

Productivity Commission Inquiry into Conservation of Historic Heritage Places

Submission by the Astronomical Society of Victoria Inc

Heritage management failure: Melbourne Observatory

20 February 2006

SUMMARY

This submission outlines a prima facie case that the Victorian Government's Melbourne Observatory has an inadequately recognised national heritage importance, and presents evidence that the Observatory's heritage conservation treatment to date falls well short of the level appropriate even for its current assessment of state and local heritage significance. This appears to bolster the need for the Australian Government to reform the present system of heritage conservation management in a way that would improve the conservation, development and exploitation of heritage places such as the Observatory, in stark contrast with the present situation in which the Observatory heritage is being degraded and extinguished at a rate that the Astronomical Society of Victoria, at least, believes is quite alarming. These matters are discussed in the context of the draft report of the Inquiry.

1. INTRODUCTION

A draft of this document was the basis of the presentation by the Astronomical Society of Victoria Inc (ASV) at the Commission's public hearings in Melbourne on 14 February 2006. This version incorporates minor revisions and additions made following the hearing.

The thrust of this submission depends almost entirely on a single example, the heritage management of the Melbourne Observatory.¹ The Observatory was established and developed by the Colony of Victoria and has been owned by the State of Victoria since Federation. The ASV, a group with over eight hundred members, believes that something has gone askew in the way that this heritage treasure is being handled. The Commission's inquiry has provided a timely opportunity for the ASV to draw attention to this example of serious shortcomings in the present applicable heritage laws and processes. Hopefully, the findings of the inquiry will lead to a much improved system that could help to save the day for the Observatory and other places that are at risk of unwarranted heritage degradation and eventual extinction.

¹ The Melbourne Observatory is on land that was originally part of Government House Reserve in the Domain, Melbourne. It is located between Government House, the Shrine of Remembrance and the Royal Botanic Gardens. The area is one of the most visited parts of Melbourne.

The Melbourne Observatory is listed on the Victorian Heritage Register and the Register of the National Estate. The ASV considers that the Observatory is of such national and even international importance that it should already have been included on the National Heritage Register. The failure of the present system to take that step could indicate unrecognised system faults in need of correction, or bolster the case for correction of faults already identified.

If the ASV's assessment is thought erroneous, then much of this submission would lose impact. For this reason, the submission includes an outline of various historical matters pertaining to the national and international heritage value of the Observatory. Although the ASV is not an expert assessor of heritage value, it does have many members with academic and practical skills in antique astronomical equipment conservation and in astronomical history and heritage. The ASV is aware that the purposes of the present inquiry do not include heritage assessments of specific places, or corrections of those assessments.

2. THE CONNECTION BETWEEN THE ASV AND THE MELBOURNE OBSERVATORY

The ASV has had a long relationship with the Melbourne Observatory. When the ASV was formed in 1922, several of the Observatory staff became members and office bearers. The ASV has maintained a close association with the Observatory ever since. In 1936, for example, the ASV was granted permissive occupancy on the site for its 'Zeiss House', a roll-off roof building that housed a small but superlative Zeiss telescope originally purchased from Germany by Sir John Monash in 1928.

After the Victorian Government closed the professional astronomy function of the Melbourne Observatory in 1944, ASV members voluntarily assisted in the care of remnant equipment and facilities, and the retention of corporate knowledge. The Melbourne Observatory continued to exist as a place with astronomical telescopes and domes,² and one of its professional sections remained on site, renamed as the Weights and Measures Branch of the Victorian Government. Within a few years, the free public sessions for telescopic viewing that had been conducted in most years at the Observatory were reconstituted in a cooperative arrangement between the ASV and the Museum of Applied Science (now Museum Victoria).

In the 1980s, a report by the Museum recommended that the Observatory should be reactivated as a working museum. At that stage, buildings on the site were occupied by various government bodies such as a psychiatric clinic, a natural history museum and the Teachers' Tribunal as well as the Weights and Measures Branch and the ASV.

² The place is typically called the 'Former Melbourne Observatory' or the 'Old Melbourne Observatory' in government documents, implying that the observing function has ceased. But professional astronomical research has similarly ceased at the Royal Observatory, Greenwich and the Sydney Observatory, for example, and neither of these nor others like them are designated 'Former' or 'Old'. The ASV therefore continues to use the term 'Melbourne Observatory', the name approved for the facility by the Governor of the Colony of Victoria in 1863.

However, the Victorian Government eventually passed management of the Observatory Site Reserve to the Board of the adjacent Royal Botanic Gardens (RBG) in 1994. The other government bodies moved out.

2. THE ERA OF RBG MANAGEMENT

It is understood that the government's intention was that the RBG should manage the site to make it more productive. Various options were proposed and examined. Eventually it was realised that heritage values plus the difficulty of adaptive re-use of the purpose-built structures constrained the possibilities to the extent that the remnant astronomical facilities would have to be retained. Meanwhile, many millions of dollars of state funds and corporate donations were spent on refurbishing some buildings, demolishing others (despite having heritage value in some cases, such as the Zeiss House), and in constructing a modern visitor centre, café and plaza. After about five years of RBG management, the ASV-Museum free telescope viewing program for the public was taken over by the RBG, and an admission fee was introduced for the first time since 1863.

As the refurbishment process did not include certain essential major conservation maintenance and repairs on the historically important 1874 South Equatorial refracting telescope or on any of the three surviving domes and the roll-off roof of the Great Melbourne Telescope House, their deterioration due to age, wear and tear accelerated. When the rotational mechanisms of the two domes used for revenue-raising 'Tours' were both failing intermittently, less than half of an emergency grant of \$5k through Heritage Victoria was used to have repairs done by an ASV member.

ASV recommendations subsequently (and repeatedly) put to the RBG for other urgently needed heritage conservation work were not given any priority for funding. In one example, the slit shutter of the dome housing the 1874 telescope began to leak rainwater. Over the following five years, the leakage grew to buckets of water (literally) in every storm before a *temporary* repair actually took place early in 2005. Polished steel parts of the telescope that had remained bright since new had become severely rusted during the five years, despite the best efforts of the ASV in deployment of a plastic sheet cover and application of grease and water-displacing sprays. This rust and other corrosion damage still remain untreated.

On the positive side, it is important to note that the RBG joined with Museum Victoria in purchasing one of the Observatory's original Frodsham clocks that was offered for public sale by the Commonwealth. Also, the RBG allowed another 1874 telescope (the Photoheliograph, privately owned and now on indefinite loan to the ASV) to be reinstalled in its original dome, and actively assisted in preparations for the reinstallation.

The RBG has had a detailed Conservation Management Plan (CMP) for the Observatory Site Reserve in place since July 1997. That plan, however, is a substantially modified version of an earlier one that had more content by an expert historian. The revision contains numerous introduced errors and omissions that substantially diminish the CMP as a compilation of the heritage aspects of the Observatory Site. It does suggest expenditure on interpretation of the astronomical

facilities at the site, however. A subsequent \$100k private grant to the RBG was used for this purpose but it resulted in posters and largely static reproduction displays with so many errors, inconsistencies and faults, despite ASV advice and even protests, that removal of most of the material would appear warranted.

It is also worth noting that the RBG is governed by state legislation that requires it to make a botanical success of its assets and activities. There is no doubt that it succeeds very well indeed at this.

In the view of the ASV, current usage of the Observatory Site Reserve continues to diminish the astronomical and other heritage aspects of the site. For instance, the RBG uses part of the site for parking of up to a hundred or more cars. At night, the light pollution from this facility continues to degrade telescope viewing despite nine years of requests by the ASV for lighting that can be switched off, and for lighting that complies with the relevant Australian Standard (AS 4282-1997). Decorative floodlighting on the site is also severely light polluting and was installed despite ASV objections that it would seriously breach AS 4282-1997. The RBG has established an auxiliary depot at the northern end of the site. Machinery and vehicles are stored in a non-heritage four-bay garage that was agreed for demolition by Heritage Victoria a decade ago, at the same time as the ASV's heritage Zeiss House was demolished.

In the Observatory Main Building, the room where Victoria's first female public servants worked is now inappropriately named and carries no information about its original occupants. This and other rooms are used by contracted caterers for corporate functions, and by the RBG for staff and management meetings. The room that was used by Victoria's pioneering weather office for decades is now used to store RBG brochures. In the Great Melbourne Telescope House of 1869, the internationally famous (or notorious) Telescope Chamber, with its unique locally-designed cast-iron truss roll-off roof, is used for storage of disused furniture. At the southern end of the building is the innovative Whirling Room, which facilitated great improvements in the monitoring of ventilation as an important factor in mine safety in Australia about a century ago. The room is now used for flower arranging classes, with no indication of its role in facilitating national resources development. There are many more examples like those given, where heritage does not appear to have been given due attention.

3. HERITAGE STATUS OF THE MELBOURNE OBSERVATORY

The Melbourne Observatory is listed on the Register of the National Estate (RNE) and the Victorian Heritage Register, and is classified by the National Trust of Australia (Victoria). In the opinion of the ASV, the national heritage importance of the Melbourne Observatory has been greatly underestimated in the course of the assessments associated with these listings.³

³ The ASV recognises that this inquiry is not the place to pursue inclusion of a particular place in the National Heritage List, and will take the Observatory case up separately through appropriate channels.

It follows from the ASV's estimation of the international, national and state heritage importance of the Melbourne Observatory that many of the present uses of the site by the RBG are inappropriate. Continued use in this way will inevitably continue the degradation of heritage. The ASV is not opposed to the RBG's continuing use of some parts and facilities of the site, where such use does not significantly degrade heritage. For example, use of the government astronomer's house for RBG administrative purposes appears to be such a case at present.

Meanwhile, shortcomings in the management of international, national and state heritage aspects of the Melbourne Observatory appear to reinforce many points made in submissions by others to the present Inquiry, as indicated by content of the draft report. There are also relevant issues that do not appear to have been addressed at all in the draft report. The primary purpose of this submission is to draw attention to these matters, and to suggest some possible improvements.

4. THE NATIONAL HERITAGE INVESTMENT INITIATIVE

4.1 Background

Applications for National Heritage Investment Initiative (NHII) grants were called for in newspaper advertisements in December 2005. Although the grants were preferably intended for National Heritage List items, grant applications for other "important heritage places... entered into a state or territory government statutory heritage register" would be accepted. It appeared to the ASV that an application for a range of urgent conservation and heritage development measures at the Melbourne Observatory could meet all necessary conditions for NHII grants.

In past years, the ASV had previously gone to some trouble to alert the RBG to opportunities to apply for Commonwealth funding for heritage conservation work at the Observatory. In one case the ASV even assisted to the extent of ferrying application forms from the city to the RBG offices. No further news has been received by the ASV in any instance about whether applications had even been made, let alone any result. In this present case, the ASV decided that it would do most of the work required in preparing an application, so that scarcity of RBG effort to do the application would be less of a problem.

4.2 NHII application

Accordingly the ASV drafted the bulk of an NHII application for \$462 k (Attachment A, Enclosure 2). All of the work proposed in that draft had previously been discussed at length or at least mentioned in formal meetings with RBG representatives, and some of it was included in written reports provided to the RBG during the last decade. The draft application was sent to the RBG, Museum Victoria and Heritage Victoria under cover of a letter dated 29 December 2005 (Attachment A). Enclosure 1 to that attachment is a draft statement of support by the ASV for the suggested application by the RBG.

The ASV expected that despite the holiday period, there would be enough time for the RBG to complete and submit the NHII application by the deadline of 20 January

2006. Museum Victoria and Heritage Victoria both responded with letters encouraging the application (Attachments B and C). Unfortunately, time was already running out when the ASV received the RBG response (Attachment D). This response was quite negative, with reasons that do not appear to tally with specific content of the current Guide for Applicants issued for the NHII Grants Programme.

Study of that Guide for Applicants clearly indicated that the ASV itself could make the application, but this would require the permission of the owner of the property concerned. Accordingly the ASV President telephoned the Director of the RBG on 12 January 2006, but was told that the RBG would definitely not support an application by the ASV. Attachment E is the ASV President's record of the conversation.

As a last resort, the ASV contacted the office of the Victorian Minister responsible for the RBG, pointing out that the Royal Botanic Gardens Act 1991 states in Section 16 that "The Board is responsible for the management of the botanic gardens but does not own them". This presumably applies also to managed land under the control of the Board. As the NHII application required consent from the *owner*, the ASV therefore requested that the Minister should examine the proposed application, and if satisfied, sign the required consent. The reply was that this could be done, but the process of preparing the accompanying brief for the Minister would take at least a week, by which time the NHII deadline would have passed. At this stage the ASV had no choice but to abandon the proposed application.

Perusal of Attachment A should indicate that the RBG Director's claims about heritage conservation spending on the Observatory Site completely miss the point. With the exception of the work on the dome mechanisms, repair of the ASV's long-clock case that was damaged in the refurbishment, preparation of the floor for the 1874 Photoheliograph and the temporary repair to the leaking slit shutter, virtually nothing has been done in the 14 years of RBG management of the site to maintain or restore the heritage *operational* capability of the Observatory. Indeed, some RBG actions in 1999 and 2005 that were intended to improve occupational health and safety in the Astrograph Room have actually hindered conservation and degraded heritage by causing serious if not irreparable damage to the dome mechanism and fabric, apart from introducing new safety hazards and severe distortion and obstruction of views through parts of the slit aperture.

Without the work proposed by the ASV in its draft NHII application, the *operational* (dynamic as opposed to static) heritage of the Observatory will continue to degrade towards extinction, and the way will become clearer for the RBG to use the 2.6 ha Observatory site primarily as a mere supplement to the Melbourne botanic gardens site, which covers 36.4 ha. In the long run, the Observatory site would be at risk of virtually complete absorption.

4.3 Attachments

The following attachments are provided as evidence of the current situation, and as support for the statements made above:

- A. Copy of covering letter of 29 December 2005 from the Astronomical Society of Victoria jointly addressed to Director, Royal Botanic Gardens; Chief Executive

Officer, Museum Victoria; and Executive Director, Heritage Victoria, headed *Urgent- Proposed Heritage Grant Application- Melbourne Observatory*, along with the following Enclosures:

1. Astronomical Society of Victoria: Draft of 29 December 2005, *Statement in support of an Application by the Royal Botanic Gardens for a National Heritage Investment Initiative Grant for Conservation and Restoration Works at the Melbourne Observatory*, and
 2. Partially Completed Draft: *NHII Grant Application Proposal for Conservation and Restoration Works at the Melbourne Observatory*.
- B.** Copy of letter response of 6 January 2006 from Museum Victoria to the ASV.
- C.** Copy of letter response of 5 January 2006 from Heritage Victoria to the ASV.
- D.** Copy of letter response of 10 January 2006 from the Royal Botanic Gardens to the ASV.
- E.** Copy of notes by Barry Cleland (ASV President) about his telephone conversation with Dr Moors (Director of the RBG) on 12 January 2006.

5. THIS MATTER IN THE CONTEXT OF THE DRAFT REPORT OF THE COMMISSION

5.1 Issues arising from the Draft Report

The last two paragraphs of section 1.2 of the Overview are noted. With respect to the first of these paragraphs, the ASV certainly does not envisage the reactivation of the Observatory as a working professional observatory, but retention of the cultural significance of the Observatory is critically dependent on the presence of as much of the original equipment as possible in an operational state. This would be best achieved by setting up the Observatory as a working museum, not just as a few refurbished old buildings with largely static displays and posters showing pictures of equipment now missing.⁴

The circumstances of the Melbourne Observatory also appear relevant to the second of these paragraphs in the Overview. The ASV believes that the Observatory has a strong case for inclusion on the National Heritage List because of its great contribution to the second half of the 19th century development of Australia in general

⁴ Or worse, pictures of equipment that was never present! This is one of the faults of the recent very costly ‘interpretation’ of parts of the Melbourne Observatory, a project overseen by RBG staff with regular access to ASV advice. Despite ASV protests, the Astrograph House display has a picture of Mount Stromlo’s Oddie Telescope instead of Melbourne’s much larger Astrograph, and the South Equatorial Annex has pictures of unrelated equipment at other observatories (eg Adelaide and Paris). As no captions are provided, visitors are misled. The message is that spending on heritage properties by a management that is insufficiently knowledgeable and overrides verifiable advice by experts can be at least partly counterproductive in terms of heritage conservation.

as well as its importance to Victoria in particular. Detailed reasons for this are given in the Appendix below.

In the ideal course of events, the Victorian Government would reappraise the situation and ensure that the Observatory heritage is properly maintained and developed. But given the existing ambivalent situation and pressures against change it seems worth considering the issues from the Commonwealth's point of view if the Victorian Government does not act as suggested. Mindful of the rights of the states in how they deal with their own property, it might be concluded that the Commonwealth has no practicable option but to accept the poor situation and concentrate on other more tractable cases. But although heritage is an intangible concept, it still has value in a range of measures from aesthetic scales to hard cash in tourist dollars. Thus it seems that although the Observatory property is state-owned, the Commonwealth owns the national share of its heritage value, however that share may be valued. In its stewardship of this share, the Commonwealth would appear to have a duty to act in the best interests of all Australians.

If a state-owned place is assessed as of sufficient national importance for inclusion on the National Heritage List, the Commonwealth would appear to have some way to carry out its stewardship duty. But if the state opposes nomination of the place for national heritage assessment, or if a national heritage application is made but fails as a consequence of, say, biased or incomplete evidence or advice, it would seem useful to strengthen the hand of the Commonwealth in such circumstances, within any limitations set by the Constitution.

From the first paragraph of Section 1.3 of the Overview, the present example could be regarded as a case of botanical interests versus astronomical interests. Both sides could claim that the balance of community wellbeing is on their side. The ASV is confident that open processes of inquiry, as favoured by the Commission, would find the astronomical side the more important in this case. Regardless, the issue in cases like this is how such open processes can be ensured at the state level, given that the circumstances in the present example were apparently not open, but set primarily by an ideological blanket strategy to reduce a state budget deficit? From at least one other heritage case at about the same time, it seems that heritage was not considered to have any positive monetary value. On the other hand, the costs of maintaining heritage were taken into account in a decision by the state to sell a bequeathed property, thus demonstrating a financial bias against state ownership of heritage places.

The last sentence on page xx is nicely illustrated by the present example. Without its telescope, a domed or shuttered building is just a curious remnant. With its working telescope inside and its viewing aperture serviceable, the facility has a far greater cultural significance.⁵ In the present case, Museum Victoria has two of the Observatory's transit circles (meridian scanning telescopes) in storage, and Museum senior staff have expressed a wish for at least one to be reinstalled at the Observatory. The Observatory Main Building has three transit rooms with their meridian shutters still in place, but not working. The two most important rooms are empty, and the

⁵ The difference is at least that between a seashell and a shellfish, or a tree stump and a tree. Visitors to the Observatory telescope viewing sessions have often remarked on the value of the total experience of observing from within the domes.

third is used to store brochures, records and furniture. The transit circles kept Victoria's parliament, schools, shops, offices, factories, farms, public transport and shipping on time for over ninety years, helped in the discovery of the wandering of Earth's poles, and contributed to the international development of precision clocks and methods of compensating for human reaction time.

At the end of 'Assessing the role for governments' on page xxi is the statement "For government intervention to be warranted, the benefits to the community need to be greater than the costs." This seems to ignore the case where intervention does not produce benefits greater than the costs, but non-intervention produces an even worse result such as irretrievable loss of heritage. Perhaps the distinction is illusory, depending on how heritage is costed or valued. Regardless, the statement has the ring of an unduly simplistic slogan about it.

The last paragraph of 'Australian, State and Territory' on page xxii includes the statement "They control the use and development of each place in order to conserve the identified heritage values." As the present example illustrates, the Victorian Government has not exercised sufficient control to ensure conservation of some of the heritage values identified in the CMP, let alone the values that the ASV thinks should have been in the CMP. So the statement seems to be some sort of ideal that in at least one case is certainly not being met in practice. Recognising that point is to recognise a major shortcoming in the present system, viz too much being taken on trust by governments in the presence of disincentives for managers to be accurate in heritage identification and fully competent in heritage conservation.

The last sentence of the first paragraph on page xxvii states that the RNE should be phased out for historic heritage purposes. In the present case, the presence of Melbourne Observatory on the RNE appears to be the only place where anyone without detailed knowledge of the relevant history might be alerted to the existence of national heritage aspects in a place that is otherwise listed on a state register as having heritage of state significance. Discarding the RNE without tackling this issue would perpetuate existing problems by throwing away some of the most accessible evidence of their existence.

Any particular place may be thought of as having certain amounts of local, state, national and international heritage significance. Ordering of heritage places by any one of these criteria would frequently give an order different from the order for another of the criteria. The same would happen if overall national and global significance were considered. Weighting of the relative values of significance could produce different ordering again. But the present system does not even appear to have any sort of measurement scale beyond descriptions such as 'significant'. What seems to be needed is some way of assigning heritage values with several ordinal levels of significance, and, most importantly, ensuring that all statutory registers have assigned levels for each of the international, national, state and local aspects. Then a search of databases could quickly point to items that would be better shifted from one register to another. For example, an item on a state register might have a 'high' national significance, a 'medium' state significance and an 'exceptional' local significance. This would point, as does the RNE after a fashion, to places that might usefully be examined for upgrading to the National Heritage List. Probably more so than the RNE, it would also indicate where downgrading should be considered.

Of course any such scheme can be abused, manipulated or adversely affected by biased or missing information, as in the case of the Melbourne Observatory under the existing systems: the information provided with the relevant RNE entry, for example, appears to fall well short of what the available facts indicate should be there.

The first and second sentences under the heading ‘Government-owned heritage’ on page xxxvii are exemplified by the Melbourne Observatory. Indeed, the second statement might be more directly put in terms of *disincentives* to heritage conservation, such as freeing up use of the land for other purposes if heritage is allowed to degrade or extinguish by ignorance, neglect or even by deliberate action. The statement also appears to be imprecise about just which governments need to do what in the case of a state government agency that is unenthusiastic or worse about conservation of a place of national significance.

The last sentence in that section assumes that the heritage assessment of the place in question is based on information that is sufficiently accurate and complete. The Observatory example indicates how wrong this assumption can be. The sentence is also an oversimplification. A place that seems too expensive to conserve might still be worth conservation if it holds promise of returning sufficient revenue, or greater revenue. Perhaps the sentence needs to deal with the net costs of ownership, assessed against the notional heritage importance of the place in question. On such a basis, it could be that few heritage places would ever run at a monetary profit. Maybe there is scope for turning this around to a more agreeable balance by introducing a monetary valuation of the heritage place or heritage component of the place. For example, how much money would the public accept as an adequate annual return into general revenue in exchange for allowing a foreign corporation to own and obliterate a site such as that of the Eureka Stockade? The issue is not about revenue foregone by not selling, but whether the net annual cost of conserving and maintaining a heritage place might be sufficiently kept in check by not exceeding the annual value to the public that this process assigns to the place, averaged over some years if appropriate.

The last sentence of ‘Assessing the role for governments’ on page xxi of the draft report might usefully be reconsidered in connection with the above suggestion. Likewise, the first paragraph under ‘*Existing listed places*’ on page xxxiv might also be worth reconsidering.

In the first sentence of ‘Conclusion’ on page xxxvii, it seems important that all conservation agreements should be open to free public scrutiny through the Internet. Furthermore, public input on the content of the agreement, together with the assessment and any action by the responsible authority should also be freely accessible on the same website within a specified time. Had this been the case with the Melbourne Observatory, for example, the present unhappy situation might have been averted years ago, much to the benefit of Australians in general.

The ASV agrees with Draft Finding 7.1 on page xl.

In Draft Finding 7.4 on page xl, it is suggested that “and a statement of compliance with the plan” be added, along with a requirement for ready public access to all of this material through the Internet.

The ASV agrees with Draft Recommendation 3.1 on page xlii. The ASV also agrees with Draft Recommendations 7.1 and 7.2 on page xlii, provided that the matters raised in the last paragraph of page 8 and the first two full paragraphs on page 9 in this submission are given due consideration and whatever action may be considered appropriate by the Commission.

In Draft Recommendations 7.4 and 7.5 on page xliii, it is suggested that the report should include the extent of compliance with the CMP. For 7.5, the word ‘adequate’ might usefully be replaced by ‘appropriate’.

The ASV welcomes the opportunity described in the last sentence on page 7 as the need for input related to the case of Melbourne Observatory increased greatly since the original call for submissions.

The inclusion of spaces and views in Box 2.1 on page 11 is exemplified by the great importance of the curtilage and sky views in the case of astronomical observatories. These aspects have repeatedly been ignored or dismissed by the RBG.

The principle of subsidiarity is mentioned on page 30 and elsewhere. As defined, it misses a requirement shown to be desirable if not necessary, ie that the next higher level of government should be required to satisfy itself periodically that the lower level’s exercise of responsibility is indeed effective in particular heritage places. The second dot point on page 31 points out that this function is or should be monitored by the state heritage council. The ASV wonders whether this level of monitoring will be reliably adequate for state-owned heritage places on the National Heritage List, or even for those with significant national heritage characteristics but not on the List. These aspects might usefully be reconsidered in connection with the second and last dot points in Box 4.2 on page 46.

The ASV agrees with the dot points at the beginning of Section 4.7 on page 68, especially the last one, with the comments about this topic on page 70, and with the Heritage Council of Victoria statements at the bottom of page 158.

Box 4.1 on page 40 has a set of heritage assessment criteria. National Heritage Listing requires a place to meet at least one of the criteria as well as having heritage value to the Australian community as a whole. In terms of backing the ASV’s contention that the Melbourne Observatory should be on the National Heritage List, the Observatory appears to meet *all* of the eight criteria.

6. REFERENCE

Clark, B. A. J. (2006) *Melbourne Observatory: new inventories of associated items, status of the site, and proposals for heritage conservation and development*. Version 3.3, 10 February. Melbourne, Australia: Astronomical Society of Victoria Inc. [157 pages, downloadable in pdf format from <http://www.asv.org.au/>]

APPENDIX: MELBOURNE OBSERVATORY AS A NATIONAL HERITAGE TREASURE

Most of this material has been adapted from Clark (2006).

A1. Adversity and Survival

The shortcomings of the heritage classification, retention, conservation and development processes in the case of the Observatory could be considered as the latest in a long series of unhappy circumstances, such as:

- Baron Sir Ferdinand von Mueller of the botanic gardens was extremely bitter about establishment of the Observatory in the Domain, the (unrealised) threat of demolition and rebuilding that this imposed on his original Herbarium, and the relatively generous early funding of the Observatory. He did his best to interfere by planting large trees to block telescopic views and by making paths look as though the Observatory fence was blocking public passage along them.
- The Observatory was modelled on the Royal Observatory, Greenwich, which specialised in positional (fundamental) astronomy for utilitarian purposes, and hence neither was unlikely to make the sort of astrophysical discoveries that would catch public attention and generate popular support.
- An enormous row developed over the performance of the world's largest steerable telescope, the Great Melbourne Telescope, after its installation in 1869. Those involved included the makers (Grubb of Dublin), the Royal Society, the Royal Astronomical Society, the Astronomer Royal and the Astronomer Royal for Ireland, the Colonial Office, the Governor and Government of Victoria, the Royal Society of Victoria, the Board of Visitors to the Observatory, the Government Astronomer and individual Observatory staff. Although the facts appeared to vindicate the Observatory staff at the time and were supported by later work at the Observatory, this was not widely accepted in Great Britain and the opprobrium lasted for a long time. By the 1880s, the limited number of discoveries made with the GMT reinforced a widespread impression that the Government had been misled by astronomers into spending a fortune on a lemon, and all Observatory expenditure after that was limited and examined closely.
- The failure of the GMT is still frequently mentioned in books on telescopes as its mechanical design set the pattern for bigger and more successful instruments for over half a century to come.
- The legal status of the Observatory Site Reserve was a long running problem for the Board of Visitors, which won some of the early battles and lost all of the later ones. A related issue, protection of the extended curtilage of the site to safeguard the quality of the observations, was decided in favour of the Observatory in the 19th century when a vehement objection was made by the Board to a plan for a housing estate on most of the land south of the present Shrine of Remembrance. Had this objection failed or not been made, there would not have been adequate vacant land for the Shrine to be built there in the late 1920s, and this part of Melbourne today would be quite different and sufficiently less attractive to affect the character of the city as a whole.

- Financial stringency imposed on the Observatory after the 1890s financial crash stopped advanced plans to turn the 1.2-m aperture GMT into a 750-mm aperture refractor! Decades of financial stringency were imposed after the start of WW1. In the 1920s, the Government Astronomer proposed to the Board that the Observatory's platinum length and mass standards should be sold to raise funds for more standards in other metals. (Museum Victoria still has some of the platinum standards.) The limited funding severely restricted the possibility of any further astronomical discoveries and added to the political case for closure of the astronomical part as an unproductive duplication of Commonwealth and other state activities.
- The military requisitioned the Observatory site during WW2, severely limiting civilian access. Curiously, one last photographic exposure for the Astrographic project begun in the 1890s was made during 1941 after a gap of many years. The last two years of the third (and last) Government Astronomer's employment, and life, were spent on secondment to Mt Stromlo to arrange for the transfer of clocks and other equipment from Melbourne for the National Time Service, a military-motivated project that was only completed after his death and after closure of the Melbourne Observatory in 1944. Ironically, before and after WW1, he (Dr J.M. Baldwin) had assisted his predecessor (Senor Pietro Baracchi) in selecting the Mt Stromlo site for what was initially the Commonwealth Solar Observatory.
- The Board of Visitors to the Observatory typically included Melbourne's most successful political, academic and professional people, for example Governor Sir Henry Barkly, Professor Wilson, George Verdon and Alfred Deakin. With one or two notable exceptions, the Board gradually lost most of its really influential members as the Observatory was forced into decline after WW1.
- The solid and sometimes brilliant technical achievements of the Observatory over its nine decades of existence were discounted by individuals apparently interested in getting hold of some of the equipment or in perpetuating old confrontations.
- The closure process of 1944 to 1946 was apparently intended to ensure that most of the astronomical equipment would be dispersed or destroyed so as to prevent any future attempt to restart that part of the professional work.
- Without the preservation efforts of the ASV and the support of the Museum, the heritage losses after 1944 would probably have been so great as to allow demolition of the buildings to make way for new buildings with different functions. By the 1970s, blockage of demolition by the emerging general interest in heritage preservation might have exacerbated some existing irritation among individuals keen to see the land used for other purposes.

The other side of the coin is that had the Observatory been funded to operate more normally in the earlier part of the twentieth century, modernisation of the facilities would probably have led to the modification or scrapping of the heritage treasures that are now fortunately still extant.⁶

⁶ Even as late as the 1960s, an ASV member suggested to the Museum Trustees that the optical tube assembly of the South Equatorial telescope should be replaced by a modern reflecting telescope assembly. The Trustees accepted the performance advantages this would bring for members of the public. The only reason they gave for not doing so was a lack of funds.

The contribution of the Weights and Measures Branch to preservation of most of the remnant on-site facilities and equipment should not be overlooked. For many years the branch was headed by a former astronomer. Admission to the buildings was strictly controlled because of the expensive standards kept and the legal responsibilities that applied to the work.

It seems that the survival of Melbourne Observatory so far is partly a perverse outcome of adversity. But this cannot be expected to continue indefinitely: the heritage conservation process now needs to do much better than has been the case to date. The threat is real enough, as is demonstrable by considering the history of changes in status of the Observatory Site Reserve. The land, originally part of Government House Reserve and never part of the Royal Botanic Gardens Reserve, was permanently reserved for observatory purposes until 1933. This was changed to a temporary reservation to enable some of the land to be used to relocate Birdwood Avenue further east, and thereby to allow more space for the Shrine of Remembrance.

As it happened, the site was left intact but the temporary reservation stayed until after professional astronomy ceased at the site in 1944. Temporary land use conditions relating only to natural history museums, parks and gardens have applied since then, despite the fact that various astronomical functions have continued right up to the present. This suggests that the current land use conditions are in need of revision to acknowledge the continuing existence of the Observatory as an operating national heritage treasure essentially needing to involve virtually the whole of the site as it stood before 1945, preferably in a reproduction of its late 19th century state. Among other outcomes, large trees will need to be removed, including several planted in a ring around the South Equatorial and Photoheliograph Houses and one northeast of the East Transit Room since RBG management of the site began.

A2. National and International Significance of the Melbourne Observatory

The heritage richness and national importance of the Melbourne Observatory and its forerunner at Williamstown have hitherto been substantially underestimated. For example, Australia's *first* telegraph line connected the Melbourne post office with the observatory building at Williamstown that was also the living quarters for the astronomer Robert Ellery, who later became Victoria's first Government Astronomer. When the telegraph line became operational in late 1854, it was used immediately to control dropping of the time ball at the Melbourne post office synchronously with the Williamstown time ball. The Williamstown time ball remained in operation until the 3LO radio broadcasts of time signals from the Observatory were established in 1926. (That time ball is now operated by a community group using a computer.) By 1863, when the observatory moved to the present Domain site, the telegraph network was already routinely distributing astronomically precise time throughout the colony via post offices and the railways. Major parts of the observatory equipment used to enable this are still in existence and available for reinstallation at the Observatory in working condition.

The Observatory's telegraphic time service grew to provide remotely corrected precise time at the Victorian Parliament House, the General Post Office and

elsewhere. Mastery of this technology and the availability of telegraphic cables linking Melbourne with Greenwich allowed the telegraphic determination of Melbourne's longitude, which confirmed the astronomically determined value. After 1944 the precision clocks and related equipment were moved to Mt Stromlo Observatory in the ACT to form the National Time Service. Prior to that, the availability of chronometric services at the Melbourne Observatory had been of national and international importance in contributing to risk reduction in maritime commerce. This helped to reduce the cost and increase the rate of state and national development.

The Melbourne Observatory was modelled closely on the Royal Observatory at Greenwich, concentrating on fundamental (positional) astronomy rather than astrophysics. But it surpassed Greenwich in 1869 with acquisition of the Great Melbourne Telescope. Visitors to the Melbourne Exhibition of 1880-1 made "incessant" demands to see through the GMT, on top of the pressure from others living in or visiting Melbourne. The GMT's pioneering photographs of the moon were in world-wide demand, and free copies were provided to all Victorian schools. Although the instrument in its original form is generally regarded as a failure in terms of discoveries made with it, there is evidence from one individual (who is still alive) that it remained in use for public viewing right up to the start of WW2. At the end of the war, the telescope was sold as scrap and rebuilt at Mt Stromlo, where it contributed greatly to knowledge of the structure of the universe until its destruction by firestorm in 2003.

For the 1874 transit of Venus, the Observatory's Photoheliograph was one of a few instruments worldwide fitted with Janssen's rapid sequence photographic apparatus, a key forerunner of the cinematograph. It was thus used to make one of the first motion picture recordings of a natural event.

In the 1890s, the Observatory became part of what was probably the first large scale international scientific cooperative program, the photographic mapping and cataloging of the whole sky. Sydney Observatory was also prominent in this program. Melbourne Observatory undertook the tedious task of microscopic measurement of thousands of photographs from both observatories. In 1898, after much negotiation with the Colonial Government, it advanced what would eventually become the concept of equal opportunity by the then radical step of employing young women to do this technical work.

In the late 1800s, the Observatory played an active role in the international negotiations for the introduction of standard time zones. The agreed zones for Australia still apply, and naturally they affect everyone in Australia.

From the earliest days, the Observatory was involved in often pioneering introduction of technology to assist in national development, for example geodetic, gravimetric and geomagnetic surveying, and the setting up of facilities for precise measurement of mass, length, time, volume, flow and electromagnetic quantities. Its long series of records of bay and ocean tidal records provide important baseline data for sea level monitoring in connection with global climate change and local effects of shipping channel deepening.

The Observatory calibrated geomagnetic and gravimetric equipment and trained observers for early international and national Antarctic explorations. By the time that the Observatory was closed, its seismological and geomagnetic functions had been passed to the Commonwealth. These functions are now part of Geoscience Australia. The seismographs remained on site in the Observatory's Magnet House during the Cold War, when they were used to monitor distant nuclear explosions. In a curious twist, this was about the time when the Soviet Union published the last volumes of Melbourne's section of the Astrographic Catalogue for propaganda purposes, the message being that the Soviet was generously helping capitalist Australia, which could not afford the expense.

The Observatory maintained cooperative rivalry with Sydney Observatory in the collection of regional meteorological data and the development of weather forecasting. It was an active participant in the international cloud height photographic program of the 1890s. When the Commonwealth Bureau of Meteorology took over weather functions in 1907 in compliance with the Australian Constitution, its head office was located in Melbourne and most of its staff and its remarkably extensive observing network and records were transferred from Melbourne Observatory.

On two occasions, Observatory expeditions with the Photoheliograph were privately funded to photograph solar eclipses for the express purpose of testing the gravitational deflection of light according to General Relativity. Although there is no direct connection with the Observatory's solar photography program that began in 1874 and extended to 1961, it is worth noting that the Commonwealth's Ionospheric Prediction Service continues to monitor solar activity on a daily basis.

Overall, Melbourne Observatory and its Williamstown predecessor made substantial scientific and technological contributions to national development between 1853 and 1929 and helped put Australia 'on the map' in these areas.

A3. Stakeholder Bodies

Familiarity with the history of the Melbourne Observatory allows identification of many present organisations or their predecessors that have had, or continue to have, some significant stake in the Observatory site heritage. Clark (2006) includes an alphabetically ordered list of possible stakeholders that is reproduced here: Australian Academy of Science, Australian Broadcasting Commission, Astronomical Society of Australia, Astronomical Society of Victoria, Bureau of Meteorology, City of Melbourne, Commonwealth authorities for heritage and telecommunications, Consumer Affairs (Vic), Department of Defence, Equal Opportunity Commission, Geoscience Australia, Heritage Council of Victoria and Heritage Victoria, Hobsons Bay, Melbourne and Port Phillip City Councils, Horological Guild of Australasia, Institution of Surveyors, Institute of Physics, Mount Stromlo and Siding Spring Observatories (MSSSO) of the Australian National University, Macquarie University, Melbourne Ports Authority, Museum Victoria, National Measurement Laboratory, National Time Service, National Trust (Vic), Parliament of Victoria, Public Record Office Victoria, Royal Australian Institute of Architects, Royal Botanic Gardens Melbourne, Royal Historical Society of Victoria, Royal Society of Victoria, State Library Victoria, Sydney Observatory, Tourism Victoria, and the University of

Melbourne.⁷ Of these, it seems that only the RBG and Heritage Victoria have had a direct role in advising the Victorian Government about the use of the Observatory Site Reserve. Indeed, most of these suggested stakeholders would probably be unaware of the present slow degradation of heritage at the Observatory. Possibly for many of these suggested stakeholders, interest in the matter has attenuated over the years, but there are others where this is not so. For instance, staff of the Bureau of Meteorology have discussed Observatory heritage with the ASV in connection with the Bureau's forthcoming centenary in 2007. The ASV suggested that they contact the RBG and keep the ASV informed, but nothing further has been heard.

Given the apparent importance of the issues raised, it would seem that the Victorian Government has unwittingly acted without due advice from most of the stakeholders identified. Fortunately it is not yet too late for the situation to be rectified.

A4. Conclusions of this Appendix

There now appears to be a stronger case than ever for the development of the whole or most of the Observatory site principally or solely as a working astronomical, geodetic, geomagnetic, meteorological, seismological, telegraphic and measurement standards museum to conserve and demonstrate the outstanding national and state heritage value of the observatory and its surviving equipment.

Greater involvement of the ASV in the conservation, operation and development of the site is suggested to make use of the ASV's corporate technical, operational and historical capabilities. Such involvement would also help to sustain and extend these capabilities. It appears highly desirable, if not essential, for Museum Victoria also to be involved in the conservation and development of the Melbourne Observatory as a working on-site museum. There is a case for substantial involvement of other stakeholders as well, at least including Victoria's Department of Sustainability and Environment and the Commonwealth through its Bureau of Meteorology, Geoscience Australia and other agencies. There is much for Australia to gain if Victoria takes this path, including far greater realisation of the Observatory's potential as a cultural and tourist attraction.

Accordingly it is suggested that the Victorian Government should reconsider the land use purposes of the Observatory Site Reserve and if appropriate, legislate to preserve

⁷ The University of Melbourne is included for its strong historical connections with the Observatory, originally through Professor Wilson and subsequently through physics, chemistry, engineering, surveying (geomatics), mathematics and the history and philosophy of science. The University of Melbourne also has courses in astronomy and related subjects at present, along with other Melbourne-based universities, viz La Trobe University, Monash University, RMIT University, Swinburne University and Victoria University. Some have their own local observatories, but presumably all could possibly make use of and contribute to the facilities at the Melbourne Observatory to mutual advantage in the context of teaching of astronomical practice, provided that this must not prejudice the heritage aspects and visitor programs. These other universities are therefore also potential stakeholders, albeit not for heritage reasons.

and develop the Observatory heritage as a splendid gift back to Australians in general and Victorians in particular.

At the national level, it is suggested that the Melbourne Observatory should be assessed for inclusion in the National Heritage List to assist in ensuring that this important intangible heritage asset of the Commonwealth is given the protection warranted. Not least of the Observatory's heritage value is that its principal displays and functions can be dynamic rather than static and provide an unusual and compelling experience for tourists and other visitors.

It does not seem to be stretching credibility too far by suggesting that the Observatory might even be considered for World Heritage status if its heritage restoration and development is allowed to advance sufficiently.

A4. REFERENCE

Clark, B. A. J. (2006) *Melbourne Observatory: new inventories of associated items, status of the site, and proposals for heritage conservation and development*. Version 3.3, 10 February. Melbourne, Australia: Astronomical Society of Victoria Inc. [157 pages, downloadable in pdf format from <http://www.asv.org.au/>]