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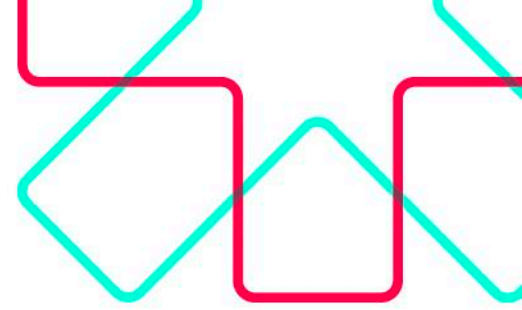
# THE ECONOMIC AND SOCIAL IMPACTS OF OTAGO MUSEUM

Draft Report

20 April 2021







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# PREFACE

This report has been prepared for the Otago Museum Trust Board by Tim Borren, Jessica Black and Jason Leung-Wai from MartinJenkins (Martin, Jenkins & Associates Limited).

MartinJenkins advises clients in the public, private and not-for-profit sectors. Our work in the public sector spans a wide range of central and local government agencies. We provide advice and support to clients in the following areas:

- economic development
- financial and economic analysis.
- public policy
- evaluation and research
- strategy and investment
- performance improvement and monitoring
- business improvement
- organisational improvement
- employment relations.

Our aim is to provide an integrated and comprehensive response to client needs – connecting our skill sets and applying fresh thinking to lift performance.

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# KEY FINDINGS



# CURRENT ECONOMIC IMPACT



Otago Museum generates  
**368 jobs**  
(FTEs) annually,

Museum operations generate  
**122 jobs**  
(FTEs) in total,

Visitor expenditure attributable to Otago Museum generates  
**246 jobs**  
(FTEs),



and contributes  
**\$25.3 million**  
in GDP to the Otago region's economy.

and  
**\$8.0 million**  
in GDP.

and  
**\$17.3 million**  
in GDP.

This represents a return of **\$5.90 in GDP for every \$1 of council funding.**





# SOCIAL IMPACTS

Otago Museum's science outreach programmes reached **13 000** residents in **32** communities last year.

**11 300** students and **2 100** adults participated in educational programmes at the museum last year.

**13 309** followers on Facebook.

"Extreme Science" took science to some of the

## most remote parts of NZ

– Great Barrier and Stewart Islands, East Cape, Northland, West Coast and Fiordland.

### KNOWLEDGE AND SKILLS

*"Learning about science is so much fun at your museum!"*  
– Year 8 student from Oamaru.

*"Having taken groups to Te Papa, I feel that Otago Museum offers a much richer experience. Thank you!"*  
– Primary school teacher.

*"We never get stuff like this, so thanks for coming!"*  
– student attendee of the Extreme Science outreach programme.

PhD research found that visitors to the Tūhua Science Centre **significantly improved** their scientific knowledge, fluency in science concepts and self-efficacy in Science.

**Over 180 research publications** over last 3 years by internal and external researchers.

### CULTURAL IDENTITY

**Hākui: Women of Kāi Tahu** exhibition attracted 34,000 visitors.

A child who took part in the Tuia – Encounters 250: He Taura Tākata outreach programme said **"it made me feel proud to be Māori"**.

### SOCIAL CONNECTIONS

Survey respondents noted the museum provided a common space to "meet and catch up" for "socialising", and for **"deepening and creating connections"**.

A quarter of visitors said a key benefit was that their visit **reinforced their connection** to the people they visited with.

**Environmental programmes** run for students include Sustainable NZ, Bug Census, Wild Otago and Climate Change.

### ENVIRONMENT

Of visitors to a Science Journey's exhibit, 60% of visitors strongly agreed, and 32% somewhat agreed that the visit **inspired them to take actions** to reduce climate change impacts.



# INTRODUCTION

MartinJenkins has been engaged by Otago Museum to assess the economic and social impacts the museum contributes to the region.

## Otago Museum

The Otago Museum has been a keystone of Dunedin and Otago's cultural, heritage and educational landscape for over 150 years. With over 1.5 million objects in its collection, the museum shares the natural, cultural and scientific stories of Otago, Aotearoa and the world with hundreds of thousands of visitors every year. Galleries, exhibitions, displays, tours and talks tell visitors more about the world – from Otago to deep space, from millions of years ago to envelope-pushing research.

While Otago Museum punches above its weight in terms of the outcomes it achieves for its communities, the museum faces future challenges around the storage and protection of its collection, earthquake proofing and fire-protecting its buildings, developing collections and providing access to ensure an enriching experience for future generations.

Otago Museum has recently finalised a Master Plan for the development of its facilities over the next 10-15 years. To realise this vision, the museum will need support from all of its stakeholders.

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**“The Museum is a really special place that tells our stories to the world and tells the world’s stories to us”**

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## Purpose of this assessment

The purpose of this assessment is two-fold:

- 1 To quantify the contribution the Otago Museum makes to jobs and incomes in the Otago region currently, as well as the potential impact of its proposed Master Plan development
- 2 To assess the wide range of social impacts that the museum's activities have in the community.



# Methodology

## NZ Treasury Living Standards Framework

The assessment has been undertaken to align with the New Zealand Treasury's Living Standards Framework<sup>1</sup>. The Framework allows impacts to be assessed in terms of 12 "domains" of current wellbeing, shown in the box to the right.

The Living Standards Framework is a framework for considering and assessing intergenerational wellbeing spanning a broad range of economic, social and environmental domains. The 12 current wellbeing domains capture elements of wellbeing generally important to people in New Zealand.

In our assessment, we have split the wellbeing domains that Otago Museum contributes to into two broad categories:

- 1 **Economic impacts**
- 2 **Social impacts** (including cultural and environmental impacts).

However, economic and social impacts should not be thought of separately as they are intrinsically linked. Economic outcomes have important social impacts and social outcomes are critical drivers of economic impacts.

The ticks in the grey box (right) show the wellbeing domains that Otago Museum contributes to.

The method used to assess the economic impacts is based on well-recognised input-output multiplier analysis and the assessment of social impacts utilises the New Zealand Treasury's Living Standards Framework wellbeing domains.

**The 12 Domains of current wellbeing**  
reflect our current understanding of the things that contribute to how New Zealanders experience wellbeing

	Civic engagement and governance	✓
	Cultural identity	✓
	Environment	✓
	Health	✓
	Housing	
	Income and consumption	✓
	Jobs and earnings	✓
	Knowledge and skills	✓
	Time use	
	Safety and security	
	Social connections	✓
	Subjective wellbeing	✓

Source: New Zealand Treasury

Note: Tick denotes Otago Museum contributes to this wellbeing domain.

## Wellbeing domains relevant to this assessment

Otago Museum contributes to 9 of the 12 wellbeing domains.

### Economic impacts

- Income and consumption
- Jobs and earnings

### Social impacts

- Cultural identity
- Environment
- Health (physical and mental)
- Social connections
- Knowledge and skills
- Subjective wellbeing
- Civic engagement and governance.

<sup>1</sup> <https://www.treasury.govt.nz/information-and-services/nz-economy/higher-living-standards/our-living-standards-framework>





## Economic impact assessment methodology

The economic impact assessment uses multiplier analysis based on input-output tables for the Otago region. This is a widely used and recognised methodology for calculating the impact of organisations, sectors, industries and events. It includes the direct impact of the museums activities as well as the indirect and induced impacts:

- **Direct impacts:** the museum purchases goods and services from its supplier firms and pays its staff.
- **Indirect impacts:** the museum's supplier firms make further purchases from their suppliers and so forth.
- **Induced impacts:** employees of the museum and in businesses that supply services are paid a wage and the enterprises generate profits, which is then spent on consumption in the region.

We calculate the economic impact in terms of jobs (FTEs) and GDP (value-added) in the Otago region. Technical details of this methodology are provided in Appendix 1.

The museum contributes to economic activity in the region through:

- **the museum's day-to-day operations**
- **significant capital projects, and**
- **visitor expenditure attributable to the museum.**

### Current and future impacts

We have assessed the current economic impact of the museum as well as the future impact that the museum's proposed Master Plan development may generate.

### Assessment time period

The current impact of the museum is assessed based on the three years prior to the 2019/20 year, which was affected by Covid-19. Otago Museum's financial year is July-June.

The potential economic impact of the museum is assessed in 2035 – two years after the Master Plan development project is complete and the new facility is fully operational.

## Social impact assessment methodology

In assessing the social impacts of Otago Museum, we have looked across the broad range of the museum's activities and grouped impacts into the applicable "wellbeing domains" in the Living Standards Framework. Where possible, quantitative data has been used to support the findings of the social impact assessment.

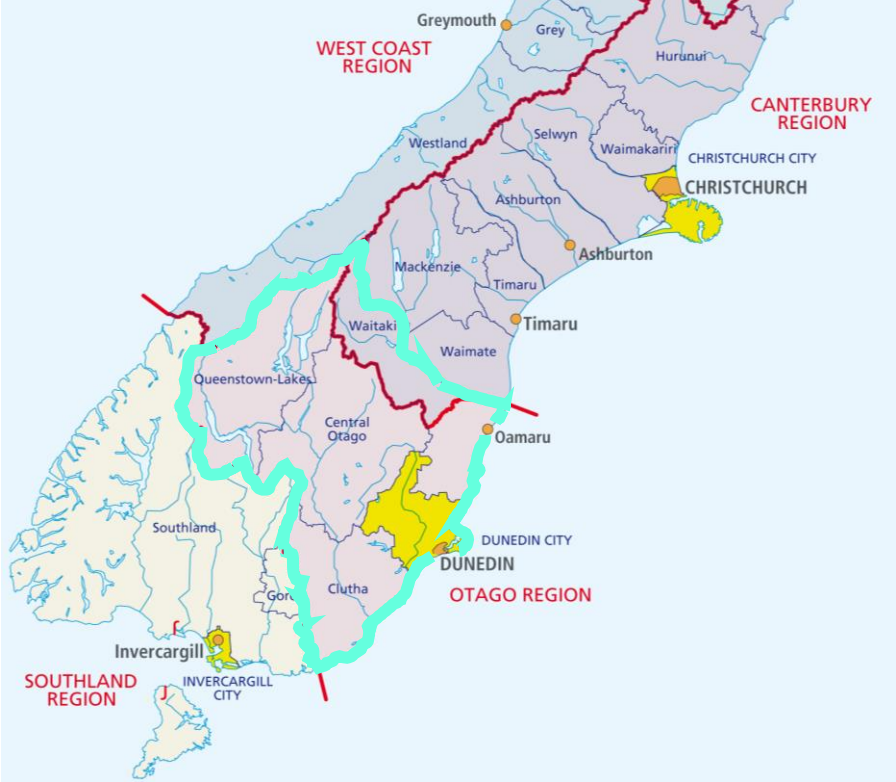
As part of the assessment of Otago Museum's specific activities, we have also referenced recent national and international literature on the critical role museum's play in weaving together the social and cultural fabric of communities.





## The study region

The geographic region of analysis is the Otago region which encompasses the territorial authorities that contribute funding to Otago Museum – Dunedin City, Waitaki, Clutha, Central Otago and Queenstown Lakes. The Otago region’s population is about 232,000 in 2021.



# ECONOMIC IMPACTS OF OTAGO MUSEUM

## Wellbeing domains



Jobs and earnings



Income and consumption

Otago Museum makes a significant contribution to jobs and incomes in the region

Otago Museum generates **368 jobs** annually and contributes **\$25.3 million** in GDP to the Otago region's economy.

## Jobs, earnings and consumption are important drivers of wellbeing

The jobs people have, the earnings they receive, and the associated consumption people derive from their incomes are important drivers of wellbeing. The Living Standards Framework defines these wellbeing domains as:

- **Jobs and earnings:** The quality of people's jobs and work environment (including monetary compensation), their ease of finding suitable employment, their job stability and freedom from unemployment. Jobs are important for developing a person's skills and income and can also improve other aspects of wellbeing – such as social connection through the opportunity for social and professional relationships, confidence and a sense of purpose.
- **Income and consumption:** People's disposable income, how much people spend and the material possessions they have. Income enables households to meet basic needs, pursue other goals and protect against economic and personal risk. Household disposable income provides an indicator of access to resources and potential living standards. It is common practice to use income as a proxy for material wellbeing.

## Otago Museum contributes to these economic wellbeing domains in three key ways

Otago Museum is an important part of the Dunedin and Otago economy, creating jobs for people in three key ways:

- 1 **Museum operations:** Otago Museum directly employs 119 people currently (82 FTEs) and has many volunteers. The museum also relies on many different suppliers of goods and services within the Otago region that contribute to the day-to-day running of the museum, which creates jobs and incomes in the community.
- 2 **Visitor expenditure:** Otago Museum is one of the most visited attractions by visitors to Dunedin. These visitors that the museum helps



to attract spend money throughout the Dunedin and broader Otago tourism and hospitality sector.

- 3 **Capital project investment by the museum:** Otago Museum has invested in significant capital projects over the last five years to improve the experience of its local visitors and those from further afield, and to improve the outcomes the museum delivers. These projects generate jobs in Otago’s construction and engineering industries, as well as in many other industries that contribute to construction projects.

## Otago Museum has 350,000 visits each year

Over the three years prior to 2019/20 (which was Covid-affected), on average the museum attracted 150,200 locals, 76,100 domestic visitors and 125,300 international visitors annually (Table 1).

**Table 1: Number of visits to Otago Museum**

	2016/17	2017/18	2018/19	2019/20*
Local (within Otago region)	148,444	187,314	114,876	106,183
Domestic visitors (from outside Otago)	77,757	63,616	87,027	62,621
International visitors	127,238	102,492	146,205	103,461
<b>Total visits</b>	<b>353,439</b>	<b>353,422</b>	<b>348,108</b>	<b>272,265</b>

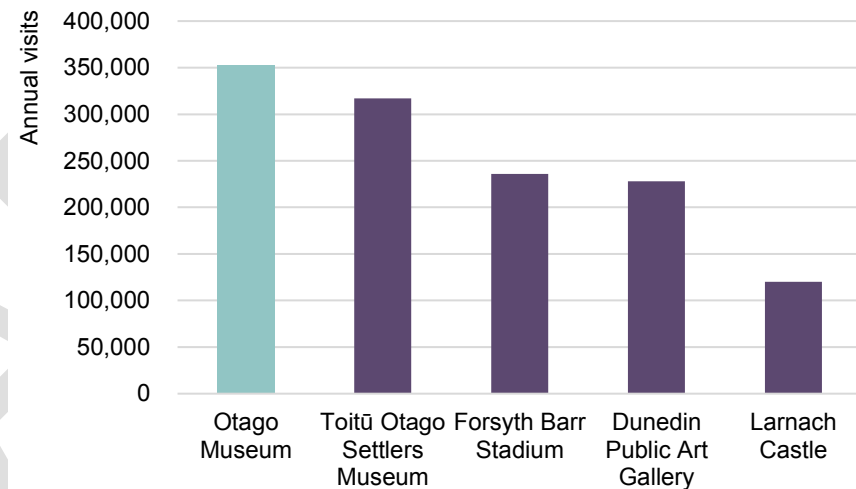
Source: Otago Museum

\* 2019/20 visitation was affected by the Covid-19 pandemic.

## The museum is the most visited attraction in Dunedin

As Figure 1 shows, Otago Museum is the most visited attraction in Dunedin with 353,000 annual visits.

**Figure 1: Visitor numbers compared to other Dunedin attractions**



## Current economic impact of Otago Museum

The museum's day-to-day operations generate **122 jobs** and visitor expenditure attributable to the museum creates an additional **246 jobs** annually

### Jobs and earnings



Otago Museum contributes 368 full-time equivalent (FTE) jobs annually in the Otago region (Table 2).

The day-to-day operation of the museum generates 122 jobs when indirect and induced flow-on impacts are included.

We estimate that visitor expenditure in Dunedin attributable to the museum is \$18.3 million per year. This expenditure generates 246 jobs in the Otago region when flow-on impacts are taken into account.

**Table 2: Jobs generated in the Otago region attributable to Otago Museum (FTEs)**

Jobs	Direct impact	Indirect impact	Induced impact	Total jobs impact (FTEs)
Museum operations	82	23	17	<b>122</b>
Visitor expenditure	176	38	32	<b>246</b>
<b>Total annual jobs generated</b>	258	61	49	<b>368</b>

For the 76,000 domestic and 125,000 international visitors that visit the museum, we attribute half a day of spending to their museum visit. Other inputs and assumptions underpinning these results are detailed in Appendix 1.

### Income and consumption



The museum contributes **\$25.3 million in GDP** to the Otago region. This represents a return of **\$5.90 for every \$1.00 of council funding**.

In terms of regional income, Otago Museum generates \$25.3 million in total GDP to the region – \$8 million from its operations and \$17.3 million from spending by museum visitors from out of the region (Table 3).

**Table 3: GDP generated in the Otago region attributable to the Otago Museum**

GDP	Direct impact	Indirect impact	Induced impact	Total GDP impact
Museum operations	\$4.2 m	\$1.9 m	\$1.9 m	<b>\$8.0 m</b>
Visitor expenditure	\$9.9 m	\$3.8 m	\$3.6 m	<b>\$17.3 m</b>
<b>Total annual GDP generated</b>	\$14.1 m	\$5.7 m	\$5.5 m	<b>\$25.3 m</b>





## The museum's significant capital projects also create jobs

Otago Museum has invested \$7.3 million in capital projects over the last five years. These projects include:

- **Tūhura Science Centre**
- **Planetarium**
- **Tropical Forest**
- **Beautiful Science Gallery**

This investment has contributed to the social and cultural impacts of the museum as well as the number of visitors it attracts. Of the total, approximately \$4.4 million was spent directly in the Otago region supporting local jobs in the construction, engineering and trades industries.

**Table 4: Economic impact of Otago Museum capital projects over the last 5 years, Otago region**

	Direct impact	Indirect impact	Induced impact	Total impact
<b>Jobs (FTEs)</b>	24	10	8	<b>42</b>
<b>GDP</b>	\$2.1 m	\$0.9 m	\$0.9 m	<b>\$3.9 m</b>

Otago Museum's capital investment over the last 5 years has generated 42 jobs in the Otago region and contributed \$3.9 million to the region's GDP.

At a national level, the projects have contributed to 83 jobs in New Zealand and \$8.7 million in GDP when the indirect and induced effects are taken into account.

### Tūhura Science Centre

The new Tūhura Science Centre, which opened in 2017 with investment of \$2.5 million, is New Zealand's largest science learning centre.



The project took four years of planning and five months of construction to complete and involved 23 local businesses across a range of industries. Funding partners included councils, the Otago Community Trust, Lions Foundation and Friends of the Otago Museum.

Tūhura has a 3-storey indoor double-helix slide, a bike riding skeleton, and another 43 hands-on interactives to awaken wonder, curiosity and reveal the science that is in everything around us. It also includes a Tropical Forest with exotic butterflies, a 5-metre high waterfall and a sky bridge.

It is the only bicultural science centre in the world, telling the Kai Tahu creation story and integrating Kaupapa/Matauranga Māori with science.

Since opening, 240,000 people have visited the centre. Each year, Tūhura Science Centre generates about \$650,000 in revenue for the museum.

Users have said "it was really fun and a different way of learning" and that "it's great to see what fun, learning and encouraging places museums have become".

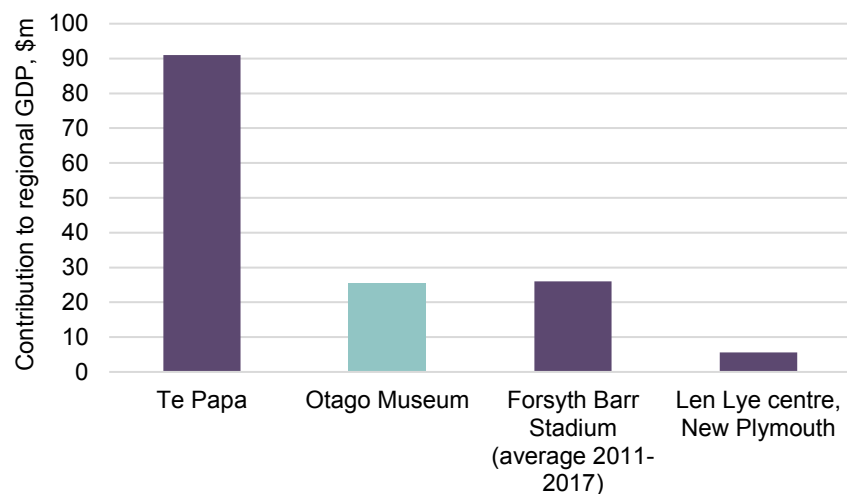
The Otago Museum Director's vision for Tūhura Science Centre is "that it will inspire curiosity and encourage the next generation of young New Zealanders to take an interest in the world around them".



## The economic impact of Otago Museum compares favourably with other cultural and recreational institutions

Figure 2 compares the economic impact of Otago Museum with Forsyth Barr Stadium in Dunedin, Te Papa and the Len Lye centre in New Plymouth. These facilities and institutions were chosen because they have had economic impact assessments done using the same methodology. There are not many cultural institutions in New Zealand that have done so.

**Figure 2: Comparison with other cultural and recreational institutions**



### Forsyth Barr Stadium

In the six years since opening (2011-2017), Dunedin Venues Management Limited estimated the Forsyth Barr stadium contributed \$165 million in visitor spend in Dunedin<sup>2</sup>. An average of \$27.5 million visitor expenditure per year.

This corresponds to total GDP impact of about \$26 million per year.

In 2018, approximately \$55 million of visitor spend was attributed to Forsyth Barr stadium<sup>3</sup> on the back of a bumper year with three Ed Sheeran concerts and two other concerts. This corresponds to about \$52 million in total GDP impact.

Forsyth Barr stadium cost around \$198 million to build (\$221 million in 2020 currency terms when adjusted for inflation).

### Te Papa

In 2017, Te Papa generated \$141 million contribution to New Zealand's GDP, which translates to a GDP return of approximately \$4.80 per dollar of Crown funding<sup>4</sup>.

In 2014, Te Papa was estimated to contribute \$91 million GDP to Wellington City economy<sup>5</sup>.

### Len Lye centre, New Plymouth

In 2017, BERL (Business and Economic Research Ltd) estimated the Len Lye centre contributes \$5.6 million in GDP and 103 jobs to New Plymouth District economy, based on 118,900 total visits to the gallery<sup>6</sup>.

<sup>2</sup> <https://www.stuff.co.nz/business/93680097/dunedins-financial-windfall-from-covered-forsyth-barr-stadium-outweighs-councils-cost-venue-managers>

<sup>3</sup> <https://www.ausleisure.com.au/news/forsyth-barr-stadium-events-contribute-55-million-into-the-dunedin-economy/>

<sup>4</sup> <https://www.tepapa.govt.nz/about/press-and-media/press-releases/2019-media-releases/increased-funding-for-te-papa-budget-2019>

<sup>5</sup> [https://www.tepapa.govt.nz/sites/default/files/briefing\\_to\\_the\\_incoming\\_minister\\_2014\\_0.pdf](https://www.tepapa.govt.nz/sites/default/files/briefing_to_the_incoming_minister_2014_0.pdf)

<sup>6</sup> <https://govettbrewster.com/news/2017/11/len-lye-centre-pumps-74m-and-103-jobs-into-district>



# SOCIAL IMPACTS OF OTAGO MUSEUM

## Wellbeing domains



Cultural identity



Knowledge and skills



Environment



Social connections



Subjective wellbeing



Health (physical and mental)



Civic engagement and governance

Key social impacts of Otago Museum	
<b>Cultural identity</b>	Connection to cultural, social and spiritual identity
	Clarifying values or beliefs
	Stewardship of community assets
<b>Knowledge and skills</b>	Learning and education
	Research provides a greater understanding of culture and heritage
<b>Social connections</b>	Enabling and reinforcing social connections
	Community development
<b>Health</b>	Contribution to mental wellbeing
<b>Subjective wellbeing</b>	Entertainment
	Unique opportunities for reflection
	Relaxation and rejuvenation
<b>Environment</b>	Encouraging commitment to and action on environmental issues
<b>Civic engagement and governance</b>	Encouraging commitment to social issues

Examples of Otago Museum activities contributing to social impacts	
<b>9</b> permanent galleries; <b>25</b> exhibitions delivered over past 3 years.	<b>353,000</b> annual visits.
<b>11,300</b> students and <b>2,100</b> adults participated in educational programmes at the museum last year.	"Learning about science is so much fun at your museum!" – Year 8 student from Oamaru.
Hākui: Women of Kai Tahu exhibition attracted <b>34,000</b> visitors.	A child who took part in the Tuia – Encounters 250 outreach programme said "it made me feel proud to be Māori".
Otago Museum's science outreach programmes reached <b>13,000</b> residents in <b>32</b> communities last year.	"We never get stuff like this, so thanks for coming!" – student attendee of the Extreme Science outreach programme.
iDNX exhibition showcasing the artistic talent of New Zealand's autistic community.	Over <b>180 research publications</b> over last 3 years by internal and external researchers.
A quarter of visitors said a key benefit was <b>reinforcing their connection</b> to people they visited with.	



## Otago Museum's enormous range of activities have far-reaching social and cultural impacts

Otago Museum is a community resource that is highly valued for its far-reaching social, cultural and environmental impacts.

In a typical year, the museum records over 350,000 visits, and visitors' feedback is overwhelmingly positive. An independent 2019/20 survey of local residents found that of all respondents who had visited the museum in the last 12 months, 94% were satisfied or very satisfied.

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**94% of locals are satisfied or very satisfied with the Otago Museum**

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### Otago Museum's many diverse activities

#### **The museum's collections are a shared public repository of objects and stories from Otago, New Zealand and the world**

The core of Otago Museum is a vast collection of 1.5 million objects, many of which the museum displays in its exhibitions and galleries.

By preserving the collections, the museum safeguards key elements of Otago's and New Zealand's material heritage, and acts as a shared public repository of objects and stories from New Zealand and around the world. This helps all of us to learn about and make sense of the world around us, and to appreciate the rich variety of cultures and histories it includes.

The museum's collections staff are experienced experts who support other museums and galleries in the region with their collections. Staff also field public enquiries and requests for access to the collections.

#### **The museum caters for a diverse range of audiences**

As well its permanent galleries, Otago Museum has changing exhibitions sourced from its own collections or other museums, to meet the needs and appetites of diverse visitors.

To match its variety of audiences, the museum's different teams focus on different ways of presenting and interpreting objects and information – including displays, tours, education programmes, talks, and hands-on interactive workshops. The museum's activities cater for all ages, backgrounds, educational levels, and learning styles, and address potential barriers to access.

#### **The museum plays a valuable educational role for both children and adults**

Otago Museum's education team runs a suite of curriculum-based programmes where schools visit the museum, as well as extensive outreach programmes often held at schools.

The museum also has the largest science centre in the country. In a world where pseudo-scientific misinformation now circulates widely, fostering an understanding of science is more important than ever.

The museum also has the largest science outreach team of any New Zealand museum – the team brings the museum to remote communities throughout the country and the Pacific.

#### **The museum does a range of research and publishing**

Otago Museum's collections provide precious research resources for those investigating change over time and space.





The museum's staff have a range of expertise that allows the museum to carry out its own research, to partner with other researchers and experts, and to ensure that research findings are communicated well in different forms.

The museum publishes information on a range of topics, and through a number of traditional and non-traditional channels.

**The museum has strong relationships with iwi, communities, government, and specialists in culture, science and research**

The museum has strong working relationships with tāngata whenua, community groups, and local and central government.

It partners with various community groups, learning from them and helping members of source communities share their knowledge, stories and expertise.

The museum also has strong relationships with culture and heritage specialists and with the science and research communities, both in New Zealand and internationally.

**These activities have a range of social impacts on individuals and the community**

The museum's impacts we have identified in this assessment contribute to seven "wellbeing domains" in Treasury's Living Standards Framework. The following sections detail the activities and the impacts Otago Museum has across these domains.



## Cultural identity

Culture refers to the customs, practices, languages, and values that define social groups such as those based on nationality, ethnicity, regions or common interests.

Having a strong cultural identity is important for a sense of self and for overall wellbeing. It includes having a strong sense of belonging, and being able to express and connect with your culture. A strong cultural identity also places intrinsic value on cultural taonga.

Four areas in which Otago Museum contributes to cultural identity are:

- 1 Connection to cultural, social, and spiritual identity
- 2 Clarifying values or beliefs
- 3 Stewardship of community assets
- 4 Providing a greater understanding of culture and heritage through research, interpretation and communication.

### Connection to cultural, social and spiritual identity

Visiting a museum and participating in events and programmes run by museums can be a profound experience, one that builds people's cultural identity and their connections to each other.<sup>9</sup> By providing places where cultures come together, museums can also help build more cohesive communities.

<sup>9</sup> OECD/ICOM (2019). See also Museums Aotearoa (2018).

<sup>10</sup> Museums Aotearoa, 2020 National Visitor Survey. This survey provides a snapshot data of visitors surveyed at museums, art galleries, and heritage properties in New Zealand.

Otago Museum clearly has this impact on many people who visit. Almost a quarter of Otago Museum visitors surveyed in the 2020 National Visitor Survey said the museum made them feel more connected to their heritage, culture, or spiritual identity.<sup>10</sup>

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**“The Tuia 250 programme made me feel proud to be Māori”**  
– Student, after attending Tuia 250

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Otago Museum creates opportunities for this impact in many ways. One is through holding events and embedding policies that express, explore and celebrate a range of cultures. Examples include hosting annual Creative Pasifika events, celebrations for Kiribati Independence Day, Diwali, and showcasing collection pieces at external events like the Moana Nui Festival. The museum is also a strong advocate for te reo Māori, particularly the local Kāi Tahu dialect.

### Exhibits provide opportunities for visitors to explore cultural identity

An example is **Hākui: Women of Kāi Tahu** – a special exhibit that shared the stories, achievements, and legacies of respected Kāi Tahu wāhine, and attracted about 34,000 visitors.<sup>11</sup>

Other special exhibits showcase the talent of typically under-represented communities and celebrate their identity – for example, **Bildungsroman** by queer Parsi artist Areez Katki, the annual **iNDx** art display from the neuro-

<sup>11</sup> Special exhibition that ran from 19 November 2015 to 8 May 2016.



diverse community, and **Kōrero Pono**, which featured works and stories of those affected by the criminal justice system.

Four permanent galleries – **Tāngata Whenua, Pacific Culture, People of the World**, and **Southern Land, Southern People** – all host a collection of cultural taoka and stories that enable visitors to explore a range of cultures. **Tūhura**, the world's first bicultural science centre, tells the Kāi Tahu creation story, integrates art with science, and explores Māori and western understandings of science. These exhibitions all encourage people to explore their cultural identity.

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## The museum's Hākui: Women of Kāi Tahu exhibit attracted **34,000** visitors.

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### The museum's educational programmes provide opportunities for students to understand and interact with different cultures

Otago Museum's educational programmes include **Māori Art and Music**, **Māori Technology**, **Multicultural Kiwis** (where the cultures and identities of all New Zealanders are explored), **He Pūrākau** (Māori mythology and astronomy), **He Mahika Kai** (Māori food gathering), and **Bicultural History**.

Each programme is tailored to the New Zealand curriculum and uses art, objects, stories, languages and discovery exercises to help students connect with and gain a deeper understanding of culture and identity. Over 800 children and adults engage in these culturally themed programmes each year.

### The museum also fields many enquiries from people seeking to connect with their past

Last year the museum received 266 public enquiries and processed and granted 87 of 109 access requests to parts of the museum's collection.

Some of these were specific requests to visit and see family heirlooms, and some to learn more about a specific culture or community the person identified with or was researching. In 2019/20, visitors came from as far away as Toronto, Arizona and Paris to see items.

It is clear visitors have been able to deepen their connection with their cultural, social and spiritual identity through the museum's offerings. They make comments such as "learnt new things about my culture", and that they had been able to connect with and revisit "memories".

Comments such as "learnt about local Māori", "learnt about Pacific cultures" and gained "cultural knowledge" also illustrate the impact the museum has in enabling people to understand and connect with other cultures.<sup>12</sup>

<sup>12</sup> Otago Museum Visitor respondents, National Visitor Survey. Comments 2017-2020.





### Showcasing and celebrating the range of traditions and customs across cultures has helped people develop pride in their culture

One visitor said they had had an “opportunity to share some of New Zealand’s culture with those outside of New Zealand”. Another traveller described their visit as “an opportunity for a traveling family to connect with New Zealand history, people and culture and develop a respect for these.”

Seeing and learning about a range of cultures enables people to reflect on and express their own cultural identity, giving them a stronger sense of belonging and stronger connections with their own identity.<sup>13</sup>

<sup>13</sup> Ministry for Culture and Heritage, Strategic Intentions 2018-22/ 1

<sup>14</sup> Otago Museum Visitor respondents, Museums Aotearoa National Visitor Survey. Figures 2020. Comments 2017-2020.

### Clarifying values or beliefs

17% of visitors to Otago Museum said their visit helped them to clarify or strengthen their personal values or beliefs. Specific comments described their visit as “soul food”, as a way to “see the interconnectedness of everything”, and as giving them an “awareness and reinforcement of life experiences”.<sup>14</sup>

The museum achieves this impact in several ways. One is through allowing exposure to and interaction with different cultures and people. This acts as a catalyst for people to reflect on or strengthen their own values and beliefs<sup>15</sup>.

Another is through showcasing and exploring contentious issues and extraordinary people and moments in history, which helps people think about what is important to them. Examples include **100 Women, 100 Words ... Infinite Possibilities**, which celebrated women in STEM, the youth-led **Climate Change – Striking a Balance**, and **James Cameron – Challenging the Deep**.

### Stewardship of community assets

#### A core function of the museum is caring for, preserving, sharing and developing community assets

The assets Otago Museum preserves include not just its collections of physical artefacts, but also the stories, knowledge, customs, and traditions that the museum captures, shares, and showcases. These tangible and intangible collections hold deep intrinsic value,<sup>16</sup> and are vital for sustaining and enriching local communities’ cultural knowledge and assets.<sup>17</sup>

<sup>15</sup> OECD/ICOM (2019). See specifically pages 45-47.

<sup>16</sup> Bollo, A. (2013).

<sup>17</sup> Loach, K., et al. (2016).





The museum holds over 1.5 million objects and, each year, develops the collection strategically by acquiring new pieces (around 70 in 2019/20). It also continually develops and updates its collection records against international museum standards. Last year, it generated nearly 13,000 new records, and updated or amended over 71,000.<sup>18</sup>

Otago Museum cares for its collections meticulously. Each year conservation staff assess and treat thousands of collection items (more than 10,000 in 2019/20).

The museum invests significantly in the ambient environment the items are stored and displayed in. A suite of preventative conservation programmes cover cleanliness, light and humidity conditions, as well as preventing fires and limiting damage from disasters and earthquakes.

Otago Museum also helps other museums preserve their collections for the benefit of the wider community, by providing its own expertise or by using its connections to access other experts.

### **The museum is a central repository and access point for valuable taoka**

The museum performs a vital function by acting as a central public repository for community assets and as a place where they can be accessed and shared. Rūnaka and families and whānau donate their taoka and stories, where they can be shared for the benefit of the wider community.

Visitors are often amazed at how big the museum's collection is, and at the calibre of the pieces on display. By request, the public is also able to access specially held assets that are not on display.

At a community level, the museum helps nourish intangible assets – like cultures, languages and traditions – by collaborating with communities to host events, exhibitions and celebrations.<sup>19</sup>

Examples include the annual **Creative Pasifika** events, which celebrate the culture of our Pacific Peoples, and Kāi Tahu's **Mahiki Kai** videos in the **Southern Land, Southern People** gallery, which showcases the iwi's traditions. The museum also has a policy promoting the use of te reo, especially the local Kāi Tahu dialect, which helps to extend the reach of te reo and ensure it remains a vibrant, living language. The museum is currently working with mana whenua to redevelop the **Tāngata Whenua** gallery.

<sup>18</sup> Otago Museum, Annual Report 2019-2020.

<sup>19</sup> OECD/ICOM (2019). See also Museums Aotearoa (2018).



## Knowledge and skills



Acquiring knowledge and developing skills is intrinsically valuable for people – fulfilling their desire to learn and enabling them to respond to changing environments. Knowledge and skills are also a fundamental driver of economic development.

Like all museums, Otago Museum is an important knowledge hub, offering many learning and education opportunities.<sup>20</sup>

## Learning and education

### Education is the most significant benefit Otago Museum provides to visitors and the wider community

The museum provides learning opportunities through every one of its activities.

Within the museum these include exhibitions and galleries, which distil current knowledge on a given topic. Some are permanent or have a permanent overarching theme, like the **Nature** and **Maritime** galleries, and these allow people to revisit and deepen their knowledge over time. Others are temporary and are often focused on inspiring interest, and giving people the chance to learn something new and see different perspectives.

The museum's highly trained staff interact with visitors throughout the museum to help them extend their knowledge and understanding.

The **Tūhura Science Centre** is a unique space within the museum that inspires discovery and learning in science. It is the world's only bicultural science centre, telling the Kāi Tahu creation story and integrating art with

science through hands-on activities. In a typical year, more than 68,000 people pay to enter the Centre.<sup>21</sup> School group sleepovers at the museum are often held in Tūhura.

The Tūhura Science Centre includes the **Tropical Forest** – a walk-through habitat of live exotic butterflies, insects, tarantulas, terrapins and other forest dwellers. It is the only one of its kind in Australasia, and is also one of only two three-level butterfly houses in the world.

Tūhura also includes the **Perpetual Guardian Planetarium**. The only 3-D planetarium in Australasia, it shows films about the earth, space, legends, nature and culture. Each year 3,000–3,500 children and 500–600 adults typically attend the Planetarium's programmes<sup>22</sup>, and overall, about 15,000 people visit the Planetarium.

The museum's collection embodies a wealth of knowledge, which is shared through exhibits and public talks, through allowing private access on request, and through articles, blogs, radio and other public media. Last year, Otago Museum staff delivered 32 presentations both in-house and externally across radio, university departments, community groups and events.

<sup>20</sup> OECD (2019). Culture and Local Development: Maximising the Impact. Guide for Local Governments, Communities and Museums.

<sup>21</sup> Otago Museum Annual Report 2019-2020.

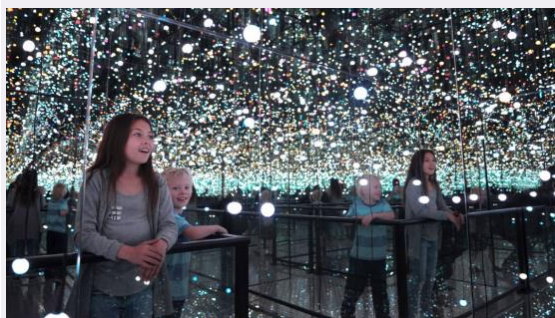
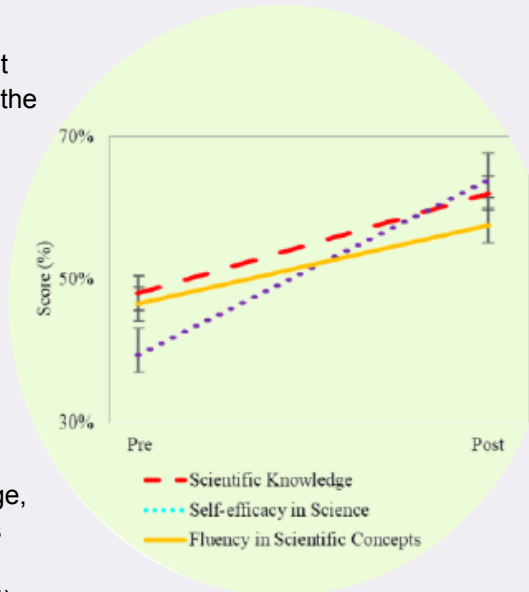
<sup>22</sup> Otago Museum numbers 2016-2020. Numbers were lower in 2020 impacted by Covid-19 at around 2,400 students and 490 adults.



### Case study: Tūhura Science Centre’s impact on visitor learning

In 2020, a PhD researcher at Otago University, evaluated the impact that visiting Otago Museum’s science centre had on various aspects of science literacy.

The study collected quantitative and qualitative data from 1,320 visitor surveys and found that visiting the Tūhura Science Centre significantly improved scientific knowledge, fluency in scientific concepts and self-efficacy in science, illustrated by the graph (right).



“This place is flippin’ awesome! I’ll be back, and will definitely continue to recommend this to everyone!”

– visitor to Tūhura.

Source: Solis Recendez, D.H. (2020).

The museum also publishes educational content on its blog (with 104 blog posts last year), and on its social media pages and website.

### Last year, Otago Museum developed @hOMe, an online collection of videos, blogs, craft activities, puzzles and science experiments that people can access anywhere

Hundreds of resources are now accessible on the museum’s website, with videos linked to YouTube reaching an international audience. Public talks, demonstrations and workshops also provide learning and education opportunities, with speakers ranging from NIWA experts to fashion designers.

The museum also produces science education videos that it shares on the Education Perfect tutoring app. These are designed to make science fun for school students, bringing education to life.

For example, the science demonstrations **Far from Frozen** and **Mighty Small, Mighty Bright** helped attendees visualise and understand complex concepts and processes. Other events like the **Multicultural Weavers** workshop are also great hands-on learning experiences. More than 15,000 people attended the museum’s public engagement offerings last year.<sup>23</sup>

### Otago Museum’s education team delivers a suite of educational programmes

There are currently around 40 different **Learning Experiences Outside the Classroom (LEOTC)** programmes available, covering topics in science,

<sup>23</sup> Otago Museum Annual Report 2019/20.



history and culture, and tailored to all learning levels.<sup>24</sup> Most are 45 to 90 minutes long.

The feedback is overwhelmingly positive, with 99% of teachers rating the programmes as either excellent or very good.<sup>25</sup> The LEOTC programmes also regularly exceed the target numbers that central government sets for them.

The museum also runs ongoing education programmes. After-school and school holiday programmes attract over 5,000 children each year.<sup>26</sup> The **Kia Mātau – Gifted and Talented** programme brings children together for eight weeks to learn about and be inspired by the world of science.

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**Last year, more than 11,300 students and 2,100 adults** participated in education programmes, including Learning Experiences Outside the Classroom, preschool, sleepovers, tertiary and Science Kids groups<sup>27</sup>

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The **Science Journeys** programme brings together groups of 20 to 30 children and teenagers, aged 11 to 17, to work together to create a science exhibition for the general public, and along the way learn from experts and delve into their own research. **Conference for Kids** brings children together for a day to learn about the museum.

<sup>24</sup> The development and delivery of these programmes is supported by funding from the Ministry of Education.

<sup>25</sup> Otago Museum LEOTC Annual Report 2019 and 2020.

<sup>26</sup> Otago Museum Annual Report 2019/20.

<sup>27</sup> Otago Museum Annual Report 2019/20.

The museum also focuses on aspects of science that are particularly vital for the future of the country and the world, like climate change and COVID-19.

### **The museum also takes science engagement opportunities out to the community**

Last year the museum took its touring science lab **Lab in a Box** to A&P shows, festivals, schools, and other community events. The year before, **Science Show-offs** was another successful outreach programme.

Science Show-offs aimed to get youth excited about science and share science knowledge. It brought science demonstrations to the likes of community swimming pools, supermarkets, sports venues and hospital wards. Over 11,300 people engaged in the 'show-offs' at 97 different events and a further 2,800 through an online competition and the project webpage.<sup>28</sup>

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**13,000 residents from 32 communities** throughout the Otago region experienced the museum's outreach programmes last year<sup>29</sup>

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**Extreme Science** and **He Taura Tākata** were two other outreach programmes run with funding support.

<sup>28</sup> Otago Museum Client Report Science Showoffs Final Report (2019). Delivered to the public May - October 2019. Funding was received from MBIE as part of the Nation of Curious Minds programme.

<sup>29</sup> Otago Museum Annual Report 2019/2020.



In 2019, Extreme Science took science to some of the most remote parts of New Zealand – Great Barrier and Stewart Islands, East Cape, Northland, West Coast and Fiordland – with 32 school sessions and 12 public events reaching 2,170 people across all age groups.<sup>30</sup> Feedback on the **Extreme Science** shows described them as having “made such an impact on the children and community members coming along”.<sup>31</sup>

Last year, **Tuia Encounters 250: He Taura Tākata** was delivered over nine months at 32 schools across Otago and Southland. The programme focused on Māori stories related to Cook’s 1769 voyage to Aotearoa. Almost 4,000 students and around 800 adults took part.<sup>32</sup>

### **Evidence of educational impacts are clear across all of Otago Museum’s activities**

Three-quarters (74%) of the museum’s visitor survey respondents said the museum enabled them to learn new things. Comments about specific benefits often started with phrases like “new information on...”, “better knowledge of...”, “better understanding of...”, and “I learnt...”. Many also labelled their visit simply as “educational”.<sup>33</sup>

Feedback from teachers about the Learning Experiences Outside the Classroom (LEOTC) programmes have shown “there was significant learning for the kids” in the experience. “The children are coming away with new knowledge, vocabulary and understanding about our earth’s place in space” from these programmes.<sup>34</sup> Community feedback has also described outreach programmes as “very educational and informative” for all age groups.<sup>35</sup>

A third (33%) of visitor respondents said their visit to Otago Museum aroused an interest in something new. Specific comments included that the experience was “insightful” and “an opportunity to rediscover”.

There is evidence this impact is considerably higher for young people. Educational programmes run by the museum have “made them [the children] more enthusiastic and keener to come up with their own ideas” and “more confident to try new things”. Trips to the museum were described as an “igniter” for topics currently being taught at school.<sup>36</sup>



<sup>30</sup> Otago Museum Client Report Extreme Science II final report (2019). Delivered between May and November 2019. Co-funding received from MBIE and the Dodd Walls Centre.

<sup>31</sup> Otago Museum Client Report Extreme Science II final report (2019).

<sup>32</sup> Otago Museum Annual Report 2019/20.

<sup>33</sup> Otago Museum Visitor respondents, National Visitor Survey. Figures 2020. Comments 2017-2020.

<sup>34</sup> Otago Museum LEOTC Annual Report. First comment from 2018. Following comment from 2019.

<sup>35</sup> Otago Museum Client Report Extreme Science II final report (2019).

<sup>36</sup> Otago Museum LEOTC Annual Report 2020 and 2019.





Older students who participated in “gifted” or “talented” programmes or projects like **Science Journeys** said how “cool” it was to engage with a scientist, and that it helped them think about their own career choices. They also said the opportunity for self-directed exploration and to ignite and share passions was a real benefit of the experience.

**Science Show-offs** achieved similar outcomes by provoking young people’s interest – which ultimately helps them retain knowledge.

Through Science Show-offs children who were not usually interested in science at school became actively engaged in it. A typical quote from children was that “In school science is boring, but here it’s really fun.<sup>37</sup>” Parents commented on how much this programme changed their kids’ behaviour at home, as they tried to look for “science show-offs” in everything they did. The videos that children made for the competition reinforced this.

The museum also ran a pre-school programme – **Kia Rapua: Science Playground** – in response to research that early childhood is an important age for engaging children in science.

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**“Learning about science is so much fun at your museum!”**

*– Year 8 student from Oamaru*

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Gaining a new or deeper understanding of the world is another educational outcome the museum contributes to. Nearly half (47%) of Otago Museum National Visitor Survey respondents said their visit had given them a new or deeper understanding of the world around them and events within it.

<sup>37</sup> Otago Museum Client Report Science Showoffs Final Report (2019).

Feedback from educational programmes described them as “a chance for kids to think more deeply”.

Teachers frequently comment on how well Otago Museum delivers education programmes. One said that “We try to do a trip each term and enrich children’s experience – certainly did that.”

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**“Having taken school groups to Te Papa, I feel that Otago Museum offers a much richer experience. Thank you!”**

*– Primary school teacher<sup>38</sup>*

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Museums also expose people to a range of issues and perspectives. In the museum’s National Visitor Survey, 39% of respondents said their visit enabled them to see things from a different perspective.

Feedback from Otago Museum programmes capture this. Many commented that programmes have enabled them to interact with scientists, science communicators, and people from different backgrounds. One teacher said of the Extreme Science shows that having “an awesome group of presenters coming from different cultures has been great for our students. The interaction with our students has been great”.

**Learning and educational impacts are wide-reaching due to Otago Museum’s focus on accessibility and inclusivity**

The museum makes inclusivity and accessibility a priority when designing and delivering its offerings.

<sup>38</sup> Otago Museum LEOTC Annual Report 2018 and 2019 (respectively).



Access to permanent galleries is free. A number of exhibits are also free (13 last year) and most general public offerings are free or ask for a small koha (98 of the 118 events were free last year). The museum's online platforms like @hOMe also provide hundreds of open-access educational resources.

Some funding allows the museum to provide entry and travel subsidies to students for certain programmes, particularly for low-decile and rural schools. This provides more equal educational opportunities for students across the southern South Island.

The outreach programmes target areas where accessibility and exposure to science is usually low. Feedback on the Extreme Science outreach programme show how much people value the museum's presence in remote communities – it included comments like “We never get stuff like this, so thanks for coming” and “We live 65 minutes away... but we had to come”.

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**“We never get stuff like this, so thanks for coming!”**  
– *Student, after the Extreme Science programme*

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### **Staff and volunteers also gain knowledge and skills**

Otago Museum values opportunities for all its staff to develop their expertise and knowledge. As well as on-the-job learning, the museum invests in professional development and training opportunities. Examples include training in customer service, presenting, dealing with conflict, and learning te reo Māori.

The museum supports staff to gain NZQA qualifications from ServiceIQ for hospitality, tourism, and museum studies, and to gain tertiary qualifications in management, leadership and other museum-related studies.

Volunteers and interns also benefit from their exposure to the museum environment. They learn about a range of topics so that they can help museum visitors get the most out of their experience. This includes soft skills like customer service, and technical skills like computer and research skills.

### **Research provides a greater understanding of culture and heritage**

One of Otago Museum's objectives is to excel at researching and interpreting the collection. Staff work to add to collection records, adding depth to the information already held. Honorary Curators dedicate significant time to advance the collections, research the past, upskill others, and share information widely, which helps strengthen a collective understanding of culture and heritage.

The museum shares its staff's research findings with the public and fellow researchers through journals, the museum's website, blog and exhibitions, newspapers, magazines, radio, social media and public talks.

Last year, the museum produced 52 publications by 72 internal researchers, and delivered 32 presentations either in-house or externally. Topics included culture, science, evolution, fashion, sports, ceramics, and places.<sup>39</sup>

<sup>39</sup> Otago Museum Annual Report 2019-2020.



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Last year, Otago Museum produced **52 publications**, and external researchers produced a further 9 collection-related publications

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Visitors to the museum clearly gain interesting insights and a deeper understanding of history. Many visitors made comments such as the information and displays enabled them to gain a “better knowledge of Dunedin”, “better knowledge of New Zealand history” and a “better understanding of New Zealand culture.”

These experiences enable people to look to the past, to within themselves and to others, and to the future to improve their way of living.<sup>40</sup> What they learn is also often shared, which raises the social and human capital within the community.<sup>41</sup>

## Social connections

Close personal relationships, social contact and support networks are important for many aspects of wellbeing. Those who have strong support networks generally have better health, live longer, and are more likely to be employed.

The museum makes a difference in this area by enabling and reinforcing:

- Social relationships and networks
- Community development, and
- Volunteering.<sup>42</sup>

### Enabling and reinforcing social relationships and networks

Otago Museum facilitates the building and strengthening of relationships and support networks for their visitors and the wider community. Visitor-facing staff actively interact with visitors and search for connections that would link the visitor to the exhibitions, activities and to others at the museum.

More generally, the museum, its staff and its partners provide a safe, welcoming environment that offers rich and rewarding experiences.

A quarter (25%) of visitors said a key benefit was that their visits reinforced their connection to the people they visited with (Otago Museum 2020 National Visitor Survey).

<sup>40</sup> OECD/ICOM (2019).

<sup>41</sup> Bollo, A. (2013).

<sup>42</sup> See more detail in the likes of OECD/ICOM (2019). Kelly, L. (2006), Bollo, A. (2013), with New Zealand case studies on Auckland Council (2014) and Fletcher, D. & Knöbl, E. (2011).



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Respondents noted the museum provided a common space to “meet and catch up” for “socialising”, and for “**deepening and creating connections.**”<sup>43</sup> Visitors said often that they enjoyed simply walking around, talking to people, spending quality time with family and friends, and engaging with staff.

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The museum’s emphasis on providing an accessible and inclusive environment also allows visitors to meet and interact with new people from all backgrounds. Many museum events and workshops involve informal group settings that allow participants to get to know each other. Examples include weaving, mosaic making, stargazing, and fossil and photography field trips.

Live demonstrations and tours are designed to make the audience feel included. Where possible, audience members become active participants. Questions are posed to the audience, who are encouraged to talk among themselves.

Other programmes often have in-built conversation starters and activities – for example when people first arrive at the **After Dark** programme, they are given a cut-out shape that matches with only one other shape given out that evening, to encourage them to talk with new people there. After Dark also includes karaoke, which is often an effective ice-breaker.

Educational programmes are also designed to enhance social connections – for example the **Kia Mātau Gifted and Talented** programme brings 110 children from different schools together for eight weeks to learn more about science. The **He Huruhumanu: Conference for Kids** programme brings 44 children together for a day to learn about the different areas of the museum. The children develop friendships among themselves but are also given the chance to connect with community leaders, scientists and curators.

The community can also access the museum for business and networking events, and for parties and social events. Many businesses and groups use the museum’s spaces for meetings, seminars, trade shows and exhibits, as well as special occasions. Over 2,500 people visited the museum in this capacity in 2018/19.<sup>44</sup> The museum facilities provide a platform for all parts of the community to connect in a way that works for them.

## Community development

### A community hub for residents and visitors

The museum is a hub for the Otago community and visitors to the region. It provides facilities, spaces, ideas and activities that bring the community together and create a sense of place. One visitor commented that visiting the museum is “an opportunity to rediscover our city as resident.”<sup>45</sup>

Researchers, the general public, volunteers, community groups, organisations, and educational institutions are all able to engage in the knowledge and entertainment hub that is the museum.

The museum itself is an active community participant. It lives and breathes its values of **Tohukataka** (growing and fostering expertise through research,

<sup>43</sup> Otago Museum Visitor respondents, National Visitor Survey. Figures 2020. Comments 2017-2020.

<sup>44</sup> Ministry of Business, Innovation and Employment. Business Events Activity Survey Report of Otago Museum. Year ended March 2019.

<sup>45</sup> Otago Museum Visitor respondents, National Visitor Survey. Comments 2017-2020.



learning and collaboration), **Whanaukataka** (collaborate and create partnerships), and **Manaakitaka** (caring for taoka, tākata, and whakapapa), through working with others to bring out the best in the community.

The museum looks to run exhibits and programmes that showcase different parts of the community, and which it develops in collaboration with the respective community or group.

Examples include an art exhibit with Aotearoa's autistic community, wellbeing programmes with groups like Life Matters and Stopping Violence Dunedin, designs of the Tāngata Whenua gallery with mana whenua, and a Tokelauan celebration day with the Pasifika community. These events have deepened community relationships. Often koha or admission fees have been donated to the charities involved.

#### **Connecting with local government and other regional museums**

Otago Museum also encourages community interaction throughout Otago and beyond.<sup>46</sup> Through its relationships with local councils, the museum has helped to develop community plans and strategies, such as the Draft **Central Otago District Council Museum Strategy**.

It is also a driver of the **Otago Participatory Science Programme**, a collaboration with MBIE, Kāi Tahu, Otago University, Otago Polytechnic and the New Zealand International Science Festival to fund new science research projects in communities across the region.

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### Otago Museum's experts support regional museums, including Teviot, Central Stories, Naseby, Cromwell, South Otago, North Otago, Southland, and Rakiura Museums

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Staff provide their time, resources and expertise to advance the standing and collections of these regional museums.



<sup>46</sup> One of the museum's objectives 2019-2020.





## Fostering international connections

Beyond its own region, the museum fosters ongoing partnerships with the international science and cultural communities. It often hosts representatives and researchers from overseas and is frequently asked to attend international conferences and be part of global collaborations and networks.

Those partnerships and connections allow Otago Museum to build the profile of New Zealand on the international stage. They also enable the local communities of museums to access unique development opportunities.<sup>47</sup>

For example, in 2018 the museum hosted the joint conference of the Society for the Preservation of Natural History Collections (SPNHC) and the Taxonomic Database Working Group (TDWG). At the conference, which was attended by 400 people from around the world, Otago Museum ran workshops on various topics, from Conservation of Zoological Collections to Introduction to 3-D Imaging.

The SPNHC–TDWG conference also brought an economic benefit to Dunedin of around \$630,000 in the form of accommodation, tourism, tours and shopping.<sup>48</sup>

## Case study: Social connections, community development and wellbeing – iNDX exhibitions

To quote one visitor, the iNDX exhibits are “collaborative and thought-provoking exhibitions” that showcase the artistic talent of New Zealand’s autistic community.

First held in August 2018, the exhibit is now an annual event for Otago Museum. Each year around 30 members of the autistic community contribute artwork to the display, and over 400 people attend.

The exhibits are developed in collaboration with the autistic community, Dunedin artists, and advocates. Supporting public talks, workshops and quiet hours are also held. These open a dialogue on autism and provide room for connections and celebrations amongst the community.

The experience is profound for attendees and participants and this is clear in feedback from participants and attendees alike. “Autistic people benefited from the opportunity to showcase their work” (artist). Specific comments like “it gave me the impetus to be brave”, and “it gave me the confidence to share a bit more of my writing” reinforce this benefit.

The platform “gave us a space to connect with other autistic people and the public, to discuss and communicate (which is often difficult) in a way that grew understanding and acceptance of our differences.” It was “a place to come together to show and communicate to the wider community the depth of talent we have and a place to be proud of those talents.”

It was meaningful to younger autistic people too, illustrated by comments like “My Mr 8 loved being in a room filled with items created by people like him. I could see it in his eyes how special the time spent looking was to him”.

<sup>47</sup> OECD/ICOM (2019).

<sup>48</sup> [https://businessevents.newzealand.com/en/conferences/conference-success-stories/spnhc\\_tdwg-2018-joint-conference/](https://businessevents.newzealand.com/en/conferences/conference-success-stories/spnhc_tdwg-2018-joint-conference/)



## Volunteering in museums and galleries represents substantial social capital

Otago Museum encourages and facilitates volunteering across event-based projects, work experience programmes, internships, and long-term research positions.

This includes collections volunteers and external experts, and an average of 6 visitor-facing volunteers, 6 interns, and 9 Honorary Curators. Together they volunteer almost 4,300 hours each year.

The Association of Friends of the Otago Museum is another valuable human resource. They champion the museum in the community and do a range of important work, from pursuing potential collection items to helping secure funding.

The museum's volunteers help it achieve its goals, and increase community involvement, loyalty and enthusiasm, particularly around the museum's operations. The sense of belonging, value and impact volunteers create and feel in the community through volunteering is an invaluable form of social capital for the Otago Museum and the wider community.<sup>49</sup>

### How volunteers grow and benefit from their experience

Volunteers also themselves benefit through skills development and work experience, social connections, and personal growth.<sup>50</sup> For many museum volunteers, particularly retirees, volunteering provides chances to learn and to engage their cognitive abilities. They grow through the experience, connect with others, and feel connected to their communities.

Student and graduate volunteers have the opportunity to build their networks and to expand on and apply their skillsets in practical ways. This helps them as they gain formal qualifications and look for employment.

Curators add to their and the museum's existing knowledge, contribute to new research, build their own standing in their research fields, network, and assist others to build their expertise, networks and capabilities. Visitor-facing volunteers are also trained to welcome visitors and make them feel comfortable and safe.

These are all substantial forms of social capital.

## Health

Living a long and healthy life is one of the most important aspects of wellbeing. A person's health can also affect other areas of wellbeing such as the ability to learn, work and earn.

Two areas that Otago Museum contributes to in health are:

- mental wellbeing, and
- physical wellbeing.

## Contribution to mental wellbeing

The spaces and experiences that museums provide contribute to the pillars of a person's wellbeing: connect (me whakawhanaunga), give (tukua), take notice (me aro tonu), keep learning (me ako tonu), and be active (me kori tonu).<sup>51</sup>

<sup>49</sup> Taylor, P. et al. (2015).

<sup>50</sup> OECD/ICOM (2019). See specifically page 71.

<sup>51</sup> Mental Health New Zealand – <https://mentalhealth.org.nz/five-ways-to-wellbeing>



Visitors often report that the museum enables them to develop social connections, volunteer and spend time with others, reflect, relax, learn and get active. They appreciate the welcoming environment, the learning opportunities, and the space for reflection. Some have specifically commented that the museum is “wellbeing time for me”, and a spiritual experience that provides an opportunity for wairua cleansing.<sup>52</sup>

Visitors often note the appreciation and gratitude they feel for their experiences at the museum. Research shows that feelings like these are “important predictors of mental health and emotional well-being.”<sup>53</sup>

More generally, ongoing engagement with arts and culture has been shown to have a positive association with long-term health outcomes.<sup>54</sup>

In recent years, the museum has been especially innovative in the wellbeing area, holding events and exhibits centred around understanding and improving health and wellbeing. Examples include **The Museum of Broken Relationships wellness programme**, which dealt with grief, loneliness and healing, **iDNX art exhibitions**, which showcased the neuro-diverse community, and **Yoga with the Butterflies**, an innovative programme of mindfulness and mental wellbeing.

## Contribution to physical wellbeing

The learning environment of the museum helps people to better understand their physical health and wellbeing.

The brain, the body, and health conditions often feature as topics in museum activities, with events on, for example, nutrition, neuro-related disorders, and polycystic ovary syndrome. These allow the community to engage with a range of health topics, including approaching them through different

scientific, cultural, and societal lenses, and ultimately to better understand their own health.

Large, indoor and outdoor spaces and interactive exhibits have a direct impact on visitors’ physical health. People have said that visiting the museum is a good chance to “get your steps in” and is great for “health – walking!” and “physical exercise”.<sup>55</sup>

They also note the museum’s warm, welcoming environment. A significant body of literature shows that environments that are culturally and aesthetically appealing can help people recover faster from high stress and illness.<sup>56</sup>

<sup>52</sup> Otago Museum Visitor respondents, Museums Aotearoa, National Visitor Survey, 2017-2020.

<sup>53</sup> Museums Aotearoa (2018). Page 27. See also Cheng, Tusi, & Lam., 2015. And Kobau et al., 2011.

<sup>54</sup> OECD/ICOM (2019)

<sup>55</sup> Otago Museum Visitor respondents, Museums Aotearoa, National Visitor Survey, 2017-2020.

<sup>56</sup> O’Neill, M. (2010).



## Case study: Positive impact on mental wellbeing – The Museum of Broken Relationships

The Museum of Broken Relationships is a global, travelling exhibition that presents the stories of thousands of lost connections, broken ties, failed friendships failed, and the objects that symbolise them. In each city that MoBR visits, a call for submissions starts with the simple question: Have you ever had your heart broken?

Otago Museum hosted the exhibition in 2019, inviting the Dunedin community to add to the global exhibition, to share their stories of love and loss, distress and healing, and to share in the love for, and connection to, one another.

The exhibition provided a unique opportunity for the museum to support wellness in the community, by starting important conversations, showing that support was available in Dunedin and shining a light of hope. A range of public events were held – expert talks, workshops, mindfulness activities, live music, craft demonstrations, a panel discussion, and even a party – centred on mental, physical and emotional wellbeing.

Community organisations, artists, and meditation and mental health professionals were involved. Most events were free, but where koha was collected it was mostly donated back to community support organisations (including Moana House, Life Matters Suicide Prevention Trust, Youthline, and Stopping Violence Dunedin).

The programme was embraced by the people of Otago and was an enriching experience for all who took part. Participants found the exhibit and events “moving and meaningful” and “inspiring”. One visitor said it “makes you appreciate the good relationships. Important to know you can get through a broken relationship”.

## Subjective wellbeing

Subjective wellbeing includes people’s overall judgement of their level of wellbeing and complements the picture provided by other domains. Subjective wellbeing can be assessed through overall life satisfaction and sense of worth.

Three areas where the museum contributes to subjective wellbeing are by providing unique opportunities for:

- Entertainment
- Reflection, and
- Relaxation and rejuvenation.

### Entertainment

Visitors see Otago Museum as a positive, safe and enjoyable environment. In particular, the free-choice learning experience it offers means that entertainment and enjoyment will be big parts of attending the museum’s different events, exhibitions and programmes.

A range of public talks, live performances, workshops, family-fun days, holiday programmes are available for visitors to enjoy. For example, the Makerspace holiday programme provides free, drop-in craft-making sessions for all ages and abilities.

Last year, over 14,800 people participated in 118 of these different public events and activities.<sup>57</sup> Most of them (98) were free. In the past, total annual attendance across these events has been as high 19,000 people.

<sup>57</sup> 5,248 participants in the ever-popular school holiday Makerspaces programme alone.



Sleepovers and parties at the museum are also unique sources of entertainment for children, and for their teachers and families. Around 1,200 children and 325 caregivers sleep-over at the museum each year.

It is clear visitors see the museum as an accessible source of entertainment for all ages. Comments such as an “entertaining and safe place to be alone”, great for getting the “kids out of the house on a rainy day”, “fun and enjoyable”, “positive for family time”, and “just a lot of fun” feature heavily in the benefits that visitors cite.<sup>58</sup>

Visitors have also commented how their visit made them happier. Many studies have explored this link between a museum visit and overall happiness. Even after controlling for a range of potential factors, visiting a museum has been shown to have a positive impact on happiness and self-reported health.

The same study found that participating in arts activities or simply being in the audience has positive effects on happiness, as much as from participating in sports (when controlling for health).<sup>59</sup>

Free admission to most parts of Otago museum helps make these entertainment and happiness benefits as accessible as possible.

## Unique opportunities for reflection

As well as being a place for discovery, the museum also provides unique opportunities for reflection. Exhibits and programmes often prompt attendees to reflect on themselves and the world around them, and at a pace and depth that suits them.

Other unique experiences also provide these opportunities for reflection – such as afternoon performances from the Red Cross Choir as part of Live @ OM, Yoga with the Butterflies, and the sit and sketch, and slow art programme.

Surveys confirm that Otago Museum visitors see reflection as a benefit of engaging with the museum. 42% of respondents to the National Visitor Survey 2020 said their visit gave them an opportunity for reflection (in line with national numbers).

Specific comments included benefiting from “quiet time, reflection and learning” and “a quite free space to reflect and absorb”. Their experiences also “enlightened” them, provided them with new perspectives, and made them think and appreciate what was around them.<sup>60</sup> Many also described their feelings of gratitude and appreciation resulting from their reflections.<sup>61</sup>

## Relaxation and rejuvenation

The ability to relax and restore energy in a safe space has been linked to improved outcomes in self-reported health metrics such as quality of life, and physical health impacts including illness recovery time, cortisol levels, and aging effects.<sup>62</sup> Otago Museum serves as a place of relaxation and rejuvenation, often cited by visitors as being a “relaxed environment” and “a comfortable place.”

46% of Otago Museum visitors surveyed in the National Visitor Survey 2020 said their visit made them feel more relaxed, rejuvenated or refreshed. Experiences were described as being “very relaxing”, “chilled out” and

<sup>58</sup> Museums Aotearoa, National Visitor Survey, Otago Museum visitor respondent comments 2017-2020.

<sup>59</sup> Fujiwara, D. (2013).

<sup>60</sup> Museums Aotearoa, National Visitor Survey.. Otago Museum specific statistics 2020, and comments 2017-2020.

<sup>61</sup> Museums Aotearoa (2018)., New Zealand wide.

<sup>62</sup> O'Neill, M.(2010). 0





“peaceful”, and the self-reported impact of their time at the museum included feeling happy and having an improved mood.

The museum’s nature areas, mix of interactive and passive displays, café and shop provide readily accessible spaces for people to enjoy. A range of activities and events also provide opportunities for relaxation and rejuvenation. Friends of the museum groups, interesting talks such as Fashion Fridays and mindfulness activities such as yoga with the butterflies are also seen as “absolutely lovely”, “peaceful and relaxing” events visitors can experience and enjoy.

### Case study: Impact on wellbeing – Yoga with the butterflies

Yoga with the Butterflies provides a unique experience for participants of all ages and fitness levels to attend a Hot Yoga class in the museum’s Tropical Forest, which is home to over a thousand butterflies,

Classes are led by local yoga instructors and focus on active, yet gentle movements and using the breath to remain present and mindful. The programme was developed specifically to encourage people to lead an active and balanced life.

The classes have proved to be extremely popular, especially for young adults, with the 50 spaces being fully booked for each programme (currently held once a quarter). Participants leave the experience feeling relaxed, refreshed, and recharged.

Comments in feedback centred on how relaxing and unique the opportunity was, even more so for those who had never done yoga before.

The experience was said to be “absolutely lovely”, “peaceful and relaxing” and “so nice and quite surreal to have a butterfly land on me while doing a yoga pose!”



## Environment



Accessing, viewing and interacting with a healthy and safe natural environment are important to wellbeing. There are health benefits from positive interactions with the natural environment.

Otago Museum contributes to this impact by encouraging commitment to and action around environmental issues.

### Encouraging commitment to and action around environmental causes

Otago Museum is an advocate for environmental sustainability and related environmental problems. Exhibitions and galleries across the museum – for example, **the Nature and Animal Attic galleries** – focus strongly on nature, and the animals and people that inhabit, depend on, and change these environments. The exhibitions and galleries provide people with opportunities to learn and think about the environment and to highlight the need for its conservation.

Often these exhibitions tell stories or provide interactive activities that prompt visitors to think about how their own actions affect the environment, which research has shown influences actual behaviour.<sup>63</sup>

Visitors to the Otago Museum have said these exhibits do encourage them to take action. 19% of respondents in the 2020 National Visitor Survey said their visit to the museum increased their concern for or commitment to a particular social or environmental issue. In an exhibit on climate change put together by students in the Science Journeys programme, 32% of visitors

‘somewhat agreed’ and 60% ‘strongly agreed’ that visiting the exhibit inspired them to take action to reduce the effects of climate change.<sup>64</sup>

Other examples include the hands-on Tūhura Science Centre, and touring events like the Far From Frozen initiative, which provided up to date messages about climate change from leading scientists.

In 2018, Auckland Council carried out a “social return on investment” (SROI) analysis of a temporary exhibition that focused on the region’s natural environment. It found that every dollar invested in developing the exhibit created around \$4.66 of social, environmental and economic value.<sup>65</sup>

Educational programmes run by Otago Museum also encourage a commitment to and action on environmental issues. **Sustainable New Zealand, Bug Census, Wild Otago, and Climate Change** are just a few of the environment-related programmes for students. They enable them to interact with the natural environment and the creatures that live in it to understand more about it and its importance in our lives. Within each programme students explore what they, their families and their communities can do for the environment. Around 4,000 students and 500 adults participate in these programmes each year.

The **Climate Change – Striking a Balance** exhibition also featured an opportunity for each visitor to pledge to do something to reduce their own personal environmental footprint.

The museum also demonstrates the importance of safe and sustainable environments through its own practices. It maintains safe, accessible environments through investing in accessibility through design, health and safety considerations, and structural integrity upgrades.

<sup>63</sup> See for example Auckland Council (2014), and impacts listed in Bollo, A. (2013).

<sup>64</sup> Otago Museum Science Journeys Final Report – Client Report for 2020.

<sup>65</sup> Auckland Council (2019).





Environmental sustainability is also practiced and demonstrated. The museum is actively involved in projects and events such as Plastic Free July and Wild Dunedin which promotes environmental conservation. The organisation fully supports the Taiki New Zealand promise, a commitment by tourism operators and visitors/tourists to care for New Zealand now and for future generations.

Large investments have been made in upgrading equipment to be more environmentally friendly. This includes purchasing new collections refrigerators (that emit 2,000 times less carbon in the event of accidental leaks), upgrading lighting to LED, and reducing the amount of waste through bulk purchases of products. As an example, milk for the café is sourced locally in kegs, saving over 7,000 plastic bottles annually. The museum is

<sup>66</sup> Kelly, L (2006).

also carbon certified (ISO 14064-1:2006), and a Sustainability Group is tasked with actively managing and reducing emissions. Exploration into solar energy and double-glazing investments are underway.

## Civic engagement and governance



Civic engagement is the ability to participate and contribute socially, both at a community and a broader societal level. It is about individuals recognising themselves as part of a society and taking some responsibility to improve the quality of life for others.

Two ways that Otago Museum contributes to better civic and governance outcomes are by encouraging and demonstrating:

- commitment to social causes, and
- better engagement with civic issues and institutions.

## Encouraging a commitment to addressing social problems

Studies indicate that a key role for museums is presenting important and challenging points of view to stimulate discussion and debate. Otago Museum is already active in this area.<sup>66</sup>

The open learning experiences the museum provides, its cultural and social offerings, and its work in the community all encourage users and followers to think about and address social problems.<sup>67</sup> A fifth (19%) of Otago Museum visitor respondents in the 2020 National Visitor Survey said their visit had increased their concern for, or commitment to addressing, a particular social or environmental problem.

<sup>67</sup> Kelly, L (2006), OECD/ICOM (2019).



## Showcasing and exploring historical and social issues

Otago Museum showcases and explores a range of historical and social topics and issues, backed by trusted information sources. Examples include talks, exhibits and programmes centred around feminism, diversity, vulnerable communities, equal rights, colonisation, equity and inclusion, and understanding how other people live. These provide room for people to raise social issues and consider how they can be addressed.

The permanent **Pacific Cultures** gallery is a specific example of showcasing the historical and social issues and changes of a particular culture or community. Comments from visitors show these types of exhibits are “a good reminder of the historical and current plight of some people (eg, Torres Strait Islanders)”.<sup>68</sup> This awareness is the first step in encouraging action around similar social issues.

Other examples include the **Dare to be Wise** special exhibit, which showcased 150 years of University of Otago history and student culture, covering (scandalous) social changes like mixed flatting and campus childcare for students and staff.

The **iDNX workshops** also enabled people to hear from Aotearoa’s neuro-diverse community and understand how they live. Feedback from the workshops said they were a “starting point for deep conversations” and “a celebration of our insights”, and that they “gave our community a voice”.

## Encouraging productive discussions on topical issues

The museum works to enable balanced and productive discussions around topical issues.

The museum often invites different parts of the community to express their views on issues that are important to them, and where appropriate the

museum also works with these groups to raise awareness around these issues. For example, the **Museum of Broken Relationships** programme invited community groups to speak on mental health challenges.

The museum is also in a position to influence the decisions and actions of others in the community on social issues. It has many partners in the community – from central to local government, iwi, not-for-profits, and private organisations – and it can also reach a wide range of people through its blog, radio, social media, and other publishing channels.

## Better engagement with civic issues and institutions

Museums actively stimulate civic engagement, particularly through learning,<sup>69</sup> including about the history of your community and country, and about different social, cultural and environmental issues and perspectives.<sup>70</sup>

Otago Museum provides a platform for this learning. For example, the **Tuia 250: He Taura Tākata, Bicultural History** and **Te Tiriti o Waitangi** educational programmes explore the interactions and relationships, past and present, between tāngata whenua, European explorers, and the Crown. They provoke learners to think about what this means for our policies, governments, institutions, communities and society at large.

Museums can also serve as an inclusive and inspiring space for public debates, hearings and community meetings.<sup>71</sup> Otago Museum provides this space, inviting different organisations and parts of the community to network, build community trust, and rediscover the Otago region across various topics.

<sup>68</sup> Museums Aotearoa, National Visitor Survey, Otago Museum visitor respondent comments 2017-2020.

<sup>69</sup> Bollo, A. (2013).

<sup>70</sup> OECD/ICOM (2019).

<sup>71</sup> OECD/ICOM (2019). Page 37.



The museum also demonstrates the benefits and importance of engaging in local democracy by actively contributing to activities that improve community outcomes.

### **Working and collaborating with institutions**

Otago Museum works closely with local government, museums, educational institutions and other organisations, locally and internationally, sharing knowledge and collaborating on civic issues and decision-making.

Examples include working with **Central Otago District Council** to develop a Draft Central Otago District Council Museum Strategy, collaborating with Otago's **Tokelauan community** to create a day of celebration, and holding wānanga with **mana whenua** on the Tāngata Whenua gallery concepts.

The museum also has an ongoing relationship with the University of Otago and Otago Polytechnic.

DRAFT





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# APPENDIX 1: THE TECHNICAL DETAILS

## Input-Output multiplier analysis methodology

Regional input-output multiplier analysis has been used to calculate the direct, indirect, and induced economic impacts of the Otago Museum. It is a widely used and accepted method for assessing the economic impacts of organisations, events, projects, and sectors.

The museum's operational expenditure, capital expenditure and visitor expenditure attributable to the museum is identified and calculated. The proportion of expenditure that occurs in the Otago region is then assessed.

This direct expenditure associated with the museum's activities is (or "output") is allocated to the industries the expenditure occurs in, which is converted to direct impacts in terms of GDP and employment using a regional input-output (I-O) multiplier model for the region of interest.

Indirect and induced impacts resulting from the direct expenditure flowing through the district economy is then calculated using the multiplier model.

### Underlying logic of multiplier analysis

The underlying logic of Regional I-O Multiplier Analysis is that enterprises create flows of expenditure (direct impacts) that are magnified or 'multiplied' as they flow on to the wider economy. This happens in two ways:

- 1 indirect impacts – the enterprise purchases materials and services from supplier firms, who in turn make further purchases from their suppliers and so forth.

- 2 induced impacts – employees in the enterprises and in firms supplying services are paid a wage and the enterprises generate profits, which is then spent on consumption.

The total impact is the sum of the direct, indirect, and induced impacts.

### Multipliers

Regional multipliers are used to capture the indirect and induced impacts at a regional or national level. They are also used to calculate GDP. Multipliers are derived from the national I-O tables published by Statistics New Zealand and the regional (Otago region) I-O tables supplied by Butcher Partners Limited.

The size of the multiplier depends upon the degree of economic self-sufficiency of the area's economy. The more self-sufficient a region or nation is, the higher the multiplier is likely to be. Initial expenditure is assigned to the industry where it occurs. Each industry has a different multiplier based on the average pattern of purchases of goods and services, capital formation, profits, wages, and salaries.



## Measures of economic activity

I-O multiplier analysis provides calculation of three measures of economic activity – Gross Output, Value Added and Employment.

Gross Output is the value of production, which is built up through the national accounts as a measure of gross sales or turnover. It is essentially the initial expenditure incurred by the activity.

Value Added is the increase in output generated along the production process, which when aggregated totals GDP. Value Added is the sum of:

- compensation of employees (salaries and wages)
- income from self-employment
- depreciation
- profits and
- indirect taxes less subsidies.

Employment, expressed as full-time equivalents (FTEs), is a measure of the total labour demand associated with the given gross output for one year.

## Economic impact inputs and assumptions

This section outlines the inputs and assumptions that underpin the economic impact model. Where possible, all inputs are based on robust data sources.

### Current economic impact

#### Museum operational expenditure

The impact of museum operations is based on the expenditure below (Table 10), excluding depreciation and amortisation, which are not real cash flows.

**Table 10: Otago Museum operational expenditure, 2018/19**

	2018/19
Salaries and wages	4,896,000
Defined contribution plans	132,000
Employee benefits	5,027,987
Depreciation and amortisation	1,526,805
Realised net loss on sale of financial instru	0
Administrative and general office expenses	454,236
Advertising	187,123
Audit fees	25,833
Maintenance	252,996
Building and exhibition operating costs	668,635
Computer and IT Costs	270,382
Consultancy	52,843
Cost of Commercial Goods Sold	773,157
Other expenses	879,975
Training and Travel	245,150
<b>Total Opex</b>	<b>10,365,123</b>



## Industry allocation of operational expenditure

The following table shows how the museum's annual operating expenditure has been allocated to industries in the input-output multiplier model. The estimated proportion of each category that is spent in the Otago region was estimated in consultation with Otago Museum.

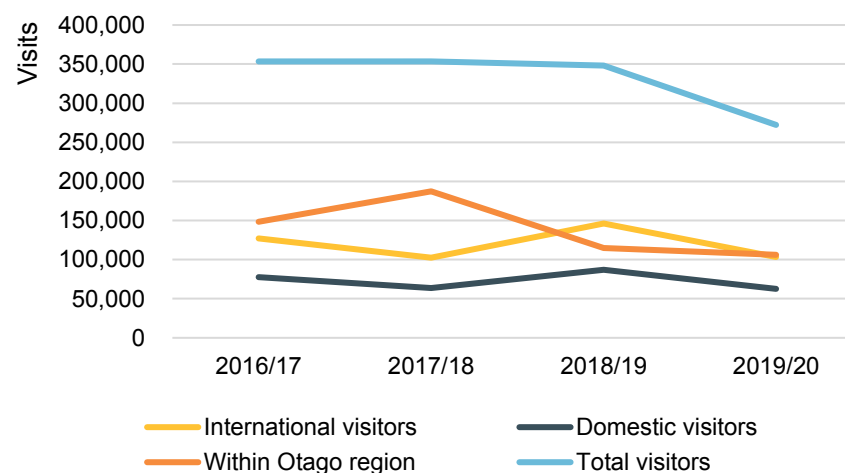
**Table 11: Industry allocation of operational expenditure**

Opex category	Industry allocation	%	\$ Total	% Otago	\$, Otago
Salaries and wages	Heritage and artistic activities	100%	4,896,000	100%	4,896,000
Defined contribution plans	Superannuation and individual pension services	100%	132,000	0%	0
Administrative and general office expenses	Employment and other administrative services	100%	454,236	100%	454,236
Advertising	Advertising, market research, and management services	100%	187,123	70%	130,986
Audit fees	Legal and accounting services	100%	25,833	100%	25,833
Maintenance	Repair and maintenance	100%	252,996	100%	252,996
Building and exhibition operating costs	Building cleaning, pest control, and other support services	70%	468,044	70%	327,631
	Construction services	30%	200,590	70%	140,413
Computer and IT Costs	Computer system design and related services	90%	243,344	80%	194,675
	Telecommunications services	10%	27,038	100%	27,038
Consultancy	Scientific, architectural, and engineering services	100%	52,843	50%	26,422
Cost of Commercial Goods Sold	Grocery, liquor, and tobacco product wholesaling	100%	773,157	100%	773,157
Training and Travel	Adult, community, and other education	50%	122,575	100%	122,575
	Travel agency and tour arrangement services	50%	122,575	100%	122,575
Other expenses	Employment and other administrative services	60%	527,985	68%	359,030
	Scientific, architectural, and engineering services	20%	175,995	68%	119,677
	Local government administration services	10%	87,998	68%	59,838
	Legal and accounting services	5%	43,999	68%	29,919
	Banking and financing; financial asset investing	5%	43,999	68%	29,919
<b>TOTAL</b>			<b>8,838,331</b>	<b>92%</b>	<b>8,092,921</b>

## Visitor spend

Figure 3 shows the visitor numbers, by type that the assessment is based on. We have used the average of 2016/17, 2017/18 and 2018/19 to smooth out year-to-year changes in the visitor type proportions.

**Figure 3: Visit numbers Otago Museum 2016/17 – 2019/20**



Note: The 2019/20 visitor numbers were heavily affected by the Covid-19 pandemic. The Museum was closed to the public for 53 days from 24 March to 15 May 2020 due to Covid-19. The New Zealand border was closed to almost all foreign travellers. International travel was restricted to essential visitors. A travel bubble to Australia opened in April 2021.



The average visitor to Dunedin stays 1.9 nights. (Source: MBIE Accommodation Data Programme)

For those visitors that visit Otago Museum, we attribute **half a day** of spend to their visit, as shown in Table 12. Half a day is used because, for a visitor or visiting family, an excursion to the museum is generally a half day exercise, including lunch for example. While the museum may not be the sole driver of their trip to Dunedin, it is an important element of the city's tourism offering.

**Table 12: Visitor spend attributed to Otago Museum**

Visitor type	Total spend in Dunedin (average)	Average spend per night per visitor	Half day spend attributed to Otago Museum
International	\$381.70	\$200.90	<b>\$100.40</b>
Domestic	\$286.30	\$150.70	<b>\$75.30</b>

Source: MBIE International Visitor Survey.

The total spend attributable to Otago Museum, (average 2016/17, 2017/18 and 2018/19) is:

- International visitors: \$12.59 m
- Domestic visitors: \$5.74 m
- Total spend: \$18.32 m

### Visitor spend industry allocation

Visitor spend has been allocated to industries based on MBIE's RTE (Regional Tourism Estimates) data for Dunedin City.

**Table 13: Visitor spend, by expenditure category**

RTE Annual series - YE October 2019

Dunedin city	Dunedin city (\$m)		
	Domestic	International	Total
Accommodation services	45.4	38.9	84.3
Cultural, recreation, and gambling services	10.8	5.7	16.5
Food and beverage serving services	63.2	54.7	118.0
Other passenger transport	94.1	18.2	112.2
Other tourism products	57.9	39.1	97.0
Retail sales - alcohol, food, and beverages	61.5	11.6	73.0
Retail sales - fuel and other automotive products	22.4	14.0	36.4
Retail sales - other	213.8	50.6	264.4
	<b>569.0</b>	<b>232.8</b>	<b>801.8</b>

Dunedin city	Dunedin city		
	Domestic	International	Total
Accommodation services	8.0%	16.7%	10.5%
Cultural, recreation, and gambling services	1.9%	2.5%	2.1%
Food and beverage serving services	11.1%	23.5%	14.7%
Other passenger transport	16.5%	7.8%	14.0%
Other tourism products	10.2%	16.8%	12.1%
Retail sales - alcohol, food, and beverages	10.8%	5.0%	9.1%
Retail sales - fuel and other automotive products	3.9%	6.0%	4.5%
Retail sales - other	37.6%	21.7%	33.0%
	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: MBIE Regional Tourism Estimates (RTE) data

Table 14 shows how the RTE data has been mapped to industry categories in the input-output multiplier model.





**Table 14: Industry allocation for visitor spend**

	Industry in I-O model	Expenditure Share	Share	
			Domestic	International
Accommodation services	Accommodation	100%	8%	17%
Food and beverage serving services	Food and beverage services	100%	11%	24%
Other passenger transport	Air and space transport	25%	4%	2%
Other passenger transport	Road transport	25%	4%	2%
Other passenger transport	Travel agency and tour arrangement services	25%	4%	2%
Other passenger transport	Rental and hiring services (except real estate)	25%	4%	2%
Cultural, recreation, and gambling services	Heritage and artistic activities	45%	1%	1%
Cultural, recreation, and gambling services	Sport and recreation services	45%	1%	1%
Cultural, recreation, and gambling services	Gambling activities	10%	0%	0%
Retail sales – alcohol, food, and beverages	Supermarket and grocery stores	50%	5%	2%
Retail sales – alcohol, food, and beverages	Specialised food retailing	50%	5%	2%
Retail sales – fuel and other automotive products	Fuel retailing	100%	4%	6%
Retail sales – other	Recreational, clothing, footwear, and personal services	50%	19%	11%
Retail sales – other	Department stores	50%	19%	11%
Other tourism products	Telecommunications services	20%	2%	3%
Other tourism products	Banking and financing; financial asset investments	20%	2%	3%
Other tourism products	Health and general insurance	20%	2%	3%
Other tourism products	Medical and other health care services	20%	2%	3%
Other tourism products	Personal services; domestic household services	20%	2%	3%
			<b>100%</b>	<b>100%</b>

**Museum capital projects over last 5 years**

- \$4.3 m spent within Otago
- \$2.9 m spent outside Otago.

Otago Museum Capex	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Planetarium & Beautiful science gallery	1,206,456					1,206,456
Chiller	413,526					413,526
Discovery World		529,574	1,465,175			1,994,750
Tūhura			278,212			278,212
Miscellaneous	350,911	573,519	1,322,962	640,560	474,496	3,362,448
<b>Total</b>	<b>1,970,893</b>	<b>1,103,093</b>	<b>3,066,350</b>	<b>640,560</b>	<b>474,496</b>	
<b>Within Otago</b>	<b>1,023,040</b>	<b>415,913</b>	<b>2,002,323</b>	<b>530,656</b>	<b>382,057</b>	<b>4,353,990</b>
<b>Outside Otago</b>	<b>947,853</b>	<b>687,179</b>	<b>1,064,027</b>	<b>109,904</b>	<b>92,439</b>	<b>2,901,402</b>
<b>Total</b>	<b>1,970,893</b>	<b>1,103,093</b>	<b>3,066,350</b>	<b>640,560</b>	<b>474,496</b>	<b>7,255,392</b>

**Future economic impact inputs and assumptions**

**Visitor growth scenarios**

**Table 15: Impact on number of visits**

	Average 2016/17, 17/18, 18/19	Growth scenario (in 2035)		
		Low	Medium	High
<b>Growth assumptions: Proportion of visitors to Dunedin City that visit Otago Museum</b>				
International visitors	27%*	34%	38%	42%
Domestic visitors	9%	11%	13%	15%
Equivalent average per annum growth in <b>Locals visits</b> 2021 - 2035	Population growth, Otago region 2021 – 2035 = 0.5% p.a.	1.5% p.a. (20% visit growth by 2035)	2.2% p.a. (35% visit growth by 2035)	2.9% p.a. (50% visit growth by 2035)
<b>Visits</b>				
International visitors	125,310	254,170	285,550	318,710
Domestic visitors	76,130	111,800	131,670	155,980
Local (within Otago)	150,210	184,030	202,780	225,320
<b>Total visits</b>	<b>351,650</b>	<b>550,000</b>	<b>620,000</b>	<b>700,000</b>
Equivalent average per annum growth rate from 2021 - 2035 ( <b>Total visits</b> )		3.2% p.a.	4.1% p.a.	5.0% p.a.

\* Note – the proportion of international visitors to Dunedin that visit the museum is 30% if visitors travelling for “business” or “other” are excluded (based on International Visitor Survey data). We use the % of all international visitors here, because this aligns with the international visitor forecast data we have based the analysis on.



## Museum operational expenditure

### Floor area summary

The below tables show the increase in museum floor area under the two development options. The preferred option is Option B. The increase in floor area is used to estimate some categories of future operational expenditure. The total floor existing floor area is 11,873 m<sup>2</sup>.

	Space (Net area)	Existing Space	Aspirations area	Additional floor area	Option A	Option B
<b>F.O.H.</b>	<b>Exhibitions</b>					
	Exhibitions (excluding Tropical Forest, Planetarium and SEG)	5,475	5,475	-	Incl.	Incl.
	Tropical Forest	360	360	-	360	Incl.
	Special Exhibitions Gallery	420	1,000	580	1,050	1,157
	Future Exhibitions	N/A		-	-	-
<b>Total Area</b>	<b>6,255</b>	<b>6,835</b>	<b>580</b>	<b>7,492</b>	<b>7,961</b>	
<b>Commercial</b>	Shop	120	240	120	240	260
	Planetarium	140	140	-	300	158
	Conference Venue (500pax) or existing Hutton remaining	N/A	700 (392)	700 (-)	406	1,021
	Barclay	104	104	-	115	110
	Cafe (including kitchen)	307	307	-	342	377
<b>Total area</b>	<b>671</b>	<b>1,491 (1,183)</b>	<b>820 (512)</b>	<b>1,403</b>	<b>1,918</b>	
<b>Amenities</b>	WC Facilities	87	130	43	Incl.	370
	Multipurpose spaces (Adult Changing Room/Parents Room/Prayer room/ storage/ IT)	N/A	16	16	Incl.	396
	Mustering area for groups	N/A	100	100	100	152
	<b>Total Area</b>	<b>87</b>	<b>246</b>	<b>159</b>	<b>422</b>	<b>918</b>
<b>Education</b>	<b>316</b>	<b>316</b>	<b>-</b>	<b>316</b>	<b>458</b>	
<b>Entry orientation/ welcome space</b>	<b>234</b>	<b>234</b>	<b>-</b>	<b>523</b>	<b>955</b>	
<b>Public space/ circulation</b>	<b>945</b>	<b>945</b>	<b>-</b>	<b>1,619</b>	<b>2,155</b>	
<b>Total F.O.H. Area</b>	<b>8,508</b>	<b>10,067 (9,759)</b>	<b>-</b>	<b>11,775</b>	<b>14,365</b>	

	Space (Net area)	Existing Space	Aspirations area	Additional floor area	Option A	Option B
<b>B.O.H.</b>	<b>On-site Collections</b>					
	Collection (Excluding space listed below)	2,324	4,560	2,236	Incl.	Incl.
	Collections Viewing	N/A	Incl.	-	Incl.	117
	Conservation Lab	75	150	75	Incl.	Incl.
	Laboratory and storage areas for Science Outreach	28	60	32	Incl.	Incl.
	AV Suite	N/A	30	30	Incl.	Incl.
<b>Total Area</b>	<b>2,427</b>	<b>4,800</b>	<b>2,373</b>	<b>2,257</b>	<b>4,965</b>	
<b>Admin</b>	Admin offices (excl. meeting rooms)	753	753*	0	775	Incl.
	Meeting rooms for Admin	185	220	35	66	Incl.
	<b>Total Area</b>	<b>938</b>	<b>938</b>	<b>35</b>	<b>841</b>	<b>973</b>
<b>Facility</b>	Facility management					
	Truck Dock (Unload/Load)					
<b>Total Area</b>						
<b>B.O.H. circulations</b>						
<b>Total B.O.H. Area</b>						

The preferred development option (Option B) is expected to have:

- 69% increase in FOH floor area under Option B.
- 104% increase in On-site collection area under Option B.
- 4% increase in Admin area under Option B.
- Total floor area under Option B: 20,303 m<sup>2</sup> (71% increase in total).

### Key assumptions for future operational expenditure estimate

- 10 additional FTEs.
- 71% increase in floor area.
- Some operating cost efficiencies due to new, energy efficient buildings.
- Additional \$660,000 for personnel costs. (Based on current personnel costs for 82 FTEs)
- Additional \$30,000 for training/travel



- Assume remaining opex costs increase in line with the increase in floor area
- Assume little to no increase in:
  - Admin and office expenses,
  - Advertising
  - Audit fees
  - Consultancy
  - Computer and IT costs.

**Operational expenditure (excluding depreciation) used in future impact calculation**

Total operational expenditure in 2035 used in the economic impact model (excluding depreciation) is \$11.6 million (in 2020\$). This compares to \$8.1 million currently. This represents approximately 40% increase in operational expenditure (excluding depreciation).

