HERITAGE COUNCIL VICTORIA

This report was commissioned by the Heritage Council of Victoria in 2023 to understand the existing research on the value of heritage to the community. The Heritage Council is pleased to share this resource publicly.

It contains a synthesis of current research on:

- the social, economic, and environmental value of heritage to Australian communities
- a summary of some of the gaps in the available research.

Its primary focus is on research from Australia, but it also includes relevant data from overseas.

The report is the work of Public Value Consulting with Extent Heritage, and is provided without edit. The content, research priorities, and recommendations are the views of the authors and have not been endorsed by the Heritage Council.

The Heritage Council thanks Kate Clark, Leo Martin and Vivian Lu for their extensive investigation, and thorough reporting and documentation of publicly available research. The report paints a picture of the breadth of resource material. Publication of the report by the Council is intended to encourage industry discussion and further research in emerging areas of interest.

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AUGUST 2023

REPORT FOR THE HERITAGE
COUNCIL OF VICTORIA 2023

OVERVIEW
MAIN REPORT
ANNEXES

WHY HERITAGE?

A SYNTHESIS OF EVIDENCE FOR THE SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS OF CULTURAL HERITAGE

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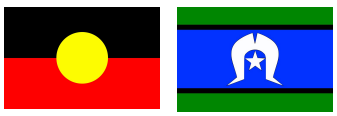
CONTENTS

LIST OF FIGURES

ACKNOWLEDGEMENT OF COUNTRY

This report was drafted on the land of the Ngunnawal people in Canberra and Gadigal people in Sydney (Eora) and the Wurunjderi people in Melbourne (Naarm). The authors pay their respects to traditional owners, past and present.

This report acknowledges Dhawura Ngilan – the vision for Aboriginal and Torres Strait Islander heritage in Australia and the best practice standards in Indigenous cultural heritage management and legislation.[1] This stresses the importance of Indigenous leadership, self- determination and engagement in relation cultural heritage. We also acknowledge Our Knowledge, Our Way, the guide to Indigenous-led approaches to strengthening and sharing their knowledge for land and sea management.[2]



[1] Department of Climate Change, Energy, the Environment and Water, 'Dhawura Ngilan: A Vision for Aboriginal and Torres Strait Islander Heritage in Australia' (Canberra: Heritage Chairs of Australia and New Zealand, 2020).
[2] Emma Woodard et al., 'Our Knowledge Our Way in Caring for Country' (Canberra: NAILSMA and CSIRO, 2020).

DISCLAIMER

This is a report to the Heritage Council of Victoria. Whilst the report has been developed in consultation with council members, the final report represents the views of the consultants and not those of the Heritage Council of Victoria. The recommendations are simply matters for consideration.

The information in this report has been sourced from desktop research, publications and websites. Whilst all due care has been taken in compiling this document PVC and Extent Heritage accept no responsibility for accurateness and completeness of information gained from these resources.

Note that we are heritage specialists and do not claim expertise in economics, sciences, public health or other research disciplines. We are therefore not qualified to comment on the robustness of the data, the quality of research or methodologies for studies cited here. Users should exercise their own care and judgement and refer to the original research to understand the full implications of the cited work including limitations.

THANK YOU

We would like to thank the members of the Heritage Council of Victoria's Steering Committee, and staff from both the Heritage Council of Victoria's Secretariat and, Heritage Victoria, as well as Jim Gard'ner of GJM Heritage and others for their invaluable assistance in helping to source material.

STRUCTURE OF THIS REPORT

Overview

This section includes an **executive summary** for the report. Headline findings from the report are set out in a graphic and a list of ten **heritage myths** setting out some of the key assumptions about heritage and the evidence that does (or does not) support them. A table summarises **gaps** in the research.

Main Report

The evidence is grouped around five chapters, focussed on public policy agendas for Victoria where heritage can make a potential contribution.

The main report reviews existing evidence for the social, environmental and economic impact of engaging with or caring for cultural heritage. The evidence is grouped around five chapters, focussed on public policy agendas for Victoria where heritage can make a potential contribution.

Chapter 1 reviews evidence for the **social impact** of heritage, Chapter 2 looks at evidence for the role of heritage in addressing **environmental issues** (focussing on the built environment). Chapter 3 explores the role of heritage in **planning and place-making**, and chapter 4 looks at the link between heritage and the **arts**. Chapter 5 reviews the contribution of heritage to **economic prosperity**. Chapter 6 describes **research gaps** in more detail, including immediate priorities for Victoria, and topics that might benefit from collaboration between agencies to avoid repetition.

The epilogue identifies four big underpinning strategic heritage policy research questions that have emerged from this report:

- learning from Indigenous approaches to cultural heritage,
- the role of heritage in wellbeing,
- the role of heritage conservation in addressing climate change,
- and the potential for more sophisticated economic modelling using a culture and heritage capital model adapted from natural capital approaches.

A **glossary** defines terms as they are used in this report. There is a separate **list of abbreviations** and a full **bibliography**.

Annexes

The project started with heritage stocktake for Victoria. The first part of that stocktake is in Annex 1 which provides data on heritage **activities** in Victoria including the different ways that people engage with heritage and also funding for heritage. The second part in Annex 2 provides data heritage **assets** and their condition.

Annex 3 summarises research on **attitudes to heritage** in Australia – this is not included in the main report as it is not strictly evidence for the difference heritage can make to social, economic or environmental policy outcomes but is relevant to understanding the social and economic values of heritage.

This is a fast-growing field of research, and this report does not claim to be comprehensive. Therefore Annex 4 directs readers to **other recent syntheses** for Australia and internationally, including some recent systematic evidence reviews whilst Annex 5 identifies **web resources** for finding further research and evidence.

EXECUTIVE SUMMARY

This report synthesises evidence for the **economic, social** and **environmental** impacts of cultural heritage in Victoria. It takes a **broad view of cultural heritage** covering both heritage activities and assets, as many of the impacts of cultural heritage arise not just from the assets themselves, but how people engage with them.

The focus is on evidence for the **impact** of engaging with cultural heritage, covering both the impact of taking part in heritage activities and cultural heritage assets. The report is not about the significance of heritage in the sense of assessing the different cultural values or thresholds of significance that might justify a decision to protect a heritage object, place or collection. Instead, it is about the **difference** that engaging with or caring for heritage can make to people, the economy and the environment.

The report synthesises a wide range of evidence across multiple disciplines, including the work of cultural economists, social scientists, property economists, planners, psychologists and other scientists, drawing on both peer-reviewed publications and grey literature.

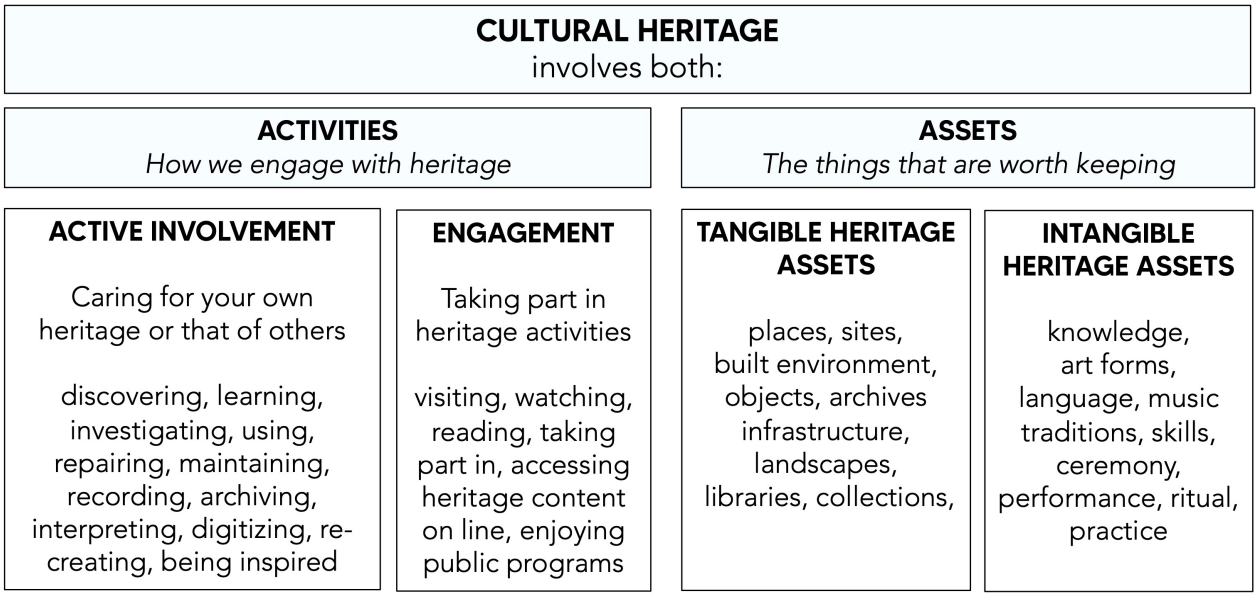


FIGURE 1 - CULTURAL HERITAGE ACTIVITIES AND ASSETS © KATE CLARK 2023

In compiling this report, we have been inspired by the work of **Indigenous scholars and policy makers** who are **leading the way** in showing how cultural heritage plays a foundational role in other aspects of our lives, including health, design, place-making, the economy and the natural environment. We have cited some of that work but recognise that **there is much more to learn**.

We also acknowledge the ground-breaking State of Victoria's Aboriginal Cultural Heritage Report 2016-21 compiled by the Victorian Aboriginal Heritage Council.[3] This is a powerful overview of current issues relating to the management of Aboriginal cultural heritage in Victoria which takes a wide view of cultural heritage and also explores some of the wider economic and environmental issues relating to Aboriginal cultural heritage as well as issues relating to health and wellbeing, education, healing and succession. As well as being critical to Aboriginal Cultural Heritage, many of the core principles and approaches to cultural heritage in the report, including the strong connections between cultural heritage and wider economic, social and environmental outcomes, may be of relevance to cultural heritage more widely.

Whist the heritage sector can work with economists to monetise social, environmental and cultural values in dollar terms to give heritage greater weight in public policy decisions, in Australia we also have the opportunity to learn from the oldest culture in the world about how connections to cultural heritage have the power to improve our lives and make a better world in ways that can't necessarily be expressed in dollars.

The report synthesises a wide range of **evidence** across **multiple disciplines**, including the work of cultural economists, social scientists, property economists, planners, psychologists and other scientists, drawing on both peer-reviewed publications and grey literature.

As this is the most recent of several reviews of the economic or social value of cultural heritage, **we have tried to add value by taking a different approach**.

As well as **reviewing evidence for impact** (rather than values) we have grouped the findings under themes and topics **linked to current Victorian government policies** such as policies on waste of the creative industries). Many of these are areas where heritage has the biggest potential to contribute to the government's own ambitions, but that contribution is perhaps not recognised.

The aim is to assist the Heritage Council of Victoria in making the connection between heritage and other public policy agendas.

[3] Anika Valenti et al., 'State of Victoria's Aboriginal Cultural Heritage Report 2016-2021' (Melbourne: Victorian Aboriginal Heritage Council, 2021) https://www.aboriginalheritagecouncil.vic.gov.au/state-victorias-aboriginal-cultural-heritage-report.

Chapter One explores evidence for the **social impact** of investing in cultural heritage assets and activities through its potential role in education, health, cultural equity and social capital. Many of those impacts arise from the way people **participate** in heritage activities:

- Many Australians see **education** as a key reason for preserving heritage and heritage sites, parks, museums across Victoria provide a wide range of rich educational opportunities for young people across all areas of the curriculum. Heritage institutions are also significant providers of primary research in their own right,

- in Australia there is growing recognition of the role of cultural heritage in **health**, and engaging with heritage sites such as Rail Trails or connecting with Aboriginal gathering places can potentially contribute both mental and physical health benefits,

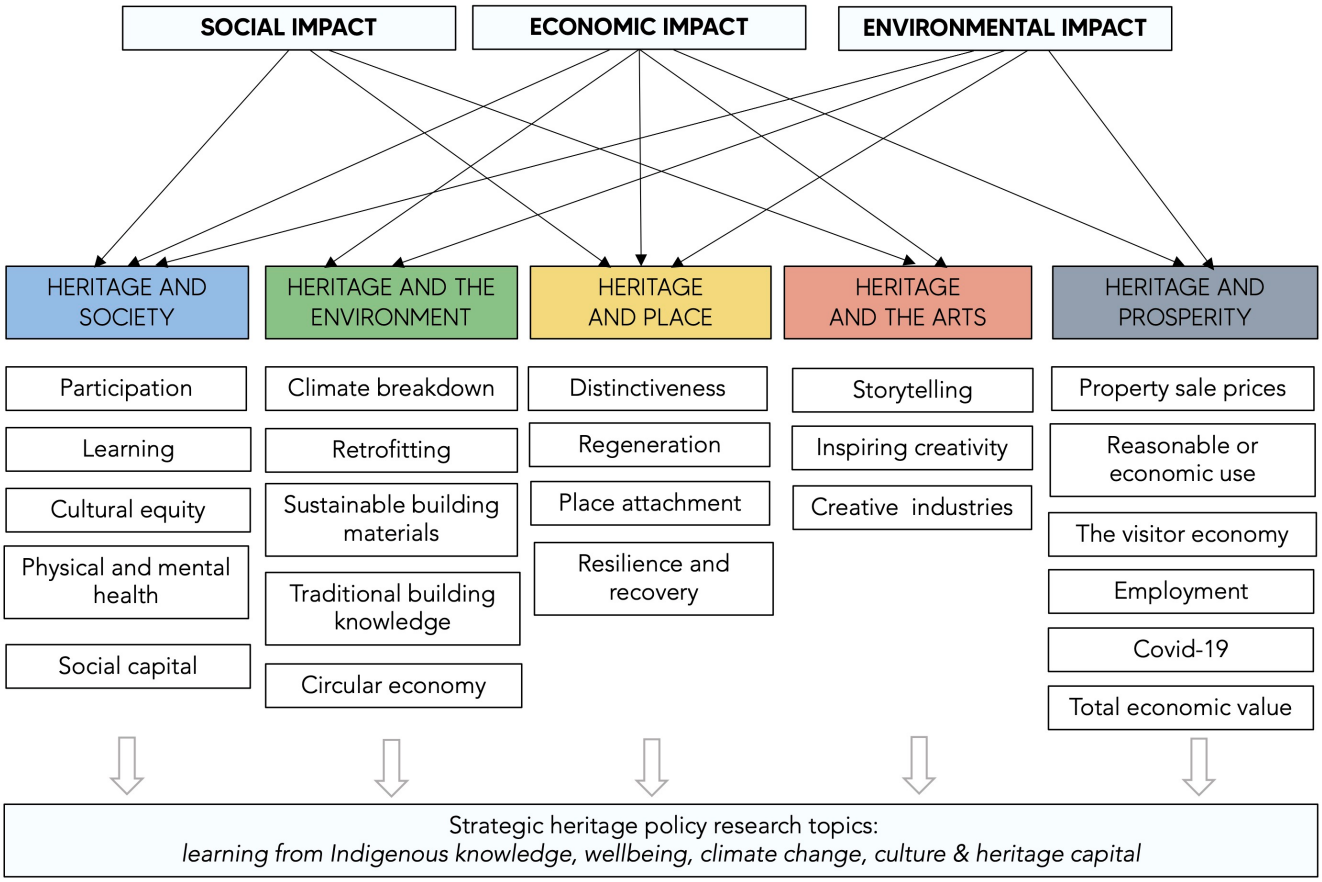


FIGURE 2 - THEMES AND TOPICS USED IN THIS REPORT © KATE CLARK 2023

- Victoria is home to one of the most **culturally diverse societies** in the world and cultural heritage can play an important role in identity, belonging and inclusion. Australians want to protect their own heritage but also recognise the diversity of Australian culture and have a strong desire to understand the heritage of cultures other than their own. From Bonegilla Migrant camp to the Islamic Museum, Victorian heritage organisations have been actively working to preserve a wider and more diverse range of heritage, and

- heritage can also play a role in communities and networks. The strong personal networks created through genealogy and local family history societies, the connections created by the significant level of volunteering across heritage and initiatives to involve people in local decision-making help build **social capital** through engaging with heritage.

Addressing climate change is a key priority for the Victorian government. **Chapter Two** explores the contribution of heritage to the **environment**, focussing on retrofitting existing buildings as a powerful tool in both reducing carbon emissions from the built environment and contributing to the circular economy. We found that:

- older buildings are often seen as less energy efficient than new buildings but standards for energy efficiency and retrofitting don't always recognise the value of **embodied energy** in existing buildings or the value of low-cost everyday activities to improve thermal comfort. There is also much to learn from the design of older buildings,

- **traditional building skills** and technology can help avoid 'maladaptation' – retrofitting that could worsen rather than improve building performance, and

- a third of Australian waste comes from demolition and construction, so conserving existing buildings (and other forms of heritage) can contribute to Victorian policies for the **circular economy.**

Cultural heritage is an important consideration in the Victorian planning system, but it can be seen as a problem rather than an opportunity. **Chapter Three** explores the role of heritage in **placemaking**, or creating better places to live:

- heritage can contribute to a sense of **regional and urban identity** from Flinders Street Station and the iconic Melbourne tram to the landscapes and places of the gold rush; it also underpins the important role of cultural heritage in tourism and visitor experiences,

- **revitalisation and renewal** are core to the economic and social performance of towns and cities. Poorly maintained places can impact negatively on people's wellbeing, sense of belonging and indeed prosperity. Most of the heritage grants in Victoria address revitalisation and renewal by repairing run down historic buildings and objects in rural and urban areas across Victoria,

- research suggests links between heritage and people's **attachment to place**, which is in turn often linked to issues such as life satisfaction and civic engagement, and

- the loss of places can have a devastating effect on both individuals and communities. Storytelling and cultural mapping can be part of the disaster recovery process.

Cultural heritage is key to the new national cultural policy and has a vital role to play in supporting arts and creative industries in Victoria. **Chapter Four** explores the value of heritage in terms of **arts and creativity**:

- **storytelling** is a powerful source of connection and healing. It is also central to cultural heritage, from the stories emerging through archaeological sources beneath the streets of Melbourne to the role of yarning and storytelling in building respectful relationships and preserving and passing on cultural knowledge. Heritage sites and practices also enable difficult stories to be explored and heard,

- heritage inspires **creativity** - some of our most creative artists, architects and writers have been inspired by their own cultural heritage and that of others, whilst heritage sites are often serve as important creative spaces in towns and cities, and

- historic areas also play a key role in the success of the **creative industries** where there is a body of international research that shows that some of the most successful creative business can be found in historic areas and buildings.

The contribution of heritage activities and assets to the **wider economy** is often unrecognised, so **Chapter Five** explores the role of cultural heritage in economic prosperity:

- SGS Economics & Planning has assessed the **value** of services provided by cultural heritage assets to the **Victorian economy** at **$1.1 billion each year** and note that even that is likely an underestimate,

- studies consistently show that **listed heritage properties** achieve **premium prices** or at worst prices that are no different to other properties (although that so-called heritage advantage can fall if the area is run down),

- **culture and heritage visitors** play a vital role in the **tourism economy** – staying longer and spending more than other types of visitors and delivering benefits, particularly to regional Victoria, and

- the heritage sector creates **jobs across arts and culture**, tourism, in construction and the environment in both the public and private sectors. We don't have specific data for the sector in Victoria, but between 2011 and 2019 the heritage sector in the UK grew by 24% - outstripping the rest of the economy. Research from the US suggests that repair and refurbishment creates more jobs than new building, and with the need for retrofitting skills and know how, this sector is likely to grow.

We were asked to **identify significant gaps in the evidence** for the economic, social and environmental impact of heritage. These are

set out in **Chapter Six** and are intended to be the basis for **further discussion**. In line with the overall approach, the gaps are focussed on critical topics needed to build a better foundation for evidence-based policy making in heritage.

We have suggested **three groups of priorities**. There are immediate priorities for HCV, such as understanding the barriers and opportunities for retrofitting and more targeted property price studies to address specific concerns over heritage overlays. There is almost no social research regarding heritage in Victoria, but it might start with the health benefits of engaging with heritage or the link between heritage volunteering and social capital.

Other research might be better taken forward in **collaboration** with other Australian heritage agencies, such as heritage in disaster recovery, a more comprehensive picture of the economic contribution of the sector across different Australian Bureau of Statistics (ABS) domains and the evidence for cultural heritage and health in Australia. There are also some **systemic challenges** around public sector heritage policy research, including the lack of a heritage data observatory and the difficulty of sourcing 'grey' literature.

Underpinning these gaps are **four more strategic heritage policy research questions** set out in the **Epilogue.** These are big questions that might benefit from working in collaboration with universities and other government agencies:

1. How can Indigenous thinking about the wider role of cultural heritage in the world around us be better known and mainstreamed?

2. How can the role of conserving cultural heritage as a strategy to address climate breakdown be better understood?

3. How can we better capture the contribution that conserving cultural heritage can make to addressing climate breakdown?

4. Should we move towards more systemic economic modelling for cultural heritage using a culture and heritage capital model adapted from natural environment models?

The foundation for the project was **a heritage stocktake for Victoria**. This covers both heritage activities (**Annex 1**) and assets (**Annex 2**), as much of the evidence for the difference that heritage can make comes from engaging with heritage, rather than simply the assets themselves. That stocktake reveals the many ways in which people **engage** with cultural heritage, from the thriving technological heritage sector through to caring for Country. It reveals the **diversity** of public sector funding for heritage, from areas such as regional development, creative industries and transport. The stocktake notes the wide range of protected and unprotected cultural heritage assets, including both Indigenous and non-Indigenous heritage, and concerns about the condition of many those assets.

As the field of heritage policy research is growing so fast, this report cannot hope to be comprehensive, so we have also pointed to some recent syntheses, including systematic literature reviews (**Annex 4**) and some of the web resources (**Annex 5**) that provide access to other data.

There have now been a range of studies exploring Australian **attitudes** to heritage including public views on heritage priorities, and audience research into the motivations and experiences of visitors. These are summarised in **Annex 3** as it is important for policymakers to be aware of those findings, but they are not strictly studies that explore the difference that engaging with or caring for heritage can make to other outcomes.

In conclusion we return to an underlying thread from the whole project – **learning from Indigenous approaches**. Whist the heritage sector can work with economists to monetise social, environmental and cultural values in dollar terms to give heritage greater weight in public policy decisions, in Australia we also have the opportunity to learn from the oldest culture in the world about how connections to cultural heritage have the power to improve our lives and make a better world in ways that can't necessarily be expressed in dollars.

HEADLINE FINDINGS

80% of Australians are involved in **at least one heritage activity every year** and the majority were involved in more than one.

Over 90% of buildings on the VHR are **in use every day** by people and businesses. They are **not monuments.**

The **greenest building is the one that already exists** – if we ignore embodied carbon we underestimate the emissions from new buildings by 25%. Demolishing an existing building and replacing it with a new one contributes to an increase in carbon emissions.

Caring about your neighbourhood builds **social connections** and has **wellbeing benefits.**

Old buildings are **good for creative industries.** They are also great places to meet and enjoy events.

Listed **heritage buildings** at best achieve **premium prices** (and at worst prices that are no different to unlisted buildings).

The **social benefits** of heritage include networks, friendships, exercise, creative inspiration and mental health benefits.

Culture and heritage **visitors spend more and stay longer** than other visitors.

Less than 10% of buildings in Victoria have **heritage protections**.

Heritage is worth $1.1bn to the **Victorian economy** each year (and that is an underestimate).

FIGURE 3 - HEADLINE FINDINGS

HERITAGE MYTHS

One of the priorities for the Heritage Council of Victoria (HCV) was to present **complex research** in an **accessible way** that can contribute to some of the challenges in communicating key messages about cultural heritage.

To help do that, this section **tackles** some of the **common assumptions** about the value of heritage in Australia and explores some of the evidence for (or against) those statements. This section pulls out some of the key findings of the more detailed research summarised in the main report and in the heritage stocktake.

1. AUSTRALIANS DON'T CARE ABOUT THEIR HERITAGE.

FALSE. Most Australians are engaged with heritage and active in its preservation, at least on a personal level. In 2010 around 80% of Australians had been involved in at least one heritage activity from visiting a site to taking part in a festival or watching heritage related media. They recognise that heritage is broad, includes both intangible and tangible heritage, and is not just about association with the post-colonial period. They often need to feel a personal connection with a given heritage element before they are willing to support its protection at a national level, but also recognise that heritage is a highly personal concept and acknowledge that some things that have no personal meaning to them might also be protected.[4]

2. HERITAGE LISTING WILL REDUCE THE VALUE OF MY HOUSE.

LARGELY FALSE. Surveys show that many people assume that heritage protection reduces property values but over forty property price studies from Australia, the US and the UK show that buildings in historic districts, protected heritage buildings and buildings near heritage buildings at best achieve premium prices and at worst, achieve prices no different to unprotected buildings. Heritage buildings also create commercial returns. But if you buy a property intending to demolish it and develop the site, heritage listing – like any other form of planning control – may affect its development potential.[5]

[4] Heath McDonald, 'What Are the Community Expectations for Heritage Protection?', Commissioned essay (Canberra: Department of Sustainability, Environment, Water, Population and Communities, 2011).
[5] Chapter 5 of the main report provides further details on these studies.

HERITAGE MYTHS

3. PROTECTING HERITAGE MEANS 'FREEZING' SITES

FALSE. Inclusion on the Victorian Heritage Register (VHR) or a local council Heritage Overlay does not stop development or change. The system of planning and heritage permits allows heritage sites and objects to be adapted, altered and changed. Only four heritage permits were refused by Heritage Victoria in 2020-21. Over 90% of sites on the VHR are in use every day as businesses or homes – they are not monuments, and the others are often industrial remains or sites that add character and distinctiveness to local places. Owners (and others) spent $1.25 billion on heritage building works in Victoria in 2021-2 (nearly 3% of all investment in building permits).[6]

4. HERITAGE IS ABOUT MORE THAN A HISTORY LESSON

TRUE. We get so much more than a history lesson when we engage with heritage including mental and physical health benefits, friendships and networks, connections with place, skills and confidence. For example, 'exercise' and 'socialising with friends' are the main reasons for visiting parks in Victoria which are often as important for their cultural heritage as their natural heritage.[7] Education is also important - 97% of Australians consider heritage education to be 'very important' and 85% of parents believe that visits to museums should be part of the national curriculum.[8]

[6] The total value of works covered by heritage permits and exemptions in Victoria in 2021-2 was $1,248,000,000. This represents around 3.1% of the value of all building permits in Victoria (more than 100,000 building permits are issued annually in Victoria, with a value of $40bn to Victoria's economy Framework for Reform. See Heritage Council of Victoria, '2021-22 Annual Report' (Melbourne: Heritage Council of Victoria, 2022); State Government of Victoria, 'Building System Review', VIC.GOV.AU, 2023, http://www.vic.gov.au/building-system-review.

[7] The parks estate includes one national heritage park, 94 designated historic reserves, 6 cultural landscapes of national significance, 210 places of state significance and many places of local significance. It includes 140 places across 84 parks and 67 wrecks on the Victorian Heritage Register (see the Heritage stocktake for more detail).

[8] McDonald, Heath, 'Understanding Public Involvement with Australian Heritage: Final Research Report.', Unpublished report (Melbourne: Deakin University, 2006).

HERITAGE MYTHS

5. OLDER BUILDINGS ARE NOT ENVIRONMENTALLY SUSTAINABLE. WE NEED MORE ENERGY EFFICIENT NEW BUILDINGS

FALSE. Our built environment is currently the world's single largest contributor to greenhouse gas emissions. It consumes around 33% of our water and generates between 33% and 40% of our waste. As much as 25% of Australia's carbon emissions come from buildings. However, energy efficiency schemes frequently ignore embodied energy, but the energy embodied in existing Australian buildings represents 10 years of energy consumption for the entire country. 'Demolishing an existing building and replacing it with a new one will increase carbon emissions by 2050' is the summary conclusion of the 2020 English report, 'Know your home, know your carbon'.[9]

6. CARING ABOUT YOUR NEIGHBOURHOOD IS GOOD FOR YOU

TRUE. People who are active in advocating for better quality developments in their areas are sometimes seen in a negative light. But people who are strongly attached to the places where they live often report a higher quality of life and better life satisfaction. And those with strong neighbourhood ties who are interested in their own roots and stories are likely to be more engaged in civic activity. There is also a link between caring about where you live and environmentally responsible behaviour.[10]

[9] Historic England, 'Know Your Home, Know Your Carbon - Reducing Carbon Emissions in Traditional Homes', Heritage Counts 2020 (Historic England, 2020).
[10] See Chapter 3 of the main report.

HERITAGE MYTHS

7. CREATIVE INDUSTRIES ARE ABOUT THE FUTURE. WE DON'T NEED HERITAGE!

FALSE. Some of our greatest artists and writers have been inspired by their cultural heritage. Victoria has some fantastic examples of heritage sites that are creative hubs such as the old Abbotsford Convent which is now home to artists and community events. Creative businesses in heritage buildings do better - over a quarter of England's creative businesses are in historic buildings or areas, and those in listed buildings generate an additional £13,000 GVA per business per year compared to those in unlisted buildings. Independent non-branded food and retail businesses (including fashion, creative industries, food) are the businesses most likely to be in heritage-listed buildings.[11] Despite this, cultural heritage is often overlooked in strategies for creative industries.

8. THE HERITAGE SECTOR IS A BRAKE ON THE ECONOMY

FALSE. Cultural heritage is often seen as a brake on the economy. But cultural heritage has a role in health and social networks, in the environment and decarbonisation, in planning and development, in the arts and in employment in tourism and other sectors such as construction. In 2018 SGS Economics & Planning estimated the Total Economic Value of heritage to the Victorian economy as $1.1billion each year– and this is only part of the figure. It omits the value of heritage building works to the economy as well as the impact of culture and heritage visitors on the visitor economy. When England set out to measure the impact of the whole heritage sector, they found that the sector has a total GVA of £36.6 billion providing over 563,509 jobs in 2019. The sector grew by 24% between 2011 and 2019 – outstripping the rest of the UK economy.[12]

[11] Historic England, 'Heritage and the Economy', Heritage Counts 2020 (Historic England, 2020), 28.
[12] Historic England, 'Heritage and the Economy', 6.

HERITAGE MYTHS

9. CULTURAL AND HERITAGE VISITORS SPEND MORE AND STAY LONGER THAN OTHER VISITORS

TRUE. Around 78% of visitors to regional Victoria expect to experience Australia's history. 30% of the international heritage visitors and 72% of the domestic overnight heritage visitors travelled to regional Victoria, with heritage tourism drawing up to 78% of tourists to some parts of regional Victoria.[13] The idea that Victoria is the capital of culture with a rich tapestry of stories is central to the Victorian Visitor Economy Masterplan. In 2009 half of all international visitors to Australia were culture or heritage visitors and the 2010 Tourism Research Australia snapshot suggested that cultural visitors stayed longer and spent more than others.[14] In 2019 Australians took almost 15million day trips to participate in arts and cultural activities, spending $1.9 billion.[15] Around 15% of young people enjoyed arts and cultural events.[16]

10. YOU KNOW WE CAN'T PROTECT EVERYTHING!

TRUE. Despite the wider benefits of caring for cultural heritage, less than 10% of the building stock in Victoria is on the Heritage Overlay. Even fewer buildings have State heritage protections and far more buildings are being demolished than are protected. In 2020-21, ten places were added to the VHR. For every building added to Australian heritage registers in 2019-20, 112 houses were demolished, and 618 new houses were built. So, most of the existing building stock, including most older buildings, have no heritage protections.

[13] This data is set out in more detail in Chapter 5 of the main report. It was provided to Heritage Victoria, drawing on Tourism Research Australia Visitor Profile and Satisfaction reports (2006-2010).
[14] Tourism Research Australia, 'Snapshots 2009 - Cultural and Heritage Tourism in Australia' (Canberra: Tourism Research Australia, 2009).
[15] Australian Bureau of Statistics, 'Arts and Culture in Australia: A Statistical Overview, 2014', Australian Bureau of Statistics (Australian Bureau of Statistics, 10 July 2014), https://www.abs.gov.au/ausstats/abs@.nsf/mf/4172.0.
[16] Tourism Research Australia, 'Youth Travellers - Aged 15 to 29' (Canberra: Tourism Research Australia, 2019).

RESEARCH GAPS

This table summarises **research gaps**. They are discussed in more detail in Chapter 6 of the main report.

	Research gaps that would benefit from wider collaboration between public sector agencies, universities and other partners in the public and private sectors	*Research gaps that may benefit from collaboration with other State, Territory and Federal heritage agencies (eg HCOANZ)*	*Suggested short term priorities for the HCV arising from this report.*
	STRATEGIC HERITAGE RESEARCH CHALLENGES	**AUSTRALIA-WIDE POLICY RESEARCH GAPS**	**PRIORITIES FOR THE HERITAGE COUNCIL OF VICTORIA**
LEARNING FROM INDIGENOUS THINKING	LEARNING FROM INDIGENOUS THINKING AND PRACTICE Much of the thinking about the link between cultural heritage and other aspects of our lives including the economy, health, place and wellbeing has been pioneered by Indigenous scholars – what lessons are there and how might it shape a uniquely Australian approach?	Review of current Indigenous initiatives across Australia that embed cultural heritage in wider environmental, health or planning policy, such as designing with Country, or cultural heritage in health research.	Literature review of current work in Victoria relating Indigenous thinking about cultural heritage and wellbeing, placemaking design or environment.
HERITAGE AND SOCIETY	THE ROLE OF CULTURAL HERITAGE IN WELLBEING IN AUSTRALIA How can we embed cultural heritage in current Australian thinking about wellbeing and what can we learn from other countries such as Wales? Is there a uniquely Australian approach? What can we learn from Indigenous thinking (see below)?	A review of the Australian literature on the cultural determinants of health across all communities including issues such as the role of cultural heritage in healing	Mapping the cultural heritage ecosystem in Victoria to understand how people engage with heritage Understanding the health impacts of engaging with heritage in Victoria A study of the motivations, impacts and benefits of heritage volunteering in Victoria
HERITAGE AND THE ENVIRONMENT	THE ROLE OF CULTURAL HERITAGE IN ADDRESSING CLIMATE CHANGE IN AUSTRALIA How can conserving cultural heritage (including existing buildings and landscapes) contribute to addressing climate breakdown? How can we best reconcile environmental and cultural outcomes?	Heritage and resilience – how can heritage practices contribute to recovery and resilience? The role of cultural heritage in the circular economy, including waste How can traditional knowledge, including building craft skills, avoid maladaptation & contribute to the green economy?	Understanding the barriers and opportunities to maximise the contribution of retrofitting existing buildings to reducing carbon emissions Topics omitted from this study e.g. the role of caring for cultural heritage in biodiversity & ecosystem resilience in Victoria.

HERITAGE AND THE ECONOMY (INCLUDING ECONOMIC ISSUES IN PLANNING)	A CULTURE AND HERITAGE CAPITAL MODEL FOR AUSTRALIA Culture and Heritage capital model for Australia that enables us to consistently monetise heritage assets and the services they provide? What are the strengths and weaknesses of such an approach and what can we learn from the environmental sector in Australia? What can we learn from the current work lead by DCMS in England?	What is the Total Economic Value (TEV) of the heritage sector in Australia – including environmental, tourism and other contributions? Mapping the sector as a whole across ABS domains to capture the scale and impact. Understanding the disincentives for conserving heritage e.g. taxation, accounting, building codes and more Maintaining consistent trend data on attitudes to heritage in Australia using economic methodologies (eg the Allen Consulting questions).	Targeted property price studies relating to commercial businesses, area-based approaches and the impact of neighbouring development on heritage property prices for Victoria. Modelling the long-term benefit of conserving a Victorian object or site using a triple bottom line approach such as the PlaceEconomics Calgary approach. Economic modelling tools for heritage decisions in Victoria e.g. reasonable or economic use or the social /economic impact of a planning amendment (Heritage Overlay). Understanding the perspectives of commercial businesses and owners including creative businesses in Victoria
CREATING A STRONGER POLICY RESEARCH ENVIRONMENT FOR CULTURAL HERITAGE	EVIDENCE-BASED POLICY RESEARCH FOR HERITAGE A dialogue with scholars in cultural economics, heritage studies, environmental studies and other related disciplines about how we can collaborate to build a stronger evidence base for the wider impacts of cultural heritage on society, the economy and the environment.	A heritage observatory that gathers regular data on heritage assets and activities and finds and shares new evidence for the impact of caring for heritage, sharing data between States and Territories. An initial research agenda for evidence-based policy research in cultural heritage, focussing on the role of heritage in the most pressing public sector policy issues.	Periodically review and update the Victorian heritage stocktake including both activities and assets (or introduce more comprehensive state of the environment reporting on cultural heritage for Victoria.)

FIGURE 4 - SUMMARY OF HERITAGE POLICY RESEARCH GAPS IDENTIFIED IN THIS REPORT

LIST OF CASE STUDIES

Each chapter is illustrated with **case studies** providing examples of Victorian heritage activities or heritage assets that are delivering some of these impacts. The case studies are in the following table.

FIGURE 5 - VICTORIAN CASE STUDIES USED TO ILLUSTRATE THEMES AND TOPICS

MAIN REPORT

INTRODUCTION

This report synthesises evidence for the **social, environmental** and **economic** impacts of caring for, and engaging with, cultural heritage. This introduction explains the background to the report and the approach.

The objectives for the report were to:

- collate authoritative and relevant facts and data from existing research in Australia and overseas that demonstrate the economic and social value of heritage to the community,
- and to understand where the gaps are in the primary research on economic and social value of heritage to the community.

The project was commissioned by the Heritage Council of Victoria (HCV) (RFQ PR220501) who asked that it not involve new primary research but should collate information from existing studies in a non-technical way that can be used in communication, taking a broad approach to cultural heritage and showing how evidence from research applies in a Victorian context, especially where Victorian research is not available.

Our approach has been to select findings that might be useful to HCV in understanding the wider impact and benefits of heritage.

This is not a systematic meta-review. Instead, our approach has been to select findings that might be useful to HCV in understanding the wider impact and benefits of heritage. We are heritage specialists, not economists, scientists or public health specialists and so not qualified to comment on the robustness of the research or the methodologies in any of the studies and can only highlight the range of research across different disciplines.

Where possible we have sourced empirical evidence using social, economic or scientific research methods. That includes published academic research, public policy research and evaluation (often in 'grey' literature). We have given priority to Victorian or Australian studies but there are significant gaps, particularly around social impact research.

In compiling this report, we have been particularly inspired by Indigenous scholars and policymakers who have led the way in embedding cultural heritage in wider public policy in Australia. We have also included published data on Aboriginal Cultural Heritage (ACH) in the stocktake as this is foundational to all heritage in Australia. As this was just a literature review, we have not consulted with Aboriginal (or other community) groups, but that should be a priority in any future work, in line with the principles in Dhawura Ngilan (the vision for Aboriginal and Torres Strait Islander heritage in Australia and the best practice standards in Indigenous cultural heritage management and legislation[17] and Our Knowledge, Our Way (the guide to Indigenous-led approaches to strengthening and sharing their knowledge for land and sea management).[18]

Research into the economic, environmental and social impacts of heritage cuts across many different disciplines, from economics to psychology and the sciences. The field has grown exponentially over the past two decades to a scale where we are now beginning to move from literature reviews to more systematic meta-reviews.

In terms of the international literature, we have mainly used studies from England or the UK. This pragmatic decision was based on three factors:

- so many economic, social and environmental impact studies for heritage have now been synthesised by either Department for Digital, Culture, Media and Sport (DCMS) or Historic England (literature reviews and systematic meta-analyses) that is both easier to find and more robust,
- the UK is an acknowledged leader in social impact research for heritage (a significant gap for Australia), and
- having worked in the field in both England and Wales, the lead author is familiar with many of the sources.

Whilst we have drawn on some easily accessible work from the US, we are very conscious of the limitations of this study. Annex 4 identifies some of the recent literature reviews and meta-analyses,

[17] Department of Climate Change, Energy, the Environment and Water, 'Dhawura Ngilan: A Vision for Aboriginal and Torres Strait Islander Heritage in Australia'.
[18] Woodard et al., 'Our Knowledge Our Way in Caring for Country'.

identifies some of the recent literature reviews and meta-analyses, and Annex 5 identifies web resources that provide access to more studies.

Although the report takes a broad view of heritage, most of the cited studies relate to built heritage. We have not included natural heritage, and only briefly referred to some of the research around heritage in the museums sector. We have noted findings from research with Aboriginal communities that have wider relevance but have not reviewed wider evidence for Aboriginal cultural heritage.

One of our first challenges was how best present such a wide body of diverse research. The list of social, economic and environmental impacts of heritage is potentially very wide, and most of those topics overlap. For example, the conservation of individual sites such as Abbotsford Convent, can deliver multiple economic, social, creative and environmental impacts. Again, we have made a pragmatic decision. To provide a report that is useful to HCV, and has a point of difference from previous reviews, we have selected five public policy themes where heritage can best make a difference, but that contribution is not always obvious. The five main topics are society, the environment, planning, the arts, and prosperity.

Within each theme we have grouped the evidence into topics that again reflect identified policy priorities for the Victorian Government. For example, under Heritage and Society we have identified learning, health, cultural equity and social capital as being of relevance in Victoria. In doing so, we found that individual research studies did not fit neatly under one topic – for example research into the contribution of heritage to creative industries could sit under prosperity, placemaking or the arts. Where possible we have highlighted **headline results** that might be useful to HCV.

We have illustrated each chapter with case studies – examples of Victorian heritage activities or heritage assets that are delivering some of these impacts.

A key requirement of the project brief was to identify gaps in the research. As the list is potentially vast, we have identified topics of most relevance to HCV's current policy challenges and some long-term research directions.

The heritage stocktake includes both heritage activities and assets, as the social, environmental, and economic impacts of heritage arise not so much from the assets themselves, but how we engage with them. In doing so it attempts to provide an overview of a fragmented sector that shares a common goal of caring for what is important to people. It illustrates the diversity of heritage in Victoria, the sheer scale of the sector including the many different community organisations. It also identifies varied sources of funding across government and the private sector.

Data about Australian attitudes to heritage is not included in the main report as it is about how people view cultural heritage, rather than social or economic outcomes of heritage interventions. It is, however, relevant to understanding social attitudes. As this research has previously been summarised elsewhere[19], Annex 4 notes the main studies (including more recent work) and some findings.

Finally, this report has drawn on Indigenous-led research around the links between culture, heritage, society and the world around us, as a contribution to decolonising heritage practice. In areas such as health and environmental policy, Aboriginal researchers have been at the forefront of exploring the importance of cultural heritage in social and environmental outcomes which is of relevance to all heritage practice.

[19] Heritage Council of Victoria, 'The Community's Perceptions of Heritage: Literature Review' (Melbourne: Heritage Council of Victoria, 2014).

THIS REPORT IS STRUCTURED AS FOLLOWS:

The **OVERVIEW** includes an executive summary, a list of ten heritage myths and a table summarising the research gaps.

For the **MAIN REPORT**, the **INTRODUCTION** sets out the approach to the report including the scope, limitations and choice of themes and topics.

CHAPTER 1 focuses on the theme of heritage and society through the topics of participation, learning, health, diversity, equality and social capital.

CHAPTER 2 is about heritage in environmental policy, including climate change, embodied energy, retrofitting, the circular economy and traditional knowledge.

CHAPTER 3 is about heritage in planning and placemaking, including its role in distinctiveness, regeneration and place attachment.

CHAPTER 4 is about heritage and the arts covering storytelling, creativity and the creative industries.

CHAPTER 5 covers the contribution of heritage to economic prosperity including the bigger economic role of the sector, listing and in property values, heritage and tourism and jobs in the sector.

CHAPTER 6 explores gaps in the evidence including short term priorities for Victoria and some issues that may be better addressed in collaboration with other state agencies. It also identifies four longer term strategic cultural heritage policy research areas around climate change, culture and heritage capital, wellbeing and Indigenous knowledge.

ANNEX 1 is a stocktake of heritage activities and

ANNEX 2 a stocktake of heritage assets in Victoria.

ANNEX 3 summarises evidence for attitudes to heritage.

ANNEX 4 is an annotated bibliography of literature reviews and selected primary research studies for Victoria and Australia.

ANNEX 5 identifies useful national and international websites and resources for sourcing additional cultural heritage data and research.

IMPACT SIGNIFICANCE OR VALUE

This section briefly explains the **approach to questions of value** used in this report. There is also a separate **glossary** of terms used in the report.

This report generally talks about the social, environmental or economic 'impact' of caring for (or engaging with) cultural heritage. This is because the focus is on empirical evidence for the difference heritage can make to other wider policy outcomes.

The term 'impact' is chosen to distinguish this from the term 'cultural significance' used in heritage protection. The choice of the term 'impact' also distinguishes empirical research into the difference that heritage make to other policy outcomes from research that expresses social, environmental economic and cultural values that people hold for things in dollar terms.

The term 'impact' (rather than value or benefit) also recognises that caring for or engaging with cultural heritage may not always deliver positive benefits – there can be disbenefits.

The background to this is that questions of value are central to cultural heritage practice. Heritage is often defined in terms of what people value and want to hand on to the future. When heritage is formally protected under state, federal or other legislation, those decisions are based on concepts of value. There are two components to heritage significance - firstly the different types of cultural value (including social, architectural, evidential or other values) and secondly thresholds or degrees of significance (which can range from the personal, through to local, state federal and international). Greater degrees of significance justify higher levels of protection.

However, there are other concepts of value that are important in heritage practice. Caring for heritage can often result in wider environmental, social or economic outcomes – for example by reducing waste or improving health. This is sometimes described as the instrumental values or benefits of heritage.

A third kind of values are own individual and institutional values that shape heritage practice, such as ethical values, approaches to inclusion and equality, or issues such as trust, accountability or fairness.

Whilst all three types of value are important in heritage practice, the focus of this report is on the 'instrumental' values of heritage – the contribution that caring for heritage can make to wider social, environmental or economic policy outcomes.

The discipline of economics is also founded on concepts of value. Economists classify values into use and non-use values. Non-use values are often captured through econometric research techniques such as assessing 'willingness to pay'. Econometric research techniques can be used to express a wide range of different values that people hold for things in monetary terms, including social, economic, environmental and cultural values.

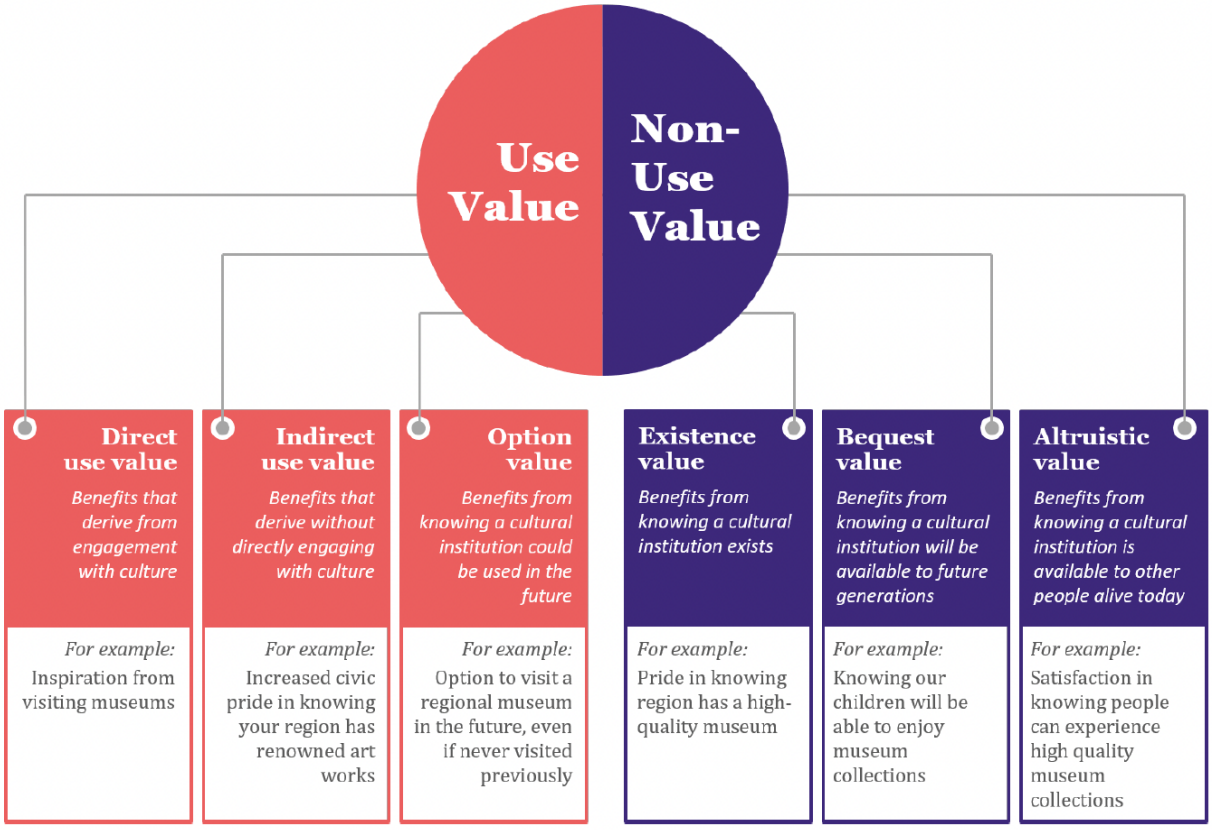


FIGURE 6 - USE AND NON-USE VALUES IN ECONOMICS[19B]

[19B] Simetrica Jacobs 2020, DCMS Rapid Evidence assessment: Culture and Heritage Valuation Studies – Technical report p 9 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/955142/REA_culture_heritage_value_Simetrica.pdf

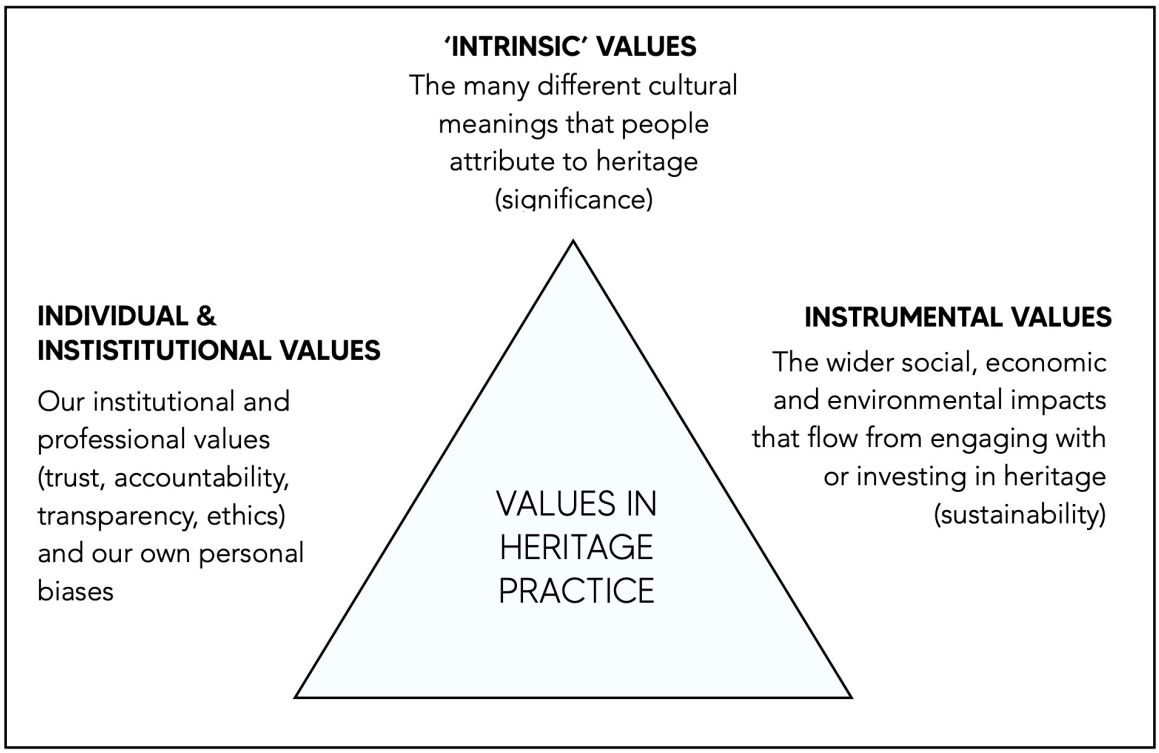


FIGURE 7 - THREE KINDS OF VALUES IN HERITAGE PRACTICE © KATE CLARK 2023

The difference between significance, impact and value (in the economic sense) can be illustrated through the example of 'social' value.

Social significance is used in listing or registration. It is a criteria that says one thing is more important than another for social reasons.

Social impact is about the **difference** that engaging with heritage or protecting heritage can make. For example, creating an album of family photographs can bring people together, or regenerating run-down buildings can create places for more social events. Caring for heritage can also have negative social impacts for example if people feel excluded from heritage activities, this might affect their confidence of self-esteem.

The term social value is used by economists when they are talking about willingness to pay to value outcomes for others over their own. So in previous reports for the Heritage Council of Victoria, SGS Planning & Environment have talked about social value in those terms. This is because econometric research methods can be used to express social, economic and environmental values - and even cultural values - in dollar terms!

GLOSSARY

This glossary lists other definitions of terms as they are used in this report. There is a separate list of abbreviations.

APPRAISAL – the process of assessing the costs, benefits and risks of alternative ways to meet government objectives. It helps decision makers to understand the potential effects, trade off and overall impact of options by providing an objective evidence base for decision making.

BENEFIT-COST RATIO (BCR) – a process that uses dollar values to capture the social, economic or environmental benefits of a project. Some impacts are adequately covered by benefit-cost analysis but others are not.

CARING FOR HERITAGE – this report uses the term 'caring' to refer to all the things that we do to hand on heritage to future generations including conservation (see below) and engagement (such as using heritage, storytelling, interpretation or enjoying cultural heritage)

CONSERVATION – conservation is one aspect of caring for heritage. Heritage conservation involves action to prolong the life of cultural heritage assets. This can include caring for buildings, landscapes, sites and objects. It is also possible to 'conserve' (in the sense of prolong the life of) intangible heritage such as language, ideas, skills and traditional knowledge.

CULTURAL AND HERITAGE CAPITAL ACCOUNTING – as system of accounting used to attribute dollar values to heritage assets to enable them to be considered in investment decisions. The UK has been pioneering a cultural and heritage capital accounting model, in line with similar models used environmental accounting ('natural capital').

CULTURAL ECONOMICS – the branch of economics that looks at the relationship between culture and economic outcomes. Cultural economists such as Professor David Throsby use economic analysis to explore issues such as how much people are willing to pay to protect heritage.

CULTURAL SIGNIFICANCE – generally refers to the cultural values people attribute to heritage that are used in designation, including social, historic, aesthetic and evidential (or story telling) significance However there are wider cultural impacts that can arise from engaging with heritage such as the role of heritage in identity or creativity, that are not necessarily considered in designation.

DESIGNATION – used here as a general term for the formal protection of heritage places or objects through, for example, listing or inclusion in a heritage overlay. The term can also refer to protected areas. In the UK designation is also relevant to designated collections. World heritage inscription is another form of designation. Designation can occur under federal or state legislation, or under international conventions or treaties.

DIFFERENCE IN DIFFERENCE – a statistical technique that has been applied to property price studies to compare the price of heritage assets before and after designation.

ECONOMIC USE – alternatively, the Executive Director may consider the extent to which economic use may be affected by refusal. The economic use is concerned with the economic functioning of the place or object and not on the financial circumstances of the applicant or owner.

ECONOMICALLY SUSTAINABLE USE – the Executive Director may consider whether the proposed works would facilitate economically sustainable use, defined as one which can continue for the medium to long term, mitigating the possibility of continual proposed changes to the place or object. If the permit applicant contends that future economic use would be affected by refusal, they may be required to provide relevant information to support the contention, which may include evidence of forecasted impact and modelling.

ECOSYSTEM SERVICES – the contribution that ecosystems can make to human wellbeing and impact on quality of life. These are often grouped into provisioning, regulating, cultural and supporting services. DCCEEW has been exploring the application of these models in Australia.

EVALUATION – the systematic assessment of the design, implementation, and outcomes of an intervention, to understand its effects and what can be improved. It is an opportunity to look back at what difference the programme or project made, and what lessons might be learned for the future and hopefully to provide peer-to-peer advice to others. Information from evaluation reports also help us to refine our grants processes for the future.

EVIDENCE-BASED POLICY MAKING – this approach is based on the idea that policy development should be grounded in the best available evidence, noting that in practice there are often many other political and operational factors to consider. For cultural heritage, evidence-based policy making involves background research, policy evaluation, systematic data collection, future forecasting and other techniques.

EXISTENCE VALUES – used in economics to capture the benefit people receive from knowing that something exists even if they never visit or use it. For example, people may value a local church that they don't necessarily visit. The concept is often used in econometric studies of heritage protection.

GREY LITERATURE – information produced by government, industry, academics and others that is published informal or non-commercially that has not been peer-reviewed. It can be difficult to locate. Much of the research cited in this report can ben considered to be grey literature.

HEDONIC PRICE MODELLING – a statistical technique that uses multiple variables to explore property prices. It has been used to compare the prices of heritage listed properties with unlisted properties, whilst controlling for other variables.

HERITAGE – this report takes a broad view of heritage, defining it as what is worth keeping. This can include natural and cultural heritage, tangible and intangible heritage, and Indigenous and 'historic' heritage, whether designated or not.

HERITAGE ASSETS – used as a generic term for both tangible and intangible heritage items or resources. This can include natural and cultural heritage, tangible and intangible heritage, and Indigenous and 'historic' heritage. Not all heritage assets are formally protected.

HERITAGE ACTIVISM – taking action to protect a local (or any other) cultural heritage place or item from damaging change or becoming derelict or disused.

HERITAGE ACTIVITIES – the different ways that people engage with cultural heritage. This includes involvement, enjoyment and learning. It also includes owning or using cultural heritage assets and cultural heritage practices such as cultural burning or traditional skills.

HERITAGE 'ECOSYSTEM' – the set of processes and interactions whereby heritage assets and investment not only deliver direct and indirect impacts but also generate numerous spill overs which further enhance the cumulative and total impact of those assets and investments.

HERITAGE SERVICES – can be defined as services that enable others to enjoy and participate in cultural heritage, including identification, protection, funding, management, interpretation, access, day to day care and maintenance, research and investigation. The term is also used in cultural capital accounting to describe the services provided by cultural heritage assets.

HERITAGE WORKFORCE – people whose paid or unpaid work involves enabling others to care for or enjoy cultural heritage.

HISTORIC HERITAGE – used in Australia to distinguish cultural heritage assets dating from after the late 18th century. Also described as non-Indigenous, post-contact or settler heritage.

INTANGIBLE CULTURAL HERITAGE – cultural heritage assets that do not have a physical dimension such as language, performance, skills, knowledge, traditions, or memories (although it may be captured in written records, recordings or photographs).

LIFE CYCLE ASSESSMENT – a technique that comprehensively analyses the environmental performance of a building, taking into consideration cradle to grave impacts.

LISTED HERITAGE ASSET – general term for heritage sites or buildings that have been formally designated or protected either under heritage legislation or planning legislation.

MITIGATION – where cultural heritage is damaged or destroyed to facilitate new development, mining, agriculture or other activities, the relevant State or Federal legislation may allow for action to 'mitigate' that destruction, such as archaeological excavation, investigation, recording or digitisation. The social, economic or environmental benefit of recording or digitisation will be very different to the impact of retaining the asset.

NATURAL CAPITAL ACCOUNTING – the process of establishing the stocks and flows of natural resources, either in physical or monetary terms. It is used to give greater weight to natural resources and ecosystems in accounting and public policy.

NON-USE VALUES – a value that arises from the existence of something even if it is not used. Non-use values can include option values (people value something because they might want to use it in the future); bequest values (people are willing to pay for something now because they feel it will benefit future generations) and existence values (see above).

REASONABLE OR ECONOMIC USE – the Heritage Act 2017 requires that in determining heritage applications, the Executive Director must, consider the extent to which the application if refused, would affect the reasonable or economic use of the registered place or object. Heritage Victoria has published guidance on Reasonable or

Economic Use (HCV 2021).[20] The Executive Director may consider the historic, recent and current uses of the registered place or object, other compatible uses of the registered place or object, the context and setting within which the place or object is located, and other relevant matters.

PLACE – this report uses place in its widest sense to refer to places in the land use planning system. Note that Victorian heritage legislation defines heritage 'places' as archaeological sites, land, buildings, landscapes, precincts, shipwrecks, trees or land.

PLACE ATTACHMENT – the emotional bond between people and places – with a focus on what makes places meaningful. Used in environmental psychology.

POLICY RESEARCH – used in this report to refer to research that can help inform the development of policy for cultural heritage or to explore the contribution of heritage to other policy agendas.

PRODUCTIVITY – is the rate at which an economic system transforms work into the output of goods and services. There is little evidence for the direct contribution of heritage to productivity but some research in the UK that tracks the role of historic buildings in the performance of creative industries.

PUBLIC VALUE – the value created by government through services, laws, regulation and other actions. Mark H. Moore's two books, Creating Public Value and Recognising Public Value provide a useful starting point.[21]

REGISTRATION – the specific term used in Victoria (and other Australian states) to refer to the formal protection of heritage places and objects under the Heritage Act. Also known as listing or designation (in the UK) or heritage protection more generally or inscription (for World Heritage sites).

[20] Department of Environment, Land, Water and Planning, 'Heritage Victoria Policy - Reasonable or Economic Use' (State Government of Victoria, 2021).
[21] Mark H. Moore, Creating Public Value: Strategic Management in Government (Harvard University Press, 1995); Mark H. Moore, Recognizing Public Value: (Cambridge, MA: Harvard University Press, 2013).

SIGNIFICANCE – use in heritage practice to determine whether something merits registration or formal protection. Incorporates both different types of value and also 'thresholds' or degrees of significance'. The types of value used in designation are normally cultural values, and can include social, aesthetic, evidential (or story telling), spiritual or historical values. The degrees of significance may be personal, local, regional, state, Federal or international.

SOCIAL CAPITAL – a resource that can facilitate cooperation within and between groups of people, and the key elements contributing to social capital as norms, networks and trust.[22]

SOCIAL IMPACT – the difference that engaging with cultural heritage can made to individual or collective social outcomes. That impact may be positive or negative.

SOCIAL SIGNIFICANCE – a specific criteria used in Victorian heritage legislation as a basis for registration or protection. This is different to the social impact of investing in cultural heritage.
Social value – often used in heritage listing to refer to social significance. In economics social value refers to people's willingness to pay for a benefit delivered to others.

SUSTAINABLE DEVELOPMENT – initially defined as the ability of people to meet their own needs without compromising the ability of future generations to do so. The four pillars of sustainability are economic, social, environmental and cultural. Often focussed on environmental issues, it is increasingly encompassing social and cultural goals.

TANGIBLE CULTURAL HERITAGE – cultural heritage assets with a physical dimension including landscapes, buildings, sites, objects, collections, technology and more.

TOTAL ECONOMIC VALUE (TEV) – a measure of the economic value of something that includes both use and non-use values. It is used in cost-benefit accounting for the natural environment.

[22] Productivity Commission, 'Social Capital: Reviewing the Concept and Its Policy Implications - Commission Research Paper', 2003.

U VALUE – rate at which heat is transferred through a building element such as a wall, door or glass. Low U values mean that the material provides good insulation.

WELLBEING – defined by the World Health Organisations as a positive state experienced by individuals and societies, encompassing the quality of life and the ability of people to contribute to the world with a sense of meaning and purpose. Australia published a wellbeing framework in 2023 and there are also initiatives in place in Victoria, including an Aboriginal wellbeing framework.[23]

[23] Commonwealth of Australia, 'Measuring What Matters: Australia's First Wellbeing Framework' (Canberra: Commonwealth of Australia, 2023); Department of Health and Human Services, 'Balit Murrup: Aboriginal Social and Emotional Wellbeing Framework 2017-2027' (Melbourne: Department of Health and Human Services, 2017).

LIST OF ABREVIATIONS

ABS – Australian Bureau of Statistics

ACH – Aboriginal Cultural Heritage

A&TSI – Aboriginal and Torres Strait Islander

BCR – benefit-cost ratio

COP – United Nations Climate Change Conference of the Parties

DCMS – Department for Culture, Media and Sport (England)

DCCEEW – Department of Climate Change, Energy, Environment and Water (Australia)

HCOANZ – Heritage Chairs and Officials of Australia and New Zealand

EIA – Environmental impact Assessment

GDP – Gross Domestic Product

HCV – Heritage Council of Victoria

HE – Historic England (note that this is separate to English Heritage)

HF – the UK National Lottery Heritage Fund (formerly the Heritage Lottery Fund)

HO – Heritage Overlay

HV – Heritage Victoria

MHC – the former NSW Migration Heritage Centre

NABERS – National Australian Built Environment Rating System

NTV – National Trust of Australia (Victoria)

OKOW – Our Knowledge, Our Way - the guide to Indigenous-led approaches to strengthening and sharing their knowledge for land and sea management

RAP – registered Aboriginal Party

SKM – Sinclair, Knight, Merz (former Australian consulting organisation)

SGS – SGS Economics & Planning (consulting organisation)

SoE – State of the Environment Report (quinquennial report for Australia)

TEV – total economic value

TRA – Tourism Research Australia

UK – United Kingdom – refers to UK-wide research unless specific to England, Scotland, Wales or Northern Ireland. DCMS has some UK-wide responsibilities that are not devolved to the home countries (eg for international heritage issues).

UNESCO – United Nations Educational, Scientific and Cultural Organisation

VAT – Value-added Tax (a UK tax similar to Australian Goods & Services Tax (GST)

VAHC – Victorian Aboriginal Heritage Council

VHR – Victorian Heritage Register

VPS – Visitor Profile & Satisfaction Data

CHAPTER ONE: HERITAGE AND SOCIETY

This chapter explores evidence for the **social impacts** of investing in cultural heritage assets and activities. This includes impacts on **individuals** and impacts on **communities**. It also makes use of case studies and data on participation in heritage activities in Victoria.

The social impact of culture and heritage can be defined as, 'the difference that engaging with cultural heritage can make to individual or collective social outcomes'. For example, activities such as volunteering at heritage sites or taking part in educational programs can deliver social benefits.

Note that understanding the social impact of engaging with cultural heritage is different to identifying the social value of heritage sites for the purposes of registration. 'Social significance' is attributed to sites when they are protected, but 'social impacts' or benefits may arise from heritage activities. That impact can be monetised as 'social value'.

The social impact of culture and heritage can be defined as, 'the difference that engaging with cultural heritage can make to individual or collective social outcomes'

SOCIAL SIGNIFICANCE (IN HERITAGE ASSESSMENT FOR VICTORIA)	SOCIAL IMPACT	SOCIAL VALUE (IN ECONOMICS)
Criteria used in heritage protection to determine what makes one site/object more significant than others: COMMUNITY ATTACHMENT TIME DEPTH RESONANCE[24]	Evidence for the difference investing in heritage assets/activities can make to social outcomes, eg: • Physical health and/or mental health • Skills and learning • Mental stimulation • Identity and cohesion • Confidence and safety • Enjoyment • Belonging and inclusion • Social networks and connections • Empowering younger audiences • Empathy for, and understanding of, others • Civic engagement	People's willingness to pay for the welfare of others in relation to their own (eg a better degree of heritage conservation or any other social benefit)

FIGURE 8 - SOCIAL SIGNIFICANCE, IMPACT AND VALUE © KATE CLARK 2023

[24] Heritage Council of Victoria, 'Assessing and Managing Social Value: Report and Recommendations' (Melbourne: Heritage Council of Victoria, 2018).

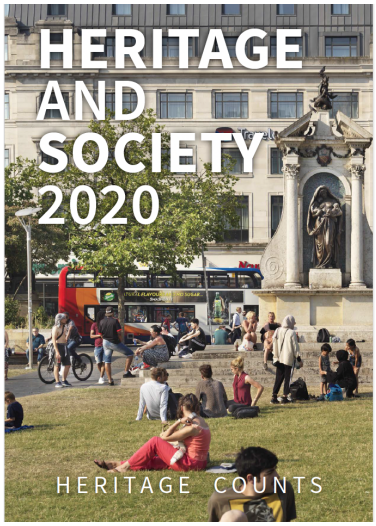


FIGURE 9 - HERITAGE AND SOCIETY 2020
© HISTORIC ENGLAND 2020

Engaging with cultural heritage can potentially have a huge range of different social impacts. In their review of Heritage Victoria Grants, SKM suggested that heritage conservation projects created a sense of community pride, that the reuse of heritage places had enhanced community cohesion and that investing in heritage brought together from people of different backgrounds for shared purpose.[25] They also noted that grants could deliver enhanced community identity, celebrate cultural diversity and participation, and create opportunities for current and future generations of Victorians to appreciate, understand and learn from Victoria's history.[26]

There is no standard approach to understanding the social impact of heritage. Matarasso identified 50 different potential outcomes for engaging with the arts and culture, including better physical and mental health, learning and skills, identity, confidence, enjoyment, social networks, respect for others and civic engagement[27], whilst a recent review of research on the social impact of cultural heritage found 180 indicators for heritage and wellbeing.[28] Historic England grouped hundreds of research studies on social impact under 13 different themes, whilst Fujiwara et al looked at the social outcomes of heritage through four themes – health, education, employment and civic participation.[29]

Of the many potential social impacts for cultural heritage, this report picks out five –participation, learning, in health, cultural equity and in social capital. The five topics have been chosen because they relate to five important social policy drivers in Victoria – education policy, health policy, multiculturalism and equality. The Victorian government has also identified social capital as an important issue that can be affected by different policy areas.

As there are often strong overlaps between social and place-based, economic and creative impacts, social impacts are also covered in

[25] SKM (Sinclair Knight Merz), 'Heritage Grants Review: Report for Heritage Victoria' (Melbourne: SKM (Sinclair Knight Merz), 2007).
[26] SKM (Sinclair Knight Merz) 2007.
[27] Francois Matarasso, Use or Ornament? The Social Impact of Participation in the Arts (Stroud: Comedia, 1997).
[28] Pennington, Andy et al., 'Heritage and Wellbeing: The Impact of Historic Places and Assets on Community Wellbeing - A Scoping Review' (London: What Works Centre for Wellbeing, 2019).
[29] Historic England, 'Heritage and Society' (Heritage and Society, 2020); Daniel Fujiwara, Laura Kudrna, and Paul Dolan, 'Quantifying and Valuing the Wellbeing Impacts of Culture and Sport' (Department for Culture, Media & Sport, 2014).

Chapter 4 (heritage in planning) and Chapter 5 (heritage in creativity). The much bigger issue of heritage and wellbeing is one of the future strategic research challenges in the Epilogue.

KEY STUDIES AND LITERATURE REVIEWS

Whilst there are very few studies of how investing in cultural heritage can make a difference to social outcomes for Australia, there are many more for the UK.[30]

Annex 4 notes some of the major studies on the social value of heritage, and Annex 5 lists useful websites and resources. The Historic England 'Heritage and Society' summarises a wide range of social impacts for heritage, from holistic issues such as wellbeing to more targeted topics such as heritage and learning, heritage and social capital, place attachment, civic engagement, and many different forms of equity.[31] The most recent systematic study was an international scoping review of research into the impact of heritage interventions on wellbeing including heritage activities in museums, hospital and healthcare settings, volunteering, community archaeology and living in heritage environments.[32] DCMS have also undertaken a review of quantifying and valuing the wellbeing impacts of culture and sport.[33]

For Australia there have been studies on how Australians perceive the social value of heritage (see Annex 4). The 2006 Deakin study included questions about the social value of heritage including its role in learning diversity; the 2005 Allen Group study considered how engaging with heritage helps build social capital including community stability and cohesion, aesthetic appreciation, spiritual and symbolic connections, vibrant local culture, a 'sense of place'.[34] The 2014 review of community perceptions of heritage in Victoria included information about people's perceptions of the social

[30] Pennington et al identified 3 Australian studies for museums or heritage sites. See Pennington, Andy et al., 'Heritage and Wellbeing: The Impact of Historic Places and Assets on Community Wellbeing - A Scoping Review'.
[31] Historic England, 'Heritage and Society'.
[32] Pennington, Andy et al., 'Heritage and Wellbeing: The Impact of Historic Places and Assets on Community Wellbeing - A Scoping Review', 2019.
[33] Fujiwara, Kudrna, and Dolan, 'Quantifying and Valuing the Wellbeing Impacts of Culture and Sport'.
[34] McDonald, Heath, 'Understanding Public Involvement with Australian Heritage: Final Research Report'; Allen Consulting Group, 'Valuing the Priceless: The Value of Historic Heritage in Australia: Research Report 2 - Prepared for the Heritage Chairs of Australia and New Zealand' (Melbourne: Allen Consulting Group, 2005).

benefits of cultural heritage activities, and Parks Victoria visitor and community research includes perceptions social outcomes of investing in parks.[35]

These studies do not demonstrate a causal relationship between investing in cultural heritage assets or activities and differential social impacts, but there is some research from other disciplines around culture and social outcomes. Research in Indigenous health shows correlations between culture and wider health and social outcomes, or public health research into for example the role of urban environments and health.[36]

Participation In Heritage

This section highlights some of the data on Australian participation in heritage as a starting point for thinking about the social benefits of heritage.

People derive potential social benefits from participating in cultural heritage. They may participate through actively caring for tangible and intangible heritage assets (e.g. as owners or traditional knowledge holders), or through enjoying heritage, for example by visiting parks, museums or heritage sites, attending ceremonies, heritage festivals, public programs or digital heritage content. Living, working or visiting historic places is also a way that people experience heritage.

As Annex 1 notes, there is no overview of heritage participation in Victoria, and where there is data, Covid-19 has had a significant impact. But for example, Museums Victoria reports 1.2million ticketed visitors and a total of 9 million visitors including the Royal Exhibition Building, and online attendance.[37] Prior to Covid-19, around 130.8 million people visited parks and piers in Victoria in 2018-19.[38] 75% of people in Victoria had visited a park, a figure that

[35] Heritage Council of Victoria, 'The Community's Perceptions of Heritage: Literature Review'; Parks Victoria, 'State of the Parks - Fourth Edition' (Melbourne: Parks Victoria, 2018).
[36] Jonathan Kingsley et al., '"Here We Are Part of a Living Culture": Understanding the Cultural Determinants of Health in Aboriginal Gathering Places in Victoria, Australia', Health & Place 54 (November 2018): 210–20, https://doi.org/10.1016/j.healthplace.2018.10.001.
[37] Museums Board of Victoria, 'Annual Report 2021-22' (Melbourne: Museums Victoria, 2022).
[38] Museums Board of Victoria, 'Annal Report 2021-22'.

had remained stable since around 2002.[39] The technological heritage sector estimates that across Australia, there are around 3.5 million paid visitors to technological sites and attractions. At the 2011 Melbourne Open House Day, over 100,000 people visited 75 open properties (with 79956 in 2022).[40]

Some idea of Australia-wide levels of participation can also be gained from surveys. For example, the 2010 Deakin study found that in the past 12 months:

- 80% of people had engaged in at least one heritage related behaviour,
- 60% had watched a TV show related to Australia's heritage,
- 47% had visited an Australian heritage site and 41% had attended a festival or event,
- 40% had read a book or article related to Australian heritage,
- 25% had donated money to a heritage related cause, and
- 10% had played an active role in heritage protection.

These figures had declined since 2006 but there has been little research into how and why those figures have changed.[41]

Heritage And Learning

This section highlights some of the learning opportunities that arise from engaging with heritage in Victoria and notes the role of the heritage sector as a provider of knowledge.

One of the most obvious measures is the role that cultural heritage activities can play in learning. This can include a wide range of learning outcomes for people of all ages from young people to older people who might benefit from mental stimulation and engagement.

[39] Parks Victoria, 'State of the Parks - Fourth Edition'.
[40] Open House Melbourne, 'Annual Report 2022' (Melbourne: Open House Melbourne, 2022).
[41] McDonald, Heath, 'Understanding Public Involvement with Australian Heritage: Final Research Report'; Heritage Council of Victoria, 'The Community's Perceptions of Heritage: Literature Review'.

One of the biggest research challenges is demonstrating a causal link between attending cultural heritage events and activities, and learning outcomes. The DCMS Case Project reviewed evidence for the learning outcomes of taking part in museums and heritage projects. Eleven systematic American or UK studies measured learning outcomes for museums and heritage. One found that visiting a museum or gallery resulted in higher test scores and another indicated the opposite effect, but both studies were of low quality and had significant limitations. Although direct learning outcomes were difficult to demonstrate, other studies showed that engaging with museums and heritage contributed to confidence and that there were overwhelmingly positive ratings for the visits.[42]

Nevertheless, Australians are very clear about the role of learning as a reason to protect cultural heritage. Education was one of the main reasons that Australians used to justify their interest in heritage and 97% of Australians consider heritage education to be 'very important' whilst 85% of parents believe that visits to museums should be part of the national curriculum.[43]

Each year some 1.35 million students visit national Australian museums to study history, biology, physics and chemistry, English, civics, arts, geography, languages and mathematics and many other subjects directed at all stages of the school curriculum as well as tertiary audiences. Cultural institutions are also moving into life-long learning – the formal and informal ways in which we develop new knowledge throughout life through programs for older and younger audiences.

THE NATIONAL TRUST OF AUSTRALIA (VICTORIA) *offers physical and virtual learning opportunities based on their heritage properties and collections. There are facilitated learning programmes at Old Melbourne Gaol, the Polly Woodside Tall Ship, Rippon Lea Estate, Como House and the McCrae Homestead. These immersive learning experience cover different curriculum elements from maths and geography to the humanities. The school programs meet*

[42] Department of Culture, Media and Sport, Arts Council England, English Heritage, the Museums, Libraries and Archives Council and Sport England, 'Understanding the Drivers, Impact and Value of Engagement in Culture and Sport' (London: Department for Culture, Media and Sport, 2010).
[43] McDonald, Heath, 'Understanding Public Involvement with Australian Heritage: Final Research Report'.

National and Victorian curriculum standards. There are also programs for adult, tertiary and ESL groups.[44]

PARKS VICTORIA *also offer a wide range of interpretation and education programs. In 2017-8 (pre Covid-19) over 114,000 participants were involved in interpretation and education programs, including 30,000 participants in education programs and 12,500 Junior ranger participants.*[45] *The service has taken on community engagement rangers which have increased the number of participants.*

MUSEUMS VICTORIA *offer virtual learning programs, museum at home learning, online resources and tools. These include programs funded by the Department of Education that are free to all Government schools.*[46] *History Lab for example uses the migration and diversity collections to explore how ordinary objects tell big stories, linked to both the history element of the curriculum and to creative and critical thinking topics.*[47] *A travelling 'museum in a van' and kit loan service includes Reminiscing Kits to explore heritage topics such as rock and roll, sporting programs, recipes, sewing and migration journeys.*[48] *The Corporate Education Program offers a First People's Cultural Competency programme, designed to help shape how we think about and interact with the history and culture of First Peoples' and can integrate it into our working relationships and meaningful interactions.*[49]

Cultural heritage organisations also contribute to learning through delivering important research, often in partnership with others in the public and private sector. In 2008-09 there were over 500 research projects underway in Australia's major museums, and museums participated in 267 grant funded research projects.[50] For example,

[44] National Trust of Australia (Victoria), 'National Trust Vic', Education for Victoria, 2023, https://www.nationaltrust.org.au/education-vic/.
[45] Parks Victoria, 'State of the Parks - Fourth Edition'.
[46] Museums Victoria, 'Museums Victoria', Learning, 2023, https://museumsvictoria.com.au/learning/.
[47] Museums Victoria, 'Immigration Museum', History Lab (VCES), 2023, https://museumsvictoria.com.au/immigrationmuseum/learning/school-programs-and-resources/history-lab/.
[48] Museums Victoria, 'Museums Victoria', Outreach program - Relive the good old days, 2023, https://museumsvictoria.com.au/learning/outreach-program/relive-the-good-old-days/.
[49] Museums Victoria, 'Museums Victoria', 2023.
[50] The Commonwealth Strategic Roadmap for Research Infrastructure acknowledges the primary role that museum collections (including artefacts, images, sound recordings, documents, films, animals, insects, plants and geological samples) can play in research, noting digitisation can provide, access for remote, regional and global communities and new opportunities for diverse research disciplines (and that) the range of disciplines that would benefit from this is vast, including biology, environmental science, ecology, zoology, humanities, arts, social science and health sciences. See Australian Government, '2021 National Research Infrastructure Roadmap' (Canberra: Australian Government, 2021).

in 2022 Museums Victoria established a Research Institute to create a multi-disciplinary, collaborative research programme built around four centres of knowledge around four heritage topics - First Peoples' Knowledge, healing Country and wellbeing, discovery and innovation, and collection care and preservation.[51]

A significant amount of research and new knowledge is delivered through the various systems of heritage approvals. For example, one of the ways of mitigating loss to archaeological heritage sites from development is through archaeological reports. Research into both First Nations and other cultural heritage is generated through compliance reporting in these approvals systems.

Heritage And Health

This section notes examples of international research into the link between heritage and health and important work being done by Indigenous researchers. It highlights examples of Victorian heritage initiatives such as Rail Trails that can deliver health benefits.

Our physical and mental health is not simply a biomechanical construct, but something intimately connected with our social and physical context – where we live, who we know and interact with, the relationships we seek to build and our cultural links and connections.

There is also wider evidence about the role of our physical environment, including access to green spaces such as parks and blue spaces such as waterways, in mental health and wellbeing. For example, international research studies show how engaging with parks, forests, views and simply being outdoors can contribute health benefits.[52]

In the UK, Operation Nightingale has shown how engaging with archaeology and excavations can improve mental health of former soldiers. [53] Operation Nightingale is a programme of hands-on conservation with veterans and people with post-traumatic stress

[51] Museums Victoria, 'Museums Victoria', Museums Victoria Research Institute, 2023, https://museumsvictoria.com.au/research-institute/.
[52] Historic England, 'Heritage and Society', 34.
[53] Wessex Archaeology, 'Wessex Archaeology', Operation Nightingale, 2023, https://www.wessexarch.co.uk/our- work/operation-nightingale.

disorder lead by Wessex Archaeology. One of the few heritage projects to be systematically evaluated, the research showed that the mental health impacts of taking part in the project included reductions in anxiety, depression and feelings of isolation, and a greater sense of being valued.[54]

There is a growing interest in the social and cultural determinants of health. 'Culture, Diversity and Health in Australia' is a core text that helps health care providers understand the role of culture and cultural safety in health practice.[55] It notes that although health is shaped by social, economic and environmental forces, there are also cultural elements that shape health that can lead to different health outcomes for some groups.

The State of Victoria's Aboriginal Cultural Heritage Report 2016-21 reports on the role of cultural practice, health and wellbeing through the voice of Dr Doris Paton, a proud Gunai and Monaro Ngarigo woman, and teacher, academic and language educator.[56]

Much of the Australian thinking about the link between cultural heritage and health has been led by Aboriginal leaders and researchers. The Lowitja Institute notes that culture and a strong connection to, and identification with, one's culture can improve resilience. A 2014 roundtable of distinguished Aboriginal and Torres Strait Islander leaders explored the role of culture in Aboriginal and Torres Strait Islander health.[57] The background report notes key cultural determinants of health as:

- connection to, custodianship, and utilisation of Country and traditional lands,
- reclamation, revitalisation, preservation and promotion of language and cultural practices,
- protection and promotion of Traditional Knowledge and Indigenous Intellectual Property, and

[54] Paul Everill, Richard Bennett, and Karen Burnell, 'Dig in: An Evaluation of the Role of Archaeological Fieldwork for the Improved Wellbeing of Military Veterans', Antiquity 94, no. 373 (2020): 212–27, https://doi.org/10.15184/aqy.2019.85.
[55] Dune, Tinashe, McLeod, Kim, and Williams, Robyn, eds., Culture, Diversity and Health in Australia: Towards Culturally Safe Care (London: Routledge, 2021), https://www.brookings.edu/articles/the-economics-of-historic-preservation/.
[56] Valenti et al., 'State of Victoria's Aboriginal Cultural Heritage Report 2016-2021', 37.
[57] The Lowitja Institute, 'Cultural Determinants of Aboriginal and Torres Strait Islander Health Roundtable' (Melbourne: The Lowitja Institute, 2014).

• understanding of lore, law and traditional roles and responsibilities.

Each of these could be described as cultural heritage practices. The direct link between culture and health for Aboriginal communities is embedded in the definition of Aboriginal health as, 'not just the physical wellbeing of the individual but the social, emotional, and cultural wellbeing of the whole community.'[58] The Roundtable report notes that culture is integral to strong and healthy identity formation, and a strong contributor to better health outcomes, but culture is not being practiced and transmitted as much as we would like. It notes the tension between the positive opportunities of culture in terms of values and meanings, and the negative impacts of colonisation.[59]

Connecting with culture and heritage can have mental health benefits including resilience, confidence and overcoming trauma. The landmark 'Elders Report into Preventing Indigenous Self-Harm and Youth Suicide', for example, has emphasised the all-encompassing connection between culture, health, healing and resilience for Australian Indigenous people.[60]

A recent study showed how **ABORIGINAL GATHERING PLACES** *in Victoria link cultural heritage and health. Each Aboriginal gathering place has its own unique history and stories. A study of the role of 13 Aboriginal gathering places (also known as healing places or community centres) in Victoria in delivering health outcomes found that creating a safe place to learn about culture and Country contributed to health outcomes.*[61]

Engaging with cultural heritage can also help people who have experienced trauma such as Veterans. The Australian National Veterans Arts Museum in Melbourne enhances and strengthens the wellbeing of the veteran community through arts engagement programs, project and collaborations. The Charity is planning to transform the Commonwealth heritage listed former Art Deco Modernist Veterans Clinic into an inclusive National Cultural Institute

[58] The Lowitja Institute.
[59] The Lowitja Institute.
[60] Gooda, Mick and Dudgeon, Patricia, 'The Elders' Report into Preventing Indigenous Self-Harm & Youth Suicide' (People Culture Environment, 2014); Alasdair Vance et al., 'Mental Health Care for Indigenous Young People: Moving Culture from the Margins to the Centre', Australasian Psychiatry 25, no. 2 (April 2017): 157–60, https://doi.org/10.1177/1039856216671655.
[61] Kingsley et al., '"Here We Are Part of a Living Culture"'.

and home of Veterans arts.[62]

A study of adolescents in Melbourne found that urban parks can support positive mental wellbeing through sensory, social, physical and spiritual experiences.[63] A survey of 4,141 Australian urban dwellers found that population density and urban parkland were positively associated with cognitive function. They argued that denser urban environments and more parkland provided opportunities to engage in more activities. [64] The implication of this research for heritage might be that dense historic neighbourhoods, such as inner-city terraces, could have a role in supporting mental wellbeing.

Covid-19 prevented many people from engaging with cultural heritage or visiting cultural heritage sites. The loss of access to culture and heritage has shown how important it can be. An English research study showed that when people were deprived of access to heritage sites in 2020, they became more aware of the impact of cultural heritage, in particular the benefits to health and wellbeing.[65]

In terms of physical health, activities such as visiting outdoor cultural heritage places including parks and landscapes can deliver physical benefits. Indeed, physical exercise is one of the key motivations for visiting metropolitan and rural parks; Parks Victoria report that more than half of all visits to Victorian metropolitan and national/state parks are for physical or sporting purposes.[66]

Other opportunities for engaging with cultural heritage that provide physical exercise include walks and trails, and activities such as taking part in archaeological excavations.

[62] Australian National Veterans Arts Museum, 'Australian National Veterans Arts Museum', Creating a Veterans Cultural Insitution, accessed 21 July 2023, https://www.anvam.org.au/310-st-kilda-road.
[63] Paul Fleckney, '"A Little Escape Dome": Exploring How Older Adolescents Experience Urban Parks as Sites of Mental Wellbeing in Melbourne, Australia', Landscape and Urban Planning 235 (July 2023): 104753, https://doi.org/10.1016/j.landurbplan.2023.104753.
[64] Ester Cerin et al., 'From Urban Neighbourhood Environments to Cognitive Health: A Cross-Sectional Analysis of the Role of Physical Activity and Sedentary Behaviours', BMC Public Health 21, no. 1 (December 2021): 2320, https://doi.org/10.1186/s12889-021-12375-3.
[65] Joanna Sofaer et al., 'Heritage Sites, Value and Wellbeing: Learning from the COVID-19 Pandemic in England', International Journal of Heritage Studies 27, no. 11 (2 November 2021): 1117–32, https://doi.org/10.1080/13527258.2021.1955729.
[66] Parks Victoria, 'State of the Parks - Fourth Edition'.

RAIL TRAILS *are examples of cultural heritage assets in the form of old railways lines, bridges and stations being repurposed to provide opportunities for physical activities such as walking and cycling. The Rail Trails Australia website lists 48 rail trails for Victoria, from the 134km Great Victorian Rail trail to smaller local trails of 1-2 km. They have published a guidebook to Rail Trails of Victoria.[67] Rail Trails Australia has worked with Bicycle NSW and Rail Trails NSW to provide a video documenting the local economic benefits of rail trails.[68]*

The 40km Lilydale to Warburton Rail Trail for example, attracts over 200,000 visitors including walkers and cyclists each year. The trail recently received funding from Regional Development Australia to provide facilities for the local community to gather socially, for relaxation and recreation.

In a formal evaluation of the impact of rail trails on physical activities, Merom et al tracked the impact of a campaign to promote a newly constructed rail trail in Western Sydney. They found that local cyclists were more likely to use the trail, but more work needed to be done to increase usage amongst walkers.[69]

Heritage And Cultural Equity

This section notes Australians' views on heritage and diversity, and provides some examples of heritage initiatives in Victoria designed to contribute to cultural equity

Museums and cultural heritage play an important role in helping to support a more culturally diverse society. Pioneering British sociologist Stuart Hall stated that, 'Heritage is a powerful mirror – those who don't see themselves are therefore excluded'.[70]

[67] RailTrails Australia, 'RailTrails Australia', Trail Finder, accessed 21 July 2023, https://www.railtrails.org.au/trails/?trail_state[]=78.
[68] RailTrails Australia, 'RailTrails Australia', Management and Promotion Resources, accessed 21 July 2023, https://www.railtrails.org.au/management-resources-overview/.
[69] Dafna Merom et al., 'An Environmental Intervention to Promote Walking and Cycling—the Impact of a Newly Constructed Rail Trail in Western Sydney', Preventive Medicine 36, no. 2 (February 2003): 235–42, https://doi.org/10.1016/S0091-7435(02)00025-7.
[70] Stuart Hall, 'Un-settling "the Heritage", Re-imagining the Post-nationWhose Heritage?', Third Text 13, no. 49 (December 1999): 3–13, https://doi.org/10.1080/09528829908576818.

Victoria is home to one of the most culturally diverse societies in the world. 30% of Victorians were born overseas – a higher percentage than other states and many people came to Victoria as refugees from conflicts in Europe, Africa, the Middle East and Southeast Asia.[71]

Diversity is an important policy topic in Victoria. For example, cultural equity is a key platform for the Victorian creative industries strategy, which includes developing diversity and inclusion targets and standards, and reviewing the accessibility and inclusiveness of Creative Victoria processes. It also involves developing universal design principles for cultural infrastructure projects.

As noted above, an international review acknowledged that there had been considerable efforts by heritage institutions and actors to target interventions towards minority, disadvantaged and vulnerable groups, including homeless people, people from economically disadvantaged backgrounds, and ethnically diverse groups, children and young people, older people, women and people experiencing physical and mental health issues and disabilities, and that the majority of studies (45) targeted these.[72]

For Australia, there is relatively little primary research into the impact of heritage assets and activities on cultural equity. However, we do know something about the value people place on a more diverse heritage. The 2006 Deakin study found that whilst most people have a bias in terms of what they wish to see protected (i.e. their own culture and history), there was a recognition of the diversity of Australian culture and the right of different groups to preserve components important to them. This illustrated the point that there is no need for heritage to be 'universal' – people respected the rights of others to preserve what is important to them so long as it did not interfere with their own ability to do the same. Australians also acknowledged that heritage is not just about white Anglo-Saxon stories and there was a strong desire to better understand Indigenous and other cultures. People felt they did not know enough about their own cultures, let alone the cultures of others and were

[71] Victorian Government, 'VIC.GOV.AU', Discover Victoria's diverse population, accessed 21 July 2023, https://www.vic.gov.au/discover-victorias-diverse-population.
[72] Pennington, Andy et al., 'Heritage and Wellbeing: The Impact of Historic Places and Assets on Community Wellbeing - A Scoping Review'.

reluctant to discuss matters where they felt insecure about their knowledge or beliefs.[73]

In the absence of research, there are many different examples of how cultural heritage organisations in Victoria are seeking to address cultural equity. This section highlights four– diversifying the Victorian Heritage Register, creating safe spaces for the Islamic community, showcasing the diverse stories of Victoria through the Victorian Collections website and work on migrant heritage in Victoria.

BONEGILLA MIGRANT CAMP *is a former army camp that was transformed into a migrant reception and training centre in the years after World War 2, and 300,000 migrants passed through its doors. It is on the National Heritage List and the VHR Today, the site and its associated oral, written and pictorial records in the Albury Library Museum, and Block 19 is open to the public bringing to light postwar immigration stories. The site is one of the assets cared for by Wodonga Council.*[74]

FIGURE 10 - BONEGILLA MIGRANT CAMP © SHEBA, WIKIMEDIA COMMONS. 2023

[73] McDonald, Heath, 'Understanding Public Involvement with Australian Heritage: Final Research Report,' 6-7.
[74] Bonegilla Migrant Experience, 'Bonegilla Migrant Experience', About Bonegilla Migrant Experience, accessed 21 July 2023, https://www.bonegilla.org.au/About-Us/About-Bonegilla-Migrant-Experience.

HCV has recognised that more needs to be done to diversify the VHR. Priority 2 of the Strategic Plan 2021-25 is to ensure that, 'the Victorian Heritage Register reflects the diverse range of state-significant cultural heritage valued by communities throughout Victoria' and one of the key actions is to analyse the VHR to better understand current coverage and identify underrepresented places, demographic group, historic themes or geographical areas.[75] This recognises that registration has evolved over time and is reactive to nominations received, so the VHR may not reflect the diverse range of state-significant cultural heritage and places and objects valued by Victorians.[76] The Victoria's Framework of Historical Themes addresses the diversity of people in Victoria through themes such as arriving in a new land, migrating and managing a home, and fighting for identity (theme 2) and theme 8 – building community life.[77]

Another important tool in showcasing the diversity of heritage is the Victorian Collections website. The site represents cultural heritage collecting organisations in Victoria including Aboriginal Trusts and cultural centres, archives, heritage centres, historical societies, religious groups and private collections.[78] The website presents curated stories about Victorian culture and history including stories relating to Aboriginal and built heritage.

The 'Many Roads: Stories of the Chinese on the Goldfields' tells the story of the experiences of Chinese goldminers coming to Australia. Despite one in five men in Victorian goldfields towns being of Chinese origin at the peak of the mining boom, by the 20th century many of the landscapes, buildings and relics of the era were hidden or forgotten. This story celebrates the extent of Chinese influence in the making of Victoria and links to wider built heritage initiatives such as the proposal to create a Victorian goldfields World Heritage Site.[79]

Engaging with heritage can also contribute to diversity through activities that build historical empathy and foster understanding

[75] Heritage Council Victoria, 'Heritage Council of Victoria - Strategic Plan 2021-25' (Melbourne: Heritage Council Victoria, 2021).
[76] Heritage Council Victoria.
[77] Heritage Council of Victoria, 'Victoria's Framework of Historical Themes' (Melbourne: Heritage Council of Victoria, 2010).
[78] Victorian Collections, 'Victorian Collections', Search organisations, accessed 21 July 2023, https://victoriancollections.net.au/organisations/types.
[79] Victorian Collections, 'Victorian Collections', Many Roads: Stories of the Chinese on the goldfields, accessed 21 July 2023, https://victoriancollections.net.au/stories/many-roads-stories-of-the-chinese-on-the-goldfields.

between communities. The Australian Human Rights Commission has emphasised the need for more diversity in education to combat increased racism and xenophobia in the community, and history and cultural heritage are increasingly playing a role in helping students to develop historical empathy.[80]

An example of how heritage institutions can create spaces to address those issues is the **ISLAMIC MUSEUM OF AUSTRALIA**. *The museum has a vision of being a leading cultural institution to showcase and preserve the arts, history, culture and rich heritage that Muslims and Islamic societies have brought to the world and more importantly, Australia. It aims to create a safe space to foster community harmony and facilitate an understanding of the values and contributions of Muslims to Australian society.*[81]

Stories of migration have been central to Victoria. In 2011 the HCV initiated a project to explore the many different post 1940s migrant stories of Victoria, through a partnership project with the City of Darebin.[82] A pilot project worked closely with local groups to better understand their own heritage and stories better.[83] This is one of many inclusive projects. For example, the Australia ICOMOS 'Dragon Tails' initiative highlighted stories of the Chinese community in Australia.[84] In one interview with Mark Wang, a Melbourne businessman and entrepreneur, he talks about the work of his family in reviving dragon parades in Australia, the establishment of the Museum of Chinese Australian history, and his role in other community projects. He talks about the importance of heritage not just in terms of buildings but people,

'what is quite unique about Chinatown (is that) it has a continuous history of Chinese occupation and the buildings are really the skeletal remains of the community. When we do a school tour down the street, we regard the history as the community who live there not the buildings…. Really the living history is just as important as the built form'[85]

[80] Kym Wilton, 'The Role of Cultural Museums in Building Historical Empathy in the Classroom', Agora 53, no. 1 (2022): 42.
[81] Islamic Museum of Australia, 'Islamic Museum of Australia', Islamic Museum of Australia, accessed 3 August 2023, https://www.islamicmuseum.org.au/.
[82] Context, 'Victoria's Post 1940s Migration Heritage - Darebin Pilot - Volume 3A Pilot Project - Project Report' (Heritage Victoria, 2011).
[83] Context.
[84] Williams, Damien and Reeves, Keir, 'Dragon Tails', Historic Environment 23, no. 3 (2011).
[85] Williams, Damien and Reeves, Keir.

Heritage And Social Capital

This section shows how cultural heritage can contribute to social capital, using the Victorian government's social capital approach.

Another potential social benefit for cultural heritage in enhancing community strength and networks sometimes known as 'social capital'. The 2006 Allen survey for example, found that 59% of Victorians agreed or strongly agreed that their life was richer for having the opportunity to visit or see heritage.[86]

Social capital is an important policy driver in Australia and culture plays a significant role in that. In 2003 the Australian Productivity Commission reviewed the role of social capital in Australian public policy, defining social capital as a resource that can facilitate cooperation within and between groups of people, and the key elements contributing to social capital as norms, networks and trust.[87] The Australian Bureau of Statistics (ABS) Social Capital Framework notes that social capital includes aspects of culture such as language, history and shared beliefs.[88]

There is some work from the UK on the role of heritage in social capital, including studies into the difference taking part in heritage projects made to people's networks and friendships. However, in the absence of systematic Australian research, this section illustrates how heritage can contribute to social capital in Victoria.

To understand social capital, the (former) Department of Planning and Community in Victoria created a framework of indicators in 2011 to measure community strength.[89] These indicators set out to capture Victorian's ability to get help when needed, community participation, satisfaction with amenity in their local area and community attitudes to issues such as feeling safe.

[86] Allen Consulting Group, 'Valuing the Priceless: The Value of Historic Heritage in Australia: Research Report 2 - Prepared for the Heritage Chairs of Australia and New Zealand'.
[87] Productivity Commission, 'Social Capital: Reviewing the Concept and Its Policy Implications - Commission Research Paper'.
[88] Australian Bureau of Statistics, '1378.0 - Information Paper: Measuring Social Capital - An Australian Framework and Indicators, 2004', Australian Bureau of Statistics, 2004, https://www.abs.gov.au/Ausstats/abs%40.nsf/5f1e01afb32859f9ca25697500217f48/77ee43cd56d2d8f7ca256e36007ba55d!OpenDocument.
[89] Pope, Jeanette, 'Indicators of Community Strength in Victoria: Framework and Evidence - Why Social Capital Can Build More Resilient Families and Communities' (Department of Planning and Community Development, 2011).

The Victorian social capital approach is based on three types of networks that can impact on individual and collective economic and social outcomes – close personal networks of families and friends, broader networks generated through participation in public life, and governance networks that linked individuals to decision making. Whilst the report does not specifically mention culture or heritage, it does note how cultural assets can be turned into specific outcomes such as employment, better economic activities, social welfare provision and improved community facilities through collaborative governance that enables people to be involved and get things done.[90]

Taking part in cultural heritage activities can contribute to each of the three networks that contribute to community strength and thus social capital in Victoria. For example:

1. 'BONDING' - PERSONAL NETWORKS OF FAMILY AND FRIENDS

Often one of the key reasons that people engage with cultural heritage is to build family networks and friendships.

For example, socialising is one of the key reasons for visiting parks in Victoria. In 2018-19 Parks Victoria found that since 2013 many more people had visited metropolitan parks for socialising and children's play, rising from 21% to 35% as a reason for visiting a park.[91]

Another important way in which connecting with cultural heritage contributes to bonding networks is through undertaking family history research. The State Library of Victoria provides a link to the many different genealogy and local and family history societies in Victoria and Australia.[92] The second oldest genealogy society in Australia (the Genealogical Society of Victoria) also provides a regular programme of activities and information to support people in learning about their own family histories and stories.[93]

[90] Pope, Jeanette.
[91] Parks Victoria, 'State of the Parks - Fourth Edition'.
[92] State Library of Victoria, 'State Library of Victoria', Researching your Victorian ancestors, 2023, https://guides.slv.vic.gov.au/victorianancestors/societies.
[93] Genealogical Society of Victoria, 'Genealogical Society of Victoria', Activities, n.d., https://www.gsv.org.au/activities.

2. BRIDGING NETWORKS CREATED THROUGH PARTICIPATING IN PUBLIC LIFE

Volunteering at a cultural heritage site can contribute to broader 'bridging' networks that bring people together, whilst opportunities to engage or consulting on cultural heritage projects and issues can contribute to governance networks. As Annex 1 notes, around 5.6% of the Australian population volunteer in the arts, culture or heritage space, and organisations such as Museums Victoria and the National Trust of Australia (Victoria) both have major volunteering programmes.

The Heritage Victoria **HANDS ON HERITAGE** *programs, launched in 2000, enabled volunteers to work on heritage places as a way of broadening community networks through heritage. The program increased the overall volunteer hours each year from one site with 14 days of volunteering in 2000 to 30 sites with 1100 days of volunteering. Wayne Hood, chairman of the Lake Tyers Aboriginal Trust, commented on the restoration of the Lake Tyers church, noting that, 'the church is now the focal point of the community…in addition to that members of our community were involved in the actual restoration work.'*[94]

3. INVOLVING PEOPLE IN LOCAL DECISION MAKING

Engaging in cultural heritage can contribute to collaborative or governance networks that involve people in local decision making. For example, people can participate in heritage decisions in Victoria by nominating place or objects to the Victorian Heritage Register.

Research by Parks Victoria shows how important this is to Victorians. The project asked Victorians what characteristics of communities are important. 72% felt it was important for people to participation in decisions made by government, and 61% thought it was important to volunteer in local groups. The report talks about the importance of

[94] Environment Protection and Heritage Council, 'Making Heritage Happen - Incentives and Policy Tools for Conserving Our Historic Heritage' (Adelaide: National Environment Protection Council, 2004); Victorian Government, 'Victorian Government Submission to the Productivity Commission Inquiry into the Conservation of Historic Heritage Places' (Melbourne: Victorian Government, n.d.), 8.

providing participatory activities, the need for support for community infrastructure and supporting organisations that enable people to participate. They also talk about the importance of designing shared civic environments that foster mixing and place attachment. The benefits of networks include evidence for their contribution to health and psychological wellbeing, positive parenting and child development, success at school, employment outcomes, positive aging better decision making, the spread of information and innovation inclusive attitudes and safety. They also talk about the importance of community planning.[95]

[95] Parks Victoria, 'State of the Parks - Fourth Edition'.

CHAPTER 2: HERITAGE AND THE ENVIRONMENT

The greenest building is the one that already exists
Carl Elefante[96]

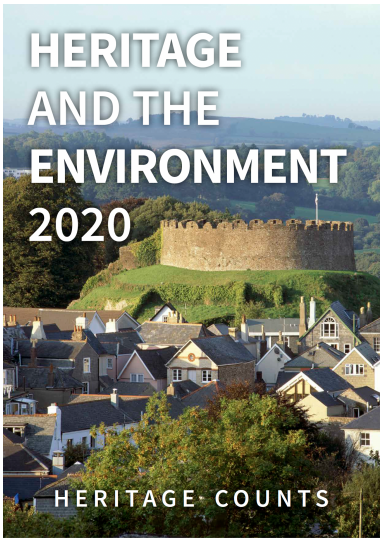


FIGURE 11 - HERITAGE AND THE ENVIRONMENT 2020
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This chapter reviews evidence for the **environmental impacts** of caring for cultural heritage.

The focus is on how retrofitting existing buildings can contribute to reducing carbon emissions, and the role of the existing building stock in reducing waste. We also touch briefly on the potential role of traditional building skills and vernacular building practices in helping to avoid 'maladaptation'.

We are very aware that there is so much more that could have been addressed in this chapter, such the role of traditional Aboriginal cultural knowledge and skills in addressing major landscape and environmental issues or indeed climate change. There is also more to be learned about the contribution that conserving cultural heritage can make to biodiversity and ecosystem resilience. These may be topics for future work.

Where possible this chapter draws on existing Australian research, but it is also important to acknowledge the Historic England volume 'Heritage and the Environment 2020' which summarises a huge range of recent research into the role of heritage in the environment for England.[97]

[96] Carl Elefante, 'Changing World, Evolving Value', 2023.
[97] Historic England, 'Heritage and the Environment' (Heritage and Society, 2020).

Climate Change And The Built Environment

Climate breakdown is a major issue for our time, and the built environment is one of the major issues driving the greenhouse gas emissions that are behind climate change.

FIGURE 12 - VICTORIAN BUILT ENVIRONMENT CLIMATE CHANGE ADAPTATION ACTION PLAN 2022-2026

The world is 0.8 degrees Celsius warmer than it was a hundred years ago and with a 2-degree Celsius warming, the earth will not be tenable for many flora and fauna species. Even a 1-degree rise will lead to erratic weather, sea level rises and, as a result, mass migrations. At current emissions levels we are on a trajectory for a more than 3-degree global temperature rise by 2050.[98]

Victoria's climate has already increased by 1.2 degrees since 1910. If global emissions continue, Victoria will face double the number of very hot days and high fire danger days, a sea level rise of around 24cm and a decline in Alpine snowfall.[99] The Victorian Climate Change Act 2017 includes actions aimed at meeting the emissions reductions goals set in the Paris Agreement and commits Victoria to net zero emissions by 2050, in line with wider Australian commitments.[100]

The greatest cause of global warming is particulate matter associated with global greenhouse gas emissions, the most problematic of which is carbon dioxide. CO2 is primarily released through coal oil and gas extraction and production, with cement (at 5%) being the fourth largest emitter of CO2 worldwide. In 2018 the Intergovernmental Panel on Climate Change (IPCC) called for urgent action to prevent further global warming maintaining that global warming should be limited to no more than 1.5 degrees Celsius.[101] It further argued that changes is needed urgently, and that the public needed to be involved in new approaches.

The built environment is one of the key issues driving carbon emissions. As the 2021 State of the Environment report notes,

[98] Faddy, Jennifer, 'CARBON TRADING AND STATE HERITAGE PLACES - Report for the South Australian Heritage Council and Heritage South Australia, Department for Environment and Water and the Architecture Museum, School of Art, Architecture and Design, University of South Australia' (Department of Environment, Land, Water and Natural Resources, 2018).
[99] Department of Energy, Environment and Climate Action, 'Energy, Environment and Climate Action', Victoria's Climate Change Strategy, accessed 21 July 2023, https://www.climatechange.vic.gov.au/victorias-climate-change-strategy.
[100] Department of Energy, Environment and Climate Action.
[101] PCC, Global Warming of 1.5°C: IPCC Special Report on Impacts of Global Warming of 1.5°C above Pre-Industrial Levels in Context of Strengthening Response to Climate Change, Sustainable Development, and Efforts to Eradicate Poverty, 1st ed. (Cambridge University Press, 2022), https://doi.org/10.1017/9781009157940.

Our built environment is currently the world's single largest contributor to greenhouse gas emissions. It consumes around 33% of our water and generates 40% of our waste … As much as 25% of Australia's carbon emissions come from buildings.[102]

As a result, more and more attention is being given to how best to reduce greenhouse gas emissions from the built environment. Victoria currently contributes 17% of Australia's emissions. Residential, commercial services and manufacturing are some of the highest emitting sectors.[103]

Victoria has seven adaptation plans, one of which focuses on the built environment. The Victorian Built Environment Climate Change Adaptation Action Plan (2022-2026) defines the built environment system as, 'our homes and buildings heritage places, energy system, public parks and sports fields'.[104] The aim of the plan is to make our cities, towns and suburbs more resilient to climate impacts.

Cultural heritage is in the forefront of the plan, through the first principle to,

Respect Traditional Owner and Aboriginal Victorian knowledge: incorporate the knowledge of Traditional Owner Groups and Aboriginal Victorians in adaptation decision making and ensure this is valued and respected.[105]

The plan also talks about understanding risks to heritage assets:

There is an ambition to train and upskill heritage and built environment industry professionals regarding the relationship between heritage, energy efficiency, thermal performance, climate change and disaster risk management, utilising a standard risk assessment methodology tailored for heritage places and values.[106]

The plan advocates for retrofitting existing buildings and considering the embodied energy in existing buildings as a key element in addressing climate change.

102 Australian Government, 'Australia State of the Environment', Australia State of the Environment 2021, 2021, https://soe.dcceew.gov.au/.
103 State Government of Victoria, 'Greenhouse Gas Emissions', Energy, Environment and Climate Action (Climate Change, 27 September 2022), https://www.climatechange.vic.gov.au/greenhouse-gas-emissions.
104 Department of Environment, Land, Water and Planning, 'Built Environment Climate Change Adaptation Action Plan 2022-2026' (Department of Environment, Land, Water and Natural Resources, 2022).
105 Department of Environment, Land, Water and Planning.
106 Department of Environment, Land, Water and Planning.

This recognises that a large percentage of the built environment consists of older buildings. Many of the buildings that we will be using in the future have already been built. Existing buildings constitute 98% of the building stock in Australia in any one year.[107] There are similar figures for other parts of the world. Half of European residential buildings were built before 1970 and in the United States residential buildings that are more than 30 years old account for more than 60% of the total[108] In England around 21% of all homes are over 100 years old, while in the US two thirds of the building stock was built between 1950 and 2000 (Historic England 2019, Elefante 2017).[109] In relation to commercial buildings, 33% of all offices in England and Wales were built before 1919 as were 48% of the retail buildings and 17% of industrial buildings.[110]

Heritage And Retrofitting

Retaining and retrofitting those existing buildings can make a significant contribution to reducing greenhouse gas emissions from the built environment. To meet its carbon emissions targets, Australia must halve its energy consumption per capita. Given the dominant role of existing buildings in the building stock noted above, one of the key strategies for achieving this is 'retrofitting' existing commercial and residential buildings to reduce their energy consumption. The Global Alliance for Building and Construction reports that current renovation rates must increase from 1% to 3% of all building work to achieve net zero carbon by 2050.[111]

This is reflected in the ground-breaking Melbourne initiative to encourage the retrofitting of existing commercial buildings to upgrade their energy and water efficiency.

The commercial sector of Melbourne generates around 53% of the municipality's emissions. In 2010 the City of Melbourne initiated the

[107] Ruth Redden and Robert H. Crawford, 'Valuing the Environmental Performance of Historic Buildings', Australasian Journal of Environmental Management 28, no. 1 (2 January 2021): 59–71, https://doi.org/10.1080/14486563.2020.1772133.
[108] Seongwon Seo and Greg Foliente, 'Carbon Footprint Reduction through Residential Building Stock Retrofit: A Metro Melbourne Suburb Case Study', Energies 14, no. 20 (12 October 2021): 6550, https://doi.org/10.3390/en14206550.
[109] Seo and Foliente; Historic England, 'Heritage and the Environment'.
[110] Whitman, Christopher, Oriel Prizeman, and Barnacle, Max Lacey, 'Correlating Maintenance, Energy Efficiency and Fuel Poverty for Traditional Buildings in the UK' (Historic England, 2016), https://historicengland.org.uk/research/results/reports/7268/CorrelatingMaintenanceEnergyEfficiencyandFuelPovertyforTraditionalBuildingsintheUK.
[111] Faddy, Jennifer, 'CARBON TRADING AND STATE HERITAGE PLACES - Report for the South Australian Heritage Council and Heritage South Australia, Department for Environment and Water and the Architecture Museum, School of Art, Architecture and Design, University of South Australia'.

1200 BUILDINGS PROGRAM *to provide commercial building owners with information and links to incentives and grants to help them upgrade the energy and water efficiency of their assets. At the time it was anticipated that if we could retrofit 1200 existing buildings to 4.5-star NABERS by 2020 it would generate an economic uplift of $2 billion and create 8000 'green collar' jobs. This would also eliminate 383,000 tonnes of CO2-e per annum. By 2015, 541 buildings had been retrofitted and 315 were planning a retrofit. The project argues that retrofitting delivers lower operating costs, higher return on investment and lower tenant churn and vacancy rates. It can also improve the capital value of the building and makes the building more attractive to investors.*[112]

The heritage sector has been increasingly focussed on the value of retrofitting existing buildings in addressing climate change. Some of that is about how to retrofit heritage buildings without compromising their cultural significance, such as the Heritage Victoria technical leaflet on improving environmental and sustainability measures for heritage buildings.[113] Heritage organisations have also been active in raising awareness of the value of retrofitting existing buildings, whether protected or not, in addressing climate change. Historic England, for example, note that, 'sympathetic refurbishment offers the greatest reduction of carbon emissions making it the most appropriate pathway for meeting the UK Government's net zero target'.[114]

The policy challenge is that embodied energy in existing buildings is not always recognised as contributing to environmental outcomes. In Australia there is no legislative requirement to demonstrate the need to demolish an existing structure and as a result, Australia continues to demolish major infrastructure well short of its lifecycle. Even the current Australian Green Star ratings system - a voluntary code designed to encourage energy efficient building - primarily

[112] City of Melbourne, 'City of Melbourne', Retrofitting is good for buisness, 2023, https://www.melbourne.vic.gov.au/business/sustainable-business/1200-buildings/Pages/retrofitting-good-business.aspx.
[113] Heritage Council Victoria, 'Heritage Council Victoria', Heritage Places and Sustainability, accessed 21 July 2023, https://heritagecouncil.vic.gov.au/your-home/heritage-places-and-sustainability/.
[114] Historic England, 'Heritage and the Environment', 52.

applies to new buildings.[115] There is also often a perception that older buildings perform badly in terms of energy efficiency, and it is better to build new, more energy efficient buildings.

Heritage organisations have therefore been active in exploring new methods and approaches to better recognise the embodied energy in existing buildings (whether listed or not) through initiatives such as the Climate Heritage network.[116] For example, Historic Scotland has produced guidance on the use of lifecycle costings for existing buildings[117] and Historic England has published a series of webinars on the role of heritage in climate changing, including adaptive reuse as climate action, the role of culture and heritage in climate action, and harnessing cultural heritage for climate action (see Annex 5).[118]

Much of this is based on a growing body of research evidence on the contribution of existing buildings to reducing carbon emissions. Jennifer Faddy has provided a recent overview of existing research for Australia in her report on the potential for cultural heritage to contribute towards Australian carbon trading initiatives.[119] For example, she notes:

- a study of 60 existing pre-2005 buildings in Melbourne that compared energy and carbon intensities for upgrading buildings[120]

- a 2018 study comparing refurbishing a building to 5 star NABERS with demolishing and rebuilding to 3 star[121]

[115] Faddy, Jennifer, 'CARBON TRADING AND STATE HERITAGE PLACES - Report for the South Australian Heritage Council and Heritage South Australia, Department for Environment and Water and the Architecture Museum, School of Art, Architecture and Design, University of South Australia', 31.
[116] Climate Heritage Network, 'Climate Heritage Network', Climate Heritage, 2022, https://www.climateheritage.org/.
[117] Gillian F Menzies, 'Embodied Energy Considerations for Existing Buildings', Historic Scotland Technical Paper 13 (Historic Scotland, 2011).
[118] Historic England, 'Climate Wednesdays: Climate Change and Cultural Heritage Webinar Series | Historic England', Historic England, 20 December 2022, https://historicengland.org.uk/services-skills/training-skills/training/webinars/climate-wednesday-webinars/.
[119] Faddy, Jennifer, 'CARBON TRADING AND STATE HERITAGE PLACES - Report for the South Australian Heritage Council and Heritage South Australia, Department for Environment and Water and the Architecture Museum, School of Art, Architecture and Design, University of South Australia'.
[120] Seongwon Seo, Greg Foliente, and Zhengen Ren, 'Energy and GHG Reductions Considering Embodied Impacts of Retrofitting Existing Dwelling Stock in Greater Melbourne', Journal of Cleaner Production 170 (January 2018): 1288–1304, https://doi.org/10.1016/j.jclepro.2017.09.206.
[121] Jonas Bengtsson, 'New Build vs Refurb - The Life Cycle Answer', Edge Environment (blog), 2018, https://edgeenvironment.com/new-build-vs-refurb-life-cycle-answer/.

- a study comparing refurbished and new buildings in Hong Kong and Melbourne[122]
- a 2007 Adelaide study which provided a tool for depicting the embodied energy in the Adelaide urban environment[123]
- a 2010 RMIT study that compared lifecycle energy, greenhouse gas, water and other impacts for a range of Australian buildings dated between 1826 and 2000 compared to retrofitted designs[124],
- a review of studies of the environmental performance of buildings built between 1997 and 2010[125]; and
- a study that compared a 1910 South Australian villa with a renovate/extend option and demolish and rebuild option.[126]

Ruth Redden and Robert Crawford have also provided a recent overview of the arguments for retaining existing historic buildings in Australia, including important discussion of the contribution of traditional knowledge to the agenda.[127]

Two recent empirical studies from Historic England are 'Understanding Carbon in the Historic Environment', which used lifecycle assessments to model carbon emissions from two retrofit projects,[128] and 'Carbon Reduction Scenarios for the Built Historic Environment' where researchers from the University of West of England evaluated the opportunity for England's pre-1919 buildings to contributing to reducing emissions in the built environment.[129]

[122] Craig Langston, Edwin H.W. Chan, and Esther H.K. Yung, 'Embodied Carbon and Construction Cost Differences between Hong Kong and Melbourne Buildings', Construction Economics and Building 18, no. 4 (12 December 2018): 84–102, https://doi.org/10.5130/AJCEB.v18i4.6280.
[123] Stephen Pullen, 'A Tool for Depicting the Embodied Energy of the Adelaide Urban Environment.' (Proceedings of 2007 Australian Institute of Building Surveyors International Transitions Conference, Adelaide, 2007).
[124] James Pow Chew Wong, Usha Iyer-Raniga, and D. Sivaraman, 'Energy Efficiency and Environmental Impacts of Buildings with Heritage Values in Australia' (Heritage and Sustainable Development, 2010).
[125] Ellis Judson, 'Reconciling Heritage Significance and Environmental Performance', Historic Environment 24 (1 January 2012): 19–24.
[126] Stephen Pullen and Helen Bennetts, 'Valuing Embodied Energy in the Conservation of Historic Residential Buildings', Conference Paper, 45th Annual Conference of the Architectural Science Association, 2011.
[127] Redden and Crawford, 'Valuing the Environmental Performance of Historic Buildings'.
[128] Duffy, Aidan et al., 'Understanding Carbon in the Historic Environment - Scoping Study' (Historic England, 2019), https://historicengland.org.uk/content/docs/research/understanding-carbon-in-historic-environment/.
[129] Organ, Samantha et al., 'Carbon Reduction Scenarios in the Built Historic Environment' (Historic England, 2020), https://historicengland.org.uk/content/docs/research/carbon-reduction-scenarios-built-historic-environment/.

FIGURE 13 - KNOW YOUR HOME, KNOW YOUR CARBON © HISTORIC ENGLAND 2020

In terms of literature reviews, the 2020 'Know your home, know your carbon' report is an overview of existing literature on how retrofitting existing buildings can contribute to addressing climate change. As many traditional Australian buildings draw on nineteenth century British building techniques, much of this research is relevant.[130]

Some of the key points that emerge from that research highlight the significance of retaining and retrofitting the existing built environment in addressing climate change:

- The energy embodied in existing buildings in Australia was calculated in 2008 to be equivalent to 10 years of the total energy consumption of the entire nation. The embodied energy varies significantly across different materials, from about two gigajoules per tonne for concrete to hundreds of gigajoules per tonne in aluminium.

- Embodied energy in a building can be more important than the operating energy. The focus of many energy efficiency programs is on the operating energy of a building. The CSIRO notes that the embodied energy of a building is a significant multiple of the annual operating energy consumed, ranging from around 10 for typical dwellings to over 30 for office buildings. Making buildings such as dwellings more energy efficient usually requires more embodied energy, thus increasing the ratio even further.[131]

[130] Historic England, 'Know Your Home, Know Your Carbon - Reducing Carbon Emissions in Traditional Homes'.
[131] S.N. Tucker and M.D. Ambrose, 'Embodied Energy of Dwellings' (Melbourne: CSIRO Division of Building, Construction and Engineering, 1997).

- If we do not count embodied carbon we underestimate the emissions of new buildings by up to a third In its comprehensive summary of the role of existing buildings in reducing carbon emissions Historic England notes the importance of embodied carbon, and that if the UK is to meet its legally binding commitment to become carbon neutral by 2050, then addressing the embodied carbon of the built environment is a priority.[132]

- In the context of the climate emergency, it may be that materials conservation is even more relevant and of greater value than cultural preservation. Carl Elefante argues that in future our primary task as preservationists will be to serve as stewards of the massive material and energy investments made in mid-century structures.[133]

- Despite being a significant element in building energy there are currently no regulations or targets in Australia relating to embodied energy in the built environment. Despite representing between 10% and 30% of the operating energy of a building over its lifetime, Faddy notes that there are currently no regulations or targets in Australia relating to embodied energy in the building environment, and indeed it is not a component of the global trading industry.[134] The Federal Governments definition of a carbon neutral building or precinct does not include any calculation of embodied energy.

- Older buildings do not perform badly in terms of energy conservation. A study of eight residential buildings in Victoria combine life cycle modelling with building energy efficiency simulation. They found that lower life cycle primary energy consumption does not necessarily lead to lower carbon emissions. They also note that while the common perception is that old buildings often perform badly in terms of energy conservation, this was not always the case.[135]

[132] Historic England, 'Heritage and the Environment'.
[133] Elefante, 'Changing World, Evolving Value'.
[134] Faddy, Jennifer, 'CARBON TRADING AND STATE HERITAGE PLACES - Report for the South Australian Heritage Council and Heritage South Australia, Department for Environment and Water and the Architecture Museum, School of Art, Architecture and Design, University of South Australia', 2018.
[135] Usha Iyer-Raniga and James Pow Chew Wong, 'Evaluation of Whole Life Cycle Assessment for Heritage Buildings in Australia', Building and Environment 47 (January 2012): 138–49, https://doi.org/10.1016/j.buildenv.2011.08.001.

- Retrofitting existing dwellings in Melbourne would result in a 36% reduction in annual operating energy. A study of the embodied impacts of retrofitting existing dwellings pre-2005 in greater Melbourne using a 25-year life cycle approach found that all the pre-2005 dwellings in the study area can be retrofitted from 3 to 6 stars (NatHErs) resulting in a 36% reduction in energy efficiency. An upgrade to 7 stars would reduce energy consumption by 76%.[136]

- Retrofitting older single detached dwellings in Melbourne presents the greatest potential for lifecycle energy and carbon savings. In a further study of the City of Dandenong, Seo and Foliente looked at the impact of retrofitting buildings across a suburb.[137] They found that environmental benefits rose faster than financial benefits over a dwelling's lifetime, suggesting that financial incentives may be needed to achieve optimum results. [138] However, they recommended double glazing and insulation as primary strategies which may not always be appropriate for older buildings.

- Retrofitting older residential buildings is vital to addressing climate change A large percentage of UK residential buildings date to pre-1919 but historically the role of these buildings in contributing to sector energy efficiency has been overlooked. Historic England modelled the potential cost and effectiveness of retrofitting this cohort. They found that approximately 15 million tonnes of CO2 emitted annually by this sector could be reduced to zero by 2050 by retrofitting.[139]

- Renovating results in fewer carbon emissions than demolishing and new build, even if embodied energy is excluded. A 2011 study of a 1910 property in South Australia compared the energy efficiency of a renovation project with the option of demolishing and rebuilding. Over 50 years the renovate and extend option yielded 26% less life cycle emissions than the demolish and

[136] Seongwon Seo, Greg Foliente, and Zhengen Ren, 'Energy and GHG Reductions Considering Embodied Impacts of Retrofitting Existing Dwelling Stock in Greater Melbourne', Journal of Cleaner Production 170 (January 2018): 1288–1304, https://doi.org/10.1016/j.jclepro.2017.09.206.
[137] Seo and Foliente, 'Carbon Footprint Reduction through Residential Building Stock Retrofit'.
[138] Seo and Foliente, 'Carbon Footprint Reduction through Residential Building Stock Retrofit'.
[139] Organ, Samantha et al., 'Carbon Reduction Scenarios in the Built Historic Environment'.

rebuild option. The calculation excluded the embodied energy in the building which might have resulted in a higher saving .[140]

- Refurbishing an existing building produces 36% less carbon emissions than a new build. Edge Consulting used lifecycle analysis to compare refurbishment with demolition and new build over a 15-year cycle. The refurbishment scenario had 36% less carbon emissions, estimated to save approximately 34,740,000 kgCo2-e over 15 years.[141] In 2008 Jean Caroon compared the CO2 emissions in new construction with the refurbishment of existing homes and concluded that energy efficient homes recover the carbon expended in construction over 35-50 years.[142]

- Despite convincing evidence that historic buildings are high environmental performers, most environmental improvement initiatives within building and planning systems continue to focus heavily on operational performance. As noted above, embodied energy is not a consideration in most building performance tools and ratings. However, focussing solely on operational energy is unlikely to address greenhouse gas emissions from the building sector. When a typical historic building is refurbished and retrofitted it will emit less carbon by 2050 than a new building.[143]

- Industry standard performance measures are not always accurate for older buildings. In the UK, energy performance certificates for buildings are based on standardised measures, for example for the U value of solid walls.[144] A study by Li et al suggests that many of the standard U values for solid walls are inaccurate and this may affect the overall energy performance ratings given to older buildings.[145]

[140] Faddy, Jennifer, 'CARBON TRADING AND STATE HERITAGE PLACES - Report for the South Australian Heritage Council and Heritage South Australia, Department for Environment and Water and the Architecture Museum, School of Art, Architecture and Design, University of South Australia'.
[141] Bengtsson, 'New Build vs Refurb - The Life Cycle Answer'.
[142] Carroon, Jean, Sustainable Preservation: Greening Existing Buildings (New Jersey: John Wiley & Sons, 2010).
[143] Redden and Crawford, 'Valuing the Environmental Performance of Historic Buildings'.
[144] The U value refers to the rate at which heat is transferred through a construction element such as a wall, door or glass. A low U value means that less heat is transferred.
[145] Li et al, Slid-wall U-values:heat flux measurements compared with standard assumptions. See Historic England, 'Heritage and the Environment', 3.

Sustainable Building Materials In Older Buildings

The materials used in older buildings are also a consideration in relation to embodied energy.

- The service life of materials can have a significant impact on recurrent embodied energy. Rauf and Crawford of the University of Melbourne explored the relationship between embodied energy and the service life of materials. They found that the choice of materials could significantly affect energy use and argued that the recurrent embodied energy involved in maintaining and refurbishing a building also needed to be taken into account in calculating embodied energy.[146]

- Traditional building materials such as timber, brick and concrete often have lower embodied energy than new materials such as glass, steel or aluminium. Materials such as concrete and timber have the lowest embodied energy intensities but are consumed in very large quantities, whereas materials with the high energy content such as stainless steel are used in smaller amounts. Thus, the greatest amount of embodied energy in a building is often in concrete and steel.[147] A study by RMIT of Australian historic buildings confirmed the relatively low embodied energy of the materials used in heritage buildings.[148]

- The reuse of building materials commonly saves about 95% of embodied energy which would otherwise be wasted. The CSIRO notes that some materials such as bricks and tiles suffer losses for up to 30% in reuse. The savings by recycling materials for reprocessing varies considerably with savings up to 95% for aluminium but only 20% for glass. And some reprocessing may use more energy, particularly if long transport distances are involved.[149]

[146] Redden and Crawford, 'Valuing the Environmental Performance of Historic Buildings'.
[147] Tucker and Ambrose, 'Embodied Energy of Dwellings'.
[148] Wong, Iyer-Raniga, and Sivaraman, 'Energy Efficiency and Environmental Impacts of Buildings with Heritage Values in Australia'.
[149] Tucker and Ambrose, 'Embodied Energy of Dwellings'.

There are also other environmental issues to consider. There is a growing interest in the impact of harmful pollutants on indoor air quality, including Volatile Organic Compounds (VOC) from modern construction materials such as glues and paints which can give off gas for months after construction or use. Lime render, mineral paints, linseed putty and beeswax used in traditional building conservation are low VOC materials in comparison to many modern materials.

In Australia there is interest in the use of sustainable materials in new buildings, including choice of timbers, the use of recycled material including brick, but there has been less emphasis on the environmental benefits of the materials in existing buildings. This could be an area to explore further.

Heritage and Traditional Building Knowledge

Whilst retrofitting existing buildings has been a key focus of many initiatives around decarbonisation in the built environment, retrofitting programs don't always take traditional building knowledge into account. There is a risk that retrofitting programs could worsen some of the problems that they have set out to address. This is known as 'maladaptation'. This has been a particular issue in Wales which has a large percentage of older buildings including terraced housing and where poor retrofitting risks making issues such as damp, potentially worse.

One of the key issues in the debate around retrofitting is the question of what can be learned from traditional, historical building techniques, and whether much of the current retrofit pathways may in fact be delivering unintended consequences and leading to the overuse of carbon and energy.

Many historic buildings were designed with a sophisticated understanding of passive heating and cooling and built from local or low carbon materials. For example, in the run up to the international Conference of the Parties on climate change (COP 27), vernacular architectural practitioners from countries such as Nigeria highlighted some of the lessons of traditional low carbon vernacular building practices, and how they respond to the pressures of climate change

including systems of heating and cooling, dealing with water and low carbon materials.[150]

Redden and Crawford argue that there is much to be learned from traditional knowledge including older building technology. Many 19th century Australian buildings were constructed with traditional cooling mechanisms and natural ventilation.

FIGURE 14 - PARLIAMENT HOUSE, MELBOURNE © KATE CLARK 2023

PARLIAMENT HOUSE IN MELBOURNE, *built in 1859 by J G Knight has a cooling system that involved a venting tower in the garden, concealed in the form of a decorative folly. The authors also note that window shades, verandahs and vegetation played a key role in reducing thermal gain in older Australian houses. They also cite Rippon Lea in Melbourne, built with a lake fed by stormwater pipes, where water was available to irrigate the garden and could be used in the house.*[151]

[150] Historic England, 'Climate Wednesdays: Climate Change and Cultural Heritage Webinar Series | Historic England', Historic England, 20 December 2022, https://historicengland.org.uk/services-skills/training-skills/training/webinars/climate-wednesday-webinars/.
[151] Redden and Crawford, 'Valuing the Environmental Performance of Historic Buildings,' 64-65.

Pender and Lemieux also advocate for the need to understand the lessons of traditional buildings. Space heating and cooling, and the control of indoor temperature are seen as one of the principal contributors to the built environment's intensive use of energy and carbon. The need to address this is based on the fundamental principle that thermal comfort is a function of air temperature. Pender and Lemieux (2020) instead argue that we need to re-evaluate the lessons from traditional buildings as a first step to understanding how best to retrofit older buildings. For example, older buildings often perform well in terms of thermal mass, heating and cooling and controlling moisture. They also argue for understanding more about thermal comfort and how people use and perceive building, rather than simply relying on standards.[152]

Many older Australian terrace buildings use sliding sash windows. Traditional features such as vertically sliding sashes can be used with awnings or shutters to give the highest possible degree of control over sunlight, ventilation and security.

In addition to the Heritage Victoria leaflet on retrofitting older buildings, there is a need for more general information and research for building owners to assist with finding retrofit options. In the UK the Sustainable Traditional Buildings Alliance (STBA) promote responsible retrofitting and are one of the founders of the 'Whole House' approach. They focus on issues including the health of occupants, the health and durability of the building consumption, the energy consumption attributed to the building, the impact on communities and the impact on the natural environment. They provide research and resources for building owners including the STBA guidance wheel which helps people to assess different options for retrofitting.[153] The Historic England guide to Energy Efficiency and Historic Buildings, also provides ideas for homeowners.[154]

[152] Robyn Pender and Daniel Lemieux, 'The Road Not Taken: Building Physics, and Returning to First Principles in Sustainable Design', Atmosphere 11, no. 6 (11 June 2020): 620, https://doi.org/10.3390/atmos11060620.
[153] Sustainable Traditional Buildings Alliance, 'Responsible Retrofit Guidance Wheel', SBTA Guidance, accessed 25 July 2023, https://responsible-retrofit.org/greenwheel/.
[154] Historic England, 'Energy Efficiency and Historic Buildings: How to Improve Energy Efficiency', 2018. https://historicengland.org.uk/advice/technical-advice/retrofit-and-energy-efficiency-in-historic-buildings/

Heritage and The Circular Economy

Another argument for retaining existing buildings and infrastructure, including registered heritage places, is the contribution that doing so can make to reducing waste, and what is now known as 'The Circular Economy'.

A linear supply chain processes natural resources into products that support human wellbeing that are subsequently disposed of as waste, whereas a circular economy model minimises overall natural resource extraction and environmental impact by extending the use of materials and reducing the consumption and waste of materials and energy. The useful life of materials is extended through reuse, design for longevity and redefining consumption to include sharing rather than individual ownership.

Around 33% of Australian landfill comes from construction and demolition waste (Faddy 2018 quoting NSW government).[155] The Green Buildings Council of Australia also notes that construction accounts for 50% of all materials used.[156]

Reducing waste also contributes to decarbonisation. The IPCC has stated that among other measures, circular material flows can make an important contribution to the decarbonisation of most industrial processes, and that there has been more attention paid to end-use demand, material efficiency and more and better-quality recycling measures.[157] Australia claims to recycle around two thirds of all waste but still disposes an amount that is close to that of the entire USA.[158]

Australian circular economy policies focus on recycling, including the re-use of materials in new buildings, rather than on the retention of

[155] Faddy, Jennifer, 'CARBON TRADING AND STATE HERITAGE PLACES - Report for the South Australian Heritage Council and Heritage South Australia, Department for Environment and Water and the Architecture Museum, School of Art, Architecture and Design, University of South Australia'.
[156] Green Building Council of Australia, 'Driving a Circular Economy | Green Building Council of Australia', Green Building Council of Australia, accessed 27 July 2023, https://new.gbca.org.au/green-star/green-star-strategy/driving-circular-conversation/.
[157] Tomaras, Juli, 'Building Australia's Circular Waste Economy – Parliament of Australia', Parliament of Australia, 2022.
[158] Faddy, Jennifer, 'CARBON TRADING AND STATE HERITAGE PLACES - Report for the South Australian Heritage Council and Heritage South Australia, Department for Environment and Water and the Architecture Museum, School of Art, Architecture and Design, University of South Australia'.

existing buildings in the first place.[159] For example, the 2023 federal budget commits funding to boost Australia's plastics recycling, raising awareness of recycling and the waste export ban.[160]

'Recycling Victoria – a New Waste Economy', is Victoria's recycling policy. The priorities include recycling, investment in waste to energy, stronger recycling oversight, reducing business waste, supporting local councils and behaviour change. It is estimated that this will boost Victoria's economy by $6.7 billion, create more than 3900 new jobs, provide cost savings for households, and improve social inclusion. Despite an emphasis on designing to last, repairing and recycling, there is little mention of the role of existing buildings.[161]

The Green Building Council of Australia and others have been looking at the role of construction in the circular economy. They note that the three key pillars of the circular economy are designing out waste and pollution, keeping products in use, and regenerating natural systems. These can be extrapolated to include extending life through reuse, maintenance and refurbishment – key elements of heritage practice. They also note the economic advantages of the circular economy, citing data from KPMG Economics that suggests that for example, the adoption of a circular economy in the food, built environment and transport sectors in Australia is estimated to be worth $210 billion to GDP by 2048 with the potential to generate 150,000 jobs by 2025 through circular economy initiatives in the built environment, transport, manufacturing, and recycling sectors.[162]

Gillian Foster has undertaken a comprehensive literature review of the research into the relationship between cultural heritage and the circular economy as part of the EU Horizon 2020 Funded project, 'Buildings as Material Banks.'[163] Otherwise, in Europe this study has

[159] Edge Environment, 'A Circular Economy Discussion Paper', 2021, https://new.gbca.org.au/news/thought-leadership/circular-economy-discussion-paper/.
[160] Tomaras, Juli, 'Building Australia's Circular Waste Economy – Parliament of Australia'.
[161] State Government of Victoria, 'Victoria's Plan for a Circular Economy | Victorian Government', Victorian Government, 2021, http://www.vic.gov.au/victorias-plan-circular-economy.
[162] Green Building Council of Australia, 'Driving a Circular Economy | Green Building Council of Australia'.
[163] Gillian Foster, 'Circular Economy Strategies for Adaptive Reuse of Cultural Heritage Buildings to Reduce Environmental Impacts', Resources, Conservation and Recycling 152 (January 2020): 104507, https://doi.org/10.1016/j.resconrec.2019.104507; Gillian Foster and Ruba Saleh, 'The Adaptive Reuse of Cultural Heritage in European Circular City Plans: A Systematic Review', Sustainability 13, no. 5 (7 March 2021): 2889, https://doi.org/10.3390/su13052889.

identified relatively little empirical research relating to the role of heritage or adaptive re-use in reducing construction waste.

It is often argued that the best way to reduce waste from construction is to recycle building materials. For example, urban mining in Sydney has been used to retain excavated material from new infrastructure projects, such as Pyrmont yellow sandstone. There is also a growing interest in deconstruction in building as a movement – the reusing, repurposing and recycling of materials from existing buildings. The concept of 'design for disassembly' encourages the design of new buildings that anticipates the demolition and reuse of materials to reduce carbon emissions and waste.[164]

For example, **MELBOURNE'S GOODS SHED NO.5** *has been demolished through a process that has seen individual components dismantled and catalogued for repurposing. The site owner is committed to giving the materials new life through a new hotel development on the site. The salvaged items include 1944 bluestone pavers, 20 timber sliding doors, 400 steel trusses, and 105 steel window frames as well as 2km of salvaged timber purlins. The existing concrete structure of the Goods Shed has been retained on site.*[165]

[164] ArchDaily, 'Design For Disassembly', ArchDaily, 18 July 2023, https://www.archdaily.com/tag/design-for-disassembly.
[165] Sustainatbility Matters, 'Historic Shed Salvage Builds Circular Economy', Sustainability Matters, 2021, https://www.sustainabilitymatters.net.au/content/sustainability/article/historic-shed-salvage-builds-circular-economy-1222754655.

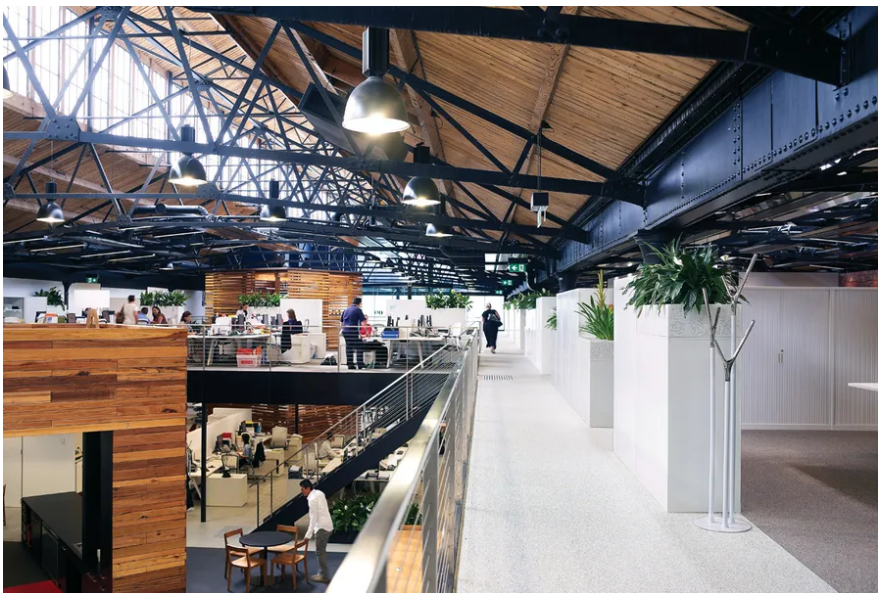

FIGURE 15 - REUSE OF HISTORIC MATERIALS AT THE GOODS SHED, MELBOURNE
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However, salvaging materials only goes part of the way towards a truly circular economy, and it is possible that retaining existing buildings can potentially offer greater savings in terms of both reducing waste and energy efficiency.

Bricks in good condition can have a lifespan of several hundred years – crushing them for aggregate creates unnecessary waste. In Australia more than 75% of construction waste is clean fill brick, timber and concrete. Manufacturing bricks is a carbon-intensive process resulting in the emission of 211-242 kgCO2e per tonne of bricks. Although new bricks may contain recycled material, these only account for about 9% of the total with the majority sourced from virgin clay resources. Demolishing buildings that are still structurally sound and crushing material for aggregates creates unnecessary waste when there are also options for deconstruction.[166]

[166] Historic England, 'Heritage and the Environment', 50.