SGS Economics & Planning

THE VALUE OF HERITAGE: SUMMARY REPORT

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Prepared for
DELWP

Independent insight.

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EXECUTIVE SUMMARY

Key messages

- Victorians place a high value on Victoria's heritage stock.
- The value of Victoria's heritage stock was estimated at $1.1 billion.
- For all heritage places, the better the condition the more people valued them. This speaks to the case for the protection *and* enhancement of these assets.
- Victorians overwhelmingly agree that the government should ensure the protection of Victoria's heritage places and objects.
- Victorians support stricter regulations, higher penalties and better enforcement of heritage regulations.
- People see development controls as an important policy tool for heritage protection and believe properties should be able to be modified to retain the utility of the asset.
- Almost half of Victorians believe that government funding should be available for heritage assets of both state and local significance.
- There is a general lack of understanding about how the heritage protection system currently works. This represents an opportunity to increase the profile of heritage protection activities undertaken by Heritage Victoria and the Heritage Council.
- There is a strong case for further investment in heritage identification and protection.

Introduction

Victoria's heritage is rich and diverse. There are currently over 2,300 heritage places and objects which are included in the Victorian Heritage Register (VHR) on the basis of their state significance and over 170,000 places identified as having local level significance which are included in the Heritage Overlays of local council planning schemes. This combined stock of heritage assets includes buildings, monuments, objects, gardens, cemeteries, landscapes, shipwrecks and archaeological sites.

This heritage is treasured by Victorians and provides a range of economic, social and environmental benefits to the State.

This report documents a study directed at understanding the scale and nature of the value that Victorians place on post-contact heritage. Its purpose was to support better decision making and resource allocation when governments consider regulatory or investment initiatives designed to advance heritage conservation and interpretation.

Background

In 2005, the Allen Consulting Group (ACG) completed the report *'Valuing the priceless: the value of historic heritage in Australia'*. This study was an important milestone in heritage valuation literature as it proved the efficacy of a particular market research technique - choice modelling - as a means of eliciting the community's willingness to pay (WTP) for heritage outcomes. WTP reflects what the respondent or citizen is willing to forego in terms of alternative consumption opportunities for their limited budget, in order to gain the particular benefit on offer. An accurate measure of WTP therefore provides a vital insight to the economic value of any cultural, environmental or social benefit which is not routinely priced in market transactions.

The current study replicates and builds the ACG choice modelling methodology. In an important extension of the 2005 work, this report applies choice modelling to the economic

valuation of individual heritage assets as well as to valuation of a broad portfolio of assets containing thousands of items.

Heritage Victoria (a branch within the Department of Environment, Land, Water and Planning (DELWP)) commissioned SGS and SurveyEngine to update the ACG research to ensure assumptions and data remain relevant, and to develop a tool that would allow for practical valuation of specific heritage assets. The Heritage Council supported this work.

Specifically, the objectives of the study were to:

- understand how Victorians view and value historic cultural heritage
- inform consideration of existing and future protection and conservation measures
- underpin decisions about investment in heritage, and
- provide baseline data for future surveys of community heritage values and studies that measure the benefits of heritage conservation.

What value do people place on heritage?

Monetised Value

Using the asset specific WTP tool developed as part of this study, the capitalised value of the heritage services generated by the assets on the VHR is estimated to be in excess of **$1.1 billion**. This translates to roughly $0.45 million per asset on average, though it should be noted that there is a broad spectrum of valuations per item reflecting parameters of asset type, land use, condition and access.

There was some variation in WTP across the three studies - the 2005 ACG report, the 2017 replication of the ACG study undertaken by SurveyEngine and the asset specific choice modelling carried out by SurveyEngine. It appears that WTP is heavily influenced by the type of heritage asset in question (discussed below). Willingness to pay for the protection of 1,000 buildings – the default 'package' of heritage assets used in the two surveys conducted according to the ACG method – appears to have declined between 2005 and 2017 when adjusted for inflation. This difference may be a result of other economic and social issues becoming more pressing. For example, between 2005 and 2017 the Global Financial Crisis significantly impacted the economy and house prices have risen rapidly, particularly when compared to income. Over this time, concerns regarding stagnant income, job security, global political stability and climate change have also intensified. It may be that valuing heritage has become a lower priority in the face of these exogenous pressures. Nevertheless, people still value heritage and are willing to pay, that is, forego other opportunities, for its protection.

The combined three studies provide conclusive evidence that Victorians place significant value on the protection of heritage.

Non Monetised Value

In 2005, over 90 percent of people thought that 'It is important to protect heritage places even though I may never visit them'; that 'Heritage is a part of Australia's identity'; and that 'It is important to educate children about heritage'. In 2017, over 80 percent of people also thought these same values were important.

What aspects of heritage are most important to people?

The SurveyEngine asset specific choice modelling study revealed significant and specific preferences for particular types of heritage. These are described below.

Type of heritage asset

In the survey, respondents tended to value civic or public buildings such as hotels, train stations and courthouses substantially more than 'private domain' assets such as residential

or commercial buildings. Places of worship and industrial buildings were also relatively weakly valued.

Respondents were less willing to pay for the protection of residential, industrial/mining or agricultural landscapes. Lighthouses were particularly highly valued, perhaps as a result of their visual significance in otherwise largely natural landscapes.

Military sites and Anzac memorabilia returned high WTP findings. The military site valuation is consistent with Victoria's growing engagement with Anzac Day, as well as the ongoing construction of Australian identity associated with Anzac Day and other historic military engagements.

Gold Rush sites and the Eureka Flag (which is intrinsically connected with the Gold Rush) were also highly valued. This may be directly linked to people's understanding of the essential role the Gold Rush had in the rapid and prosperous growth of Melbourne and other key regional towns such as Ballarat and Bendigo.

Age

Respondents tended to value older heritage assets more than more recent ones. Nineteenth century buildings were consistently highly valued, while heritage assets from post 1971 were not. A potential cause of this is that people may only understand 'heritage' in the context of something associated with a time before they were alive. In time, it is possible that greater value is placed on 20th century historic assets as they become part of a more distant past.

It is also likely that the character of older heritage assets is valued, for example the opulent and architecturally extravagant buildings developed during the Gold Rush.

Condition

A linear and positive relationship was found between asset condition and WTP, except in the case of heritage objects. For all heritage places, the better the condition the more people valued it. This speaks to the case for the protection *and* enhancement of these assets.

Do people understand the heritage system, and do they believe the heritage system is working well?

The SurveyEngine asset specific choice modelling study provides substantial evidence that Victorians only have a weak appreciation of how the heritage system operates. The study showed that there was poor recognition of the VHR and heritage bodies. The distinction between local heritage protection (through Planning Scheme Overlays) and State level protection was also poorly understood.

In the 2005 ACG study, over 60 percent of respondents thought not enough was being done to protect heritage. In the 2017 replication study, this had dropped to 40 percent. This may suggest that the general population in Victoria is largely satisfied with protection of heritage assets that has occurred during this time. However, given the difference between the sample populations (Australia versus Victoria) it is also possible that residents in other jurisdictions were more concerned that not enough was being done to protect heritage in 2005.

While people may not have a good understanding of the governance of heritage protection in Victoria, there may be a general acceptance that the system is working well. When asked about the strengths and weaknesses of the current heritage system, the 2017 asset specific choice modelling survey found that relatively few respondents had a view but those that did felt the system works well.

Reflecting on these findings, there is an opportunity to improve communication around the roles of Heritage Victoria, the Heritage Council of Victoria and local government councils in protecting heritage. There is significant scope to increase public awareness of the VHR,

particularly since people are most likely to use the internet to find out about heritage. This could be supported through television and media as well as print public awareness campaigns. According to the 2017 SurveyEngine extension study, these were also popular ways of finding out about heritage.

How do people think the heritage system can be improved?

All three studies demonstrate that people are interested in seeing heritage protected. It is also clear that there is a community appetite for more and better information about heritage and the heritage conservation system.

One of the questions in the SurveyEngine asset specific choice modelling study asked how government could operate differently to protect heritage. The second most frequent response (after *'I don't know'*) was that management needed to change and the authorities responsible for heritage protection needed to be reorganised. There were a number of responses that described inefficiency of governance, ineffective enforcement and excessive complexity.

There appears to be a desire in the community to see stricter regulations, higher penalties and better enforcement of heritage controls. Between 65 and 80 percent of people wanted to see higher penalties for unlawful construction works, and there was strong support for court orders and fines to coerce landowners to remediate properties that had been deliberately neglected. This is also reflected in people's perceptions of threats or risks to heritage – more than 46 percent of people felt that over development was a threat/risk, followed by poor management and enforcement.

These results indicate that there is strong support amongst Victorians for heritage protection, and there is significant scope for improving community engagement with this field of public policy through better promotion and education.

What is the benefit of the Victorian government investing in heritage?

At an estimated value of $1.1 billion, Victoria's heritage stock generates an annual flow of more than $40 million in benefits for the community (calculated at a yield of 4%). This flow relates only to WTP for cultural, educational and other purely heritage services. It does not include collateral benefits, for example, support for tourism exports or underwriting the wider cultural 'brand' of Melbourne.

The State Government provides ongoing direct support for heritage bodies. In 2017 this included $4.2million for Heritage Victoria's operating budget (including staff costs), and a contribution of $500,000 to the Heritage Council's operating budget. There is a strong case for further investment in heritage identification and protection, on cost benefit grounds.

1. INTRODUCTION

Victoria's heritage is rich and diverse. There are currently over 2,300 heritage places and objects which are considered to have state significance and over 170,000 places identified as having local level significance. This includes buildings, monuments, objects, gardens, cemeteries, landscapes, shipwrecks and archaeological sites.

This heritage provides a range of economic, social and environmental benefits to Victorians. Understanding the value of heritage places and objects to Victorians is essential when seeking to promote the value of conserving and interpreting heritage to governments, business and community. It also provides an important platform for the development of future business cases that seek investment in Victoria's cultural heritage places and objects.

In 2005, the Allen Consulting Group (ACG) released the report '*Valuing the priceless: the value of historic heritage in Australia*'. This study was an important milestone in the heritage valuation literature as it proved the efficacy of using choice modelling as a means of eliciting the community's willingness to pay (WTP) for heritage outcomes.

However, with the benefit of hindsight it is now clear that the ACG survey method needs to be further developed. A key issue with the 2005 work is that it does not provide the means for the practical valuation of heritage outcomes in the context of specific planning or investment situations.

Considering these methodological issues, and that the study was completed more than ten years ago, the Department of Environment, Land, Water and Planning (DELWP) and the Heritage Council of Victoria (Heritage Council) commissioned SGS and SurveyEngine GmbH (SurveyEngine) to update this research to ensure assumptions and data remain relevant, and to develop a tool that would allow for practical valuation of specific heritage assets. This was to ensure continued credibility when demonstrating why Victoria's heritage is important to the economic growth of Victoria, the social capital of communities and the State's environmental sustainability objectives.

Specifically, the objectives of this project were to:

- understand how Victorians view and value historic cultural heritage
- inform consideration of existing and future protection and conservation measures
- underpin decisions about investment in heritage, and
- provide baseline data for future surveys of community heritage values and studies that measure the benefits of heritage conservation.

1.1 This report

A number of outputs have been produced during the course of this study. These reports are included in the appendix and are listed below:

- The Value of Heritage: Literature Review
- Valuing Victoria's Heritage: Annotated Bibliography
- Valuing Victoria's Heritage: Methodology
- Victorian Heritage Valuations 2017
- ACG Heritage Valuation Replication Results

This report synthesises the key elements and results of these background reports. The remainder of this report is structured as follows:

- Chapter 2 provides an overview of the overall project methodology
- Chapter 3 summarises the literature on heritage values and the current protection mechanisms in Australia and Victoria
- Chapter 4 summarises the key findings from the new choice modelling survey showing updated willingness to pay and community values in Victoria for heritage objects and places,
- Chapter 5 presents the findings from the replication study which reproduced the ACG methodology including analysis of similarities and differences between the two studies, and
- Chapter 6 presents concluding remarks and policy implications.

2. METHOD

This chapter provides an overview of the methodology used for the Valuing Victoria's Heritage study including the replication of a 2005 study and the development and implementation of a new choice modelling survey.

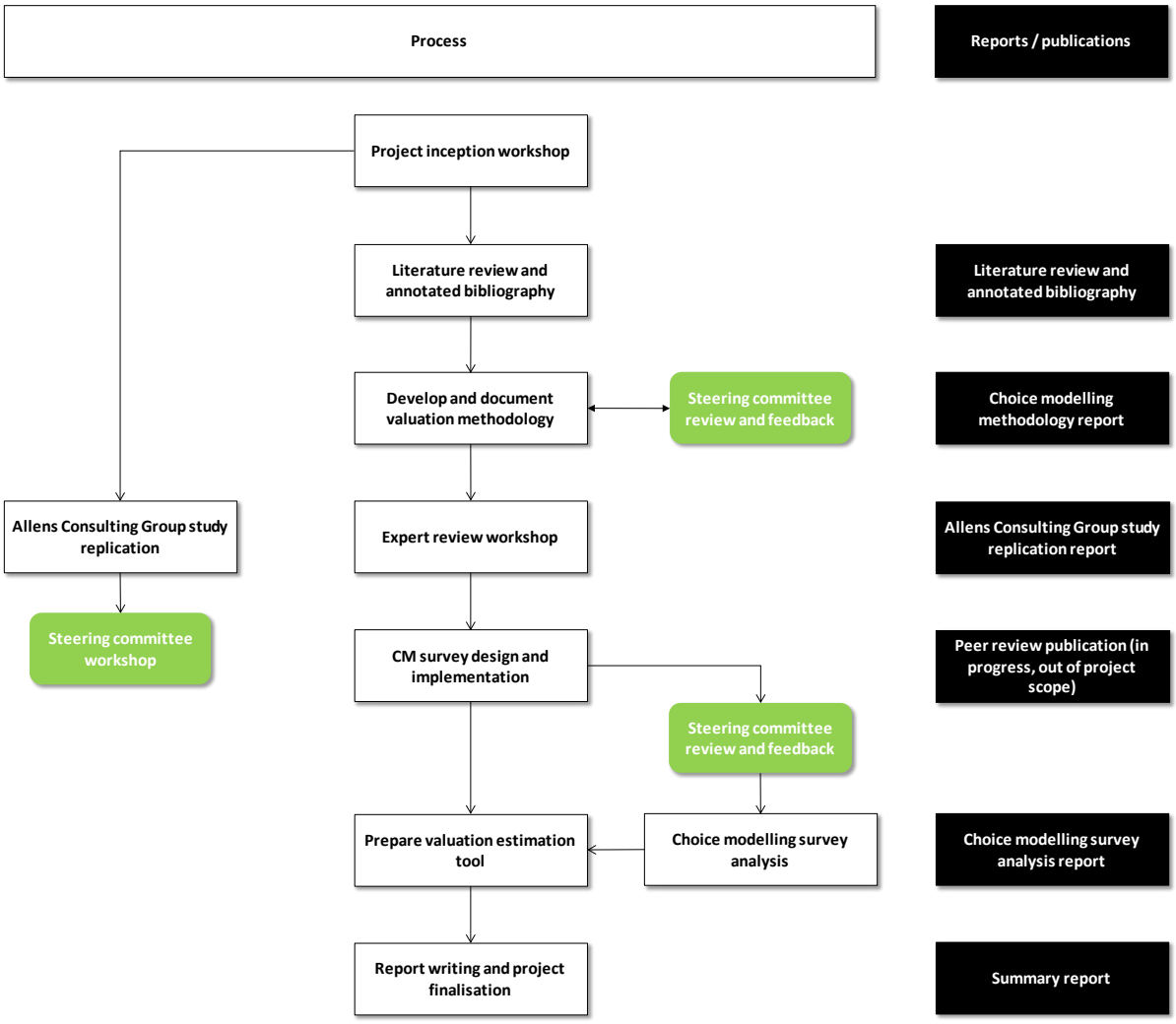
2.1 Overview

The methodology for the project was designed to produce both an estimate of the value of Victoria's heritage and a set of default numbers that can be readily applied in business cases and regulatory initiatives designed to preserve or promote heritage benefits. This includes use in Planning Panels and VCAT submissions, as well Regulatory Impact Statements (RIS) and funding proposals considered through the State Government's budget process.

The approach involved not only developing a new study to satisfy the project requirements, but also replicating the 2005 ACG study. The replication study was to investigate the extent of the change in estimates of community valuation of heritage that could have taken place in the last decade as a result of changes in public preferences and affluence, achievements of past conservation policies, and the availability of substitutes.

Figure 1 shows the steps undertaken for the study with a description of each step following.

FIGURE 1: PROJECT METHODOLOGY



2.2 Steps

Project inception workshop

The project inception workshop enabled a full briefing on the policy background to the study and confirmed the project's objectives and requirements.

The workshop was an opportunity for DELWP and the Heritage Council to share key internal research it held.

Literature review and annotated bibliography

The consultant team undertook a literature review to update the findings in the ACG report. This task was desk top based, but included feedback from key academics in Australasia and elsewhere, as well as from acknowledged experts or leaders within heritage peak bodies and interest groups.

To provide best possible guidance in method design, the scope of the literature search was broadened to measure a range of cultural and social values, as opposed to being strictly confined to heritage assets.

Output

An overview of the literature review and annotated bibliography are included in Chapter 3 of this Summary Report. The full reports: 'The Value of Heritage: Literature Review' and 'Valuing Victoria's Heritage: Annotated Bibliography' are located in Appendix B and Appendix C.

Develop and document valuation methodology

Based on the literature review, our critique of previous valuation methodologies and the application of first principles utility theory, the consultant team then documented the proposed research methodology to be applied in the current project.

The methodology report:

- Recaps on the definition of 'heritage value'
- Summarises methodological issues as revealed via the literature search, the interviews and the consultant team's internal discussions
- Establishes the purpose and objectives of the proposed research method, and
- Describes the research method in some detail, including the sampling strategy and approach to Choice Modelling (CM).

Output

A brief overview of the methodology is described in Chapter 3. A detailed choice modelling methodology report: 'Valuing Victoria's Heritage: Methodology' is located in Appendix D.

Steering committee review and feedback

An iterative process of steering committee review and refinement was undertaken to finalise the study methodology, particularly for the survey design.

Expert review workshop

The choice modelling methodology was also critiqued and further developed through a workshop of selected academics and economists with expertise in cost benefit analysis and statistically robust consumer research and other technical stake holders as agreed at the project inception meeting. The results of this workshop are reported in the Choice Modelling Analysis report prepared by SurveyEngine.

This was designed to rigorously test the robustness of the planned research method.

Choice modelling survey design and implementation

Based on the agreed method, an operational plan for the choice modelling survey was developed including:

- A finalised sampling strategy
- Identification of specific heritage assets to be used in the choice modelling questions, and
- Resolution of the wording of the choice modelling questions.

The survey instruments were pilot tested for intelligibility and user friendliness, through circulation to internally identified respondents.

Following resolution of issues, the survey was put into the field and the resultant data stored into a multi-use format.

Output

The refinements to the choice modelling methodology is described in the report detailing the full results and analysis: 'Victorian Heritage Valuations 2017', located in Appendix E.

A practical valuation guide is located in Appendix F.

Steering committee review and feedback

Once the choice modelling survey was completed, a workshop was held with the steering committee and representatives from Department of Environment, Land, Water and Planning, The Heritage Council of Victoria, The Department of Premier and Cabinet and the City of Melbourne. Given the breadth of data collected, the workshop was to identify the key priorities for reporting and analysis by those who would be most likely to use the tool. This provided a framework for analysing the survey results.

Choice modelling survey analysis

With the data collected, extensive analysis was undertaken by SurveyEngine to identify specific willingness to pay for a series of attributes, and to observe trends in attitudinal questions. This was converted into a stand alone tool which can be used to estimate the willingness to pay for individual buildings based on their specific attributes. Analysis also looked at how results varied across demographics.

Output

A summary of the findings of the choice modelling survey are presented in Chapter 4. A report detailing the full results and analysis: 'Victorian Heritage Valuations 2017' is located in Appendix E.

Prepare valuation estimation tool

A key focus of the analysis of the survey results was the development of a practical tool for the valuation of heritage assets in the context of business cases, planning initiatives and regulatory impact statements.

The tool enables various characteristics of a heritage building to be selected, along with its current and proposed protection level. The tool can then be used to calculate the willingness of the Victorian community to pay for the change in protection.

Allen Consulting Group (ACG) study replication

The 2005 Allen Consulting Group study 'Valuing the priceless: the value of historic heritage in Australia' was replicated. The principal difference in the replication is that only Victorian

residents were used rather than drawing participants from across Australia, as occurred for the ACG study.

Output

An overview of the findings from the replication study are included in Chapter 5 of this Summary Report. The full replication study: 'ACG Heritage Valuation Replication Results', is located in Appendix A.

Steering committee workshop

Once the replication study data was collected and analysed a workshop was held with the steering committee to present some of the key findings and identify the implications.

Report writing and project finalisation

The final stage of the project was to summarise the study stages and findings in this report. The report brings together:

- The overall project methodology
- Background material on the theory of heritage valuation and existing national, state and local heritage protection mechanisms from the literature review
- The key results of the replication study and how they differ from the 2005 ACG study
- Documentation of the key findings from the updated survey, and
- A concluding section on key implications.

3. VALUING HERITAGE: CONTEXT

This chapter includes an overview of policies relevant to the protection of post contact heritage and a concise review of current literature relating to the cultural and economic value of historic heritage.

3.1 Context

In recent decades, the urban and socio-political fabric of our societies has been shaped by a range of inexorable global forces. Climate change, urbanisation and population growth, mass migration, the restructuring of the global economy and the advent of the smart city have all had significant repercussions for the way communities and governments approach the built environment.[1]

Cities are increasingly viewed as living, dynamic and complex systems comprising rich layers of history and collective memory. Embedded in cities as an intricate fabric, woven from threads of the past and present, are not only our histories, but our plans, projections and desires for the future.

UNESCO views cities as the 'most powerful engines of human development' and highlights the hope placed in urban areas to determine mankind's future. [2] In this context, culture is a 'powerful strategic asset' capable of creating cities and urban futures that are more 'inclusive, creative and sustainable'.[3]

Culture, which encompasses cultural heritage, is increasingly viewed as integral to sustainable development and, as argued by Hawkes, is the 'fourth pillar' of sustainability. [4]

What is historic heritage?

Heritage is all the things that make up Australia's identity—our spirit and ingenuity, our historic buildings, and our unique, living landscapes. Our heritage is a legacy from our past, a living, integral part of life today, and the stories and places we pass on to future generations[5].

Definitions of heritage can be nuanced. However, heritage is generally understood to mean 'what we inherit, and what society retains of this inheritance'.[6] For UNESCO, built heritage is treated as a 'productive asset' transmitting knowledge from one generation to the next. DELWP and the Heritage Council define historic heritage as contact and post-contact places and objects that can include buildings, monuments, gardens, landscapes, archaeological sites and many other types of assets which embody aesthetic, archaeological, architectural, historic, scientific or social values.

A popular understanding of historic heritage is as an endowment from one generation to the next. While this understanding has been critiqued by some academic authors as 'patriarchal and socially constructed', it is generally accepted. [7]

[1] Christopher Tilley, 'Introduction: Identity, place, landscape and heritage.' *Journal of Material Culture,* 11, No. 1-2 (2006): 7-32.
[2] I Bokova, Forward to *Global Report on Culture for Sustainable Development' United Nations Educational, Scientific and Cultural Organisation* (UNESCO), (2015). ONLINE SOURCE
[3] Ibid (2015):5
[4] Jon Hawkes, 2001. The fourth pillar of sustainability: culture's essential role in public planning. Common Ground.
[5] Australian Government Department of the Environment. '*Plan for a Cleaner environment*' , (DoE, Canberra, 2016)
[6] The Allen Consulting Group, *Valuing the Priceless: The Value of Historic Heritage in Australia* (2005): p.1
[7] Laurent Dalmas, Vincent Geronimi, Jean-Francois Noël, and Jessy Tsang King Sang. "Economic evaluation of urban heritage: An inclusive approach under a sustainability perspective." *Journal of Cultural Heritage*, 16, no. 5 (2015): 681-687.

For Harvey, society's approach to heritage has been an evolutionary process, shaped by society's experience of time and space and 'societal changes associated with the colonial and post-colonial experience'.[8]

Since the 1990s, the concept of historic heritage has shifted towards a more holistic understanding of historic heritage as part of a 'cultural ecosystem'.[9] The field of cultural economics has explored the concept of 'cultural capital', drawing parallels between cultural and natural capital. [10] In this way, cultural economics has drawn on environmental and ecological discourses to consider new ways of measuring intrinsic value and factoring in intergenerational equity.[11]

Aligning historic heritage with sustainability discourse has resulted in a greater emphasis and awareness in recent years on sustainable urban development, corporate ethics and social responsibility.[12] This is reflected in the 'landscape based approach to architectural heritage management' employed and promoted by the United Nations and European Union.[13]

A key issue in defining heritage is defining what counts as heritage. Academics have tended to emphasise the negotiated nature of what counts as heritage, and are critical of how defining heritage assets is 'bound up with elite power, specifically the power of experts'[14] referred to by Laura Jane Smith[15] as the 'authorised heritage discourse'.

Historic preservation and sustainable development

A new development in the valuation of heritage has been an increased awareness of the role of historic heritage in sustainable development.

Armitage et al. argue that while Australia has a well-developed system of heritage management it has been 'slow to adapt to its responsibilities under international treaties in the area of sustainable practices in the property field'. [16]

Bandarin et al. [17] probing the relevance of cultural heritage for contemporary society in a postmodern context suggest it is intrinsically tied to visions for a sustainable future and adaptive reuse. Radoine [18] supports the emergence of a vision for sustainable development which 'combines heritage, contemporary design and environmental awareness'. In this vein, the practice of urban conservation of historic heritage in itself can offer the following benefits:[19]

- New approaches and instruments to achieve urban and environmental sustainability
- Unlock local knowledge, creativity and wellbeing (support the knowledge economy), and
- Bring together a range of public and private stakeholders.

The environmental benefits of adaptive reuse featured prominently across the most recent literature on cultural built heritage. A number of academics have made compelling arguments for the adaptive reuse of heritage from a sustainability viewpoint and outlined the following benefits:

- Extending the lifecycle of buildings as opposed to demolition and new construction

[8] David Harvey, 'Heritage pasts and heritage presents: temporality, meaning and the scope of heritage studies.' *International Journal of Heritage Studies*, 7(4), (2010): 319-338.
[9] Xavier Greffe, 'Is heritage an asset or a liability?' *Journal of Cultural Heritage*, 5, no. 3 (2004): 301-309.
[10] Throsby, D., Why should economists be interested in cultural policy? *Economic Record*, 88(s1), (2012): 107
[11] Ibid
[12] UNESCO (2015):40
[13] Loes Veldpaus, Ana R. Pereira Roders, and Bernard JF Colenbrander, 'Urban heritage: putting the past into the future.' *The Historic Environment: Policy & Practice*, 4, no. 1 (2013): 3-18.
[14] H. Graham, R. Mason, A. and Newman, *Literature Review: Historic Environment, Sense of Place and Social Capital*, Commissioned for English Heritage. (2009)
[15] Laura Jane Smith, *The Uses of Heritage*, (London 2006)
[16] Lynne Armitage and Janine Irons, "The values of built heritage." *Property Management*, 31, no. 3 (2013): 246.
[17] Francesco Bandarin, and Ron van Oers, 'The Historic Urban Landscape: Preserving Heritage in an Urban Century.' *The Historic Urban Landscape: Managing Heritage in an Urban Century* (2012): 175-193.
[18] Hassan Radoine, 'Planning and Shaping the Urban Form through a Cultural Approach' *Global Report for Sustainable Urban Development* (UNESCO 2015) 5: 169
[19] Global Report on Culture for Sustainable Development. (United Nations Educational, Scientific and Cultural Organisation (UNESCO), 2015). ONLINE SOURCE

- Efficient use of resources (reduced carbon)[20] , and
- Reuse of a historic building is more sustainable than LEED certified[21] new construction.[22]

Armitage et al. argue that as yet, there is poor recognition of the tools to measure the value of a heritage asset's social and cultural contribution to sustainability.[23]

Donovan Rypkema is a world leading expert on the economic benefits of heritage preservation. He has also described how historic preservation is fundamental to sustainable development. Some of the key reasons identified by Rypkema include[24:]

- Repairing and rebuilding historic features in buildings such as windows means that money is spent locally rather than at an out of state or international manufacturing plant (environmental sustainability)
- Retention of the original built form fabric helps maintain the character of a historic neighbourhood (cultural sustainability)
- Due to their relative affordability, historic buildings are often used as incubators for small businesses allowing these enterprises to make a sizeable contribution to the local economy (economic sustainability)
- Using US examples, new construction generates fewer jobs than the same level of expenditure on rehabilitation of historic buildings (economic benefit), and
- Properties located in local historic districts appreciate at a greater rate than properties in the same local market that are not in historic districts. Historic districts also tend to be less susceptible to changes in the real estate market (economic benefit).

3.2 Historic Heritage Protection

Federal Government Historic Heritage Protection

The Environment Protection and Biodiversity Conservation Act of 1999 (EPBC) provides for the listing of natural, historic or indigenous places that are of outstanding national heritage value to Australia. Historic heritage that is of international significance is included in the world heritage list and are declared world heritage properties. The National Heritage List includes natural, historic and Indigenous places of outstanding heritage value, while the Commonwealth Heritage List comprises natural, Indigenous and historic heritage places on Commonwealth lands and waters or under Australian Government control. Once a heritage place is listed, a number of conditions are applied that ensure that the values of the place are protected and conserved for future generations.

The EPBC Act also provides for the preparation of management plans which establish the significant heritage values of a place, and, how the values will be managed. The Australian Government provides funding for a range of activities to protect Australia's heritage. This includes competitive funding programs such as the Community Heritage and Icons Grant and the Protection of National Historic Sites Program as well as discretionary/ad hoc/non-competitive grants such as the Historic Shipwrecks Program and the National Trusts Partnership Program.

Victorian Government Historic Heritage Protection

Post contact heritage places and objects of state significant are protected through inclusion in the Victorian Heritage Register (the Register). Places or objects listed in the Register cannot

[20] Esther HK Yung, and Edwin HW Chan, 'Implementation challenges to the adaptive reuse of heritage buildings: Towards the goals of sustainable, low carbon cities.' *Habitat International*, 36, no. 3 (2012): 352-361.
[21] LEED (Leadership in Energy and Environmental Design) is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts
[22] Sarah Laskow, 'Why historic buildings are greener than LEED certified new ones, *The Daily Grind'* (2012). Available online: https://www.good.is/articles/why-historic-buildings-are-greener-than-new-leed-certified-ones
[23] Armitage et al,(2013): 255
[24] Donovan Rypkema, 'Sustainability, Smart Growth and Historic Preservation', presentation given at the Historic Districts Council Annual Conference in New York City, on March 10, 2007

be altered in any way without a permit or permit exemption to ensure they survive for future generations to appreciate.

The *Heritage Act 2017* establishes the Register as well as the Heritage Council of Victoria (Heritage Council). The Heritage Council is an independent statutory authority that lists places and objects of state-wide cultural heritage significance in the Victorian Heritage Register and hears appeals on registration matters and permits issued. For the Heritage Council to include a place or object in the Register at least one of the following criteria must be met:

a) Importance to the course, or pattern, of Victoria's cultural history
b) Possession of uncommon, rare or endangered aspects of Victoria's cultural history
c) Potential to yield information that will contribute to an understanding of Victoria's cultural history
d) Importance in demonstrating the principal characteristics of a class of cultural places and objects
e) Importance in exhibiting particular aesthetic characteristics
f) Importance in demonstrating a high degree of creative or technical achievement at a particular period
g) Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
h) Special association with the life or works of a person, or group of persons, of importance in Victoria's history.

The work of the Heritage Council is supported by Heritage Victoria, the Victorian State Government's principal cultural (post contact) heritage agency. Heritage Victoria is part of the Department of Environment, Land, Water and Planning (DELWP). It identifies, protects and interprets Victoria's most significant cultural heritage resources and gives advice on heritage matters to private owners, local and State government, industry and the community. Its primary functions are to:

- Administer the *Heritage Act 2017*
- Maintain the Victorian Heritage Register
- Recommend places and objects for inclusion in the Victorian Heritage Register as part of the assessment and registration processes
- Issue permits to alter or make other changes to heritage places and objects
- Manage historic shipwrecks and artefacts
- Protect Victoria's archaeological heritage, and
- Help conserve significant objects and collections.

Local Historic Heritage Protection

Post contact heritage places with significance to a local area are protected by local councils via listing on a schedule to the Heritage Overlay in the Council's planning scheme. The purpose of the Heritage Overlay is:

- To conserve and enhance heritage places of natural or cultural significance
- To conserve and enhance those elements which contribute to the significance of heritage places
- To ensure that development does not adversely affect the significance of heritage places, and
- To conserve specified heritage places by allowing a use that would otherwise be prohibited if this will demonstrably assist with the conservation of the significance of the heritage place.

The Heritage Overlay could apply to individual buildings or to an area. A heritage place listed in the schedule to the Overlay could include a site, area, building, group of buildings,

structure, archaeological site, tree, garden, geological formation, fossil site, habitat or other place of natural or cultural significance and its associated land.[25]

The protection afforded by the Overlay varies in each instance but, at a minimum, requires a permit for any works.

The local Council is responsible for identifying and including places on the schedule to the Heritage Overlay. They are also responsible for issuing planning permits for the use and development of local heritage places under the *Planning and Environment Act 1987*.

3.3 Cultural value and significance of historic heritage

History and heritage are essential elements of all cultures, as reflected in the ideas, materials and habits passed through time. In this way, cultural values are 'a part of the very notion of heritage' and pertain to the shared meanings associated with historic heritage.[26]

The value of a heritage place, site, landscape or object is commonly referred to as its cultural significance.[27] Cultural value/significance is a broad term which encompasses the aesthetic, historic, scientific, symbolic and social or spiritual value of cultural heritage for past, present and future generations.[28]

The socio-cultural values embodied by the term 'cultural significance' have a range of associated benefits that are often intangible and not necessarily quantifiable. There have been a number of approaches taken to categorising sociocultural values over time. Current trends observed in the literature tend to agree on the typology of sociocultural values outlined in Table 1.

TABLE 1: SOCIOCULTURAL VALUES

VALUE	DEFINITION
Historic	The building or site provides a connectedness with the past and reveals the origins of the present
Aesthetic	The building or site possess and displays beauty. This may include the relationship of the site to the landscape in which it is situated and environmental qualities relevant to the site and surrounds.
Scientific	The building or area is important as a source or object for scholarly study
Spiritual	The building or site contributes to the sense of identity, awe, delight, wonderment, religious recognition or connection with the infinite
Symbolic	The building or site conveys meaning and information that helps the community to assert its cultural individuality
Social	The building or site contributes to social sustainability and cohesion in the community, helping to identify the group values that make the community a desirable place in which to live and work.

Source: Throsby David "Heritage Economics: A Conceptual Framework" Urban Development Series, The World Bank (2012).

3.4 Economic value of heritage

Mason observes that 'economic valuing is one of the most powerful ways through which society identifies, assesses and decides on the relative value of things'.[29] There are a number of well-established economic values with regards to historic heritage which are described in Table 2.

[25] Heritage Council and Heritage Victoria, "The Heritage Overlay: Guidelines – Introduction"p5. https://www.heritage.vic.gov.au/__data/assets/pdf_file/0022/55543/Introduction.pdf
[26] Randall Mason, 'Assessing values in conservation planning: methodological issues and choices.' *Assessing the Values of Cultural Heritage,* Ed. Marta de la Torre, (The Getty Conservation Institute, Los Angeles, 2002): 5-30.
[27] The Allen Consulting Group, (2005): p1
[28] Ibid;
[29] Mason, (2002): 12

It is suggested that each of the use and non-use benefits identified are capable of 'increasing welfare' and ought to be considered in any analysis of cultural value.[30]

Serageldin argues that there is a spectrum of decreasing tangibility' of value to individuals, with direct use having the highest tangibility and bequest value having the lowest tangibility.[31]

TABLE 2: ECONOMIC VALUES

VALUE		DEFINITION
USE	Direct	Direct worth of buildings as a private good. This embodies their potential to accommodate residential, commercial, services or other uses with demand in the property markets and for which consumers will be willing to pay a premium rent due to the heritage value of the asset.
	Indirect	Value accruing to others (passive use)
NON-USE	Existence	Communities value the existence of the heritage, even though they may not directly consume its services, and are willing to invest resources for its safeguarding
	Option	Communities wish to ensure that their members or others will have access to the heritage in future, and are prepared to commit resources for its safeguarding
	Bequest	Communities wish to bestow the heritage for future generations, so devote resources to its conservation

Source: Eduardo Rojas "Governance in Historic City Core Regeneration Projects" Urban Development Series. The World Bank (2012).

The following section defines and discusses uses and non-use economic values in greater detail.

Use Value

Direct user value

Direct use values are also defined as market values, and can typically be assigned a price. For heritage assets, the use values 'refer to the goods and services that flow from it that are tradable and priceable in existing markets'.[32]

Historic heritage has direct use value as a physical asset capable of accommodating and earning revenue from a range of residential, commercial and other uses.

The heritage element of physical assets and objects often adds value to the primary use as people may 'derive additional value from viewing, visiting and/or living and working in a heritage place.'[33]

The direct use value of heritage assets (places and objects) has a number of quantifiable direct benefits including the stimulation of economic activity and increased labour force productivity, increased tourism and opportunities for recreation, leisure and entertainment.[34]

The argument that heritage assets can extract premium rents for residential and commercial uses should be tempered with an understanding of the capital expenditure and ongoing operational costs associated with maintaining the asset. Whether a heritage listing elevates property values or 'creates a negative impact' by restricting property rights is contested across the literature.[35]

[30] The Allen Consulting Group,(2005):p5
[31] Ismail Serageldin, 'Cultural heritage as public good.' *Global Public Goods*(1999): 240.
[32] Mason, (2002)
[33] Serageldin,(1999): 4
[34] The Allen Consulting Group (2005)
[35] Armitage et al., (2013): 252

In some development contexts, heritage is viewed a liability by public and private property owners.[36] In recent years, UNESCO has endeavoured to promote urban heritage's contribution to sustainable development and shift perceptions to a view of historic heritage as a development asset for the city.[37]

However, as suggested by the Allen Consulting Group (ACG)[38], there are sometimes trade-offs to be made between the degree of place conservation and the intensity of use proposed for an asset.

Indirect user value

The indirect use value of historic heritage is best defined as external or 'passive use' or the value accruing to others.[39] A non-use value can occur 'without any direct consumption' whereby 'individuals can derive benefit from a heritage place despite never physically entering or viewing the place but from mere reflection or association'.[40]

Indirect value relates to the more subtle and less quantifiable values that are relevant to the users who do not specifically live or work in the heritage structure but for whom the property forms a familiar and defining element of the community and is associated with regular community life. The property may define the community image that is projected to visitors and, in turn, may increase the overall appeal of the community. The presence of an appealing heritage building can increase the visual amenity of a street and/or the wider neighbourhood. Indirect benefits of a heritage site can include the social benefits derived from having a recognisable and iconic local building that can act as a landmark and meeting place that encourages social interaction.

Throsby suggests the most promising approaches to measuring cultural value is to break the category down into components 'for which measurement scales might be devised'[41]. These are:

- Aesthetic value
- Spiritual value
- Social value
- Historic value
- Symbolic value, and
- Authenticity value.

More specific indirect benefits accruing from indirect user value may include:[42]

- Community image
- Environmental quality
- Aesthetic quality
- Increase in the capital value of existing (non heritage) assets
- Social interaction
- Educational benefits
- Impact of heritage designation on property values, and
- Spill-over benefits from tourism.[43]

Non-Use Value

Non-use values are also referred to as non-market values. As with indirect user value, they are not traded in markets and are not readily assigned a price. Many of the sociocultural values

[36] Eduardo Rojas "Governance in Historic City Core Regeneration Projects" Urban Development Series. The World Bank (2012): 199.
[37] Global Report on Culture for Sustainable Development. (United Nations Educational, Scientific and Cultural Organisation (UNESCO), 2015).
[38] The Allen Consulting Group (2005)
[39] Rojas, (2012):199
[40] Armitage et al., (2013): 249
[41] David Throsby, 'Heritage Economics: A Conceptual Framework' *Urban Development Series*, The World Bank (2012).
[42] Serageldin, (1999): 48
[43] Armitage et al., (2013)

discussed above can be categorised as non-use values. These values can be expressed as economic values due to individual's willingness to pay to acquire them and/or protect them.

Option value

The option value of heritage can be defined as 'someone's wish to preserve the possibility (the option) that he or she might consume the heritage services at some future time'.[44]

Bequest value

The bequest value refers to the historic legacy of historic heritage and is encapsulated by the resources communities are prepared to allocate to its ongoing preservation. It stems from the desire to bequeath a heritage asset to future generations. This cultural and historical legacy stems from the feeling of obligation and responsibility shared by individuals in communities that it is right to protect and pass down our historical places for those that have not had the chance to experience them.

Existence/intrinsic value

'Intrinsic value' is a much less tangible value of heritage. It typically involves the perceptions of individuals as to how a heritage property contributes to the basic and essential elements of a local community. The presence of these intrinsic values can help form the identity of an area and the identity of people who live within it.

Serageldin argues that the 'estimation of existence values is not a senseless academic exercise' and without due rigour can lead to the significant understating of the value of heritage.[45]

It is proposed that cultural historic heritage requires a similar approach to that taken in environmental economics to estimate the existence value of biodiversity.[46]

Methods for assessing the value of historic heritage

There are a number of methods that can be applied to assess the value of heritage. These include hedonic pricing methods, travel cost methods, maintenance cost methods and contingent valuation.

Contingent valuation primarily involves surveying people with regards to their willingness to pay for received benefits from cultural heritage or alternately, willingness to accept compensation for their loss.

Choice modelling is a type of contingent valuation, and has been described as having a 'powerful and detailed capacity of evaluation' for cultural assets.[47]

An evaluation of the different methods available for assessing the value of cultural heritage are included in the literature review report.

Choice modelling was identified as the most appropriate method for eliciting people's willingness to pay for cultural historic heritage assets and is detailed further on the following page.

[44] Mason, (2002)
[45] Serageldin (1999): 47
[46] Ibid: 48
[47] Susana Mourato and Massimiliano Mazzanti "Economic Valuation of Cultural Heritage: Evidence and Prospects" (2002): 64

Choice modelling

Qualitative research is often required to gauge the existence value of an historic heritage asset by assessing the willingness of members of a community to pay (WTP). Already widely applied in environmental economics, the use of choice modelling in the evaluation of cultural heritage assets is still relatively new.

Choice modelling uses a number of survey based methodologies for the measurement of preferences for non-market goods. Respondents to surveys are typically asked to do one of the following:

- Rank the various alternatives in order of preference
- Rate each alternative according to a preference scale, and
- Choose their most preferred alternative out of a set.

A price is attached to one of the attributes of a good and therefore willingness to pay can be deduced from respondents' ranks, ratings and choices. In this way, choice modelling allows for 'multidimensional changes' and overcomes the limitations traditionally associated with contingent valuation.

Limitations of choice modelling

According to Susana Mourato and Massimiliano Mazzanti[48] choice modelling is also prone to the difficulties associated with survey techniques encountered by contingent modelling. In addition, respondents may experience 'cognitive difficulty' with making 'complex choices between bundles with many attributes and levels'.

Other issues can include:

- Respondent fatigue/ overburdening respondents with information, and
- Choosing options with reference to one attribute only (ignoring others).

Related Reports

The full reports: 'The Value of Heritage: Literature Review' and 'Valuing Victoria's Heritage: Annotated Bibliography' are located in Appendix B and Appendix C.

A detailed choice modelling methodology report: 'Valuing Victoria's Heritage: Methodology' is located in Appendix D.

[48] Mourato et al., (2002)

4. CHOICE MODELLING FINDINGS

This chapter presents the results of the new choice modelling survey which elicited willingness to pay for individual heritage assets. The variations between different types of heritage assets are described, as are how the results varied for different segments of the population.

4.1 The survey

The survey was conducted over a three week period in October 2017. Out of a total sample of 3,397 responses, 1,611 surveys were completed, an effective response rate of 47 percent (see Table 3). Age and gender were actively managed to ensure the final sample was close to the 2016 Victorian census figures. This is a robust, statistically significant sample.

TABLE 3: SURVEY SAMPLE STATISTICS

Completion statistics	Number
Incomplete	1,231
Screened out	216
Over quota	145
Quality screenouts	194
Useable completes	1,611
Total	3,397

Source: SurveyEngine, 2017

Key to the approach taken in this choice modelling survey is the acknowledgement that different types of heritage assets have different properties, threats, protection types and development options. Separating the heritage assets by type allows departure from the 'one size fits all' problems with the ACG (2005) study results, particularly when comparing heritage objects to heritage buildings and sites.

Separating the heritage assets by types means only relevant attributes need be tested. This means that there are less constraints on the attributes selection as they do not need to be generally applicable to every type of heritage asset. Furthermore, the choice tasks are more meaningful and credible for respondents and the results more useful for users of the final results.

Another key change with respect to the ACG (2005) study was valuing protection of individual heritage assets, rather than evaluating policies that simultaneously target thousands of them. Incremental valuation, for example reflecting the particular protection of an additional heritage asset, of a given type and set of characteristics, is more aligned to supporting most policy decisions (e.g. extending protection to an additional asset, or allowing for a specific development of a building that could have some cultural heritage value). This bottom-up approach is more appropriate than the top-down approach, in which conservation as a whole is being valued and used to infer values resulting from marginal changes across the portfolio of assets.

4.2 Willingness to pay

The results of the choice modelling are expressed as a willingness to pay for a range of attributes. Attributes include the type of place, site or object; age; condition; significance; and level of public access. However, willingness to pay for individual attributes cannot be applied individually. Accurate estimates of willingness to pay can only be calculated from the total willingness to pay for a particular site – the aggregate of one attribute from each category. i.e. the type of site + the type of landscape + the type of historic heritage + age + condition + significance + protection + distance + controls + access + places = the willingness to pay for sites. The following tables illustrate the spectrum of willingness to pay across a series of hypothetical examples.

Heritage valuation simulator

The heritage valuation simulator is an online/Excel based tool which enables the attributes of the place, site, landscape or object to be selected and the resulting willingness to pay displayed.

Application

Assume that Heritage Victoria wishes to assess the heritage value of a given building for the community residing within a particular municipality.

The building has the following characteristics.

- A residential building
- 19th Century
- Excellent condition
- Locally significant
- There are no visitation, noise or traffic controls applied
- Access is private only
- No permit is required to interior alterations.

Based on the heritage valuation simulator, the monetary value for this would be $68.05 per person. The online/Excel simulator tool associated with this report allows for easy computation of willingness to pay for any heritage asset based on these attributes.

Convention for Use

In order to generate a conservative and more realistic assessment of the value of heritage assets, appropriate population catchments must be applied. For valuing an individual asset, the appropriate catchment is the area in which there are no other substitutable/similar heritage assets. For heritage assets in the state register, either municipal population catchments, or 3km population catchments are the most appropriate catchment to use for generating a valuation. For locally significant heritage assets, a smaller catchment is required. Appendix F provides detailed guidance on determining appropriate population catchments.

Willingness to pay for heritage buildings and places

The following tables show the application of the heritage valuation simulator to a range of places, sites and landscapes. The relevant attributes are identified and the resulting willingness to pay displayed. All examples are hypothetical and are presented here as a way of demonstrating how the tool works.

TABLE 4: RESIDENTIAL PLACES

	Example 1	Example 2	Example 3	Example 4
Type	Residential building	Residential building	Residential building	Residential building
Age	19th century (1803-1900)	1971 to present	19th century (1803-1900)	Interwar period (1919-45)
Condition	Excellent condition	Excellent condition	Poor condition	Good condition
Significance	State significance	State significance	State significance	National significance
Protection	No further development permitted	No further development permitted	No further development permitted	Sympathetic alternations subject to approval
Distance	3 km	3 km	3 km	20km
Controls	Control of visitation	Control of visitation	Control of visitation	Control of visitation; Control of traffic
Access	Public access – with entry fee	Public access – with entry fee	Private access only	Public access free
Total willingness to pay	$77.60	$31.74	$11.36	$23.63

Source: SurveyEngine, 2017; SGS Economics and Planning, 2017

TABLE 5: COMMERCIAL/RETAIL PLACES

	Example 1	Example 2	Example 3	Example 4
Type	Commercial/retail building	Commercial/retail building	Industrial building	Industrial building
Age	Early 20th century (1901-18)	Post war (1946-70)	19th century (1803-1900)	Interwar period (1919-45)
Condition	Good condition	Poor condition	Excellent condition	Very poor condition
Significance	Local significance	State significance	State significance	National significance
Protection	No permit required for interior alterations	Sympathetic alternations subject to approval	No permit required for interior alterations	No permit required for interior alterations
Distance	10 km	2 km	2 km	1 km
Controls	No controls	Control of noise	Control of traffic; Control of noise	Control of visitation
Access	Private access only	Public access – with entry fee	Public access free	Private access only
Total willingness to pay	$18.53	$20.01	$173.90	$0.07

Source: SurveyEngine, 2017; SGS Economics and Planning, 2017

TABLE 6: OTHER SITES

	Example 1	Example 2	Example 3	Example 4
Type	Garden	Theatre	Sports centre	Hotel
Age	19th century (1803-1900)	19th century (1803-1900)	Post war (1946-70)	1971 to present
Condition	Good condition	Excellent condition	Excellent condition	Poor condition
Significance	State significance	National significance	State significance	Local significance
Protection	No further development permitted	Sympathetic alternations subject to approval	Sympathetic alternations subject to approval	No permit required for interior alterations
Distance	15 km	4 km	10 km	3 km
Controls	Control of traffic	Control of noise	No controls	Control of visitation
Access	Public access – with entry fee	Public access – for commercial purposes	Public access – for commercial purposes	Private access only
Total willingness to pay	$115.67	$161.74	$31.98	$60.09

Source: SurveyEngine, 2017; SGS Economics and Planning, 2017

TABLE 7: CIVIC PLACES

	Example 1	Example 2	Example 3	Example 4
Type	Place of worship	School	Gallery	Police/gaol
Age	Interwar period (1919-45)	Early 20th century (1901-18)	1971 to present	19th century (1803-1900)
Condition	Good condition	Poor condition	Good condition	Excellent condition
Significance	National significance	Local significance	State significance	National significance
Protection	No permit required for interior alterations	Sympathetic alternations subject to approval	Sympathetic alternations subject to approval	No further development permitted
Distance	13 km	9 km	2 km	40 km
Controls	No controls	No controls	Control of visitation; Control of noise	Control of traffic
Access	Public access free	Private access only	Public access – with entry fee	Public access free
Total willingness to pay	$42.26	$40.12	$109.08	$155.64

Source: SurveyEngine, 2017; SGS Economics and Planning, 2017

TABLE 8: LANDSCAPES

	Example 1	Example 2	Example 3	Example 4
Type	Residential landscape	Lighthouse	Trees	Agricultural landscape
Age	19th century (1803-1900)	Early 20th century (1901-18)	19th century (1803-1900)	Post war (1946-70)
Condition	Excellent condition	Poor condition	Good condition	Excellent condition
Significance	National significance	National significance	Local significance	State significance
Protection	No further development permitted	No further development permitted	No further development permitted	Sympathetic alterations subject to approval
Distance	1 km	84 km	26 km	52 km
Controls	Control of traffic	No controls	No controls	Control to traffic; Control of visitation
Access	Public access – with entry fee	Public access free	Private access only	Public access free
Total willingness to pay	$1.43	$122.40	$89.71	$6.42

Source: SurveyEngine, 2017; SGS Economics and Planning, 2017

TABLE 9: HISTORIC SITES

	Example 1	Example 2	Example 3	Example 4	Example 5
Type	Settlement site	Goldrush site	Mining site	Shipwreck	Military site
Age	Interwar period (1919-45)	19th century (1803-1900)	Early 20th century (1901-18)	Post war (1946-70)	Early 20th century (1901-18)
Condition	Excellent condition	Good condition	Poor condition	Poor condition	Good condition
Significance	Local significance	National significance	National significance	State significance	National significance
Protection	Sympathetic alterations subject to approval	No further development permitted	No further development permitted	No further development permitted	No further development permitted
Distance	4 km	12 km	4 km	37 km	16 km
Controls	No controls	Control of traffic; Control of visitation	Control of traffic; Control of visitation; Control of noise	No controls	Control of traffic
Access	Private access only	Public access – with entry fee	Public access – with entry fee	Public access – free	Public access – with entry fee
Total willingness to pay	$4.24	$197.21	$52.16	$15.07	$151.08

Source: SurveyEngine, 2017; SGS Economics and Planning, 2017

Key observations of results

These results indicate:

- The **type** of site, landscape, historical site or object had among the largest effects on preference. Mining, industrial and commercial sites had the lowest value across the categories.
- For building **age**, the older a site is, the higher value placed on it. This is similar for landscapes and historical sites although both with a small reversal for post war 1956-1970 period.
- For all three site categories, sites were valued more the better **condition** they were in.
- In the **significance** category, for Buildings, respondents were willing to pay more if the site was state listed, compared to either a national or a local heritage overlay. For historic sites, local significance (those covered by a local heritage overlay) had a relatively higher value. For landscapes the differences were negligible.
- When considering **distance**, for Buildings and Landscapes, proximity held a higher value with willingness to pay dropping off the further the site was away. However, for Historic sites the effect was not significant.
- For Buildings and Landscapes, **protection** that allowed sympathetic alterations subject to permit held a higher value than no development. This was reversed for Historic sites, with alterations having a negative effect.
- **Control** of visitation was only significant and positive for historic sites. The effect of security measures on all types of sites was not significant. Noise control was positive but only significant for Buildings. Control of traffic was universally highly positive for all sites.
- Public **access** to all sites had a higher value than private access for all sites. It is noteworthy that entry fees on historic sites were highly preferred to free public access.

Willingness to pay for historic objects

Table 10 shows the application of the heritage valuation simulator to a range of real historic objects. The attributes are arbitrarily assigned and the resulting willingness to pay displayed. All examples are therefore hypothetical. They are presented here as a way of demonstrating how the tool works. The VHR only includes a small number of objects which are difficult to group into categories. Therefore specific, actual objects were tested in the survey rather than randomised building/place profiles.

TABLE 10: HISTORIC OBJECTS

	Example 1	Example 2	Example 3	Example 4
Type	Eureka Flag	The Taggerty Buffet Car	ANZAC memorabilia	Marianne Gibson Quilt
Condition	Very poor condition	Good condition	Excellent condition	Good condition
Rating	Victorian significance	Victorian significance	Victorian significance	Victorian significance
Significance	Integral to a Heritage Place	Significant in its own right	Significant in its own right	Significant in its own right
Context	Part of an exhibition	Part of an exhibition	Archived	Part of an exhibition
Custodian	Medium to large	Small sized community	Private collection no access	Small sized community
Changes	Works to conserve/protect allowed	Works to conserve/protect allowed	Works to conserve/protect allowed	Works to conserve/protect allowed
Total willingness to pay	$129.07	$104.64	$79.65	$48.85

Source: SurveyEngine, 2017; SGS Economics and Planning, 2017

Key observations of results

These results indicate:

- The **object type** had among the largest effects on preference. Consistent with military sites in the above models, Anzac Memorabilia also held a higher value than other assets.
- Better **condition** was preferred over poorer condition. However, an anomalous result indicated that an object in 'excellent condition' had a negative WTP. This result should be examined closely for possible causes which may include the estimation by respondents that an object in excellent condition did not require additional protection.
- The value of **context** was related to an object's connection to a site and use. Archived objects or exhibited objects had a negative WTP.
- Value of **custodianship** was directly related to the custodian's size and access. Private custodianship with no access had the lowest WTP.
- More stringent levels of control over **relocation and changes** had a higher value.

Segment differences

Male respondents had a higher preference for objects that were of local significance.

Older respondents (people over 60) were correlated with the following:

- higher preference for older heritage sites with a peak at 1902-1918
- higher preference for sites in 'excellent' condition
- lower preference for industrial sites, halls, schools, hospitals, theatres, sports centres, goldrush and mining sites
- lower preference for objects including the Minton peacock, ANZAC memorabilia and the buffet car
- higher preference for noise controls (and security measures at 95 percent), and
- higher preference for objects being looked after by a community collection.

Wealthier respondents (gross weekly income over $1,900) had:

- a lower value for protecting bridges, and
- a higher value on residential buildings.

University Educated respondents had:

- higher value for local significance
- higher preference for modern buildings (at 95 percent), and
- more negative value for ANZAC memorabilia (at 95percent).

Respondents from metropolitan Melbourne had:

- higher preference for noise and traffic controls, and
- higher preference for archiving objects.

Willingness to Pay for a portfolio of heritage assets.

The SurveyEngine Heritage Valuation Simulation Tool can also be used to estimate the value of portfolios of heritage assets. Detailed guidance on this is provided in Appendix F.

In order to estimate the WTP by Victorians for the protection of Victoria's heritage assets, a lower bound (minimum WTP) and upper bound (maximum WTP) were identified. The true value falls between these two estimates.

Using this methodology, SurveyEngine estimates the value of Victoria's heritage as approximately $1.1 billion (falling within the range of $1.05 and $1.18 billion). This methodology is documented in greater detail in Appendix F.

This method can also be used to assess people's WTP for smaller portfolios of assets, for example, heritage buildings within an urban renewal area. The population catchment for an urban renewal area is likely to be the local government area. It is important to note that the values used must be derived from the most highly valued asset that exists within the catchment. Ie. If the heritage assets in the urban renewal area are all industrial heritage buildings, the maximum individual WTP for protection of a single asset will be closer to $100.

Case study application

To illustrate the use of the simulator in assessing the value of individual heritage sites, we have applied it to a registered building in Southbank, although the attributes of this building have been hypothesised., SGS used the ABS's 2016 Census of Population data and applied the assumption that, on average, residents in the City of Melbourne live 1 kilometre from Southbank.

The Robur Tea Building (Figure 2) was built between 1887 and 1888 as a warehouse, and is currently used as a massage parlour and spa salon. This building is one of the few remaining traces of the industrial and warehousing establishments that until the 1970s and 1980s dominated the south bank of the Yarra.

The Robur Tea Building is in excellent condition and is registered as an asset of State significance.

FIGURE 2: ROBUR TEA BUILDING, SOUTHBANK

Source: Victorian Heritage Data Base

Based on the attributes listed in the Victorian Heritage Data Base, and the estimated adult population of the City of Melbourne, the simulator returns a value of heritage of some $20 million for the Tea House, for the City of Melbourne community only (see Table 11).

As noted above, SGS recommends the application of a convention for determining population catchments, where only the local/municipal population is used to determine the value of heritage assets. Appropriate population catchments are where there are no other substitutable heritage assets within the same area. This is further described in Appendix F.

TABLE 11: VALUATION OF SOUTHBANK HERITAGE ASSET

	Robur Tea House
Willingness to Pay (per resident adult)	$168
Resident adults (City of Melbourne)	121,818
Total heritage value	**$20,431,315**

Source: SurveyEngine, 2017; SGS Economics and Planning, 2017

4.3 Usage and attitudinal responses

The survey also asked usage and attitudinal questions. The results provide insight into:

- How respondents access information on heritage
- Understanding of the heritage protection system
- Views on funding and enforcement
- Views on different types of heritage assets
- Promotion of heritage protection, and
- Understanding of what heritage is.

Accessing information

Most respondents reported they find out about heritage via the internet, with television and radio the next most popular format (Table 12). A related question identified that approximately 50 percent of respondents reported that they enjoy reading about heritage on social media.

TABLE 12: SURVEY RESULTS FOR THE QUESTION 'HOW DO YOU MAINLY FIND OUT ABOUT HERITAGE'*

Answer	Frequency	Percent
Print media (newspapers / magazines)	572	35.5%
Television / radio	678	42.1%
Social media	371	23.0%
Internet	853	52.9%
Friends / relatives / colleagues	412	25.6%
Other	57	3.5%
Not interested	185	11.5%

Source: SurveyEngine, 2017

* More than one answer allowed

However, less than a quarter of respondents reported that they use the Heritage Council website as a source of information, with almost 70 percent stating they do not use the website. This is not necessarily because people find the website difficult to use, but more likely that they are unaware of it. Only 17 percent of respondents said they find the website difficult to use to find information on the Heritage Register. Thirty one percent stated they find it easy to use and the remaining 52 percent stated they do not know whether finding information on the Heritage Register is easy via the website.

The heritage protection system

The responses indicate a lack of knowledge about how the heritage protection system currently works, and the process of listing a heritage asset on the Heritage Register.

Table 13 shows that over 50 percent of respondents (776) either did not know or had no comment in response to the strengths and weaknesses of the heritage protection system and how it could be improved. Of the remaining responses, the highest responses were that the current systems works well (8 percent), there is ineffectual enforcement (7 percent) and that the identification of local significance through planning overlays is weak and/or should be replaced with a state only system (5 percent).

TABLE 13: SURVEY RESULTS FOR THE QUESTION 'WHAT ARE THE STRENGTHS AND WEAKNESSES OF THE CURRENT TWO TIERED APPROACH[49] TO HERITAGE PROTECTION IN VICTORIA? WHAT WORKS WELL AND WHAT COULD BE IMPROVED?'*

Answer	Frequency	Percent
Don't know / no comment	776	51%
Status quo – it works well	127	8%
Weakness – ineffectual enforcement	104	7%
Weakness – overlays weak or should be abandoned in favour of a state scheme	80	5%
Weakness – too complicated or inconsistent	62	4%
Strength – is more effective or allows more places to be protected	57	4%
Improvement – increased awareness and communication with community	56	4%
Improvement – owners of heritage properties should be better supported	41	3%
Weakness – two tiers is slow, inefficient and bureaucratic	34	2%
Weakness – too broad and too many overlays	33	2%
Weakness – council's lack of effectiveness and consistency	32	2%
Better management or prioritisation	31	2%
Improvement – less tax / more Government funding or purchase	22	1%
Weakness – too narrow, too few are protected, gaps in protection	17	1%
Improvement – there could be more protection or controls	15	1%
Strengths – better use of local or council knowledge	10	1%
Strength – allows more flexibility and differentiation of heritage assets	10	1%

Source: SurveyEngine, 2017

* More than one answer allowed

When considering whether government could operate differently to protect heritage (Table 14), again the highest response was that respondents did not know (47 percent). Of respondents who did provide suggestions, 20 percent identified changes to governance arrangements, nine percent identified enforcement, penalties and legal settings, and seven percent suggested more information and awareness of heritage assets.

[49] A definition for the two tiered approach to heritage protection was included in the survey.

TABLE 14: SURVEY RESULTS FOR THE QUESTION 'ARE THERE WAYS THAT THE GOVERNMENT COULD OPERATE DIFFERENTLY TO PROTECT HERITAGE?'*

Answer	Frequency	Percent
Don't know	761	47%
Manage differently or reorganise the authorities	286	18%
Better enforcement, tougher penalties or stricter laws	142	9%
More information and better awareness of heritage sites	105	7%
Fund Heritage better	65	4%
Empty comment, opinion or vague statement	64	4%
Support or consider owners and occupiers more	55	3%
Non specific yes	50	3%
Better community consultation	43	3%
Happy with the current situation	30	2%
Acquisition of heritage properties	10	1%

Source: SurveyEngine, 2017

* More than one answer allowed

The community's role in the process of listing assets on the Heritage Register also does not appear to be well understood with more than half of respondents (54 percent) identifying that they did not know whether the process allowed for adequate community input. Two thirds (67 percent) of respondents also reported that they did not know if there were types of heritage assets that were currently under represented on heritage lists (Table 15) possibly indicating a lack of knowledge or interest in the heritage protection system. Twenty percent of respondents believe that there are no heritage asset types currently under represented, and 13 percent believing there are.

TABLE 15: SURVEY RESULTS FOR THE QUESTION 'IN YOUR OPINION, ARE THERE TYPES OF HERITAGE ASSETS THAT ARE UNDER REPRESENTED ON HERITAGE LISTS?'

Answer	Frequency	Percent
Yes	208	13%
No	323	20%
I don't know	1,080	67%
Total	1,611	100%

Source: SurveyEngine, 2017

Funding and enforcement

The survey shows overwhelming agreement (79 percent) that government should look after heritage places and objects. There was also a belief that it was unfair that individual landowners are asked to look after heritage places for the whole community. This shows a belief that heritage assets bring benefit to the whole community and therefore government should have a leading role in their protection.

Considering these views, it is therefore not surprising that there is support for government funding for a broad range of heritage assets and that funding should extend to private owners of heritage assets.

Table 16 shows almost half of respondents believe government funding should be available for heritage assets of both state and local significance. Only a quarter of respondents believed state funding should be limited to state significant assets only.

TABLE 16: SURVEY RESULTS FOR THE QUESTION 'SHOULD GOVERNMENT FUNDED GRANTS ONLY BE AVAILABLE FOR PLACES INCLUDED IN THE VICTORIAN HERITAGE REGISTER OR SHOULD THEY BE BROADENED TO INCLUDE PLACES IN HERITAGE OVERLAYS OF LOCAL GOVERNMENT PLANNING SCHEMES?'

Answer	Frequency	Percent
Victorian Heritage Register only	411	25%
Victorian Heritage Register and others	734	46%
I don't know	467	29%
Total	1,612	100%

Source: SurveyEngine, 2017

Table 17 shows approximately 40 percent believe government funds should extend to private owners, even without a demonstration of public benefit. However, this view was not as universal with almost 35 percent stating it should not be.

TABLE 17: SURVEY RESULTS FOR THE QUESTION 'SHOULD THERE BE GOVERNMENT FUNDED GRANTS AVAILABLE TO PRIVATE OWNERS WITHOUT THEM HAVING TO DEMONSTRATE PUBLIC BENEFIT?'

Answer	Frequency	Percent
Yes	655	41%
No	563	35%
I don't know	394	24%
Total	1,612	100%

Source: SurveyEngine, 2017

When considering where additional funding on heritage should be directed, the two highest categories were 'protection and management of historic archaeological sites' (27 percent) and 'conservation management plans for heritage places and objects' (26 percent). Other categories that rated highly were 'digital recording of registered places and objects' (17 percent), 'interpretation of historic archaeological sites' (13 percent) and 'protection of shipwrecks' (12 percent).

Ineffectual enforcement has already been reported as the biggest weakness of the current system (Table 13) and better enforcement, tougher penalties and stricter laws the most commonly identified ways to better protect heritage (Table 14). Respondents were also asked whether penalties should be higher for owners of heritage assets who undertake unlawful construction with 72 percent of respondents agreeing and only 11 percent disagreeing. When considering an acceptable penalty for an owner of a heritage asset who has deliberately neglected the asset, 40 percent believed a council notice followed by fines until remediation was appropriate. Thirty seven percent believed a court order requiring remediation was appropriate. Only 14 percent believed no penalty should apply.

Different types of heritage assets

A number of questions were asked about the importance of protecting different types of heritage assets. This provides insight into the types of assets people believe are most worthy of protection.

Eighty five percent of respondents either strongly agree or somewhat agree that it is important to recognise all types of heritage places with only three percent disagreeing (Table 18).

TABLE 18: SURVEY RESULTS FOR THE QUESTION 'IT IS IMPORTANT TO RECOGNISE ALL TYPES OF HERITAGE PLACES (LANDSCAPES, OBJECTS, COLLECTIONS)'

Answer	Frequency	Percent
Strongly agree	745	46%
Somewhat agree	625	39%
Neither agree nor disagree	202	13%
somewhat disagree	25	2%
Strongly disagree	14	1%

Source: SurveyEngine, 2017

Respondents were also asked about specific types of archaeological heritage. For archaeological sites and for artefacts recovered from heritage places, a slightly higher percentage of respondents (88 percent and 89 percent respectively) strongly or somewhat agreed that this type of heritage was important to protect. For maritime/shipwreck heritage sites the percentage was slightly lower, at 79 percent.

Promotion of heritage protection

Many respondents thought that more should be done to promote heritage protection. Table 19 shows almost half of respondents believe not enough is being done to promote heritage in Victoria with only 19 percent agreeing that enough is being done. More than 70 percent of respondents identified that they would like to know the human interest stories behind heritage places and objects. This perhaps suggests a way of promoting heritage protection to the broader community.

TABLE 19: SURVEY RESULTS FOR THE QUESTION 'DO YOU THINK THERE IS ENOUGH DONE TO PROMOTE HERITAGE PROTECTION IN VICTORIA?'

Answer	Frequency	Percent
Yes	305	19%
No	779	48%
I don't know	527	33%
Total	1,611	100%

Source: SurveyEngine, 2017

Understanding of what heritage is

One of the most striking findings from the usage and attitudinal responses is the high percentage of respondents who answered 'I don't know' to some of the questions, potentially indicating a lack of understanding in how the Victorian heritage protection system currently works, how funding is allocated, what types of sites or objects are currently covered, or even a lack of knowledge of what heritage is.

This is further reinforced by the response to a question on whether respondents believe that what people consider to be heritage is too broad. The responses are evenly split with a third of people agreeing that what people consider to be heritage is too broad, a third believing it is not too broad and a third uncertain (Table 20). This could also suggest the scope of what people believe constitutes heritage varies significantly.

TABLE 20: SURVEY RESULTS FOR THE QUESTION 'DO YOU THINK THAT WHAT PEOPLE CONSIDER TO BE HERITAGE IS TOO BROAD?'

Answer	Frequency	Percent
Yes	551	34%
No	505	31%
I don't know	555	34%
Total	1,611	100%

Source: SurveyEngine, 2017

Related reports

A report detailing the full results and analysis: 'Victorian Heritage Valuations 2017' is located in Appendix E.

A practical valuation guide is located in Appendix F.

5. REPLICATION STUDY

This chapter presents the results of the survey which replicated the methods and structure of a 2005 study by the Allen Consulting Group which quantified the value of heritage places. Differences and similarities between the results of the 2005 study and the replication study are discussed as well as possible reasons for the differences.

5.1 ACG – Valuing the Priceless

In 2005, the Allen Consulting Group released 'Valuing the Priceless: the value of historic heritage in Australia' which used choice modelling to quantify the value of heritage places to the community.

The current project, sought to replicate as closely as possible both the methods and structure of the ACG survey. The purpose of this was to update the results and to provide insight into whether there had been any major shifts in how heritage is being valued by the community.

The principal difference between the two surveys is that the original ACG study was conducted Australia wide whereas this study was conducted in Victoria only.

The fieldwork for the replication study occurred over a two week period in September 2017. There were 566 useable responses provided out of a total sample of 1060, an effective response rate of 65 percent (see Table 21). The sample used was consistent with the population distribution identified in the 2016 Census.

TABLE 21: SURVEY SAMPLE STATISTICS

Respondent statistics	Number
Complete	566
Quality screenout	113
Technical screenout	9
Incomplete	372
Total sample	**1060**

Source: SurveyEngine, 2017

5.2 Similarities

In general, the results 12 years on align with the 2005 results, but there are some noteworthy departures from the patterns of responses found in 2005.

The tables and figures following show key findings from the 2005 and 2017 studies.

Respondents in both studies were conscious of the financial impost a heritage levy would mean for them should they choose a different level of heritage protection than currently provided. Both studies also found that respondent's Willingness to Pay (utility) is increased by:

- an increase in the number of heritage places protected
- an increase in the proportion of places that are in good condition, and
- an increase in the proportion of places that are accessible to the public.

Table 22 shows that respondents in both 2005 and 2017 believe that heritage has significant value. The overwhelming majority in both studies either 'strongly agree' or 'agree' that heritage has direct use, indirect use, option, existence and other non-use values.

TABLE 22: COMMUNITY VIEWS AND PERCEPTIONS OF HERITAGE RELATED VALUES, 2005 AND 2017

Value type	Statement	'Strongly agree' and 'Agree'		'Strongly disagree' and 'Disagree'		Neither agree or disagree	
		2005 (Aust)	2017 (Vic)	2005 (Aust)	2017 (Vic)	2005 (Aust)	2017 (Vic)
Direct use value	Looking after heritage is important in creating jobs and boosting the economy	56.1%	66.3%	11.0%	6.0%	32.9%	27.7%
Indirect use value	My life is richer for having the opportunity to visit or see heritage	78.7%	70.9%	4.6%	5.2%	16.8%	23.9%
Option value	It is important to protect heritage places even though I may never visit them	93.4%	82.3%	1.5%	1.5%	5.0%	16.2%
Existence value	Heritage is part of Australia's identity	92.3%	83.0%	5.3%	1.9%	2.3%	15.1%
	The historic houses in my area are an important part of the area's character and identity	80.2%	73.3%	5.2%	5.4%	14.5%	21.3%
Other non-use values	It is important to educate children about heritage	96.9%	89.2%	0.3%	0.7%	2.8%	10.0%

Source: Source: Allen Consulting Group, 2005; SurveyEngine, 2017.

Table 23 shows the implicit prices estimated for a range of attributes. It includes the 2005 reported values, 2005 values adjusted to account for inflation to 2017, and the 2017 study values.

The findings from this study broadly agree with the 2005 ACG study, although there appears to be some slippage in valuations placed on heritage. In general, average willingness to pay for the protection of additional places from loss is estimated to be $4.64 per person each year for every 1,000 places protected, compared to $5.53 in 2005. When inflation is considered, the difference is more considerable, with the original survey willingness to pay being equivalent to $7.47.

TABLE 23: IMPLICIT PRICES FOR HERITAGE CONSERVATION

Attribute	Annual price per person			Units
	2005 (reported) (Aust)	2005 (inflation adjusted)* (Aust)	2017 (Vic)	
Places protected	$5.53	$7.47	$4.64	Per 1,000 additional heritage places protected
Condition of places	$1.35	$2.46	$0.33	Per 1 percent increase in the proportion of places in good condition
Age mix of places	-$0.20	-$0.27	$0.14*	Per 1 percent increase in the proportion of places that are over 100 years of age
Accessibility of places	$3.60	$4.86	$1.86	Per 1 percent increase in the proportion of places that are publicly accessible
Development control				
Change to level 1	$39.50	$53.33	$26.55	Change from 'demolition permitted' to 'substantial modifications permitted but no demolition'
Change to level 2	$53.07	$71.65	$46.51	Change from 'demolition permitted' to 'minor modifications permitted only'
Change to level 3	$2.38	$3.21	$18.58	Change from 'demolition permitted' to 'no modifications permitted'

Source: Allen Consulting Group, 2005; SurveyEngine, 2017.

* Age Mix willingness to pay is not significant

* adjusted for inflation to 2017 equivalent

Respondents are also willing to pay for improvements to the condition and public accessibility of places. A one percentage point increase in the proportion of places that are accessible to the public is valued at $1.86 per person per year compared to $3.60 in 2005 ($4.86 in 2017 prices). As in 2005, this result indicates that people, on average, value accessibility more highly than condition.

Regarding Development Control, on average, respondents are willing to pay $26.55 per person per year to change the level of development control from one of 'demolition permitted' to a slightly more stringent protection policy of 'substantial modifications permitted — but no demolition'. This is comparable with the 2005 value of $39.50 per person. However, when inflation is considered, the difference becomes more significant, suggesting a decline in the valuing of development controls over this time period.

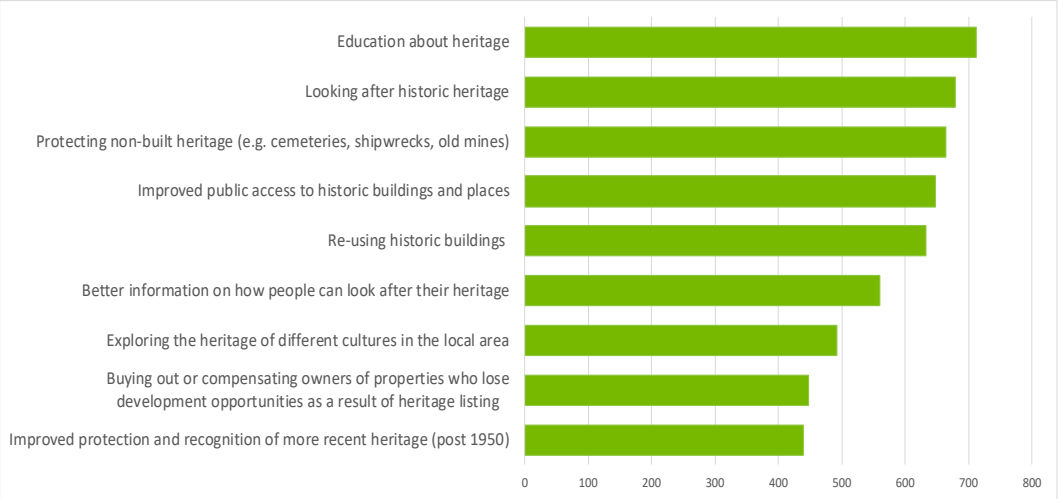
Respondents are willing to pay an additional $19.96 per person for a further tightening of controls such that only 'minor modifications' are permitted, this compares well with the 2005 figure of $13.57 per person (or $18.32 when adjusted for inflation).

Finally, going the next step to 'no modifications permitted' reduces utility in comparison with the 'minor modifications permitted' option. Relative to the 'no change' scenario in which demolition is permitted, it is worth $18.58 to respondents. This has the same sign as the 2005 study. However, in 2005 it was estimated that the no modifications option was worth a relatively modest amount of $2.38.

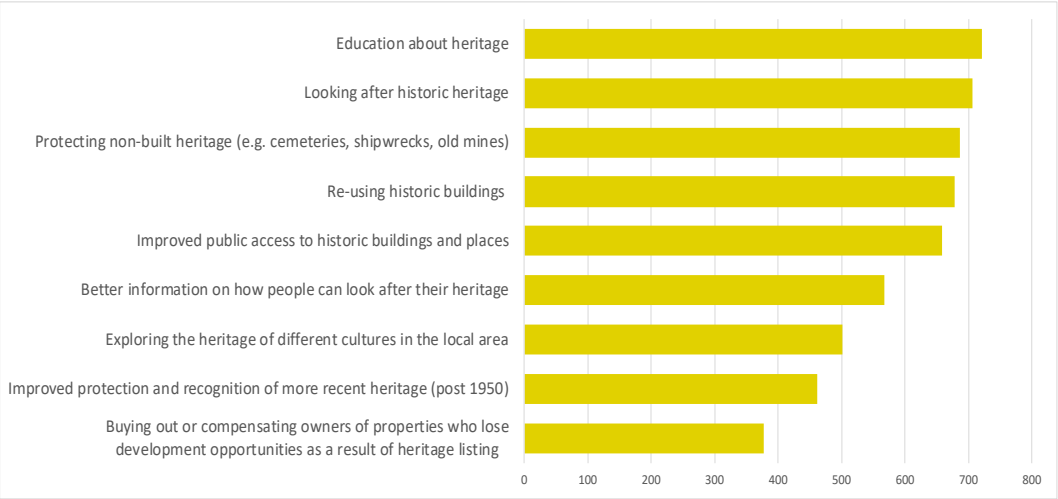
These results suggest that people perceive development controls to be an important policy instrument for protecting heritage. They are not in favour of demolition but value a system that allows property developers/owners the flexibility to undertake modifications that retain the utility of the asset.

FIGURE 3: SURVEY RESULTS FOR THE QUESTION 'IF MORE MONEY WAS TO BE SPENT ON HERITAGE ISSUES, WHICH OF THE FOLLOWING WOULD YOU CHOOSE', 2005 AND 2017

2005



2017



Source: Allen Consulting Group, 2005; SurveyEngine, 2017.

Figure 3 compares the results from 2005 and 2017 on what heritage issue people would prefer to see money spent on. The rank order of importance also remains largely unchanged with education, looking after historic heritage and protecting non-built heritage the top three responses in both surveys.

5.3 Differences

A few key changes are apparent between the two studies, principally a seemingly greater ambivalence towards heritage issues than in 2005. This is evident in several places: in the higher incidence of 'don't know' answers, approximately double the number of respondents selecting the 'no change' option in the models and a lower significance in some model estimates. This general trend is reinforced with the majority response that heritage protection is 'about right' rather than 'not enough is being done' as it was in 2005 (Figure 4).

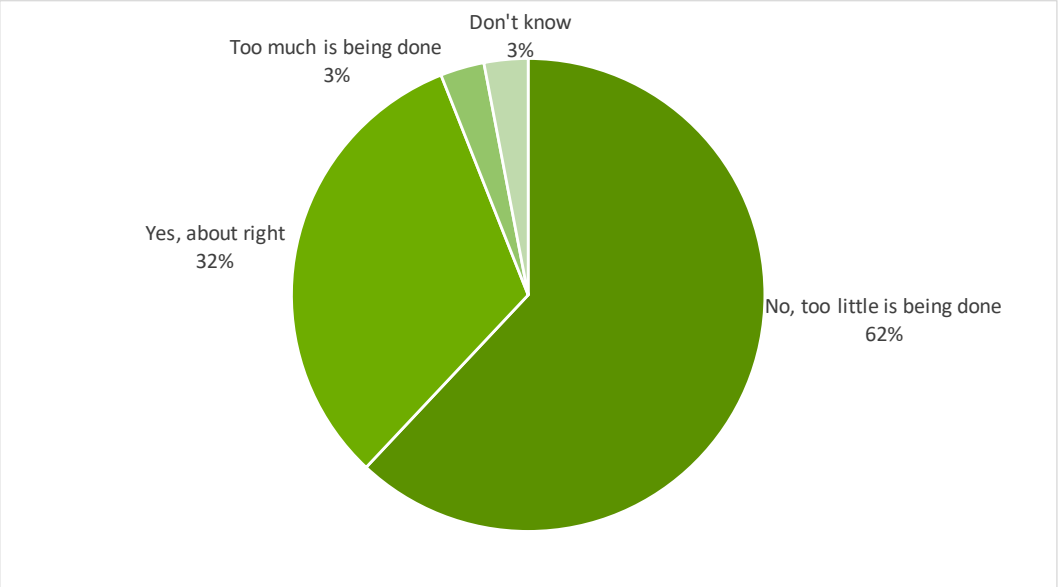
Finally reported rates of volunteerism for heritage activities, causes and club memberships have experienced a 50 percent decline since 2005 when comparing Victoria in 2017 to Australia wide in 2005. This decline needs to be considered in light of the different populations being sampled.

A 2016 study by Volunteering Australia found that over the previous 5 years, there had been a decline in volunteering, and people were increasingly time poor and facing greater barriers to volunteering[50]. The decline in volunteerism for heritage activities is much greater than the reported decline in volunteerism overall.

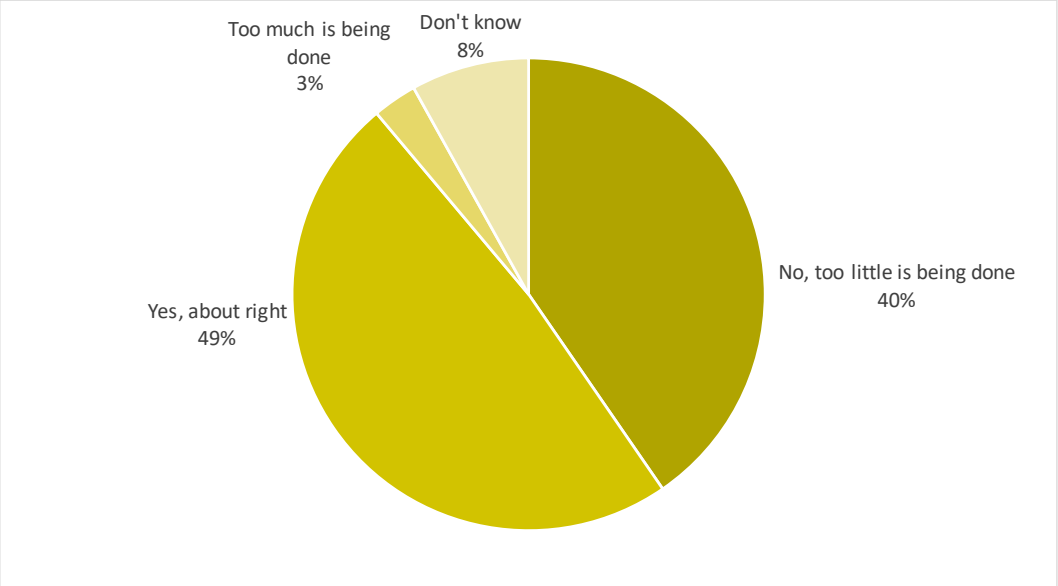
[50] http://www.volunteering.com.au/wp-content/uploads/2016/04/160406.CfV_.MediaRelease.StateofVolunteeringReport.v.1.0.pdf

FIGURE 4: SURVEY RESULTS FOR THE QUESTION 'DO YOU THINK ENOUGH IS BEING DONE TO PROTECT HISTORIC HERITAGE ACROSS AUSTRALIA'

2005



2017



Source: Allen Consulting Group, 2005; SurveyEngine, 2017.

5.4 Discussion

There may be several reasons for the changes in willingness to pay for heritage between the 2005 and 2017 study. As noted, the principal methodological difference between the two surveys is that the original ACG study was conducted Australia wide whereas this study was conducted on Victorian adults only. It is possible that the 2017 results are similar to the Victorian only responses from 2005. Without the raw data from the 2005 study, however, it is not possible to test this hypothesis.

Changes in internet access may also affect the profile of respondents. In 2005, internet use in Australia was approximately 50 percent. In 2017 this has risen to over 90 percent. Both the surveys in 2005 and 2017 were conducted online. This change in internet access means the 2017 survey was accessible by a more representative sample of the population. Combined with the increasing use of online panels[51] it is suggested that the 2017 survey may be more representative of the Victorian population than in 2005.

The willingness to pay for the protection of 1000 buildings declined significantly when adjusted for inflation. This difference may be a result of other economic and social issues becoming more pressing. For example, between 2005 and 2017 the Global Financial Crisis significantly impacted the economy and house prices have risen significantly, particularly when compared to income. Whilst people still value heritage and are willing to pay for its protection, economic and social changes may have influenced the relative value people attach to heritage and the amount they are willing to pay for its protection. Over this time period, concerns regarding climate change have also increased, and so it is likely that valuing heritage has become a lower priority in the face of greater financial insecurity and vulnerability to climate change. It is also possible that the community is placing a higher value on the adaptive reuse of heritage assets. This is reflected in issues papers and case studies prepared by the Heritage Council of Victoria on the opportunities and challenges of the benefits of adaptively reusing industrial heritage buildings.[52]

The overall consistency in results between the 2005 and 2017 study suggest that people perceive development controls to be an important policy instrument for protecting heritage.

Overall, the results of the two surveys indicate a consistent willingness to pay for the protection of heritage assets. Responses to attitudinal questions regarding the importance of heritage are also consistent, indicating that heritage assets are considered an important dimension of urban environments. While there is some variation in the results, the overwhelming majority in both studies either 'strongly agree' or 'agree' that heritage has direct use, indirect use, option, existence and other non-use values.

Interestingly, in 2005 over 60 percent of respondents thought not enough was being done to protect heritage. In 2017, this had dropped to 40 percent. This suggests that the general population in Victoria is largely satisfied with protection of heritage assets that has occurred during this time. However, given the difference between the sample populations (Australia versus Victoria) it is also possible that residents in other jurisdictions were more concerned that not enough was being done to protect heritage in 2005.

Related Report

The full replication study: 'ACG Heritage Valuation Replication Results', is located in Appendix A.

[51] An online panel is a sample of persons who have agreed to complete surveys via the Internet

[52] In 2014, an issues paper was prepared by the Heritage Council of Victoria, 'Adaptive Reuse of Industrial Heritage: Opportunities and Challenges' http://heritagecouncil.vic.gov.au/wp-content/uploads/2014/08/HV_IPAWsinglepgs.pdf

6. IMPLICATIONS FOR HERITAGE PROTECTION

Overview

This study provides insight into a number of pertinent issues for Heritage Victoria and the Heritage Council of Victoria. The results of the original ACG study in 2005, the replication of the ACG study by SurveyEngine in 2017 and the new Choice Modelling study undertaken by SurveyEngine in 2017 all contribute to improved understanding of these issues.

It is important to consider the methodological differences between each of these studies when analysing the consistencies and differences in their results. The 2005 ACG study was conducted Australia wide, while the 2017 replication study was only conducted in Victoria. Further, the SurveyEngine study involved an entirely new study methodology, with a focus on individual heritage assets, and a different suite of attitudinal questions.

What value do Victorians place on heritage?

The combined results of the three studies provide conclusive evidence that Victorians place significant value on the protection of heritage.

Using the asset specific WTP tool developed as part of this study, the capitalised value of the heritage services generated by the assets on the VHR is estimated to be in excess of **$1.1 billion**. This translates to roughly $0.45 million per asset on average, though it should be noted that there is a broad spectrum of valuations per item reflecting parameters of asset type, land use, condition and access.

In 2005, over 90 percent of people thought that 'It is important to protect heritage places even though I may never visit them'; 'Heritage is a part of Australia's identity'; and 'It is important to educate children about heritage'. In 2017, over 80 percent of Victorians also thought these same values were important.

In the 2005 ACG report, people in Australia indicated a willingness to pay of $7.47 (adjusted to 2017 prices) for every 1,000 additional heritage places protected. In the 2017 replication study, people in Victoria indicated an average willingness to pay of $4.64. This may indicate that people's average willingness to pay for the protection of additional places has declined though differences in survey scope and timing need to be borne in mind (see below).

Unlike the ACG 2005 study and the 2017 ACG replication study, the 2017 SurveyEngine study distinguished Victorians' willingness to pay for the protection of different types of historic sites, heritage landscapes, heritage places and historic objects. It provided a more nuanced tool to assess how people value heritage so that individual assets could be valued based on a specific range of attributes. The median WTP for the protection of these assets was found to be $118.13 per item per year, based on application of the valuation tool to a representative random sample of items on the VHR.

The 2017 SurveyEngine Study also found that over 75 percent of Victorians thought that owners who deliberately neglected heritage assets should be penalised, either by a court order requiring remediation, or a council notice followed by fines until remediation occurs. It also found that almost 80 percent thought that penalties for owners who undertake unlawful construction works (which would include demolition or extensive modification) should be

higher. This concern for protecting heritage assets through penalties and court involvement also indicates a strong valuation of heritage within the Victorian community.

In terms of willingness to pay, there was some significant variation across these studies. Willingness to pay is heavily influenced by the type of heritage asset in question. As noted, willingness to pay for the protection of 1,000 buildings/assets declined significantly between 2005 and 2017 when adjusted for inflation. This difference may be a result of other economic and social issues becoming more pressing. For example, between 2005 and 2017 the Global Financial Crisis significantly impacted the economy and house prices have risen substantially, particularly when compared to income. At the same time, growth in wages has been low while energy and utility costs have increased. Whilst people still value heritage and are willing to pay for its protection, economic and social changes may have influenced the relative value people attach to these assets. Over this time, concerns regarding climate change may have also increased. It may be that valuing heritage has become a lesser priority in the face of greater financial insecurity and vulnerability to climate change.

When the original ACG study, the 2017 ACG replication study and the 2017 SurveyEngine study are considered together, there is a clear message that people place a high value on heritage.

What aspects of heritage are more important to Victorians and why?

The SurveyEngine 2017 study revealed significant and specific preferences for particular types of heritage based on Victorians willingness to pay. These are described below.

Type of heritage asset

People tended to value civic buildings such as hotels, train stations and courthouses substantially more than residential buildings or commercial buildings. It is likely that the perceived public benefit associated with civic buildings was a key factor in people's willingness to pay for their protection. Places of worship and industrial buildings were also only weakly valued. Lighthouses were particularly highly valued, perhaps as a result of their visual significance in otherwise largely natural landscapes, while people were less willing to pay for the protection of residential, industrial/mining or agricultural landscapes.
Military sites and Anzac memorabilia were also highly valued. The military site valuation is consistent with Victoria's growing engagement with Anzac Day, as well as the ongoing construction of Australian identity associated with Anzac Day and other historic military engagements.

Gold Rush sites and the Eureka Flag (which is intrinsically connected with the Gold Rush) were also highly valued. The valuing of the Gold Rush may be directly linked to people's understanding of the essential role the Gold Rush had in the rapid and prosperous growth of Melbourne and other key regional towns such as Ballarat and Bendigo. Like military sites and Anzac memorabilia, this may be a consequence of broad public awareness and the prominence of these elements of history in school curriculums.

Other objects that were highly valued included the Electric Tram No. 13 and CSIRAC (an early computer). People's high willingness to pay for protection of the Electric Tram No. 13 could be attributed to trams forming a fundamental part of Melbourne's identity- no other city in Australia has enjoyed such a continuous and extensive tram network.

Age

People typically tended to value older heritage assets more than more recent ones. Nineteenth century buildings were consistently highly valued, while heritage assets from post 1971 were not. A potential cause of this is that people may only understand heritage in the context of something associated with a time before they were alive. It is possible that greater value is placed on 20th century historic assets as they become part of a more distant past.

It is also likely that the character of older heritage assets is valued- for example the opulent and architecturally extravagant buildings developed during the Gold Rush.

Condition

There was a linear and positive relationship between valuation and asset condition, with the exception of objects. For heritage sites and landscapes and historic sites, the better the condition the more people valued it. This suggests that through improving heritage assets, people will value them more, which makes a case for their protection.

The Willingness to Pay Heritage Valuation Simulator Tool developed as part of this project is most useful for providing insights into the relative valuation of different buildings, places, sites and objects in different conditions. Appendix F provides guidance on the using this tool.This is complemented by the replication study of 2017. The combination of these tools will allow agencies such as Heritage Victoria to design policy that best responds to the aspects of heritage that people value, and apply it at a broad scale.

Do Victorians understand the heritage system, and do they believe the heritage system is working well?

One of the most striking findings from the usage and attitudinal responses in the SurveyEngine study of 2017 is the high percentage of respondents who answered '*I don't know*' to some of the questions, potentially indicating a lack of understanding in how the Victorian heritage protection system currently works, how funding is allocated, what types of sites or objects are currently covered, or even a lack of knowledge of what heritage is.

The SurveyEngine study of 2017 provides substantial evidence that there is only a weak understanding of how the heritage system operates. There was low recognition and appreciation of the Victorian Heritage Register, heritage bodies (including Heritage Victoria) and the distinction between local heritage protection (through Planning Scheme Overlays) and State level protection.

Between 55 and 75 percent of people stated that they did not look for information about heritage issues on the Heritage Council website. Between 33 and 63 percent of people did not know whether information was easy to find on the Heritage Register. For both these questions, people over 55 were the least likely to use the Victorian Heritage Register or to find it easy to find information. At the same time, more than 50 percent of people use the internet to find out about heritage. There is a clear opportunity to lift awareness of the Victorian Government's heritage resources.

Over 70 percent of people stated that they wanted to know the human interest stories behind heritage places, and between 40 and 53 percent of people felt not enough was being done to promote heritage protection in Victoria. Again, people that were over 55 were more likely to feel not enough was being done. There was also a lack of awareness regarding heritage protection, with between 30 and 35 percent of people responding that they did not know if enough was being done to promote heritage protection. More than half of respondents could not identify strengths and weaknesses within the heritage protection system. This suggests that there is a general lack of awareness of heritage protection promotion in Victoria, and an opportunity to increase the profile of heritage protection activities undertaken by the Heritage Council.

Between 55 and 75 percent of people responded that they did not know if there were types of heritage assets that were under represented on heritage lists. It was again people in the over 55 category who were most likely to give this response. This suggests a widespread lack of understanding of the Heritage Register.

It is clear that Victorians have only weak awareness of the role of the Register in Victoria and they do not see it as a vehicle for heritage protection.

Further, when asked how government could operate differently to protect heritage, almost half of all responses were 'I don't know'. When asked whether the current state listing

process for heritage assets allowed for adequate community input, over 50 percent answered that they did not know.

In the 2005 ACG study, over 60 percent of respondents thought not enough was being done to protect heritage. In 2017, this was 40 percent. This suggests that the general population in Victoria is largely satisfied with protection of heritage assets. However, given the difference between the sample populations (Australia versus Victoria) it is also possible that residents in other jurisdictions were more concerned that not enough was being done to protect heritage in 2005.

The 2017 SurveyEngine study, which asked about the strengths and weaknesses of the current heritage system found, that of those who responded, the highest response was that the system works well.

While people may not have a good understanding of the governance of heritage protection in Victoria, there appears to be a general acceptance that the system is working well. This represents an opportunity to increase communication around the role of Heritage Victoria and the Heritage Council of Victoria and local government councils in protecting heritage. There is significant scope to increase public awareness of the Victorian Heritage Register, particularly since people are most likely to use the internet to find out about heritage. This could be supported through television and media as well as print public awareness campaigns, which were also popular ways of finding out about heritage.

How do Victorians think the heritage system can be improved?

All three studies indicate that people are interested in seeing heritage protected, and would like information about heritage to be more readily available.

The 2005 ACG study and 2017 ACG replication study asked people about what heritage issues people would like see more money spent on. The results across these two studies were very consistent, and indicated that '*heritage education*', '*looking after historic heritage*' and '*protecting non-built heritage*' were consistently the three main priorities.

The 2017 SurveyEngine study asked this same question. However, a different suite of possible responses was outlined. In this survey, by far the most frequent responses were '*Protection and management of historic archaeological sites*' and '*Conservation management plans for heritage places*'. This study also showed that the system could be improved by increasing awareness and communication.

The SurveyEngine study of 2017 asked a number of direct questions regarding the heritage system. When asked how government could operate differently to protect heritage, the second most frequent response (after *'I don't know'*) was that management needed to change and the authorities responsible for heritage protection needed to be reorganised. There were a number of responses that described inefficiency of governance, ineffective enforcement, and excessive complexity.

There were also a number of responses that indicated a desire to see stricter regulations, higher penalties and better enforcement of heritage regulations. Between 65 and 80 percent of people wanted to see higher penalties for unlawful construction works, and there was strong support for court orders and fines to coerce landowners to remediate properties that been deliberately neglected. This is also reflected in people's perceptions regarding threats or risks to heritage - over 46 percent of people felt that over development was a threat/risk, followed by poor management and enforcement.

These results indicate that there is strong community support for heritage protection, and there is significant scope for improving community engagement with heritage protection. People are interested in improved education around historic heritage. While considerable heritage resources are available online, people lack awareness of them. There is also support for increased regulation and enforcement to ensure heritage protection. This has to be

tempered with apparent concerns that current heritage management is ineffective and inefficient.

What is the benefit of the Victorian government investing in heritage

The SurveyEngine study of 2017 found Victorians were in overwhelming agreement that the government should ensure heritage places and objects are conserved. The majority of Victorians also felt it was unfair for individual landowners to look after heritage properties for the whole community. At the same time, there was ambivalence regarding the role of government funded grants for private owners where there were no demonstrated public benefits, with roughly equal numbers of Victorian's identifying a role as those who did not.

At an estimated value of $1.1 billion, Victoria's heritage stock generates an annual flow of more than $40 million in benefits for the community (calculated at a yield of 4%). This flow relates only to WTP for cultural, educational and other purely heritage services. It does not include collateral benefits, for example, support for tourism exports or underwriting the wider cultural 'brand' of Melbourne.

Heritage Victoria's operating budget for 2017 was $4.2 million (including staff costs), while the Heritage Council's operating budget was $500,000. There would appear to be a strong case for further investment in heritage identification and protection, on cost benefit grounds.

APPENDIX A

ACG Heritage Valuation Replication Results

survey engine

decision modelling technology

ACG Heritage Valuation Replication Results

Version

05.08.2017, Version 1.12 - Final

Authors

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Preface

This research report has been commissioned by Heritage Victoria and the Heritage Council of Victoria.

The views in this report reflect those of SurveyEngine GmbH and not necessarily those of Heritage Victoria and the Heritage Council of Victoria or their respective governments.

This report is part of a broader project 'Valuing Victoria's Heritage' also commissioned by Heritage Victoria and the Heritage Council of Victoria.

Contents

Executive Summary

This study faithfully replicates the methodology of the 2005 research report “Valuing the Priceless: The value of historic heritage in Australia” a report conducted by the Allen Consulting Group to measure Australians' value of Historic Heritage.

While every attempt was made to faithfully reproduce the methods and analysis, this study differed in a few key respects from the 2005 study, principally in that the sample was draw from Victorians only rather than Australia-wide.

In general, the results 12 years on marry well with the 2005 results. For most results, the rank-order of importance of aspects of heritage remains unchanged.

A few keys changes are apparent, namely a seemingly greater ambivalence towards heritage issues than in 2005. This is evident several places: in the higher incidence of 'don't know' answers, approximately double the number of respondents selecting the 'no change' option in the models and a lower significance in some model estimates. This general trend is reinforced with the majority response that heritage protection is 'about right' rather than 'not enough is being done' as is was in 2005. Finally reported rates of volunteerism for heritage activities, causes and club membership has experienced a 50% decline since 2005 when comparing Victoria in 2017 to Australia-wide in 2005.

This report is not intended to be a detailed comparison of the two studies, rather a standalone 'point in time' reflecting the current state of heritage value in Victoria in 2017 compared to 2005.

Nevertheless, this report has been structured to allow maximum ease of comparison with the 2005 study with the salient results Chapter 4 and Appendices in the 2005 report being replicated using same structure and naming conventions.

Chapter 1 - Background and Context

This study was conducted within the framework of a larger heritage valuation project 'Valuing Victoria's Heritage' commissioned jointly by Heritage Victoria and the Heritage Council of Victoria in 2017.

One of the aims of this project was to replicate the 2005 report “Valuing the Priceless. The Value of Historic Heritage”undertaken in 2005 by the Allen Consulting Group for the Heritage Chairs and Officials of Australia and New Zealand.

While the main 2017 study will introduce new methods and cover a broader array of heritage valuations, it was felt a faithful and independent replication of the 2005 ACG study should be performed and be reproduced in 2017 'as-is', so that any changes could be inferred without introducing incidental bias.

The principal difference in this replication is that only Victorian residents would be used in this valuation, however a commensurate number of Victorian respondents were used as were reported in the 2005 study.

This report is intended to be a standalone analysis of the current valuation of heritage using the 2005 methodology. A detailed comparison of the differences and interpretation of the causes is beyond the scope of this document, however, differences to the 2005 ACG study will be noted throughout this report.

Structure of this report

The ACG report contained chapters (1,2 and 3) that were concerned with definitions of heritage, economic valuation and previous measures to value heritage. These are not included in this report.

Chapter 4 and the appendix of the ACG report match Chapter 4 and the appendices of this report. For readability and comparison with the 2005 ACG report, the format, structure, order and labelling of tables and figures in this report are identical.

Chapter 2 - Differences to the 2005 study

This section outlines relevant changes to technology and demographics in Victoria since the original 2005 study. Some of these changes have impacted how this replication study was conducted and some may have an effect on interpretation of reasons the results may differ.

Omissions and Discrepancies

The original data used in the analysis of the ACG report was unavailable as were certain details about the specific methodology used to calculate Willingness-To-Pay. Where assumptions have been made in the analysis, they are noted within the report.

Two omissions and one discrepancy were found by replicating the study. These involved the raw model results (page 49 of the ACG report). Two critical model estimates (the number of places protected and the tax levy) were listed as 0.0000 making it not possible to re-calculate the WTP from the model provided. In addition an undocumented model estimate for 'Development Control levels' (line 5 of the model) was discovered that may be a typographical error in the report. As such any comparison in WTP should use the Attribute Implicit Prices (Table 4.3, page 33 of the 2005 ACG report) which agree with our WTP calculations, rather than the models.

In some cases in the ACG report, it is unclear how the ratings scales have been collapsed to infer the summary statements, in particular Box 4.1 and Box 4.2 on Page 30 of the ACG report. Where an ambiguity exists in the analysis method, the method used in this report is made explicit.

Respondent Sample

The original ACG study was conducted Australia-wide whereas this study was conducted on Victorian adults only. While the ACG report includes Victorian specific results the appendix, the modelling, Willingness-to-Pay estimates were calculated for from the Australia-wide responses. Care should therefore be taken comparing the above Australia-wide results from the ACG report with the same results in this report which are for Victoria only.

In addition, the sampling technique used in 2005 did not appear to actively quota to ensure representability as the key demographics variables were included in the latter part of the survey. It is therefore likely the ACG analysts used respondents weighting to maximise the use of the data collected while maintaining representation by age and gender. While the raw sample collected differs by no more than 2% from the census statistics of age and gender, we used weighting to ensure the sample more closely matches the Victorian population.

Smartphones

Apple released the iPhone in 2007and the intervening years we have seen a large rise in primary online access being through a smartphones or small screen device. Gartner group estimates 50% of al internet access by 2018 will be via smartphones.[1]

The 2005 study, particularly the choice experiment was not designed for small screens, consequently smart-phone users were excluded from the fieldwork in this study.

1 Gartner Group, 2014. http://www.gartner.com/newsroom/id/2939217

Internet Use

Internet use in Australian has risen from approximately 50% in 2005 to over 90% in 2017[2]. Combined with the rise in online panels it is suggested that the use of panels in 2017 may be more generally representative of the Victorian population than in 2005.

Online Panels

The 2005 study used respondents drawn from an online panel with a reported response rate of 79%. This study used a similar technique yielding an effective response rate of 65%.

However, since 2005, the technology for recruiting and managing online panels has increased, as has the number of Australians participating in online research. While this has lead to a larger pool of respondents for market research, it has also seen the rise of the 'professional respondent'. A number of measures were taken in this study to ensure this sample was free of such respondents. The data was manually searched for illogical, inconsistent and nonsensical responses which were removed from the final data set.

Analytical Methods

Methods used to design and analyse Choice Experiment data have improved dramatically since 2005. At the time of the ACG report, a relatively simple fractional factorial design was used to control the choice scenarios and the data was analysed using a Multinomial Logit model. In this study we have faithfully used the same technique so that the results could be comparable but also analysed the data using newer superior methods for comparison.

2 Australian Bureau of Statistics
http://www.abs.gov.au/AUSSTATS/abs@.nsf/0/EC6E4AB45631E20ECA2573B600186F04?opendocument

Chapter 3 - Fieldwork Collection

Fieldwork for the survey and experiment was conducted over a 2 week period in September 2017 to reduce possible day-of-week bias.

The key demographic quota variables of Age and Gender were actively managed to ensure the final sample was close to the Victorian population census 2016 figures.

Respondents were recruited from ResearchNow, an ESOMAR accredited online panel and incentivised to participate in the survey.

Panels were instructed to disallow respondents accessing the survey from a small screen device such as a smart phone. Respondents devices were again tracked within the survey and rejected in the case they were using such a device as 'technical screenouts'.

A timeout of 30 minutes was applied to the survey. This meant that any respondent who paused for more than 30 minutes between responses was screened from the survey.

Post data collection, all open ended responses were manually checked. Respondents providing illogical or nonsense responses were marked as low quality responses and screened-out as 'Quality screenouts'

Table 3.1

SURVEY SAMPLE STATISTICS

Completion Status	Number
Complete	566
Quality screenout	113
Technical screenout	9
Incomplete	372
Total Sample	**1060**

Review of the total completions (including those that were post-collection removed) shows an effective response rate of 65%,

Data was analysed post collection to review how closely the sample matched the Victorian population by gender and age.

Table 3.2

SAMPLE GENDER REPRESENTATION

	Raw data	Weighted	Census 2016
Male	46%	48%	48%
Female	54%	52%	52%
Total	**100%**	**100%**	**100%**

Table 3.2

SAMPLE AGE REPRESENTATION

	Raw data	Weighted	Census 2016
18-34	29%	32%	32%
35-54	33%	34%	34%
Over 55	38%	34%	34%
Total	**100%**	**100%**	**101%**

From the analysis of gender and age of the raw data, a weighting factor was calculated for each respondent to be used in all subsequent analysis.

Chapter 4 - Chapter 4 - Data Analysis

This chapter presents the findings from the survey of 566 of Victorian adults conducted in September 2017. The survey sought both to replicate as closely as possible the methods and structure in a survey conducted in 2005 by the ACG group.

The original 2005 ACG study sought to:

- quantify the values that people attach to a number of attributes of protection afforded to heritage places; and
- identify people's views on a number of matters which would point to the social capital associated with heritage place protection.

The value of heritage protection

As with the 2005 study, two approaches were taken to ascertain the value of heritage protection from adult Victorians:

- simple attitudinal questions; and
- choice modelling.

The results from each of these approaches follows.

4.1 Simple attitudinal questions

As with the 2005 ACG study, one of the questions in the survey asked people to agree or disagree with a series of statements. Some of these statements could be mapped against the types of values identified in figure 2.1 of the ACG report.

In the ACG report, 16.6% of the community strongly agreed with the statement 'Looking after heritage is important in creating jobs and boosting the economy'. In this study a commensurate 23% were found to strongly agree with the statement.

Table 4.1

COMMUNITY VIEWS AND PERCEPTIONS OF HERITAGE-RELATED VALUES

Value type	Statement	'Strongly Agree and Agree'	'Strongly Disagree and Disagree'	Neither agree nor disagree
Direct use value	Looking after our heritage is important in creating jobs and boosting the economy	66.3%	6.0%	27.7%
Indirect use value	My life is richer for having the opportunity to visit or see heritage	70.9%	5.2%	23.9%
Option value	It is important to protect heritage places even though I may never visit them	82.3%	1.5%	16.2%
Existence value	Heritage is a part of Australia's identity	83.0%	1.9%	15.1%
	The historic houses in my local area are an important part of the area's character and identity	73.3%	5.4%	21.3%
Other non-use values	It is important to educate children about heritage	89.2%	0.7%	10.0%

The comparative results with a similar UK study from 2003 are presented below. The results from this study closely follow both the ACG study and the UK one.

Table 4.2

COMPARISON OF AUSTRALIAN AND UNITED KINGDOM ATTITUDES (PROPORTION OF RESPONDENTS WHO AGREED OR STRONGLY AGREED WITH THE FOLLOWING STATEMENTS — PER CENT)

Australian question (and United Kingdom question in brackets where the question is Different)	Victoria (2017)	Australia (2005)	United Kingdom (2003)
It is important to educate children about heritage	89.2	96.9	95.0
It is important to keep historic features wherever possible when trying to improve towns and cities	88.9	94.7	91.7
Built heritage can mean small and modest places as well as grand historic buildings and churches (Heritage can mean my local area as well as historic castles and stately homes)	84.2	92.8	89.7
The historic buildings in my local area are worth saving and are important parts of heritage (The heritage in my local area is worth saving)	75.6	84.1	86.0
Celebrating heritage is important	80.3	81.5	76.0
Heritage can mean recent as well as old buildings	62.5	62.4	59.3
I don't know what heritage activities are taking place in my area	48.5	39.7	50.0
There's never any information on the heritage topics of interest to me	32.7	21.2	30.0
Australia's heritage is not relevant to me or my family (Heritage is not relevant to me or my family)	17.3	5.0	12.3

Source: MORI 2003, Making Heritage Count? Research Study Conducted for English Heritage, Department for Culture, Media and Sport and the Heritage Lottery Fund, October, pp. 23-26. Note: The MORI survey was of Bradford, Cornwall and London. Survey responses do not appear to be weighted.

Victorians generally believe 'enough is being done' to protect historic heritage. This is a significant difference with an additional 16% of the community agreeing with this statement compared to the 2005 ACG study. Also of note, and as can be seen in other results, there is a larger proportion of the community apparently more ambivalent to heritage than in 2005 as is seen in the 8% 'Don't know' compared to the 2% in 2005 in Figure 4.1.

Figure 4.1

DO YOU THINK THAT ENOUGH IS BEING DONE TO PROTECT HISTORIC HERITAGE ACROSS AUSTRALIA?

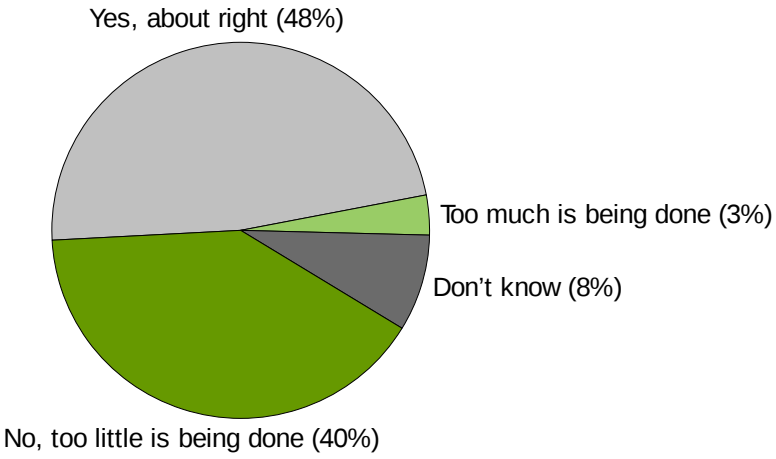
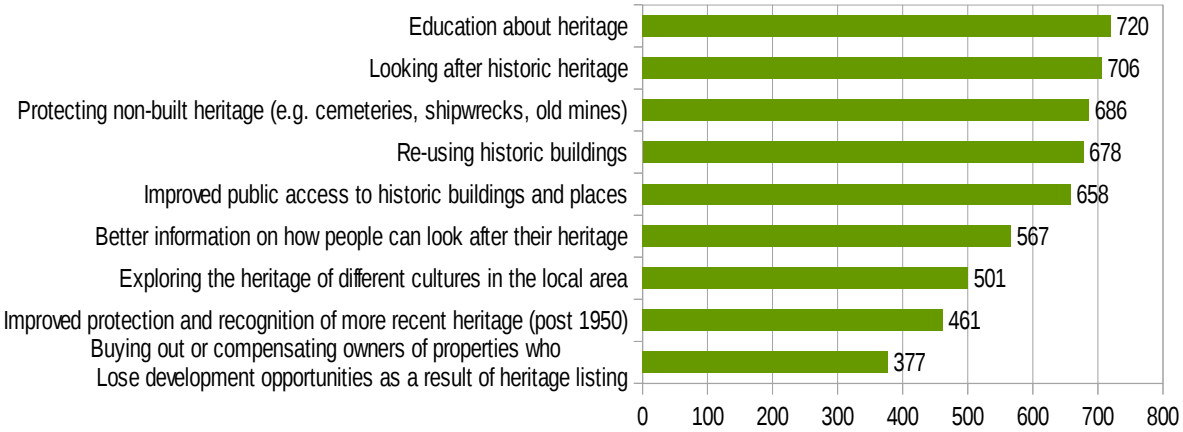


Figure 4.2 agrees with the 2005 study insofar as having a similar rank ordering of where additional government money should be spent educating and protecting heritage.

Figure 4.2

IF MORE MONEY WAS TO BE SPENT ON HERITAGE ISSUES, WHICH OF THE FOLLOWING WOULD YOU CHOOSE TO SPEND IT ON?



Box 4.1

VIEWS OF THOSE WHO OWN OR LIVE IN A HERITAGE-LISTED PROPERTY

The survey asked people to identify whether or not they own or live in a heritage-listed property. These respondents comprised 2.3 per cent of the respondents of the total sample. This number is regarded as too low to perform any further meaningful statistical analysis or to compare against the Australia wide summary in the 2005 study.

Responses by different age groups were analysed. In general there was commonality across the groups. A principal difference to the 2005 study was that the 'enough was being done' to protect heritage in Victoria was the most common response across all age groups. Typically, as with the 2005 study, seniors tended to be more pessimistic that heritage was being looked after.

Box 4.2

SURVEY RESPONSES BY AGE GROUP

The most common response across all age groups (youth, middle age and senior) was that enough was being done in Australia to protect historic heritage, with 55% of youth, 42% of the middle aged and 47% of seniors. This was in contrast to the 2005 results. As with the 2005 study, all age groups agreed that heritage plays an important part in Australia's culture*.
Other results were:

- Agreeing with the 2005 study, seniors would prefer to direct additional funding to places of national significance (60 per cent) compared with around 50 per cent for those that are younger;
- Agreeing with the 2005 study, seniors were more likely to consider that looking after our heritage is important in creating jobs and boosting the economy (67 per cent compared with around 60 per cent of those who are younger);
- Agreeing with the 2005 study, the youth are less likely to know what heritage activities are taking place in their local area (57 per cent) compared with seniors (41 per cent)
- Agreeing with the 2005 study, up to 40 per cent of the youth group thought that there was never enough information on the heritage topics of interest compared with around 29 per cent with those aged over 36 years of age.)

Also agreeing with the 2005 study, the three age groups had similar rankings for allocating additional money to the ten choices that they had available in the survey.

Note: Age groups were defined as: youth (18 to 34 years of age); middle aged (35 to 54 years of age) and senior (55 years of age and above).
* In all cases, it was assumed that "strongly agree' and 'agree' counted both as agreeing.

4.2 Choice Modelliing

As with the 2005 ACG study, choice modelling was undertaken to look behind general statements about heritage to see the degree to which the population is willing to financially support the call for a greater commitment to heritage protection, and which historic heritage conservation outcomes they particularly value.

General Observations

All the heritage protection attributes (Cost, Places Protected, Condition, Accessibility and Development Control) are statistically significant at 95% or more in explaining respondent choice. The only exception is the Age-Mix (see the reasons explained below).

The general conclusions marry well with the 2005 study:

- Respondents were conscious of the financial impost a heritage levy would mean for them should they choose a different level of heritage protection than currently provided.
- Respondent utility is increased by:
    - an increase in the number of heritage places protected;
    - an increase in the proportion of places that are in good condition; and
    - an increase in the proportion of places that are accessible to the public.
- The MNL estimates for Age-Mix were not significant at the 90% level. Deeper analysis using the more advanced Mixed Logit (MXL) model and dummy-coded attribute levels showed the optimal mix of old buildings to new buildings was between 50% and 100% with a point estimate optimal of 95%, which partly agrees with the 2005 MNL results. This means that respondents' utility is increased as the Age-Mix approaches 95% then declines towards 100%. It should be noted that the figure of 95% is a point estimate used in the experiment and not necessarily the optimal. Forcing a linear specification to this U-shaped relationship (as the 2005 study did) results in the parameter estimate for age apparently being insignificant rather than significant but non-linear.
- No modifications permitted (vs. no control), Minor modifications permitted (vs. no control) and Substantial modifications permitted (vs. no control) were all positive and significant. In line with the 2005 study we found that Development Control with Minor modifications permitted was the most preferred and that development control with both No modifications permitted and Substantial modifications permitted are perceived as better to the no development control option (that could involve demolition subject to assessment). Unlike the 2005 study, however, we found that the preference ordering for development control with no modifications permitted and substantial modifications permitted has changed. Currently, citizens prefer the former to the latter.
- The results of the most accurate MXL model with dummy-coded attribute levels shows that overall people display support for the new protection policy (a general disutility associated with the status quo when the new policy becomes an option). This is evidenced with the positive coefficient with alternative specific constant (ASC) associated with the improvement options. It is not possible to compare this result with the 2005 study, as the necessary details are not reported, and because using the MNL model is known to result in biased estimates, particularly with respect to alternative specific constants.

Box 4.3

ANALYTICAL METHOD 3 — 'CHOICE MODELLING' AND THE SURVEY OF HISTORIC HERITAGE VALUES

Below is a reproduction of the outline of choice modelling described in the 2005 report[3].

Choice modelling involves eliciting a respondent's stated preference in a hypothetical setting. Used commonly in the natural resources field, and by consumer product companies when developing new goods and services, survey respondents are presented with several different sets of two or more resource use options and asked to indicate which option they prefer in each of these 'choice sets'. One of the resource use options usually corresponds to the do-nothing option and is held constant over all sets of choices. The levels of the attributes characterising the different options varies according to an 'experimental design'. In many valuation applications, one attribute always involves a monetary payment and there would typically be two or more attributes. By observing and modelling how people change their preferred option in response to the changes in the levels of the attributes, it is possible to determine how they trade-off between the attributes. In other words, it is possible to infer people's willingness to pay some amount of an attribute in order to achieve more of another. In this case, the survey presented respondents with a series of choice sets in which they were asked to indicate their preferred option. The attributes related to:

- the number of heritage places protected from loss (Places Protected)— one aspect of managing our heritage is to protect important places from being lost. Listing places on an official heritage register is one way of helping this to happen. But it does not guarantee against loss;
- condition and integrity of places (Condition) — this refers to the: structural and physical soundness of a place; and whether the place has been preserved in a way that is faithful to the original features of the place. Places in poor condition may become an 'eyesore' and a public safety hazard. Similarly, places that have been poorly restored and managed may not maintain their heritage character;
- the age mix of places (Age Mix) — this attribute is a measure of the proportion of listed places that come from different historical periods;
- public accessibility (Accessibility) — this refers to whether or not the public is able to visit a historic place and get a hands-on experience at the place (e.g. photography, guided tours, workshops, open days, etc). Accessibility is more than just being able to view a place. It includes the opportunity to get a deeper appreciation of the place's value and meaning;
- development controls (Development Control) — this attribute refers to the level of controls on development in and around heritage places (including buildings, gardens, monuments, etc). Some form of control is necessary to protect heritage places, but the level of control could vary depending on the heritage outcomes being sought; and
- the respondent's additional levy payment each year (Cost) — the amount of money that the respondent would be required to contribute each year via a levy to achieve the outcomes specified by a particular option.

By specifying different values for each of the attributes, different policy alternatives were constructed for managing the national system of heritage protection, and alternative 20 year outcomes for heritage conservation were specified. In this case, each choice set had three options, including a 'no-change' option and two alternatives. The no-change option referred to the outcomes that would eventuate if the current system of heritage protection remained intact, with no additional funding made available. It was included in the choice experiment as a benchmark against which to measure respondents' willingness to pay for changes in attribute provision.

The attributes and their values were developed by The Allen Consulting Group, in conjunction with representatives of the Heritage Chairs and Officials of Australia and New Zealand, following focus group meetings in Perth, Sydney and Dubbo

3 *Box 4.3 Page 32, 2005 ACG study*

The choice modelling allows implicit prices to be assigned each of the changes associated with the attributes. Table 4.3 summarise the implicit prices estimated for each attribute.

These agree with the 2005 ACG study insofar as the rank ordering of the attributes is identical. Two anomalies are noted:

1. Firstly the age-mix of properties is not significant at 90%. (see appendix B, table B.4).
2. Secondly, there is a more negative effect of 'no modification' allowed, compared to demolition with permit. This is commensurate with the findings from 2005 that 'no modifications' would reduce utility compared to minor or substantial modifications being allowed. That is, demolition with a permit is generally preferred to 'retention with modifications being allowed'.

Table 4.3

ATTRIBUTE IMPLICIT PRICES

Attribute	Annual price per person		Units
Places protected	$4.64		per 1000 additional heritage places protected
Condition of places	$0.33		per 1% increase in the proportion of places in good condition
Age mix of places	$0.14	*	per 1% increase in the proportion of places that are over 100 years of age
Accessibility of places	$1.86		per 1% increase in the proportion of places that are publicly accessible
Development control			
- Change to level 1	$18.58		Change from 'demolition permitted' to 'substantial modifications permitted but no demolition'
- Change to level 2	$46.51		Change from 'demolition permitted' to 'minor modifications permitted only'.
- Change to level 3	$26.55		Change from 'demolition permitted' to 'no modifications permitted'.

*Age-Mix Willingness to pay is not significant

The implications from this study agree with the 2005 ACG study, albeit with updated WTP estimates.

In general :

Average willingness to pay for the protection of additional places from loss is estimated to be $4.64 per person each year for every 1000 places protected, compared to $5.53 in 2005.

Respondents are also willing to pay for improvements to the condition and public accessibility of places.

- A one percentage point increase in the proportion of places that are accessible to the public is valued at $1.86 per person per year compared to $3.60 in 2005.
- As in 2005, this result indicates that people, on average, value accessibility more highly than condition.

With respect to Age-Mix, while the MNL results were not statistically significant, the more powerful MXL model (table B.4b) with dummy-coded attribute levels showed that reducing the share of buildings of over 100 years old from the current 85% to 50% would mean average decrease in respondents' welfare of $4.21. Increasing it to 95% would be worth $8.25 for an average respondent, while increasing it to 100% would mean a decrease of welfare of $6.07 in comparison with the current 85%.

Regarding Development Control, on average, respondents are willing to pay $26.55 per person per year to change the level of development control from one of 'demolition permitted' to a slightly more stringent protection policy of 'substantial modifications permitted — but no demolition'. This is commensurate with the 2005 value of $39.50 per person. Respondents are willing to pay an additional $19.96 per person for a further tightening of controls such that only 'minor modifications' are permitted, this compares well with the 2005 figure of $13.57 per person. Finally, going the next step to 'no modifications permitted' reduces utility in comparison with the 'minor modifications permitted' option. Relative to the 'no change' scenario in which demolition is permitted, it is worth $18.58 to respondents. This is in line with the results of the 2005 study, however, in 2005 it was estimated that this option to be worth a relatively negligible amount of $2.38. These results suggest that people perceive development controls to be an important policy instrument for protecting heritage and are not in favour of demolition but value a system that allows property developers/owners the flexibility to undertake minor modifications, and are more supportive towards the cases that impose 'no modifications permitted' option than in 2005.

Valuation of alternative historic heritage outcomes

A number of different outcome scenarios can be evaluated in terms of respondent willingness to pay for changes relative to a 'no change' scenario using the willingness to pay estimates above – as they have since 2005.

Table 4.4 provides an updated example of how the implicit prices can be used in this way.

Table 4.4

EXAMPLE SCENARIO VALUATION

Attribute	Current Level	Change by 2020	Implicit price (per person per year)	Units of attribute change	Annual aggregate value (per person)	
Places protected from loss	200 000 places on heritage lists	8000 places	$4.64	Per 1000	$37.12	
Proportion of sites in good condition	20%	20% point increase	$0.33	Per 1% increase	$6.60	
Age Mix (proportion of sites over 100 years old)	80%	15% point reduction	$0.14	Per 1% reduction	-$2.10	*not sig
Proportion of places accessible to the public	10%	5% point increase	$1.86	Per 1% increase	$9.30	
Development control	Substantial modifications permitted	Only minor modifications permitted	$19.96		$19.96	
TOTAL					**$70.88**	

An updated figure for the estimate of social capital from this study is below in Figure 4.3. This result differs from the 2005 one in that a larger proportion (14%) of people are ambivalent about heritage compared to 2005 (8%), a common theme in this replication study.

Figure 4.3

COMMUNITY (ADULT) RESPONSE TO 'HERITAGE IS A PART OF AUSTRALIA'S IDENTITY'

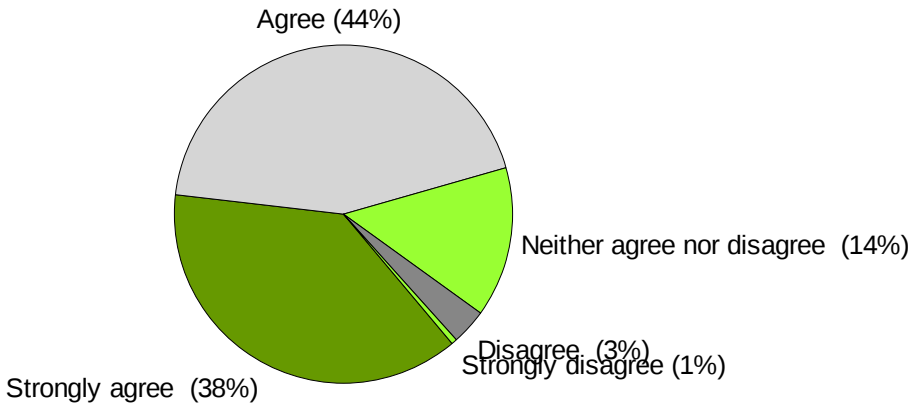


Table 4.5 below shows the 2017 figures for indicators of social capital. The values below show an approximate 50% decline in volunteerism to heritage issues since 2005.

Table 4.5

INDICATORS OF SOCIAL CAPITAL

Form of reciprocity	Percentage of adult population
Volunteered your time for heritage activities?	5.5%
Donated to heritage causes in the last 12 months?	5.6%
Indicators of community support for heritage activities	
Member of a historic society or club?	3.4%

In the 2005 study, each of these figures was between 25% and 100% higher than in 2017. The 2005 report notes that while their value is limited as standalone indicators, their value will emerge if the indicators are monitored over time.

In this respect, social capital can be viewed as having declined since 2005 for each of the indicators measured both in 2005 and 2017..

Appendix A - Abbreviations

ACG	Allen Consulting Group
DCE	Discrete Choice Experiment
MNL	Multinomial Logit
MXL	Mixed Logit
WTP	Willingness to pay

Appendix B - Choice Modelling Technical Details

The Choice Modelling Discrete Choice Experiment used in this study replicated the method used in the 2005 ACG study. The policy context, attribute selection, attribute levels, questionnaire design and data analysis were reproduced from Appendix B (page 39) and Appendix C (page 51) of the 2005 ACG report.

Salient 2017 results differing to the original report are below. The attributes and levels used in the 2017 study were the same as those used in 2015. The table of attributes B.2 is reproduced from the 2005 ACG report below.

Table B.2

ATTRIBUTES

Attribute	Future levels (as at 2020)		Range of levels under change options
	Approximate current level	No change to current management	
Additional number of places protected from loss	200,000 places currently listed on official registers	5000	2,000
			5,000
			8,000
			10,000
Per cent of places in good condition and high integrity	20%	15%	15%
			20%
			40%
			80%
Age mix of listed places	80% over 100 years old and 20% more recent	Many over 100 years old, some (15%) more recent	All over 100 years old
			Almost all over 100 years old, few (5%) more recent
			Many over 100 years old, some (15%) more recent
			Half over 100 years old, half more recent
Per cent of places publicly accessible	10%	5%	5%
			15%
			20%
			25%
Development control	Substantial modifications permitted but no demolition	Demolition permitted subject to assessment	No modifications permitted
			Minor modifications permitted
			Substantial modifications permitted but no demolition
			Demolition permitted subject to assessment
Annual heritage levy	$0	$0	$0
			$20
			$50
			$200

B.4 Questionnaire design and administration

The questionnaire part of the study was reproduced faithfully from Appendix C of the 2005 ACG report. As this was a replication, there was no need for stakeholder input or respondent testing.

The questionnaire was built on the SurveyEngine research platform and designed for responsive browsers. The survey was tested using an automated suite of simulations to confirm data collection was as expected and the survey was operable on most modern internet browsers.

Respondents were sourced from ResearchNow – an ESOMAR accredited panel provider. Respondents were selected from the panel according to age (18 or above on January 2017) Residence(Victoria) and device type (tablet or desktop) as well as initial age and gender quota requirements.

Respondents were additionally screened a second time within the survey for age, gender, location and device type.

Respondents were incentivised by the ResearchNow panellist incentive scheme. No personally identifiable information about respondents was recorded by the survey platform and no responses provided to the SurveyEngine platform were provided to the panel provider.

A 'Late Screening' method was used to mark respondents that already filled age and gender quotas. Due to the structure of the original ACG study, this meant that more respondents than were necessary completed the study.

A final response rate of 65% of all respondents who started the survey was achieved.

Post data collected, a number of respondents were removed from the data analysis for quality reasons.

A total of 566 usable respondents completed the survey. This is commensurate with the numbers achieved for Victoria in the 2005 ACG study, which are estimated at not more than 500. This assumes that Victorians comprise 25% of the population of Australia[4] and that a similar proportion existed in the 2024 Australian sampled in the 2005 study.

4 Australian Bureau of Statistics, 2017 http://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0

B.5 Analysing the choice modelling results

As in the 2005 study, each respondent completed 8 choice tasks, yielding 4528 individual choice observations.

Of these, 58 (or 10%) consistently selected the 'no change option (compared to 5% for the 2005 study). Table B.3 shows the reasons given for this consistent selection.

Table B3
REASONS FOR CONSISTENT SELECTION OF THE 'NO CHANGE' OPTION

Reason for selecting 'no change'	% of 'no change' respondent sub-set	Interpretation (ACG 2005)
I believe that historic heritage is already well managed	22	Zero value for additional for additional heritage protection
I support more protection but can't afford to contribute to the cost	19	Zero value for additional for additional heritage protection
I oppose the idea of a heritage levy.	28	Protest zero
I am prepared to pay for additional heritage outcomes but distrust that my payment into a fund will be wisely spent.	14	Protest zero
I didn't know which option was best so I stuck with the 'no change' option.	17	Confusion and possible poorly formed preferences

As in the 2005 study, there was a vocal minority opposing the idea of introduction of a 'heritage levy'. This was a methodological concern during this study since the requirement that heritage be valued meant introducing a fictitious government taxation levy. Nevertheless, this was a relatively small number of respondents.

Selected responses from open-ended comments in this study on this objection are are reproduced in Box B.1 below.

Box B.1

CONCERNS ABOUT INCREASED GOVERNMENT SUPPORT FOR HERITAGE PLACES

- an interesting survey but we are always being asked to pour more money in to things. As a retiree I am on a fixed low income. Perhaps big business could help out here.
- I agree with protecting our heritage but I don't agree with yet another levy being imposed on people - the government could easily cover costs if they stopped frittering away taxpayer money or getting tax dodgers to pay their fair share.
- If collecting extra funding through local council, then a proportion of the funding should go to local historical sites for improvement, and council should be audited to see that this is happening.
- I don't think any tax payer should have to pay a levy for heritage listed to preserve...gov't should look after that...we pay enough tax. When you buy a property and you know it is heritage listed or part of...that is something you need to deal with, not the tax payers.
- I think the suggestion of personal levy charged to help with the upkeep of historic heritage buildings might discourage many

Statistical Analysis of the data

Analysis of the choice data proceeded as per the 2005 study. The principal analysis tool used was a MNL modelling technique as used in the 2005 study to estimate the model coefficients.

Two additional modern methods were used to verify the modelling was valid. These were variants of the MXL (mixed-logit) variety.

While these methods produced arguably more accurate results, in order to compare the 2017 results with the 2005, as the original datasets were unavailable, the standard MNL as used in 2005 was used to calculate the WTP values.

Table B.4

MULTINOMIAL MODEL COEFFICIENT ESTIMATES

Attribute	Annual price per person (in $100 units)	sig	Units
Places protected	0.05	***	per 1000 additional heritage places protected
Condition of places	0.00	***	per 1% increase in the proportion of places in good condition
Age mix of places	0.00		per 1% increase in the proportion of places that are over 100 years of age
Accessibility of places	0.02	***	per 1% increase in the proportion of places that are publicly accessible
Development control			
- Change to level 1	0.27	***	Change from 'demolition permitted' to 'substantial modifications permitted but no demolition'
- Change to level 2	0.47	***	Change from 'demolition permitted' to 'minor modifications permitted only'.
- Change to level 3	0.19	**	Change from 'demolition permitted' to 'no modifications permitted'.
Cost	-0.76	***	In 100 AUD
Alternative specific constant	-0.49	**	Change options associated with introducing a new policy
Individual characteristics			Interactions with the ASC
Gender	-0.12		Male
Pro heritage	1.21	***	Heritage active
Heritage house	2.61	***	Owns heritage house
Age	-0.06	*	Age (normalised)
Education	-0.14		Education lower than "Certificate"
Income	0.04		Income (normalised)
Citizen	-0.01		Australian citizen
Metropolitan resident	0.23	**	Greater Melbourne
Model diagnostics			
LL at convergence	-4534.35		
LL at constant(s) only	-4900.57		
McFadden's pseudo-R^2	0.0747		
Ben-Akiva-Lerman's pseudo-F	0.4186		
AIC/*n*	2.0068		
BIC/*n*	2.0308		
n (observations)	4536		
r (respondents)	567		
k (parameters)	17		

Table B.4b (additional modelling to 2005 ACG Report)

MIXED LOGIT MODEL COEFFICIENT ESTIMATES

dummy-coded attribute levels, in WTP-space, standard errors in parentheses

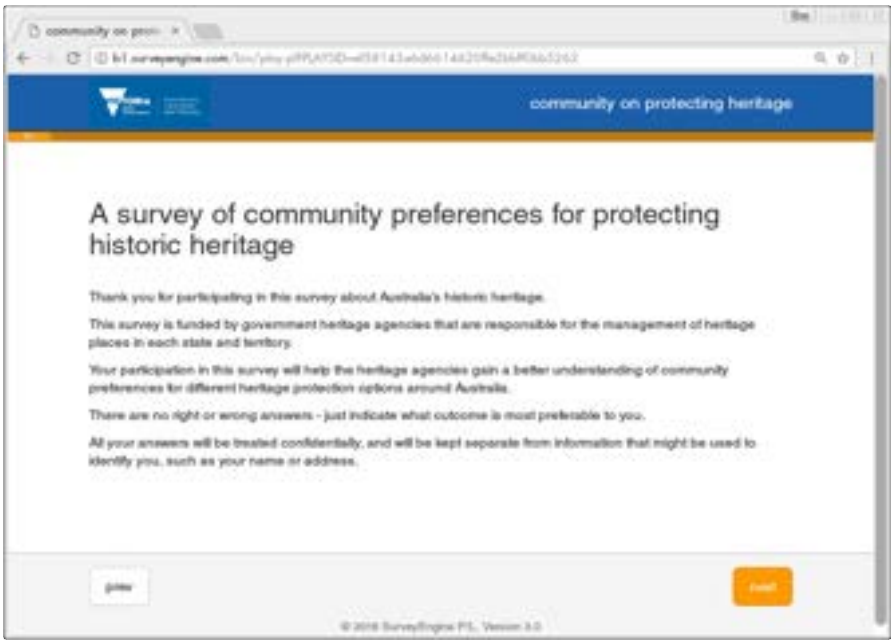
Attribute	Distribution	Mean of the annual price per person	Standard deviation of the annual price per person
Places - 2000 (vs. 5000)	n	-0.2830***	0.3002***
		(0.0121)	(0.0078)
Places - 8000 (vs. 5000)	n	0.0876***	0.1326***
		(0.0139)	(0.0090)
Places - 10000 (vs. 5000)	n	0.1039***	0.1893***
		(0.0161)	(0.0076)
Condition - 20% (vs. 15%)	n	0.1055***	0.0995***
		(0.0130)	(0.0069)
Condition - 40% (vs. 15%)	n	0.0649***	0.1120***
		(0.0164)	(0.0061)
Condition - 80% (vs. 15%)	n	0.2077***	0.1782***
		(0.0155)	(0.0136)
Age - 50% 100y+ (vs. 85%)	n	-0.0421***	0.1267***
		(0.0145)	(0.0099)
Age - 95% 100y+ (vs. 85%)	n	0.0825***	0.2237***
		(0.0183)	(0.0144)
Age - 100% 100y+ (vs. 85%)	n	-0.0607***	0.2656***
		(0.0159)	(0.0084)
Accessibility - 15% (vs. 5%)	n	0.1927***	0.2061***
		(0.0159)	(0.0097)
Accessibility - 20% (vs. 5%)	n	0.1578***	0.1867***
		(0.0163)	(0.0050)
Accessibility - 25% (vs. 5%)	n	0.2364***	0.2270***
		(0.0182)	(0.0114)
No modifications permitted (vs. no control)	n	0.2184***	0.2827***
		(0.0163)	(0.0068)
Minor modifications permitted (vs. no control)	n	0.3193***	0.3461***
		(0.0209)	(0.0134)
Substantial modifications permitted (vs. no control)	n	0.1760***	0.3797***
		(0.0190)	(0.0168)
- Cost (100 AUD)	l	1.4218***	4.3681*
		(0.1697)	(0.4313)
Alternative specific constant	n	-0.4114***	0.7421***
		(0.0121)	(0.0164)
Model diagnostics			
LL at convergence		-3858.52	
LL at constant(s) only		-4900.57	
McFadden's pseudo-R^2		0.2126	
Ben-Akiva-Lerman's pseudo-R^2		0.4862	
AIC/*n*		1.7762	
BIC/*n*		2.0168	
n (observations)		4536	
r (respondents)		567	
k (parameters)		170	

Note: *,**,*** represent statistical significance at 0.90%, 0.95%, 0.99%, respectively

Appendix C - The Survey Instrument

The survey instrument used was identical in structure to that specified in the 2005 study (appendix C page 51). No indication in that appendix was given to the specific graphical look.

Below are two example screenshots from the 2017 study.



Appendix D - Further National Results From the Survey

Appendix D in the 2005 report provided results aggregated Australia-wide. This study only sampled Victoria.

For ease of matching the 2005 results with this report, this appendix is included but intentionally left blank.

Appendix E – State Results

Below are results from the demographic and usage & attitudinal sections from the study.

E.1 New South Wales

New South Wales was not included in this study. This section is included but intentionally left blank so that the sections and tables may easily matched with the 2005 ACG teport.

Tables E.1 through E.4 and figure E.1 are not included in this report

E.2 Victoria

Table E.5

PROPORTION OF RESPONDENTS WHO ANSWERED: DO YOU THINK ENOUGH IS BEING DONE ACROSS AUSTRALIA TO PROTECT HISTORIC HERITAGE? (PER CENT)

	No, too little is being done	Yes, about right	Too much is being done	Don't know	Total
VIC. Metro	38.3	48.2	2.8	10.8	100
VIC. Regional	41.0	47.7	3.6	7.6	100
TOTAL VIC.	40.5	47.8	3.4	8.3	100

Table E.6

PROPORTION OF RESPONDENTS WHO ANSWERED: HISTORIC HERITAGE PROTECTION IS FUNDED BY ALL LEVELS OF GOVERNMENT. IF MORE FUNDS WERE TO BECOME AVAILABLE, WHERE DO YOU THINK THE ADDITIONAL MONEY SHOULD BE SPENT? (PER CENT)

	Places of significance to the nation	Places of significance to your State or Territory	Places of significance to your local area	Don't know	Total
VIC. Metro	49.1	27.1	14.9	9.0	100
VIC. Regional	51.0	32.6	8.8	7.7	100
TOTAL VIC.	50.6	31.4	10.1	7.9	100

Table E.7

PROPORTION OF RESPONDENTS WHO ANSWERED: TO WHAT EXTENT DO YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS ABOUT HERITAGE?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	TOTAL
It is important to educate children about heritage						
VIC. Metro	46	40	13	1	0	100
VIC. Regional	48	42	9	0	0	100
TOTAL VIC.	47	42	10	1	0	100
It is important to keep historic features wherever possible when trying to improve towns and cities						
VIC. Metro	49	42	10	0	0	100
VIC. Regional	47	41	10	1	0	100
TOTAL VIC.	47	42	10	1	0	100
Built heritage can mean small and modest places as well as grand historic buildings and churches						
VIC. Metro	50	39	10	0	0	100
VIC. Regional	37	45	15	2	0	100
TOTAL VIC.	40	44	14	1	0	100
The historic buildings in my local area are worth saving and are important parts of heritage						
VIC. Metro	42	38	18	2	0	100
VIC. Regional	33	41	21	3	1	100
TOTAL VIC.	35	40	21	3	1	100

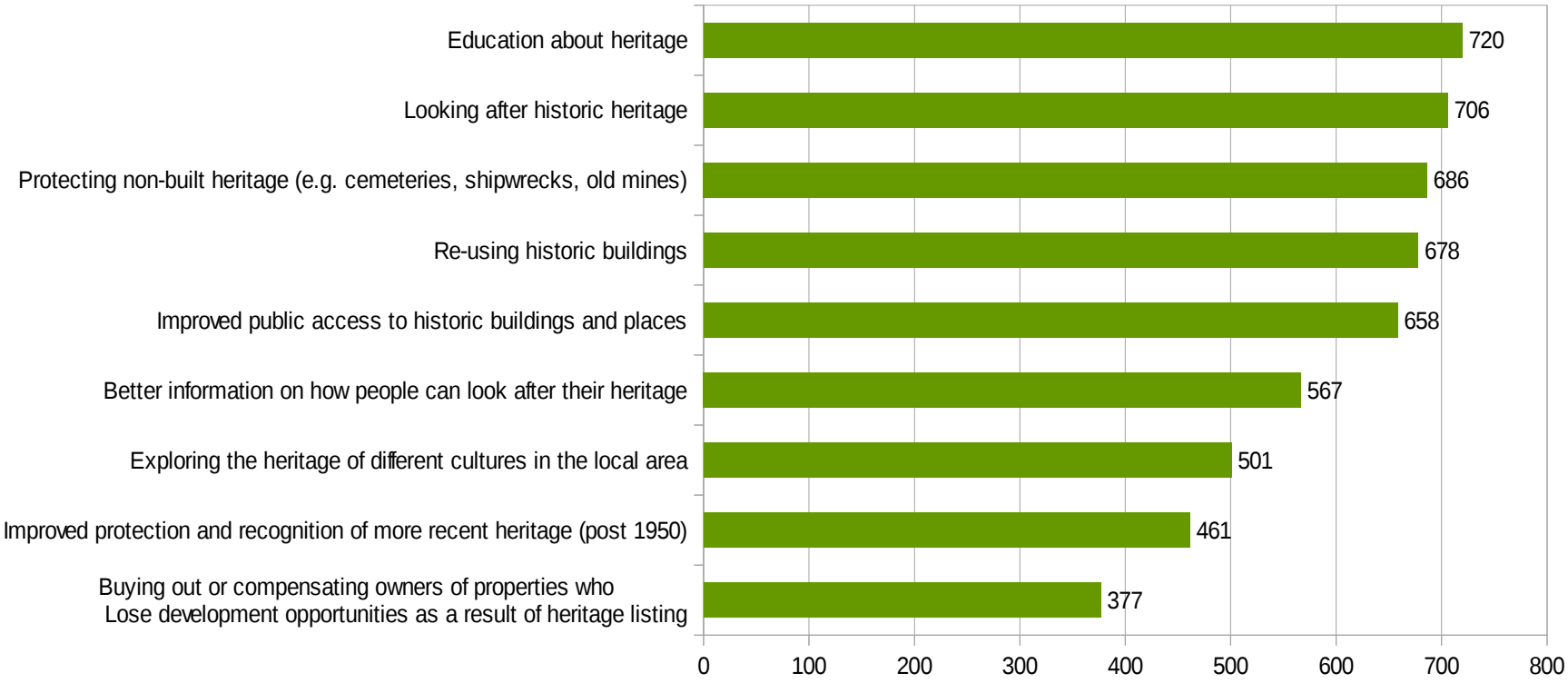
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	TOTAL
The historic houses in my local area are an important part of the area's character and identity						
VIC. Metro	34	42	17	7	0	100
VIC. Regional	31	41	22	3	2	100
TOTAL VIC.	32	41	21	4	1	100
Celebrating heritage is important						
VIC. Metro	36	40	22	3	0	100
VIC. Regional	41	41	15	3	1	100
TOTAL VIC.	40	40	16	3	1	100
Heritage can mean recent as well as old buildings						
VIC. Metro	21	40	27	12	0	100
VIC. Regional	24	39	28	7	2	100
TOTAL VIC.	23	39	28	8	2	100
Looking after our heritage is important in creating jobs and boosting the economy						
VIC. Metro	25	40	30	5	0	100
VIC. Regional	23	44	27	5	1	100
TOTAL VIC.	23	43	28	5	1	100

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	TOTAL
Heritage plays an important part in Australia's culture						
VIC. Metro	34	45	15	5	0	100
VIC. Regional	39	43	14	3	1	100
TOTAL VIC.	38	44	14	3	1	100
We protect too much heritage						
VIC. Metro	9	13	30	29	19	100
VIC. Regional	5	17	26	36	17	100
TOTAL VIC.	6	16	26	34	17	100
It is possible to keep heritage places and provide for the needs of today						
VIC. Metro	26	52	22	0	0	100
VIC. Regional	29	50	19	2	0	100
TOTAL VIC.	28	51	19	1	0	100
My life is richer for having the opportunity to visit or see heritage						
VIC. Metro	29	41	25	5	1	100
VIC. Regional	27	44	24	4	1	100
TOTAL VIC.	28	43	24	4	1	100

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	TOTAL
I don't know what heritage activities are taking place in my area						
VIC. Metro	12	32	36	16	4	100
VIC. Regional	13	36	38	10	2	100
TOTAL VIC.	13	36	38	11	3	100
There's never any information on the heritage topics of interest to me						
VIC. Metro	9	20	42	24	5	100
VIC. Regional	10	24	43	19	4	100
TOTAL VIC.	10	23	43	20	4	100
Australia's heritage is not relevant to me or my family						
VIC. Metro	10	5	23	35	28	100
VIC. Regional	5	13	23	36	23	100
TOTAL VIC.	6	11	23	36	24	100
Heritage is a part of Australia's identity						
VIC. Metro	42	43	14	0	0	100
VIC. Regional	40	43	15	2	1	100
TOTAL VIC.	40	43	15	1	1	100
It is important to protect heritage places even though I may never visit them						
VIC. Metro	37	44	19	0	0	100
VIC. Regional	37	46	15	1	1	100
TOTAL VIC.	37	45	16	1	0	100

Figure E.2

VICTORIA'S OVERALL FOR THE QUESTION: IF MORE MONEY WAS TO BE SPENT ON HERITAGE ISSUES, WHICH OF THE FOLLOWING WOULD YOU CHOOSE TO SPEND IT ON? (UNITS)



Note: The maximum number of units for a category is 1000, which is equivalent to 100 per cent of respondents ranking the category as their first priority. The lower bound may vary because of the opportunity provided to respondents to nominate an optional category. In practice, the lower bound is close to 100 units.

Table E.8

PROPORTION OF RESPONDENTS WHO RANKED THE FOLLOWING ISSUES FOR THE QUESTION: IF MORE MONEY WAS TO BE SPENT ON HERITAGE ISSUES, WHICH OF THE FOLLOWING WOULD YOU CHOOSE TO SPEND IT ON? (PER CENT)

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total
Education about heritage											
VIC. Metro	26	12	13	13	9	12	6	6	3	0	100
VIC. Regional	28	11	10	14	11	9	6	4	5	2	100
TOTAL VIC.	28	11	11	14	11	9	6	4	4	1	100
Re-using historic buildings											
VIC. Metro	14	16	19	15	12	4	8	5	6	0	100
VIC. Regional	11	23	15	10	11	8	8	8	6	1	100
TOTAL VIC.	11	21	16	11	11	7	8	7	6	1	100
Protecting non-built heritage (e.g. cemeteries, shipwrecks, old mines)											
VIC. Metro	8	20	22	23	7	8	8	4	1	0	100
VIC. Regional	11	17	22	9	11	11	8	7	5	1	100
TOTAL VIC.	10	18	22	12	10	10	8	6	4	1	100
Improved public access to historic buildings and places											
VIC. Metro	8	8	16	16	23	18	6	4	3	0	100
VIC. Regional	8	17	14	19	13	7	11	7	4	1	100
TOTAL VIC.	8	15	15	18	15	10	10	6	4	1	100

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total
Better information on how people can look after their heritage											
VIC. Metro	1	12	7	16	16	18	13	12	4	0	100
VIC. Regional	2	8	9	15	16	20	11	10	7	0	100
TOTAL VIC.	2	9	9	16	16	20	12	11	6	0	100
Exploring the heritage of different cultures in the local area											
VIC. Metro	3	9	6	7	11	18	25	9	11	1	100
VIC. Regional	2	4	8	10	15	17	16	17	11	1	100
TOTAL VIC.	2	5	7	9	14	17	18	15	11	1	100
Looking after historic heritage											
VIC. Metro	24	14	11	7	15	8	16	4	0	0	100
VIC. Regional	27	13	10	8	8	11	13	5	5	0	100
TOTAL VIC.	26	14	11	7	9	10	13	5	4	0	100
Improved protection and recognition of more recent heritage (post 1950)											
VIC. Metro	9	5	3	1	5	9	11	29	27	1	100
VIC. Regional	4	5	6	11	7	10	17	27	12	2	100
TOTAL VIC.	5	5	5	8	7	10	16	27	15	1	100
Buying out or compensating owners of properties who lose development opportunities as a result of heritage listing											
VIC. Metro	7	2	2	3	3	6	7	25	41	6	100
VIC. Regional	5	3	6	4	6	6	9	14	43	5	100
TOTAL VIC.	5	2	5	3	6	6	8	16	42	5	100

Appendix F – Sources

The Allen Consulting Group 2005, *Valuing the Priceless: the Value of Historic Heritage in Australia*. Research Report ,2005, pp. 26-133.

The Australian Bureau of Statistics, *Household Use of Information Technology,* Australia, 2005-06 , reference 8146.0

The Australian Bureau of Statistics, *Australian Demographic Statistics*, Mar 2017, reference 3101.0 -

The Gartner Group, *Predicts 2015: Mobile and Wireless.,* Stamford Conn. US, 2014

APPENDIX B

The Value of Heritage: Literature Review

SGS Economics & Planning

THE VALUE OF HERITAGE: LITERATURE REVIEW

[VERSION 2]
[JULY 2017]

Prepared for DEWLP
13 July, 2017

Independent insight.

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TABLE OF CONTENTS

1. INTRODUCTION

1.1 Context

In recent decades, the urban and socio-political fabric of our societies has been shaped by a range of inexorable global forces. Climate change, urbanisation and population growth, mass migration, the restructuring of the global economy, and the advent of the smart city, all have significant repercussions for the way communities and governments approach the built environment.[1]

Cities are increasingly viewed as living, dynamic and complex systems comprising rich layers of history and collective memory. As an intricate fabric, woven from threads of the past and present, embedded in cities are not only our histories, but our plans, projections and desires for the future.

UNESCO views urban areas as the 'most powerful engines of human development' and highlights the hope placed in urban areas to determine mankind's future. [2] In this context, culture is a 'powerful strategic asset' capable of creating cities and urban futures that are more 'inclusive, creative and sustainable'.[3]

Culture, which encompasses cultural heritage, is increasingly viewed as integral to sustainable development and, as argued by Hawkes, is the 'fourth pillar' of sustainability. [4]

1.2 What is heritage?

Heritage is all the things that make up Australia's identity—our spirit and ingenuity, our historic buildings, and our unique, living landscapes. Our heritage is a legacy from our past, a living, integral part of life today, and the stories and places we pass on to future generations[5].

Definitions of heritage can be nuanced, however, heritage is generally understood to mean 'what we inherit, and what society retains of this inheritance'.[6] For UNESCO built heritage is treated as a 'productive asset' transmitting knowledge from one generation to the next.

A popular understanding of built heritage is as an endowment from one generation to the next. While this understanding has been critiqued by some academic authors as 'patriarchal and socially constructed', it is generally accepted. [7]

Understanding heritage as an endowment poses significant challenges for the sector in terms of ensuring intergenerational equity.

For Harvey, society's approach to heritage has been an evolutionary process, shaped by society's experience of time and space and 'societal changes associated with the colonial and post-colonial experience'.[8]

---

[1] Christopher Tilley, 'Introduction: Identity, place, landscape and heritage.' *Journal of Material Culture,* 11, No. 1-2 (2006): 7-32.
[2] I Bokova, Forward to *Global Report on Culture for Sustainable Development' United Nations Educational, Scientific and Cultural Organisation* (UNESCO), (2015). ONLINE SOURCE
[3] Ibid (2015):5
[4] Jon Hawkes, 2001. The fourth pillar of sustainability: culture's essential role in public planning. Common Ground.
[5] Australian Government Department of the Environment. '*Plan for a Cleaner environment*' , (DoE, Canberra, 2016)
[6] The Allen Consulting Group, *Valuing the Priceless: The Value of Historic Heritage in Australia* (2005): p.1
[7] Laurent Dalmas, Vincent Geronimi, Jean-Francois Noël, and Jessy Tsang King Sang. "Economic evaluation of urban heritage: An inclusive approach under a sustainability perspective." *Journal of Cultural Heritage*, 16, no. 5 (2015): 681-687.
[8] David Harvey, 'Heritage pasts and heritage presents: temporality, meaning and the scope of heritage studies.' *International Journal of Heritage Studies*, 7(4), (2010): 319-338.

Since the 1990s, the concept of heritage has shifted towards a more holistic understanding of built heritage as part of a 'cultural ecosystem'.[9] The field of cultural economics explored the concept of 'cultural capital', drawing parallels between cultural and natural capital. [10] In this way, cultural economics has drawn on environmental and ecological discourses to consider new ways of measuring intrinsic value and factoring in intergenerational equity.[11]

Aligning built heritage with sustainability discourse has resulted in a greater emphasis and awareness in recent years on sustainable urban development, corporate ethics and social responsibility.[12] This is reflected in the 'landscape based approach to architectural heritage management' employed and promoted by the United Nations and European Union.[13]

A key issue in defining heritage, is defining what counts as heritage. Academics have tended to emphasise the negotiated nature of the construction of what counts as heritage, and are critical of how defining heritage assets is ' bound up with elite power, specifically the power of experts'[14], which is referred to by Laura Jane Smith[15] as the 'authorised heritage discourse' (2006).

1.3 Environmental sustainability and adaptive reuse

A new development in the valuation of heritage has been an increased awareness of the role in built heritage in sustainable development.

Armitage et al. argue that while Australia has a well-developed system of heritage management it has been 'slow to adapt to its responsibilities under international treaties in the area of sustainable practices in the property field'. [16]

Bandarin et al. probing of the relevance of cultural heritage for contemporary society of in a postmodern context and suggests it is intrinsically tied to visions for a sustainable future and adaptive reuse. [17] Radoine support the emergence of a vision for sustainable development which 'combines heritage, contemporary design and environmental awareness'. [18] In this vein, the practice of urban conservation of built heritage in itself can offer the following benefits:[19]

- New approaches and instruments to achieve urban and environmental sustainability
- Unlock local knowledge, creativity and wellbeing (support the knowledge economy)
- Bring together a range of public and private stakeholders

The environmental benefits of adaptive reuse featured prominently across the most recent literature on cultural built heritage. A number of academics have made compelling arguments for the adaptive reuse of heritage from a sustainability viewpoint and outlined the following benefits:

- Extending the lifecycle of buildings as opposed to demolition and new construction.
- Efficient use of resources (reduced carbon)[20]

[9] Xavier Greffe, 'Is heritage an asset or a liability?' *Journal of Cultural Heritage*, 5, no. 3 (2004): 301-309.
[10] Throsby, D., Why should economists be interested in cultural policy? *Economic Record*, 88(s1), (2012): 107
[11] Ibid
[12] UNESCO (2015):40
[13] Loes Veldpaus, Ana R. Pereira Roders, and Bernard JF Colenbrander, 'Urban heritage: putting the past into the future.' *The Historic Environment: Policy & Practice*, 4, no. 1 (2013): 3-18.
[14] H. Graham, R. Mason, A. and Newman, *Literature Review: Historic Environment, Sense of Place and Social Capital*, Commissioned for English Heritage. (2009)
[15] Laura Jane Smith, *The Uses of Heritage*, (London 2006)
[16] Lynne Armitage and Janine Irons, "The values of built heritage." *Property Management*, 31, no. 3 (2013): 246.
[17] Francesco Bandarin, and Ron van Oers, 'The Historic Urban Landscape: Preserving Heritage in an Urban Century.' *The Historic Urban Landscape: Managing Heritage in an Urban Century* (2012): 175-193.
[18] Hassan Radoine, 'Planning and Shaping the Urban Form through a Cultural Approach' *Global Report for Sustainable Urban Development* (UNESCO 2015) 5: 169
[19] Global Report on Culture for Sustainable Development. (United Nations Educational, Scientific and Cultural Organisation (UNESCO), 2015). ONLINE SOURCE
[20] Esther HK Yung, and Edwin HW Chan, 'Implementation challenges to the adaptive reuse of heritage buildings: Towards the goals of sustainable, low carbon cities.' *Habitat International*, 36, no. 3 (2012): 352-361.

- Reuse of a historic building is more sustainable than LEED certified new construction.[21]

Armitage et al. argues as yet there is poor recognition of the measurement tools to measure the value of a heritage asset's social and cultural contribution to sustainability.[22]

[21] Sarah Laskow, 'Why historic buildings are greener than LEED certified new ones, *The Daily Grind'* (2012). Available online: https://www.good.is/articles/why-historic-buildings-are-greener-than-new-leed-certified-ones
[22] Armitage et al,(2013): 255

2. THE CULTURAL VALUE OF HERITAGE

This chapter provides a broad overview on why heritage is important to individuals and society at large. It provides a background context to the categories of value identified in chapter 3.

2.1 Cultural value and significance

History and heritage are essential elements of all cultures, as reflected in the ideas, materials and habits passed through time. In this way, cultural values are 'a part of the very notion of heritage' and pertain to the shared meanings associated with built heritage.[23]

The value of a heritage place, site, landscape or object is commonly referred to as its cultural significance.[24] Cultural value/significance is a broad term which encompasses the aesthetic, historic, scientific, symbolic and social or spiritual value of cultural heritage for past, present and future generations.[25]

The socio-cultural values embodied by the term cultural significance have a number of associated benefits that are often intangible and not necessarily quantifiable. There have been a number of approaches taken to categorising sociocultural values over time. Current trends observed in the literature tend to agree on the typology of socioeconomic values outlined in **Error! Reference source not found.**. Several of these values and other values not explicitly identified in this list are explored in greater detail in the following sections.

TABLE 1: SOCIOCULTURAL VALUES OF URBAN HERITAGE

VALUE	DEFINITION
Historic	The building or site provides a connectedness with the past and reveals the origins of the present
Aesthetic	The building or site possess and displays beauty, this may include the relationship of the site to the landscape in which it is situated and environmental qualities relevant to the site and surrounds.
Scientific	The building or area is important as a source or object for scholarly study
Spiritual	The building or site contributes to the sense of identity, awe, delight, wonderment, religious recognition, or connection with the infinite
Symbolic	The building or site conveys meaning and information that helps the community to assert its cultural individuality
Social	The building or site contributes to social sustainability and cohesion in the community, helping to identify the group values that make the community a desirable place in which to live and work.

Source: Throsby David "Heritage Economics: A Conceptual Framework" Urban Development Series, The World Bank (2012).

[23] Randall Mason, 'Assessing values in conservation planning: methodological issues and choices.' *Assessing the Values of Cultural Heritage,* Ed. Marta de la Torre, (The Getty Conservation Institute, Los Angeles, 2002): 5-30.
[24] The Allen Consulting Group, (2005): 1
[25] Ibid;
Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter. ICOMOS (2013),
David Throsby, 'Heritage Economics: A Conceptual Framework' *Urban Development Series*, The World Bank (2012).

2.1 Aesthetic and Design Quality

Throsby[26] describes the aesthetic qualities of cultural heritage as the beauty displayed or possessed by the site. This may extend to the surrounding landscape in which an asset is located and associated environmental qualities.

Previous studies by SGS have also highlighted the architectural and design qualities of built heritage, and the contribution an asset makes towards the education of the community on the value of good design.

2.2 Political significance

The attribution of cultural significance to heritage sites and places is values based, and has not and does not necessarily occur in an equitable manner.[27]

Heritage sites have a political value-in that they can be used to build or maintain the legitimacy for governments, protest movements and ideological causes. The political value of heritage sites can be purely symbolic, but can also result from understanding how the heritage site was created and evolved over time and from providing insight into who has shaped the environment.[28]

The political value of heritage sites can be viewed as 'a key contributor to civil society' or more cynically 'a political tool used to enforce national culture, imperialism, post-colonialism, and so on'.[29]

2.3 Educational

Built heritage has educational meaning and value for a society. Built heritage provides opportunities for people to gain knowledge about the past, provide primary research material for academics and an archaeological record that can be studied in context.[30]

Bandarin[31] suggests the active use of heritage assets can leverage the cultural value embedded in a heritage building to inform the intellectual development of a community.

Recent studies are starting to unpack the relationship between heritage and the knowledge-based city and maintain the heritage has an important role in 'creating representations of place within which the knowledge economy remains firmly rooted'.[32]

2.4 Community identity

Cultural heritage is widely understood to constitute 'who we are' and underwrites a community's source of identity.[33] Tilley[34] argues that our relationship to heritage raises all of the 'classical questions of social identity' which, in a contemporary context of globalisation, the rapid development of multicultural urban communities are increasingly uncertain.

It is argued that 'tangible and intangible heritage are integral parts of a city's identity, sense of belonging and cohesion'.[35] Further to the contribution of built heritage to a city's identity, is

[26] Throsby, (2012)
[27] Chris Johnston, *What is social value,* (Australian Heritage Commission, Commonwealth of Australia,1992)
[28] Mason, (2002)
[29] Ibid: 11
[30] Ibid
[31] Bokova, (2015): 5
[32] Graham, (2002)
[33] Bokova, (2015): 5
[34] Tilley, (2006): 8
[35] Bokova, (2015): 17

the unique contribution it makes to personal identity and a 'sense of self'.[36] For Tilley[37] the two are 'inextricably bound'.

UNESCO suggest that for communities 'disrupted by bewildering change and economic instability' built heritage is all the more important in 'constituting a source of identity and cohesion'.[38]

2.1 Sense of Place

Heritage sites are also associated with a sense of place and positive place attachment. In a UK Study, historic environments were identified as contributing to a sense of place because of its role in 'place distinctiveness (what makes a place distinctive), place continuity (the way a place supports people's sense of continuity) and place dependency (how a place enables people to realise their goals)'.[39]

Place attachment relates to the production of identity, both individual and community. It is associated with the social cohesion and community identity that members of a social group share, which arises from the shared symbolic meanings associated with the specific heritage and environmental characteristics of their "home "territory.[40] It is widely accepted that place attachment operates at a variety of scales- the place someone may be attached could be as local as the street or as global as the country.

2.2 Social Capital

Built heritage impacts on social capital in a range of ways.[41] The Allen Consulting Group suggest heritage places 'engender community involvement and networking'. [42] The social capital of heritage sites enable and foster social connections and networks and other kinds of social relations, which may not be related to the historical importance of the heritage asset.

In this way heritage assets contribute to and provides a place for the following:

- encounters and social gatherings such as celebrations, markets, picnics and games
- Contributes to a healthy local economy (Jobs and wealth)
- Civic Pride
- Sense of place
- Community hubs (and associated uses)
- Sites for social integration and inclusion
- Source of identity and local pride
- Activities of NGOs and volunteers

2.3 Community concerns and historical legacies

There is limited research available on community concerns regarding heritage and historical legacies. A literature review commissioned by the Heritage Council of Victoria in 2014 on existing research and studies on 'community perceptions of heritage' found no Victorian studies regarding public attitudes to heritage, with the exception of the Allen Consulting study of 2005. However, there is considerable research on the impact of loss of heritage on communities.

In recent years, deliberate attacks on cultural heritage in Afghanistan, Iraq, Libya, Mali and Syria has brought the concept of 'access to cultural heritage as a human right' to the fore of

[36] Tilley, (2006):8
[37] Ibid
[38] Protecting our heritage and fostering creativity. UNESCO (2017) http://en.unesco.org/themes/protecting-our-heritage-and-fostering-creativity
[39] Graham et al. (2009)
[40] Mason, (2002); Scannell and Gifford (2010)
[41] The Allen Consulting Group, (2005); Murzyn-Kupis (2013)
[42] The Allen Consulting Group, (2005): 8

discussion[43].To the UN the destruction of cultural heritage in conflict and non-conflict situations undermines a number of additional human rights.

The devastating and long term impacts on a community's psyche resulting from the destruction of cultural heritage, demonstrate the strong correlation between heritage and civic pride, identity and wellbeing.

Hejazi[44] identifies the four types of risk to cultural heritage, natural causes, economic causes, social causes and institutional weaknesses. The risks posed by climate change to built heritage and heritage landscapes are increasingly recognised by the community.[45]

Worldwide, there are numerous case study examples of communities galvanising to protect against the loss of built heritage.

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[43]'Destruction of cultural heritage is an attack on people and their fundamental rights – UN Expert', *UN News Centre*, (United Nations 2016). Available online: http://www.un.org/apps/news/story.asp?NewsID=55412#.WUdZi2iGMdU

[44] Mehrdad Hejazi, "The risks to cultural heritage in western and central Asia." Journal of Asian Architecture and Building Engineering 7, no. 2 (2008): 239-245.

[45] Armitage et al., (2013): 255

3. ECONOMIC VALUES OF HERITAGE

This chapter summarises the different economic values for heritage that can be used to inform a CBA.

3.1 The meaning of 'value' in a heritage context

Mason observes that 'economic valuing is one of the most powerful ways which society identifies, assesses, and decides on the relative value of things'.[46] There are a number of well-established economic values with regards to historic heritage which are described in Figure 1. Economic values significantly overlap with the cultural values discussed in the previous chapter, but differ in that they can be measured through economic analysis.

It is suggested that each of the use and non-use benefits identified are capable of 'increasing welfare' and ought to be considered in any analysis.[47] In addition, there may be examples of evaluations in which the 'benefits conflict' and trade-offs are required between the degree of place conservation and the intensity of use.[48]

Serageldin argues that there is a spectrum of decreasing tangibility' of value to individuals, with direct use having the highest tangibility and bequest value having the lowest tangibility. [49]

FIGURE 1: ECONOMIC VALUES OF URBAN HERITAGE (AFTER THROSBY)

VALUE		DEFINITION
USE	Direct	Direct worth of buildings as a private good. Their potential to accommodate residential, commercial, services or other uses with demand in the property markets and for consumers. Direct worth of buildings as a private good. Their potential to accommodate residential, commercial, services or other uses with demand in the property markets and for which consumers will be willing to pay a premium rent due to the heritage value of the asset.
	Indirect	Value accruing to others (passive use)
NON-USE	Existence	Communities value the existence of the heritage, even though they may not directly consume its services, and are willing to invest resources for its safeguarding
	Option	Communities wish to ensure that their members or others will have access to the heritage in future, and are prepared to commit resources for its safeguarding
	Bequest	Communities with to bestow the heritage for future generations, so devote resources to its conservation

Source: Eduardo Rojas "Governance in Historic City Core Regeneration Projects" Urban Development Series. The World Bank (2012).

[46] Mason, (2002): 12
[47] The Allen Consulting Group, (2005): 5
[48] Ibid: 5
[49] Ismail Serageldin, 'Cultural heritage as public good.' *Global Public Goods*(1999): 240.

The following section defines and discusses uses and non-use economic values in greater detail.

3.2 Use Value

Use values are also defined as market values, and can typically be assigned a price. For heritage assets, the use values 'refer to the goods and services that flow from it that are tradable and priceable in existing markets'.[50]

Direct user value

Built heritage has direct use value as a physical asset capable of accommodating and earning revenue from a range of residential, commercial and other uses.

The heritage element of physical assets often adds value to the primary use value as people may 'derive additional value from viewing, visiting and or living and working in a heritage place.'[51]

The direct use value of heritage assets has a number of quantifiable direct benefits including the stimulation of economic activity and increased labour force productivity, increased tourism, and opportunities for recreation, leisure and entertainment.[52]

The argument that heritage assets can extract premium rents for residential and commercial uses should be tempered with an understanding of the capital expenditure and ongoing operational costs associated with maintaining the asset. Whether a heritage listing elevates property values or 'creates a negative impact' by restricting property rights is contested across the literature.[53]

In some development contexts, heritage is viewed a liability by public and private property owners.[54] In recent years, UNESCO have endeavoured to promote urban heritage's contribution to sustainable development and shift perceptions to a view of built heritage as a development asset for the city.[55]

However, as suggested by the Allen Consulting Group, there are sometimes trade-offs to be made between the degree of place conservation and the intensity of use proposed for an asset.

Indirect user value

The indirect use value of built heritage is best defined as external or 'passive use' or the value accruing to others.[56] A non-use value can occur 'without any direct consumption' whereby 'individuals can derive benefit from a heritage place despite never physically entering or viewing the place but merely from reflection or association'.[57]

"Indirect value relates to the more subtle and less quantifiable values that are relevant to the users who do not specifically live or work in the heritage structure but for whose property forms a familiar and defining element of the community and is associated with regular community life. The property may define the community image that is projected to visitors and, in turn, may increase the overall appeal of the community. The presence of an appealing heritage building can increase the visual amenity of a street or the wider neighbourhood. Indirect benefits of a heritage site can include the social benefits derived from having a

[50] Mason, (2002)
[51] Serageldin,(1999): 4
[52] Allen Consulting Group, (2005)
[53] Armitage et al., (2013): 252
[54] Eduardo Rojas "Governance in Historic City Core Regeneration Projects" Urban Development Series. The World Bank (2012): 199.
[55] Ibid
[56] Rojas, (2012):199
[57] Armitage et al., (2013): 249

recognisable and iconic local building that can act as a landmark and meeting place that encourages social interaction.

Throsby suggests the most promising approaches to measuring cultural value is to break the category down into components of value 'for which measurement scales might be devised'. These are captured in the cultural values described by Throsby in **Error! Reference source not found.**:

- Aesthetic value
- Spiritual value
- Social value
- Historic value
- Symbolic value
- Authenticity value

More specific indirect benefits accruing from indirect user value may include:[58]

- Community image
- Environmental quality
- Aesthetic quality
- Valorisation of existing assets
- Social interaction
- Educational benefits
- Impact of heritage designation on property values
- Spill-over benefits from tourism[59]

3.3 Non-Use Value

Non use values are also referred to as nonmarket values, as they are not traded in markets and are not readily assigned a price. Many of the sociocultural values discussed in the previous chapter can be categorised as non-use values. However, these values can be expressed as economic values due to individuals willingness to pay to acquire them and/or protect them.

Option value

The option value of heritage can be defined as 'someone's wish to preserve the possibility (the option) that he or she might consume the heritage's services at some future time'.[60]

Bequest value

The bequest value refers to the historic legacy of built heritage and is encapsulated by the resources communities are prepared to allocate to its ongoing preservation. It stems from the desire felt to bequeath a heritage asset to future generations. This cultural and historical legacy stems from the feeling of obligation and responsibility shared by individuals in communities that it is right to protect and pass down our historical places for those that have not had the chance to experience them.

Existence/intrinsic value

"Intrinsic value" is a much less tangible value of heritage. It is typically involves the perceptions of individuals as to how a heritage property contributes to the basic and essential elements of a local community. The presence of these values helps form the identity of an area and the people that live within it. The existence value or inherent value of heritage is firmly embedded in a building and or site's identity, uniqueness and significance.

[58] Serageldin, (1999): 48
[59] Armitage et al., (2013)
[60] Mason, (2002)

Serageldin argues that the 'estimation of existence values is not a senseless academic exercise' and without due rigour can lead to the significant understating of the value of heritage.[61]

It is proposed that cultural built heritage requires a similar approach to that taken in environmental economics to estimate the existence value of biodiversity.[62]

[61]Serageldin (1999): 47
[62] Ibid: 48

4. INDICATORS FOR THE ECONOMIC VALUE OF HERITAGE

This chapter summarises measurable indicators that can be used to assess community values for built form heritage that can be used as direct inputs in a CBA.

4.1 Overview

Choi et al consider the field of cultural economics a burgeoning area which is receiving an increasing amount of attention and scholarship.[63]As discussed in the previous chapters, the use and non-use qualities of built heritage assets make valuing heritage a complex and challenging exercise.

The literature review highlighted that there are longer term indicators of a society's recognition and valuing of heritage which are often taken for granted, including:

- Establishment and maintenance of legislation and regulation[64]
- Well established community bodies with nationwide membership
- Advocacy groups

A 'typical valuation study' looks to arrive at a total economic value through use and intangible non-use values.[65]

To determine use values, revealed preference methods are used to look at 'surrogate markets' by analysing preferences for non-market goods indicated by willingness to pay (WTP) data for similar markets. [66] Such techniques include:

- Hedonic price method
- Travel cost method
- Maintenance cost method

To determine non-use values, stated preferences methods are employed which use 'hypothetical markets' (captured by a social survey methodology and supporting qualitative analysis) to understand preferences for which there may be 'no surrogate market a cultural good or service'.[67] Typical methods include:

- Contingent valuation method
- Choice Modelling

Figure 2 outlines the framework of a typical valuation study for a cultural heritage asset.

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[63] A.S Choi., B.W. Ritchie, F. Papandrea, and J.Bennett, 'Economic valuation of cultural heritage sites: A choice modeling approach.' *Tourism Management*,31(2),. (2010): 213-220

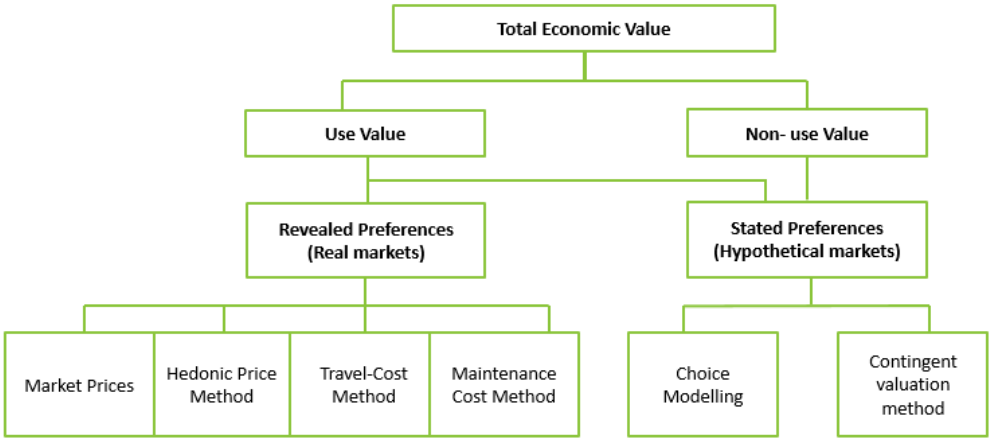
[64] "Community Perceptions of Heritage". Heritage Council of Victoria. (2014):254. Available online: http://heritagecouncil.vic.gov.au/research-projects/community-perceptions-of-heritage/

[65] Ibid: 214

[66] Susana Mourato, and Massimiliano Mazzanti. 'Economic valuation of cultural heritage: evidence and prospects' in *Assessing the Values of Cultural Heritage*, Ed. Marta de la Torre, (The Getty Conservation Institute, Los Angeles, 2002):51-76

[67] Ibid: 51

FIGURE 2: FRAMEWORK FOR ECONOMIC VALUATION TECHNIQUES



Source: Economic valuation techniques, modified by Choi et al. from Fig.1.4 of Bateman et al. (2002: p.30)

4.2 Use Value Indicators (Revealed preferences)

Hedonic Pricing Method

A hedonic pricing method is based on the concept that house prices are impacted by a range of attributes, which may include 'non-market cultural factors' such as a heritage overlay. [68] This method captures the 'extra price commanded by a house in a historic area' if all other factors are the same.[69]

Limitations

This method has the following limitations:

- Only applies to cultural heritage attributes that are incorporated in property prices
- Reliant on assumptions that the property market is efficient and self-regulating. [70]
- Assumes the value of the cultural good accrues only to those who live close to it: visitor use values and non use values are excluded.[71]

Travel Cost Method

A travel cost method captures how much individuals value the benefits of a cultural heritage site by quantifying how much they are willing to pay to make a journey to visit it. This includes both the amount of time spent and the financial costs associated with the trip, including any entry fees. .

As individuals experience different costs to visit different places, this method uses these 'implicit prices' instead of 'conventional market prices' to determine a site's value and or changes to the quality or offer available. [72]

This data is used to establish a demand curve for the benefits of a site.

A 2015 study used the travel cost method to value an American Revolutionary Ware heritage site in South Carolina USA, which was visited by cultural and recreational tourists. The found while the site had substantial economic value, but the results were particularly sensitive to the variables that described the different types of visitor.

[68] Mourato and Mazzanti, (2002): 54
[69] Ibid;
[70] Ibid;
[71] S. Navrud, S., and R. C. Ready, *Valuing Cultural Heritage: Applying Environmental Valuation Techniques to Historic Buildings, Monuments and Artifacts*. Edward Elgar (2002): 14
[72] Mourato, and Mazzanti, (2002): 54

Limitations

While this is a well-established and regarded method for economists, this approach is limited in that it cannot determine option, non-use values or negligible changes in cultural assets. Other limitations include:

- Less effective for accessible and or centrally located sites not requiring much travel
- Difficult to apply to cultural sites with multiple attributes and confused by the 'presence of substitute locations'[73]
- Sample selection bias due to questionnaire non-response and item non response where surveys are applied[74]
- Misspecification of the demand curve

Maintenance cost method

The maintenance cost method uses an avoided maintenance-cost approach to understand 'damages to cultural materials' common examples include air pollution.[75] This method calculates the cost savings 'implied from a reduction in maintenance cycles due to reduced maintenance rates'.[76]

Limitations

It is important that this method is tempered by an understanding that cost data is often more accessible than data on benefits. A heavy reliance on this method may lead to a significant underestimate of the true economic value of an asset.

4.3 Non-use value indicators (Stated preferences)

Contingent Valuation

Contingent valuation has been a prevalent valuation method in the past, however in recent years the use of choice modelling has become a popular alternative. Contingent valuation primarily involves surveying people with regards to their willingness to pay for received benefits from cultural heritage assets or alternately, willingness to accept compensation for their loss.[77]

Survey's aim to illicit from respondents the maximum financial contribution they would be willing to make towards supporting a cultural asset. Table 2 includes a list developed by Doug Noonan of Contingent Valuation Studies in the Arts and Culture, that were conducted internationally between 1983 and 2003.[78]

A particularly relevant study conducted in 2012 looked at tourist's as well as local residents' willingness to pay for cultural heritage in the city of Valdivia in Chile, as a way to understand the economic vale associated with the city's historic fabric[79]. They found that "Contingent valuation may thus be an invaluable tool for public authorities charged with the care of cultural heritage, as the findings may offer a coherent guideline for allocation of funding or assessing cultural projects, in sum for designing specific cultural policies linked to heritage".[80]

[73] Mourato, and Mazzanti., (2002): 55
[74] R. T. Melstrom, 'Valuing a historic site with multiple visitor types and missing survey data'. *Journal of Cultural Heritage*, 16(1): (2015): 102-105.
[75] Mourato, and Mazzanti., (2002): 55
[76] Ibid;
[77] Throsby, (2002): 111
[78] Doug Noonan, *Contingent Valuation Studies in the arts and Culture: An Annotated Bibliography*, (The Cultural Policy Centre, University of Chicago, 2003): 10
[79] A Báez, and L.C. Herrero, 'Using contingent valuation and cost-benefit analysis to design a policy for restoring cultural heritage.' *Journal of Cultural Heritage*, 13(3) (2012): 244
[80] Ibid;

TABLE 2: WILLINGNESS TO PAY: SUMMARY OF SELECTED CULTURAL CONTINGENT VALUATION STUDIES

Column heading	Year	Topic	Specific Good	Currency	WTP	Survey Number
Thompson, et. al.	1983		Support Australian arts through taxes	Australian $	18	827
Morrison, West	1986		Support for performing arts in Ontario through taxes	Canadian $	6	463
Thompson, et. al.	2002		Preventing losing 25% of arts in Kentucky	US $	16	503
Glass, et. al.	1999		Increase in local area arts in Kansas	US $	19	515
Pollicino et. al.	2001		Cleaning Lincoln Cathedral more often	UK Pound	15	328
Willis	1994		Access to Durham Cathedral, England	UK Pound	1	92
Grosclaude, et. al.	1994		Maintain buildings in Neuchatel	Swiss Franc	5	200
Garrod, et. al.	1996		Renovate buildings in Newcastlel	UK Pound	10	202
Santagata, et. al.	2000		Support for Napoli Musei Aperti	Italian Lira	17000	468
Maddison, et. al.	1999		Road options for Stonehenge	UK Pound	0*	357
World Bank	1998		Prevent deterioration of Fés Medina, Morocco	Us $	30*	600
Navrud	1992		Preservation of Nidaros Cathedral, Norway	US $	51	163
Chambers, et. al.	1998		Historic building in St. Genevieve, MO	US $	6*	305
Morey, et. al.	1997		Reducing damage rate to DC monuments by 50%	US $	4	272
Kling, et. al.	2001		Hotel in Ft. Collins, CO	US $	121*	212
Scarpa, et. al.	1998		Rivoli Castle, Italy	US $	28	1323
Powe, Willis	1996		Preservation of Warkworth Castle, England	UK Pound	2*	201
Bille Hansen	1997		Support for the Royal Theatre in Copenhagen	US $	11	1843
Martin	1994		Support for all Quebec museums	Canadian $	8	908
Maddison, Foster	2001		Congestion costs in the British Museum, per marginal visitor	UK Pound	6*	400
Mazzanti	2001		Admission to the Galleria Borghese in Rome	Italian Lira	6000*	185

Lockwood, et. al.	1996		Preserve cultural heritage of grazing Australian alps	Australian $	81	702
Boxall, et. al.	2002		Aboriginal rock paintings in Canada	?	?	?
Riganti, Scarpa	1998		Conserving all of Campi Flegrei in Italy	US $	216	448
Beltrán, Rojas	1996		Preservation of Mexican archeological sites	New pesos	36	6503
Papandrea	1999		Increase domestic TV programming by 10%	Australian $	12	2193
Schwer, et. al.	1995		PBS TV in Las Vegas	US $	25	229
Harless, Allen	1999		18 extra reference desk hours at university library for faculty	US $	5	382
Johnson, et. al.	2000		Building a new UK basketball arena	US $	5	230
Johnson, et. al.	2001		Keeping the Pittsburgh Penguins hockey team	US 6	293	

Source: Doug Noon, 2003. * indicates the WTP payment is a one time payment.

Limitations

Throsby outlines a number of biases which may impact the results of contingent valuation studies and argues that careful experimental design is required to mitigate these.

- Incentives may exist for individuals not to reveal their true willingness to pay
- Responses may not be informed by sufficient or correct information (must provide expected effects of the choice being proposed)[81]
- Budget constraint – gap between monetary value suggested and an individual's financial resources
- Difficulty validating the responses to questions
- General public are not familiar with valuation techniques
- Thoroughness – recommended that they are carried out in person[82]

Choice modelling

Qualitative research is often required to gauge the existence value of a built heritage asset by assessing the willingness of members of a community to pay (WTP). Already widely applied in environmental economics, the use of choice modelling in the evaluation of cultural heritage assets is still relatively new.[83] Choice modelling has been described as a 'powerful and detailed capacity of evaluation' for cultural heritage assets.[84]

Choice modelling uses a number of survey based methodologies for the measurement of preferences for non-market goods and respondents to surveys are typically asked to do one of the following:[85]

- Rank the various alternatives in order of preference
- Rate each alternative according to a preference scale
- Choose their most preferred alternative out of a set

A price is attached to one of the attributes of a good and therefore willingness to pay can be deduced from respondents' ranks, ratings and choices.[86] In this way choice modelling allows for 'multidimensional changes' and overcomes the limitations traditionally associated with contingent valuation.[87]

Table 3 summaries the stages of a choice modelling exercise.

TABLE 3: STAGES OF A CHOICE MODELLING EXERCISE

STAGE	DESCRIPTION
Selection of attributes	Literature reviews and focus groups are used to select the attributes of the good to be valued that are relevant to people, while expert consultations help to identify the attributes that will be impacted by the policy. A monetary cost is typically one of the attributes to allow the estimation of Willingness to Pay.
Assignment of levels	The attribute levels should be feasible, be realistic, and span the range of respondents' willingness to pay values. A baseline, status quo level is usually included (e.g., a no-payment level in the case of willingness to pay).
Choice of experimental design	Statistical design theory is used to combine the levels of the attributes into a number of alternative scenario descriptions.

[81] Peter Abelson 'Valuing the public benefits of heritage listing of commercial buildings.' In *Proceedings Conference*, (2000): 147..
[82] Ibid:153
[83] Choi et al., (2010): 215
[84] Mourato et al., (2002): 64
[85] Ibid;
[86] Ibid;
[87] Ibid;

Construction of choice sets	The scenarios identified by the experimental design are then grouped into choice sets to be presented to respondents. Choice sets can have two or more alternative scenarios.
Measurement of preferences	Respondents are typically asked to choose their most-preferred alternative out of each choice set, or to rank the alternatives in order of preference

Source: Susana Mourato and Massimiliano Mazzanti "Economic Valuation of Cultural Heritage: Evidence and Prospects" (2002): 64

Limitations of choice modelling

According to Susana Mourato and Massimiliano Mazzanti choice modelling is also prone to the difficulties associated with survey techniques encountered by contingent modelling. In addition, respondents may experience 'cognitive difficulty' with making 'complex choices between bundles with many attributes and levels'.[88]

Other issues can include:

- Respondent fatigue/ overburdening respondents with information
- Choosing options with reference to one attribute only (ignoring others)

CHOICE MODELLING – ALLEN CONSULTING GROUP 2005

Choice modelling undertaken in 2005 by the Allen Consulting Group with the assistance of ACNielsen to evaluate the importance of heritage to community. According to a literature review undertaken by the Heritage Council of Victoria, this is one of the few studies to date on the Victoria community's perceptions of heritage.

The following approach was taken:

- **Survey**: In simple attitudinal questions respondents were asked if they 'Strongly agree and agree', 'Strongly disagree and Disagree', or 'Neither agree or disagree' with statements representative of community views and perceptions of heritage related values.
- **Choice modelling:** was undertaken to further analyse general statements to see the degree to which the population is willing to financially support historic heritage conservation. Attributes were developed following focus group meetings, and related to Protection, Condition, Accessibility, Age Mix, Development Control, and Cost. The Choice modelling involved eliciting a respondent's stated preference in a hypothetical setting; respondents are presented with several sets of options, and asked to indicate which option they prefer. The choice modelling allows implicit prices to be assigned to each of the changes associated with the attributes, e.g. $5.53 per person for the Places Protected attribute, per 1000 additional heritage places protected.

Armitage et al. argue that since the Allen Consulting Group survey in 2005 there has been greater public awareness on sustainability and the need to 'effectively use the planet's resources'. This may feed into a future survey approach.

4.4 Additional indicators

Revenue from entry fees

Price paid for entry into heritage venues and associated programs and activities, calculated by attendance numbers.

[88] Mourato et al., (2002): 64

Limitations

- Often instances where there is a failure to charge optimal entry fees and charges i.e. 'fees that would maximise visitor revenue without compromising targets for number of visits and fees that could subsequently revert to conservation'[89]

Volunteer hours

Another important indicator of heritage places' contribution to social capital is reciprocity.[90] Reciprocity is seen in actions including contributing time or money to the community, making charitable donations, and sharing support among friends and family.

This can be measured through the percentage of adult population volunteering for heritage activities, and the percentage which donated to charity causes in the last 12 months.

Limitations

While the survey results are useful in pointing to the degree of social interaction regarding historic heritage matters, their value as standalone indicators is limited. Their value may emerge if monitored over time.[91] Additionally, the indicators of reciprocity are vague; the percentage of adult population volunteering for heritage activities does not specify how much time is spent, and how much time constitutes as 'volunteering' (i.e. frequent and continuous volunteering, once off volunteering, or whether the activity was compulsory community service, etc.). This also applies to the indicator of 'donations to heritage causes in the last 12 months', with the indicator failing to address exactly how much is donated, or in which percentiles in proportion of income the donations were made.

4.5 Foregone commercial value

The foregone commercial value of a heritage site refers to the the difference between the economic value of a heritage site and the economic value of redeveloping that site for commercial purposes. The difference between these indicates a willingness to pay for the heritage values, due to the foregone commercial value of not developing it

4.6 Environmental benefits

The literature review highlighted a number of environmental benefits linked to the restoration and upkeep of heritage assets have been identified, including:

- Extended lifecycle
- Recycling versus demolition and construction
- Reduction in carbon emissions
- Long term investment

The environmental benefits identified share a link with the maintenance cost method, in that it identifies the cost savings of environmental benefits associated with restoration and upkeep of heritage assets. .

[89] Mourato et al., (2000):51
[90] The Allen Consulting Group, (2005):37
[91] Ibid;

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APPENDIX C

Valuing Victoria's Heritage: Annotated Bibliography

SGS Economics & Planning

VALUING VICTORIA'S HERITAGE: ANNOTATED BIBLIOGRAPHY

REPORT
JULY

Prepared for DELWP

Independent insight.

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ANNOTATED BIBLIOGRAPHY

Please find below an annotated bibliography – a supporting document to the Value of Heritage literature review.

Abelson, P., 'Valuing the public benefits of heritage listing of commercial buildings.' For the New South Wales Heritage Office, (2000).

Abelson reviews key methods of valuing the benefits of heritage listing of commercial buildings to the community, and analyses the application of these methods to seven listed properties in Sydney. The key valuation methods considered include:

- Stated preference
- Hedonic property valuation
- Travel cost method
- Economic Impact Analysis

The overall findings suggest that only the state preference model has general application, however, careful implementation and considerable resources are required. Abelson puts forward a suggested approach to valuing the public benefits of commercially listed heritage buildings in a large city.

Ahmad, Y., 'The scope and definitions of heritage: from tangible to intangible.' *International Journal of Heritage Studies*, 12, no. 3 (2006): pp. 292-300.

This paper focuses on the scope and definition of heritage accepted and promoted by various charters ie. UNESCO and ICOMOS. Ahmad argues that while the scope of heritage is generally accepted internationally as including both 'tangible' and 'intangible' as well as 'environments', the 'finer terminology is yet to be streamlined or standardised'. As such there is no consensus between countries.

Alberini, A., Riganti, P. and Longo, A., 'Can People Value the Aesthetic and Use Services of Urban Sites? Evidence from a Survey of Belfast Residents'. *Journal of Cultural Economics*, 27(3): pp. 193-213, (2003).

This study considers the potential for conjoint choice experiments for planning decisions on urban sites. People's preferences for regeneration projects that alter the aesthetic and use character of specified urban sites are determined. A split-sample design is used with two sets of regeneration projects.

1. The hypothetical transformations of an actual square with an important cultural and historical dimension
2. The hypothetical transformation of an abstract square which is made to resemble the former in all respects, aside from its cultural and historical dimension

Each of the projects are defined by aesthetic and use attributes. The overall results imply that 'individual choices are explained by attributes, and that the marginal utilities *are* significantly different across projects for the actual and the abstract square'.

Armitage, L., and Irons, J., 'The values of built heritage.' *Property Management*, 31, no. 3 (2013): pp. 246-259.

This study considers some of the established approaches which have been developed to generate awareness for the role of heritage and its significance in reducing the use of carbon incurred by building new structures.

The study finds that Australia has a 'well developed system of heritage management' but has been somewhat slower to adapt to its 'responsibilities under international treaties in the area of sustainable practices in the property field'. Armitage et al suggest that while the overall impact of a heritage listing on property value remains unclear, the sustainable use of resources is currently receiving increased attention in both professional and academic circles.

Ashworth, G. J., 'Conservation Designation and the Revaluation of Property: the risk of heritage innovation. '*International Journal of Heritage Studies*, 8, no. 1 (2002): pp. 9-23.

This study by Ashworth explores the relationship between the designation of heritage areas, property values and the role of local authority policy in St. John's Newfoundland, Canada's oldest and largest Heritage Conservation District.

Using St. John's Newfoundland as a case study, Ashworth suggests that investment in renovation by both public authorities and individuals proves to be a 'risky undertaking' and does not necessarily achieve private and or public gains.

To conclude, Ashworth draws conclusions concerning the relationship of local authority goals and policies and private initiatives in order to establish the 'preconditions for possible success and risk minimisation' for other jurisdictions.

'Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter'. ICOMOS (2013). Available online: http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf

'The Burra Charter' is the Australia ICOMOS Charter for Places of Cultural Significance. The charter sets a standard practice for those who provide advice, make decisions about, or undertake works to places of cultural significance, including owners, managers and custodians. The Charter process outlines seven steps in planning for and managing a place of cultural significance.

1. Understand the place: Define the place and its extent. Investigate the place: Its history, use, associations, fabric
2. Assess Cultural Significance: Assess all values using relevant criteria. Develop a statement of significance
3. Identify all factors and issues: Identify obligations arising from significance. Identify future needs, resources, opportunities and constraints, and condition
4. Develop policy
5. Prepare a management plan
6. Implement management plan
7. Monitor the results and review the plan.

The charter defines cultural significance as 'aesthetic, historic, scientific, social or spiritual value for past, present or future generations'. Furthermore, cultural significance is considered to be 'embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects'. It is also recognised that places may have a range of values for different individuals or groups.

Báez, A., and Herrero, L. C., 'Using contingent valuation and cost-benefit analysis to design a policy for restoring cultural heritage.' *Journal of Cultural Heritage,* 13(3): (2012) pp. 235-245.

Báez argues that while contingent valuation for estimating individual as well as collective preferences is increasingly applied to historical heritage, the findings are rarely used to inform cultural policies or assess heritage related projects.

This paper suggests an approach which combines contingent valuation and cost benefit analysis to design a cultural policy aimed at restoring the urban cultural heritage of the city of Valdivia, Chile. Contingent valuation is used to estimate the expected benefits from heritage for both local residents and tourists. A cost benefit analysis is then applied to the findings to assess a project to restore urban cultural heritage through a non-profit organisation.

Bandarin, F., and van Oers, R., 'The Historic Urban Landscape: Preserving Heritage in an Urban Century.' The Historic Urban Landscape: Managing Heritage in an Urban Century, (2012): pp. 175-193.

This paper discusses the challenges to urban conservation in light of the 'forces of change' associated with Globalisation. Bandarin et al also consider the need to revisit the 'classic conservation paradigms' in order to recognize 'cultural diversity and the dynamic nature of urban heritage'.

Blake, J., 'Unesco's 2003 Convention on Intangible Cultural Heritage'. *The Implications of Community Involvement*, (2008): pp. 45-50.

This paper discusses the outcomes and significant aspects of the 2003 *Convention on Safeguarding of the Intangible Cultural Heritage (ICHC).* Blake argues that the Convention gives a central role to the cultural communities (groups and individuals) associated with intangible cultural heritage, an unprecedented approach in international law.

The implications of this new approach to cultural heritage treaty making is discussed along with what it means for the implementation of the Convention itself and national cultural policy-making. Blake situates the Convention within the broader context of the evolution of thinking about culture in international policy making over the last quarter century. The paper emphasizes a shift from high art to a more anthropological conception, and how this has informed the development of cultural heritage law and human rights thinking.

Bokova, I., Forward to 'Global Report on Culture for Sustainable Development' United Nations Educational, Scientific and Cultural Organisation (UNESCO), 2015.

This report was produced as a policy framework document to support governments in the implementation of the 2030 Agenda and is a 'key contribution' to the common United Nations' actions within the framework of a New Urban Agenda.

The report considers the role of culture for sustainable urban development and analyses the situation, trends, threats, and existing opportunities in a range of regional context. Furthermore, a 'global picture of tangible and intangible urban heritage conservation' is presented. A unique aspect of the report is its promotion of cultural and creatives industries for sustainable urban development.

Bokova, in the forward to the report, advocates that urban areas have been among the most powerful engines of human development, and to address key challenges and sustainable development issues we ought to 'place our hope in cities'.

Byrne, D., Brayshaw, H., & Ireland, T. (2003). Social significance: a discussion paper. NSW National Parks and Wildlife Service.

This is a discussion paper released by the authors in response to the expansion by NPWS of its paradigm for cultural heritage. Such an expansion involved a shift from an individual site based approach to an approach more attuned to the 'social and environmental (landscape) dimensions of cultural heritage'.

The paper critiques the past three decades of the Service's involvement with cultural heritage. The main achievement in relation to Aboriginal heritage is regarded as the opening up of archeological work and the Environmental Impact Assessment (EIA) process to Aboriginal participation. However, while the Service is well informed about archeological value a gap remains in terms of social and cultural value.

The paper then focusses on the 'significance assessment process' in particular and the potential for expanded community involvement. It is suggested that the NPWS implement a more fluid approach to significance assessment and one which is 'more responsive to the whole range of heritage values as they exist in communities today'.

'*Community Perceptions of Heritage*'. Heritage Council of Victoria. (2014). Available online: http://heritagecouncil.vic.gov.au/research-projects/community-perceptions-of-heritage/

This report presents the findings of a literature review of existing research and studies on community perceptions of heritage to inform planning commissioned by the Heritage Council of Victoria.

The report contains an overview of existing research, and key findings including:

- What heritage means to people
- How interest in heritage develops
- Attitudes to the preservation of heritage
- Expectations surrounding the role of government and whether expectations are being met.

Choi, A. S., Ritchie, B.W., Papandrea, F. and Bennett, J., 'Economic valuation of cultural heritage sites: A choice modeling approach.' *Tourism Management*.' 31, no. 2 (2010): pp. 213-220.

Choi et al. recognise that despite the growing attention in policy circles and by academics on the economic value of cultural heritage sites, there is still contention surrounding the use of adequate methods to measuring value.

This paper presents the results of a national choice modelling study of Old Parliament House, Australia. The study aimed to value marginal changes in a number of attributes of the site and revealed that only a selection of them are valued positively.

The advantages of using a mixed logit model are presented, followed by further discussion of the managerial and policy implications.

'Culture Urban Future; A global report on culture for Sustainable Urban Development. United Nations Educational, Scientific and Cultural Organisation (UNESCO) 2017. Available online: http://en.unesco.org/themes/culture-sustainable-development

This report was produced as a policy framework document to support governments in the implementation of the 2030 Agenda and is a 'key contribution' to the common United Nations' actions within the framework of a New Urban Agenda.

Dalmas, L., Geronimi, V., Noël, J.F., and Tsang King Sang, J., 'Economic evaluation of urban heritage: An inclusive approach under a sustainability perspective.' *Journal of Cultural Heritage*, 16, no. 5 (2015): pp. 681-687.

Dalmas et al propose an operational analysis grid to evaluate the 'economic interest of rehabilitation or renovation projects linked to urban heritage'. This paper covers both monetary and non-monetary indicators and aims to advance an operational economic definition of urban heritage.

Urban heritage is conceptualised as 'inclusive' due to its inclusion of four series of interdependent economic, social, cultural and environmental dimensions. The paper argues that the environmental economist's definition of "strong sustainability" is increasingly relevant for the evaluation of urban heritage. Therefore, Dalmas et al argue that above certain thresholds all four different dimensions are 'complementary rather than substitutional' – the loss of one dimension is deemed irreversible.

Dalmas et al conclude by identifying the thresholds and risks that may weigh on heritage rehabilitation or renovation projects.

'Destruction of cultural heritage is an attack on people and their fundamental rights – UN Expert' (2016). *United Nations News Centre*. Available online: http://www.un.org/apps/news/story.asp?NewsID=55412#.WUdZi2iGMdU

This online article from October 27 2016 discusses the destruction of world heritage in Afghanistan, Iraq, Libya, Mali and Syria. UN experts have made 'urgent calls' to the UN General Assembly to step up international action to prevent the destruction of heritage ie. Monuments, historic sites and sacred places.

The article emphasizes that when cultural heritage is under attack, people and their fundamental human rights are also under attack. The problem of deliberate destruction of human rights is framed as a human rights issue.

Garrod, G. D., Willis, K. G., Bjarnadottir, H., and Cockbain, P., 'The non-priced benefits of renovating historic buildings.' *Cities*, 13(6):pp. 423-430. (1996).

This paper uses the contingent valuation method to explore public preferences for the renovation of historic buildings in the Grainger Town area of Newcastle upon Tyne.

The study asked members of the public how much they were willing to pay (WTP) in additional council taxes towards the renovation and restoration of this set of buildings. In addition, respondents were asked to allocate the funds across different areas of the district.

The findings of the study revealed that locals had a strong preference for the renewal of historic areas, showing a preference to contribute to the areas most degraded.

Giove, S., Rosato, P., and Breil, M., 'An application of multi-criteria decision making to built heritage. The redevelopment of Venice Arsenale.' *Journal of Multi-Criteria Decision Analysis*, 17, no. 3-4 (2010): pp. 85-99.

This paper evaluates the sustainability of projects for the economic re-use of historic buildings in Venice using a multiple criteria model.

The 'relevant parameters for the appraisal of sustainability' are aggregated into three macro-indicators, including:

- Intrinsic sustainability
- Context sustainability
- Economic-financial feasibility

The model was adjusted by a panel of experts and then tested on two re-use hypothesis of the Old Arsenal in Venice.

Global Report on Culture for Sustainable Development. United Nations Educational, Scientific and Cultural Organisation, 2015. Available online: http://www.unesco.org/fileadmin/MULTIMEDIA/HQ/CLT/images/Concept-note_EN.pdf

This is a concept note to the UNESCO Global Report on Culture and Sustainable Urban Development. The note acknowledges that cities have become 'prominent actors' in the promotion of sustainable urban development.

UNESCO promote the view that the starting point for sustainable urban development is the conservation and safeguarding of tangible and intangible assets. Furthermore, culture is recognized as a key tool for the promotion of sustainable urban development by achieving the following:

- Preservation of the urban identity and environment
- Attraction of activities and visitors
- Fostering the development of the creative economy
- Enhancing quality of life.

Graham, B., 'Heritage as knowledge: capital or culture?' *Urban Studies*, 39, no. 5-6 (2002): pp. 1003-1017.

Despite heritage itself being conceptualised as the 'meanings attached in the present to the past' and regarded as a 'knowledge defined within social, political and cultural contexts', Graham maintains that there is relatively little research regarding the role of heritage in the knowledge economy.

Graham discusses the 'complex conflicts' inherent within heritage as a result of it representing knowledge that fulfils a range of both economic and cultural uses. The paper makes some 'preliminary connections' between heritage, the knowledge base and the city,

indicating the importance of heritage in generating the 'representations of place within which the economy remains firmly rooted'.

Graham, H., Mason,R. and Newman, A., *Literature Review: Historic Environment, Sense of Place, and Social Capital*. International Centre for Cultural and Heritage Studies (ICCHS), Newcastle University, 2009.

Graham et al present a literature review which considers whether it is possible to identify relationships between the historic environment, sense of place and social capital.

Across the literature, no 'major studies' were identified which directly link all three of these components. However, there were encouraging links discovered between:

1. The historic environment (although often referred to more broadly as heritage) and sense of place, and
2. Between sense of place (as developed through heritage) and social capital.

Greffe, X., 'Is heritage an asset or a liability?' *Journal of Cultural Heritage,* 5, no. 3 (2004): pp. 301-309.

This study uses France as a case study to demonstrate how the 'valorisaton' of heritage can create new jobs for a society, and the different channels through which such jobs are generated.

A heritage ecosystem approach is taken. This approach is based on the 'interdependence between the quality of a monument and the relationship between the providers of heritage-related services and those who desire these services'.

The findings indicate that taking a heritage ecosystem approach is useful when defining the conditions necessary for sustaining heritage and determining whether it is an asset or liability.

Harvey, D. C., 'Heritage pasts and heritage presents: temporality, meaning and the scope of heritage studies. '*International Journal of Heritage Studies*.' 7, no. 4 (2001): pp. 319-338.

This paper delves into a longer historical analysis of the development of heritage as a process. Harvey covers the evolution of a medieval sense of heritage and how it is related to 'transitions in the experience of space and place'. Early modern developments in the heritage concept, namely societal change associated with the colonial and post-colonial context, are also explored.

Harvey highlights the embedded nature of heritage and engages with debates concerning the production of identity, power and authority over the course of history.

Hawkes, J., *The Fourth Pillar of Sustainability: Culture's Essential Role in Public Planning*. Common Ground, 2001.

This is a paper presented by Hawkes and prepared for the Cultural Development Network of Victoria. The network commissioned the review of the potential value of a specifically cultural perspective to the planning, service delivery and evaluation activities of local government. The work builds on that of Yencken and Wilkinson (2000) which supports the need for a fourth pillar of sustainability.

Hawkes advocates for cultural vitality as an essential aspect of a healthy and sustainable society, of equal importance to social equity, environmental responsibility and economic viability (triple bottom line considerations). Hawkes calls for an integrated framework of cultural evaluation 'in line' with those developed for social, environmental and economic impact assessment.

Hejazi, M., 'The risks to cultural heritage in western and central Asia.' *Journal of Asian Architecture and Building Engineering*, 7, no. 2 (2008): pp. 239-245.

Hejazi argues that cultural heritage in Western and Central Asia is faced with both natural and non-natural risks ie. Natural catastrophes and resource exploitation, as well as from social and economic problems and institutional weakness.

This paper supports the need to classify situations across regions regarding different categories of risk, and then explore how to devise measures for endangered heritage sites as well as prepare for anticipated risks going into the future.

Department of the Environment and Energy '*Heritage Economics: Challenges for heritage conservation and sustainable development in the 21st Century*.' Australian Government, Department of the Environment and Energy (2000). Available online: http://www.environment.gov.au/heritage/ahc/publications/heritage-economics-challenges-heritage-conservation-and-sustainable-development-21st

This paper considers developments in the theory and methodology involved in the evolution of cultural heritage. The three types of capital identified as standard practice by economists included:

- Physical capital
- Human capital, and
- Natural capital.

The paper advocates for the inclusion of a fourth type of capital – cultural capital (in line with recent suggestions) and considers how such a value may be assessed. Sustainability in the management of cultural capital is also discussed with reference to the treatment al natural capital in ecological economics.

Kim, S.S., Wong, K.K.F., and Cho, M., 'Assessing the economic value of a world heritage site and willingness-to-pay determinants: A case of Changdeok Palace.' *Tourism management,* 28, no. 1 (2007): pp. 317-322.

This is a study which sought to estimate the use value of a World Cultural Heritage site in Korea using the contingent valuation method (CVM).

A survey was conducted using a closed-ended question (dichotomous choice), 10 price offers were given. Logit models in both linear and logarithmic forms were then used to identify the determinants from the dichotomous question.

The results indicated that WTP values were 5706 Won ($5.70) in a log-linear model and 6005 Won ($6.00) in a log-logit model. Then taking into account domestic visitors only, aggregate use value from the log-linear model was estimated to be approximately 1.93 million dollars, while aggregate use value from the log-logit model was estimated as 2.01 million dollars.

Smith, L., The Uses of Heritage, London and New York: Routledge, 2006.

This paper by Smith, puts forward a bold contention that there is 'no such thing' as heritage. Smith offers an alternate re-imagination of heritage theory which suggests that heritage is a 'cultural process or performance framed by a range of discourses'.

This work explores the concept of heritage as a 'theatre of memory' whereby the past and present are negotiated through performances of heritage management, preservation and visiting. Heritage should thus be regarded as an iterative process of remembering and meaning making.

Mason, R. 'Assessing values in conservation planning: methodological issues and choices.' In *Assessing the Values of Cultural Heritage,* Ed. Marta de la Torre, The Getty Conservation Institute, Los Angeles, (2002): pp. 5-30.

This paper forms part of a research report, the third in a series on the values and economics of cultural heritage initiated at the Getty Conservation Institute in 1995.

Mason addresses four specific questions with regards to valuing heritage:

1. Characterizing values: How can the wide range of heritage values be identified and characterized in a way that is relevant to all the disciplines and stakeholders involved?

2. Methodological issues and strategies for assessing heritage values: What kinds of methodological strategies and specific assessment tools are available and appropriate for assessing heritage values?
3. Tools for eliciting heritage values: How can the views of the many parties with a stake in a heritage site be accommodated in the conservation planning process, including its specific value-assessment phase?
4. Integrating assessments and guiding decision making: Once the range of heritage values has been articulated, how can they inform decision making?

Mazzanti, M. 'Cultural heritage as multi-dimensional, multi-value and multi-attribute economic good: toward a new framework for economic analysis and valuation.' *The Journal of Socio-Economics,* 31, no. 5 (2002): pp. 529-558.

This paper reviewed critical issues concerning the economic dimensions of cultural heritage in the hopes of showing that tangible and intangible "cultural economic" goods and services (as provided by cultural institutions) may be analysed and valued in a 'multi-dimensional, multi-attribute and multi-value socio-economic environment'.

Mazzanti arrives at a conceptual framework for analyzing cultural services.

Melstrom, R. T., 'Valuing a historic site with multiple visitor types and missing survey data.' *Journal of Cultural Heritage*, 16(1): pp. 102-105. (2015).

This paper explores a travel cost method for evaluating the economic use value of a site from the American Revolutionary Period. Several demand models are assessed using a 2003 intercept survey of visitors and it is discovered that the results are sensitive to how visitor type and non-response in the sample are handled.

The results indicate that the economic value of the heritage site is substantial.

Mourato, S., and Mazzanti, M., 'Economic valuation of cultural heritage: evidence and prospects.' in *Assessing the Values of Cultural Heritage*, Ed. Marta de la Torre, (The Getty Conservation Institute, Los Angeles, 2002):

This paper considers how the demand for cultural destinations has become a major force in the global economy. The authors argue that even if the cultural asset is not in use, investment in its conservation and maintenance keeps the possibility of a future use.

On this basis it is argued that the option value of cultural heritage is the equivalent of an insurance premium.

Murzyn-Kupisz, M., and Działek, J., 'Cultural heritage in building and enhancing social capital.' *Journal of Cultural Heritage Management and Sustainable Development,* 3, no. 1 (2013): pp. 35-54.

This paper suggests that there are 'myriad impacts of tangible and intangible cultural heritage on social capital'. Furthermore, the potential of heritage for providing places for face to face interaction and community hubs (sites of social integration and inclusion) is emphasized.

It is also argued that heritage sites have the ability to function as a source of identity and local pride, as well as supporting the activities of NGOs and volunteers.

Navrud, S., and Ready, R. C., *Valuing Cultural Heritage: Applying Environmental Valuation Techniques to Historic Buildings, Monuments and Artifacts*. Edward Elgar, 2002.

This paper argues that in light of limited resources to preserve heritage it is necessary to prioritise competing preservation and restoration goals. This is then accompanied by a discussion of the role of government in the provision of cultural heritage goods.

Nijkamp, P., '*Quantity and Quality: Evaluation Indicators for our Cultural-Architectural Heritage*.' 1989.

This paper discusses the evaluation of cultural architectural heritage with the aim of designing a method which includes both tangible and intangible dimensions of assets. This includes an overview of existing evaluation methods (monetary; scoring; decision support methods).

The 'generalized regime method' is introduced which provides a two-stage 'evaluation procedure' for socio cultural assets based on the idea of 'compound' evaluation which takes into account cardinal and ordinal information.

Noonan, D., '*Contingent Valuation Studies in the arts and Culture: An Annotated Bibliography*', The Cultural Policy Centre, University of Chicago, 2003.

Annotated bibliography charting the use of contingent valuation studies to value cultural heritage. This paper suggests the future cultural CVM research ought to consider the following:

- The possibility that WTP values may be either positive or negative is yet to receive adequate attention from practitioners.
- Certain cultural icons may have entirely opposing or opposite meaning for different goods.

Oomen, J., and Aroyo, L., 'Crowdsourcing in the cultural heritage domain: opportunities and challenges.' In *Proceedings of the 5th International Conference on Communities and Technologies*, ACM, (2011). pp. 138-149.

This paper discusses the rise of crowdsourcing as a source of funding by museums, libraries and galleries. A Digital Content Life Cycle model is used to consider the relationship between different types of crowdsourcing and the core activities of heritage organisations.

The 'path to a more open, connected and smart heritage' is explored:

- Open (data is open, shared and accessible)
- Connected (use of linked data for interoperable infrastructures)
- Smart (use of knowledge and web providers)

The paper suggests that a future cultural heritage that is 'open, has intelligent infrastructures, and involved users, consumers and providers' is achievable.

'*The value of heritage: literature review 23 Culture Urban Future. Global report on culture for Sustainable Urban Future*, United Nations Educational, Scientific and Cultural Organisation (UNESCO) 2015. Available online: http://unesdoc.unesco.org/images/0024/002459/245999e.pdf

UNESCO webpage discussing the "2030 Agenda for Sustainable Development" and outlining 17 'ambitious and universal goals'.

UNESCO define culture as 'who we are and what shapes our identity' and states that no development can be sustainable without including culture as culture is an 'enabler and driver of the economic, social and environmental dimensions of sustainable development'.

Protecting Our Heritage and Fostering Creativity. (United Nations Educational, Scientific and Cultural Organisation (UNESCO), 2017) Available online: http://en.unesco.org/themes/protecting-our-heritage-and-fostering-creativity

This UNESCO webpage on protecting heritage and fostering creativity which acknowledges the contribution creativity makes to 'building open, inclusive and pluralistic societies'.

UNESCO provide links to a number of reports and international treaties relating to culture.

Ripp, M., and Dennis R., 'The governance of urban heritage.' *The Historic Environment: Policy & Practice,* 7, no. 1 (2016): pp. 81-108.

This paper considers the evolution of our understanding of urban heritage and considers the implications of the 2010 European Union Toledo Declaration which acknowledged the

importance of urban heritage and defined the 'multiple dimensions of sustainability' as the following:

- Economic
- Social
- Environmental
- Cultural
- Governance

The authors argue that governance at the municipal level holds the key to integrated urban policy and practice. Current initiatives and possible future directions for further research and implementation are explored in greater detail.

Radoine, H., 'Planning and Shaping the Urban Form through a Cultural Approach.' *Global Report for Sustainable Urban Development UNESCO 5*, *(*2015) p. 169.

This article discusses the value of human centered and compact cities and argues for the need to infuse culture into current planning practice including plans and strategies. The focus in particular is on the need for more sustainable, resilient and green cities.

Radoine's discussion covers aspects of the 'cultural memory of the built environment' and the risks presented by rapid urbanization.

Rizzo, I., and Mignosa, A., eds. *Handbook on the Economics of Cultural Heritage*. Edward Elgar Publishing, 2013.

The handbook outlines the contribution of economics to the design and analysis of cultural heritage policies and to addressing issues related to the conservation, management and enhancement of heritage.

It adopts a multidisciplinary approach, where cultural economics is used as a theoretical framework to illustrate the importance and benefit of cross disciplinary dialogue. Contributors assess the co-existence of cultural and economic values as well as the challenges that are currently being presented by changes in technology, and the relationships between various stakeholders in the production, distribution and consumption of heritage services. The book draws heavily on case studies to demonstrate a clear connection between theory and practice .The role of public, private and non-profit organisations are also explored.

Serageldin, I., 'Cultural heritage as public good,' in *Global Public Goods*: *international cooperation in the 21st Century* (1999): pp. 240-263.

This chapter reviews some of the methodological advances that have been made in the valuation of culture and cultural goods. It discusses the need for new tools for the proper valuation of culture, as existing tools designed for ordinary private goods are inadequate.

Drawing on work in environmental economics, Serageldin discusses categories of economic value their relevance to valuing heritage assets: extractive use value, nonextractive use value, aesthetic value, recreational value and nonuse value.

This is followed by an appraisal of different methods for measuring the economic value of heritage goods. This includes market price methods, replacement cost, travel cost, hedonic methods, contingent valuation and benefits transfer.

The chapter closes with a discussion of two case studies.

Throsby, D., 'Heritage economics: a conceptual framework.' *The Economics of Uniqueness: World Bank Urban Development Series* (2012): pp. 45-72.

This chapter outlines a conceptual framework for heritage economics. It begins with a discussion on the basic concept of heritage as asset, positioning it in the context of capital theory. In a discussion on sustainability, it identifies the parallels between heritage as cultural capital and environmental resources as natural capital. It describes the central issue in heritage economics as the question of value, and there is a detailed discussion on value and

valuation. The analysis is divided into economic values and cultural values embodied or generated by heritage, and provides commentary on measurement.

The framework outlined is then translated to a policy setting, with a discussion of economic instruments for the implementation of heritage policy. IT concludes with a description of a case study and applies some of the aforementioned principles to a cultural investment project in Macedonia.

Throsby, D., 'Why should economists be interested in cultural policy?' *Economic Record*, 88, no. s1 (2012): pp. 106-109.

This paper is based on the premise that there has been a growing recognition of the contribution the cultural sector makes to output, employment, incomes, exports and growth in the economy.

It suggests five areas where the theories, tools, and methods of economic analysis can make a contribution to the formation of a rational cultural policy: support for the creative arts; cultural goods in international trade; the management of cultural assets; industry and innovation; and foreign policy.

In the conclusion, it notes that to date, there has been little interest shown by economist in discussion of cultural policy issues, in contrast with economists in a number of countries in Eurpoe, North and south America, Asia and elsewhere.

Tilley, C.,'Introduction: Identity, place, landscape and heritage.' *Journal of Material Culture,* 11, No. 1-2, (2006): pp. 7-32.

This introductory chapter discusses the interconnections between identity, place landscape and heritage. It describes how the meanings associated with landscape are contested and dynamic, and undergo an ongoing process of transformation by people according to particular individual, social and political circumstances. In this way they are seen as in process, rather than as a static entity.

It also includes a discussion on how social identities are closely bound to heritage and tradition and the places people live in. It provides insight into the significant cultural value of heritage in relation to social and personal identities. It also explores some of the challenges regarding the politics of identity, tourism and representation.

Veldpaus, L., Pereira Roders, A.R.P., and Colenbrander, B.F.J., 'Urban heritage: putting the past into the future.' *The Historic Environment: Policy & Practice*, 4, no. 1 (2013): pp. 3-18.

In this paper part of the results of doctoral research regarding the contribution of the United Nations Educational, Scientific and Cultural Organisation's (UNESCO) historic urban landscape approach to the theory of urban heritage management are presented.

This paper critically analyses the shift in heritage management away from focusing on individual assets towards a more integrated network or landscape-based approach to include concepts such as the intangible, setting and context as well as urban and sustainable development.

The implications of a landscape-based approach are explored in greater detail. This paper concludes by demanding the need to further develop and assess the adequacy of the tools and methods available to support the implementation of an integrated approach. Implementation is positioned as a prerequisite for 'fostering' the sustainable development and conservation of urban heritage.

Johnston, C., *'What is Cultural Value: A discussion Paper?'* Australian government Publishing Services, (1992). Available online: http://www.contextpl.com.au/wp-content/uploads/2014/06/What_is_Social_Value_web.pdf

This seminal work from Chris Johnston explores the special meanings attached to places by groups of people (rather than individuals and how we can take account of these values in heritage assessment processes. It includes an exploration of the broad concept and meanings

associated with the term social value, and describes social value in relation to places in the cultural environment. It explores methods to evaluate social value and raises questions the processes used to help people articulate values and meanings.

The report focuses on the social value of culturally significant places, and these are predominantly historic/heritage places. IT notes that social value can be distinguished, but will often be closely connected to historic values. It also observes that all values are transitory; the nature of social value as a set of meanings shared by a community mean they are likely to be held with greater consistency, and overtime depth and richness of meaning increase.

Laskow, S., 'Why historic buildings are greener than LEED certified new ones.' *The Daily Good*, 2012. Available online: https://www.good.is/articles/why-historic-buildings-are-greener-than-new-leed-certified-ones

This online article by Laskow discusses the findings of a new report for the National Trust for Historic Preservation's Preservation Green Lab. The report's findings suggest that the construction of new energy efficient buildings 'almost never saves as much energy as renovating old ones'.

The report's authors call for more research into the 'relationship between density and environmental impacts as it relates to building reuse versus new construction'. Laskow argues that the report fails to address the 'real point of contention' between preservationists and advocates for the construction of LEED certified higher density.

Yung, Esther H.K., and Chan, E.H.W., 'Implementation challenges to the adaptive reuse of heritage buildings: Towards the goals of sustainable, low carbon cities.'*Habitat International*, 36, no. 3 (2012): pp. 352-361.

This paper begins by acknowledging the role lowering of carbon emissions plays in contributing to sustainable urban development and addressing climate change. Adaptive reuse of a buildings is a form of sustainable urban development which:

- Extends a building's life
- Avoids waste demolition
- Encourages reuses of embodied energy
- Provides social and economic benefits to society.

A literature review is undertaken with the aim of better understanding the factors that contribute to the goal of sustainable development in the conservation of heritage. This is bolstered by in-depth interviews with practitioners engaged with adaptive reuse in Hong Kong.

While the interviews are said to confirm the reliability of the above short-list, the authors argue that s framework is required for achieving sustainable, low carbon adaptive reuse. Furthermore, a framework ought to be viewed with a more holistic approach by integrating social, economic, environmental, urban and political policies.

Zancheti, S. M., Tone Ferreira Hidaka, L., Ribeiro, C. and Aguiar, B., 'Judgement and validation in the Burra Charter Process: Introducing feedback in assessing the cultural significance of heritage sites.' *City & Time*, 4, no. 2 (2009): pp. 47-53.

Zancheti et al discuss the conceptualisation of cultural significance by the Burra Charter. The paper concludes that while the Burra Charter Process is a 'powerful instrument' for determining the cultural significance of sites, it is perhaps necessary to revise it considering the challenges presented by the 'plural, multivalent and contingent nature of values in society today'.

APPENDIX D

Valuing Victoria's Heritage: Methodology

Valuing Victoria's Heritage

Methodology

Version
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Authors
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Abstract

This document outlines the proposed methodology for the project 'Valuing Victoria's Heritage – the value and benefits of Victoria's historic heritage assets', commissioned by the Victorian State Government Department of Environment, Land, Water and Planning (DELWP).

Two attached documents complement this methodology: a) Value of Heritage Literature Review conducted by SGS and SurveyEngine and b)the Heritage Attribute Matrix which defines the proposed classes, attributes and their levels for use in the Discrete Choice Experiment.

The scope of this document is limited to valuing assets currently on the Victorian Heritage Register or likely to be included in the future. Valuation of pre-settlement Aboriginal heritage is explicitly not included.

The methodology proposed is of an academic grade. The analysis and interpretation of the final results are expected to also be of the same level. Efforts have been made to describe the method to be comprehensible by a lay-person. However, it is acknowledged that there is a practical limit to a full understanding by the intended audience of this research.

To overcome this limit and provide confidence in the research, it is recommended that this methodology and results undergo an academic peer review process for publication in leading international scientific journals with relevant acknowledgement of the contributors. A successful publication would increase the gravity of the Heritage valuations and citation value for policy makers, planners and other users of the research.

1 CONTENTS

1 Summary of the Methodological Approach

This study aims to develop estimates of Willingness-to-Pay (WTP) for heritage assets in Victoria, such that

(1) they are updated with respect to the existing estimates (Allen Consulting Group, 2005),
(2) they can be used for past and potential future estimates for public policy, including cost benefit analysis of individual development decisions, and
(3) they are derived in accordance with the state-of-the-art methodology that assures their validity.

With respect to (1), this approach involves not only developing a new study that builds on the methodological approach selected to satisfy the project requirements, but also replicates the 2005 ACG study, to investigate the extent of the change in welfare estimates that could have taken place in the the last decade as a result of changes in public preferences and affluence, achievements of past conservation policies, and the availability of substitutes.

Regarding (2), a review of the project requirements, existing materials and literature review was done collectively by the SurveyEngine team. The point of departure for the new study was provided by real and hypothetical cases of the usage of the valuation results. The valuation instrument developed in consultation with SGS Economics and Planning to understand relevant inputs for valuation.

Key to the approach is acknowledgement that different types of heritage assets have different properties, threats, protection types and development options. Separating the heritage assets by type allows departure from the 'one size fits all' problems with the Allen Consulting Group (2005) study results, particularly when comparing heritage objects to heritage buildings and sites. Separating the heritage assets by types means only relevant attributes need be tested. This means that there are less constraints on the attributes selection as they don't need to be generally applicable to every type of heritage asset. Furthermore the choice tasks would be more meaningful and credible for respondents and the results more useful for users of the final results.

Another key change with respect to the Allen Consulting Group (2005) study was valuing protection of individual heritage assets, rather than evaluating policies that simultaneously target thousands of them. This is because incremental valuation, for example reflecting particular protection of an additional heritage asset, of a given type and set of characteristics, is a more adequate approach for providing support to most policy decisions (e.g., extending protection to an additional asset, or allowing for a specific development of a building that could have some cultural heritage value). We argue that such a bottom-up approach is more appropriate than the top-down approach, in which conservation as a whole is being valued and used to infer values resulting from marginal changes in the portfolio of assets.

With respect to methodology used by our approach, it is clear that studies that have invested considerable time and effort into understanding what people believe, and satisfies certain design conditions (e.g., presenting a credible choice scenario with a well-defined good and a coercive payment mechanism, highlighting survey consequentiality) generally appear to produce results that are well-behaved, which is not necessarily the case otherwise (Carson and Czajkowski, 2015). We note that Stated Preference (SP) valuation is constantly being developed and an accumulating body of evidence leads to establishing new recommendations for the state-of-the-art (see e.g., Johnston et al., 2017). Following these recommendations allows for SP estimates to be

more robust and is also crucial for their validity and usability in public policy or judicial processes (Cameron, Cragg and McFadden, 2013). Reviewing all guidelines and requirements for the development and administration of SP studies necessary for the validity of resulting WTP estimates is too extensive a task to include it here. Instead, in what follows we discuss the four main approaches used to evaluate the validity of SP methods that we incorporate in the design and the analysis stages of our study. They are convergent, construct, content, and criterion validity, also known as CCCC framework (Bishop and Boyle, 2017).

The main points:

- Identical replication of the 2005 ACG as a separate standalone research project
- A new 2017 study will be conducted separately and differs in many respects
- The 2017 study will value separate heritage classes and individual Heritage assets
- Heritage classes will be differentiated by Heritage Sites, Cultural Landscape, Historical Sites and Heritage objects
- The CCCC framework will be used to establish research validity

Convergent validity

Convergent validity verifies the correspondence between WTP estimates derived from a stated preference study with some other measure of the same theoretical construct, but obtained by different studies or methods, including by indirect valuation methods. Therefore, these tests usually compare value estimates from a stated preference study with their counterparts from other stated or revealed preference approaches such as the contingent valuation, discrete choice experiments, hedonic pricing or the travel cost method (Zawojska and Czajkowski, forthcoming).

Due to the pioneering character of this study there are no estimates that would provide exact reference for convergent validity test of our results. Some insights can be gained by comparing our results with those of the earlier study aimed at valuing conservation of the heritage places in Victoria (Allen Consulting Group, 2005) as well as with the other valuation studies of cultural goods (Value of Heritage Literature Review, 2017). We note, however, that due to differences in the definitions of the valued goods, extent of the change, location, target population, methodology and other aspects the results are expected to vary between these studies and the comparisons can only give overall impression if the range of the WTP estimates are reasonable.

Results will be compared with other similar studies to verify results are reasonable.

Construct validity

The tests of construct validity assess stated preference methods' validity by verifying the consistency of stated WTP values with predictions derived from the consumer demand theory, such as sensitivity to price changes, income levels, and other economic variables, which can confirm that responses to stated preference surveys are not random.

Construct validity requires well-defined theory as a reference point for the comparison of theoretical predictions and stated values - this is somewhat problematic because the neoclassical demand theory provides the basis for the comparisons in some cases only. In addition, even in real markets, consumers are observed not necessarily to behave in line with this theory (Poe, 2016).

Given that this theory does not appear to capture all aspects central to consumers' choices, it should be complemented by other concepts such as those provided by behavioral economics. However, because of the constant development of behavioral economics, the discrepancy between theoretical predictions and SP values may demonstrate not the SP methods' lack of validity, but rather the incompleteness of the theory. Although construct validity constitutes an important component of validity, it is questionable whether the current state of the economic theory development enables conducting a proper test of SP methods' construct validity, because the rational choice theory does not provide a sufficient reference point for testing.

We address construct validity of our approach by evaluating if the results are in line with the current state of the economic theory, wherever the theory offers clear predictions that are also satisfied for consumers' behavior in markets. Specifically, by accounting for various sources of respondents' observed preference heterogeneity we are able to test if individuals' responses are sensitive to the cost and other attribute levels presented (e.g., distance, heritage rating), and test if their WTP is sensitive to their income and the availability of substitutes.

Results will be compared against economic theory to verify validity. We expect:

- a decrease in preference for increased costs such as Tax Levy,
- a decrease in preference for increased distance from the asset and
- a reduced WTP for respondents from lower socio-demographic segments

Content validity

Content validity focuses on whether a survey applies state-of-the-art recommendations of best design practices. The interpretation often relies on the evaluator's experience and subjective opinion, however, some general recommendations follow from a number of seminal works developed for contingent valuation (e.g., Arrow et al., 1993; Mitchell and Carson, 1989; Bateman et al., 2004; Champ, Boyle and Brown, 2004), recent state-of-the-art methodology summaries (Johnston et al., 2017) and more general recommendations regarding the construction of surveys (Dillman, Smyth and Christian, 2008).

This criterion is satisfied by following the state-of-the-art recommendations. Specifically:

- A clear description the baseline conditions, the mechanism of change, and the changes to be valued and elicit evidence that these pieces of information are understood, accepted, and viewed as credible by respondents.
- A qualitative (elicit open comments at the development stage, confirm understanding and credibility) and quantitative (a dedicated pilot study) pretest of the instrument and review by domain experts
- Responses are elicited to support debriefing questions.

- The change being valued is described (the information content of valuation scenarios) in a way that is in line with how respondents tend to perceive the good.
- An experimental design makes use of information from prior empirical research and is pretested considering both statistical efficiency and respondents' cognitive abilities and attention budgets The design employs constraints on implausible attribute levels and combinations, is robust to alternative model specifications and considers the levels chosen for each attribute to influence design properties.
- The hypothetical situation setting review will be in accordance with scientific ethics (the survey design procedures avoid deception).
- A sample is drawn from a known frame that is consistent with the population for which values are to be estimated and respondents are randomly selected from the sample frame using an explicit sampling procedure.
- Willingness-to-Pay will be used as the most appropriate welfare measure from a conceptual perspective in our case.
- An incentive-compatible response format will be used.
- Valuation scenarios and valuation questions will be designed to enhance incentive compatibility and to encourage truthful responses.
- A payment vehicle is selected such that it is realistic, credible, familiar and binding for all respondents to as great an extent as possible and to ensure that payments are viewed as fixed and non-malleable.
- The questionnaire will include auxiliary questions to enhance the validity of the study and to evaluate the validity of responses to the value elicitation questions.
- Utility-theoretic, behavioral, statistical, and other assumptions underlying model selection and specification for data analysis are made explicit.
- Analysis of the data will allow for both observed and unobserved preference heterogeneity and will consider the relevance of this heterogeneity for the use of study results to support decision making.
- Data analysis will include both (a) the simplest, most parsimonious specifications and (b) more-complex models that impose additional investigator assumptions on the structure of responses.
- Undesirable response anomalies will be analysed for potential influence and data analysis will investigate these anomalies to determine whether they significantly affect responses (for example, we will consider whether protest or outlier responses are influential).
- Reported welfare estimates will, at a minimum, include estimates of central tendency and dispersion. Methods used to calculate welfare measures will be transparent and will ensure that estimates are theoretically and statistically well defined.
- Analysis of the data will include a set of core internal validity assessments.
- Full documentation of study design, implementation, analyses, and results.
- With the client's consent, the study would undergo a peer review process and will be undertaken and results published in high quality scientific journals. This will strengthen the value of the results in policy making.

- Formal scientific and technical measures will be taken to ensure the validity of the scientific validity of the study.
- The all-encompassing measure to ensure validity of this method and results is submission of the final report for peer academic review and publication in a scientific journal.

Criterion validity

Criterion validity tests investigate consistency of preferences stated in a survey with another measure which is thought to truly express preferences, or at least to be a good proxy of true preferences. This measure is a so-called criterion and provides a reference point for comparison. Such criteria are usually derived from real (field) or simulated (laboratory) market data. Unlike convergent validity tests, this approach does not utilise revealed-preference-based estimates as a benchmark, but typically elicits consumers' preferences for the same or very similar good in both hypothetical and actual payment settings. Typically, a reference point for validity verification is provided by real-payment-based estimates. However, what has been shown consistently is that a criterion standard is rare if not non-existent, because actual behavior may also suffer from various systematic errors (e.g., resulting from behavioural effects).

As a result, almost all comparisons of stated preference estimates to some other type of measurement should be treated as tests of convergent validity (Mitchell and Carson, 1989).

Criterion validity tests remain experimental in their nature, as they are only possible when equivalent estimates exist - such as when stated and actual decisions are compared in a lab experiment, or when there is an opportunity to compare stated responses and actual voting. While tests of content and construct validity may be conducted using data from a single study, criterion validity tests require data from two or more parallel studies or data sources. Hence, they are not feasible as part of most analyses (if criterion values were available, there would be no need for stated preference analyses to inform decisions). In addition, many researchers believe that almost all comparisons of stated preference estimates to some other type of measurement should be treated as tests of convergent validity (Mitchell and Carson, 1989; Bateman et al. 2002; Carson et al. 2014; Ryan et al. 2016). For these reasons, state-of-the-art recommendations do not include criterion validity among the suggested lines of validity investigations (Johnston et al., 2017). In our case, it is not possible to infer about criterion validity of our approach due to the lack of equivalent valuations using real or simulated data, nevertheless real-world market data will be sought to validate that the results are at least reasonable.

Independent real-world market data for heritage valuation will be sought for comparison to validate the results are reasonable.

2 Experiment Instrument

In each contingent valuation survey, respondents are asked to imagine a situation in which they choose one of the available alternatives regarding the good that is being valued. In alignment with the Lancasterian perspective of utility (Lancaster, 1966), every good is described in terms of a collection of its characteristics (attributes).

The selected combinations of levels of these attributes include the alternatives that are presented to respondents, who will be asked to choose the alternative that they consider the best (the most preferred). The choices observed in these hypothetical situations make it possible to apply statistical methods to estimate the utility function parameters that are related to the specific attributes of a good and to formally model consumer preferences.

Therefore, it is possible to evaluate changes in consumer welfare in the case of implementing of a particular scenario (e.g., providing a new public good) and predict consumers' behavior that is related to new goods or alternatives. In addition, identifying the marginal rates of substitution between particular characteristics of a good (including the pecuniary attribute, e.g., the cost of provision) makes it possible to identify respondents' WTP for non-market goods and their characteristics.

2.1 Defining the hypothetical situation

The context sets up a credible situation that a respondent can understand in order to make a choice. The context should be closely related to what is being attempted to model and measure – in this case WTP for various heritage attributes.

The state-of-the-art recommendations underline that the hypothetical situation should be constructed in such a way that respondents' choices are incentive compatible. We discuss satisfying this criteria below.

Incentive compatibility

Incentive compatibility is a concept that implies that the optimal strategy for a respondent is to answer truthfully by revealing their actual preferences. Based on a review of literature (e.g., Carson and Groves, 2007) one can summarise that for the stated preference study to be incentive compatible, i.e., to reveal respondents' true preferences, the necessary (albeit not necessarily sufficient) conditions are:

1. respondents should correctly understand and answer the question being asked including the requirement that the good(s) being valued, including the different attribute levels and cost, are seen as plausible; (Carson and Hanemann, 2005);
2. respondents need to see the survey as consequential, i.e. their responses should be viewed as potentially influencing the supply of a public good, and agents must care about these outcomes (Vossler, Doyon, and Rondeau, 2012; Vossler and Watson, 2013);
3. the payment has to be coercive, i.e. the payment vehicle must be able to impose costs on all agents if the government undertakes the project (Carson and Louviere 2011);
4. following from the Gibbard-Satterthwaite theorem, the message space of a choice question cannot be larger than binary without restricting the space of allowable preference functions, i.e. a binary choice is the only elicitation format that has a potential to be incentive compatible;

5. the survey should be seen as a 'take-it-or-leave-it offer', so that agents do not see their decisions as influencing any other offers that may be made (Carson, Groves, and List 2014).

Some of the above conditions (correct understanding, take-it-or-leave-it character) can only be evaluated via researcher's experience and careful qualitative testing and refinement of the survey instrument. Others (consequentiality, coercive payment mechanism) are possibly easier to satisfy, although they too require making sure that what is written in a survey script, and what is read and understood by respondents is the same thing. Finally, some authors impose rather stringent conditions on acceptable elicitation formats (Carson and Louviere 2011). While certain elicitation formats should probably be avoided altogether, in the light of the bias vs. efficiency trade-off, it remains an empirical question to what extent moving away from these incentive compatibility requirements actually biases results.

The validity of Stated Preference (SP) methods has been thoroughly investigated, particularly because the empirical evidence is often contradictory. Some studies report significant differences between stated and true preferences, whereas others find no significant difference. Recently, Zawojska and Czajkowski (2015) have critically re-evaluated this evidence. By reviewing the four main types of validity tests – content, construct, convergent, and criterion validity – they argue that comparing SP-based estimates with corresponding criterion measures is the most adequate approach to verify how well SP-based estimates reflect true preferences. By classifying the empirical evidence with respect to whether it (1) deals with private or public goods, (2) uses a coercive or voluntary payment mechanism, (3) can be perceived by respondents as consequential, and (4) uses a single binary choice format, they identified studies that provide meaningful results in terms of providing conditions in which rational respondents can be expected to answer in line with their true preferences. The results of such studies consistently point to the validity of stated preferences under such conditions. When the available evidence is limited only to studies that satisfy the requirements listed above, the evidence becomes univocal – hypothetical bias can be avoided. This conclusion is very encouraging for SP methods, although it obviously comes with many requirements for the design and administration of future SP studies (Hanley and Czajkowski, 2017).

Choice Context

In our case, we propose that the goals of the study can be credibly achieved by setting the survey context as being advisory for the authorities responsible for conservation of heritage sites. Respondents to the survey will be informed that the results may have a direct impact on the types and levels of heritage protection in the state of Victoria, including the personal cost to them. As a result, their personal responses will have an impact on the public policy that directly affects them.

In order to calculate WTP from Choice Models, it is necessary for at least one of the attributes be a monetary one. This allows for calculating marginal rate of substitution of the changes in any non-monetary attributes to the monetary variable - the trade-off respondents are willing to make in terms of money for policy improvements. This is how their WTP is inferred.

It s proposed to a use one-time tax levy as payment vehicle - as was used in the Allen Consulting Group (2005) study.

An artifact of standard implementations of DCE's is that respondents are asked to evaluate more than one choice scenario, typically up to 8 scenarios for each choice experiment. This is done principally for efficiency of data collection and to maximise the amount of data collected for each respondent.

Because of this it is important that the context of the tax levy is clear for a consistent comprehension by the respondents and interpretation during analysis.

In our case, respondents will be asked to treat each choice task independently. Each choice task would be presented with a choice between a (systematically generated) protection policy (and associated tax levy) and would answer in each case whether they would vote for or against that policy As a result, the tax levy is:

- independent from one scenario to the next (specifically non cumulative) and
- the choice to support a protection measure (at a cost) is akin to a 'vote' and so it does not automatically imply implementing conservation policy and the bearing associated cost, that would limit one's budget in the following choice tasks.

Estimated WTP results should be interpreted accordingly, namely that they reflect a respondent's maximum willingness to pay for the first heritage protection extension of a particular kind. WTP for subsequent extensions is likely to be smaller due to income effects (reduced budget) and preference changes (that might depend on how much is already protected).

In summary, a respondent is told that the survey results will be used to inform the decisions of the authorities responsible for the conservation of heritage assets in Victoria. His or her responses will help decide if it is worth to implement additional protection measures such as to extend protection to an additional heritage building or asset of particular characteristics at a the cost presented in the survey. Further that this cost of protection is eventually covered from his or her taxes.

Such an instrument is consequential, as the respondent knows his or her responses will be taken into account by policy makers and influence policy decisions regarding conservation of Victorian heritage and potential new tax levies. At the same time, the payment mechanism (one time tax levy) is coercive - if the policy goes through respondents may be requested to pay increased taxes. Awareness of one's responses increasing or decreasing the probability of making a particular policy decision makes the response situation incentive compatible.

An example of how a heritage site valuation context may be presented is given below:

Example Site Valuation Task

On the next screen we are going to show you a heritage site that is under review for changes to its conservation status under a local planning scheme.

We would like you to imagine that you are asked to be involved in the decision to protect the site.

Your task is simple, carefully review the site, the proposed conservation amendments and the additional taxation cost and choose whether you would support the conservation measures.

A decision to not support the conservation measures means that the site would have no special status as a Heritage site, and that it may be altered or possibly demolished within the normally applicable building regulations

For physical Heritage objects, the valuation task would be similar:

Example Object Valuation Task

On the next screens we are going to show you a heritage object that is under review for changes to its conservation status.

We would like you to imagine that you are asked to be involved in the decision to control how this object may be protected from custodial ownership or alteration.

Your task is simple, carefully review the object, the proposed conservation amendments and the additional taxation cost and choose whether you would support the conservation measures.

A decision to not support the conservation measures means that the object would have no special Heritage status, and that it may be altered, transferred or sold without conservation controls.

The instrument would have separate sections for each of the heritage classes, with one section being presented after each other.

2.2 Heritage Classes

Heritage Classes were selected by review of the register and grouping by type of asset such that the majority of attributes were meaningful to compare within a group but not across a group.

Heritage Site:	Typically a single building
Cultural Landscape:	An area defined by features evoking a common theme
Historical Site:	Typically places commemorating a specific event or events from history
Heritage Object:	A relocatable object with potential heritage value such as a flag or portrait.

2.3 Attributes and Levels

A matrix of attributes, and their possible levels, used in the experiment were obtained from various sources

- the attributes and levels from the ACG 2005 report,
- examination of the Victorian Heritage Register,
- examination of economic valuation use-cases with SGS,
- discussion and input from with the project stakeholders and
- the selected payment vehicles from the ACG 2005 report and similar WTP evaluations

The process for developing the attributes and their levels was performed using the following steps::

1. Using the sources above, attributes and levels were created per heritage class. This allowed focus on the attributes relevant to each class. Attributes were required to be independent of each other and their levels should span all conceivable values of interest.
2. A second stage looked at generalising attributes discovered in one class for generalisation across all classes.
3. Heritage assets were constructed randomly from the attribute matrix to verify that they were comprehensible and credible.
4. A final verification stage involved repeated selection of assets from a large sample of the heritage register and examining whether the object could be represented uniquely by the attribute and level structure.

The result of this process was documented in the Heritage Attribute Matrix Spreadsheet attachment.

2.4 Presentation Format

Valuation scenarios were drawn randomly from the attribute matrix as sample content, yielding examples as below:

Attributes	**Heritage Site**
Age	Interwar Period 1919-1945
Type	Industrial Warehouse
Condition	Poor condition
Heritage Rating	National Significance
Distance from You	3 to 5 km
Protection Type	no protection from demolition
Built Environment Context	Sympathetic External Development
Visitation Management	yes
Traffic Management	none
Noise Management	none
Public Access	Public Access - free
Protection Tax Levy (per year)	$150

Reviewing the register and the typical presentation format therein, the above scenario was reorganised into a more familiar and readable format as below and a typical image of the asset provided.

Industrial Warehouse
Period: 1900-1945 In Poor Condition
Of National Significance
Approximately 4 km from you
Currently free Public Access

Proposed Protection Control
No protection from demolition
Sympathetic development only within area
Control of visitation
No control of traffic
No control of noise
Tax Levy for this Protection: $150

Would you vote for or against extending protection to such a building, considering the associated cost to your household? ☐Yes ☐No

2.5 Experiment Design

There are many ways in which the combinations of the levels of attributes can be combined to create alternatives for each choice situation. Because the number of attributes (and their levels) is too large to take into account all the possible combinations in a study, a so-called fractional design is applied. This includes only selected combinations of attributes that reduce the number of unique combination while preserving information properties allowing the independent effects of each attribute to be estimated.

The design will follow two concurrent approaches to experimental design using a split sample treatment. The first one will follow a standard so-called orthogonal optimal in a difference fractional factorial design. It aims at guaranteeing orthogonality of attribute levels while keeping balance concerning the incidence (Street, Burgess and Louviere, 2005; Street and Burgess, 2007).

The second approach will follow a different suggestion from contemporary literature, which shows that it is possible to construct non-orthogonal research designs, which make it possible to obtain more information from each consumer's choice (Sándor and Wedel, 2001). In the case of these so-called efficient designs, instead of preparing orthogonal sets of levels of attributes for each choice situation presented to respondents, sets are generated in such a way as to minimise the determinant of the asymptotic variance-covariance matrix of parameters (the so-called D-error), with the assumption of certain initial estimates (priors) concerning the parameters of the utility function of a respondent a priori (Huber and Zwerina, 1996; Scarpa and Rose, 2008).

Because the parameters in the utility function are usually other than zero, orthogonal designs are not efficient. Researchers usually have some expectations concerning the values of parameters (or at least their characters), for example a decreasing preference for price. This allows researchers to generate designs of choice situations which reveal more information and therefore improve the statistical features of the final model or make it possible to decrease the sample necessary to estimate the model at a given level of significance. This means either less sample is required, more accurate estimates can be produced for the same sample or some optimal balance of both. A common practice is to carry out preliminary research making it possible to obtain better estimates of the parameters for the main study.

Finally, the state-of-the-art in designing choice situations is the application of Bayesian efficient research designs, which take into account the uncertainty related to the initial estimates of parameters through allowing these estimates to have the form of random variables with certain probability distributions (Sándor and Wedel, 2001). In this case, evaluating the value of the determinant of the asymptotic variance-covariance matrix of parameters requires the integration based on simulation, since it is not possible to determine it analytically. Still, the added value of this approach involves taking into account the uncertainty related to initial estimates through the application of parameter distributions for the most probable values.

This method of generating research designs for research on conditional choices makes it possible to decrease the uncertainty associated with parameter estimates, ceteris paribus. As a result, the application of Bayesian initial estimations allows better estimates to be obtained.

The experimental design will randomise the order of sets of questions for each heritage type. Instead of using fixed blocks we select choice tasks randomly, ensuring that each choice task is used an almost equal number of times (Czajkowski and Budzinski, 2016). The Bayesian efficient design will be updated after the pilot and twice throughout the data collection to account for the information already available (i.e., to take better priors into account). The Bayesian priors will be normally distributed, with means given by the MNL model estimated on the available data, and standard deviations equal to 0.25 to 0.5 of the means (with an absolute minimum for means which were relatively close to 0), representing our certainty level in these estimates. The experimental design will be optimized for d-efficiency of the MNL model (Bliemer and Rose, 2010).

3 Additional Data Collected

In addition to the choice data collected for modelling, the research data-set will be augmented by additional data types.

3.1 Survey Meta Data

This includes starting time and duration of time spent on each page

- start-time
- end time
- duration per page

3.2 Screening Data

Data required to screen out ineligible respondents such as ages under 18 or place of residence outside of Victoria. It is also proposed that respondents participation be voluntary. This may also include data to detect panel fraud including non-Australian points of origin through use of VPNs and TOR exit nodes and automated data entry agents such as web-bots.

3.3 Demographics Data

Data on individuals will be collected to allow representative sampling. This includes

- Gender
- Age
- Postcode
- Education
- Citizenship
- Income

3.4 Usage and Attitudinal Data

Replication some of the ACG usage and attitudinal questions (UA) including

- Attitudes to levels of current heritage protection
- Attitudes to cost of heritage protection
- Heritage statement agreement
- Ranking of Heritage spending
- Involvement in heritage activities, groups, governance and tourism

3.5 Open-ended comments

Free text input on aspects of the survey including

- Difficulty and comprehension
- Technical issues
- Un-prompted views on heritage and conservation

This data will be used variously and interchangeably for ensuring only valid respondents, sample representativeness but also for the opportunity to gain additional insights into usage, visitation and attitudes to heritage for supporting analysis of WTP.

4 Sampling and Fieldwork

Fieldwork will proceed in 2 phases:

4.1 Pilot Study

A pilot of approximately 200 Victorians will be conducted using the experiment instrument to allow direct review of the data and respondent feedback. This risk management measure allows the opportunity for review of initial models, feedback and to make for minor corrections before committing to the full data collection.

This short run study will also be used to evaluate dominance effects and will allow review of the potential dominance and correction of the selected payment vehicle and distance attributes ranges.

Optimisation of the experimental design may also be be performed from analysis of the pilot study data.

4.2 Main Study

A main data collection phase of 1,200 Victorian residents of 18 years or older will be conducted using a professional Market Research panel.

4.3 Sample Frame & Representativeness

Sample quotas will be established to ensure the sample proportions of

- Age,
- Gender and
- Regional Location

match those of the most recent Census

4.4 Experiment Sampling

The order of the heritage classes will be randomised by respondent to avoid any possible ordering biases.

Experiment treatments for each class will be drawn randomly, without replacement, for all experiments. This will eliminate ordering bias while also ensuring an even allocation of experiment treatments.

4.5 Privacy and Data

Respondent privacy and data management will be as per the standard SurveyEngine usage and privacy terms at

http://surveyengine.com/terms

http://surveyengine.com/privacy

5 Analysis

Respondents' utility function parameters will be modelled using the stated choices they made in the discrete choice experiment component of the survey. We utilised the mixed logit model (MXL, McFadden and Train, 2000; Hensher and Greene, 2003) which allows for incorporation of unobserved preference and scale heterogeneity (Hess and Train, 2017).

Formally, the discrete choice data is modelled using the random utility theory (McFadden 1974). This assumes that the utility an individual receives from an alternative he chooses depends on observed characteristics (attributes) and unobserved idiosyncrasies, which is represented by a stochastic component. Individual i's utility from choosing alternative j in situation t can be expressed as:

$$V_{ijt} = \boldsymbol{\beta}_{ijt\ \ i} + e_{ijt}\ .$$

The utility expression is separable in the observed choice attributes $\mathbf{X}_{ijt}$ and e_{ijt} being the stochastic component allowing for unobservable factors that affect individuals' choices. The parameters $\boldsymbol{\beta}_i$ represent individual-specific taste parameters associated with marginal utilities of the choice attributes, allowing for heterogeneous preferences among the respondents. The multivariate (parametric) distribution of these parameters in the sample is $\boldsymbol{\beta}_i \sim \mathbf{f}(\mathbf{b}, \boldsymbol{\Sigma})$ where $\mathbf{b}$ is a vector of sample means and $\boldsymbol{\Sigma}$ is a variance-covariance matrix. A convenient way of accounting for preference differences associated with accessing information is $\boldsymbol{\beta}_i \sim \mathbf{f}(\mathbf{b} + z_i\boldsymbol{\delta}, \boldsymbol{\Sigma})$, where z is a binary indicator for accessing information and $\boldsymbol{\delta}$ is a vector of its estimated attribute-specific effects.[1]

The stochastic component of the utility function (e_{ijt}) has an unknown, possibly heteroskedastic variance $\left(\text{var}\left(e_{ijt}\right) = s_i^2\right)$. The model is usually identified by normalizing this variance, making the error term $\varepsilon_{ijt} = e_{ijt} \cdot \frac{\pi}{\sqrt{6}s_i}$ identically and independently, extreme value type 1 distributed with a constant variance $\text{var}\left(\varepsilon_{ijt}\right) = \pi^2/6$, leading to the following specification:

$$U_{ijt} = \sigma_i \boldsymbol{\beta}_{ijt\ \ i} + \varepsilon_{ijt}\ ,$$

where $\sigma_i = \pi/\sqrt{6}s_i$ is the 'scale' parameter. Due to the ordinal nature of utility, this specification still represents the same preferences for individual i. Note that since the scale and preference parameters enter the model as

[1] The specific distributions must be assumed by the modeller; it is typically done based on model fit.

multiplication they are not separately identifiable. This does not restrict applicability of the model, because utility function parameters do not have absolute scale and can only be interpreted in relation to 0 and each other.

Finally, given that we are interested in marginal rates of substitution with respect to the monetary attribute p it is convenient to introduce the following modification, which is equivalent to using a money-metric utility function (also called estimating the parameters in WTP space; Train and Weeks, 2005):

$$U_{njt} = \alpha\left(p_{njt} + \mathbf{x}_{njt}\boldsymbol{\beta}\right) + e_{njt} = \alpha\left(p_{njt} + \mathbf{Y}_{njt}\right) + e_{njt}.$$

In this specification, the vector of parameters $\boldsymbol{\beta} = \boldsymbol{\beta}/\alpha$ can be directly interpreted as a vector of implicit prices (marginal WTPs) for the non-monetary attributes $\mathbf{Y}_{njt}$, facilitating interpretation of the results.

The model is estimated using maximum likelihood techniques. An individual will choose alternative j if $U_{ijt} > U_{ikt}$, for all $k \neq j$, and the probability that alternative j is chosen from a set of J alternatives is given by:

$$P(j|J) = \frac{\exp\left(\sigma_i \mathbf{x}_{ijt}\boldsymbol{\beta}_i\right)}{\sum_{k=1}^{J}\exp\left(\sigma_i \mathbf{x}_{ikt}\boldsymbol{\beta}_i\right)}.$$

There exists no closed form expression of , but it can be simulated by averaging over D draws from the assumed distributions (Revelt and Train 1998). As a result, the simulated log-likelihood function becomes:

$$\log L = \sum_{i=1}^{N}\log\frac{1}{D}\sum_{d=1}^{D}\prod_{t=1}^{T_i}\sum_{k=1}^{J} y_{ikt}\frac{\exp\left(\sigma_i \mathbf{x}_{ijt}\boldsymbol{\beta}_i\right)}{\sum_{k=1}^{J}\exp\left(\sigma_i \mathbf{x}_{ikt}\boldsymbol{\beta}_i\right)}.$$

where y_{ikt} is a dummy taking the value 1 if alternative k is chosen in choice situation t, and zero otherwise. Maximising the log-likelihood function in gives estimates for the parameters. In the modelling, the cost variable was continuous and other attributes were dummy-coded. The parameters of alternative specific constants (ASC) and all other attributes, including the cost, will be modelled as random.

Econometric models estimated using maximum simulated likelihood are known to be relatively sensitive to starting values, optimisation techniques and selection of convergence criteria. Our model is no exception in this respect and to make sure we reached the global maximum in optimization, we will use different optimisation algorithms, derive gradients analytically and use multiple starting points. In addition, since using longer low-discrepancy sequences (as opposed to shorter sequences or using pseudo-random draws) is found to facilitate reaching the global optimum or revealing identification problems (Chiou and Walker, 2007; Czajkowski and Budziński, 2017) in simulation of the log-likelihood function, we will use 10,000 scrambled Sobol draws.

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APPENDIX E

Victorian Heritage Valuations 2017

survey engine

decision modelling technology

Victorian Heritage Valuations 2017

Version

07.12.17 – version 10 , final

Authors

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Preface

This research report has been commissioned by Heritage Victoria and the Heritage Council of Victoria.

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Contents

Chapter 1 - Background

Structure of this report

The majority of the concrete results may be found in the appendices of this document. The body of the document describes methods used to derive the WTP estimates, departures from the initial methodology and examples of how to calculate WTP for a heritage site or object.

1.1 Context

This study was conducted within the framework of a larger heritage valuation project 'Valuing Victoria's Heritage' commissioned jointly by Heritage Victoria and the Heritage Council of Victoria in 2017.

This report is the centrepiece of that valuation project and aims to provide more granularity on heritage valuation by directly addressing the needs of planners and of those involved in heritage conservation and advocacy. This is achieved by using newer experimental design and modelling techniques. The study uses a realistic context and imagery to convey the valuation tasks to respondents while controlling for aesthetic bias. The study also attempts to provide the tools to estimate a marginal willingness-to-pay for a single heritage site or object

This report is intended to be a standalone analysis the heritage valuation experiment and survey conducted in 2017. It follows the methodology set out at the beginning of the project (Victoria's Heritage Methodology, 2017) and the replication study of the 2005 ACG report.

Discussion and interpretation of the results are beyond the scope of this document but will follow in a subsequent report prepared by SGS.

1.2 Proposed Methodology in Practice

It is obvious that poor survey design and administration could easily induce all sorts of anomalous behaviours, including hypothetical bias. On the other hand, studies that invested considerable time and effort into understanding what people believe, in presenting a credible choice scenario with a well-defined good and a coercive payment mechanism, and where survey design enhances belief in outcome and payment consequentiality generally appear to produce results that are well-behaved.

To this end, our study followed state-of-the-art recommendations of best design practices (e.g., Arrow et al., 1993; Mitchell and Carson, 1989; Bateman et al., 2004; Champ, Boyle and Brown, 2004; Johnston et al., 2017; Dillman, Smyth and Christian, 2008).

Specifically, we designed the survey instrument in such a way that:

Respondents see the survey as consequential, i.e. their responses are viewed as influencing agency's actions.

The introduction to the survey included the information who commissioned the survey and how the results can potentially be used. As a result, respondents believed that their choices can influence agency decisions (e.g., increase or decrease the probability of taking a particular action, based on the result of the public opinion).

Agents care about the outcomes.

The sample frame included respondents from the area in which heritage protection would take place. Respondents could be affected by the policy implementations and by increased coercive tax payments.

Respondents correctly understand and answer the question being asked
This requires ensuring that the good(s) being valued, including the different attribute levels and cost, are seen as plausible.

We iteratively refined the survey instrument and the design of the survey to make sure it includes only and all attributes that are relevant, is understandable and credible.

The payment was coercive, i.e. the payment vehicle was able to impose costs on all agents if the government undertakes the project.

We used a one-off common coercive tax payment, which has been used in Australia for existing projects and other studies.

The survey was seen as take-it-or-leave-it offer, so that agents do not see their decisions as influencing any other offers that may be made.

Each set of choices included an instruction to treat each choice independently, and not cumulatively (i.e., not declaring WTP for one item, and considering additional WTP for another, but treat all choices as if they were concurrent decisions).

Following the **incentive compatibility requirements**, we used a binary choice setting with the 'status quo' (no protection) alternative.

We used a simple binary choice to satisfy incentive compatibility conditions and to reduce cognitive burden on respondents.

To assure that our survey meets these conditions we iteratively refined the survey instrument, considering the maximum attention to these issues. We also consulted the survey with outside experts in the field of non-market valuation (Dr. Jürgen Meyerhoff, Dr. Marek Giergiczny) and cultural economics and policy (Aleksandra Wisniewska) as well as presentation of methods and survey instruments at the Choice Colloquium at the Technical University Berlin.

In addition, the survey instrument was evaluated and refined in the thorough process of pretesting, including focus groups, cognitive interviews, verbal protocols and expert reviews to make sure it satisfies the above conditions and is fit for local conditions. The survey instrument and design was also consulted with the client for correctness and policy relevance. Finally, the survey was piloted with 500 respondents, to assure validity, understanding, relevance and completeness. The pilot study results were also used to inform experimental design of the main waves of the survey.

Chapter 2 - Expert Reviews

Two expert review sessions were held. One at the Choice Colloquium at Technical University Berlin, moderated by Ben White and one at the University of Warsaw, moderated by Mikołaj Czajkowski. Both sessions included academics and environmental economists with expertise in the use of Choice-based methods for eliciting preference.

Participants were invited to provide specific feedback on both the methodology and the survey instrument used in this study. These were conducted with an academic flavour of openness, discussion and critique. None of the participants were incentivised or paid to provide their views. Their views remain their own while the responsibility to accept or reject them rests with the researchers.

The participants at the sessions included:

- Dr. Jürgen Meyerhoff, Institute of Landscape Architecture and Environmental Planning, Technical University Berlin
- Dr. Marek Giergiczny, Faculty of Economic Sciences, University of Warsaw
- Aleksandra Wiśniewska, Faculty of Economic Sciences, University of Warsaw
- Dr. Martin Achtnicht, Leibniz Institute of Ecological Urban and Regional Development (IOER), Dresden

The expert review feedback was collated and reviewed and either accepted or rejected with reasons given.

General Feedback

The general feedback was that “it looks very good”, “it is clear and easy to read”. It was also commented that the Choice situations were engaging and it was a well executed instrument.

The strongest and most unanimous critique was of the potential bias from the selection of images provided by the project sponsor which may have been subconsciously chosen for their aesthetic appeal. A danger being that certain assets would be chosen more often because of the associated image, Solutions were discussed to control and measure this potential effect.

Specific Feedback

Feedback	Resolution	Mitigation
I would strongly recommend to have the question regarding the support (and the hint towards my financial contribution) above the answer options.	accepted	placed choice question at top
in some cases the was a zero "none" payment? does this make sense from the choice perspective? Why should i not support it when i don't have to pay.	accepted	remove zero level of payment vehicles
People can go to the previous page although when in the sequence of choice tasks. Iwould try to avoid this as people might learn in the sequence and then want to go back and reverse their choice.	accepted	remove previous button
overall, my feeling is that people have to go through a lot of choices.	rejected as comment	number of scenarios necessary to maximise data
Number of places protected should also be collected and modelled.	accepted	a new attribute 'number of places added'
Learning bias could arise from presenting the categories in the same	accepted	each block of categories

order.		was randomised
Taxation payment should be clear about whether it is for the individual/household and other Victorians	accepted	explicitly stated individual tax and 'similar amount' for each Victorian depending on their circumstances
Add an example test page showing what the scenarios look like with a glossary of the possible values.	accepted	added an example and glossary
Some of the description of the attributes could be shortened, e.g. "poor condition / good condition / excellent condition" or "measures taken to secure.	rejected	content already signed off by client
The tick looks like a 'correct' response, and perhaps X or dot in the middle would be more neutral.	rejected	is in line with a standard survey response paradigm
"Heritage objects" has different description and attributes than before - this could not be unified with other categories.	accepted	these are the factors the client wants to understand
"Do you think that what people consider to be heritage is too broad?" Appears before the definition of 'heritage'. This could be intentional.	rejected as comment	the order is intentional
Alter the hover text for the 'Proposed Protection from changes attribute' from *Any changes or relocation are subject to permit approval : Any material changes to the object such as painting, conservation works or repairs, or any other modification are subject to permit approval* to *Any changes or relocation are subject to permit approval : Any material changes to the object such as painting, conservation works or repairs, or any other modification are subject to permit approval. Permit approval can be provided by a number of regulatory authorities*.	accepted	text altered
Forcing respondents to fill in text fields does not seem like a good idea. I suggest including 'no comment' tick or, if you do not want to provide an easy out' let respondents proceed even without typing anything in.	rejected	No - this is important to gauge engagement and honest responses (BW)
Potential Bias could result from the current selection of images/	accepted	the experiment should control for image aesthetics and presence

Chapter 3 - Differences to the Proposed Methodology

This research was conducted in accordance with the methodology set out at the beginning of the project (Valuing Victoria's Heritage Methodology, 30.07.2017, White & Czajkowski).

Specific departures and/or necessary clarifications to that document arose from the expert reviews of the methodology and initial versions of the data collection instrument. These are noted below.

Terminology

The original terminology for categories: Heritage Sites, Heritage Landscapes, Historic Sites and Heritage Objects has been replaced in this document with: Buildings, Landscapes, Historic Sites and Heritage Objects for clarity. The adjective 'Heritage' may be optionally dropped in the descriptive text and charts.

The term 'Sites' is used to refer to Buildings, Landscapes or Historic Sites. The term 'Heritage Assets' is used to describe all four categories.

Use of images

The potential bias that could arise from the selection and aesthetics of the imagery shown with each site or object was addressed thus: A second image was randomly selected for each type as well as 'no image'. In this way the dominant effect of a specific image could be measured as well as the effect of no images.

Payment Vehicle Context

The original methodology did not explicitly state whether the tax was an individual one or by household. The final version states explicitly that the tax would be an:

“.. additional one-off taxation cost to yourself, with a similar cost for each Victorian, proportional to their income”.

Additional Attributes

Two additional attributes were added to the the Sites categories:

These were:

> **Security measures** – a binary attribute indicating whether or not special measures are proposed to protect against fire, flooding, theft or vandalism were available.
>
> **Number of places protected** - varying from 1 to 10 was added to measure the marginal value of additional numbers of protected places.

Data Weighting

Post data collection, quality screening removed 194 respondents from the sample. As these respondents were not evenly distributed by age and gender, the remaining usable sample was re-weighted so that analysis would would maintain demographic proportions in line with the Victorian population. For model estimation we used weighted simulated maximum likelihood method.

Small Device Screen-outs

As the choice task contained a reasonably large amount of information, it was decided to screen-out respondents accessing the survey on devices smaller than a tablet. This was done automatically by interrogating the user's browser agent. Respondents on small screen devices were sent to a screen-out page and prevented from re-entering the survey.

Chapter 4 - Fieldwork Collection

Fieldwork for the survey and experiment was conducted over a 3 week period in October and November 2017 to reduce possible day-of-week bias.

The key demographic quota variables of age and gender were actively managed to ensure the final sample was close to the Victorian population census 2016 figures.

Respondents were recruited from two ESOMAR accredited online panels, Toluna and Research Now. All respondents were incentivised to participate in the survey.

Panels were instructed to disallow respondents accessing the survey from a small screen device such as a smart phone. Respondents devices were again tracked within the survey and rejected in the case they were using such a device as 'technical screenouts'.

A timeout of 30 minutes was applied to the survey. This meant that any respondent who paused for more than 30 minutes between responses was screened from the survey.

Post data collection, all open ended responses were manually checked. Respondents providing illogical or nonsense responses were marked as low quality responses and screened-out as 'Quality screenouts'

Table 3.1

Study information	
Fieldwork Start	6th October 2017
Fieldwork End	27th October 2017
Median Completion Time (seconds)	14.93
Number of Pages	31
Sample Frame	Victorians aged 18 and over on Jan 1, 2017

Table 3.2

Completion Statistics	Raw number
Incomplete	1231
Screened Out	216
Over Quota	145
Quality Screenouts	194
Usable Completes	1611
Total	**3397**

As noted above, respondents were screened out unless they were using a moderately large screen to perform the survey.

The device statistics on completion data below reflect the effectiveness of the screenout procedure.

Table 3.3

With what kind of device are you filling out this survey?	Freq	Percent
Android phone	0	0.0%
iPhone	0	0.0%
other smartphone	0	0.0%
Android tablet	38	2.3%
iPad	38	2.3%
Windows tablet	0	0.0%
desktop device	1,536	95.3%
Total	**1,611**	**100.0%**

Statistical Robustness

A total usable sample of 1,611 adult Victorians represents a statistically robust sample size. An upper limit for the sample error range can be calculated using a Z-test.

$$z^* \sqrt{\frac{p(1-p)}{n}},$$

Where p is the proportion of a statistic of interest – e.g. income, n is the sample size and z* is z value for the desired level of confidence. Taking a the standard 95% confidence level yields a z* value of 1.96.

This calculation shows that the maximum sampling error is 1.25%, meaning that any results in the survey will be within 1.25% of the true value for the population, with 95% confidence.

Chapter 5 - Data Analysis

5.1 Frequency Analysis

Demographic and attitudinal responses were analysed by weighted frequency where questions were of a closed form.

Open ended textual responses were manually categorised then analysed by weighted frequency.

In addition, closed form usage and attitudinal responses were segmented by age and analysed by weighted frequency.

Full results may be found in the appendices.

5.2 Choice modelling

In order for the model results to be practically useful and easily understood by lay readers, the models have been estimated into Willingness-To-Pay (WTP) space. This means that the coefficients in the models can be read as dollar values.

Furthermore our models do not include alternative specific constants. Instead, all dummy coded levels of the 'Type' attribute are included (like in a fixed effects model) instead of the more common practice of omitting one (reference) level. These two specifications are informationally equivalent. Our specification was selected for ease of interpretation – it readily shows respondents WTP for a program targeting each of the Types, instead of adding the coefficient for the alternative specific constant associated with protection program and the coefficient for the non-reference Type.

Further, note that because the alternative specific constant is incorporated in each of the Type levels, the estimated WTP has to be interpreted with caution. It reflects both – the WTP for protection of a particular Type of item and the WTP for implementing the program itself, irrespectively of its attributes. This means that in using the Willingness to pay tables – care should be taken to not interpret individual estimates on their own – rather to combine them and compare them in aggregate.

It is not unusual for consumers to hold preferences for implementing a program or purchasing a good itself, irrespectively of its attributes. For example, despite offering a respondent exactly the same cola, they could be willing to pay extra for a particular brand (e.g., Coca-Cola). In the same way, respondents could be generally in favour or against the protection program along with its implementation details, as described in the survey (e.g., the payment mechanism).

This WTP for the program itself could be positive or negative. We note that the estimated WTP for each Type are conditional on implementing the protection program in the way described in our survey (protecting a single item at the cost collected via a one-off tax payment by everyone in Victoria).

Interpreting individual WTP estimates

As noted above, care should be taken when considering point estimates of WTP for a single attribute.

Nevertheless an interpretation of an individual estimate can be made with the implicit assumption of all other attributes being at the reference base level having been set to zero dollars WTP.

These reference base levels for each site are:

- 1971 to present
- Very poor condition
- Of local significance
- Less than 1km from you
- No further development permitted
- Private access only

This means that a a willingness to pay of -$107.73 for a sports centre implies the following:

Victorians would need to be compensated $107.73 to protect from further development a nearby (<1km) locally significant, private sports centre, built after 1971 but in very poor condition.

The estimates of non-reference levels of all these attributes should be added to the -$107.73 to represent non-reference situations.

5.3 Willingness to pay for Sites (Buildings, Landscapes and Historic)

Table 5.1

	Attribute	BUILDING	LANDSCAPE	HISTORIC
TYPE – Site	Residential Building	-$73.29		
	Commercial/Retail Building	-$69.46		
	Industrial Building	-$43.64		
	Place of Worship	-$52.62		
	Hotel	$15.28		
	Hall	-$52.92		
	School	-$19.55		
	Bank	-$55.91		
	Garden	-$11.64		
	Transport Station	$15.70		
	Hospital	-$39.76		
	Police/Gaol	$18.75		
	Post Office	$6.39		
	Courthouse	$18.61		
	Theatre	$0.05		
	Sports Centre	-$103.73		
	Gallery	$26.23		
	Library	-$24.38		
TYPE – Landscape	Residential Landscape		-$146.11	
	Industrial/Mining Landscape		-$76.99	
	Agricultural Landscape		-$77.53	
	Natural Landscape		-$58.16	
	Trees		-$16.92	
	Bridge		$13.63	
	Wall		-$78.34	
	Lighthouse		$85.06	
	Roadway/Avenue		-$55.74	
	Pier/Wharf		-$42.39	
TYPE – Historic	Settlement Site			-$30.19
	Military Site			$49.86
	Goldrush Site			$52.52
	Mining Site			-$60.55
	Shipwreck			$5.67
AGE	19th century (1803-1900)	$45.86	$77.69	$34.52
	Early 20th century (1901-18)	$29.65	$34.13	$18.86
	Interwar period (1919-45)	$22.45	$4.42	$11.50
	Post war (1946-70)	$8.02	$17.99	$23.68
	1971 to present	$0.00	$0.00	$0.00
CONDITION	Excellent condition	$70.75	$42.49	$20.90
	Good condition	$33.60	$35.23	$17.96
	Poor condition	$18.01	$3.73	$2.81
	Very poor condition	$0.00	$0.00	$0.00
SIGNIFICANCE	National Significance	-$6.14	$2.04	-$14.01
	State Significance	$21.67	-$0.78	-$27.98
	Local Significance	$0.00	$0.00	$0.00
PROTECTION	Sympathetic alterations subject to approval	$14.67	-$5.70	$1.44
	No permit required for interior alterations	$27.69	$7.52	-$18.52
	No further development permitted	$0.00	$0.00	$0.00
DISTANCE	Distance (per 100km)	-$29.61	-$36.52	$0.00
CONTROLS	Control of visitation	$0.00	$0.00	$28.39
	Control of traffic	$17.13	$20.81	$31.36
	Control of noise	$14.19	$0.00	$0.00
	Security measures	$0.00	$0.00	$0.00
ACCESS	Public access - free	$21.13	$24.92	$5.49
	Public access - with entry fee	$13.50	$1.67	$44.71
	Public access - for commercial purposes	$23.55	$11.92	$20.51
	Private access only	$0.00	$0.00	$0.00
PLACES	Number of places (per additional)	$0.00	$3.20	$0.00

***Note**: where a model estimate was found to be not significant at the 90% confidence level it has been set to zero. Full model results are however reproduced faithfully in the Appendix.*

5.4 Observations on Site Valuations

Type

The type of Building, Landscape, Historical Site had among the largest effects on preference. Mining, industrial and commercial sites had the lowest value across the categories.

Age

For buildings the older a site is, the higher value placed on it. This is similar for Landscapes and Historical sites although both with a small reversal for post war 1956-1970

Condition

For all three site categories, sites were valued more the better condition they were in.

Significance

For Buildings, respondents were willing to pay more if the site was state listed rather than either national or a local heritage overlay. For Historic sites, local significance had a relatively higher value. For Landscapes the differences were negligible.

Distance

For Buildings and Landscapes, proximity held a higher value with WTP dropping off the further the site was away. However for Historic Sites the effect was not significant.

Protection

For Buildings and Landscapes, sympathetic alterations subject to permit held a high value than no development. This was reversed for Historic sites, with alterations having a relative negative effect.

Controls

Control of visitation was only significant and positive for Historic Sites. The effect of security measures on all types of sites was not significant. Noise control positive but only significant for Buildings. Control of traffic was universally highly positive for all sites.

Access

Public access to all sites had a higher value than private access for all sites. Entry fees on Historic sites was highly preferred to free public access.

Number of Places protected

No significant effect on number of places protected could be measured for either Buildings or Historic sites. This may have been because the marginal value of a single site is very low, as noted in the 2005 ACG report and the 2017 replication study.

5.5 Willingness to pay – Historic Objects

Table 5.2

	Attribute	
OBJECT TYPE	Minton Peacock	-$40.37
	Ballarat Reform League Charter	-$16.68
	Marianne Gibson Quilt	-$45.92
	Eureka Flag	$31.44
	Trade Union Banners	-$52.12
	CSIRAC	$62.51
	The Taggerty Buffet Car	$9.87
	Electric Tram No. 13	$79.50
	Church pipe organ	-$50.23
	Anzac Memorabilia	$46.97
	Historic furniture	-$13.73
	Purpose designed cabinetry	-$40.58
	Navigational equipment	-$19.12
CONDITION	Excellent condition	-$14.43
	Good condition	$15.62
	Poor condition	$0.56
	Very poor condition	$0.00
SIGNIFICANCE	Victorian Significance	$46.19
	Local Significance	$0.00
CONTEXT	Integral to a Heritage Place	$7.52
	Contributes to significance	-$6.38
	Significant in its own right	$0.00
	Archived	-$6.11
	Part of an Exhibition	-$9.42
	In use	$0.00
CUSTODIAN	Medium to large	$46.31
	Medium sized community	$41.22
	Small sized community	$35.36
	Private collection with access	$30.05
	Private collection no access	$0.00
	Works to conserve/protect allowed	$7.03
CHANGES	Any changes allowed	-$20.29
	Relocation allowed	-$7.75
	Changes/Relocation subject to approval	$0.00

5.6 Observations on Object Valuations

Object Type

The type of object had among the largest effects on preference. Consistent with military sites in the above models, military objects also held a higher value than other assets..

Condition

Better condition was preferred over poorer condition, however an anomalous result indicated that an object in 'excellent condition' had a negative WTP. This result should be examined closely for possible causes which may include the estimation by respondents than an object in excellent condition did not require additional protection.

Context

The value of context was related to an object's connection to a site and use. Archived objects or exhibited objects had a negative WTP.

Custodianship

Value of custodian was directly related to the custodian's size and access. Private custodianship with no access had the lowest WTP.

Changes/Relocation

More stringent levels of control over relocation and changes had a higher value.

5.7 Example WTP Calculation

Below is a worked through example on the calculation of the willingness to pay for the protection of a heritage Building.

To calculate WTP for an asset:

1. Find the closest category to the asset – in this case a heritage building.
2. For each attributes of the asset (TYPE, AGE etc) look up the closest level WTP from the table that matched. In this example case we are using first column from table 5.1 above.
3. Enter the unit WTP from the table 5.1
4. For the linear attributes of Distance and Number of places, the WTP value will need to be calculated by multiplying the lookup WTP value with the relevant unit proportion. In this case the unit WTP for distance is -$29.61 per 100km. so for 25km the value is -$29.61 * 0.25 = -$7.40
5. Sum the total calculated WTP to calculate the total Willingness to Pay for the described asset.

Table 5.3

		UNIT WTP	Calculated WTP
TYPE	Residential Building	*-$73.29*	-$73.29
AGE	19th century (1803-1900)	*$45.86*	$45.86
CONDITION	Good condition	*$33.60*	$33.60
SIGNIFICANCE	State Significance	*$21.67*	$21.67
PROTECTION	No permit required for interior alterations	*$27.69*	$27.69
DISTANCE	25km	*-$29.61*	-$7.40
ACCESS	Public access - for commercial purposes	*$23.55*	$23.55
PLACES	1 Place	*$0.00*	$0.00
	TOTAL WTP		**$71.68**

Note: Because of the way the WTP has been generated from the models, it is important to include all attributes in the WTP calculation and not just the ones of interest.

For detailed analysis where it is critical to differentiate between two or more WTP values it is strongly recommended to use the original models in Appendix A.1. In such a case it is important to understand that the estimates represent mean WTP in the sample/population and there could be some heterogeneity around each estimate as indicated by the estimated standard deviation. Mean and standard deviation are uncertain to the extent indicated by the estimated standard error reported in that table. Appropriate statistical tests e.g. t-tests should be used to differentiate between WTP estimates if required.

5.8 Segment Differences

The models presented in this section are not intended for determining mean WTP of the population but rather for investigating sources of preference heterogeneity that can be associated with observed socio-demographic characteristics of our respondents.

Main effects can be different than those presented for models without interactions, because WTP for an attribute is now represented by the sum of a main effect and all interactions multiplied by the mean values of each socio-demographic characteristic in the sample. Some explanatory variables were normalised for zero mean and unit standard deviation.

The interpretation of the results is based on evaluating whether a coefficient of an interaction is statistically significant and if it is – examining its sign. For example, a statistically significant and negative coefficient -0.8610 of the interaction of 'Age (normalised)' with 'Type - Commercial/Retail Building' shows that respondents who are older than average value protection of this Type of building less, while respondents who are younger than average – value this Type more. The value of the coefficient shows that respondents who are 1 standard deviation of sample age above the mean age in the sample are WTP 86.10 AUD less.

Each of the following segment variables: Gender, Age, Income, Education and Region was interacted in this way with each model attribute to examine possible correlations with socio-demographic variables. These interaction models can be seen in detail in the Appendices.

With such a large number of cross effects – only effects significant at the 3 sigma level (99% or above) are highlighted here. At this level a small number of segment differences were observed.

Male respondents

- Had a higher preference for Objects that were of local significance.

The older a respondent a respondent was, the higher was the preference for:

- older heritage sites with a peak at 1902-1918
- sites in 'excellent' condition.
- higher preference for noise controls. (and security measures at 95%)
- higher preference for objects being looked after by a community collection

The younger a respondent was, the higher the preference was for :

- industrial sites, halls, schools, hospitals, theatres, sports centres, goldrush and mining sites..
- for objects including the Minton peacock, ANZAC memorabilia and the buffet car

The wealthier a respondent was, the

- a lower was the preference for protecting bridges
- a higher was the preference for protecting residential buildings

University Educated respondents had

- higher value for local significance
- higher preference for modern buildings (at 95%)
- more negative value for ANZAC memorabilia (at 95%)

Melbourne Metro had

- higher preference for noise and traffic controls
- higher preference for archiving objects

Victorian regions were analysed for segment differences. Each of the following regions was interacted with each model parameter to look for possible interactions. The following regions were used.

- Central Subregion
- Eastern Subregion
- Geelong
- Gippsland
- Hume
- Loddon Mallee South
- Northern Subregion
- Southern Subregion
- Western Subregion
- Central Highlands

No significant differences, at the 99% confidence level were found for any of these regions for any of the model variables.

Example WTP calculation by Segment

Using the segment models in the index it is possible to precisely calculate WTP difference by Socio-Demographic (SD) variables above. The models frequently represent the SD variables in an unfamiliar form – e.g. mean centred with unit standard deviations for age and income. This needs to be considered when using the models in their raw form.

For example, looking at the MNL model with SD interactions for buildings:

A Residential Building as a WTP of -1.0913 (equivalently -$109). That means protecting it would be worth -$109 for an average respondent.

The coefficient of Age (normalised) is -0.4535 (-$45). So someone who is 62 (which is the the mean plus one standard deviation) would have a WTP -$45 less that the average,i.e -$109-$45 = -$154.

Conversely, someone who is 32 (the mean minus one standard deviation) would have an additional $45 WTP above the average, ie -$109 + $45 = -$64.

Full details on the coding scheme for Socio-Demographic interactions used are in the appendix.

5.9 Attribute Cross-Effects

Modelling the cross effects of Age, Condition and Type was undertaken to identify if there were certain combinations that had a stronger joint effect on preference in addition to the independent effects observed in the main models.

The method used was similar too the one used above to identify cross effects with segments. The full results can be found in the appendices. Given the large number of cross-effects, only effects significant at the 99% have been included in this report.

Type x Age Interactions

Table 5.4

	19th Century	1901-1918	1919-1945	1946 -1970	1971 to present
Trees	1.41				
Bridge	2.54				
Police station/gaol	1.28	1.45			
Military site	1.11		1.10	1.07	
Lighthouse	1.64	1.25	1.05	1.21	
Transport station			1.36		
Goldrush	1.05				
Industrial/mining		-0.96			-1.07
Industrial building					-1.25
Wall					-1.13

Positive Effects were found for

- Bridges, Trees and Goldrush sites exclusively from the 19th Century
- Police Stations built before 1918
- Transport stations from 1919 to 1945
- Lighthouses and Military Sites from before 1970

Negative effects were found for

- Industrial mining sites and industrial buildings and walls from 1971 onwards and
- Industrial buildings from 1901 to 1918

Type x Condition Interactions

Table 5.5

Type*Condition	Excellent	Good	Poor	Very poor
Hall	1.80			
Police/Gaol	1.69			
Lighthouse	1.54	1.11	1.17	
Courthouse	1.16		1.01	
Gallery	1.12			
CSIRAC	1.08	0.82	0.78	
Hospital	1.04			
Military Site	0.77	0.93		
Church pipe organ	-0.76			
Marianne Gibson Quilt	-0.89			
Electric Tram No. 13		0.98	1.11	1.09
Wall		-0.90		
Industrial/Mining Landscape		-0.91	-1.19	-1.69
Transport Station			1.31	
Agricultural Landscape			-1.05	
Bridge				0.86
Mining Site				-0.80
Trade Union Banners				-1.03

The interaction between type and condition revealed that types that already had a high WTP experienced a further increase in WTP depending on their condition.

Lighthouses, Military Sites, Police Stations, Galleries had an even higher WTP if in a good or excellen condition.

Other highly preferred assets such as the tram, bridges and stations when in a poor condition also had an increased joint WTP.

In the same sense, sites and objects with low WTP such as Mining sites and Industrial landscapes experienced a further drop in WTP if in poor condition.

It should be noted that negative WTP for items such as the pipe organ or quilt can also be interpreted as" all other types had a more positive WTP for excellent condition relative to these items.

Age x Condition Interactions

Age	Excellent	Good	Poor	Very poor
19th Century	1.17	0.87	0.60	0.80
1901-1918	0.63			
1919-1945	0.66			
1946 -1970	0.58			
1971 to present				

Table 5.6

Cross effects for Age by Condition show a universal higher valuation for 19th century heritage sites.

In addition there is a significant and increasing cross effect between a site in excellent condition and its age.

5.10 Image effects

It was decided to introduces images in the choice experiment in this study to facilitate comprehension by respondents. This was mainly as the Building category had 18 difference site types that needed to be clearly differentiated. It was felt that using imagery would provide a more engaging experiment for respondents and reduce potential fatigue.

The images shown were selected by Heritage Victoria and were specific to each relevant type of site or object.

As noted in the expert reviews, this could potentially bias the experiment such that respondents were choosing based on specific aesthetic taste rather than on the general type of asset.

The alternative – of showing no images was also hazardous. Showing no image could bias the results in a different manner with different respondents having different concepts about assets which had a vague description such as 'residential landscape'.

To mitigate both sides of this potential bias, two strategies were undertaken. Firstly to show an alternative image to the one provided by Heritage Victoria, and secondly to also occasionally show no image.

The alternative images were randomly selected from the same database and all three possible images (including 'none') were presented to respondents in a randomised controlled way.

Figure 5.6

Examples of 3 possible images shown for 'Commercial' Heritage site.

This allowed collection of data that could allow estimation of:

a) the effect on preference of showing an image versus showing now image

b) identification of highly dominant images

c) a 'spread' or range of interpretation of the site types

this was done for all 4 heritage categories.

Three important observations were made

1. Absence of an image produced a both reduced WTP and a bias towards certain heritage site types.
2. Inclusion of an image produced no significant bias towards any of the types of asset.
3. Comparing the effect of the two alternate images showed no significant for one image over the other.

This is a positive result. It shows that,presentation of imagery in valuation comparisons increases the engagement with the subject matter but does not systematically bias certain attributes over others.

The image effect can therefore now be ignored for the purposes of comparing one heritage asset over another using the models in this study.

Appendix A – Demographics Results

Table A.1

Region	Freq	Percent
Southern Subregion	341	21.2%
Eastern Subregion	312	19.4%
Northern Subregion	219	13.6%
Central Subregion	186	11.6%
Western Subregion	177	11.0%
Gippsland	71	4.4%
Geelong	67	4.2%
Hume	63	3.9%
Loddon Mallee South	60	3.7%
Central Highlands	48	3.0%
Loddon Mallee North	30	1.9%
Great South Coast	23	1.4%
Wimmera Southern Mallee	9	0.5%
Other	3	0.2%
Queenscliffe (B)	2	0.1%
Total	**1,611**	**100.0%**

Table A.2

What is your gender?	Freq	Percent
Male	771	47.9%
Female	840	52.1%
Other*	0	0.0%
Total	**1,611**	**100.0%**

** because of the necessity to weight responses with Census Data which records only two genders, the apparent number of respondents selecting 'other' is calculated as zero although a small number did respondent as 'other' to the question.*

Table A.3

Age (as of January 1st 2017)	Freq	Percent
18-24	110	6.8%
25-29	164	10.2%
30-34	224	13.9%
35-39	113	7.0%
40-44	123	7.6%
45-49	144	8.9%
50-54	177	11.0%
55-59	133	8.2%
60-64	126	7.8%
65-69	144	8.9%
70 and above	156	9.7%
Total	**1,611**	**100.0%**

Table A.4

Are you an Australian citizen?	Freq	Percent
Yes	1,480	91.8%
No	131	8.2%
Total	**1,611**	**100.0%**
Asia Other	60	3.7%
India	46	2.9%
China	44	2.7%
New Zealand	26	1.6%
Malaysia	22	1.4%
Other	51	3.2%
Total	**1,614**	**100.0%**

Table A.5

What is your legal marital status?	Freq	Percent
Never married	487	30.2%
Married	866	53.7%
Separated, but still legally married	26	1.6%
Divorced	141	8.8%
Widowed	49	3.1%
Other (please specify)	42	2.6%
Total	**1,611**	**100.0%**

Table A.6

Number of children	Freq	Percent
None	642	39.9%
1 child	258	16.0%
2 children	416	25.8%
3 or more children	295	18.3%
Total	**1,611**	**100.0%**

Table A.7

What is the highest level of formal education qualification you have completed?	Freq	Percent
Post Graduate	229	14.2%
Graduate Diploma or Graduate Certificate	125	7.7%
Bachelor Degree	424	26.3%
Advanced Diploma or Diploma	208	12.9%
Certificate	221	13.7%
Year 12 or equivalent	194	12.0%
Year 11 or equivalent	82	5.1%
Year 7 to Year 10	120	7.4%
Primary School	5	0.3%
Other	4	0.2%
Total	**1,611**	**100.0%**

Table A.8

Which of the following best describes your working status?	Freq	Percent
Working for an employer	847	52.6%
Self-employed	128	7.9%
Unemployed	67	4.2%
Looking after family/home	100	6.2%
Unable to work due to permanent sickness or disability	55	3.4%
Retired	341	21.2%
Student	60	3.7%
Other	13	0.8%
Total	**1,611**	**100.0%**

Table A.9

What is your household income?	Freq	Percent
Negative income	10	0.6%
Nil income	14	0.9%
$1 - $149 per week ($1 - $7,799 per year)	20	1.2%
$150 - $249 per week ($7,800 - $12,999 per year)	21	1.3%
$250 - $399 per week ($13,000 - $20,799 per year)	67	4.1%
$400 - $599 per week ($20,800 - $31,199 per year)	138	8.6%
$600 - $799 per week ($31,200 - $41,599 per year)	121	7.5%
$800 - $999 per week ($41,600 - $51,999 per year)	111	6.9%
$1,000 - $1,299 per week ($52,000 - $67,599 per year)	180	11.2%
$1,300 - $1,599 per week ($67,600 - $83,199 per year)	160	10.0%
$1,600 - $1,999 per week ($83,200 - $103,999 per year)	185	11.5%
$2,000 or more per week ($104,000 or more per year)	363	22.6%
Prefer not to say	220	13.7%
Total	**1,611**	**100.0%**

Table A.10

Please indicate whether any of the following applies to you. *more than one answer	Freq	Percent
Member of a historic society or club	52	3.2%
Past or present employee or councillor of a local council	40	2.5%
Volunteered your time for heritage activities	94	5.8%
Donated to heritage causes in the last 12 months	104	6.4%
Own or live in a heritage-listed property	47	2.9%
None of the above applies to you	1,351	83.8%

Appendix B – Usage and Attitudinal Responses

Table B.1

Please Complete The Following Statements With Yes, No Or Don't Know	Yes (freq)	No (freq)	Don't Know (freq)	Yes (%)	No (%)	Don't Know (%)
I enjoy reading about heritage on social media	793	608	211	49.2%	37.7%	13.1%
I look for information about heritage issues on the Heritage Council website	373	1,109	129	23.1%	68.8%	8.0%
It is easy to find information on heritage places and objects on the Heritage Register	497	280	835	30.8%	17.3%	51.8%
I want to know the human interest stories behind heritage places and objects	1,144	289	178	71.0%	17.9%	11.1%

Table B.2

To what extent do you agree or disagree with the following statements about archaeological heritage? *more than one answer	strongly agree (freq)	somewhat agree (freq)	neither agree nor disagree (freq)	somewhat disagree (freq)	strongly disagree (freq)	strongly agree (%)	somewhat agree (%)
It is important to protect and manage artefacts recovered from heritage places	852	568	167	12	12	52.9%	35.3%
It is important to protect historical archaeological sites	897	540	146	15	14	55.7%	33.5%
It is important to recognise all types of heritage places (landscapes, objects, collections)	745	625	202	25	14	46.2%	38.8%
It is important to protect maritime/shipwreck heritage sites	672	598	281	46	15	41.7%	37.1%

Table B.3

How Do You Mainly Find Out About Heritage? *more than one answer	Freq	Percent
Print media (newspapers/magazines)	572	35.5%
Television/radio	678	42.1%
Social media	371	23.0%
Internet	853	52.9%
Friends/relatives/colleagues	412	25.6%
Other	57	3.5%
Not interested	185	11.5%

Table B.4

Should there be government-funded grants available to private owners without them having to demonstrate public benefit?	Freq	Percent
Yes	655	40.6%
No	563	34.9%
I don't know	394	24.5%
Total	**1,611**	**100.0%**

Table B.5

Should government-funded grants only be available for places included in the Victorian Heritage Register or should they be broadened to include places in heritage overlays of local government planning schemes?	Freq	Percent
Victorian Heritage Register only	411	25.5%
Victorian Heritage Register and others	734	45.5%
I don't know	467	29.0%
Total	**1,611**	**100.0%**

Table B.6

Do you think there is enough done to promote heritage protection in Victoria?	Freq	Percent
Yes	305	18.9%
No	779	48.3%
I don't know	527	32.7%
Total	**1,611**	**100.0%**

Table B.7

What would be an acceptable penalty for an owner of a heritage asset who has deliberately neglected it and allowed it to become ruinous or in a state of poor repair?	Freq	Percent
No penalty	219	13.6%
A court order requiring remediation	604	37.5%
Council notice followed by fines until remediation	646	40.1%
Other	143	8.9%
Total	**1,611**	**100.0%**

Table B.8

Should there be higher penalties for owners of heritage assets who undertake unlawful construction works?	Freq	Percent
Yes	1,177	73.1%
No	170	10.6%
I don't know	264	16.4%
Total	**1,611**	**100.0%**

Table B.9

What are the strengths and weaknesses of the current two tiered approach to heritage protection in Victoria? What works well and what could be improved? *open question*	Freq
Don't know/no comment	776
Status Quo – it works well	127
Weakness – ineffectual enforcement	104
Weakness - overlays weak or should be abandoned in favour of a state schemefor state	80
Weakness – too complicated or inconsistent	62
Strengths – is more effective or allows more places to be protected	57
Improvement – increased awareness and communication with community.	56
Improvement – owners of heritage properties should should be better supported	41
Weakness – two tiers is slow, inefficient and bureaucratic	34
Weakness - too broad and too many overlays	33
Weakness – council's lack of effectiveness and consistency	32
better management or prioritisation	31
Improvement – less tax/more Government funding or purchase	22
Weakness - too narrow, too few are protected. Gaps in protection	17
Improvement – there could be more protection or controls	15
Strengths – better use of local or council knowledge	10
Strength – allows more flexibility and differentiation of heritage assets	10

Table B.10

Are there ways that the government could operate differently to protect heritage? *open question	Freq
Don't know	761
Manage differently or reorganise the authorities	286
Better enforcement, tougher penalties or stricter laws	142
More information and better awareness of heritage sites	105
Fund Heritage better	65
Empty comment, opinion or vague statement	64
Support or consider owners and occupiers more	55
Non specific yes	50
Better community consultation	43
Happy with the current situation	30
Acquisition of heritage properties	10

Table B.11

Do you think that what people consider to be heritage is too broad?	Freq	Percent
Yes	551	34.2%
No	505	31.3%
I don't know	555	34.5%
Total	**1,611**	**100.0%**

Table B.12

In your opinion, are there types of heritage assets that are under represented on heritage lists?	Freq	Percent
Yes	208	12.9%
No	323	20.1%
I don't know	1,080	67.0%
Total	**1,611**	**100.0%**

Table B.13

What are these types of heritage assets (that are under represented on heritage lists?) **open question*	Freq	Percent	Percent (of valid)
Empty comment, opinion or vague statement	1,453	90.2%	
Buildings/Sites	67	4.2%	42.2%
Historical or archaeological	35	2.1%	21.8%
Natural parks/sites	17	1.1%	10.7%
Cultural Assets	13	0.8%	8.3%
Aboriginal Culture	9	0.6%	5.9%
Objects, Artefacts and folklore	9	0.6%	5.8%
Industrial and commercial assets	8	0.5%	5.3%
Total	**1,611**	**100.0%**	**100.0%**

Table B.14

What do you perceive to be current threats or risks to Victoria's heritage assets? *open question*	Freq	Percent	Percent (of valid)
Empty comment, opinion or vague statement	392	24.3%	
Over development	562	34.9%	46.1%
Poor management and enforcement	170	10.5%	13.9%
Public attitude	117	7.3%	9.6%
Natural aging and environmental damage	114	7.1%	9.4%
Lack of funding	111	6.9%	9.1%
Neglect	102	6.3%	8.3%
Vandalism	44	2.7%	3.6%
Total	**1,611**	**100.0%**	**100.0%**

Table B.15

How could the threats or risks be managed?	Freq	Percent	Percent (of valid)
Empty comment, opinion or vague statement	526	32.6%	
Manage differently or reorganise the authorities	368	22.8%	33.9%
Stricter regulations	182	11.3%	16.8%
More education	148	9.2%	13.6%
Higher penalties	144	8.9%	13.2%
Better enforcement	129	8.0%	11.9%
Fund Heritage better	114	7.1%	10.5%
Total	**1,611**	**100.0%**	**100.0%**

Segmented Usage and Attitudes

Table B.16

Please Complete The Following Statements With Yes, No Or Don't Know	18-34			34-54			55		
	Yes	No	Don't Know	Yes	No	Don't Know	Yes	No	Don't Know
I enjoy reading about heritage on social media	58.9%	29.4%	11.7%	48.5%	38.0%	13.4%	41.3%	44.8%	14.0%
I look for information about heritage issues on the Heritage Council website	33.2%	55.0%	4.9%	21.2%	69.7%	9.1%	16.1%	74.6%	9.3%
It is easy to find information on heritage places and objects on the Heritage Register	41.9%	18.5%	33.4%	28.1%	19.4%	52.5%	23.8%	12.3%	63.9%
I want to know the human interest stories behind heritage places and objects	72.0%	18.3%	6.7%	67.2%	18.8%	14.0%	74.0%	14.8%	11.3%

Table B.17

More Money Was To Be Spent On Heritage Issues, Which Of The Following Would You Choose To Spend It On? *more than one answer	18-34	34-54	55+
Interpretation of historic archaeological sites	29.6%	31.2%	33.0%
Protection and management of historic archaeological sites	69.7%	71.8%	71.3%
Conservation management plans for heritage places and objects	61.0%	65.6%	71.9%
Digital recording of registered places and objects	32.7%	42.3%	49.2%
Protection of shipwrecks	22.6%	30.2%	38.1%
Other	0.6%	1.9%	2.7%
Don't know	9.3%	10.5%	10.0%

Table B.18

How Do You Mainly Find Out About Heritage? *more than one answer	18-34	34-54	55+
Print media (newspapers/magazines)	26.4%	30.3%	48.9%
Television/radio	29.8%	42.5%	52.6%
Social media	36.9%	20.3%	13.3%
Internet	60.6%	55.2%	43.9%
Friends/relatives/colleagues	24.0%	25.9%	26.6%
Other	1.5%	3.3%	5.6%
Not interested	13.6%	13.0%	8.0%

Table B.19

Should there be government-funded grants available to private owners without them having to demonstrate public benefit?	18-34	34-54	55+
Yes	49.6%	38.2%	35.0%
No	26.9%	34.8%	42.2%
I don't know	23.5%	27.0%	22.8%
Total	**100.0%**	**100.0%**	**100.0%**

Table B.20

Should government-funded grants only be available for places included in the Victorian Heritage Register or should they be broadened to include places in heritage overlays of local government planning schemes?	18-34	34-54	55+
Victorian Heritage Register only	28.0%	23.9%	24.9%
Victorian Heritage Register and others	42.7%	43.5%	50.1%
I don't know	29.3%	32.6%	25.0%
Total	**100.0%**	**100.0%**	**100.0%**

Table B.21

Do you think there is enough done to promote heritage protection in Victoria?	18-34	34-54	55+
Yes	25.6%	16.4%	15.5%
No	41.8%	48.7%	53.8%
I don't know	32.6%	34.9%	30.7%
Total	**100.0%**	**100.0%**	**100.0%**

Table B.22

To what extent do you agree or disagree with the following statements about archaeological heritage? *more than one answer	18-34					34-54					55				
	strongly agree	somewhat agree	neither agree nor disagree	somewhat disagree	strongly disagree	strongly agree	somewhat agree	neither agree nor disagree	somewhat disagree	strongly disagree	strongly agree	somewhat agree	neither agree nor disagree	somewhat disagree	strongly disagree
It is important to protect and manage artefacts recovered from heritage places	46.4%	35.9%	16.4%	1.0%	0.3%	52.0%	35.9%	10.0%	0.7%	1.5%	59.6%	34.1%	5.4%	0.5%	0.5%
It is important to protect historical archaeological sites	47.1%	38.6%	12.7%	1.2%	0.3%	56.5%	30.5%	10.8%	0.7%	1.5%	62.4%	31.9%	4.0%	0.8%	0.8%
It is important to recognise all types of heritage places (landscapes, objects, collections)	42.2%	39.6%	16.2%	1.7%	0.3%	48.1%	35.7%	12.6%	2.0%	1.5%	48.0%	41.0%	9.2%	0.9%	0.9%
It is important to protect maritime/shipwreck heritage sites	37.6%	37.6%	21.0%	3.3%	0.5%	41.7%	36.3%	17.2%	3.1%	1.7%	45.4%	37.5%	14.5%	2.1%	0.5%

Table B.23

What would be an acceptable penalty for an owner of a heritage asset who has deliberately neglected it and allowed it to become ruinous or in a state of poor repair?	18-34	34-54	55+
No penalty	15.2%	13.3%	12.5%
A court order requiring remediation	36.1%	36.5%	39.6%
Council notice followed by fines until remediation	45.3%	41.4%	34.1%
Other	3.3%	8.8%	13.8%
Total	**100.0%**	**100.0%**	**100.0%**

Table B.25

Should there be higher penalties for owners of heritage assets who undertake unlawful construction works?	18-34	34-54	55+
Yes	64.1%	74.9%	79.1%
No	17.6%	9.2%	5.7%
I don't know	18.3%	15.8%	15.2%
Total	**100.0%**	**100.0%**	**100.0%**

Table B.26

Do you think that what people consider to be heritage is too broad?	18-34	34-54	55+
Yes	32.7%	32.8%	37.0%
No	34.2%	29.8%	30.3%
I don't know	33.1%	37.4%	32.7%
Total	100.0%	100.0%	100.0%

Table B.27

In your opinion, are there types of heritage assets that are under represented on heritage lists?	18-34	34-54	55+
Yes	16.6%	11.3%	11.2%
No	28.0%	18.6%	14.5%
I don't know	55.4%	70.1%	74.3%
Total	**100.0%**	**100.0%**	**100.0%**

Appendix D – Models

Table D.1

Buildings		MEANS (in WTP space of 10AUD units)					STDDEV			
MXL model		dist.	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
TYPE	Residential Building	n	-7.3292	***	1.9866	0.0002	9.6681	***	2.9581	0.0011
	Commercial/Retail Building	n	-6.9460	***	2.0745	0.0008	9.2821	***	2.3765	0.0001
	Industrial Building	n	-4.3642	**	1.8454	0.0180	7.4913	***	1.9924	0.0002
	Place of Worship	n	-5.2620	***	1.7759	0.0030	6.2887	***	1.6783	0.0002
	Hotel	n	1.5280		1.9511	0.4336	8.3718	***	2.2181	0.0002
	Hall	n	-5.2916	***	1.9660	0.0071	4.2151		2.5817	0.1025
	School	n	-1.9549		2.0816	0.3477	8.5920	***	2.4902	0.0006
	Bank	n	-5.5905	***	2.0305	0.0059	11.7215	***	2.5560	0.0000
	Garden	n	-1.1641		1.8098	0.5201	2.7736		1.8287	0.1293
	Transport Station	n	1.5696		2.0024	0.4331	6.4637	**	2.5896	0.0126
	Hospital	n	-3.9763	*	2.1477	0.0641	15.0414	***	3.2041	0.0000
	Police/Gaol	n	1.8748		1.9980	0.3481	12.4394	***	2.5921	0.0000
	Post Office	n	0.6389		2.0390	0.7540	2.4596		2.3697	0.2993
	Courthouse	n	1.8605		2.0743	0.3698	9.2279	***	2.7280	0.0007
	Theatre	n	0.0049		1.9307	0.9980	12.8724	***	2.2028	0.0000
	Sports Centre	n	-10.3730	***	1.9485	0.0000	8.1960	***	2.5123	0.0011
	Gallery	n	2.6229		1.9394	0.1762	12.3684	***	1.6145	0.0000
	Library	n	-2.4377		1.9544	0.2123	4.8637		3.2037	0.1290
AGE	19th century (1803-1900)	n	4.5858	***	1.0058	0.0000	2.6249	*	1.3752	0.0563
	Early 20th century (1901-18)	n	2.9653	***	0.9512	0.0018	1.0399		1.3471	0.4401
	Interwar period (1919-45)	n	2.2452	**	0.9805	0.0220	0.4898		1.4471	0.7350
	Post war (1946-70)	n	0.8021		0.9680	0.4073	1.1219		1.2210	0.3582
	1971 to present	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CONDITION	Excellent condition	n	7.0753	***	0.9297	0.0000	11.8298	***	1.2720	0.0000
	Good condition	n	3.3599	***	0.9017	0.0002	10.1529	***	1.2703	0.0000
	Poor condition	n	1.8009	**	0.8524	0.0346	2.8411	**	1.2906	0.0277
	Very poor condition	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SIGNIFICANCE	National Significance	n	-0.6143		0.7973	0.4410	7.5241	***	0.9388	0.0000
	State Significance	n	2.1671	***	0.8253	0.0086	4.6808	***	0.9953	0.0000
	Local Significance	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Sympathetic alterations subject to approval	n	1.4675	*	0.8284	0.0765	8.0505	***	1.1368	0.0000
PROTECTION	No permit required for interior alterations	n	2.7694	***	0.7826	0.0004	5.0088	***	0.8973	0.0000
	No further development permitted	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DISTANCE	Distance (per 100km)	n	-2.9605	***	0.8981	0.0010	13.6644	***	0.9485	0.0000
CONTROLS	Control of visitation	n	0.8412		0.6870	0.2207	13.7335	***	1.0496	0.0000
	Control of traffic	n	1.7131	***	0.6428	0.0077	7.9225	***	0.7233	0.0000
	Control of noise	n	1.4190	**	0.6450	0.0278	7.9337	***	0.8737	0.0000
	Security measures	n	0.7080		0.6571	0.2813	8.4460	***	0.8329	0.0000
ACCESS	Public access - free	n	2.1132	**	0.8700	0.0151	7.0031	***	1.1985	0.0000
	Public access - with entry fee	n	1.3497		0.9501	0.1555	8.5644	***	1.2242	0.0000
	Public access - for commercial purposes	n	2.3547	***	0.8548	0.0059	1.0650		0.9413	0.2579
	Private access only	n	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PLACES	Number of places (per additional)	n	0.1139		0.1049	0.2775	1.4565	***	0.1462	0.0000

Model diagnostics

LL at convergence	-3798.2492
LL at constant(s) only	-4360.3255
McFadden's pseudo-R^2	0.1289
Ben-Akiva-Lerman's pseudo-R^2	0.5697
AIC/n	1.2016
BIC/n	1.2834
n (observations)	6452.0000
r (respondents)	1613.0000
k (parameters)	78.0000

Estimation method	weighted simulated maximum likelihood
Simulation with	1000 Sobol draws with random linear scramble and random digital shift (skip = 1; leap = 0)
Optimization method	trust-region
Gradient	user-supplied, analytical
Hessian	user-supplied, BHHH, ex-post calculated using BHHH

Table D.2

Landscapes		MEANS (in WTP space of 10AUD units)					STDDEV			
MXL model		dist.	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
TYPE	Residential Landscape	n	-14.6107	***	1.3815	0.0000	24.7716	***	1.4776	0.0000
	Industrial/Mining Landscape	n	-7.6990	***	1.3111	0.0000	5.8678	***	0.8456	0.0000
	Agricultural Landscape	n	-7.7530	***	1.2825	0.0000	3.0455	**	1.2115	0.0119
	Natural Landscape	n	-5.8159	***	1.2234	0.0000	5.4889	***	1.0110	0.0000
	Trees	n	-1.6916		1.3105	0.1968	11.5934	***	1.2037	0.0000
	Bridge	n	1.3627		1.2995	0.2943	14.7591	***	1.5053	0.0000
	Wall	n	-7.8335	***	1.3421	0.0000	9.5938	***	1.2300	0.0000
	Lighthouse	n	8.5060	***	1.3094	0.0000	13.7065	***	1.1217	0.0000
	Roadway/Avenue	n	-5.5739	***	1.3791	0.0001	12.0122	***	1.1714	0.0000
	Pier/Wharf	n	-4.2387	***	1.2682	0.0008	0.5077		1.0617	0.6325
AGE	19th century (1803-1900)	n	7.7687	***	0.7603	0.0000	7.5911	***	0.8294	0.0000
	Early 20th century (1901-18)	n	3.4128	***	0.6973	0.0000	2.2962	***	0.5797	0.0001
	Interwar period (1919-45)	n	0.4421		0.6670	0.5074	4.8878	***	0.7540	0.0000
	Post war (1946-70)	n	1.7995	***	0.6421	0.0051	10.3211	***	0.7050	0.0000
CONDITION	1971 to present	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Excellent condition	n	4.2494	***	0.6219	0.0000	3.9086	***	0.6155	0.0000
	Good condition	n	3.5231	***	0.6176	0.0000	4.7063	***	0.6127	0.0000
	Poor condition	n	0.3729		0.6287	0.5531	9.6763	***	0.8178	0.0000
SIGNIFICANCE	Very poor condition	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	National Significance	n	0.2035		0.5340	0.7031	8.6658	***	0.6197	0.0000
	State Significance	n	-0.0784		0.5300	0.8824	8.6739	***	0.6015	0.0000
	Local Significance	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PROTECTION	Sympathetic alterations subject to approval	n	-0.5696		0.5558	0.3054	9.9209	***	0.6322	0.0000
	No permit required for interior alterations	n	0.7519		0.5582	0.1779	7.7856	***	0.5731	0.0000
	No further development permitted	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DISTANCE	Distance (per 100km)	n	-3.6516	***	0.5918	0.0000	11.7791	***	0.6037	0.0000
CONTROLS	Control of visitation	n	0.5859		0.4212	0.1643	4.0644	***	0.3843	0.0000
	Control of traffic	n	2.0812	***	0.4795	0.0000	10.2738	***	0.5952	0.0000
	Control of noise	n	0.3900		0.4483	0.3843	5.3797	***	0.4467	0.0000
ACCESS	Security measures	n	-0.0529		0.4855	0.9132	4.9762	***	0.4568	0.0000
	Public access - free	n	2.4916	***	0.6464	0.0001	3.9887	***	0.6705	0.0000
	Public access - with entry fee	n	0.1674		0.5837	0.7743	3.8496	***	0.5741	0.0000
	Public access - for commercial purposes	n	1.1923	*	0.6451	0.0646	7.2179	***	0.6960	0.0000
	Private access only	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PLACES	Number of places (per additional)	n	0.3201	***	0.0731	0.0000	1.9857	***	0.1171	0.0000

Model diagnostics

LL at convergence	-3971.4419
LL at constant(s) only	-4465.0406
McFadden's pseudo-R^2	0.1105
Ben-Akiva-Lerman's pseudo-R^2	0.5517
AIC/n	1.2503
BIC/n	1.3154
n (observations)	6452.0000
r (respondents)	1613.0000
k (parameters)	62.0000

Estimation method	weighted simulated maximum likelihood
Simulation with	1000 Sobol draws with random linear scramble and random digital shift (skip = 1; leap = 0)
Optimization method	trust-region
Gradient	user-supplied, analytical
Hessian	user-supplied, BHHH, ex-post calculated using BHHH

Table D.3

Historic		MEANS (in WTP space of 10AUD units)					STDDEV			
MXL model		dist.	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
TYPE	Settlement Site	n	-3.0187		2.2288	0.1756	0.5996		2.1150	0.7768
	Military Site	n	4.9861	***	1.7578	0.0046	10.9103	***	1.0282	0.0000
	Goldrush Site	n	5.2524	**	2.5634	0.0405	13.3342	***	2.2463	0.0000
	Mining Site	n	-6.0554	***	1.8608	0.0011	15.1903	***	1.4600	0.0000
	Shipwreck	n	0.5675		1.6914	0.7372	12.9850	***	1.2911	0.0000
AGE	19th century (1803-1900)	n	3.4520	**	1.3459	0.0103	8.7107	***	1.0263	0.0000
	Early 20th century (1901-18)	n	1.8860		1.1529	0.1019	6.0515	***	1.3047	0.0000
	Interwar period (1919-45)	n	1.1503		1.0700	0.2824	2.0668	**	0.9978	0.0383
	Post war (1946-70)	n	2.3681	**	1.2076	0.0499	0.5146		1.4487	0.7224
	1971 to present	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CONDITION	Excellent condition	n	2.0896	**	0.9966	0.0360	6.4020	***	0.9927	0.0000
	Good condition	n	1.7961	*	0.9961	0.0714	5.4336	***	1.1027	0.0000
	Poor condition	n	0.2814		0.9502	0.7671	0.2374		0.9214	0.7967
	Very poor condition	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SIGNIFICANCE	National Significance	n	-1.4009	*	0.8478	0.0985	4.3634	***	0.8375	0.0000
	State Significance	n	-2.7983	***	0.8916	0.0017	7.7004	***	1.0717	0.0000
	Local Significance	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Sympathetic alterations subject to approval	n	0.1442		0.8284	0.8618	3.2282	***	0.8402	0.0001
PROTECTION	No permit required for interior alterations	n	-1.8521	**	0.8979	0.0391	3.0797	***	0.8489	0.0003
	No further development permitted	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DISTANCE	Distance (per 100km)	n	1.4579		0.9760	0.1352	11.9320	***	0.9288	0.0000
CONTROLS	Control of visitation	n	2.8394	***	0.7356	0.0001	6.3276	***	0.7262	0.0000
	Control of traffic	n	3.1364	***	0.7088	0.0000	6.5921	***	0.7546	0.0000
	Control of noise	n	-0.2730		0.6889	0.6919	6.1469	***	0.8254	0.0000
	Security measures	n	-0.9502		0.7101	0.1809	5.3119	***	0.7612	0.0000
ACCESS	Public access - free	n	0.5491		1.0180	0.5896	4.7043	***	1.0671	0.0000
	Public access - with entry fee	n	4.4707	***	0.9918	0.0000	6.5955	***	0.9916	0.0000
	Public access - for commercial purposes	n	2.0508	**	1.0257	0.0456	3.1443	***	1.0569	0.0029
	Private access only	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PLACES	Number of places (per additional)	n	0.1665		0.1364	0.2221	1.8727	***	0.1801	0.0000

Model diagnostics

LL at convergence	-2093.6207
LL at constant(s) only	-2506.4167
McFadden's pseudo-R^2	0.1647
Ben-Akiva-Lerman's pseudo-R^2	0.5718
AIC/n	1.1867
BIC/n	1.2758
n (observations)	3616.0000
r (respondents)	904.0000
k (parameters)	52.0000

Estimation method	weighted simulated maximum likelihood
Simulation with	1000 Sobol draws with random linear scramble and random digital shift (skip = 1; leap = 0)
Optimization method	trust-region
Gradient	user-supplied, analytical
Hessian	user-supplied, BHHH, ex-post calculated using BHHH

Table D.4

Objects		MEANS (in WTP space of 10AUD units)					STDDEV			
MXL model		dist.	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
TYPE	Navigational equipment	n	-4.0375	***	1.0440	0.0001	14.0285	***	0.9194	0.0000
	Minton Peacock	n	-1.6685		1.0809	0.1227	6.8310	***	0.7234	0.0000
	Ballarat Reform League Charter	n	-4.5920	***	1.1105	0.0000	4.0333	***	0.9111	0.0000
	Marianne Gibson Quilt	n	3.1442	***	0.9194	0.0006	6.4898	***	1.3257	0.0000
	Eureka Flag	n	-5.2117	***	1.5542	0.0008	21.1261	***	2.6718	0.0000
	Trade Union Banners	n	6.2506	***	1.4014	0.0000	10.2841	***	2.0349	0.0000
	CSIRAC	n	0.9868		0.9583	0.3031	0.4159		0.6122	0.4969
	The Taggerty Buffet Car	n	7.9496	***	0.9099	0.0000	17.7559	***	1.5089	0.0000
	Electric Tram No. 13	n	-5.0229	***	1.1648	0.0000	10.5742	***	0.9831	0.0000
	Church pipe organ	n	4.6972	***	1.1485	0.0000	10.8531	***	1.3570	0.0000
	Anzac Memorabilia	n	-1.3734	*	0.8147	0.0918	4.6970	***	0.4538	0.0000
	Historic furniture	n	-4.0577	***	1.1739	0.0005	13.4690	***	1.1505	0.0000
	Purpose designed cabinetry	n	-1.9115	**	0.9297	0.0398	7.2081	***	0.5375	0.0000
	Excellent condition	n	-1.4428	***	0.5333	0.0068	7.5527	***	0.4810	0.0000
	Good condition	n	1.5619	***	0.4757	0.0010	4.5903	***	0.4441	0.0000
	Poor condition	n	0.0556		0.5707	0.9225	7.1743	***	0.6548	0.0000
SIGNIFICANCE	Very poor condition	n	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Victorian Significance	n	4.6185	***	0.3963	0.0000	11.5976	***	0.5698	0.0000
	Local Significance	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CONTEXT	Integral to a Heritage Place	n	0.7525		0.6109	0.2180	7.2352	***	0.6144	0.0000
	Contributes to significance	n	-0.6378		0.4871	0.1904	6.3339	***	0.3697	0.0000
	Significant in its own right	n	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Archived	n	-0.6107		0.4553	0.1798	7.9474	***	0.5184	0.0000
	Part of an Exhibition	n	-0.9423	**	0.4670	0.0436	10.5292	***	0.5302	0.0000
	In use	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CUSTODIAN	Medium to large	n	4.6307	***	0.7766	0.0000	5.2412	***	0.4996	0.0000
	Medium sized community	n	4.1221	***	0.5827	0.0000	6.1416	***	0.4681	0.0000
	Small sized community	n	3.5359	***	0.6079	0.0000	5.9370	***	0.4172	0.0000
	Private collection with access	n	3.0055	***	0.6125	0.0000	8.9990	***	0.6852	0.0000
	Private collection no access	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Works to conserve/protect allowed	n	0.7032		0.5387	0.1918	8.8218	***	0.5965	0.0000
CHANGES	Any changes allowed	n	-2.0287	***	0.5117	0.0001	6.3674	***	0.6084	0.0000
	Relocation allowed	n	-0.7753	*	0.4620	0.0933	8.9833	***	0.5880	0.0000
	Changes/Relocation subject to approval	n	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Model diagnostics

LL at convergence	-4036.5450
LL at constant(s) only	-4470.8609
McFadden's pseudo-R^2	0.0971
Ben-Akiva-Lerman's pseudo-R^2	0.5442
AIC/n	1.2692
BIC/n	1.3301
n (observations)	6452.0000
r (respondents)	1613.0000
k (parameters)	58.0000

Estimation method	weighted simulated maximum likelihood
Simulation with	1000 Sobol draws with random linear scramble and random digital shift (skip = 1; leap = 0)
Optimization method	trust-region
Gradient	user-supplied, analytical
Hessian	user-supplied, BHHH, ex-post calculated using BHHH

Appendix E – Interaction Models

Table E.1

Buildings Socio- Demographics Interations			Interactions																											
MNL in WTP-space of 100AUD units	Mean		Male				Age				Income				Income missing				Diploma				Bachelor				Melbourne metro			
Attribute	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
Type - Residential Building	-1.09		0.97	0.26	-0.24		0.55	0.66	-0.45		0.29	0.12	0.17		0.25	0.48	-0.67		1.31	0.61	-0.04		0.81	0.96	0.26		0.84	0.76	0.65		0.69	0.35
Type - Commercial/Retail Building	-1.06		1.00	0.29	0.13		0.59	0.82	-0.41		0.30	0.18	0.08		0.27	0.77	0.53		1.40	0.71	1.17		0.83	0.16	1.03		0.80	0.20	-0.64		0.76	0.40
Type - Industrial Building	-0.60		1.04	0.57	0.36		0.56	0.52	-0.86	***	0.30	0.00	-0.31		0.27	0.24	-0.67		1.33	0.61	-0.42		0.85	0.63	0.49		0.86	0.57	0.13		0.75	0.87
Type - Place of Worship	-1.20		1.02	0.24	-0.64		0.58	0.27	-0.52	*	0.31	0.09	-0.26		0.25	0.31	-1.21		1.40	0.39	0.61		0.87	0.48	0.43		0.83	0.61	1.18		0.76	0.12
Type - Hotel	-1.35		0.97	0.17	0.70		0.56	0.21	-0.12		0.29	0.67	-0.12		0.26	0.64	0.28		1.40	0.84	1.27		0.80	0.11	1.29		0.84	0.12	0.39		0.71	0.58
Type - Hall	-1.11		0.97	0.26	-0.04		0.56	0.94	-0.79	***	0.29	0.01	0.16		0.23	0.50	-0.77		1.39	0.58	1.12		0.80	0.16	0.68		0.79	0.39	0.38		0.73	0.60
Type - School/Education facility	-1.11		0.97	0.25	0.11		0.54	0.84	-0.78	***	0.28	0.01	-0.30		0.27	0.26	1.04		1.42	0.46	0.91		0.83	0.27	1.07		0.81	0.19	-0.11		0.75	0.89
Type - Bank	-0.29		1.00	0.77	0.29		0.56	0.61	-0.71	**	0.31	0.02	-0.18		0.25	0.48	0.94		1.52	0.54	0.16		0.83	0.85	0.85		0.84	0.31	-0.98		0.76	0.20
Type - Garden	-0.63		0.96	0.52	-0.47		0.58	0.42	-0.51	*	0.29	0.08	-0.06		0.25	0.80	-0.14		1.23	0.91	-0.32		0.79	0.68	-0.23		0.79	0.77	1.47	*	0.75	0.05
Type - Transport Station	-1.15		0.99	0.24	0.60		0.57	0.29	-0.64	**	0.28	0.02	0.00		0.24	0.99	-0.64		1.32	0.63	0.88		0.81	0.28	0.41		0.79	0.60	0.85		0.74	0.25
Type - Hospital	-1.89	*	1.00	0.06	0.39		0.56	0.49	-0.77	***	0.29	0.01	-0.33		0.26	0.21	0.97		1.36	0.47	0.71		0.85	0.41	0.68		0.81	0.40	0.92		0.74	0.21
Type - Police/Gaol	0.27		1.00	0.79	-0.17		0.57	0.76	-0.58	*	0.31	0.06	-0.45	*	0.26	0.08	-0.05		1.43	0.97	-0.57		0.83	0.49	-0.22		0.84	0.79	0.48		0.77	0.54
Type - Post Office	-0.79		1.00	0.43	-0.03		0.57	0.96	-0.34		0.30	0.25	-0.05		0.25	0.84	0.49		1.42	0.73	1.17		0.84	0.16	1.27		0.84	0.13	0.02		0.79	0.98
Type - Courthouse	-0.36		1.02	0.73	-0.09		0.58	0.87	-0.29		0.30	0.34	-0.30		0.25	0.23	1.87		1.57	0.23	1.45		0.89	0.10	1.17		0.84	0.16	-0.50		0.80	0.53
Type - Theatre	-0.42		0.99	0.67	0.12		0.59	0.83	-0.63	**	0.32	0.05	-0.31		0.26	0.25	-0.46		1.33	0.73	0.65		0.87	0.45	0.46		0.86	0.59	0.12		0.79	0.88
Type - Sports Centre	-2.14	**	1.06	0.04	0.30		0.57	0.60	-0.74	***	0.29	0.01	-0.40		0.26	0.13	-1.13		1.35	0.40	0.61		0.86	0.48	1.27		0.88	0.15	0.25		0.77	0.75
Type - Gallery	0.68		1.04	0.52	-0.05		0.59	0.94	-0.83	***	0.31	0.01	0.13		0.26	0.62	-0.64		1.24	0.60	0.30		0.86	0.73	0.12		0.84	0.89	-0.73		0.81	0.37
Type - Library	-0.74		0.96	0.44	0.02		0.56	0.98	-0.41		0.30	0.17	-0.25		0.25	0.32	-0.89		1.43	0.53	0.47		0.82	0.56	0.73		0.82	0.37	0.32		0.72	0.66
Age - 19th century (1803-1900) vs. 1971 to present	1.04	**	0.50	0.04	-0.30		0.29	0.29	0.46	***	0.15	0.00	0.11		0.13	0.38	0.17		0.68	0.81	-0.38		0.42	0.37	-0.22		0.42	0.60	-0.21		0.37	0.56
Age - Early 20th century (1901-18) vs. 1971 to present	0.71		0.49	0.15	-0.09		0.28	0.75	0.54	***	0.15	0.00	0.20		0.13	0.14	-0.23		0.68	0.73	-0.13		0.41	0.76	-0.01		0.40	0.97	-0.35		0.39	0.37
Age - Interwar period (1919-45) vs. 1971 to present	0.70		0.46	0.13	-0.49	*	0.28	0.08	0.41	***	0.15	0.01	0.22	*	0.12	0.08	-0.86		0.63	0.18	-0.24		0.39	0.55	-0.06		0.40	0.88	-0.03		0.35	0.93
Age - Post war (1946-70) vs. 1971 to present	0.91	*	0.47	0.05	-0.51	*	0.28	0.07	0.35	**	0.15	0.02	0.04		0.12	0.76	-1.45	**	0.65	0.03	-0.31		0.41	0.45	0.00		0.41	1.00	-0.42		0.36	0.25
Condition - Excellent vs. Very poor	1.37	***	0.46	0.00	-0.34		0.27	0.20	0.39	***	0.14	0.00	0.18		0.11	0.11	0.74		0.64	0.25	0.14		0.38	0.71	-0.26		0.37	0.48	-0.42		0.35	0.23
Condition - Good vs. Very poor	0.71		0.45	0.12	0.06		0.26	0.82	0.29	**	0.13	0.03	0.09		0.11	0.43	1.27	*	0.72	0.08	0.26		0.36	0.47	0.15		0.37	0.69	-0.70	**	0.35	0.05
Condition - Poor vs. Very poor	0.80	*	0.42	0.06	-0.18		0.25	0.47	0.26	*	0.14	0.06	0.04		0.11	0.73	0.69		0.61	0.25	-0.39		0.35	0.27	-0.22		0.36	0.55	-0.43		0.32	0.18
Rating - National vs. Local Significance	-0.46		0.38	0.22	-0.10		0.22	0.65	-0.06		0.12	0.61	-0.08		0.10	0.43	0.01		0.47	0.98	0.32		0.32	0.32	-0.17		0.31	0.59	0.37		0.30	0.21
Rating - Victorian vs. Local Significance	0.10		0.37	0.79	-0.22		0.22	0.33	-0.04		0.12	0.72	-0.08		0.10	0.44	0.30		0.50	0.55	0.19		0.31	0.54	0.25		0.30	0.42	-0.02		0.28	0.95
Protection Type - Sympathetic int & ext vs No	-0.02		0.39	0.96	0.36	*	0.22	0.10	-0.14		0.11	0.20	-0.09		0.10	0.36	0.39		0.51	0.44	-0.28		0.33	0.40	-0.28		0.34	0.40	0.19		0.29	0.52
Protection Type - Sympathetic Interior only vs. No	0.25		0.38	0.51	0.17		0.22	0.44	-0.12		0.11	0.27	-0.11		0.10	0.24	-0.63		0.48	0.19	-0.29		0.33	0.38	-0.20		0.33	0.55	0.22		0.29	0.44
Distance (100 km)	-0.55		0.41	0.18	0.26		0.24	0.28	-0.21	*	0.13	0.09	-0.11		0.10	0.28	-1.50	**	0.58	0.01	0.61	*	0.34	0.07	0.24		0.34	0.48	0.04		0.32	0.90
Control of visitation	-0.26		0.32	0.41	-0.10		0.18	0.59	-0.09		0.10	0.33	-0.12		0.08	0.14	0.47		0.46	0.30	0.42		0.27	0.12	0.19		0.27	0.47	-0.04		0.24	0.88
Control of traffic	-0.30		0.31	0.33	0.03		0.18	0.87	-0.01		0.09	0.93	-0.03		0.08	0.70	0.28		0.41	0.50	0.54	**	0.26	0.04	0.45	*	0.26	0.08	0.03		0.24	0.90
Control of noise	0.01		0.30	0.99	0.03		0.18	0.87	0.10		0.09	0.30	-0.01		0.08	0.88	-0.60		0.42	0.16	-0.04		0.26	0.89	0.03		0.26	0.92	0.18		0.23	0.44
Security measures	0.11		0.30	0.71	-0.25		0.18	0.17	0.09		0.09	0.34	-0.08		0.08	0.33	-0.23		0.41	0.57	0.30		0.25	0.24	0.45	*	0.25	0.08	-0.18		0.23	0.44
Access - public free vs. no	0.82	*	0.43	0.06	0.15		0.26	0.57	-0.17		0.14	0.21	0.05		0.12	0.66	-0.85		0.61	0.17	-0.41		0.37	0.27	-0.62	*	0.37	0.09	-0.18		0.34	0.61
Access - public with entry fee vs. no	0.70		0.46	0.12	-0.31		0.25	0.22	-0.10		0.13	0.47	0.09		0.12	0.42	-0.02		0.54	0.97	-0.44		0.39	0.25	-0.67	*	0.39	0.08	0.17		0.34	0.63
Access - commercial vs. no	0.28		0.44	0.53	0.03		0.25	0.92	0.05		0.13	0.68	0.10		0.12	0.38	0.43		0.61	0.49	-0.11		0.37	0.77	-0.27		0.36	0.45	0.21		0.35	0.55
Number of places	0.07		0.05	0.17	-0.02		0.03	0.38	0.00		0.01	0.92	0.02	*	0.01	0.08	-0.10		0.07	0.16	0.00		0.04	0.92	-0.02		0.04	0.69	-0.02		0.04	0.54
- Cost (100 AUD)	0.39	***	0.08	0.00	0.14	**	0.06	0.03	0.02		0.03	0.38	-0.04		0.03	0.20	-0.35	***	0.09	0.00	0.23	***	0.09	0.01	0.14	*	0.08	0.07	0.13	*	0.07	0.06

Model diagnostics

LL at convergence	-4,032.04	Estimation method	weighted maximum likelihood
LL at constant(s) only	-4,360.33	Optimization method	quasi-newton
McFadden's pseudo-R^2	0.08	Gradient	user-supplied, analytical
Ben-Akiva-Lerman's pseudo-R^2	0.55	Hessian	off, ex-post calculated using BHHH
AIC/*n*	1.35		
BIC/*n*	1.67		
n (observations)	6,452.00		
r (respondents)	1,613.00		
k (parameters)	312.00		

Clarification on segment model coding scheme

Income is recoded from the discrete ranges from demographic variable d7 to a continuous variable using mid-points of each segment (and $2,000 as the final '$2,000 or more' level). Missing income is coded as equal to mean income and controlled by an additional dummy 'Income missing'. This continuous variable is mean centred (mean income is $1,320) with unit standard deviation ($602).

Age is recoded similarly such that the mean age (47.32) is coded as zero and unit standard deviations (15.35 years). E.G an age value of 1 means one standard deviation above the mean which is 47+15 = 62 years old.

Education is based on recoded from the variable d5 What is “the highest level of formal education qualification you have completed?

1 Post Graduate

2 Graduate Diploma or Graduate Certificate

3 Bachelor Degree

4 Advanced Diploma or Diploma

5 Certificate

6 Year 12 or equivalent

7 Year 11 or equivalent

8 Year 7 to Year 10

9 Primary School

10 Other

into 'diploma or certificate' is 1, 2, 3. 'bachelor or above' is 4, 5 and 'lower' is 6,7,8,9,10. In the model, this is dummy coded with 'lower' being the reference.

'Melbourne metropolitan area' is based on respondents postcode matching metropolitan codes from data provided by SGS. This is coded inn the mode as a dummy dummy variable as if 'VicRegion' = 1.

Regions are based on using postcode and a regional lookup table provided by SGS

Table E.2

Landscapes Socio- Demographics Interations					Interactions																									
MNL in WTP-space of 100AUD units	Mean				Male				Age				Income				Income missing				Diploma				Bachelor				Melbourne metro			
Attribute	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**
Type - Industrial/Mining Landscape	-1.95	**	0.79	0.01	0.74		0.54	0.17	-0.64	**	0.30	0.03	0.04		0.25	0.86	-3.63	**	1.76	0.04	0.91		0.81	0.26	0.69		0.76	0.37	-0.38		0.59	0.52
Type - Agricultural Landscape	-1.02		0.72	0.16	0.60		0.54	0.27	-0.42		0.29	0.15	-0.15		0.25	0.56	-3.75	**	1.79	0.04	0.13		0.75	0.86	0.08		0.71	0.92	0.20		0.59	0.74
Type - Residential Landscape	-1.20	*	0.69	0.08	0.53		0.52	0.30	-0.40		0.29	0.17	-0.47	**	0.24	0.05	-2.51		1.55	0.11	0.49		0.72	0.49	-0.03		0.69	0.96	0.29		0.59	0.62
Type - Natural Landscape	-1.18	*	0.70	0.09	0.74		0.50	0.14	-0.47	*	0.27	0.09	-0.15		0.23	0.52	-3.43	*	1.77	0.05	0.23		0.73	0.76	0.00		0.67	1.00	0.56		0.57	0.33
Type - Trees	-0.17		0.67	0.80	-0.15		0.51	0.77	-0.35		0.28	0.21	-0.18		0.23	0.45	-1.03		1.59	0.52	0.37		0.70	0.60	0.21		0.67	0.75	0.16		0.56	0.77
Type - Bridge	-1.05		0.73	0.15	1.05	**	0.52	0.04	-0.54	*	0.27	0.05	-0.69	***	0.25	0.01	-1.59		1.46	0.28	0.06		0.74	0.94	0.07		0.72	0.92	0.99	*	0.58	0.09
Type - Wall	-0.91		0.70	0.19	0.49		0.51	0.34	-0.33		0.28	0.24	-0.38		0.24	0.12	-4.35	**	1.77	0.01	-0.05		0.73	0.95	1.03		0.70	0.14	-0.52		0.56	0.35
Type - Lighthouse	-0.09		0.71	0.90	0.44		0.52	0.40	-0.17		0.28	0.54	-0.44	*	0.25	0.08	-2.25		1.60	0.16	-0.12		0.74	0.87	0.27		0.71	0.71	1.10	*	0.58	0.06
Type - Roadway/Avenue	-1.33	*	0.70	0.06	0.96	*	0.52	0.06	-0.54	*	0.28	0.06	-0.11		0.25	0.64	-3.52	**	1.78	0.05	0.48		0.73	0.51	0.13		0.67	0.84	0.26		0.57	0.65
Type - Pier/Wharf	-1.27	*	0.72	0.08	0.77		0.52	0.14	-0.48	*	0.28	0.09	-0.12		0.24	0.61	-2.77		1.76	0.12	0.56		0.72	0.43	0.49		0.68	0.48	0.20		0.58	0.73
Age - 19th century (1803-1900) vs. 1971 to present	0.49		0.40	0.22	-0.04		0.29	0.90	0.28	*	0.17	0.10	0.09		0.14	0.53	1.35		0.87	0.12	-0.08		0.42	0.84	0.59		0.42	0.16	0.11		0.34	0.74
Age - Early 20th century (1901-18) vs. 1971 to present	0.21		0.41	0.61	-0.50	*	0.29	0.08	0.34	**	0.16	0.04	0.11		0.13	0.40	0.43		0.88	0.62	-0.06		0.41	0.89	0.31		0.39	0.43	0.48		0.34	0.16
Age - Interwar period (1919-45) vs. 1971 to present	0.48		0.39	0.22	-0.45		0.28	0.10	0.20		0.16	0.21	0.07		0.13	0.60	-0.01		0.83	0.99	-0.24		0.42	0.56	0.15		0.40	0.71	-0.06		0.32	0.84
Age - Post war (1946-70) vs. 1971 to present	-0.39		0.41	0.35	-0.17		0.29	0.55	0.16		0.16	0.31	-0.01		0.13	0.97	-0.35		0.74	0.63	0.71		0.44	0.11	0.83	**	0.42	0.05	0.15		0.33	0.65
Condition - Excellent vs. Very poor	0.90	**	0.36	0.01	-0.41		0.25	0.10	0.11		0.14	0.43	-0.07		0.12	0.57	-0.23		0.68	0.73	0.14		0.35	0.70	0.13		0.35	0.72	-0.46	*	0.28	0.10
Condition - Good vs. Very poor	0.36		0.35	0.30	-0.33		0.25	0.19	0.26	*	0.13	0.05	-0.05		0.11	0.64	0.64		0.70	0.36	0.46		0.36	0.20	0.51		0.34	0.14	-0.42		0.28	0.13
Condition - Poor vs. Very poor	0.12		0.36	0.75	-0.45	*	0.25	0.07	0.02		0.14	0.89	-0.01		0.11	0.95	-0.77		0.72	0.28	0.65	*	0.36	0.07	0.68	*	0.35	0.06	-0.54	*	0.30	0.07
Rating - National vs. Local Significance	0.30		0.31	0.34	0.07		0.22	0.75	0.12		0.12	0.30	-0.02		0.10	0.88	-0.93		0.62	0.14	-0.56	*	0.32	0.07	-0.45		0.30	0.13	0.21		0.25	0.39
Rating - Victorian vs. Local Significance	0.37		0.31	0.23	0.27		0.22	0.22	0.11		0.12	0.34	0.12		0.10	0.23	0.23		0.54	0.67	-0.59	*	0.32	0.07	-0.85	***	0.31	0.01	0.14		0.25	0.59
Protection Type - Sympathetic Interior and Exterior develop	-0.03		0.30	0.91	0.12		0.22	0.59	-0.05		0.12	0.66	0.12		0.10	0.24	-0.59		0.58	0.31	0.37		0.32	0.24	0.26		0.30	0.38	-0.37		0.25	0.14
Protection Type - Sympathetic Interior development vs. No	-0.12		0.31	0.70	-0.22		0.21	0.30	0.06		0.12	0.61	0.19	*	0.10	0.06	-0.50		0.54	0.35	0.80	**	0.32	0.01	0.45		0.30	0.13	-0.01		0.26	0.98
Distance (100 km)	-1.46	***	0.35	0.00	0.24		0.23	0.31	0.24	*	0.14	0.09	-0.08		0.11	0.47	0.06		0.67	0.93	0.94	***	0.35	0.01	0.62	*	0.34	0.07	0.70	**	0.28	0.01
Control of visitation	-0.31		0.24	0.20	-0.12		0.18	0.48	0.05		0.10	0.61	-0.13		0.08	0.11	0.93	*	0.49	0.06	-0.02		0.25	0.93	0.19		0.23	0.41	0.40	**	0.20	0.05
Control of traffic	0.19		0.25	0.45	-0.01		0.18	0.94	0.10		0.10	0.31	-0.11		0.08	0.20	1.84	***	0.62	0.00	-0.19		0.25	0.44	0.21		0.25	0.41	-0.16		0.20	0.44
Control of noise	0.21		0.25	0.40	0.06		0.18	0.72	0.02		0.10	0.87	-0.08		0.08	0.33	-0.22		0.43	0.62	-0.33		0.25	0.19	-0.49	**	0.25	0.05	0.17		0.20	0.39
Security measures	-0.14		0.25	0.57	-0.11		0.17	0.53	0.05		0.09	0.58	0.02		0.08	0.79	0.30		0.52	0.56	0.16		0.26	0.53	0.01		0.25	0.96	0.05		0.21	0.80
Access - public free vs. no	-0.03		0.36	0.93	-0.37		0.25	0.14	0.01		0.13	0.92	0.13		0.11	0.24	2.23	***	0.82	0.01	0.31		0.36	0.38	0.02		0.33	0.96	0.28		0.30	0.35
Access - public with entry fee vs. no	-0.07		0.35	0.84	-0.53	**	0.26	0.04	0.36	**	0.14	0.01	0.20	*	0.12	0.10	1.27	*	0.72	0.08	0.34		0.36	0.34	0.33		0.35	0.34	0.06		0.29	0.82
Access - commercial vs. no	-0.45		0.35	0.19	0.10		0.26	0.69	-0.02		0.14	0.91	0.11		0.12	0.35	0.96		0.68	0.16	0.57		0.36	0.11	0.30		0.35	0.38	0.06		0.30	0.85
Number of places	0.02		0.04	0.68	0.02		0.03	0.42	-0.01		0.01	0.48	0.00		0.01	0.92	0.08		0.08	0.35	-0.01		0.04	0.71	-0.06		0.04	0.12	0.03		0.03	0.34
- Cost (100 AUD)	0.70	***	0.09	0.00	0.10	*	0.05	0.06	-0.10	***	0.03	0.00	0.01		0.03	0.80	-0.36	***	0.08	0.00	0.09		0.07	0.19	0.06		0.07	0.39	-0.20	***	0.07	0.01

Model diagnostics

LL at convergence	-4,176.17	Estimation method	weighted maximum likelihood
LL at constant(s) only	-4,465.04	Optimization method	quasi-newton
McFadden's pseudo-R^2	0.06	Gradient	user-supplied, analytical
Ben-Akiva-Lerman's pseudo-R^2	0.53	Hessian	off, ex-post calculated using BHHH
AIC/*n*	1.37		
BIC/*n*	1.63		
n (observations)	6,452.00		
r (respondents)	1,613.00		
k (parameters)	248.00		

Table E.3

Historic Sites Socio- Demographics Interations					Interactions																									
MNL in WTP-space of 100AUD units	Mean				Male				Age				Income				Income missing				Diploma				Bachelor				Melbourne metro			
Attribute	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**	**coef.**	**sign.**	**st.err.**	**p-value**
Type - Settlement Site	-1.86		1.52	0.22	-0.81		0.68	0.23	-0.80	**	0.37	0.03	-0.30		0.29	0.30	1.31		0.87	0.13	-0.39		1.55	0.80	1.34		1.42	0.34	0.64		0.95	0.50
Type - Military Site	1.25		1.12	0.26	0.20		0.53	0.71	-0.73	**	0.31	0.02	-0.54	**	0.25	0.03	0.40		0.66	0.55	-1.97	*	1.14	0.08	-1.52		1.01	0.13	0.32		0.72	0.66
Type - Goldrush Site	0.37		1.35	0.79	0.03		0.64	0.96	-0.86	**	0.38	0.03	-0.49		0.30	0.10	0.80		0.86	0.35	-1.07		1.51	0.48	-1.07		1.29	0.41	0.65		0.92	0.48
Type - Mining Site	-0.43		1.04	0.68	-0.07		0.51	0.88	-0.93	***	0.30	0.00	-0.30		0.23	0.18	0.16		0.62	0.80	-0.94		1.09	0.39	-0.60		0.94	0.52	0.20		0.69	0.77
Type - Shipwreck	-0.13		1.12	0.91	-0.11		0.52	0.83	-1.04	***	0.31	0.00	-0.41	*	0.24	0.09	0.23		0.64	0.72	-0.84		1.16	0.47	-0.19		1.00	0.85	0.07		0.71	0.92
Age - 19th century (1803-1900) vs. 1971 to present	0.49		0.67	0.47	-0.24		0.32	0.46	0.20		0.19	0.27	-0.09		0.14	0.52	-0.76	*	0.41	0.06	1.01		0.74	0.17	0.24		0.64	0.71	-0.08		0.46	0.87
Age - Early 20th century (1901-18) vs. 1971 to present	-0.89		0.66	0.18	-0.72	**	0.32	0.02	0.27		0.19	0.15	0.17		0.15	0.28	-0.12		0.38	0.75	1.48	**	0.71	0.04	1.32	**	0.62	0.03	0.44		0.43	0.30
Age - Interwar period (1919-45) vs. 1971 to present	0.14		0.65	0.84	-0.85	**	0.33	0.01	0.29		0.19	0.13	0.08		0.15	0.61	-0.72		0.45	0.11	1.25	*	0.73	0.09	1.14	*	0.63	0.07	-0.49		0.42	0.23
Age - Post war (1946-70) vs. 1971 to present	-0.63		0.67	0.35	-0.53	*	0.32	0.10	0.14		0.19	0.47	0.07		0.16	0.64	-0.34		0.35	0.34	1.95	***	0.71	0.01	1.30	**	0.62	0.04	-0.11		0.43	0.80
Condition - Excellent vs. Very poor	1.25	**	0.60	0.04	-0.22		0.28	0.42	0.28	*	0.16	0.09	0.26	**	0.13	0.05	0.08		0.35	0.81	-0.47		0.60	0.43	-0.38		0.54	0.48	-0.39		0.37	0.30
Condition - Good vs. Very poor	0.38		0.61	0.53	-0.09		0.29	0.76	0.20		0.17	0.24	0.16		0.14	0.27	-0.09		0.38	0.80	0.72		0.63	0.25	0.44		0.55	0.43	-0.59		0.39	0.13
Condition - Poor vs. Very poor	0.72		0.57	0.21	0.02		0.26	0.93	0.18		0.15	0.22	0.11		0.12	0.36	0.07		0.33	0.83	-0.09		0.59	0.87	-0.51		0.51	0.32	-0.33		0.38	0.39
Rating - National vs. Local Significance	-0.26		0.50	0.61	0.00		0.24	1.00	0.09		0.14	0.54	-0.03		0.12	0.80	0.16		0.30	0.61	0.66		0.52	0.20	0.19		0.45	0.67	-0.17		0.34	0.63
Rating - Victorian vs. Local Significance	-0.94	**	0.48	0.05	0.48	**	0.24	0.05	0.06		0.14	0.65	-0.03		0.11	0.75	-0.44		0.33	0.19	0.50		0.50	0.31	0.63		0.46	0.17	-0.04		0.31	0.90
Protection Type - Sympathetic Interior and Exterior develop	0.30		0.46	0.53	0.07		0.23	0.78	0.12		0.14	0.40	0.19	*	0.11	0.10	0.08		0.29	0.78	-0.07		0.48	0.88	-0.47		0.43	0.28	-0.02		0.34	0.96
Protection Type - Sympathetic Interior development vs. No	-0.28		0.47	0.55	0.06		0.23	0.78	-0.27	**	0.14	0.05	0.18		0.11	0.12	-0.04		0.30	0.89	0.70		0.49	0.15	0.54		0.45	0.23	-0.47		0.32	0.14
Distance (100 km)	0.73		0.49	0.14	-0.11		0.27	0.68	0.00		0.15	0.98	0.14		0.12	0.24	-0.89	***	0.33	0.01	-0.39		0.54	0.47	-0.77		0.48	0.11	0.36		0.36	0.32
Control of visitation	-0.01		0.37	0.99	-0.17		0.19	0.38	0.26	**	0.12	0.03	0.06		0.09	0.52	-0.18		0.22	0.42	-0.14		0.39	0.72	0.08		0.34	0.82	0.44	*	0.26	0.09
Control of traffic	0.56		0.39	0.16	0.12		0.20	0.54	-0.06		0.12	0.60	0.06		0.09	0.49	0.35		0.24	0.15	0.00		0.42	1.00	-0.02		0.37	0.97	-0.48	*	0.27	0.08
Control of noise	-0.33		0.39	0.40	0.28		0.19	0.13	0.47	***	0.13	0.00	-0.03		0.09	0.72	-0.47	**	0.24	0.05	-0.66		0.43	0.12	-0.09		0.38	0.82	0.77	***	0.27	0.00
Security measures	-0.90	**	0.40	0.02	-0.09		0.19	0.63	0.28	**	0.11	0.02	0.04		0.09	0.61	-0.30		0.24	0.20	0.53		0.43	0.22	0.21		0.38	0.58	0.84	***	0.27	0.00
Access - public free vs. no	0.11		0.53	0.83	0.00		0.25	0.99	-0.03		0.16	0.84	0.05		0.11	0.65	0.06		0.33	0.85	0.50		0.58	0.38	-0.23		0.50	0.65	0.12		0.37	0.75
Access - public with entry fee vs. no	0.34		0.53	0.52	0.04		0.27	0.90	0.00		0.17	0.99	-0.17		0.13	0.20	0.03		0.33	0.92	0.54		0.57	0.35	-0.08		0.50	0.88	0.11		0.38	0.77
Access - commercial vs. no	0.85		0.53	0.11	-0.43		0.27	0.11	-0.22		0.16	0.17	0.02		0.13	0.88	-0.23		0.37	0.53	0.08		0.56	0.89	-0.14		0.50	0.78	-0.50		0.36	0.17
Number of places	0.12		0.07	0.10	-0.03		0.03	0.37	0.00		0.02	0.87	0.02		0.02	0.15	-0.03		0.04	0.45	-0.05		0.08	0.55	-0.07		0.07	0.30	-0.03		0.04	0.54
- Cost (100 AUD)	0.41	***	0.12	0.00	0.15	*	0.08	0.06	-0.13	***	0.04	0.00	-0.12	***	0.04	0.00	0.25	**	0.13	0.05	0.11		0.12	0.34	0.52	***	0.12	0.00	-0.10		0.09	0.29

Model diagnostics

LL at convergence	-2,259.16	Estimation method	weighted maximum likelihood
LL at constant(s) only	-2,506.42	Optimization method	quasi-newton
McFadden's pseudo-R^2	0.10	Gradient	user-supplied, analytical
Ben-Akiva-Lerman's pseudo-R^2	0.55	Hessian	off, ex-post calculated using BHHH
AIC/*n*	1.36		
BIC/*n*	1.72		
n (observations)	3,616.00		
r (respondents)	904.00		
k (parameters)	208.00		

Table E.4

Objects Socio- Demographics Interations					Interactions																									
MNL in WTP-space of 100AUD units	Mean				Male				Age				Income				Income missing				Diploma				Bachelor				Melbourne metro			
Attribute	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
Type - Minton Peacock	-0.63		0.69	0.36	0.87	**	0.40	0.03	-0.65	***	0.24	0.01	-0.14		0.25	0.58	-0.46		0.55	0.40	0.23		0.62	0.71	-0.70		0.59	0.24	-0.16		0.55	0.77
Type - Ballarat Reform League Charter	-1.39	*	0.73	0.06	0.87	**	0.40	0.03	-0.28		0.23	0.22	0.06		0.25	0.81	-0.81		0.51	0.11	0.83		0.67	0.21	0.24		0.61	0.70	0.34		0.55	0.54
Type - Marianne Gibson Quilt	-0.40		0.65	0.54	0.40		0.39	0.30	-0.27		0.22	0.22	-0.08		0.25	0.75	-0.17		0.49	0.73	0.09		0.61	0.89	-0.12		0.57	0.84	-0.33		0.54	0.55
Type - Eureka Flag	0.56		0.66	0.40	0.02		0.39	0.97	-0.21		0.22	0.34	0.22		0.23	0.34	0.46		0.50	0.36	0.50		0.62	0.42	-0.70		0.60	0.24	-0.60		0.52	0.25
Type - Trade Union Banners	-0.31		0.68	0.65	0.24		0.39	0.54	-0.49	**	0.22	0.02	-0.19		0.25	0.44	-0.14		0.49	0.77	0.47		0.58	0.42	-0.36		0.54	0.50	-0.59		0.59	0.32
Type - CSIRAC	1.24	*	0.69	0.07	0.29		0.40	0.47	-0.18		0.24	0.43	-0.15		0.25	0.56	-0.80		0.50	0.11	-0.68		0.63	0.28	-0.85		0.59	0.15	0.08		0.57	0.89
Type - The Taggerty Buffet Car	0.20		0.68	0.77	0.49		0.41	0.23	-0.90	***	0.24	0.00	0.28		0.25	0.26	-0.45		0.52	0.39	0.58		0.62	0.35	-0.71		0.60	0.23	-0.63		0.52	0.22
Type - Electric Tram No. 13	0.89		0.68	0.19	0.80	**	0.40	0.05	-0.23		0.22	0.31	0.30		0.23	0.20	-0.36		0.48	0.45	-0.44		0.59	0.45	-0.80		0.55	0.14	0.05		0.51	0.92
Type - Church pipe organ	-0.94		0.71	0.19	0.23		0.40	0.56	-0.45	**	0.23	0.05	0.16		0.25	0.51	0.06		0.54	0.91	0.18		0.64	0.78	0.00		0.57	1.00	-0.05		0.57	0.92
Type - Anzac Memorabilia	0.77		0.70	0.27	0.41		0.39	0.30	-0.82	***	0.23	0.00	0.03		0.24	0.92	-0.26		0.50	0.61	-0.03		0.63	0.97	-1.29	**	0.58	0.03	-0.06		0.55	0.92
Type - Historic furniture	0.20		0.70	0.78	0.70	*	0.41	0.08	-0.20		0.23	0.39	0.22		0.25	0.38	-0.28		0.52	0.59	-0.03		0.63	0.97	-0.72		0.59	0.23	-0.74		0.59	0.21
Type - Purpose designed cabinetry	-1.17	*	0.68	0.08	0.17		0.41	0.68	-0.15		0.22	0.51	0.32		0.25	0.21	-0.05		0.50	0.93	1.01	*	0.60	0.09	0.59		0.55	0.28	-0.46		0.54	0.39
Type - Navigational equipment	-0.88		0.72	0.22	0.93	**	0.41	0.02	-0.52	**	0.25	0.04	0.08		0.25	0.75	-0.34		0.49	0.50	0.31		0.66	0.64	0.17		0.63	0.79	-0.17		0.54	0.75
Condition - Excellent vs. Very poor	0.09		0.37	0.80	-0.47	**	0.21	0.02	-0.13		0.12	0.29	0.00		0.13	0.98	0.22		0.26	0.40	0.20		0.35	0.56	0.39		0.34	0.25	-0.46		0.29	0.11
Condition - Good vs. Very poor	0.03		0.36	0.94	-0.18		0.21	0.39	-0.01		0.12	0.94	0.17		0.12	0.17	0.31		0.27	0.25	-0.39		0.34	0.25	-0.07		0.32	0.82	0.21		0.28	0.45
Condition - Poor vs. Very poor	-0.10		0.36	0.79	-0.24		0.21	0.24	0.03		0.12	0.78	0.11		0.12	0.40	0.45	*	0.26	0.09	0.35		0.33	0.29	0.39		0.32	0.22	-0.30		0.27	0.26
Rating - Victorian vs. Local Significance	1.21	***	0.27	0.00	-0.47	***	0.15	0.00	0.18	**	0.09	0.04	-0.10		0.09	0.31	-0.45	**	0.19	0.01	-0.32		0.25	0.20	-0.23		0.24	0.33	-0.08		0.20	0.69
Significance - Integral to a heritage listed place vs. in its own r	0.37		0.30	0.22	-0.41	**	0.17	0.02	0.13		0.10	0.19	-0.01		0.11	0.90	0.10		0.21	0.64	-0.47	*	0.28	0.09	-0.26		0.26	0.33	0.21		0.24	0.38
Significance - Contributes to a heritage collection vs. in its ow	0.12		0.32	0.70	-0.33	*	0.18	0.07	0.18	*	0.10	0.07	0.08		0.11	0.46	0.15		0.22	0.48	0.12		0.30	0.69	0.02		0.28	0.93	-0.05		0.24	0.82
Context - Archived/Storage vs. In Use	-0.42		0.32	0.18	0.22		0.18	0.22	-0.11		0.10	0.30	-0.01		0.11	0.93	0.06		0.22	0.78	-0.28		0.29	0.33	-0.42		0.27	0.12	0.71	***	0.25	0.01
Context - Part of an exhibition vs. In Use	-0.20		0.33	0.55	0.23		0.18	0.18	0.09		0.10	0.36	0.03		0.11	0.80	0.35		0.22	0.11	-0.34		0.29	0.24	-0.08		0.28	0.78	0.30		0.26	0.25
Custodianship - Medium to large sized public vs. Private colle	1.06	**	0.42	0.01	-0.39		0.24	0.10	0.26	**	0.13	0.05	0.05		0.14	0.73	-0.21		0.29	0.46	0.22		0.39	0.57	0.41		0.37	0.27	-0.56	*	0.33	0.09
Custodianship - Medium sized community vs. Private collecti	0.49		0.42	0.24	-0.49	**	0.23	0.04	0.41	***	0.13	0.00	-0.10		0.15	0.47	-0.53	*	0.29	0.07	-0.12		0.39	0.76	0.39		0.36	0.27	0.41		0.31	0.19
Custodianship - Small sized community vs. Private collection	0.39		0.44	0.37	-0.26		0.24	0.28	0.36	**	0.14	0.01	-0.07		0.14	0.63	-0.08		0.30	0.80	0.79	**	0.40	0.05	0.58		0.38	0.13	-0.37		0.32	0.25
Custodianship - private collection with access vs. Private col	0.25		0.41	0.54	-0.39		0.25	0.11	0.15		0.14	0.30	-0.23		0.15	0.12	-0.27		0.30	0.37	0.39		0.38	0.30	0.65	*	0.37	0.07	-0.02		0.31	0.96
Protection - Works to conserve/protect allowed vs. Any chan	-0.37		0.37	0.32	0.29		0.21	0.16	0.20		0.12	0.10	-0.23	*	0.13	0.08	0.04		0.26	0.88	-0.04		0.34	0.90	0.10		0.32	0.76	0.49		0.31	0.11
Protection - Any changes allowed vs. Any changes or relocati	-0.63	*	0.37	0.09	0.03		0.21	0.90	0.06		0.12	0.60	-0.11		0.13	0.40	0.23		0.26	0.37	0.72	**	0.34	0.03	0.82	**	0.32	0.01	-0.25		0.28	0.37
Protection - Relocation of the object allowed vs. Any change	-0.15		0.37	0.69	0.03		0.20	0.87	0.24	**	0.11	0.03	-0.34	***	0.13	0.01	0.19		0.26	0.45	-0.07		0.32	0.83	0.44		0.30	0.14	-0.04		0.29	0.90
- Cost (100 AUD)	0.52	***	0.10	0.00	0.02		0.07	0.73	-0.10	***	0.03	0.00	0.16	***	0.03	0.00	0.29	***	0.11	0.01	0.24	**	0.09	0.01	0.09		0.09	0.27	0.02		0.08	0.83

Model diagnostics

LL at convergence	-4,151.68	Estimation method	weighted maximum likelihood
LL at constant(s) only	-4,470.86	Optimization method	quasi-newton
McFadden's pseudo-R^2	0.07	Gradient	user-supplied, analytical
Ben-Akiva-Lerman's pseudo-R^2	0.53	Hessian	off, ex-post calculated using BHHH
AIC/*n*	1.36		
BIC/*n*	1.60		
n (observations)	6,452.00		
r (respondents)	1,613.00		
k (parameters)	232.00		

Table E.5

Building Image Interactions					Alternate Picture				No picture		
MNL in WTP space of 100AUD units	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.
Type - Residential Building	-0.35		0.32	0.27	0.38		0.42	0.37	-1.13	***	0.43
Type - Commercial/Retail Building	-0.32		0.33	0.33	0.08		0.43	0.85	-0.91	**	0.43
Type - Industrial Building	0.13		0.34	0.71	-0.47		0.46	0.31	-0.80	*	0.44
Type - Place of Worship	-0.63	*	0.33	0.05	0.71		0.45	0.12	-0.12		0.42
Type - Hotel	0.40		0.32	0.22	-0.35		0.47	0.45	-0.22		0.44
Type - Hall	-0.15		0.34	0.66	-0.02		0.41	0.96	-0.59		0.45
Type - School/Education facility	-0.06		0.33	0.87	0.15		0.45	0.73	-0.79	*	0.43
Type - Bank	-0.20		0.33	0.55	-0.12		0.45	0.78	-0.34		0.42
Type - Garden	0.22		0.32	0.49	-0.41		0.43	0.34	-0.40		0.44
Type - Transport Station	0.42		0.32	0.19	0.17		0.43	0.68	-0.67		0.44
Type - Hospital	-0.17		0.33	0.61	-0.34		0.45	0.46	-0.13		0.44
Type - Police/Gaol	0.46		0.34	0.17	-0.28		0.45	0.54	-0.51		0.47
Type - Post Office	0.79	**	0.34	0.02	-0.83	*	0.43	0.05	-1.37	***	0.50
Type - Courthouse	0.38		0.33	0.26	-0.04		0.48	0.94	-0.36		0.43
Type - Theatre	0.21		0.35	0.55	0.20		0.47	0.68	-0.55		0.44
Type - Sports Centre	-0.81	**	0.32	0.01	0.16		0.40	0.69	-1.05	**	0.44
Type - Gallery	0.49		0.33	0.14	-0.71		0.49	0.15	-0.25		0.47
Type - Library	-0.03		0.32	0.91	0.05		0.45	0.92	-0.35		0.41
Age - 19th century (1803-1900) vs. 1971	0.51	***	0.14	0.00	0.00				0.00		
Age - Early 20th century (1901-18) vs. 1971	0.34	**	0.13	0.01	0.00				0.00		
Age - Interwar period (1919-45) vs. 1971	0.18		0.13	0.15	0.00				0.00		
Age - Post war (1946-70) vs. 1971	0.10		0.13	0.41	0.00				0.00		
Condition - Excellent vs. Very poor	0.67	***	0.13	0.00	0.00				0.00		
Condition - Good vs. Very poor	0.35	***	0.12	0.00	0.00				0.00		
Condition - Poor vs. Very poor	0.14		0.12	0.22	0.00				0.00		
Rating - National vs. Local Significance	-0.17		0.11	0.10	0.00				0.00		
Rating - Victorian vs. Local Significance	0.19	*	0.10	0.06	0.00				0.00		
Protection – Int + Ext by permit vs no dev	0.13		0.10	0.20	0.00				0.00		
Protection – Ext only by permit vs no dev	0.33	***	0.11	0.00	0.00				0.00		
Distance (100 km)	-0.17		0.11	0.13	0.00				0.00		
Control of visitation	-0.09		0.09	0.29	0.00				0.00		
Control of traffic	0.18	**	0.09	0.04	0.00				0.00		
Control of noise	0.15	*	0.08	0.07	0.00				0.00		
Security measures	0.12		0.09	0.17	0.00				0.00		
Access - public free vs. no	0.24	**	0.12	0.05	0.00				0.00		
Access - public with entry fee vs. no	0.17		0.12	0.16	0.00				0.00		
Access - commercial vs. no	0.28	**	0.12	0.02	0.00				0.00		
Number of places	0.03	**	0.01	0.05	0.00				0.00		
- Cost (100 AUD)	0.62	***	0.05	0.00	0.00				0.00		

Model diagnostics	
LL at convergence	-4182.96
LL at constant(s) only	-4360.33
McFadden's pseudo-R^2	0.0407
Ben-Akiva-Lerman's pseudo-R^2	0.5338
AIC/*n*	1.3199
BIC/*n*	1.3986
n (observations)	6452
r (respondents)	1613
k (parameters)	75

Estimation method	weighted maximum likelihood
Optimization method	quasi-newton
Gradient	user-supplied, analytical
Hessian	off, ex-post calculated using BHHH

Table E.6

Landscape Image Interactions MNL in WTP space of 100AUD units					Interactions Alternate picture				No picture			
var.	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
Type - Industrial/Mining Landscape	-1.61	***	0.32	0.00	0.23		0.35	0.50	0.63	*	0.35	0.07
Type - Agricultural Landscape	-0.94	***	0.31	0.00	0.46		0.35	0.19	0.32		0.35	0.36
Type - Residential Landscape	-0.68	**	0.29	0.02	-0.24		0.34	0.47	-0.08		0.33	0.81
Type - Natural Landscape	-0.40		0.28	0.16	-0.29		0.33	0.38	-0.27		0.34	0.42
Type - Trees	0.24		0.28	0.41	-0.32		0.35	0.36	-0.45		0.35	0.20
Type - Bridge	0.27		0.28	0.34	-0.07		0.34	0.82	-0.29		0.36	0.43
Type - Wall	-0.94	***	0.30	0.00	0.27		0.35	0.45	0.32		0.35	0.36
Type - Lighthouse	0.81	***	0.29	0.01	0.44		0.37	0.23	-0.21		0.34	0.55
Type - Roadway/Avenue	-0.41		0.29	0.15	-0.08		0.32	0.81	-0.56	*	0.33	0.09
Type - Pier/Wharf	-0.31		0.28	0.28	-0.18		0.32	0.57	-0.32		0.33	0.33
Age - 19th century (1803-1900) vs. 1971	0.92	***	0.15	0.00	0.00				0.00			
Age - Early 20th century (1901-18) vs. 1971	0.37	***	0.14	0.01	0.00				0.00			
Age - Interwar period (1919-45) vs. 1971	0.17		0.14	0.21	0.00				0.00			
Age - Post war (1946-70) vs. 1971	0.21		0.14	0.12	0.00				0.00			
Condition - Excellent vs. Very poor	0.43	***	0.12	0.00	0.00				0.00			
Condition - Good vs. Very poor	0.30	**	0.12	0.01	0.00				0.00			
Condition - Poor vs. Very poor	0.04		0.12	0.73	0.00				0.00			
Rating - National vs. Local Significance	0.02		0.10	0.82	0.00				0.00			
Rating - Victorian vs. Local Significance	0.02		0.10	0.84	0.00				0.00			
Protection – Int + Ext by permit vs no dev	-0.05		0.10	0.63	0.00				0.00			
Protection – Ext only by permit vs no dev	0.14		0.10	0.18	0.00				0.00			
Distance (100 km)	-0.35	***	0.12	0.00	0.00				0.00			
Control of visitation	0.07		0.08	0.43	0.00				0.00			
Control of traffic	0.20	**	0.09	0.02	0.00				0.00			
Control of noise	0.03		0.08	0.68	0.00				0.00			
Security measures	-0.11		0.08	0.20	0.00				0.00			
Access - public free vs. no	0.20	*	0.12	0.09	0.00				0.00			
Access - public with entry fee vs. no	-0.03		0.12	0.78	0.00				0.00			
Access - commercial vs. no	0.06		0.12	0.65	0.00				0.00			
Number of places	0.02		0.01	0.14	0.00				0.00			
- Cost (100 AUD)	0.60	***	0.05	0.00	0.00				0.00			

Model diagnostics	
LL at convergence	-4314.32
LL at constant(s) only	-4465.04
McFadden's pseudo-R^2	0.0338
Ben-Akiva-Lerman's pseudo-R^2	0.5186
AIC/*n*	1.3532
BIC/*n*	1.4067
n (observations)	6452
r (respondents)	1613
k (parameters)	51

Estimation method	weighted maximum likelihood
Optimization method	quasi-newton
Gradient	user-supplied, analytical
Hessian	off, ex-post calculated using BHHH

Table E.7

Historic Site Image Interactions MNL in WTP space of 100AUD units					Interactions Alternate picture				No picture			
var.	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
Type - Settlement Site	-0.30		0.37	0.42	-0.28		0.50	0.58	0.26		0.49	0.60
Type - Military Site	0.80	***	0.27	0.00	-0.29		0.28	0.31	-0.25		0.28	0.38
Type - Goldrush Site	0.60		0.38	0.12	-0.69		0.53	0.19	0.79		0.55	0.15
Type - Mining Site	-0.54	*	0.27	0.05	0.33		0.29	0.25	0.25		0.27	0.34
Type - Shipwreck	0.17		0.27	0.54	-0.07		0.27	0.80	-0.14		0.28	0.63
Age - 19th century (1803-1900) vs. 1971	0.42	**	0.17	0.01	0.00				0.00			
Age - Early 20th century (1901-18) vs. 1971	0.10		0.16	0.51	0.00				0.00			
Age - Interwar period (1919-45) vs. 1971	0.12		0.16	0.46	0.00				0.00			
Age - Post war (1946-70) vs. 1971	0.17		0.16	0.29	0.00				0.00			
Condition - Excellent vs. Very poor	0.27	*	0.14	0.06	0.00				0.00			
Condition - Good vs. Very poor	0.13		0.14	0.37	0.00				0.00			
Condition - Poor vs. Very poor	-0.02		0.13	0.88	0.00				0.00			
Rating - National vs. Local Significance	-0.15		0.12	0.22	0.00				0.00			
Rating - Victorian vs. Local Significance	-0.31	**	0.12	0.01	0.00				0.00			
Protection – Int + Ext by permit vs no dev	-0.04		0.12	0.76	0.00				0.00			
Protection – Ext only by permit vs no dev	-0.06		0.12	0.62	0.00				0.00			
Distance (100 km)	0.20		0.13	0.12	0.00				0.00			
Control of visitation	0.22	**	0.10	0.03	0.00				0.00			
Control of traffic	0.28	***	0.10	0.01	0.00				0.00			
Control of noise	-0.04		0.10	0.67	0.00				0.00			
Security measures	-0.17	*	0.10	0.08	0.00				0.00			
Access - public free vs. no	0.08		0.13	0.54	0.00				0.00			
Access - public with entry fee vs. no	0.45	***	0.14	0.00	0.00				0.00			
Access - commercial vs. no	0.19		0.14	0.16	0.00				0.00			
Number of places	0.01		0.02	0.40	0.00				0.00			
- Cost (100 AUD)	0.71	***	0.06	0.00	0.00				0.00			

Model diagnostics	
LL at convergence	-2396.04
LL at constant(s) only	-2506.42
McFadden's pseudo-R^2	0.0440
Ben-Akiva-Lerman's pseudo-R^2	0.5222
AIC/*n*	1.3452
BIC/*n*	1.4068
n (observations)	3616
r (respondents)	904
k (parameters)	36

Estimation method	weighted maximum likelihood
Optimization method	quasi-newton
Gradient	user-supplied, analytical
Hessian	off, ex-post calculated using BHHH

Table E.8

Object Image Interactions					Interactions							
MNL in WTP space of 100AUD units					Alternate picture				No picture			
var.	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
Type - Minton Peacock	-0.30		0.25	0.25	-0.54	*	0.33	0.10	-0.44		0.33	0.18
Type - Ballarat Reform League Charter	-0.24		0.26	0.35	-0.61	*	0.35	0.08	0.07		0.32	0.83
Type - Marianne Gibson Quilt	-0.66	***	0.25	0.01	0.22		0.32	0.48	0.18		0.32	0.58
Type - Eureka Flag	-0.08		0.25	0.75	0.23		0.32	0.48	0.21		0.33	0.53
Type - Trade Union Banners	-0.43	*	0.24	0.07	-0.53		0.33	0.11	-0.67	**	0.33	0.04
Type - CSIRAC	0.64	***	0.25	0.01	-0.03		0.34	0.92	0.17		0.34	0.62
Type - The Taggerty Buffet Car	0.02		0.25	0.93	-0.39		0.33	0.24	0.08		0.35	0.81
Type - Electric Tram No. 13	1.06	***	0.26	0.00	-0.20		0.35	0.56	-0.55		0.33	0.10
Type - Church pipe organ	-0.51	**	0.25	0.04	-0.40		0.34	0.24	-0.02		0.33	0.94
Type - Anzac Memorabilia	0.41	*	0.25	0.09	-0.32		0.34	0.34	0.15		0.33	0.64
Type - Historic furniture	-0.63	**	0.26	0.02	0.31		0.33	0.34	0.47		0.35	0.17
Type - Purpose designed cabinetry	-0.75	***	0.26	0.00	0.11		0.35	0.75	0.38		0.34	0.26
Type - Navigational equipment	-0.13		0.26	0.62	-0.38		0.36	0.29	-0.22		0.36	0.53
Condition - Excellent vs. Very poor	-0.13		0.11	0.22	0.00				0.00			
Condition - Good vs. Very poor	0.12		0.10	0.26	0.00				0.00			
Condition - Poor vs. Very poor	-0.04		0.10	0.72	0.00				0.00			
Rating - Victorian vs. Local Significance	0.52	***	0.08	0.00	0.00				0.00			
Significance - Integral to a heritage listed plac	0.07		0.09	0.40	0.00				0.00			
Significance - Contributes to a heritage collec	0.01		0.09	0.94	0.00				0.00			
Context - Archived/Storage vs. In Use	-0.03		0.09	0.75	0.00				0.00			
Context - Part of an exhibition vs. In Use	0.07		0.09	0.47	0.00				0.00			
Custodianship - Medium to large sized public	0.53	***	0.12	0.00	0.00				0.00			
Custodianship - Medium sized community vs.	0.51	***	0.12	0.00	0.00				0.00			
Custodianship - Small sized community vs. Pr	0.35	***	0.12	0.00	0.00				0.00			
Custodianship - private collection with access	0.29	**	0.12	0.02	0.00				0.00			
Protection - Works to conserve/protect allowe	0.09		0.11	0.39	0.00				0.00			
Protection - Any changes allowed vs. Any char	-0.19	*	0.11	0.08	0.00				0.00			
Protection - Relocation of the object allowed	-0.07		0.10	0.48	0.00				0.00			
- Cost (100 AUD)	0.69	***	0.05	0.00	0.00				0.00			

Model diagnostics	
LL at convergence	-4291.37
LL at constant(s) only	-4470.86
McFadden's pseudo-R^2	0.0401
Ben-Akiva-Lerman's pseudo-R^2	0.5209
AIC/*n*	1.3473
BIC/*n*	1.4050
n (observations)	6452
r (respondents)	1613
k (parameters)	55

Estimation method	weighted maximum likelihood
Optimization method	quasi-newton
Gradient	user-supplied, analytical
Hessian	off, ex-post calculated using BHHH

Table E.9

Buildings Region Interactions MNL in WTP space of 100AUD units	Interactions vs Central highlands																																							
	Central Subregion				Eastern Subregion				Geelong				Gippsland				Hume				Loddon Mallee South				Northern Subregion				Southern Subregion				Western Subregion				Other			
var.	coef.	sign.	st.err	p-value	coef.	sign.	st.err	p-value	coef.	sign.	st.err	p-value	coef.	sign.	st.err	p-value	coef.	sign.	st.err	p-value	coef.	sign.	st.err	p-value	coef.	sign.	st.err	p-value	coef.	sign.	st.err	p-value	coef.	sign.	st.err	p-value	coef.	sign.	st.err	p-value
Residential Building	1.95		1.76	0.27	-2.32		1.93	0.23	-2.95		1.85	0.11	-2.49		2.05	0.22	-5.07	*	2.89	0.08	-82.21		1,317.71	0.95	-2.84		1.95	0.15	-2.52		1.93	0.19	-2.25		1.85	0.22	-2.15		1.95	0.27	-0.84		2.08	0.69
Commercial/Retail Building	2.83		2.35	0.23	-3.33		2.46	0.18	-4.11	*	2.43	0.09	-3.39		2.63	0.20	-4.18		2.91	0.15	-36.99		559.44	0.95	-3.70		2.51	0.14	-3.22		2.48	0.20	-3.56		2.42	0.14	-3.99		2.51	0.11	-0.81		2.71	0.76
Industrial Building	0.67		1.73	0.70	-0.44		1.91	0.82	-1.37		1.84	0.45	-1.15		2.00	0.57	-1.51		2.36	0.52	-64.66		1,047.99	0.95	-1.28		2.09	0.54	-0.50		1.85	0.79	-0.65		1.81	0.72	-2.11		2.00	0.29	-0.38		2.05	0.85
Place of Worship	0.03		1.45	0.98	-0.04		1.60	0.98	-0.04		1.59	0.98	-2.43		1.93	0.21	-0.90		2.28	0.69	-38.79		635.24	0.95	-1.32		1.73	0.44	-0.43		1.66	0.79	-0.85		1.56	0.59	0.05		1.68	0.98	0.61		1.79	0.74
Hotel	0.86		1.45	0.55	-0.47		1.63	0.77	-0.99		1.59	0.53	-0.76		1.78	0.67	-2.89		2.54	0.26	-34.61		563.39	0.95	-0.47		1.65	0.78	-0.78		1.61	0.63	-0.41		1.54	0.79	-0.09		1.72	0.96	0.17		1.76	0.92
Hall	0.62		1.26	0.62	-0.92		1.46	0.53	-0.85		1.38	0.54	-1.75		1.83	0.34	-2.31		2.47	0.35	-65.65		1,069.12	0.95	-0.88		1.46	0.55	-1.03		1.49	0.49	-1.13		1.36	0.40	-0.38		1.50	0.80	0.77		1.78	0.66
School	1.18		1.31	0.37	-0.99		1.48	0.50	-1.20		1.44	0.41	-2.92		1.87	0.12	-2.50		2.30	0.28	-16.48		255.98	0.95	-1.11		1.52	0.47	-1.47		1.51	0.33	-1.71		1.42	0.23	-1.85		1.56	0.23	-0.46		1.84	0.80
Bank	1.39		1.45	0.34	-2.37		1.61	0.14	-2.19		1.59	0.17	-1.16		1.80	0.52	-0.12		2.50	0.96	-32.02		494.31	0.95	-2.75		1.70	0.11	-2.05		1.66	0.22	-1.73		1.55	0.26	-1.59		1.69	0.34	-0.06		1.83	0.97
Garden	1.40		1.16	0.23	-1.38		1.35	0.31	-1.52		1.30	0.24	-2.77		1.71	0.11	-1.93		1.98	0.33	-93.12		1,504.18	0.95	-2.19		1.38	0.11	-2.26		1.40	0.11	-1.10		1.27	0.39	0.88		1.55	0.57	-0.32		1.67	0.85
Transport Station	0.57		1.24	0.65	-0.72		1.42	0.61	-0.10		1.40	0.94	-2.48		2.10	0.24	-1.63		2.22	0.46	-89.47		1,472.92	0.95	-0.75		1.79	0.67	-0.67		1.46	0.65	-0.18		1.35	0.89	0.59		1.54	0.70	1.43		1.64	0.38
Hospital	-0.19		1.08	0.86	0.09		1.31	0.94	-0.29		1.22	0.81	-0.57		1.49	0.70	-1.98		2.31	0.39	-46.02		767.62	0.95	0.13		1.41	0.93	0.44		1.35	0.75	-0.62		1.23	0.61	1.33		1.40	0.34	0.48		1.50	0.75
Police/Gaol	0.43		1.56	0.78	-0.47		1.73	0.79	-0.38		1.65	0.82	0.38		1.97	0.85	-1.88		2.80	0.50	-2.07		68.45	0.98	-0.30		1.76	0.87	0.08		1.75	0.97	-0.41		1.66	0.80	0.30		1.81	0.87	-0.08		1.96	0.97
Post Office	1.90		1.31	0.15	-1.61		1.49	0.28	-1.76		1.45	0.23	-2.05		2.04	0.31	-1.78		2.27	0.43	-10.63		161.16	0.95	-2.53		1.58	0.11	-1.42		1.50	0.34	-2.19		1.42	0.12	-1.50		1.57	0.34	-0.72		1.82	0.69
Courthouse	2.35		1.55	0.13	-2.42		1.70	0.15	-3.01	*	1.65	0.07	-3.38	*	1.98	0.09	1.37		3.81	0.72	17.80		354.75	0.96	-1.76		1.84	0.34	-1.85		1.75	0.29	-1.73		1.64	0.29	-2.00		1.80	0.27	-1.88		1.84	0.31
Theatre	3.30		2.19	0.13	-3.69		2.31	0.11	-3.48		2.28	0.13	-3.36		2.52	0.18	-4.39		2.80	0.12	-1.65		64.86	0.98	-3.71		2.33	0.11	-3.37		2.34	0.15	-3.22		2.27	0.16	-2.87		2.33	0.22	-1.42		2.56	0.58
Sports Centre	-0.13		1.58	0.94	-1.02		1.75	0.56	-1.55		1.69	0.36	-0.95		1.83	0.61	-0.20		2.40	0.93	-72.23		1,190.29	0.95	-0.76		1.82	0.68	-0.27		1.77	0.88	-0.65		1.67	0.70	-0.88		1.82	0.63	-0.02		2.05	0.99
Gallery	2.47		1.59	0.12	-2.28		1.76	0.20	-2.76		1.69	0.10	-1.55		2.18	0.48	-3.27		2.35	0.17	-27.07		408.16	0.95	-2.08		1.93	0.28	-2.07		1.82	0.26	-2.20		1.67	0.19	-2.59		1.78	0.15	-0.63		2.02	0.75
Library	1.96		1.55	0.21	-2.11		1.70	0.21	-2.68		1.66	0.11	-2.63		1.82	0.15	-3.97		2.69	0.14	-8.02		112.22	0.94	-2.54		1.76	0.15	-1.89		1.72	0.27	-2.03		1.65	0.22	-1.97		1.79	0.27	0.17		1.93	0.93
19th century (1803-1900) vs. 1971	1.22	*	0.74	0.10	-0.80		0.83	0.34	-0.67		0.79	0.40	-1.39		0.99	0.16	0.62		1.57	0.69	33.29		563.11	0.95	-0.45		0.88	0.61	-0.99		0.82	0.23	-0.65		0.79	0.41	-0.70		0.85	0.41	-1.48		0.93	0.11
Early 20th century (1901-18) vs. 1971	1.27	*	0.74	0.09	-0.33		0.84	0.69	-1.44	*	0.80	0.07	-0.78		0.87	0.37	-0.39		1.21	0.75	-4.40		57.70	0.94	-0.95		0.86	0.27	-0.76		0.83	0.36	-1.05		0.79	0.18	-1.02		0.85	0.23	-0.46		0.98	0.64
Interwar period (1919-45) vs. 1971	1.41	*	0.82	0.08	-0.68		0.91	0.45	-1.53	*	0.86	0.08	-2.08	**	1.02	0.04	-1.11		1.16	0.34	47.90		809.64	0.95	-1.46		0.90	0.10	-1.19		0.90	0.19	-1.11		0.86	0.20	-1.53	*	0.90	0.09	-1.07		0.97	0.27
Post war (1946-70) vs. 1971	0.73		0.66	0.27	-0.41		0.74	0.58	-0.64		0.72	0.38	-0.74		0.82	0.37	-0.35		1.10	0.75	46.47		771.79	0.95	-0.58		0.80	0.46	-0.83		0.74	0.27	-0.59		0.71	0.41	-1.22		0.77	0.11	-0.26		0.86	0.77
Condition - Excellent vs. Very poor	0.24		0.61	0.70	0.98		0.72	0.17	0.36		0.68	0.60	0.71		0.84	0.40	2.12		1.61	0.19	80.90		1,330.93	0.95	-0.22		0.74	0.77	-0.08		0.72	0.91	0.58		0.66	0.39	0.38		0.73	0.60	-0.18		0.80	0.82
Condition - Good vs. Very poor	0.33		0.56	0.56	-0.16		0.66	0.81	-0.16		0.63	0.80	0.66		0.81	0.42	0.54		1.01	0.59	54.77		906.39	0.95	-0.03		0.71	0.97	-0.42		0.66	0.53	0.30		0.62	0.62	-0.23		0.71	0.75	-0.24		0.78	0.75
Condition - Poor vs. Very poor	1.11		0.90	0.22	-1.41		0.97	0.14	-0.86		0.94	0.36	-0.40		1.06	0.70	-0.66		1.15	0.57	6.96		128.45	0.96	-0.39		1.00	0.70	-1.64	*	0.97	0.09	-0.63		0.94	0.50	-1.06		0.99	0.28	-1.66		1.10	0.13
National vs. Local Significance	-1.82	***	0.67	0.01	1.70	**	0.73	0.02	1.80	**	0.70	0.01	1.03		0.81	0.21	0.94		1.00	0.35	46.38		732.46	0.95	1.28	*	0.78	0.10	1.85	**	0.73	0.01	1.66	**	0.70	0.02	1.62	**	0.76	0.03	1.23		0.78	0.12
Victorian vs. Local Significance	-0.31		0.53	0.56	0.53		0.61	0.38	0.60		0.57	0.29	0.15		0.66	0.82	0.68		0.87	0.43	12.62		200.96	0.95	0.41		0.65	0.53	0.74		0.61	0.22	0.49		0.57	0.39	0.02		0.62	0.97	0.80		0.68	0.24
Int + Ext by permit vs no dev	0.17		0.48	0.73	-0.05		0.56	0.93	0.24		0.53	0.66	0.20		0.74	0.79	0.07		0.88	0.94	18.44		306.10	0.95	-0.69		0.59	0.24	-0.17		0.56	0.76	0.05		0.53	0.92	0.01		0.58	0.98	-0.61		0.68	0.37
Ext only by permit vs no dev	-0.23		0.49	0.64	0.40		0.57	0.48	0.97	*	0.55	0.08	1.11		0.70	0.11	0.15		0.89	0.86	19.43		314.60	0.95	0.40		0.62	0.52	0.55		0.57	0.34	0.40		0.54	0.46	0.47		0.61	0.44	-0.11		0.68	0.87
Distance (100 km)	0.20		0.48	0.68	-0.22		0.57	0.70	-0.55		0.54	0.31	-0.62		0.73	0.40	-0.31		0.87	0.73	-14.04		222.11	0.95	-0.63		0.62	0.31	-0.46		0.58	0.43	-0.28		0.54	0.61	-0.12		0.61	0.84	0.40		0.73	0.59
Control of visitation	0.24		0.50	0.63	-0.36		0.55	0.52	-0.24		0.54	0.65	-0.65		0.67	0.33	-0.13		0.72	0.85	5.88		105.38	0.96	-0.33		0.60	0.58	-0.38		0.55	0.49	-0.28		0.53	0.60	-0.32		0.57	0.58	-0.22		0.63	0.73
Control of traffic	-0.38		0.48	0.42	0.86		0.55	0.11	0.48		0.52	0.35	0.55		0.63	0.38	1.04		0.90	0.25	-6.50		113.85	0.95	-0.08		0.56	0.88	0.62		0.53	0.24	0.44		0.51	0.38	0.77		0.56	0.17	1.00		0.62	0.10
Control of noise	0.15		0.53	0.78	-0.03		0.58	0.96	0.33		0.57	0.56	-0.27		0.68	0.69	-0.69		0.84	0.41	2.42		46.81	0.96	0.35		0.60	0.55	0.03		0.59	0.96	-0.18		0.56	0.75	0.10		0.61	0.87	-0.60		0.65	0.36
Security measures	0.91	*	0.49	0.07	-1.12	**	0.55	0.04	-0.99	*	0.53	0.06	-1.20	*	0.63	0.06	-0.88		0.73	0.23	-12.29		187.00	0.95	-0.27		0.60	0.65	-0.61		0.55	0.26	-0.52		0.53	0.33	-1.07	*	0.55	0.05	-0.83		0.63	0.19
Access - public free vs. no	-0.94		0.68	0.17	1.42	*	0.77	0.07	1.25	*	0.73	0.09	1.40		0.88	0.11	2.23	*	1.15	0.05	16.33		253.72	0.95	0.79		0.78	0.31	1.18		0.77	0.12	1.01		0.72	0.16	1.28		0.79	0.10	1.27		0.84	0.13
Access - public with entry fee vs. no	-1.01		0.91	0.27	1.36		0.98	0.16	1.53		0.95	0.11	1.57		1.07	0.14	1.05		1.20	0.38	-1.73		48.35	0.97	0.91		0.99	0.36	0.99		0.96	0.30	1.15		0.95	0.22	1.46		1.00	0.14	1.27		1.04	0.22
Access - commercial vs. no	-1.17	**	0.58	0.04	1.87	***	0.67	0.01	1.75	***	0.64	0.01	1.63	**	0.77	0.03	1.97	*	1.03	0.05	-15.71		274.51	0.95	1.04		0.72	0.15	1.63	**	0.67	0.01	1.22	*	0.63	0.05	1.37	*	0.70	0.05	1.68	**	0.75	0.02
Number of places	-0.03		0.09	0.72	0.04		0.09	0.65	0.02		0.09	0.87	0.05		0.10	0.61	0.03		0.12	0.80	-3.21		53.97	0.95	0.12		0.10	0.23	0.10		0.10	0.29	0.05		0.09	0.56	0.06		0.10	0.53	0.04		0.11	0.72
- Cost (100 AUD)	1.03	***	0.36	0.00	-0.39		0.39	0.31	-0.39		0.37	0.30	-0.15		0.44	0.73	-0.49		0.47	0.30	-1.01	**	0.49	0.04	0.21		0.53	0.69	-0.40		0.38	0.29	-0.37		0.38	0.33	-0.45		0.39	0.25	-0.10		0.47	0.84

Model diagnostics

LL at convergence	-3999.39
LL at constant(s) only	-4360.33
McFadden's pseudo-R^2	0.0828
Ben-Akiva-Lerman's pseudo-F	0.5514
AIC/*n*	1.3727
BIC/*n*	1.8230
n (observations)	6452
r (respondents)	1613
k (parameters)	429

Estimation method	weighted maximum likelihood
Optimization method	quasi-newton
Gradient	user-supplied, analytical
Hessian	off, ex-post calculated using BHHH

Table E.10

Type - Wall		3.39		2.29	0.14	-3.93		2.42	0.10	-4.71	**	2.37	0.05	-2.93		3.06	0.34	-3.58		2.46	0.15	-5.29	*	2.73	0.05	-5.51	**	2.63	0.04	-3.87		2.37	0.10	-4.40	*	2.36	0.06	-3.91		2.45	0.11	-3.93	*	2.38
Type - Lighthouse		2.74	*	1.55	0.08	-1.84		1.74	0.29	-1.87		1.64	0.25	-3.23		2.77	0.24	-1.67		1.84	0.36	-3.66	*	2.14	0.09	-4.26	**	2.10	0.04	-0.74		1.68	0.66	-1.64		1.63	0.32	-2.02		1.76	0.25	-3.09	*	1.69
Type - Roadway/Avenue		0.94		1.52	0.54	-1.75		1.74	0.31	-1.49		1.64	0.36	-0.99		2.49	0.69	-1.82		1.86	0.33	-3.10		2.34	0.18	-2.33		1.99	0.24	-0.94		1.63	0.57	-0.99		1.61	0.54	-1.93		1.76	0.27	-2.17		1.70
Type - Pier/Wharf		0.07		1.51	0.96	-0.18		1.71	0.92	-0.21		1.61	0.89	0.03		2.68	0.99	0.55		1.83	0.77	-1.74		2.04	0.39	-1.43		2.03	0.48	-0.01		1.60	1.00	-0.53		1.60	0.74	-0.31		1.73	0.86	-2.06		1.76
19th century (1803-1900) vs. 1971		1.20		0.87	0.17	0.50		1.01	0.63	0.10		0.97	0.92	1.38		2.32	0.55	-0.93		1.04	0.37	-0.48		1.07	0.66	-0.28		1.07	0.80	-0.67		0.95	0.48	-0.45		0.93	0.63	-0.35		0.98	0.72	-0.67		1.03
Early 20th century (1901-18) vs. 1971		0.38		0.89	0.67	0.83		1.01	0.41	-0.13		0.96	0.89	-0.57		1.41	0.68	-0.70		1.11	0.53	1.20		1.29	0.35	0.53		1.15	0.64	0.22		0.97	0.82	0.00		0.94	1.00	-0.34		1.00	0.73	-0.40		1.01
Interwar period (1919-45) vs. 1971		0.48		0.84	0.57	0.51		0.95	0.59	-0.40		0.89	0.65	-0.06		1.42	0.97	-0.34		1.03	0.74	-0.17		1.14	0.88	0.33		1.09	0.76	-0.25		0.91	0.78	-0.66		0.89	0.46	-0.53		0.93	0.57	0.02		0.96
Post war (1946-70) vs. 1971		0.29		0.81	0.72	0.30		0.91	0.74	-0.21		0.87	0.81	-2.11		2.20	0.34	0.22		1.00	0.83	-0.19		1.13	0.87	0.00		1.07	1.00	0.17		0.88	0.85	0.22		0.87	0.80	-0.59		0.95	0.54	-0.14		0.92
Condition - Excellent vs. Very poor		-0.55		0.69	0.43	1.00		0.77	0.19	0.94		0.74	0.21	2.96		2.32	0.20	0.59		0.81	0.47	1.46		0.93	0.12	1.91	**	0.92	0.04	0.26		0.76	0.73	1.19		0.74	0.11	-0.02		0.82	0.98	1.02		0.79
Condition - Good vs. Very poor		-0.47		0.62	0.45	0.70		0.71	0.32	1.03		0.68	0.13	1.44		1.71	0.40	1.17		0.81	0.15	1.91	**	0.96	0.05	0.79		0.84	0.35	0.36		0.68	0.60	0.65		0.67	0.33	0.06		0.76	0.94	0.73		0.71
Condition - Poor vs. Very poor		-0.79		0.78	0.31	0.27		0.86	0.75	1.18		0.83	0.16	2.32		2.14	0.28	1.65		1.06	0.12	1.43		1.02	0.16	1.29		0.97	0.18	0.52		0.84	0.54	0.76		0.82	0.35	0.01		0.90	0.99	1.28		0.86
National vs. Local Significance		-0.16		0.65	0.80	0.50		0.74	0.49	0.19		0.70	0.79	-1.75		1.74	0.31	-0.32		0.84	0.71	1.58		0.98	0.11	0.28		0.79	0.73	0.13		0.70	0.85	0.18		0.69	0.80	0.04		0.74	0.96	-0.11		0.72
Victorian vs. Local Significance		-1.18		0.96	0.22	1.50		1.02	0.14	0.88		0.99	0.38	0.17		1.44	0.91	1.18		1.06	0.27	1.45		1.10	0.19	1.48		1.06	0.16	1.15		0.99	0.25	1.51		0.99	0.13	1.24		1.02	0.22	1.16		1.00
Int + Ext by permit vs no dev		-0.12		0.76	0.87	-0.25		0.84	0.77	-0.04		0.80	0.96	0.02		1.22	0.99	0.08		0.87	0.92	0.26		0.93	0.78	0.39		0.88	0.66	0.01		0.80	0.99	0.16		0.79	0.84	0.25		0.84	0.77	0.47		0.81
Ext only by permit vs no dev		-0.33		0.69	0.63	0.30		0.76	0.69	0.54		0.73	0.46	1.18		1.28	0.36	0.61		0.81	0.45	-0.02		0.87	0.98	0.62		0.82	0.45	0.28		0.73	0.70	0.55		0.72	0.45	0.95		0.79	0.23	0.53		0.76
Distance (100 km)		-0.32		0.76	0.67	-0.20		0.83	0.81	0.13		0.81	0.87	-1.71		1.96	0.38	-0.83		1.02	0.41	-0.15		0.96	0.88	0.03		0.94	0.97	0.14		0.80	0.86	0.28		0.80	0.72	0.31		0.83	0.71	-0.67		0.85
Control of visitation		0.08		0.50	0.87	-0.08		0.56	0.88	0.00		0.54	1.00	-1.20		1.25	0.34	-0.41		0.62	0.51	0.50		0.71	0.48	-0.45		0.61	0.46	-0.01		0.54	0.98	0.06		0.53	0.91	0.24		0.58	0.67	-0.42		0.57
Control of traffic		0.23		0.40	0.56	-0.49		0.50	0.33	0.19		0.45	0.68	1.74		1.76	0.32	-0.45		0.55	0.42	0.54		0.66	0.41	0.00		0.56	0.99	-0.18		0.45	0.69	-0.08		0.44	0.85	0.05		0.50	0.92	0.09		0.49
Control of noise		0.00		0.44	0.99	0.26		0.52	0.61	0.14		0.48	0.78	-0.32		0.88	0.72	-0.07		0.60	0.91	0.37		0.66	0.58	0.04		0.55	0.94	-0.30		0.49	0.55	-0.05		0.48	0.92	0.18		0.54	0.73	0.23		0.53
Security measures		-0.83		0.67	0.21	0.56		0.72	0.44	0.52		0.70	0.46	0.19		1.25	0.88	1.01		0.75	0.18	0.93		0.79	0.24	0.97		0.77	0.21	0.82		0.70	0.24	0.70		0.70	0.32	1.30	*	0.74	0.08	0.47		0.72
Access - public free vs. no		-0.02		0.70	0.98	0.16		0.78	0.84	0.27		0.75	0.71	-2.78		2.75	0.31	-0.02		0.89	0.98	-0.07		0.93	0.94	0.35		0.90	0.70	0.43		0.77	0.58	0.06		0.74	0.93	0.69		0.82	0.40	0.46		0.80
Access - public with entry fee vs. no		-0.18		0.80	0.82	-0.41		0.88	0.65	0.51		0.85	0.55	-0.03		1.18	0.98	0.20		0.93	0.83	-0.16		1.05	0.88	0.39		0.95	0.68	0.06		0.85	0.94	-0.07		0.84	0.94	0.42		0.91	0.64	-0.07		0.86
Access - commercial vs. no		-0.76		0.78	0.33	0.28		0.88	0.75	1.05		0.83	0.21	0.21		1.40	0.88	0.06		0.95	0.95	0.63		1.02	0.54	1.79	*	1.03	0.08	0.90		0.84	0.28	0.52		0.83	0.53	1.62	*	0.91	0.07	0.52		0.86
Number of places		0.13		0.10	0.21	-0.13		0.11	0.25	-0.14		0.11	0.20	-0.33		0.22	0.13	-0.11		0.12	0.36	-0.12		0.12	0.31	-0.18		0.12	0.14	-0.06		0.11	0.58	-0.07		0.11	0.52	-0.15		0.11	0.17	-0.10		0.11
- Cost (100 AUD)		0.72	**	0.33	0.03	-0.14		0.37	0.70	-0.14		0.35	0.69	-0.29		0.49	0.55	0.04		0.47	0.93	-0.03		0.44	0.95	0.13		0.43	0.76	-0.05		0.36	0.89	-0.11		0.35	0.76	-0.17		0.37	0.65	0.45		0.43

Model diagnostics

LL at convergence	-4,142.41
LL at constant(s) only	-4,465.04
McFadden's pseudo-R^2	0.07
Ben-Akiva-Lerman's pseudo	0.54
AIC/n	1.39
BIC/n	1.75
n (observations)	6452
r (respondents)	1613
k (parameters)	341.00

Estimation method	weighted maximum likelihood
Optimization method	quasi-newton
Gradient	user-supplied, analytical
Hessian	off, ex-post calculated using BHHH

Table E.11

Historic Sites Region interactions MNL in WTP space of 100AUD units	Interactions vs Central highlands																																			
	Central Subregion				Eastern Subregion				Geelong				Gippsland				Hume				Loddon Mallee South				Northern Subregion				Southern Subregion				Western Subregion				Other			
var.	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
Type - Settlement Site	-2.21		3.32	0.51	3.97		3.61	0.27	3.39		3.40	0.32	1.97		3.60	0.58	1.97		3.59	0.58	0.55		4.89	0.91	-0.01		4.97	1.00	1.15		3.46	0.74	1.97		3.39	0.56	-0.61		3.73	0.87	0.52		3.40	0.88
Type - Military Site	1.79		1.98	0.37	-0.30		2.22	0.89	-0.45		2.04	0.83	-1.15		2.29	0.62	-0.55		2.23	0.81	-1.92		3.35	0.57	-0.67		3.20	0.83	-1.38		2.09	0.51	-1.49		2.06	0.47	-1.54		2.22	0.49	-1.69		2.05	0.41
Type - Goldrush Site	0.61		2.80	0.83	-0.03		3.02	0.99	1.15		2.89	0.69	0.63		3.12	0.84	0.91		3.04	0.76	-2.29		4.86	0.64	-2.45		5.47	0.65	-0.80		2.96	0.79	0.50		2.90	0.86	-2.52		3.24	0.44	-1.57		2.89	0.59
Type - Mining Site	-0.40		2.01	0.84	0.91		2.21	0.68	0.73		2.08	0.73	-0.66		2.36	0.78	0.86		2.28	0.71	0.49		3.31	0.88	-1.24		3.34	0.71	-0.41		2.13	0.85	-0.20		2.10	0.92	-0.52		2.31	0.82	-0.71		2.09	0.73
Type - Shipwreck	0.20		1.83	0.91	1.71		2.18	0.43	0.91		1.90	0.63	0.17		2.17	0.94	0.28		2.18	0.90	-0.83		3.37	0.80	-0.57		2.99	0.85	-0.62		1.98	0.75	-0.31		1.92	0.87	-1.69		2.18	0.44	-0.59		1.93	0.76
19th century (1803-1900) vs. 1971	0.54		1.29	0.67	0.05		1.45	0.97	-0.79		1.33	0.55	-0.77		1.49	0.61	-0.32		1.42	0.82	-0.31		2.36	0.90	0.81		2.60	0.76	0.32		1.39	0.82	-0.15		1.34	0.91	0.55		1.45	0.70	0.94		1.41	0.50
Early 20th century (1901-18) vs. 1971	-0.53		0.99	0.59	0.87		1.15	0.45	0.48		1.04	0.64	0.29		1.16	0.80	-0.16		1.15	0.89	-2.42		3.55	0.50	0.91		1.68	0.59	0.86		1.11	0.44	0.96		1.05	0.36	1.00		1.17	0.40	1.13		1.05	0.28
Interwar period (1919-45) vs. 1971	-0.20		1.20	0.86	1.12		1.37	0.41	-0.12		1.24	0.92	1.48		1.54	0.34	-0.20		1.35	0.88	-0.74		2.24	0.74	1.27		2.00	0.53	0.44		1.29	0.73	0.33		1.25	0.79	-0.16		1.36	0.91	1.04		1.25	0.41
Post war (1946-70) vs. 1971	0.71		1.38	0.61	-0.40		1.48	0.79	-0.65		1.42	0.65	-0.52		1.52	0.73	-1.13		1.51	0.45	-0.51		2.36	0.83	-0.14		1.97	0.94	-0.49		1.46	0.74	-0.53		1.42	0.71	-0.84		1.52	0.58	-0.08		1.42	0.95
Condition - Excellent vs. Very poor	-0.22		1.07	0.83	-0.26		1.22	0.83	0.18		1.10	0.87	-0.11		1.23	0.93	-0.19		1.24	0.88	1.31		2.01	0.52	2.04		2.36	0.39	0.75		1.13	0.51	0.78		1.12	0.49	0.64		1.21	0.59	0.88		1.13	0.44
Condition - Good vs. Very poor	-0.12		1.09	0.91	-1.20		1.31	0.36	0.29		1.12	0.80	0.31		1.29	0.81	-0.79		1.22	0.52	1.41		2.19	0.52	1.18		1.83	0.52	0.28		1.15	0.81	0.56		1.13	0.62	0.19		1.21	0.88	0.60		1.18	0.61
Condition - Poor vs. Very poor	0.32		0.91	0.73	-0.70		1.06	0.51	-0.12		0.96	0.90	-0.23		1.13	0.84	-1.14		1.04	0.27	0.73		1.70	0.67	-1.24		1.74	0.47	-0.76		0.98	0.44	-0.12		0.96	0.90	-0.18		1.04	0.86	0.18		0.99	0.86
National vs. Local Significance	0.39		0.83	0.63	-0.77		0.96	0.42	-0.79		0.86	0.36	-0.48		1.00	0.63	0.67		1.05	0.52	-0.66		1.57	0.67	-1.34		1.56	0.39	-0.67		0.91	0.46	-0.64		0.86	0.45	-0.28		0.97	0.77	-0.83		0.89	0.35
Victorian vs. Local Significance	0.31		0.76	0.68	-0.64		0.88	0.47	-0.95		0.80	0.24	-0.24		0.96	0.80	-0.60		0.91	0.51	-0.65		1.46	0.66	-1.44		1.67	0.39	-0.55		0.84	0.51	-0.77		0.80	0.33	0.05		0.93	0.96	-0.41		0.82	0.61
Int + Ext by permit vs no dev	-0.66		0.76	0.39	0.06		0.96	0.95	0.74		0.80	0.35	0.31		0.95	0.74	1.16		0.92	0.21	2.17		2.11	0.30	1.35		1.41	0.34	0.39		0.82	0.64	0.71		0.80	0.38	0.55		0.90	0.54	0.20		0.84	0.81
Ext only by permit vs no dev	-0.31		0.85	0.71	0.05		0.96	0.96	0.38		0.88	0.67	-0.01		1.01	0.99	0.44		0.99	0.66	0.01		1.49	0.99	1.52		1.65	0.36	0.17		0.91	0.85	-0.18		0.89	0.84	0.50		0.98	0.61	0.30		0.91	0.74
Distance (100 km)	0.47		0.88	0.60	0.88		1.15	0.45	0.11		0.92	0.90	-1.53		1.17	0.19	-0.80		1.02	0.43	-0.04		1.60	0.98	-0.63		1.62	0.70	-0.36		0.95	0.71	-0.63		0.92	0.49	-0.41		1.02	0.69	-0.46		0.91	0.61
Control of visitation	-0.12		0.68	0.85	0.59		0.79	0.46	0.23		0.70	0.74	0.62		0.89	0.49	-0.22		0.80	0.79	-0.02		1.32	0.99	-0.59		1.22	0.63	0.51		0.74	0.49	0.43		0.71	0.54	0.04		0.80	0.96	0.41		0.72	0.57
Control of traffic	0.16		0.53	0.76	0.16		0.66	0.81	-0.17		0.56	0.76	-0.50		0.71	0.48	0.26		0.65	0.69	1.77		2.12	0.40	-0.29		1.06	0.78	0.32		0.61	0.60	0.15		0.57	0.79	0.20		0.68	0.77	0.35		0.57	0.54
Control of noise	0.28		0.66	0.67	-0.70		0.79	0.38	-0.13		0.68	0.85	-0.85		0.82	0.30	-0.81		0.80	0.31	-0.73		1.56	0.64	-0.49		1.35	0.71	-0.22		0.70	0.75	-0.30		0.69	0.66	-0.31		0.77	0.69	-0.38		0.69	0.58
Security measures	-1.13		0.79	0.15	0.82		0.86	0.34	0.91		0.81	0.26	0.80		0.87	0.36	0.62		0.85	0.47	0.53		1.19	0.66	-0.20		1.75	0.91	1.17		0.84	0.16	1.27		0.81	0.12	1.14		0.86	0.18	1.05		0.81	0.20
Access - public free vs. no	0.70		0.82	0.40	0.24		1.06	0.82	-0.52		0.86	0.55	-0.50		1.01	0.63	-0.59		1.00	0.56	-0.41		1.27	0.75	-1.00		1.71	0.56	-0.73		0.88	0.41	-0.99		0.87	0.26	-0.51		0.96	0.60	-0.85		0.88	0.34
Access - public with entry fee vs. no	-0.28		0.88	0.75	1.69		1.13	0.13	0.74		0.92	0.42	0.32		1.03	0.76	1.62		1.16	0.16	3.24		3.24	0.32	-1.01		1.95	0.61	1.03		0.96	0.28	0.37		0.92	0.69	0.37		1.07	0.73	0.88		0.93	0.35
Access - commercial vs. no	0.64		1.03	0.53	0.75		1.32	0.57	-0.55		1.06	0.61	-0.37		1.12	0.74	-0.64		1.17	0.59	2.08		3.08	0.50	-0.54		1.44	0.71	-0.56		1.10	0.61	-0.92		1.07	0.39	-0.11		1.20	0.93	-0.42		1.06	0.69
Number of places	0.06		0.11	0.60	-0.13		0.13	0.32	-0.04		0.12	0.75	-0.06		0.15	0.70	-0.05		0.13	0.71	-0.05		0.20	0.82	0.22		0.32	0.50	-0.04		0.12	0.74	-0.07		0.12	0.54	-0.02		0.13	0.90	-0.06		0.12	0.60
- Cost (100 AUD)	0.72		0.46	0.11	-0.19		0.51	0.71	0.11		0.48	0.81	0.31		0.66	0.64	0.37		0.61	0.54	-0.25		0.63	0.69	-0.29		0.61	0.63	0.01		0.49	0.98	0.03		0.48	0.94	-0.17		0.49	0.72	1.86	**	0.92	0.04

Model diagnostics	
LL at convergence	-2269.43
LL at constant(s) only	-2506.42
McFadden's pseudo-R^2	0.0946
Ben-Akiva-Lerman's pseudo-R	0.5444
AIC/*n*	1.4134
BIC/*n*	1.9032
n (observations)	3616
r (respondents)	904
k (parameters)	286

Estimation method	weighted maximum likelihood
Optimization method	quasi-newton
Gradient	user-supplied, analytical
Hessian	off, ex-post calculated using BHHH

Table E.12

Historic Objects Region Interactions MNL in WTP space of 100AUD units	Interactions vs Central highlands																																							
	Central Subregion				Eastern Subregion				Geelong				Gippsland				Hume				Loddon Mallee South				Northern Subregion				Southern Subregion				Western Subregion				Other			
var.	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value	coef.	sign.	st.err.	p-value
Type - Minton Peacock	-2.82		2.01	0.16	2.19		2.15	0.31	1.60		2.08	0.44	3.94		4.16	0.34	2.09		2.24	0.35	3.43		2.15	0.11	2.77		2.37	0.24	2.32		2.09	0.27	2.44		2.05	0.24	1.98		2.08	0.34	2.13		2.17	0.33
Type - Ballarat Reform League Charter	-2.25		1.62	0.17	1.27		1.78	0.48	2.11		1.69	0.21	-2.60		8.66	0.76	2.28		1.83	0.21	2.61		1.85	0.16	2.28		2.16	0.29	2.22		1.74	0.20	1.85		1.68	0.27	1.54		1.72	0.37	2.25		1.83	0.22
Type - Marianne Gibson Quilt	-2.89		1.83	0.11	2.93		1.94	0.13	1.79		1.89	0.34	-4.83		11.92	0.69	3.54	*	2.06	0.09	3.99	**	1.99	0.04	2.31		2.33	0.32	2.81		1.92	0.14	1.98		1.88	0.29	1.86		1.90	0.33	2.77		2.02	0.17
Type - Eureka Flag	0.06		1.10	0.96	-0.27		1.28	0.84	-0.16		1.21	0.89	-2.19		5.25	0.68	0.40		1.43	0.78	0.61		1.39	0.66	1.76		1.65	0.29	-0.21		1.28	0.87	-0.04		1.17	0.97	0.10		1.20	0.93	-0.84		1.52	0.58
Type - Trade Union Banners	-2.24		1.79	0.21	1.84		1.92	0.34	1.30		1.86	0.49	-3.63		9.54	0.70	2.21		2.00	0.27	2.04		1.98	0.30	3.17		2.21	0.15	0.54		1.92	0.78	1.69		1.84	0.36	1.49		1.86	0.42	1.75		1.97	0.37
Type - CSIRAC	-1.80		1.66	0.28	2.48		1.78	0.16	2.21		1.73	0.20	-6.05		13.63	0.66	3.79	**	1.93	0.05	3.74	*	2.01	0.06	4.06	*	2.18	0.06	2.68		1.78	0.13	2.73		1.71	0.11	1.94		1.74	0.27	2.18		1.86	0.24
Type - The Taggerty Buffet Car	0.15		1.13	0.90	-0.30		1.33	0.82	-0.51		1.23	0.68	-7.51		11.72	0.52	-0.28		1.58	0.86	1.15		1.46	0.43	1.61		1.60	0.31	-0.43		1.31	0.74	-0.45		1.21	0.71	0.05		1.24	0.97	-0.14		1.34	0.92
Type - Electric Tram No. 13	-1.91		1.95	0.33	3.75	*	2.09	0.07	3.07		2.00	0.13	0.49		5.55	0.93	3.19		2.11	0.13	2.96		2.07	0.15	3.79	*	2.29	0.10	2.92		2.06	0.16	2.32		1.99	0.24	2.08		2.03	0.31	3.69	*	2.18	0.09
Type - Church pipe organ	-3.52		2.31	0.13	2.67		2.44	0.27	2.35		2.37	0.32	-3.68		11.75	0.75	3.54		2.49	0.16	4.38	*	2.46	0.08	3.85		2.64	0.14	3.09		2.40	0.20	3.04		2.35	0.20	2.85		2.37	0.23	3.53		2.48	0.15
Type - Anzac Memorabilia	-3.15		2.39	0.19	3.72		2.49	0.13	3.04		2.44	0.21	-3.40		10.87	0.75	4.35	*	2.54	0.09	3.54		2.55	0.17	6.30	**	2.91	0.03	4.01		2.47	0.10	3.57		2.43	0.14	3.62		2.45	0.14	3.88		2.55	0.13
Type - Historic furniture	-2.06		1.65	0.21	1.62		1.78	0.36	1.12		1.73	0.52	-2.44		7.82	0.75	1.94		1.98	0.33	2.73		1.81	0.13	4.58	*	2.34	0.05	1.57		1.78	0.38	1.49		1.71	0.38	1.61		1.72	0.35	2.26		1.91	0.24
Type - Purpose designed cabinetry	-2.29		1.79	0.20	1.61		1.93	0.40	1.24		1.86	0.51	-0.17		5.98	0.98	1.45		1.99	0.46	2.76		1.93	0.15	3.26		2.15	0.13	1.55		1.89	0.41	1.98		1.83	0.28	1.12		1.88	0.55	2.14		1.98	0.28
Type - Navigational equipment	-2.68		1.87	0.15	2.77		2.02	0.17	2.36		1.93	0.22	1.58		5.00	0.75	2.56		2.06	0.21	2.79		1.99	0.16	3.95	*	2.20	0.07	1.91		1.97	0.33	2.74		1.92	0.15	1.95		1.94	0.32	2.05		2.05	0.32
Condition - Excellent vs. Very poor	-0.54		0.69	0.43	1.02		0.80	0.20	0.22		0.73	0.76	1.52		3.10	0.62	0.72		0.85	0.39	0.55		0.85	0.51	0.50		0.89	0.58	0.15		0.76	0.84	0.18		0.73	0.80	0.18		0.74	0.81	1.03		0.83	0.21
Condition - Good vs. Very poor	-0.75		0.74	0.31	1.02		0.84	0.23	1.29		0.78	0.10	0.79		1.99	0.69	0.44		0.90	0.62	0.47		0.84	0.57	1.33		0.96	0.17	0.47		0.81	0.56	1.12		0.77	0.15	0.73		0.78	0.35	0.82		0.88	0.35
Condition - Poor vs. Very poor	0.01		0.54	0.98	0.48		0.67	0.48	-0.23		0.59	0.70	2.95		5.00	0.56	0.03		0.74	0.97	-0.03		0.68	0.96	-0.15		0.76	0.85	-0.21		0.63	0.74	-0.31		0.59	0.60	0.06		0.60	0.92	0.07		0.71	0.92
Rating - Victorian vs. Local Significance	0.93		0.58	0.11	-0.55		0.64	0.39	-0.32		0.61	0.60	3.32		5.52	0.55	-0.85		0.69	0.22	-0.45		0.67	0.50	-0.67		0.77	0.38	-0.46		0.63	0.46	-0.36		0.61	0.55	-0.47		0.62	0.45	-0.74		0.67	0.27
Significance – Integral vs. in its own ri	-0.15		0.57	0.79	0.03		0.64	0.97	0.43		0.61	0.48	0.45		2.23	0.84	0.33		0.71	0.64	0.19		0.71	0.79	-0.64		0.77	0.40	0.55		0.63	0.38	-0.03		0.60	0.97	0.62		0.62	0.32	-0.10		0.67	0.88
Significance - Contributes vs. in its ow	1.02		0.71	0.15	-1.03		0.77	0.18	-1.07		0.74	0.15	-1.02		2.21	0.64	-1.03		0.82	0.21	-0.69		0.79	0.39	-1.44		0.89	0.11	-0.87		0.76	0.25	-1.10		0.73	0.13	-0.85		0.74	0.25	-1.41	*	0.79	0.07
Context - Archived/Storage vs. In Use	1.50		1.03	0.15	-1.62		1.08	0.13	-1.14		1.06	0.28	-4.55		4.51	0.31	-2.21	*	1.14	0.05	-2.21	**	1.12	0.05	-2.05	*	1.13	0.07	-1.28		1.07	0.23	-1.45		1.05	0.16	-1.86	*	1.06	0.08	-1.76		1.09	0.11
Part of an exhibition vs. In Use	1.71		1.07	0.11	-1.58		1.11	0.15	-1.66		1.09	0.13	0.86		4.53	0.85	-1.95	*	1.16	0.09	-2.33	**	1.16	0.04	-2.02	*	1.18	0.09	-1.71		1.10	0.12	-1.52		1.08	0.16	-1.58		1.09	0.15	-2.02	*	1.14	0.08
Medium to large sized public vs. Priva	1.11		0.81	0.17	-0.71		0.89	0.43	-0.54		0.87	0.54	0.87		3.54	0.81	0.17		1.07	0.88	-0.47		0.98	0.63	-1.03		1.07	0.34	-0.58		0.89	0.52	-0.50		0.85	0.55	-1.01		0.87	0.25	-0.02		0.98	0.98
Medium sized community vs. Private	0.72		0.86	0.40	-0.35		0.94	0.71	0.12		0.91	0.89	0.13		2.45	0.96	0.00		1.06	1.00	-0.72		0.99	0.46	-0.42		1.11	0.70	-0.14		0.94	0.88	-0.14		0.90	0.88	-0.37		0.91	0.68	-0.44		1.01	0.66
Small sized community vs. Private coll	0.03		0.74	0.97	0.12		0.84	0.88	0.07		0.79	0.93	3.12		4.76	0.51	0.90		0.99	0.36	0.87		0.90	0.34	0.27		0.99	0.78	0.87		0.83	0.30	0.22		0.78	0.78	-0.28		0.81	0.73	0.85		0.93	0.36
Custodianship - private collection with	0.95		0.83	0.25	-0.75		0.93	0.42	-0.58		0.89	0.51	1.44		4.12	0.73	-0.19		1.07	0.86	-0.70		0.95	0.46	-1.52		1.08	0.16	-0.75		0.92	0.42	-0.49		0.87	0.57	-0.97		0.90	0.28	-0.43		0.98	0.66
Protection - Works to conserve/protect	0.44		0.66	0.51	-0.40		0.74	0.59	-0.36		0.71	0.61	-1.17		2.56	0.65	-0.50		0.81	0.54	-0.65		0.79	0.41	-1.02		0.89	0.26	-0.05		0.74	0.95	-0.34		0.69	0.62	0.00		0.71	1.00	-0.19		0.84	0.82
Protection - Any changes allowed vs. A	0.94		0.86	0.27	-1.34		0.95	0.16	-1.42		0.90	0.11	-2.67		3.15	0.40	-1.04		0.97	0.29	-1.16		0.98	0.23	-1.73		1.06	0.10	-1.31		0.92	0.15	-1.05		0.89	0.24	-0.49		0.90	0.58	-1.26		1.01	0.21
Protection - Relocation of the object	1.29		0.97	0.18	-1.28		1.03	0.21	-1.49		1.00	0.14	-2.91		3.00	0.33	-1.22		1.07	0.26	-1.20		1.08	0.27	-1.21		1.16	0.30	-1.61		1.01	0.11	-1.29		0.99	0.20	-1.39		1.01	0.17	-1.38		1.07	0.20
- Cost (100 AUD)	0.84	*	0.46	0.07	-0.25		0.48	0.60	-0.18		0.47	0.71	-0.66		0.53	0.21	-0.11		0.54	0.84	0.14		0.55	0.79	-0.08		0.54	0.88	-0.22		0.48	0.65	-0.09		0.47	0.84	0.01		0.49	0.99	0.05		0.52	0.92

Model diagnostics	
LL at convergence	-4140.28
LL at constant(s) only	-4470.86
McFadden's pseudo-R^2	0.0739
Ben-Akiva-Lerman's pseudo-R	0.5354
AIC/*n*	1.3823
BIC/*n*	1.7171
n (observations)	6452
r (respondents)	1613
k (parameters)	319

Estimation method	weighted maximum likelihood
Optimization method	quasi-newton
Gradient	user-supplied, analytical
Hessian	off, ex-post calculated using BHHH

Attribute Interactions

Note: For reasons of space, only interactions that had a 99% or higher significance are included in this appendix. Full results are available as digital assets listed in the Digital Assets appendix.

Table E.12

Type*Age Interactions MNL in WTP space of 100AUD units		coef.	sign.	st.err.	p-value
Type - Bridge * Age - 19th century (1803-1900)		2.5421	***	0.4421	0.0000
Type - Lighthouse * Age - 19th century (1803-1900)		1.6439	***	0.4167	0.0001
Type - Police/Gaol * Age - Early 20th century (1901-18)		1.4482	***	0.5423	0.0076
Type - Trees * Age - 19th century (1803-1900)		1.4142	***	0.3552	0.0001
Type - Transport Station * Age - Interwar period (1919-45)		1.3555	***	0.4922	0.0059
Type - Police/Gaol * Age - 19th century (1803-1900)		1.2787	***	0.4663	0.0061
Type - Lighthouse * Age - Early 20th century (1901-18)		1.2547	***	0.3451	0.0003
Type - Lighthouse * Age - Post war (1946-70)		1.2096	***	0.3704	0.0011
Type - Military Site * Age - 19th century (1803-1900)		1.1112	***	0.2780	0.0001
Type - Military Site * Age - Interwar period (1919-45)		1.0997	***	0.3049	0.0003
Type - Military Site * Age - Post war (1946-70)		1.0652	***	0.2917	0.0003
Type - Lighthouse * Age - Interwar period (1919-45)		1.0485	***	0.3000	0.0005
Type - Goldrush Site * Age - 19th century (1803-1900)		1.0462	***	0.2756	0.0001
Type - Lighthouse * Age - 1971 to present		0.9085	***	0.3161	0.0041
Type - Industrial/Mining Landscape * Age - Early 20th century (1901-18)		-0.9578	***	0.3369	0.0045
Type - Industrial/Mining Landscape * Age - 1971 to present		-1.0694	***	0.3530	0.0024
Type - Wall * Age - 1971 to present		-1.1269	***	0.3491	0.0012
Type - Industrial Building * Age - 1971 to present		-1.2535	***	0.4467	0.0050

Table E.14

Type*Condition Interactions MNL in WTP space of 100AUD units		coef.	sign.	st.err.	p-value
Type - Hall * Condition - Excellent		1.8040	***	0.4731	0.0001
Type - Police/Gaol * Condition - Excellent		1.6933	***	0.4869	0.0005
Type - Lighthouse * Condition - Excellent		1.5435	***	0.3381	0.0000
Type - Transport Station * Condition - Poor		1.3133	***	0.4355	0.0026
Type - Lighthouse * Condition - Poor		1.1705	***	0.3041	0.0001
Type - Courthouse * Condition - Excellent		1.1607	***	0.3761	0.0020
Type - Gallery * Condition - Excellent		1.1168	***	0.3964	0.0048
Type - Electric Tram No. 13 * Condition - Poor		1.1129	***	0.3415	0.0011
Type - Lighthouse * Condition - Good		1.1109	***	0.3125	0.0004
Type - Electric Tram No. 13 * Condition - Very poor		1.0877	***	0.2833	0.0001
Type - CSIRAC * Condition - Excellent		1.0774	***	0.2907	0.0002
Type - Hospital * Condition - Excellent		1.0419	***	0.3696	0.0048
Type - Courthouse * Condition - Poor		1.0149	***	0.3851	0.0084
Type - Electric Tram No. 13 * Condition - Good		0.9810	***	0.2844	0.0006
Type - Military Site * Condition - Good		0.9256	***	0.2753	0.0008
Type - Bridge * Condition - Very poor		0.8644	***	0.3212	0.0071
Type - CSIRAC * Condition - Good		0.8226	***	0.3020	0.0065
Type - CSIRAC * Condition - Poor		0.7812	***	0.3017	0.0096
Type - Military Site * Condition - Excellent		0.7696	***	0.2872	0.0074
Type - Church pipe organ * Condition - Excellent		-0.7567	***	0.2909	0.0093
Type - Mining Site * Condition - Very poor		-0.8011	***	0.2945	0.0065
Type - Marianne Gibson Quilt * Condition - Excellent		-0.8859	***	0.3061	0.0038
Type - Wall * Condition - Good		-0.8965	***	0.3300	0.0066
Type - Industrial/Mining Landscape * Condition - Good		-0.9097	***	0.3470	0.0088
Type - Trade Union Banners * Condition - Very poor		-1.0295	***	0.2865	0.0003
Type - Agricultural Landscape * Condition - Poor		-1.0479	***	0.3597	0.0036
Type - Industrial/Mining Landscape * Condition - Poor		-1.1920	***	0.3377	0.0004
Type - Industrial/Mining Landscape * Condition - Very poor		-1.6897	***	0.3591	0.0000

Table E.15

Age* Condition Interactions MNL in WTP space of 100AUD units		coef.	sign.	st.err.	p-value
Age - 19th century (1803-1900) vs. 1971 to present * Condition - Excellent	LANDSCAPE	1.1989	***	0.2361	0.0000
Age - 19th century (1803-1900) vs. 1971 to present * Condition - Excellent	BUILDING	1.1404	***	0.2275	0.0000
Age - 19th century (1803-1900) vs. 1971 to present * Condition - Good	LANDSCAPE	1.0961	***	0.2284	0.0000
Age - 19th century (1803-1900) vs. 1971 to present * Condition - Very poor	LANDSCAPE	0.8046	***	0.2203	0.0003
Age - Early 20th century (1901-18) vs. 1971 to present * Condition - Excellent	LANDSCAPE	0.6621	***	0.2193	0.0025
Age - Interwar period (1919-45) vs. 1971 to present * Condition - Excellent	BUILDING	0.6611	***	0.2249	0.0033
Age - 19th century (1803-1900) vs. 1971 to present * Condition - Good	BUILDING	0.6458	***	0.2304	0.0051
Age - 19th century (1803-1900) vs. 1971 to present * Condition - Poor	LANDSCAPE	0.5982	***	0.2184	0.0062
Age - Early 20th century (1901-18) vs. 1971 to present * Condition - Excellent	BUILDING	0.5952	***	0.2132	0.0053
Age - Post war (1946-70) vs. 1971 to present * Condition - Excellent	LANDSCAPE	0.5777	***	0.2176	0.0079

Appendix F – Attributes and Levels

Table F.1

SITE TYPE levels	glossary
Residential Building	Residential Building: building that is used for human habitation. Eg houses, terraces, apartment buildings
Commercial/Retail Building	Commercial/Retail Building: A building is used for commercial/office and/or retail purposes. Eg shops, office buildings, and businesses
Industrial Building	Industrial Building: A building that is used for industrial purposes. Eg warehouses, factories
Place of Worship	Place of Worship: Any building where people gather for prayer. Eg churches, mosques, synagogues
Hotel	Hotel: An establishment providing accommodation, meals, and other services for travellers and tourists
Hall	Hall: A building or large room used for meetings, concerts, or other events
School	School/Education facility: Any building used for instruction of enrolled students, including but not limited to any day-care center, nursery school, public or private school, college, university, medical school, law school, or career and technical education school.
Bank	Bank: A place where people and businesses can invest, borrow or exchnage money
Garden	Garden: A piece of ground used for growing flowers, fruit, or vegetables, eg Residential gardens, botanic gardens, public parks
Transport Station	Transport Station: Eg train stations, tram depots, airports and ferry terminals
Hospital	Hospital: A building providing medical and surgical treatment and nursing care for sick or injured people
Police/Gaol	Police/Gaol: Eg Police station, remand centre, gaol, prison
Post Office	Post Office: A customer service facility forming part of a national postal system
Courthouse	Courthouse: A building in which courts of law are regularly held
Theatre	Theatre: A building where plays,dramatic performances and musical recitals are given
Sports Centre	Sports Centre: Eg Racecourse, cricket ground, football field, tennis centre, swimming centre
Gallery	Gallery: A building intended for the display or sale of works of art
Library	Library: A building that contained collections of books, periodicals, and sometimes films and recorded music for use or borrowing
Industrial/Mining Landscape	Industrial/Mining Landscape. Eg warehouse precincts, remains of mining sites
Agricultural Landscape	Agricultural Landscape. Eg farm buildings and environs,
Residential Landscape	Residential Landscape: Eg a cluster of similiar types of residential buildings (houses, terraces, cottages etc)
Landscape	Natural Landscape: Eg National and State Parks and Wilderness areas
Trees	Trees: Eg Trees of cultural significance
Bridge	Bridge: a structure carrying a road, path, railway, etc. across a river, road, or other obstacle.
Wall	Wall: a continuous vertical brick or stone structure that encloses or divides an area of land.
Lighthouse	Lighthouse: a tower or other type of structure designed to emit light from a system of lamps and lenses, to serve as a navigational aid for maritime pilots at sea or on inland waterways
Roadway/Avenue	Roadway/Avenue: Eg Avenues of Honour, roads, streets, historic routes
Pier/Wharf	Pier/Wharf: a level structure commencing from the shore where ships may dock to load and unload cargo or passengers
Settlement Site	Settlement Site: a site associated with the European settlement of Australia (pre 19th Century)
Military Site	Military Site: A site associated with military events or activities. Eg Army Barracks, forts'
Goldrush Site	Goldrush Site: A site associated with Victoria's gold rush between 1851 and the late 1860s. Eg gold mining sites
Mining Site	Mining Site: A site associated with mining of natural resources
Shipwreck	Shipwreck: the remains of a ship that has wrecked, which is found either beached on land or sunken to the bottom of a body of water

Table F.2

CONTROLS	
levels	glossary
Control of visitation	Control of visitation: The number of visitors to the site/place is restricted by management to protect the integrity of the building.
No control of visitation	No control of visitation: The number of visitors to the site/place is not restricted.
Control of traffic	Control of traffic: Vehicular and or pedestrian traffic is restricted around the place/site to either protect the structural integrity of the site/place or to contribute to a quiet atmosphere
No control of traffic	No control of traffic: Vehicular and or pedestrian traffic is not restricted around the place/site
Control of noise	Control of noise: The surrounding environment is regulated to restrict noise and sound pollution impacting on people's experience of the site/place
No control of noise	No control of noise: The surrounding environment is not regulated to restrict noise and sound pollution impacting on people's experience of the site/place
Measures taken to secure the asset from damage such as fire, flooding, theft and vandalism	Measures to secure the asset from damage such as fire, flooding, theft and vandalism
No special security measures	No special security measures
ACCESS	
levels	glossary
Private access only	Private only: The place/site is not accessible to the general public, unless invited by owners/management. Eg private residences
Public access - free	Public Access - free. The general public is able to access the place/site without paying an entry fee
Public access - with entry fee	Public access - with entry fee. The general public can access the place/site but must pay an entry fee
Public access - for commercial purposes	Public access - for commercial purposes. The general public can access the place/site for business purposes only- eg. To visit a commercial office as a client/customer
PLACES PROTECTED	
levels	glossary
1 place protected	1 additional place the same or similar to this one would be protected under this proposal
2 places protected	2 additional places the same or similar to this one would be protected under this proposal
5 places protected	5 additional places the same or similar to this one would be protected under this proposal
10 places protected	10 additional places the same or similar to this one would be protected under this proposal
PAYMENT	
levels	glossary
One off payment: $1	n/a
One off payment: $2	n/a
One off payment: $5	n/a
One off payment: $10	n/a
One off payment: $20	n/a
One off payment: $50	n/a
One off payment: $100	n/a
One off payment: $200	n/a

Table F.3

CONTROLS	
levels	glossary
Control of visitation	Control of visitation: The number of visitors to the site/place is restricted by management to protect the integrity of the building.
No control of visitation	No control of visitation: The number of visitors to the site/place is not restricted.
Control of traffic	Control of traffic: Vehicular and or pedestrian traffic is restricted around the place/site to either protect the structural integrity of the site/place or to contribute to a quiet atmosphere
No control of traffic	No control of traffic: Vehicular and or pedestrian traffic is not restricted around the place/site
Control of noise	Control of noise: The surrounding environment is regulated to restrict noise and sound pollution impacting on people's experience of the site/place
No control of noise	No control of noise: The surrounding environment is not regulated to restrict noise and sound pollution impacting on people's experience of the site/place
Measures taken to secure the asset from damage such as fire, flooding, theft and vandalism	Measures to secure the asset from damage such as fire, flooding, theft and vandalism
No special security measures	No special security measures
ACCESS	
levels	glossary
Private access only	Private only: The place/site is not accessible to the general public, unless invited by owners/management. Eg private residences
Public access - free	Public Access - free. The general public is able to access the place/site without paying an entry fee
Public access - with entry fee	Public access - with entry fee. The general public can access the place/site but must pay an entry fee
Public access - for commercial purposes	Public access - for commercial purposes. The general public can access the place/site for business purposes only- eg. To visit a commercial office as a client/customer
PLACES PROTECTED	
levels	glossary
1 place protected	1 additional place the same or similar to this one would be protected under this proposal
2 places protected	2 additional places the same or similar to this one would be protected under this proposal
5 places protected	5 additional places the same or similar to this one would be protected under this proposal
10 places protected	10 additional places the same or similar to this one would be protected under this proposal
PAYMENT	
levels	glossary
One off payment: $1	n/a
One off payment: $2	n/a
One off payment: $5	n/a
One off payment: $10	n/a
One off payment: $20	n/a
One off payment: $50	n/a
One off payment: $100	n/a
One off payment: $200	n/a

Table F.4

OBJECT TYPE levels	glossary
Minton Peacock	Minton Peacock: The 'Loch Ard' ship was shipwrecked along the South West Coast of Victoria. Two days after the shipwreck a wooden packing crate which contained the Minton Peacock was washed onto the beach.. The Loch Ard Peacock is the most notable artefact to be salvaged from the shipwreck which is recognised as one of Australia's worst shipwreck tragedies. The Minton Peacock was the largest and grandest of the items in the Loch Ard's cargo, and is associated with the Loch Ard shipwreck, the 1880-1881 Melbourne International Exhibition and the opening of the Royal Exhibition Building
Marianne Gibson Quilt	Marianne Gibson Quilt: The Marianne Gibson crazy quilt has aesthetic significance as an outstanding example of the craft of crazy quilting. It is a rare unfaded example of a 19th century quilt and the largest known crazy quilt in Victoria. As a sophisticated artwork in its own right, it is a significant example of a woman's creative self expression in an era where this was restricted to textile arts such as embroidery and quilting.
Ballarat Reform League Charter	Ballarat Reform League Charter: The Ballarat Reform League Charter is a four-page handwritten manifesto of democratic principles and demands, presented to Governor Hotham a few weeks before the Eureka rebellion. The Ballarat Reform League Charter is a central feature of the Eureka story, one of the most significant and influential events in Australia's political and social history.
Eureka Flag	Eureka Flag: The flag is an important historical relic, symbolising Australia's only armed rebellion against the government which took place onVvictorian goldfields and lasted just six days. The flag has been used as a symbol of protest by diverse organisations individuals.
Trade Union Banners	Trade Union Banners: The banners have historical significance for their association with the Eight Hour Day movement. The symbol of the Eight Hour Day movement, the entwined figure of eight, appears on many of the banners. The granting of the Eight Hour Day was one of the most important industrial reforms won by unionists in the 19th century, contributing towards the image of Australia as the 'working man's paradise in the late 19th century and development of organised labour.
CSIRAC - The first computer in Australia	CSIRAC (Commonwealth Scientific and Industrial Research Organisation Computer), is Australia's first programmable digital computer and the only surviving intact generation in world. it is considered to be one of australia's foremost technological achievements. Many founders in the software industry were trained on CSIRAC.
The Taggerty Buffet Car	The Taggerty Buffet Car was originally built for the Victorian Railways in 1910 at the Newport Railway Workshops. It is significant as the earliest surviving, largely intact composite buffet and sitting carriage in Victoria. It was introduced on Victorian rail services, mainly the Bendigo line from early 1937.
Electric Tram No. 13, located at Hawthorn Tram Depot	Electric Tram No. 13, located at Hawthorn Tram Depot, is of technical significance as a rare example of the first type of cross-bench electric tram to be operated in Melbourne. While an imported design, it shows the origins of many of the standard elements which became part of the design of later trams built by municipal tramways and later the Melbourne and Metropolitan Tramways Board.
Church Pipe Organ	Church pipe organ: A historically significant pipe organ housed in a church.
Anzac Memorabilia	Anzac Memorabilia: e.g. Honour boards recognising service to an organisation, company, club or community. They were often used as memorial tributes to people who served or were killed in military conflicts.
Historic Furniture	Historic furniture: furniture that an historical association with the use or function of a heritage place.
Purpose Designed Cabinetry	Purpose designed cabinetry: cabinetry that was constructed to enable the original or significant use or function of a heritage place.
Navigational Equipment	Navigational equipment: equipment that is important in understanding the navigational function of a heritage place or is significant is its own right as an instrument used by nautical navigators or pilots.

Table F.5

CONDITION	
levels	glossary
Excellent condition	Excellent condition - object is intact, well maintained, with no repairs needed
Good condition	Good condition - object is 75% or more intact, reasonably maintained but in need of minor repair or conservation
Poor condition	Poor condition - object is 50-75% intact, showing signs of a lack of appropriate maintenance and requires minor - major repair or conservation
Very poor condition	Very poor condition - object is less than 50% intact, demonstrates little or no maintenance or requires significant repair or conservation
REGISTER	**0**
levels	glossary
Included in the Victorian Heritage Register	The object is proposed to be included in the Victorian Heritage Register
Not included in the Victorian Heritage Register	The object is not proposed to be included in the Victorian Heritage Register
SIGNIFICANCE	**0**
levels	glossary
Significant object in its own right	Significant object in its own right
Integral to significance of a heritage listed place	Integral to significance of a heritage listed place
Contributes to the significance of a heritage collection	Contributes to the significance of a heritage collection
CONTEXT	**0**
levels	glossary
Archived/Storage	Archived/Storage: The object is not on display and is in storage/held in an archive
Part of an exhibition	Part of an exhibition: The object forms part of an exhibition in a museum, gallery or heritage building.
In use	In Use: The object is still in operation and use
CUSTODIANSHIP	**0**
levels	glossary
Custodian is a medium to large sized public collecting organisation - professional staff - publicly accessible 5-7 days a week	Custodian would become a medium to large sized public collecting organisation - professional staff - publicly accessible 5-7 days a week
Custodian is a medium-sized community collecting organisation - mix of volunteer and professional staff - publicly accessible 1-5 days a week	Custodian would become a medium-sized community collecting organisation - mix of volunteer and professional staff - publicly accessible 1-5 days a week
Custodian is a small, community collecting organisation - volunteer staff - publicly accessible 1-2 days a week or by appointment	Custodian would become a small, community collecting organisation - volunteer staff - publicly accessible 1-2 days a week or by appointment
Custodian is a private collection - publicly accessible by appointment	Custodian would be a private collection - publicly accessible by appointment
Custodian is a private collection - no public access	Custodian would become a private collection - no public access
CHANGES & RELOCATION	
levels	glossary
Any changes or relocation are subject to permit approval	Any changes or relocation are subject to permit approval: Any material changes to the object such as painting, conservation works or repairs, or any other modification are subject to permit approval. Permit approval can be provided by a number of regulatory authorities.
Works to conserve/protect the object are allowed through a permit exemption	Works to conserve/protect the object are allowed through a permit exemption
Permit exemptions in place for all works or activities	Permit exemptions in place for all works or activities: Any changes to the object such as painting, conservation works or repairs, or any other modification or relocation do not require a permit
(New) Relocation of the object is allowed with a permit exemption	(New) Relocation of the object is allowed with a permit exemption

Figure F.1

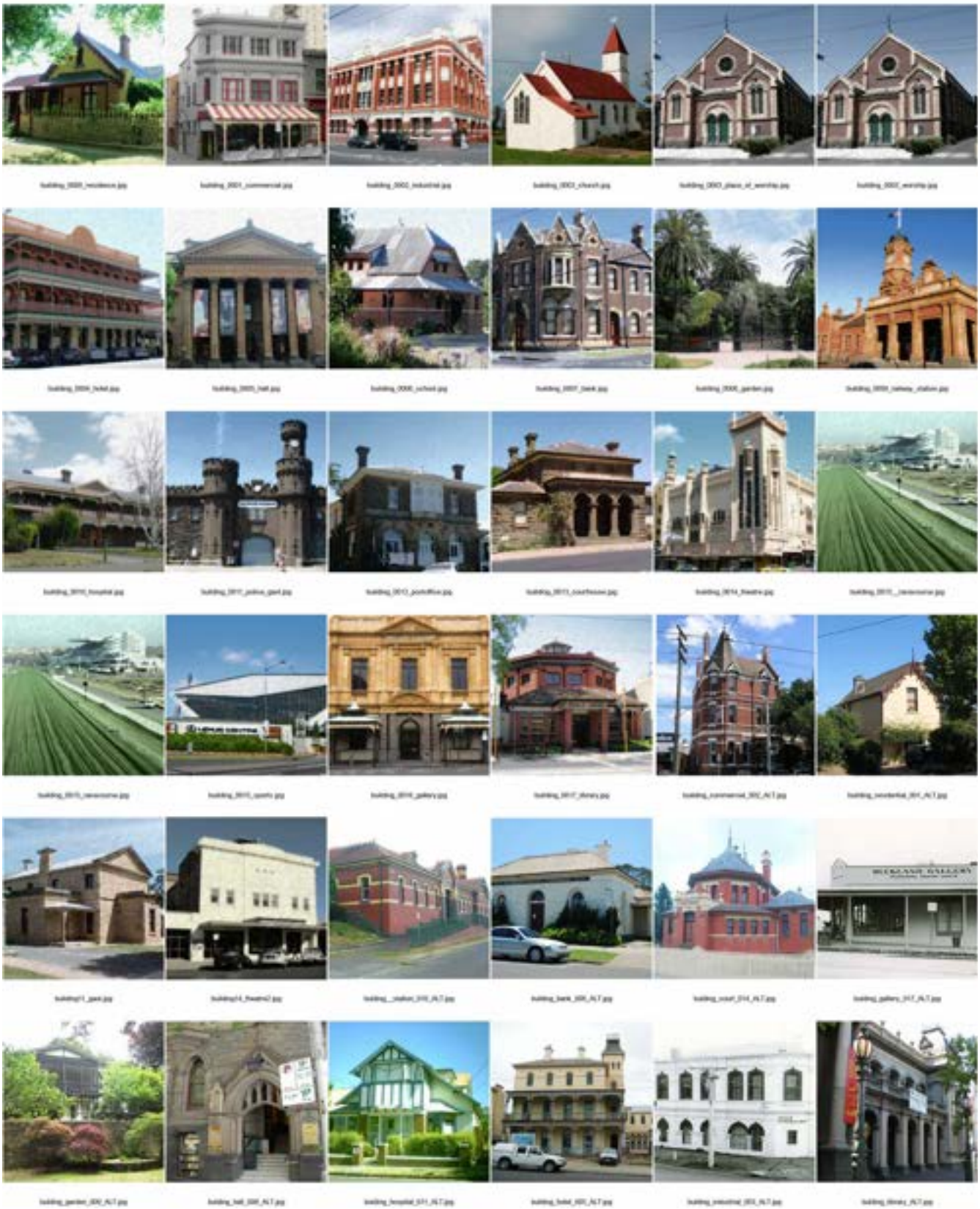


Figure F.1

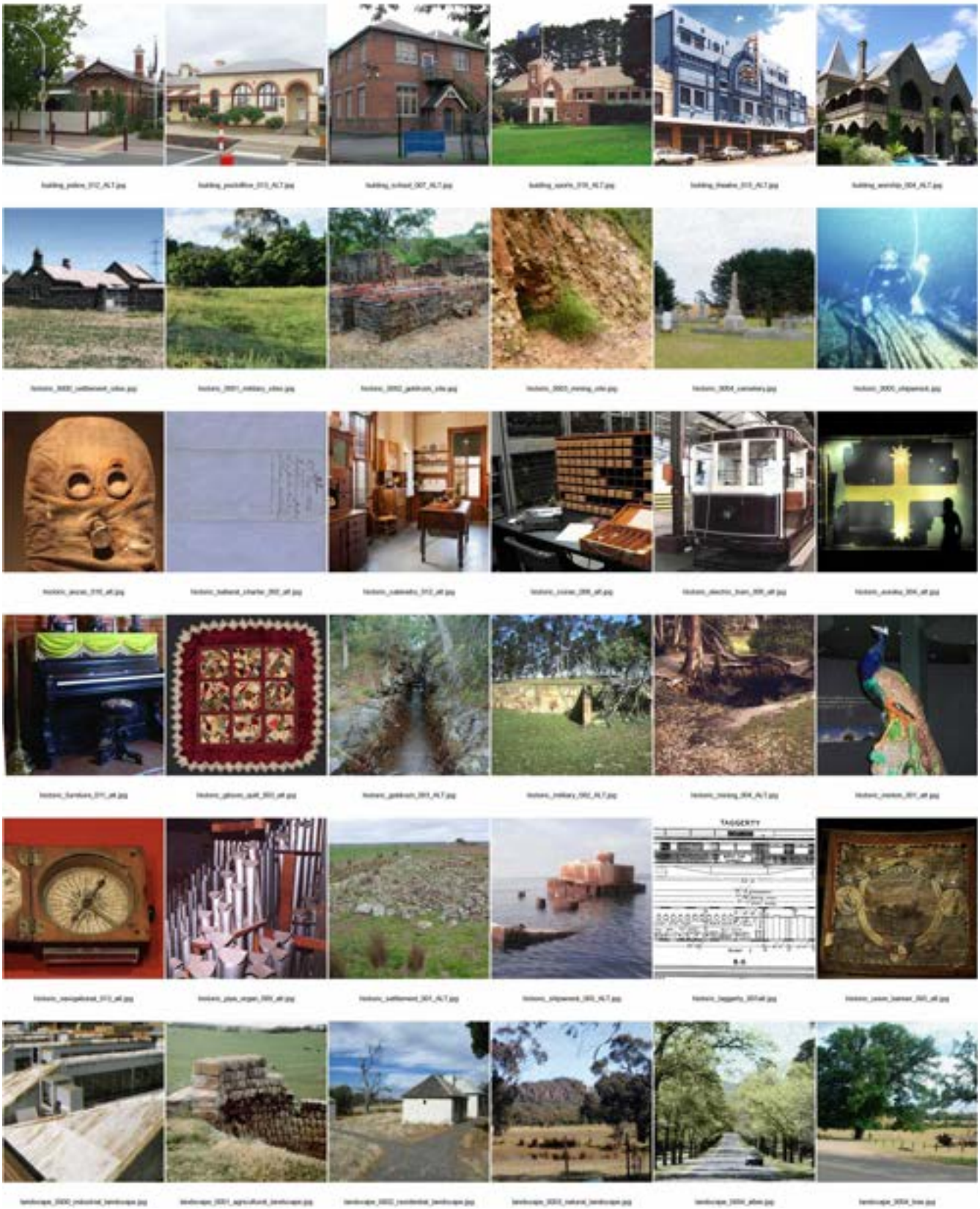
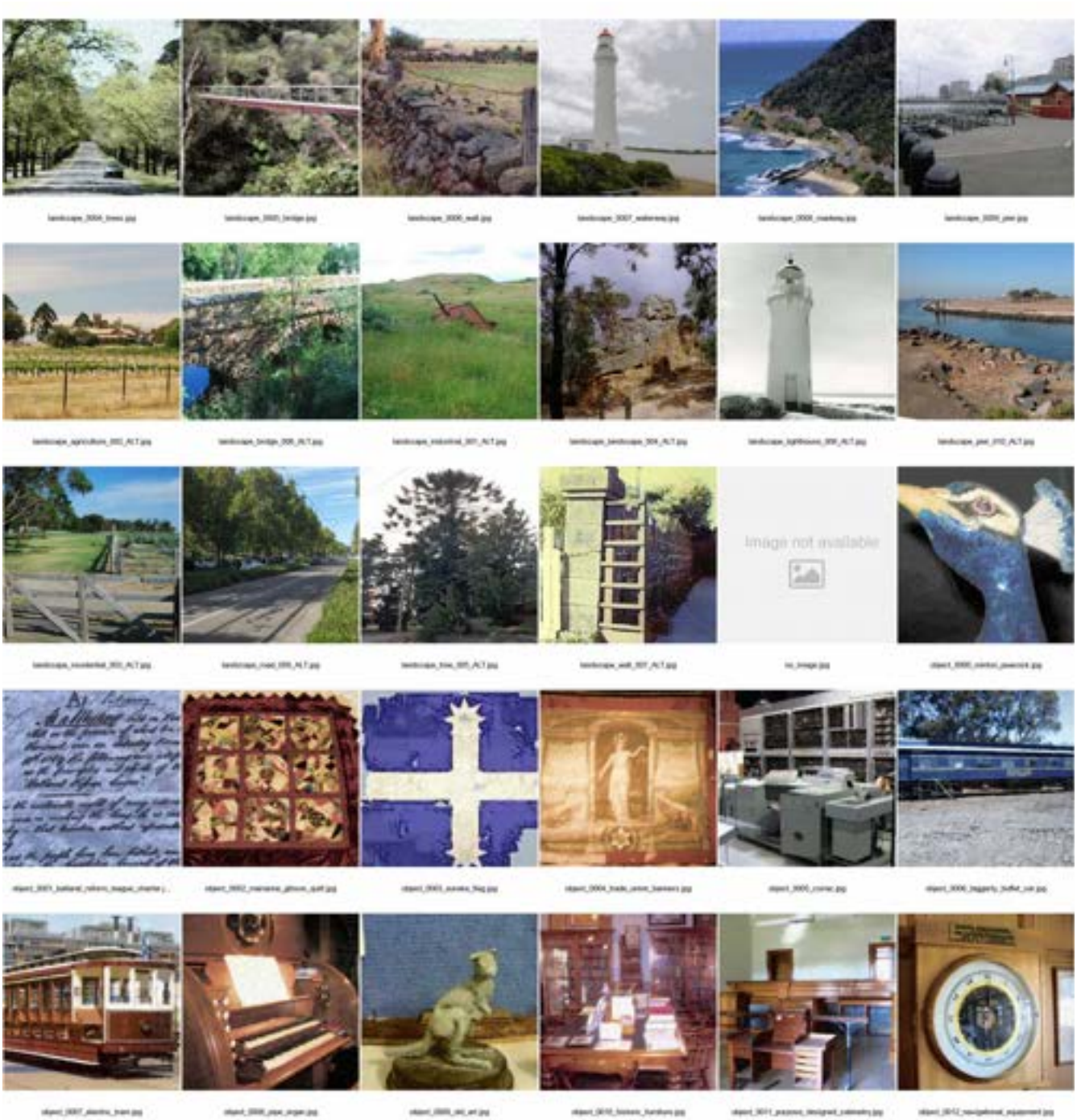


Figure F.3



Appendix G – Experiment Screenshots

Figure G.1

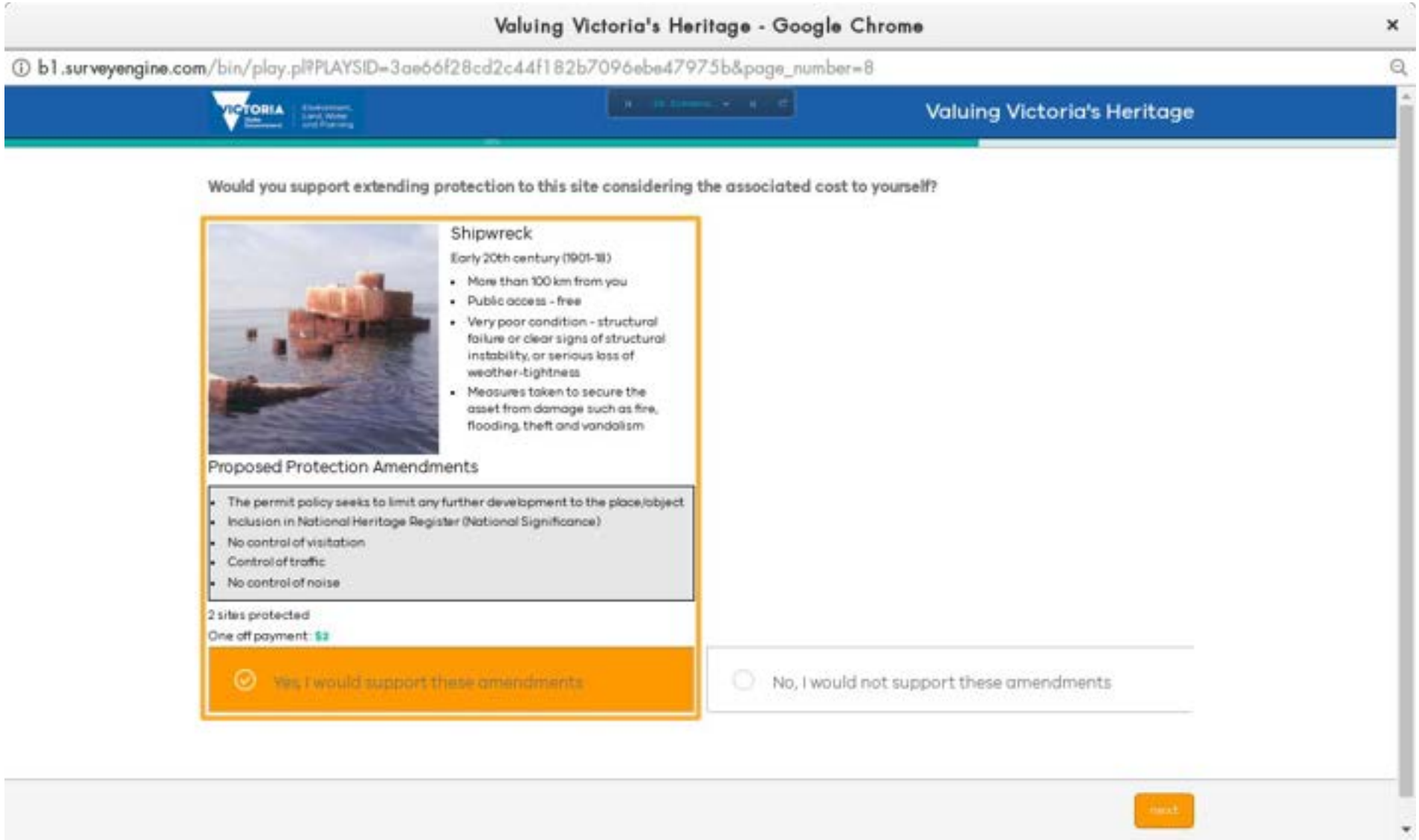

Valuing Victoria's Heritage - Google Chrome
b1.surveyengine.com/bin/play.pl?PLAYSID=3ae66f28cd2c44f182b7096ebe47975b&page_number=8
Valuing Victoria's Heritage
Would you support extending protection to this site considering the associated cost to yourself?
Shipwreck
Early 20th century (1901-18)
More than 100 km from you
Public access - free
Very poor condition - structural failure or clear signs of structural instability, or serious loss of weather-tightness
Measures taken to secure the asset from damage such as fire, flooding, theft and vandalism
Proposed Protection Amendments
The permit policy seeks to limit any further development to the place/object
Inclusion in National Heritage Register (National Significance)
No control of visitation
Control of traffic
No control of noise
2 sites protected
One off payment: $2
Yes, I would support these amendments
No, I would not support these amendments

Figure G.2

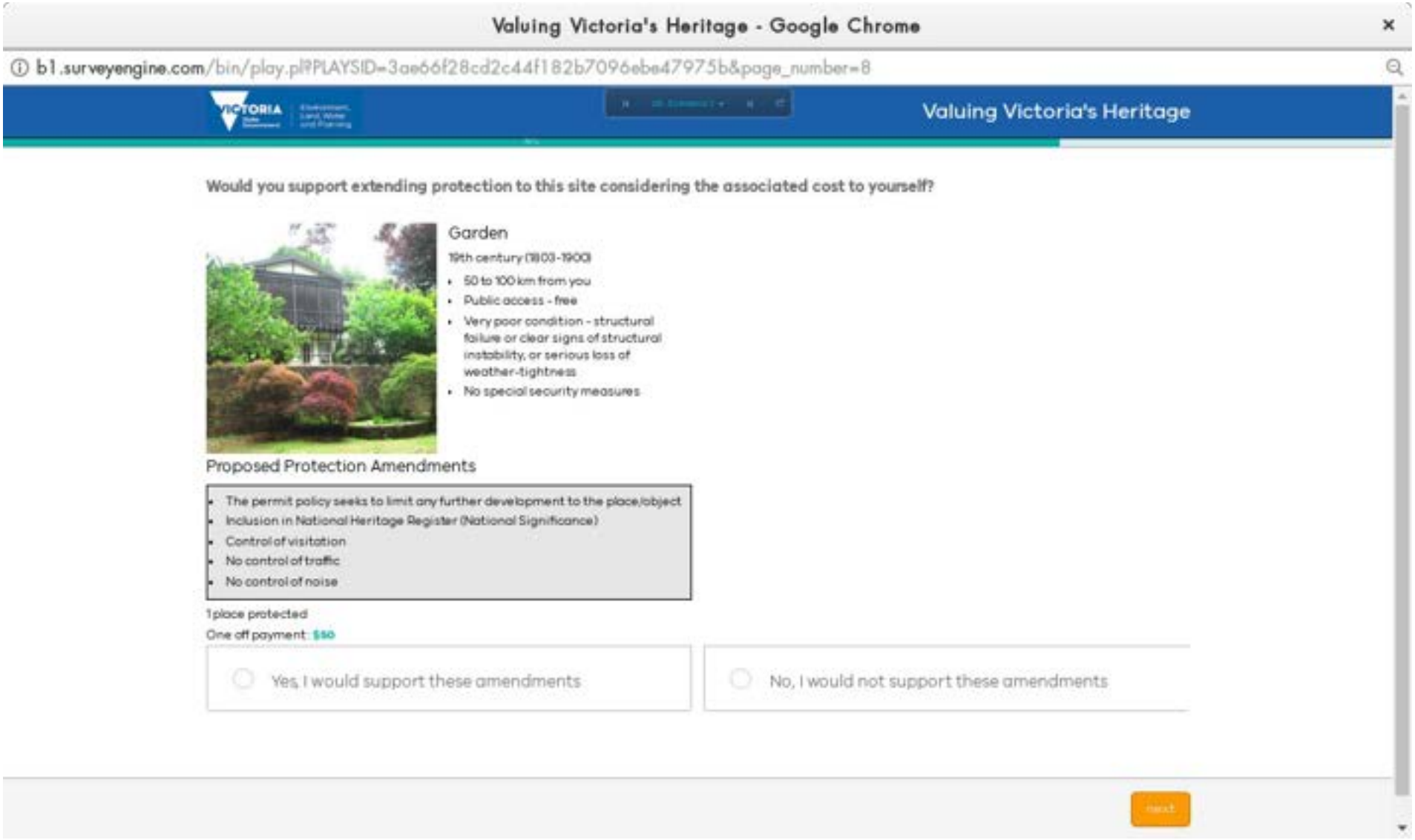
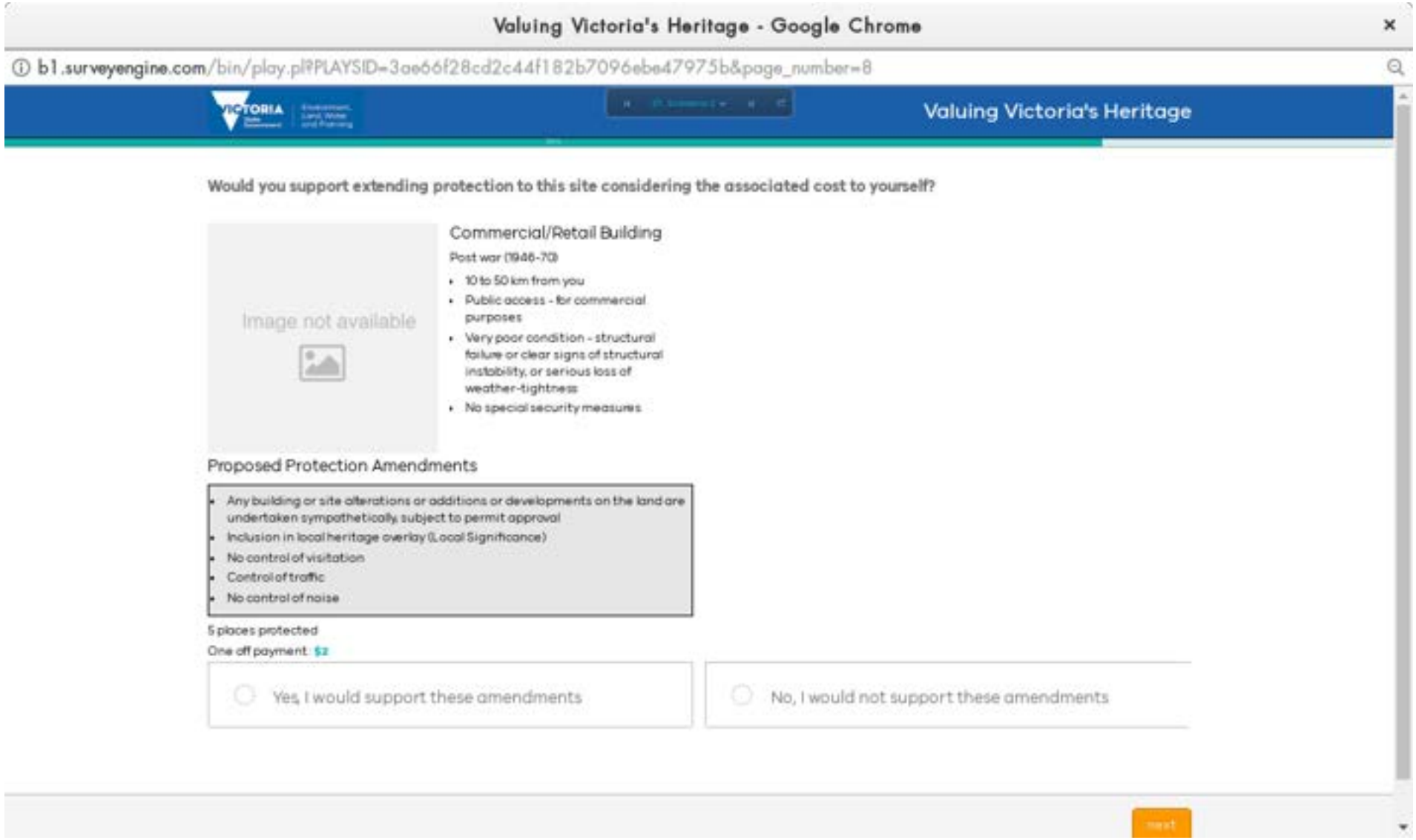

Valuing Victoria's Heritage - Google Chrome
b1.surveyengine.com/bin/play.pl?PLAYSID=3ae66f28cd2c44f182b7096ebe47975b&page_number=8
Valuing Victoria's Heritage
Would you support extending protection to this site considering the associated cost to yourself?
Garden
19th century (1803-1900)
50 to 100 km from you
Public access - free
Very poor condition - structural failure or clear signs of structural instability, or serious loss of weather-tightness
No special security measures
Proposed Protection Amendments
The permit policy seeks to limit any further development to the place/object
Inclusion in National Heritage Register (National Significance)
Control of visitation
No control of traffic
No control of noise
1 place protected
One off payment: $50
Yes, I would support these amendments
No, I would not support these amendments

Figure G.3


Valuing Victoria's Heritage - Google Chrome
b1.surveyengine.com/bin/play.pl?PLAYSID=3ae66f28cd2c44f182b7096ebe47975b&page_number=8
Valuing Victoria's Heritage
Would you support extending protection to this site considering the associated cost to yourself?
Image not available
Commercial/Retail Building
Post war (1946-70)
10 to 50 km from you
Public access - for commercial purposes
Very poor condition - structural failure or clear signs of structural instability, or serious loss of weather-tightness
No special security measures
Proposed Protection Amendments
Any building or site alterations or additions or developments on the land are undertaken sympathetically, subject to permit approval
Inclusion in local heritage overlay (Local Significance)
No control of visitation
Control of traffic
No control of noise
5 places protected
One off payment $2
Yes, I would support these amendments
No, I would not support these amendments
next

Appendix H – Digital Assets

Below is a list of digital assets not included in this report but available as an accompanying digital archive.

ITEM	FORMAT
Experiment Instrument	
Experiment Instrument project file	SurveyEngine project file
All Survey and Experiment screens	PDF
Data Files	
covariate data file	Matlab
Buildings Experiment Choice data	Matlab
Landscape Experiment Choice data	Matlab
Historic Sites Experiment Choice data	Matlab
Heritage Objects Experiment Choice data	Matlab
Page timestamp data file	Excel
Additional Models	
All Attribute Interactions models	Excel

Appendix I – Sources

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APPENDIX F

Practical Valuation Guide

Victorian Heritage Valuations

survey engine
decision modelling technology

Practical Valuation Guide

Version
06.06.2017, version 1.2
Authors
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This addendum provides guidance on using the Victorian Heritage Willingness-to-Pay models for various types of valuation.

1 Relative Valuation of Assets

When wishing to compare the heritage value of two or more different heritage assets in different conditions.

method:

Calculate the total WTP for each asset by summing the marginal WTP values for each attribute.

Note:

All attributes values should be used in the WTP calculation. Omission of any value may lead in incorrect values

2 Marginal Improvement Valuation

When making a decision which set of improvements or protections for an an object yield the best value

method:

Calculate the 'status quo' WTP by summing all attribute WTP. Then recalculate the WTP for each of the improvement scenarios e.g. traffic control, register inclusion etc. The scenario with the highest WTP will have the best overall value.

3 Portfolio Valuation - by an individual

When wishing to calculate the WTP an individual would place on a portfolio of assets e.g. a building, a Streetscape and a set of historic objects.

In this case we instead calculate a lower and upper bound. The true portfolio value will lie between these two values.

Lower bound calculation method

The total WTP for the portfolio should not be lower than the asset with the maximum WTP. Using the asset with the highest WTP will establish a lower bound on total WTP

Upper bound method

The upper limit of the portfolio WTP can be calculated by assuming that the maximum portfolio WTP will not be greater than the asset with the highest WTP (as above) plus the per number of assets WTP for the number of assets in the portfolio.

NOTE: Naively adding the WTP for each asset together and multiplying by catchment is likely to greatly overvalue total WTP. This is because all the models show very small incremental estimates of 'number' of protected assets for the same type of asset. This is expected to hold for different types of assets.

4 Absolute WTP estimation

When it is required to place an absolute WTP value to compare (for example) demolition or replacement of a heritage asset.

Since the models estimate a WTP at an individual level, calculating an absolute WTP involves addition of the individual WTP values to a group of individuals. Selection of the group size, typically as from catchment population data. Such a calculation will be particularly sensitive to the catchment chosen and should be performed with caution.

method

The 'Relevant Population' method of determining catchment is common is such valuations. In this method, a catchment is judiciously chosen such that only people that are affected by the decision are included in the calculation (Bateman *et al.*, 2004; Champ, Boyle and Brown, 2017) .

Since we know that people's WTP for an additional item is very small (we assume zero), we can infer the relevant catchment for any project considered as the population for whom the distance to the site considered in the project would be lower than the distance to a close substitute. In other words, a catchment should only consider people who are closer to the heritage asset under consideration for, than to another heritage asset. Further that this consideration be the only one occurring within a one year period.

example

For example, a council decision on whether to demolish a local church and sell the land would involve a catchment of the local council rate-paying population only (assuming there was only one church)

In this case, the heritage WTP could be calculated as such: If the church was of local significance, had public access, was built in 1900's and in good condition (-$52 +$30 +$21 +$33) and the average distance to the church was 10 km (a marginal WTP of -$2.96) yielding a total WTP of $29. If the council population was 20,000. WTP could be estimated at $29 x 20,000, yielding a WTP of $480,000.

NOTE: WTP estimates should not be used for catchments larger than 100km radially. Catchments should not be larger that the next available asset substitute and the estimations are only valid for a single asset within a one year period.

Note also that when the number of assets in the portfolio exceeds 10, being the limit of the models, either this number should be used in place as the maximum or other valuation methods.

5 Calculation of Total WTP for Victoria

The 2017 Model results have limitations

Calculations of Victoria-Wide WTP using the main 2017 study models should be taken with care as critical parameters of number of places protected and distance to the asset are likely to be out of bounds for extrapolation. The 2017 models permit estimations for number of protected places to a maximum of 10 at a maximum distance of 100km.

This merely imposes a maximum extrapolation range and therefore a conservative estimate of state-wide WTP. It is instructive to use the two replication which do explore the ranges of number of places protected above 1000 – abeit with different comparison restrictions. We can apply the portfolio valuation method to each of the study results as below and compare them.

These results are calculated using the portfolio valuation method above and using assumptions about average distances in the calculations section below.

For the purposes of comparison, two optimal assets were used in the valuation (a Lighthouse and a Gallery), the 2005 ACG study makes no differentiation of asset type so, ceteris paribus, the models are assumed to encompass all attributes as the 2017 main study.

	2017 Main Lighthouse	2017 Main Gallery	2017 Replication	2005 Original ACG
MIN WTP (individual)	$227.21	$246.05	$240.31	$481.07
MAX WTP (individual)	$256.01	$246.05	$251.59	$494.52
Adult Population (Millions)	$4.60	$4.60	$4.60	$3.70
MIN WTP (VIC) – Billions	**$1.05**	**$1.13**	**$1.11**	**$1.78**
MAX WTP (VIC) – Billions	**$1.18**	**$1.13**	**$1.16**	**$1.83**

6 Calculations

Calculation of the average distance from a heritage asset in Victoria. This assumes an even distribution of assets and the geometry of each unit area containing an asset is square.

Distance Calculations

Average Asset Distance – Land	
Number of assets	2,432
VIC area (km2)	237,630
Area per asset (km2)	98
Average distance from asset (km)	**2.8**

Calculation of the average distance from a coastal heritage asset in Victoria. This assumes all assets are on the perimeter of a square of equivalent are to the state of Victoria.

Average Distance Calculation – Coastal	
VIC area (km2)	237,630
Equivalent Square dimensions (km)	487
average distance from coast (km)	244

Calculation of Max individual WTP from 2017 Main Study

Two candidate asset cases are considered – a Building and a Landscape.

Case 1 – Building

Assumes a single asset with all optimal WTP settings at the average asset land distance.

Attribute	Unit WTP
Gallery	$26.23
19th century (1803-1900)	$45.86
Excellent condition	$70.75
State Significance	$21.67
No permit required for interior alterations	$27.69
Control of noise	$14.19
Control of traffic	$17.13
Public access - for commercial purposes	$23.55
Number of places (per additional)	$0.00
Asset WTP	**$247.07**
average distance (km)	2.8
distance WTP	-$1.02
TOTAL SINGLE ASSET WTP	**$246.05**
Marginal WTP for 10 places	$0.00
TOTAL MAXIMUM ASSET WTP	**$246.05**

Case 2 – Landscape

Note in this case as the asset is always coastal – the distance WTP is larger than a land asset.

Attribute	Unit WTP
Lighthouse	$85.06
19th century (1803-1900)	$77.69
Excellent condition	$42.49
National Significance	$2.04
No permit required for interior alterations	$7.52
Control of traffic	$20.81
Public access - free	$24.92
Number of places (per additional)	$3.20
Asset WTP	**$263.72**
average distance (km) *note using max valid distance (100km)*	100
distance WTP	-$36.52
TOTAL MINIMUM ASSET WTP	**$227.21**
Marginal WTP for additional 9 places	$28.80
TOTAL MAXIMUM ASSET WTP	**$256.01**

Calculation of WTP from Replication Studies

Calculation of total WTP is acheived by calculating the increased utility and therefore WTP from the change from no asset to the maximum number of assets at the greatest positive change at the optimal WTP.

2017 replication					
Attribute	**Current Level**	**Change**	**Implicit Price Per Person**	**Units of attribute change**	**Annual Aggregate**
Places protected from loss	0	2432	$4.64	Per 1000	$11.28
Proportion of sites in good condition	20%	80%	$0.33	Per 1% increase	$26.40
Age Mix (proportion of sites over 100 years old)	80%	20%	$0.14	Per 1% reduction	$0.00
Proportion of places accessible to the public	10%	90%	$1.86	Per 1% increase	$167.40
Development control		Only minor modifications permitted	$46.51		$46.51
TOTAL Individual WTP					**$251.59**

2005 ACG Study					
Attribute	**Current Level**	**Change**	**Implicit Price Per Person**	**Units of attribute change**	**Annual Aggregate**
Places protected from loss	0	2432	$5.53	Per 1000	$13.45
Proportion of sites in good condition	20%	80%	$1.35	Per 1% increase	$108.00
Age Mix (proportion of sites over 100 years old)	80%	20%	-$0.20	Per 1% reduction	-$4.00
Proportion of places accessible to the public	10%	90%	$3.60	Per 1% increase	$324.00
Development control		Only minor modifications permitted	$53.07		$53.07
TOTAL Individual WTP					**$494.52**

7 Methodological Notes

A critical component of determining the total economic value is defining the relevant population of individuals (Bateman et al., 2004; Champ, Boyle and Brown, 2017). While the simple answer to this might seem to be that anyone who values the change should be included, the relevant population typically depends on the context of the study, and is determined by whether use values (e.g., people who actually get to see a protected object) or also non-use values should be included (with non-use or policy-specific values known to be relatively insensitive to the scope of the change). Segerson (2017) notes that whether a regional or more local measure of benefits is appropriate depends on how the policy decision will be made. If policymakers are willing to adopt the policy as long as benefits exceed the costs that the region would incur (even if local benefits do not), then the benefit measure should be at the regional scale. However, if policymakers will base their decision on whether the local community will realise a net benefit, a more localised measure of benefits is needed.

Most studies use geopolitical boundaries such as a city, county, or region to define the relevant study population. As Boyle (2017) notes, “the literature provides little guidance for selecting study populations (those who are affected by the change), but two points of consideration are useful. First, geopolitical boundaries are useful for identifying locations affected by the change being valued and those who will pay for the change to be implemented. Second, a spatially referenced sample will allow for an investigation of how value estimates change with distance from the affected area.” Aggregation of benefits over larger areas is therefore additionally complicated by the fact that values often decrease or increase with distance and this can affect the magnitude of aggregate welfare calculations (Hanley, Schläpfer and Spurgeon, 2003; Bateman et al., 2006).

Holmes, Adamowicz and Carlsson (2017) suggest that the geographic scope of a study would include consideration of whose values are to be included in the valuation or benefit-cost analysis. Despite administering the survey to citizens of Victoria, it is likely that only the local population would be impacted by changes in policy – at least with respect to use value of the changes. In addition, the location of substitute sites is important and, especially that as revealed by our results, the WTP function is very elastic with respect to the number of places protected. As a result, it is reasonable to expect that WTP of people who have a close substitute to the considered item available at a closer distance would be much lower. We therefore suggest assuming that their WTP is equal to zero, and only summing over the population who is closer to the considered site, than a site that can be considered a close substitute.

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