the area of restoration, I have not included information relating to siliceous material, textiles and furniture but have concentrated on the areas pertinent to tramway museums.

In the area of the preservation of Museum holdings, the conservator as the instrument of this work has two roles. Firstly, to establish the optimum environmental and physical conditions for the storage and/or display of museum objects and secondly, to examine each individual object on acquisition to look for any damage which has occurred or may occur and take appropriate remedial or preventive action. You have to remember that:

- a. Iron and steel items are subject to rust and for effective preservation, the rust needs to be removed either by derusting or by forming a phosphate coating on the surface.
- b. Objects made from copper and its alloys will tarnish in the presence of moisture. If this is not corrected a more severe corrosion will follow, resulting in a pitting of the metal surface.
- c. Moreover we all know that silver tarnishes easily but more importantly it should be realised that silver, being a very soft metal, can be easily worn down with polishing.
- d. Lesser problems confront siliceous and organic-based items while leather and textile-based articles require special treatment.

Should you decide to go beyond this preservation and return a museum relic to its original form (or as close as it), several steps are recommended:

Photograph the item when it is brought in and then go on to provide a visual and actual account of each stage of its restoration. In dismantling the relic pre-restoration, all parts removed should be labelled. Appendages to the item under restoration which would not have been found on the original article should be discouraged whilst replacement parts used in the restoration process should never be disguised as anything but.

A machine, for example, in operation was maintained by replacement of worn bearings, operating shafts etc. If it is proposed to return the item to operational use, the restorer will need to have access to pattern making, metal casting and machinery facilities. Special care needs to be taken with the refurbishing and reassembly of the item, remembering at all times, the dictum that 'restoration always destroys some original information. Bad restoration is worse than no restoration at all'. Nowhere is that latter quotation more applicable than in the field of restoration of literary holdings. Normally a Museum's holding of such would be minimal when compared with that of a library. Notwithstanding, a museum should mirror a community's geneology and documents that record the past events and, very often, the reasons for those events are as important as the most interesting tramcar (or whatever). They should be seen to have a significance and all Museums should have an archivist or librarian. Moreover if literary holdings are to be displayed, let them have their own entity. Too often, I go to folk museums and see interesting documents crammed into the display cabinet with the christening gowns. In the course of giving literary holdings their own identity, certain provisions for their preservation must be met.

In the storing of same, it is essential that the holdings are held in a secure area and preferably a separate, air-conditioned room, away from

external walls. Dust-proof cupboards (or even refurbished bedroom wardrobes) are vital as are plexiglass sleeves over fluorescent light fittings in order to cut down U/V penetration. Insects and mould can be deterred by open trays of naphthalene and fumigation once a year is recommended.

The danger to a museum's literary holdings are far greater than the risks confronting its relics. Invariably amongst the literary holdings will be a great volume of records that reflect truthfully all aspects of the institution from which they came - literally all aspects! - so that yet another dilemma appears on the scene, namely the disposition of superfluous records. Suddenly a multitude of questions arise - who determines what are superfluous records, can part of the holding be legally disposed of, do we have the money to microfilm items and so create space? All these questions should be able to be answered because a wise Museum Committee set parameters for the Museum's operation - or did they? Tom Carter will, no doubt, have more to say about that and other things shortly.

Before I close and in view of the many interstate delegates to this Conference, I will briefly relate some of my hitherto theoretical paper to the work that I have been involved in at Newstead House over the past six years. Much of my paper has urged optimum levels of operation for museums, yet it is extremely doubtful if any museum is functioning at such levels and in such situations.

Newstead House, as an historic home/museum under the jurisdiction of the Queensland Government, has itself a long way to go before I can lay claim to a totally satisfactory operation. With a large relic holding as against a small literary holding, our accessioning of incoming items for the Collection is always behind schedule. Moreover, our ability to dispose of items thought to be outside of our preserve is limited by an Act of Parliament under which we operate.

Newstead House began life in 1846 as a town-house for one of Queensland's foremost squatters. In time, it became a repository for items of general Queensland History - often indiscriminantly collected - the property of the Royal Historical Society of Queensland. Newstead House, at this stage was being preserved by virtue of the Collection contained within. The Residence had no recognisable identity of its own.

Today, Newstead House through the restoration of the interior of the building, is an identity in its own right. The homestead still has a preserving role in that a majority of the Royal Historical Society of Queensland's relic and literary holdings are still inside the building.

The decision to go beyond simply preserving the structure as a consequence of the items contained therein, and move towards restoration was a decision influenced by changing public tastes and by persons with creativity and foresight (something which we all should cultivate but don't) who were prepared to don the overalls of a blue-collar administrator and get on with the job. In the work of restoration, we have been greatly assisted by access to a catalogue of items from an auction at Newstead House last century, indicating from which rooms the furniture had come.

At the same time, we have been careful to use restoration processes which are reversible and sections of walls that have been papered have had retained part of the original painted decor. Doorways and floors - though repolished - have had retained part of the hard lacquer surface.

Yet ultimately, all work in respect of the preservation and/or restoration of any museum's holdings is governed by the public that visits us. Let us have 'art for art's sake' by all means however that attitude won't pay your rates, your curator and more importantly, your restorer or conservator. What the public wants - the public should get.

Complacency is one of the museum industry's biggest problems. Loss of public support reflected by this in turn hinders our ability to raise the funds necessary to improve Collections or to improve on them in order to meet changing public attitudes. We must face up to changing situations in the Community and in the visiting public's expectations and must constantly adjust policies to ensure that our primary aims are met and that the methods of achieving this are the best we can develop. All museums - however good - can always be better.

Reference

- (1) D.J. Robinson & P. Quinn as referred to in "Restoration", a collection of papers entitled The Small Museum, Q.M. Brisbane, 1978.

Relic Restoration/Conservation

Iron and Steel Items: Restoration and/or conservation of these two categories must always be governed by the items delicacy. For the most solid items (tools and frames etc) an inhibited phosphoric acid solution should be used to derust. Brand products are available for this task (Ferropro). Leave the article in this solution at room temperature until the rust has been removed. Scrub to loosen rust. Then wash in water and then place in another solution of phosphoric acid ... 2 parts of orthophosphoric acid (by volume) and 98 parts of water (by volume) ... for another 24 hours. A coating is now on the item to prevent further deterioration. Wash thoroughly in clean cold water, dry and coat with a wax*.

The second procedure (viz. creation of protective coating) should not be attempted with cast iron items. For the more delicate items a cleaning solution of 7 parts thioglycolic acid (by volume) and 25 parts of water (by volume) should be mixed in a well ventilated room with the artificer wearing gloves and safety goggles. To this solution add ammonia solution (by volume). The principle is that the ammonia makes the overall solution neutral and prevents damage to the item being immersed. Once the rust is removed, it is then flushed with clean, cold water, dried and then coated with wax.

* Wax will protect any metal from moisture and pollutants in the atmosphere. It is especially made from a combination of 100 parts by weight of micro-crystalline wax and 25 parts by weight polyethylene wax (Technical Waxes P/L, 15 Clapham Road, Regents Park, 2143). Waxes are melted in a saucepan and mixed. Removing pan from heat, pour 230 parts white spirit (by weight) and mix continually until smooth and cool. Wax and white spirit are both highly inflammable and the addition must be effected well away from the heater where the waxes were melted.

Copper, Brass and Bronze: These objects are cleaned in a citric acid solution made up of 5 parts citric acid (solid) to one part of thiourea (solid) and 25 parts of water by weight. Once clean, the object(s) are placed in a container of distilled water and boiled, remaining in this solution for one hour.

Repeat the process twice more and then thoroughly flush (use litmus paper here .. if the ph is less than 7 repeat the flushing until a neutral result is forthcoming). Dip the item then in acetone (using great care as it is highly inflammable), which will quickly evaporate. Place the item down to dry ... dryness occurring when there is no longer smell of acetone evident. Apply then two coats of the wax as previously described.

Timber: which has to be left out in the open should always be treated with an insecticide/fungicide ... a 40% solution of pentachlorophenol diluted with 7:1 parts of kerosene or industrial methylated spirits or creosote will be most effective.

Leather: when exposed to dry atmosphere for a prolonged period loses its flexibility and becomes brittle and hard. The leather should then be treated with a preparation made up of 200 parts bw of anhydrous lanolin, 28.5 parts bw of cedarwood oil, 15 parts bw of beeswax and 1.1.1 trichloroethane (465 parts bw). The first three ingredients are mixed together and melted. The molten mixture is then poured rapidly onto the cold 1.1.1 trichloroethane and allowed to cool with stirring. Apply sparingly and rub well with swabs of cotton wool. Wait two days and polish with a soft cloth. Turdey-red oil also helps with very badly affected items.

PLEASE REMEMBER: Take care with chemicals.
Work in well ventilated areas, wear rubber gloves
and use eye protectors.
If in doubt consult a professional conservator.

Records Restoration/Conservation

1. Mildew: Probably mildew is one of the easiest matters to resolve. Place mildewed paper in direct sunlight for one hour. If the mildew is extensive, then it is advisable to make up a 2½% solution of Thymol and methylated spirits in proportion half an ounce to one pint. The solution is then brushed onto the affected area. Alternately, a 10% solution can be applied to blotting paper and that paper is then placed between the affected pages (2 ounces to one pint).

2. Torn Pages present a problem especially with very important pages. Essentially a small artist's brush, white blotting paper, a quality paste and a quantity of Japanese tissue is required.

- a. Place some waste paper under the offending tear and then apply some paste along the line of the tear.
- b. Place a piece of Japanese tissue on both sides of the tear allowing for some overlap with paste applied on top of the tissue so that it is forced through the tissue.
- c. Blotting paper is then placed either side of the offending page so that it will not affect the other pages.
- d. Close the book and weight the pages together... a house brick is effective. The paste must be acid free and kept fresh.

3. Foxing or Rust is a common problem and is caused by a chemical reaction from iron impurities in the paper and organic acids released by fungi. Particularly evident in documents post nineteenth century. Place affected page in an immersion of Chloramine-T bleach for twenty minutes, (eight ounces of Chloramine-T to 1 gallon of water, mixing in the former when the water has almost reached boiling point). The document is then placed between fibreglass screen mesh and immersed in very warm water with rubber gloves worn at all times. Once that is done, the document should be rinsed in clean warm water and allowed to dry.

4. Pests, like cockroaches and silverfish are deterred from eating through the cloth and paper spines if an acrylic resin dressing is applied to the covers of the books. Bookworm is harder to control with the bookworm particularly fond of cellulose. Fumigation by Ethylene oxide in a vacuum chamber is necessary however if the outbreak is only small, then the infected item can be placed in a freezer for 24 hours. The insect will be killed and the item unharmed. Mexican book beetle is only rid by sophisticated fumigation. Dusting will restrict activity of this insect. Booklice is a very dangerous pest destroying everything in its path. No larger than a pin-head, the only way to detect this pest is to tap the suspect item; white powder will appear and specks will begin to move. They thrive in a temperature range of 18-25° and mid-high humidity. Treatment by freezing therefore is very effective.

5. Acidity manifests itself in a brittleness in paper. The cellulose fibres of the paper are attacked by acids and the paper has a greater resistance to folding. Deacidification will not return the folding properties of the paper alone. A cool, dry spot or air-conditioned area will help. Major problems should be passed onto a professional conservator.