Godden Mackay Logan
Heritage Consultants

LA TROBE UNIVERSITY

DONALD HORNE INSTITUTE
FOR CULTURAL HERITAGE

Heritage Trades and Professional Training Project

Final Report

Report prepared for Heritage Victoria on behalf of
Heritage Chairs and Officials of Australia and New Zealand

September 2010

Report Register

The following report register documents the development and issue of the report entitled Heritage Trades and Professional Training Project—Final Report, undertaken by Godden Mackay Logan Pty Ltd in accordance with its quality management system. Godden Mackay Logan operates under a quality management system which has been certified as complying with the Australian/New Zealand Standard for quality management systems AS/NZS ISO 9001:2008.

Job No.	Issue No.	Notes/Description	Issue Date
09-0174	1	Heritage Trades and Professional Training Project—Interim Draft Report	December 2009
09-0174	2	Heritage Trades and Professional Training Project—Draft Report	June 2010
09-0174	3	Heritage Trades and Professional Training Project—Final Report	September 2010

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Executive Summary

Project Background

Heritage Victoria, on behalf of the Heritage Chairs and Officials of Australia and New Zealand (HCOANZ) commissioned *Heritages Trades and Professional Training* project to identify and address perceived gaps in professional historic heritage and traditional trades training in Australia and New Zealand. Funding to support this project was provided by the Australian Government Department of Sustainability, Environment, Water, Population and Communities. The project was undertaken by a team from Godden Mackay Logan Pty Ltd Heritage Consultants, the Archaeology Program at La Trobe University and the Donald Horne Institute for Cultural Heritage at the University of Canberra, assisted by Dr Jennie Harre Hindmarsh and James R Lynch, QSM.

The project documented and evaluated existing professional heritage and trades training and assessed community and industry requirements by undertaking a literature review, an industry wide audit of training opportunities, and a skills needs analysis based on surveys and an industry experts workshop. Analyses of the gaps, trends and issues arising from the data lead into some clear findings about looming skills shortages and proposals for action that can be taken by the Heritage Chairs of Australia and New Zealand.

Key Findings

The project identified that:

- there is an aging demographic of practitioners and lack of younger (under 30 and 30–45) practitioners coming into the industry;
- the level of training for practitioners entering the industry is largely seen as inadequate with an evident disconnect between what the industry wants, and what training providers are teaching;
- a high rate of training is received on-the-job and therefore without formal qualification or compliance, the standard of this training can not be qualified;
- much formal training was received over 20 years ago;
- offerings for training programs are not evenly distributed throughout Australia;
- qualified specialist heritage trade skills are rare; and
- many attempts to launch curricula in professional and trades training have failed due to funding and low interest.

The project results also demonstrated the need for:

- a co-ordinated National approach to professional heritage and trades training;
- an overarching policy on heritage training;
- industry benchmarks for education and training outcomes;
- high quality resources on best practice heritage management;

- adequate research and development including ongoing data collection;
- appropriate models for training in various sectors and at different career stages; and
- quality standards and mechanisms for their enforcement.

Based on the findings of the research, specific and general recommendations were made for both the HCOANZ to consider and for the wider heritage industry.

Recommendations

The project recommends that HCOANZ:

- adopt of a policy for heritage training and education in Australia and New Zealand;
- adopt a support and advocacy role in promoting accreditation for heritage training and education including the formation of a heritage training and education accreditation taskforce;
- promote co-ordination between heritage education and training providers in Australia and New Zealand;
- develop a process for recognition of 'on the job' training;
- foster a research agenda covering: the relative size of the heritage industry in Australasia, data on heritage building stock and place types, data on the demand for skills for heritage works, identified training and skills needs in the heritage sector, promotion of opportunities for interdisciplinary cross fertilisation in research, training and practice;
- support consistent statutory approval and compliance practice among heritage regulators, at all levels of government across Australia and New Zealand; and
- support consistent practice among heritage regulators which makes grant funding for works on heritage buildings and places conditional on use of professionals and tradespeople with relevant specialist qualifications and/or experience who can demonstrate appropriate specialist skill levels.

The report also provides the following general recommendations:

- Professional/trade/training organisations need to respond to the sporadic or rolling need cycle of the heritage industry.
- Professional/trade/training organisations should be encouraged to develop professional development courses provided on a not-for-profit basis.
- Government heritage agencies should lead by example in providing professional development staff training and in the recognition of expert, well trained staff.
- A priority for heritage related research should be the maintenance of traditional trades practices as an issue of intangible heritage conservation, as highlighted in the UNESCO *Convention for the Protection of Intangible Cultural Heritage*.
- Heritage education and training providers should form their own liaison group to promote dialogue and co-ordination between heritage education and training providers across Australia and New Zealand.

1.0 Introduction

1.1 Project Background

Heritage Victoria, on behalf of the Heritage Chairs and Officials of Australia and New Zealand (HCOANZ) has commissioned this project to identify and address perceived gaps in professional historic heritage and traditional trades training in Australia and New Zealand. Funding to support this project was provided by the Australian Government Department of Sustainability, Environment, Water, Population and Communities.

The project documented and evaluated existing professional heritage and trades training and assessed community and industry requirements. Organisations and individuals involved in historic heritage in Australia and New Zealand were invited to participate in online surveys and additional consultation occurred with a number of stakeholders.

1.2 Project Genesis

A series of meetings and workshops were held between 2003 and 2007 to provide the context for this project. The early focus of the evolving project was primarily concerned with heritage trades, identifying training opportunities as a response to the perceived lack of qualified tradespeople, however, concerns were also raised at this time about professional heritage training. In 2009, Heritage Victoria, on behalf of HCOANZ, formally established the project with an expanded scope, which included professional heritage training.

1.3 Project Team

The project was undertaken by a collaborative team from Godden Mackay Logan Pty Ltd Heritage Consultants (GML), the Archaeology Program at La Trobe University and the Donald Horne Institute for Cultural Heritage at the University of Canberra. The representatives include: from GML, Professor Richard Mackay, AM and Sheridan Burke, Partners and Amy Guthrie, Heritage Consultant; from the Archaeology Program at La Trobe University, Dr Anita Smith, Research Fellow; and from the Donald Horne Institute for Cultural Heritage at the University of Canberra, Dr Tracy Ireland, Director.

The team was assisted for the New Zealand components of this project (Audit and Skills Needs Analysis) by Dr Jennie Harre Hindmarsh, Independent Consultant and James R Lynch, QSM.

1.4 Report Outline

In brief, the report is set out as follows:

Section 1.0—background to the project;

Section 2.0—summary of a review of relevant literature;

Section 3.0—outline of the results of the audit of current training opportunities in Australia and New Zealand including those offered at Universities, Technical And Further Education (TAFE) and Polytechnic institutions and other training providers;

Section 4.0—outline of the outcomes of the Skills Needs Analysis including the results of the initial survey and subsequent data analysis; and

Section 5.0—outline of the results from two supplementary surveys undertaken to address specific concerns about heritage trades.

Section 6.0—a Gap Analysis based on the results of the Literature Review, Audit and Skills Needs Analysis—identifying gaps in the industry.

Section 7.0—findings and recommendations of the project, including an indicative heritage training policy for consideration by HCOANZ.

1.5 Associated Data

In addition to the Interim Draft Report, the following associated data for the project is attached:

- a summary of each Type of Training identified in the project is attached at Appendix A;
- a table outlining the literature reviewed is attached at Appendix B;
- the full web-ready Audit Database (in Microsoft Excel format) is attached at Appendix C; and
- the raw survey data (in both Microsoft Excel and PDF Format) is attached at Appendix D.

1.6 Project Limitations

The scope of this project was limited to the analysis of historic heritage training in Australia and New Zealand and did not include analysis of Indigenous or natural heritage training opportunities.

The survey undertaken for the Skills Needs Analysis was only available to those participants who were contactable via heritage networks, via colleagues and through membership of several professional bodies including Australia ICOMOS.

1.7 Acknowledgments

The project team acknowledges the patience, support and guidance provided by the Steering Committee: Jim Gard'ner (Heritage Victoria), Leanne Handreck (Department of Sustainability, Environment, Water, Populations and Communities (DSEWPaC)), Elisha Long (Heritage Branch, NSW Department of Planning) and Amanda Mulligan (Heritage Victoria). The assistance of the following people is also acknowledged:

- Jim Gard'ner, Executive Director, Amanda Mulligan and Jennifer Dawson—Heritage Victoria.
- Elisha Long, Technical Advice Officer, Heritage Branch, NSW Department of Planning.
- Australian Government Department of Sustainability, Environment, Water, Populations and Communities.
- David West, Executive Director, International Conservation Services.
- Susan Macdonald, Head of Field Projects, Getty Conservation Institute, Los Angeles.
- Chris Johnston, Director/Principal Consultant, Context.
- David Young, OAM, Heritage Consultant.
- Mark Goodchild, Master Builders Association.

- Bruce Chapman and Ann Neill, New Zealand Historic Places Trust.
- Survey respondents and other interested parties who assisted with data gathering.
- Members of the NSW Technical Advisory Group (TAG).
- Members of the Association for Preservation Technology (APT) Australia Chapter.
- Members of State heritage agencies, professional organisations and heritage networks who assisted in the distribution of survey notices.
- Participants in the 'Expert Workshop' held in Melbourne on 26 March 2010:
  - Jim Gard'ner, Executive Director, Heritage Victoria (Project Steering Committee)
  - Leanne Handreck, DSEWPaC (via telephone) (Project Steering Committee)
  - Elisha Long, Heritage Officer, Heritage Branch, NSW Department of Planning (Project Steering Committee)
  - Amanda Mulligan, Acting Hearings Officer, Heritage Victoria (Project Steering Committee)
  - Jacqui Goddard, Department of Environment, Climate Change and Water, NSW (DECCW)
  - Peter Lovell, Director, Lovell Chen Architects and Heritage Consultants
  - Donald Ellsmore, Heritage Consultant
  - Chris Johnston, Director/Principal Consultant, Context
  - David Young, OAM, Heritage Consultant
  - Grahame Crocket, DSEWPaC
  - Simon Davies, Contract Management Systems (CMS)
  - Robert Sands, Director, Robert Sands Pty Ltd
  - Mark Goodchild, Master Builders Association (MBA)
  - Greg Owen, Director, Period Restoration Services
  - David West, Executive Director, International Conservation Services
  - Paul Roser, National Trust of Australia (Victoria)

Apologies: Alan Croker, Amy Chan, Megan McDougall, David Scanell and Stuart McLennan.

2.0 Literature Review Summary

2.1 The Literature Review

The project brief for the Heritage Trades and Professional Training Project stipulated that a literature review be undertaken as the first stage of the project. This included the review of a large set of information provided to the project team and the identification and analysis other relevant literature. The purpose of the literature review was to provide the background to the audit and skills needs analysis tasks and provide a basis for useful project methodologies and target areas for further investigation.

Much of the material provided to the project team was based in the United Kindgom (UK) heritage sector, which has undertaken successful initiatives to rectify the gap in heritage training in the UK. The methodologies and findings in this literature informed the skills needs analysis component of this project, including data gathering methods.

The points following in Section 2.2 were raised as general themes and repeated throughout a large majority of the literature. Specific points about professional heritage training are listed in Section 2.3 and those regarding heritage trades training are listed in Section 2.4 below. A brief summary and bibliographic information of all sources reviewed for this project is provided at Appendix B.

2.2 General Points

- The need for a National Heritage Training Strategy is highlighted repeatedly—the ad-hoc development of state strategies and initiatives has failed to rectify the nation-wide problem.
- There is a wide push for professional accreditation in the industry; this is also recommended to be established by the professions (eg: engineers, archaeologists, tradespeople etc), rather than the legislators of the industry. Accreditation of practitioners may also increase the attractiveness of the industry to newcomers.
- Some professionals feel their formal education did not adequately prepare them for working in the field.
- Many practices find it hard to locate qualified professionals when recruiting staff. Many practices also prefer to hire already qualified staff rather than undertake in-house training or fund further education.
- There is an identified need to increase demand for conservation training through increasing the awareness of opportunities to the industry, place owners and place managers.
- The literature points to inadequate access to professional support for those in the industry, and those interested in heritage.
- It is recognised that many regional areas are missing out on adequate training, and there is a need for the development and support of training initiatives in these areas.
- Many of the available training opportunities are poorly targeted and suffer a low response rate from students.

- Current standards in conservation practice are low compared to other countries—Australia is regarded for values-based practice, but not physical conservation.
- Many institutions are offering somewhat mis-focussed curricula, which are not directly linked to industry needs (in both professional and heritage trades training)—further research needs to be undertaken into exactly what the industry is looking for in a heritage professional and/or heritage tradesperson.
- The gap in the industry could be filled by the establishment of specialised heritage training institutions for both professional and heritage trades training.
- The current heritage industry is inward/insular, and should be talking to other sectors about useful collaborative opportunities.
- The importance of cross-institutional and cross-curricula educational opportunities is highlighted throughout the literature.
- Recommendations for 'taster courses' which could be implemented to show non-industry professionals what the heritage industry has to offer are outlined throughout the literature.
- The literature identifies that there are notable shortages in lack of experience and practical knowledge of graduates.
- There are strong recommendations for the heritage sector to self-educate.
- Linking of accreditation to the development application process (only using accredited practitioners to undertake work).

2.3 Professional Heritage Training

- Wide assessment of current curricula needs to be undertaken. Curricula should be assessed often and by professional advisory panels of experienced industry representatives to ensure they are appropriately focussed.
- Heritage related courses are currently primarily offered at a postgraduate level; enforcing the view that the industry is for mid-career professionals, not undergraduates.
- Lack of interest in the university sector may be due to the poor reputation of the heritage sector and lack of awareness about career opportunities in the industry.
- There is a perceived lack of practical learning experiences for students including fieldwork, lab time and other hands-on activities in universities.
- The workforce for teaching and mentoring is aging and retiring—undergraduate education may be the only answer to a new generation of heritage professionals.

2.4 Heritage Trades Training

- Students have a lack of understanding of the behaviour and use of traditional materials and the use of traditional tools and techniques.

- Trade education needs to be focussed on the people who learn the trades, many of whom do not respond to learning in the same way as academics. Videos/DVD and hands-on practical learning are much better suited for this sector.
- The literature points to a lack of accessible and useable information on necessary traditional skills and techniques.
- The current workforce in heritage trades is small and aging rapidly, with very few available opportunities to pass on their vast knowledge and skills.
- Apprentices do not receive much opportunity for training in heritage trades, only 2% of heritage work is undertaken by apprentices.
- As most practitioners have a good skill base (around 60–70% of the necessary skills), training should be focussed on gap filling rather than whole new courses.
- The literature supports the possible implementation of a 'Bond System' for work on heritage buildings, with those who do inappropriate work on heritage buildings being prosecuted.
- The use of derelict unlisted and not-likely-to-be listed buildings to be used for training students is recommended.
- Skilled tradespeople who are retiring may be able to volunteer their time for training.
- Linking heritage trades training to grants—with priority given to grant proposals which involve training opportunities.
- A flurry of interest from the government in trades training after the Newcastle earthquake was noted. This also highlighted the lack of qualified practitioners in the industry.
- The literature notes that heritage work is intermittent and it is difficult for practitioners to commit solely to conservation work—any increase in practitioners (new) also exacerbates this situation.
- Linking the requirement for qualified tradespeople to the award of government projects is recommended—this could be through a pre-qualified (or accredited) tenderers list. This would also link to the award of grants.
- A centralised training facility of a high standard, to possibly attract off-shore participants, is recommended.
- A review of national trade competencies is recommended, as they are well below the standards to which many historic buildings were constructed.

3.0 Audit of Education and Training Opportunities in Historic Cultural Heritage Conservation and Management

3.1 Introduction—About the Audit

The aim of the Heritage Trades and Professional Training Project is to identify training opportunities and skills gaps within heritage conservation in Australia and Aotearoa/New Zealand, and to recommend policy responses or actions to address the identified skills gaps. As set out in Section 1.0, the scope of the project is limited to historic (non-Indigenous and non-natural) cultural heritage. The brief for the project required a scan of current tertiary training in the heritage sector including (but not necessarily limited to) universities, institutes of TAFE, technical colleges, polytechnics and other bodies including, for instance, the International Specialised Skills Institute (ISSI). The trades, crafts and professional disciplines set out in the project brief to be covered by the training audit are shown in Table 3.1.

Table 3.1 Trades, craft and professional disciplines covered by the audit.

Trades and Crafts	Professional Disciplines
Aboriculture	Architecture
Bricklaying, pointing and repair	Architectural history
Carpentry, joinery, cabinet work and repair	Building conservation
Glass repair	Engineering
Horticulture	Geography
Masonry, pointing and repair	Historical archaeology
Metal repair	History
Painting and other decorative finishes	Interior finish analysis
Plaster and render	Landscape architecture
Roof plumbing	Maritime archaeology
Rood tiling	Materials conservation
Solid plaster	Town and country/urban planning
Maori building craft (briefly included, see 3.2.6)	

The audit of Australian and Aotearoa/New Zealand training and education opportunities was undertaken through web-based searches and a limited amount of follow up research and telephone enquiries. The audit has been presented as a web-ready database (to be searchable online) identifying courses and locations, and the degree of heritage focus of each. Courses where heritage issues are specifically dealt with were then further defined in terms of the key skill and knowledge areas that they address, following the keyword breakdown (Table 4.1) that was also used in the web-based survey undertaken for the Skills Needs Analysis (Section 4.0). The audit data and the skills needs data are further considered in Section 6.0, to determine gaps in training and other trends and issues emerging from these two data sets.

3.2 Issues

3.2.1 Limitations of the Methodology

The audit was compiled as accurately as possible, but owing to the nature of key word searches and the variable level of detail that is published about the exact content of courses, there will undoubtedly be some inaccuracy. Courses which are 'one offs', or not run on a recurrent basis, may not have been captured by the audit. This also illustrates the fact that many courses may be missed owing to difficulty in locating them. It would be a worthwhile exercise to undertake historical research into the nature and success of such courses, to assess how, or whether, the industry has responded to training needs in the historical context, and to build up a longer term picture of the impacts and success of various training initiatives.

3.2.2 Trades

The audit identified the TAFE sector, institutes of technology, polytechnics and other forms of trade training such as specialist short courses, covering all trade areas set out in the brief. It was discovered that many of these course only very slightly touched on traditional trades. As stated above, many of the specialist short courses are not run on a recurrent basis and therefore were difficult to collate in the audit. Concerns have been expressed to the project team that major gaps in heritage trades training and physical conservation remain unaddressed, including technical analysis and professional skills such as building diagnosis and causation analysis; works specification; scheduling and documentation skills; monitoring skills; and physical conservation skills (by material).

3.2.3 University Programs

The audit identified university programs at undergraduate and postgraduate levels which covered discipline, skill and knowledge areas relevant to historic cultural heritage management, including the areas identified in the brief. The audit did not include opportunities to undertake research degrees, although these are an important aspect of growing knowledge, theory and practice in cultural heritage. Many of the universities that offer undergraduate and postgraduate courses in heritage related areas also offer opportunities for postgraduate research. Funding for such research is an issue outside the scope of this report; however, it is important to note the vital and sustaining relationship between heritage and conservation research and successful teaching and practice in these fields.

The majority of the discipline based university programs identified do not contain specific cultural heritage components, with the exception of archaeological programs. Archaeology programs, including historical and maritime archaeology programs, often, but not always, contain components dealing with the cultural heritage management context of archaeological research and site management. Other discipline areas which offer courses with a heritage focus include postgraduate courses in architecture and undergraduate and postgraduate courses in urban planning, geography and history.

A number of degree courses at undergraduate level do contain cultural heritage focused units, and this number appears to be expanding. It has been the usual practice in heritage conservation work in Australia for practitioners to train in a discipline and then focus on a heritage specialisation through postgraduate training (in Australia or overseas), on-the-job training, or self-directed learning. This pattern appears to be changing with the growing number of specialist and more

professionally oriented undergraduate and postgraduate coursework degrees which have become a feature of the university sector over the last 20 years.

Another growing feature of university education is distance education and web-based learning. Multimedia and web-based technologies are rapidly changing the nature of tertiary education and open a host of possibilities for heritage training along with all other forms of education and training. A number of the university based courses identified in the audit are offered through distance education, which widens their geographical area of accessibility beyond their location, as shown in the audit database.

3.2.4 Professional Development Courses

Only approximately 20 of the 291 Australian and none of the Aotearoa/New Zealand (NZ) training opportunities captured by the audit fall into the category of professional development short courses.

Short courses captured by the data audit cover the following topics:

- World Heritage: Conserving Cultural Heritage Values
- Best Practice in Managing Heritage Places
- Conservation of Traditional Buildings
- Cultural Heritage Management
- Conservation Field School
- Introductory Archaeological Geophysics
- Human Osteology
- Urban Rural and Regional Planning
- New Policy Directions—Heritage Places
- Intangible Heritage
- World Heritage Management
- Sustainable Cultural Tourism
- Cultural Landscapes
- Heritage Interpretation
- Reading and Interpreting Maps
- Forest Soil and Water Protection: Working with Cultural Heritage Requirements
- Development Approvals: The Heritage Perspective
- Australian Institute of Maritime Archaeology: Short Courses on Maritime Heritage
- Various short courses in construction techniques (including tuckpointing) at Holmesglen TAFE

- Various short courses run by the ISSI, (none scheduled currently).

In addition, the study team is aware that there are a range of other short courses, offered on a sporadic basis by heritage agencies and professional bodies, predominantly one day (but occasionally longer) seminars, workshops and training courses. These are run by a wider range of organisations. In any given year, there are around ten training and education opportunities in the heritage sector across Australia—and possibly more. Providers include heritage agencies and their advisory bodies such as the Technical Advisory Group (NSW) and Technical Advisory Committee (Victoria), the National Trusts, APT Australia Chapter, Australia ICOMOS, formal and informal professional groups, institutes or faculties or departments of universities and commercial providers.

The nature of such sporadic educational and training opportunities is that they can be highly flexible, organised quickly to reflect new needs, delivered in more than one location, and often delivered economically and efficiently owing to the contribution made by experienced professionals. However, there are also obstacles to such courses, including the cost and drain on resources of individuals involved (particularly speakers), challenges in logistics and publicity, limited national co-ordination and a lack of any framework for assessment of quality and effectiveness.

3.2.5 Quality and Content of the Identified Education and Training Opportunities

The audit contains no judgements on the quality, depth or content of the identified education and training programs in cultural heritage. As discussed in Section 2.0 of this report, no professional standards or accreditation relating to heritage conservation and management education and training currently exist in the Australasian context. In view of this, the data collected in the audit can only identify training and education opportunities on the basis of their published content, and can make no comment on how courses might reflect best practice standards (which is also an undefined concept). The lack of established standards or accreditation framework affects not only the audit of training opportunities but also the skills needs survey in the following section. As there is currently no defined set of core skills or knowledge areas prescribed for the various sectors of heritage practice, the significance of the identified gaps in training (discussed in Section 5.0) can only be analysed in an impressionistic manner.

3.2.6 Maori Building Craft

The project consultants from Aotearoa/New Zealand considered and advised the project team that the exclusion of Maori heritage building craft was and is a serious flaw in the project brief (which excluded 'Indigenous heritage'). Under the *Treaty of Waitangi*, New Zealand agencies have a duty to address Maori priorities and issues in any exercise of this nature. Maori heritage buildings, archaeological and heritage sites are integral to the Aotearoa/New Zealand national identify and are ubiquitous in society.

Maori arts and decoration, such as *whakairo* (carving), *tukutuku* (woven panels) and *kowhaiwhai* (patterns), as well as *tikanga* (lore) are integral to Maori building. In addition, Maori building has its own distinctive traditional style and techniques.

After discussion with the project team it was decided to include at least some of the major training opportunities available in this area to ensure it is given due attention and highlighted for future research. However, it should be noted that this is a superficial and inadequate treatment as there are many local carving schools and programs which will not be located by the survey methodology used and could not be located using available time and resources. A proper search of this area

would need a person familiar with Maori building and design, *te reo* (language) and a much broader consultation and investigation process—which would be an extensive project.

3.3 Results of the Audit

3.3.1 Key Professional Discipline Areas—General Findings

Architecture—architecture degrees of various levels are offered in all states and territories in Australia, with three courses in Aotearoa/New Zealand, and one degree in Building Science. Few offer heritage focused units although many offer units in the history of architecture and/or the history of architectural theory.

Landscape Architecture—landscape architecture is offered in all states and territories except Tasmania and the Northern Territory and is offered at two institutions within Aotearoa/New Zealand. A heritage or history focus is featured in a small number of courses.

Interior Architecture—interior architecture is taught in all states and territories except Tasmania and the Northern Territory and is not taught in Aotearoa/New Zealand. No heritage focused options in this discipline are currently known, although students of the new interior architecture degree at the University of Canberra can take electives in heritage related units.

Engineering—engineering degrees are offered in all states and territories of Australia and also in Aotearoa/New Zealand (although NZ courses were not audited). No specialist courses in heritage engineering are known in Australia or Aotearoa/New Zealand; however, Engineers Australia is currently establishing a recognised area of practice called 'Heritage and Conservation Engineering'—'to provide accreditation for professional engineers competent in that field, and for those where heritage and conservation engineering is a significant area of their professional practice'.[1]

History—history degrees are offered in all states and territories of Australia but only as major/minor fields of study in Aotearoa/New Zealand. Several can be combined with heritage focused units at an undergraduate and postgraduate level.

Geography—geography courses are available in all states and territories of Australia except the Northern Territory and are offered as part of an arts or science degree in Aotearoa/New Zealand. Courses often include heritage related units as well as access to GIS training.

Archaeology (historical and maritime)—archaeology degrees are offered in all states of Australia except Tasmania and the Northern Territory and is taught as part of an Anthropology degree in Aotearoa/New Zealand, and most contain some components dealing with cultural heritage. Maritime archaeology is taught in Western Australia (UWA), South Australia (Flinders) and in far North Queensland (James Cook University) and is not taught in Aotearoa/New Zealand. Historical archaeology is taught in all states of Australia except Tasmania and the Northern Territory.

Planning—planning courses, like many of the other disciplines discussed, can vary widely in their focus, varying from development studies and urban design to environmental management issues. Planning courses at diploma, undergraduate and postgraduate levels are offered in all states and territories of Australia and in Aotearoa/New Zealand. Several planning courses offer the opportunity for a heritage related focus.

Materials Conservation—is taught only at the University of Melbourne as a postgraduate diploma or masters degree and at the University of Canberra as an undergraduate degree. Heritage Materials Science is taught at the Victoria University of Wellington in Aotearoa/New Zealand.

Sub-disciplines

Architectural History—is taught as part of most architecture courses and as part of specialist heritage courses at the University of Canberra (undergraduate), Deakin University and Melbourne University (post-graduate).

Building Conservation—is taught as part of the undergraduate cultural heritage degree and as a short course at the University of Canberra; as part of a postgraduate cultural heritage course and a short course at Deakin University, and as part of the postgraduate architectural conservation course at the University of Melbourne.

Interior Finish Analysis—no training opportunities in this area were captured by the audit.

3.3.2 The Shape of Heritage Related Education and Training in the University Sector

In general terms two types of specialist heritage related education are available in the Australian and Aotearoa/New Zealand university sectors. The term 'specialist heritage' is used to denote courses where the prime focus is heritage related skill and knowledge areas, as distinct from courses which have a traditional disciplinary focus such as archaeology or history. The first type is heritage degrees which cover a range of traditional disciplines and promote heritage as the key skill and knowledge area. The second type also promote heritage as the key skill and knowledge area but focus study on one form of cultural heritage conservation practice—archaeology, materials conservation or architectural conservation.

These highly specialised heritage courses have a reasonably wide geographic spread being located in the Australian Capital Territory, Victoria, regional New South Wales, Western Australia, and Adelaide in South Australia.

Specialist Heritage Degrees with a Broad Focus

- Bachelor of Cultural Heritage, University of Canberra, Australian Capital territory (ACT)
- Bachelor of Applied Science (Parks, Recreation and Heritage), Charles Sturt University, New South Wales (NSW)
- Master in Liberal Arts (Cultural and Environmental Heritage), Australian National University (as well as diploma and certificate courses), ACT
- Master of Applied Heritage Studies, Curtin University, Western Australia (WA)
- Master of Cultural Heritage, Deakin University (as well as diploma and certificate courses), Victoria (VIC)
- Master of Arts (Heritage Studies), University of New England, NSW
- Bachelor to Master of Arts in Museums and Cultural Heritage, University of Auckland, NZ
- Museum and Heritage Studies, Victoria University of Wellington, NZ
- The Bachelor of Arts (BA) in Anthropology, University of Auckland, NZ

Specialist Heritage Degrees with a Specific Discipline Focus

- Bachelor of Cultural Heritage Conservation (Materials Conservation), University of Canberra, ACT
- Diploma to Master of Science in Heritage Materials Science, Victoria University of Wellington, NZ
- Heritage Tourism Management (offered in 2010), University of Waikato, NZ
- Master in Cultural Heritage Management (archaeological focus), Flinders University, South Australia (SA)
- Graduate Diploma in Applied History and Heritage Studies, Flinders University, SA
- Master of Heritage Conservation (architecture), University of Sydney, NSW
- Master of Cultural Material Conservation, University of Melbourne (as well as postgraduate diploma), VIC
- Postgraduate Diploma in Planning and Design (Architectural History and Conservation), University of Melbourne, VIC
- Graduate Diploma Planning and Design (Architectural History and Conservation), University of Melbourne, VIC

3.4 Previous Heritage Trades Training Initiatives

There have been a number of previous Australasian programs and initiatives aimed at providing and encouraging heritage training. These have generally addressed heritage trades and they have been focused on the east coast of Australia. A brief outline summary / chronology of these initiatives follows.[2]

3.4.1 Training and Employment Opportunities for Young People in Heritage Restoration and Construction

This project was instigated following the Newcastle Earthquake in 1989. It was funded by a NSW Heritage Assistance Program grant to National Trust of Australia (NSW) (NT). The aim of the project was to investigate the possibility of re-introducing systematic training in the traditional building skills. The project was conducted under the guidance of a special Industry Steering Committee.

This project identified a heritage skills profile requirement across six heritage trades areas:

- Bricklaying;
- Carpentry and Joinery;
- Painting and Decorating;
- Stonemasonry;
- Plastering; and

- Roof plumbing.

The final report from this project recommended the development of appropriate heritage training courses at post-trade level. It further recommended that these courses be delivered on the job and to qualified tradesmen.

As a result of this project, 60 heritage training modules were created. These were accredited by the NSW Vocational Education and Training Advisory Board in August 1997.

3.4.2 1996 Dept of Education and Training funded a feasibility study on heritage training

Sydney Training and Employment established a group training company called 'Heritage Training Enterprises' in 1996, in the wake of the 'Training and Employment Opportunities for Young People in Heritage Restoration and Construction' project. It appears that this initiative did not proceed as far as delivery of any courses.

3.4.3 Heritage Trades Training 2000-2005 (post 1999 hailstorm)

This project had a similar stimulus to the Training and Employment Opportunities for Young People in Heritage Restoration and Construction' project, in that it arose as a response to a natural disaster; in this case the Sydney hailstorm of 1999. the project covered the same skills as Training and Employment Opportunities for Young People in Heritage Restoration and Construction' project namely:

- Bricklaying;
- Carpentry and Joinery;
- Painting and Decorating;
- Stonemasonry;
- Plastering; and
- Roof plumbing.

It appears the project used much of the curriculum and course content from its predecessor. Sixty Heritage modules were developed and a number were offered through the TAFE system. However, many modules were never offered because of a lack of students. None of the modules are currently available, (even if there were enough students).

3.4.4 Heritage Office 2005 Workshop in Response to Productivity Commission Inquiry into Heritage

A workshop was arranged in 2005 as part of a coordinated Heritage Chairs and Officials response to the Australian Productivity Commission Inquiry into Heritage. The workshop agreed that there were skills deficits in both trades and professionals areas. Various regulatory, persuasive and incentive measures were suggested.

3.4.5 Master Builders Association consider setting up their own traditional trades program 2005/06.

On a number of occasions the Master Builders Association of Australia (MBA) has endeavoured to establish their own heritage trades courses, commencing with plastering. Unfortunately these initiatives have not succeeded owing to insufficient demand from potential attendees.

3.4.6 2006—Opening of the Specialist Centre for Heritage Trades, Holmesglen TAFE

With much excitement, the Holmesglen TAFE established the Specialist Centre for Heritage Trades with support from Skills Victoria in 2006. Unfortunatley, its funding was withdrawn in 2007 after less than 12 months in operation as the demand for its courses was insufficient to support the Centre and those courses which did run tended to have low numbers.[3]

3.4.7 2006–7 NT Group Training effort

In 2006 the then NSW Heritage Office provided seed funding to the National Trust of Australia (NSW) to investigate the possibility of a group training company for heritage skills. The investigation was completed but no funding could be found to establish the scheme.

3.4.8 2007 National Workshops on Professional and Trade Skills and Training

In 2007 a series of Australian workshops was presented by John Fidler, formerly of English Heritage. These workshops reviewed the UK experience and highlighted the need for 'demand' from regulators and funding bodies to stimulate heritage trades training.

3.5 Conclusions

In addition to the above highly specialised courses, the audit identified 68 training opportunities in the university sector in Australia and 16 in Aotearoa/New Zealand with a significant amount of heritage related content and around 190 undergraduate or postgraduate courses in relevant disciplines. Only 20 short course options were identified covering professional and trade skills and knowledge in Australia and considerably less in Aotearoa/New Zealand, which infers that, following tertiary training, relatively few options for professional development currently exist. However, the number of short courses needs to be considered in the context of the total numbers of professionals active in Australia. For instance there are around 360 members of Australia ICOMOS and a total of 456 people attempted the skills needs questionnaire discussed in the following section of the report. These issues will be addressed further in Section 6.0.

Although 33 courses of instruction were identified and recorded for Aotearoa/New Zealand there is in fact very little substantive or formal training available in the heritage building area (with the possible exception of Maori building and crafts as stated above). While the search time was limited, a wider search was unlikely to change the conclusions or find any major additional training opportunities, with the possible exception of Maori building. Most of the identified existing courses do not have a core focus on heritage buildings but offer this as a peripheral subject or elective option. Many are so minor in their treatment of heritage building that without more detailed investigation there is some doubt that they should be included at all in a list of substantive training opportunities.

It was concluded that most non-Maori heritage building skills and knowledge acquired by people from Aotearoa/New Zealand were acquired offshore, mostly in Australia or the UK. Heritage agencies such as the NZ Historic Places Trust and Department of Conservation use qualified

heritage architects who typically have obtained their specialist qualification in the aforementioned countries, or are qualified in their discipline (eg architecture/archaeology/planning/historical research) and acquire heritage conservation knowledge on the job. These heritage advisers, especially architects, have their networks of skilled tradespeople—who have either acquired their skills by experience on the job or through working overseas, or are migrants with qualifications and experience gained overseas—who can work to very specific and quite tight building specifications and with specialist materials. The limited demand for these skills in New Zealand (a few hundred practitioners and few job opportunities) means it is not cost effective for training providers to offer a full range of courses. For skills and knowledge *specific* to built heritage in NZ and, in addition to relevant opportunities to train overseas, on-the-job and short courses and/or web-based learning are the most realistic modes of training delivery to meet priorities.

It is important to facilitate and promote collaboration both within the NZ heritage sector and its overseas counterparts, and between employing organisations, education agencies and training providers, to provide targeted training to meet identified priorities and develop ways to 'recognise' skills and knowledge acquired on-the-job and through informal training.

This recognition should extend to generic courses with relevance to built heritage, for example history courses, governance and management, interpretation, research and evaluation skills, etc.

Maori building crafts appear to be significantly different. There are many training opportunities available. Some, especially in *whakairo* (carving), have recognised qualifications, but there also appear to be many localised *iwi*, *whanau* and *marae* based carving and weaving schools which operate on a less formalised and institutional level (say, compared to *Te Puia* or the major *Wananga*). These would have their own local standing and credibility and would be appropriate to include in this type of survey. However, they are difficult to identify (seldom linked to websites) and difficult to assess whether or not they should be included.

It is the Maori traditional building crafts which are likely to have the most value in extending this exercise into further detailed identification of informal and formal training opportunities, and formalisation of existing and additional training opportunities. Maori building craft is an area that cannot be imported from overseas and is the most unique aspect of heritage building in New Zealand.

3.6 Endnotes

1 Engineers Australia, Engineering Heritage, <http://www.engineersaustralia.org.au/groups/engineering-heritage/registration/registration_home.cfm>, consulted 10 December 2009.

2 Information provided by Elisha Long, Technical Advice Officer, Heritage Branch, NSW Department of Planning 15/6/2010.

3 Pers.comm. Alexandra Mannell, 10/12/09.

4.0 Skills Needs Analysis: Summary and Interpretation of Results

4.1 About the Survey

The initial web-based survey undertaken for this project was designed (using the 'Survey Monkey' tool) in Australia to provide information for the HCOANZ about the current and future training needs of the heritage sectors in both countries. The survey aimed to provide a 'snapshot' of the skill sets that respondents are most commonly using in the sector, and whether these skills were developed through formal and/or on-the-job and short course training.

For the purposes of this project, 'heritage training' was defined as limited to 'historical cultural heritage or place based heritage (excluding Indigenous and natural heritage)'. The information gathered from the survey will be used by the HCOANZ primarily to inform heritage training policy and to contribute to solutions for identified training gaps.

The survey was designed to capture the experiences of people working in the management and conservation of historic heritage places, in allied trades or in educational institutions in Australia and Aotearoa/New Zealand according to five key areas:

- the industry sector in which they work;
- the nature of their employment;
- their primary tasks;
- past training; and
- training requirements.

The information gathered during this initial survey also provides a snapshot of the age and education of people working in historic heritage management and conservation and the sector of the industry in which they work.

The questionnaire consisted of four sections:

- **Section A**—was to be completed by all respondents and provided information as to the location of individual respondents and their role within the heritage industry;
- **Section B**—was to be completed by individual respondents working within the heritage industry;
- **Section C**—was to be completed by those responding on behalf of a government heritage agency, organisation or private company; and
- **Section D**—provided a free text space for respondents to provide comment or feedback on the survey content and the issues it was designed to address.

Appendix C contains the data set of the 'Skills Needs Analysis Survey' questionnaire including the responses received in the free text section.

The survey was available for completion online in Australia and Aotearoa/New Zealand from 1–16 October 2009. People were alerted to the survey through the newsletters of professional organisations, email chat groups, government agencies involved in heritage management and through word of mouth. All raw data was organised electronically.

Wording changes were made to the survey to ensure consistency and, in summarising the results, it became evident that some Aotearoa/New Zealand respondents had already completed the survey before the wording of some questions was modified to reflect the NZ context.

The survey did not include in its lists of heritage skills and knowledge those related to Maori heritage building craft. This limits the scope of information obtained for NZ purposes, especially given that Maori heritage buildings, archaeological and heritage sites are fundamental and integral to NZ national identify and are ubiquitous in society. Furthermore, Aotearoa/New Zealand agencies have a duty to address Maori priorities and issues in any exercise of this nature.

A total of **456** people began the questionnaire and **336** completed it. An 'incomplete' questionnaire, is one in which the respondent skipped one or more questions. For example, 25 respondents skipped Question 1—'Location and Postcode' and 43 respondents did not identify the state in which live (Question 2). 'Incomplete' questionnaires were included in the data for analysis. Of the 456 respondents, 91 are located in Aotearoa/New Zealand.

A substantial amount of feedback was received through the 'free text' section of the questionnaire where respondents were asked to comment. A number of the respondents' written submissions suggested alternative key words and questionnaire structure. In particular, a number felt that too little emphasis had been given to specific technical and specialist trades within the heritage industry and to the skills involved in assessing the state of conservation of built heritage, the writing of condition reports and the identification of conservation requirements.

4.2 Significant Findings

4.2.1 Formal Education and Industry Skills Training—Australia

Overall, people working in the conservation and management of historic heritage places have a high level of education and most of it is gained through tertiary education. Sixty-six percent of the respondents have a post-graduate degree or award (including 23 doctorates). Ninety-one percent of respondents to the survey have a university education. Sixty-three percent have also undertaken professional short courses or workshops.

Despite a very high level of formal education across the industry, the survey results show that the great majority of industry-specific skills are being learnt (or have been learnt) informally, 'on-the-job'. Only in the case of skills used in archaeology and in historical research are those skills identified, on the basis of the number of individual responses, as having been learnt through formal education.

In interpreting these findings it should be noted that the age range of the people who completed the survey primarily reflects the training situation in universities and elsewhere some time ago, nearly 70% of respondents having completed their formal education prior to 2000. The survey thus primarily captures the perceptions of people who have been in the industry for some time.

Notwithstanding the age profile of the respondents, although formal tertiary education appears a prerequisite for employment in the heritage industry, it does not appear from the survey results to be the primary vehicle through which the skills most in use in the workplace are learnt.

With the exception of archaeology, most skills-based training appears to be occurring in the work place. The survey does not provide information about the nature of work place training, that is, whether it is systematic or organised or experiential. Interestingly, the majority of responses from heritage agencies, organisations or companies indicated that they only occasionally ran professional development training, suggesting that work place training was more likely to be ad hoc.

Preferred Mode for Future Training

Individual respondents to the survey were asked to identify one or more preferred modes for the training in the future. Most people identified Intensive short courses and/or on-the-job training as their preference/s. This may reflect the age and education profile of the respondents. Most having completed tertiary education would be unlikely to select full or part time study as their preference

Priority Training Areas

The findings of the survey in relation to the skills most in use in the industry and those that are a priority for training in the future are discussed in detail below. These findings have been summarised below in three tables according to the frequency with which particular skills were identified as 'most used' and 'priorities for future training' (Section B of the survey) or 'priority skills for staff in future' (Section C of the survey).

4.2.2 Formal Education and Industry Skills Training—Aotearoa/New Zealand

From the survey results, some tentative interpretations are noted regarding current gaps and issues in heritage trades and professional training, as indicated by the respondents. Given the small numbers of respondents and non-representative sampling, these interpretations are tentative and require further exploration, triangulation or testing.

At the end of the survey, just under one quarter (25%) of the 91 NZ respondents added other short comments 'to help … identify the needs for and training in heritage trades and professional skills'.

One person noted that 'ICOMOS NZ is currently surveying training opportunities for new entrants to the profession and will probably be mounting assessments on the web site'.

Other comments varied from short phrases to very full statements about training priorities, issues, and/or characteristics of the heritage sector in NZ to be taken into account when developing policies and/or on-the-job, short informal training, and any formal courses.

Tentative observations regarding current trends, gaps and issues in each of the eight areas of heritage trades and professional skills and knowledge have been noted in each section of the summary of responses.

More general conclusions can only be drawn with caution in the context of the survey limitations noted. These limitations include the small number of NZ responses, per question and overall, and also that the profile of NZ respondents as a group that may not be representative of the actual profile of the heritage sector 'workforce'. For example, the majority of NZ respondents were university graduates, in the 30–50 year old age range, employed full-time by a heritage agency or consultancy company based in a metropolitan area, and with a management and/or archaeological focus. Trades personnel were significantly unrepresented, and it is not clear whether any practitioners of Maori building crafts participated in the survey.

The interpretation of responses to a few specific questions has been limited by the impact of the Australian-specific wording and/or the changes to wording made in the last week the survey was available online. Furthermore, the skills and knowledge sets listed for selection by respondents did not include those integral to Maori heritage building and places, such as whakairo (carving), tukutuku (woven panels) and kowhaiwhai (patterns), as well as tikanga (lore).

Skills and Knowledge Needs and Gaps

One of the survey aims was to develop a 'snapshot' of the skill sets that respondents are most commonly using in the sector and any current or future gaps they noted in skills and knowledge. The most used skills and identified gaps (reported as training priorities) are detailed in this report.

If of relevance to this project and, with more time, another layer of analysis could be undertaken to identify any common themes or patterns among and across these most used and prioritised gaps in skills and knowledge sets.

Training Contexts

Another survey aim was to gather information about the main contexts in which respondents had developed their skills and knowledge sets—formal training and/or on-the-job and short course training.

While the majority of NZ respondents had formal university qualifications, the context in which they had most commonly developed their more specific heritage-related skills and knowledge was through on-the-job experience and short courses.

These contexts were also most common for many generic skills and knowledge sets (eg stakeholder engagement and public speaking). This was in addition to having sometimes accessed heritage training overseas (Australia and UK were mentioned), through either formal or short courses, as New Zealanders or before migrating to NZ.

Issues

Respondents noted that lack of available time amongst heritage personnel (the majority of whom are in their middle years with family and work commitments), compounded with costs associated with training, relatively low numbers of persons employed in this sector, and relative remoteness from centres of expertise, as key issues to be addressed when planning training opportunities. Employer support was also cited as important.

More information is required directly from trades persons and Maori working in heritage in the formulation of NZ heritage training priorities and the most realistic strategies to address the priorities. A different methodology may be required, for example using key informant interviews and/or focus groups.

Ways Forward

These themes suggest that collaboration, both within the NZ heritage sector and with overseas counterparts, and between employing organisations, education agencies and training providers, will be required to develop targeted, affordable, and mainly on-the-job (including apprenticeships), short course and web-based training opportunities to meet heritage-specific priorities identified.

In addition, offering bonded scholarships to support key personnel to develop specialist skills and knowledge, identified as a priority for NZ respondents and only accessible though longer, tertiary-

level formal qualifications overseas, could also be required as part of a strategic training plan for NZ heritage.

Developing ways to 'recognise' the skills and knowledge acquired on-the-job and through other less formal training are also important. This recognition should also extend to generic courses with relevance to built heritage, for example history, governance and management, interpretation, research and evaluation skills, tourism, carving and construction, etc.

4.2.3 A—Industry Wide Generic Skills (Australia and Aotearoa/New Zealand)

These are skills that were identified as 'most used' by a large number of respondents to the survey. They tend to be generic skills, used across the various sub-disciplines or specialist areas in the heritage industry. In some cases, as indicated, they were also identified as a priority for training but this was not always the case. Regardless of perceived need or priority, there will always be a need for training in these generic skills, although not necessarily for those already working in the industry.

The generic nature of these skills and their common use throughout the heritage industry lend them to be taught through university undergraduate and/or postgraduate courses.

INDUSTRY AREA OR SUB-DISCIPLINE	SKILL OR KNOWLEDGE	INDIVIDUAL RESPONSES		AGENCY/ORGANISATION/ COMPANY RESPONSES	
		'Most Used'	Priority for Training	'Most Used'	Priority Skills for Staff in Future
Physical Conservation	Architectural analysis	✓✓	✓	✓✓	✓
Recording	Historical research	✓✓✓		✓✓	✓
	Site survey (general)	✓✓✓		✓✓	✓
	Photography	✓✓✓		✓✓	
	Archival research	✓✓✓	✓	✓✓	✓
Management	Significance assessment	✓✓✓		✓✓	✓
	Conservation management planning	✓✓✓	✓	✓✓	✓✓
	Legislative/statutory context	✓✓✓	✓	✓	✓✓
	Conservation strategy	✓✓	✓	✓	✓
	Policy development	✓✓✓		✓	
	Site analysis	✓✓✓			
Consultation	Stakeholder engagement	✓✓✓	✓	✓✓	✓✓
	Recording information (consultation)	✓✓✓		✓✓	
	Communication skills	✓✓✓		✓	✓
	Historical themes	✓✓		✓	

INDUSTRY AREA OR SUB-DISCIPLINE	SKILL OR KNOWLEDGE	INDIVIDUAL RESPONSES		AGENCY/ORGANISATION/ COMPANY RESPONSES	
		'Most Used'	Priority for Training	'Most Used'	Priority Skills for Staff in Future
Interpretation	Interpretation strategies and plans	✓✓	✓✓	✓	✓✓
Archaeology	Report writing	✓✓		✓	
	Archaeological site survey	✓✓			✓
	Research design	✓✓			
Historic landscape management	Historic map/plan analysis	✓✓	✓	✓	✓
	Landscape assessment	✓✓	✓✓	✓	✓✓
Legislation and Policy	State heritage legislation	✓✓✓	✓	✓✓	✓✓
	Burra Charter	✓✓✓	✓	✓✓	✓
	State planning legislation	✓✓	✓	✓	
	OH&S requirements	✓✓		✓	

4.2.4 B—Specific Skills or Knowledge

These are skills or knowledge that received fewer responses for 'most used' but a relatively large number of responses to being a 'priority for training'. They tend to be skills that are more specific to particular aspects of the heritage management process and/or to particular sectors of the industry.

The relatively low numbers of respondents regularly using these skills, assuming this reflects the industry as a whole, and the specific skills they entail, mean they are less likely to fit an undergraduate university model of education but may be appropriate in postgraduate course work or in intensive short course professional development.

INDUSTRY AREA OR SUB-DISCIPLINE	SKILL OR KNOWLEDGE	INDIVIDUAL RESPONSES		AGENCY/ORGANISATION/ COMPANY RESPONSES	
		'Most Used'	Priority for Training	'Most Used'	Priority Skills for Staff in Future
Recording	GIS	✓	✓✓	✓	✓✓
	Data management	✓	✓	✓	✓
Management	Thresholds	✓			✓
Consultation	Public speaking	✓✓	✓		
	Survey development and analysis	✓✓			✓
Interpretation	Audience analysis		✓		✓
	Content development	✓	✓	✓✓	✓

INDUSTRY AREA OR SUB-DISCIPLINE	SKILL OR KNOWLEDGE	INDIVIDUAL RESPONSES		AGENCY/ORGANISATION/ COMPANY RESPONSES	
		'Most Used'	Priority for Training	'Most Used'	Priority Skills for Staff in Future
	Visitor Management				✓
	Plain English publication	✓✓		✓	✓
	Multimedia skills		✓		✓
Archaeology	Artefact conservation		✓		✓
	Artefact analysis	✓✓			✓✓
Historic landscape management	Curtilage analysis	✓	✓	✓✓	✓
	Landscape architecture		✓	✓	✓
	View analysis		✓	✓	
Legislation and policy	Building codes	✓		✓	✓
	Aboriginal heritage legislation	✓	✓✓		
	EPBC Act	✓	✓	✓	

4.2.5 C—Specialist Skills

These skills are represented by only small number of responses to all questions, but a relatively high number in the questions around priorities for future training or staffing. The overall numbers of people in the industry with specialist training in these areas will continue to be small but they (and other specialist skills) are essential to the industry and will be overlooked in assessing industry training needs if this is based purely on numbers. Appropriate models for training in specialist areas are likely to be those of TAFE colleges, short courses, post-graduate courses, apprenticeships or internships with mentoring and a significant component of on-the-job training.

INDUSTRY AREA OR SUB-DISCIPLINE	SKILL OR KNOWLEDGE	INDIVIDUAL RESPONSES		AGENCY/ORGANISATION/ COMPANY RESPONSES	
		'Most Used'	Priority for Training	'Most Used'	Priority Skills for Staff in Future
Physical conservation	Stone masonry		✓		✓
	Carpentry				✓
	Mortar analysis		✓		
	Engineering		✓		
	Traditional tool making or use		✓		
	Traditional mechanical skills		✓		
Recording	Photogrammetry		✓		

INDUSTRY AREA OR SUB-DISCIPLINE	SKILL OR KNOWLEDGE	INDIVIDUAL RESPONSES		AGENCY/ORGANISATION/ COMPANY RESPONSES	
		'Most Used'	Priority for Training	'Most Used'	Priority Skills for Staff in Future
Archaeology	Underwater survey and recording		✓		
Historic landscape management	Landscape architecture		✓	✓	✓
	Aboriculture		✓		
	Horticulture		✓		

4.3 About the Respondents

4.3.1 Location

The states of Victoria and New South Wales were each represented by approximately 30% of the 320 Australian respondents. All other states and territories were represented by between 5% and 10% except the Northern Territory, with less than 1%.

Twenty percent of the total respondents (91) were based in Aotearoa/New Zealand. Of the 91 NZ respondents who answered the question about their location, 81 provided a postcode and 90 a 'city' location.

4.3.2 City/Rural

The large majority of the Australian respondents are located in capital cities. Only 45 respondents (14%) are located in non-capital cities or rural centres. The extent to which this reflects the geographic distribution of people in the heritage industry in Australia, or simply those who responded to the survey, is unclear.

Almost 50% of the 90 NZ respondents to this question were located in the two largest metropolitan centres of the North Island—Auckland (20) and Wellington (23). Thirteen were in the two largest cities of the South Island—Christchurch (8) and Dunedin (5). Twelve respondents were based in provincial cities—Tauranga (3), New Plymouth (3), Hamilton (2), Invercargill (2), Napier (1) and Wanganui (1). Nine were based in region of Northland—Kerikeri (5) and Whangarei (2). Four were on the West Coast of the South Island—Greymouth (3) and Hokitika (1). There was one respondent each in the smaller towns of Hunterville (1), Picton (1), Rangiora (1), Lyttleton (1) and Oamaru (1). No NZ respondents were based in more remote rural locations.

4.3.3 Individual vs Organisation or Company

Respondents were given the option of responding either as an individual working in the heritage industry or as the representative of a heritage organisation or private company or consultancy.

A total of 177 individuals responded to the survey in Australia and 52 in Aotearoa/New Zealand. One hundred and twelve people responded as representing their company or organisation in Australia and 29 in Aotearoa/New Zealand (31 Australians and 10 from Aotearoa/New Zealand did not respond to this question). The high number of responses (112) representing companies or organisations in Australia suggests that in some cases companies or organisations may be represented by more than one survey.

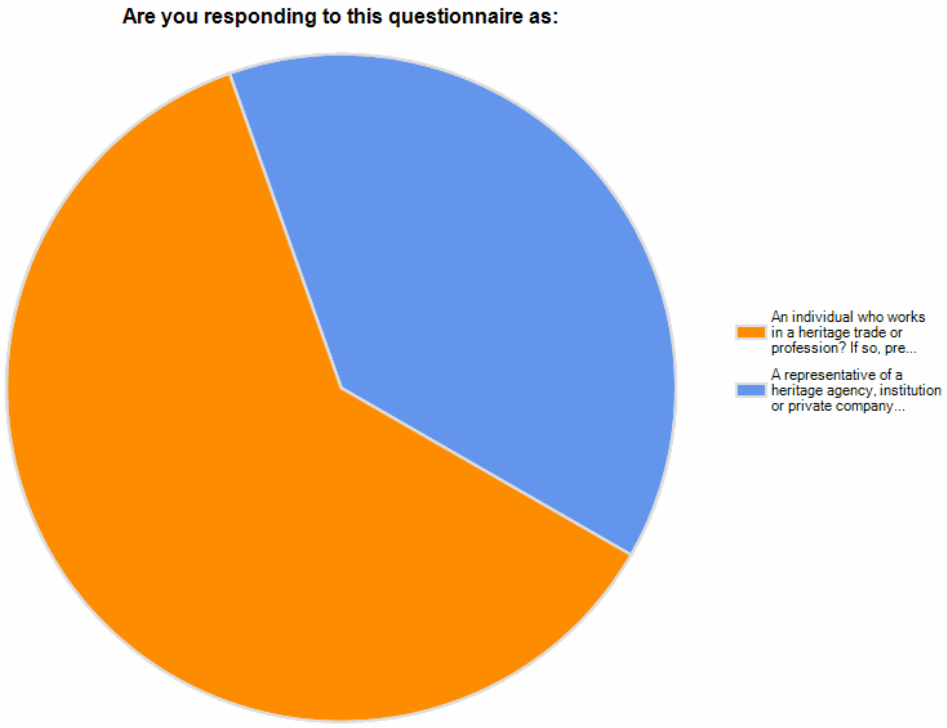


Figure 4.1 Australian respondents profile—individuals vs representative of an organisation.

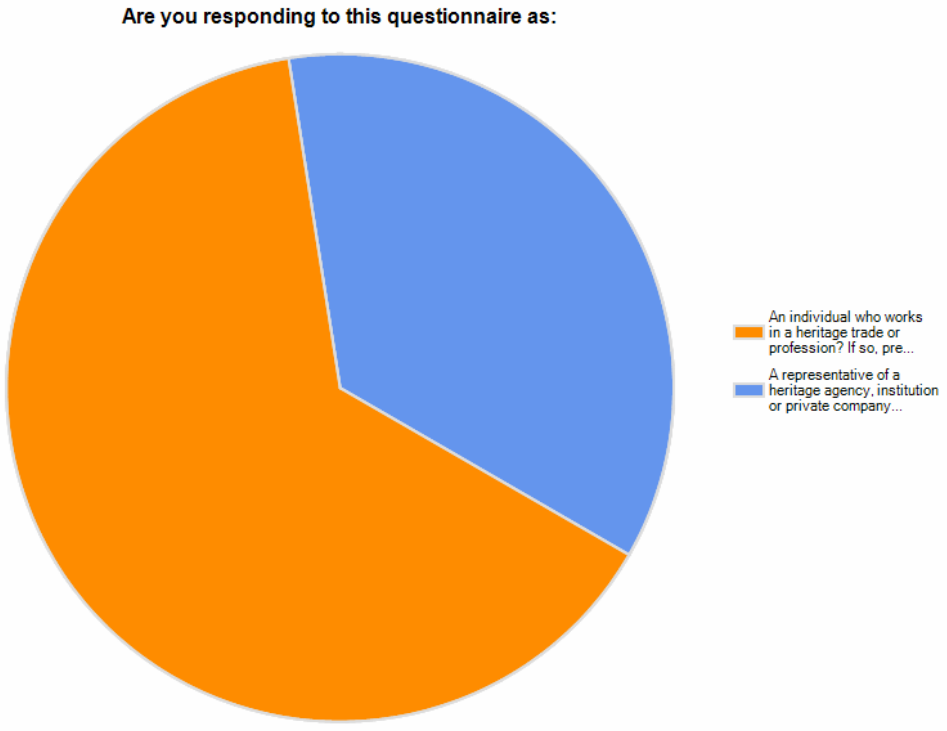


Figure 4.2 NZ respondents profile—individuals vs representative of an organisation.

4.4 Analysis of the Survey Results

The following is a discussion of the results of the survey and their analysis, separated into responses from Australia and Aotearoa/New Zealand.

4.4.1 Individual Respondents (Section B)

Number of Respondents

- Australian Respondents—177 surveys were completed by individuals.
- Aotearoa/New Zealand—52 surveys (64.2%) were completed by individuals.

Nature of Employment

Australian Respondents

Of the Australian respondents, 50% described themselves as full time paid employees and 30% as consultants/freelance workers. The remainder consisted of part-time employees (10%), volunteers (5%), and students, retired people and company directors (5%).

Aotearoa/New Zealand Respondents

Almost two-thirds (36) of the individual NZ respondents to this question described themselves as full-time paid employees, and about a quarter (14) as consultants/freelance workers. The remainder consisted of five part-time/casual paid employees, three volunteers, one retiree, and two 'other': a company director and an expert member of an ICOMOS NZ committee. No one identified as an apprentice or student.

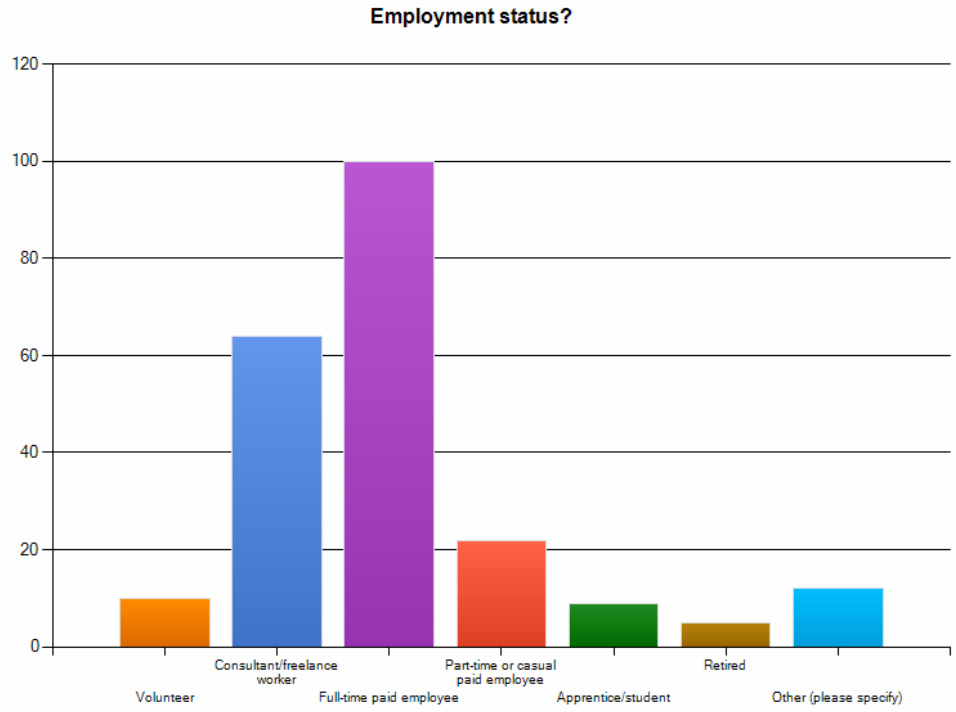


Figure 4.3 Employment status of Australian respondents.

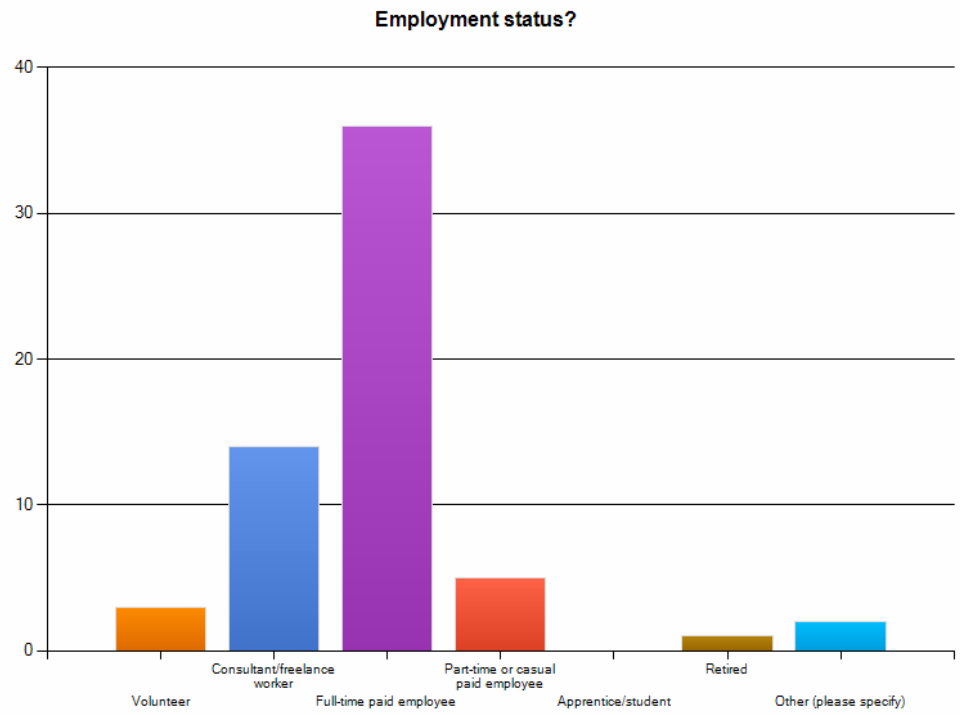


Figure 4.4 Employment status of NZ respondents.

Age Range

Fifty percent of Australian Respondents were aged between 30 and 50 years of age, 40% were over 50 years and 10% under 30 years.

Just over half (56% or 32) of the NZ Respondents were between 30 and 50 years of age, just over a third (20) were over 50 years (one over 66 years), and five (8.8%) were under 30 years.

Place of Work

Australian Respondents

Nearly 50% of individual respondents from Australia identified their place of work as being a private practice or consultancy and nearly 30% as being a state government agency. Commonwealth Government agencies, local government agencies, heritage sites, educational Institutions, non-government agencies and trade companies were each represented by between 5 and 15 individual responses.

Aotearoa/New Zealand Respondents

More than a third (23) of the NZ respondents defined their work place as a central government agency, this is assuming that the 16 (28%) who ticked either the 'State' or 'Commonwealth' government category understood both to mean 'central government/crown entity' in the NZ context. Also, seven had ticked their work place as 'other' and listed it as a central government department or crown entity. Just over one-third (37% or 21) of the 57 NZ respondents to this question identified their place of work as a private practice or consultancy.

Five listed local government agency (8.8%) as their work place, four listed heritage sites (7%), two education institutions, and only one worked for a trades company. No one indicated they worked in a non-government organisation. The remaining 'other' worked from home.

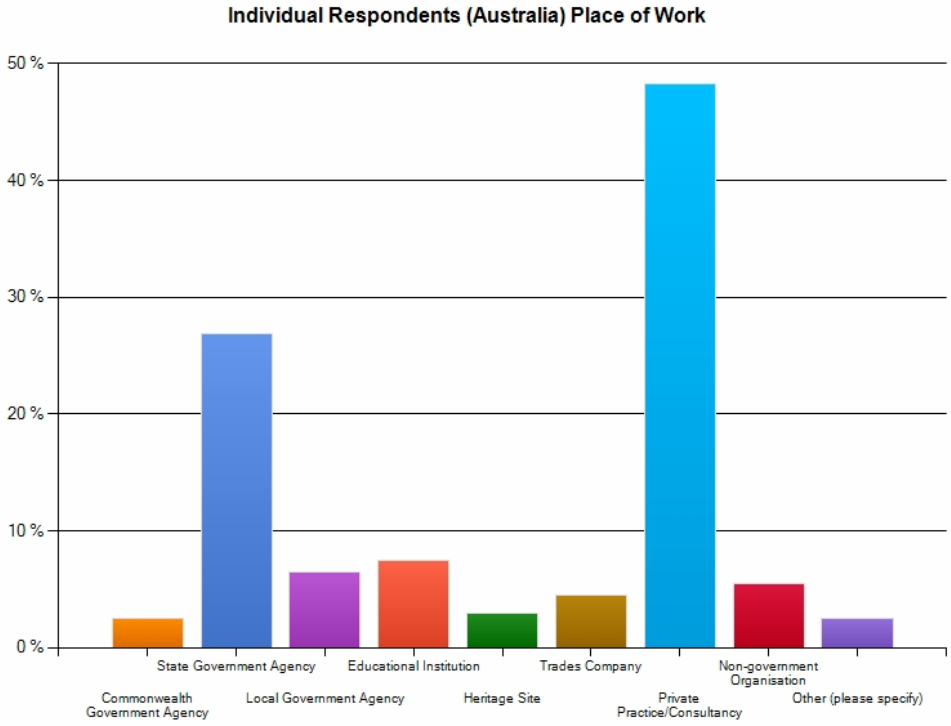


Figure 4.5 Place of work responses (Australia).

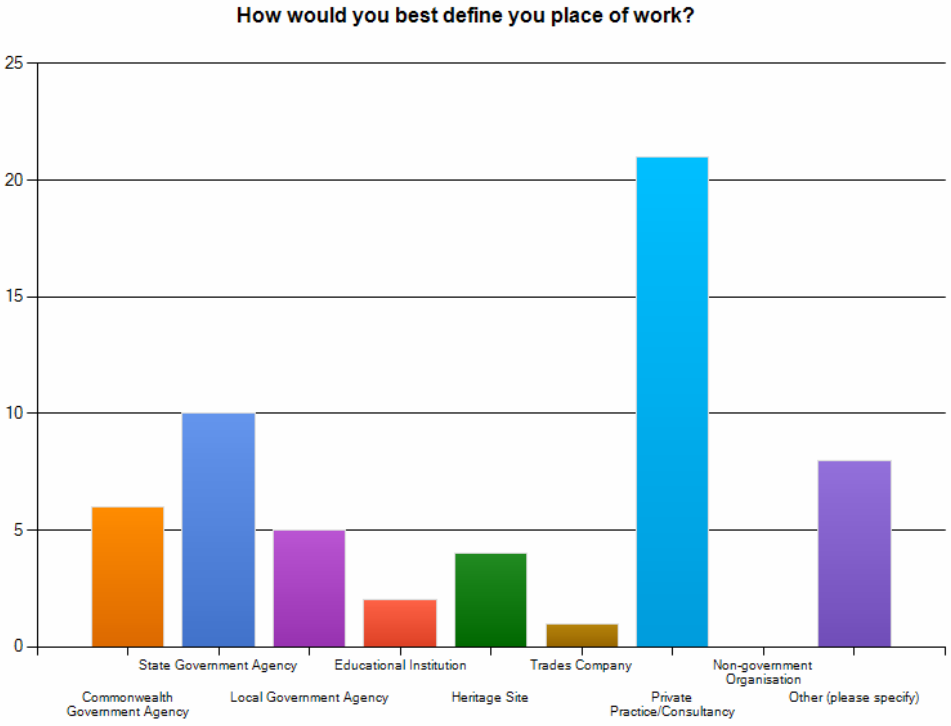


Figure 4.6 Place of work responses (Aotearoa/New Zealand).

Trade or Profession

Australian Respondents

Twenty-five percent of Australian respondents identified their profession as 'heritage management', 22% as archaeologists and 23% as architects. Fourteen respondents identified themselves as tradespeople.

Forty-nine Australian respondents specified 'other' in response to this question, meaning they considered the categories offered in the survey did not fit the title of their trade or profession. These included five planners, six conservators, eight consultants, nine engineers (some retired) and four curators. Other professions with only one response included photographer, architectural historian, 'heritage believer', scientist, lawyer, industrial designer/interior architect, and housewife.

Aotearoa/New Zealand Respondents

A quarter (25%) of the NZ respondents defined their trade or profession as archaeologist (4) and another 25% as heritage manager (14). The next most commonly mentioned were historian (8) and architect (6). Only two defined themselves as tradespersons, one as bureaucrat and one as academic/teacher.

Twenty-two (40%) of NZ respondents considered the categories offered in the survey did not fit the title of their trade or profession, thus listed their occupations under 'other'. Of these people, six use the term 'planner' solely or as part of the description of their trade or profession. Six defined themselves as covering several types of work, for example 'heritage policy advisor, planner, writer, researcher, lecturer, funding advisor and advocate'. Four respondents used more general titles like urban designer/cultural heritage expert, and heritage or museums consultant /professional (4).

Three were architects (one conservation-focused and two were heritage landscape-focused) and one a heritage engineer. One respondent was a manager of cultural heritage database and provision of information and another was an administrator. Other professions or trades listed by a person included curator/collection manager, interpreter/project manager, conservation ranger, technical advisor, and contract manager for maintenance service provider.

Level of Education

Individual respondents were asked to indicate their highest level of education.

Australian Respondents

Twenty-three (11%) respondents have a Doctorate. Fifty-five percent of respondents have, or are completing, a postgraduate award. Twenty-five percent have an undergraduate degree and the remainder have completed a TAFE, polytechnic or vocational education certificate, an apprenticeship or secondary school. The five responses in the 'other' category include two undergraduate and two postgraduate awards.

Nearly 60% of respondents had completed this education prior to 2000. This is likely to reflect the very large majority of respondents who are over the age of 30.

Aotearoa/New Zealand Respondents

The majority of NZ respondents (93%) have university degrees. Of these, just under three-quarters (72%, 41) of the NZ individual respondents have a postgraduate award. Five (8.8%) hold

doctorates (the one response marked 'other' has a masters degree). Twenty-one percent (12) have an undergraduate degree. Of the remainder, one held a trade certificate and two have polytechnic certificates. For one person, secondary school is their highest level of education.

Just over half (57.3%, 33) had completed this study at least nine years ago (before 2000). The remainder were spread fairly evenly across completing in 2001–03 (6), 2004–06 (9), or 2007–09 (8), with one currently studying for their highest qualification.

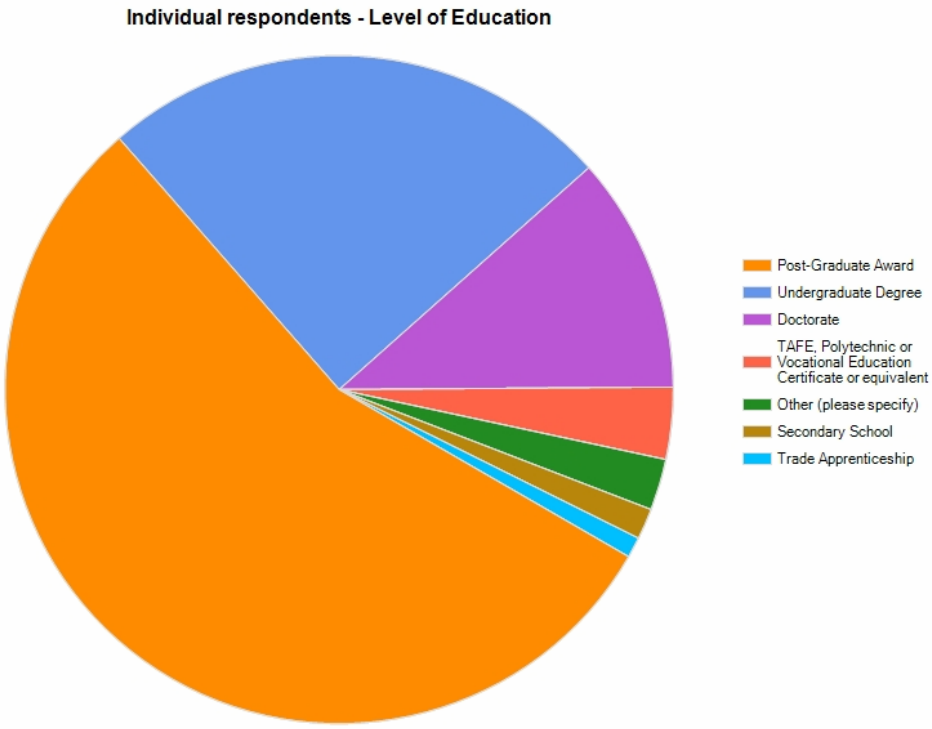


Figure 4.7 Levels of education (Australia).

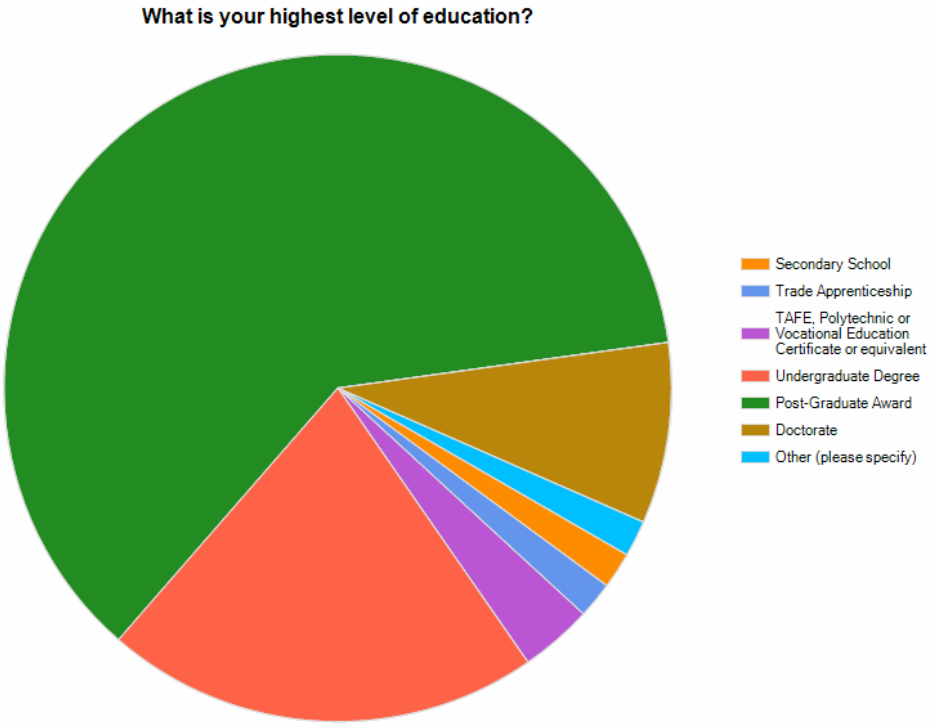


Figure 4.8 Levels of education (Aotearoa/New Zealand).

Field of Expertise

The survey asked individual respondents to identify any area of specialisation in their studies.

Australian Respondents

One hundred and twenty-six people responded to this question as follows:

- Archaeology (including historic, Indigenous)—34
- Cultural heritage management—19
- Architectural history and/or conservation—19
- History—17
- Materials conservation—10
- Architecture—6
- Archaeology maritime—5
- Visual Arts—4
- Museum Studies—3
- Planning—2
- Classical studies—2

- Anthropology—1
- Natural resource management—1
- Landscape management—1

Aotearoa/New Zealand Respondents

Thirty-three NZ respondents had specialised in a particular heritage field during their formal education, listed as:

- Archaeology (Maori archaeology, archaeology of standing buildings, and industrial archaeology)—13
- Museums and heritage studies—5
- Conservation (building conservation, heritage/built heritage conservation, architectural conservation)—3
- Anthropology—3
- Heritage management (funding, planning and business administration)—3
- Architecture—2
- History—2
- Collection management—2
- Heritage buildings—1

Other Training in Heritage Management or Conservation

Respondents were asked to identify types of heritage training that they have undertaken aside from formal education.

Australian Respondents

One hundred and forty-seven people have had informal or on-the-job training, 122 have undertaken professional short courses or workshops, 76 have some skills or knowledge that was self taught and 18 have undertaken internships.

Aotearoa/New Zealand Respondents

Other types of heritage training undertaken most commonly included informal or on-the-job training (46, 3 specified under 'other') and professional short courses or workshops (40). Nineteen had been self taught, and four had undertaken a heritage training internship. One person had been taught skills by their family. Two persons specified conferences as heritage training under 'other'.

4.4.2 Individual Respondents Under 30 Years of Age

Of particular interest are the respondents under the age of 30 years who will become the mainstay of the heritage and allied professions over the next decade. Only 29 of the respondents are under 30 years and, of these, nearly 50% are in Victoria and 20% from Aotearoa/New Zealand. All bar one responded as individuals rather than as representatives of an organisation or business.

Respondents representing companies or organisations were asked only to identify the age range of the majority of their workers and therefore in those organisations where younger workers are a minority their presence will not be reflected in the results unless they also responded as individuals. Despite this, the comparatively low number of young respondents suggests a potential skills shortage in heritage conservation and management in the coming years.

Over half (52%) the respondents under 30 years of age are in full time paid employment. Nearly 50% work in government agencies and 24% in private practice or consultancies. Archaeologists and heritage managers each make up roughly 30% of respondents; only one respondent under 30 years is an architect and two are tradespeople.

The majority (55%) have a postgraduate award. Only one respondent identified as having a specialist skill (in stained glass). Twenty-five of the 29 young respondents have had informal on-the-job training and nearly half (44%) have undertaken professional short courses or attended workshops. This suggests a well educated profession, although within a limited range of fields in the heritage industry.

In response to the question 'Do you know of training opportunities that would provide the skills and knowledge you have identified as a priority?' 85% of respondents less than 30 years of age answered 'no'. To the question of their preferred mode of training, the great majority identified short courses and on-the-job training as their preferred mode of training

4.4.3 Representatives of Heritage Agencies, Organisations or Companies (Section C)

Number of Respondents

A total of 112 responses were received from representatives of heritage agencies, organisations or companies in Australia. As discussed above, this is a relatively high number and may reflect in some cases more than one response on behalf of an agency, company, or organisation.

Twenty-nine (35.8%) NZ respondents answered the survey on behalf of a heritage agency, organisation or company. As with the Australian responses, this may reflect more than one response on behalf of an agency, company or organisation.

Nature of the Organisation or Company

Australian Respondents

The majority of respondents identified their organisations or companies as state government agencies (50%), private practices or consultants (30%) and non-government organisations (11%). Commonwealth government agencies, local government agencies, heritage sites, educational institutions and museums were each represented by 11 or less surveys. Ten surveys were completed by representatives of trade companies.

Aotearoa/New Zealand Respondents

More than 50% (16) of the 28 NZ respondents to this question identified their organisation or company as a central government agency (assuming the 11 (39%) who ticked the 'state' or 'commonwealth' government categories to mean 'central' government in the NZ context, and including five of the six who specified crown/central government agencies as 'other'). Fourteen percent (4) represented a private practice or consultancy, and 14% (4) represented a local government agency.

The remaining four respondents were divided between education institutions (7%, 2), and non-government organisations (7%, 2—plus the remaining 'other' who manages a voluntary organisation). No NZ respondents said they represented a trades company nor a heritage site.

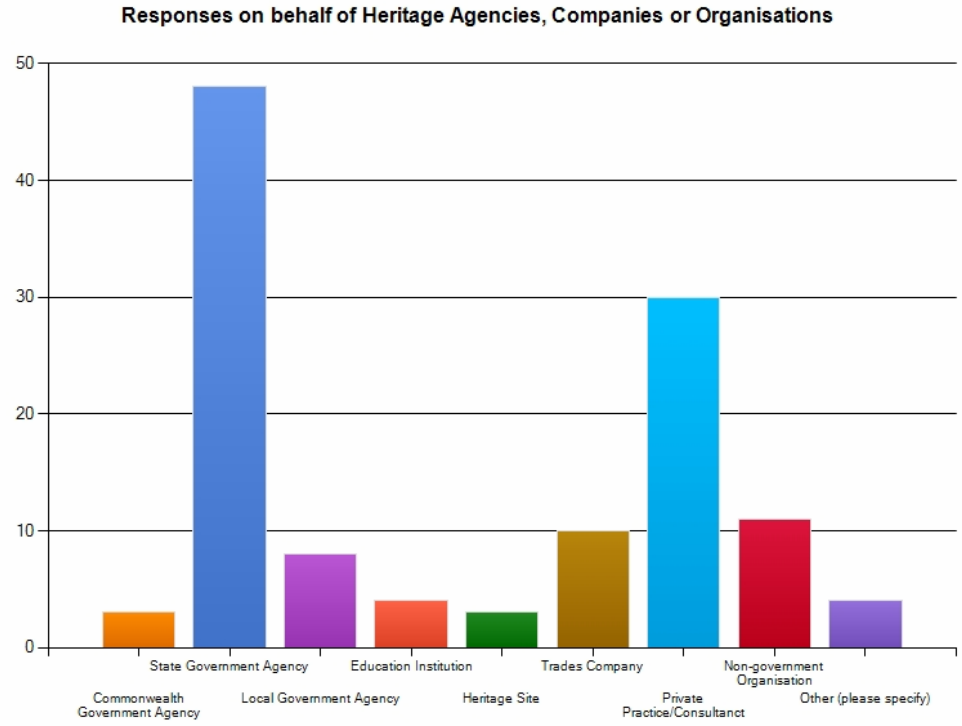


Figure 4.9 Nature of organisations (Australia).

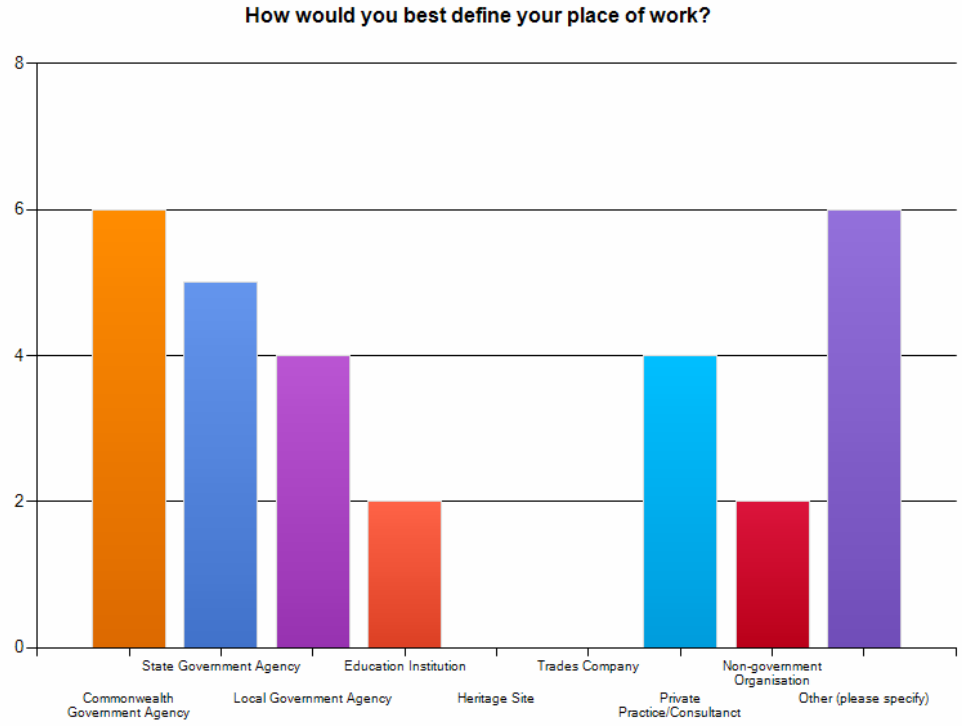


Figure 4.10 Nature of organisations (Aotearoa/New Zealand).

Number of Employees

Australian Respondents

Fifty percent of the agencies, organisations or companies employ more than 20 people, reflecting the large number of state government organisations represented in the survey. Thirty percent employ less than 10 people and the remainder employ between 10 and 20 people.

Aotearoa/New Zealand Respondents

Just over half (55.6%, 15) of these NZ organisations or companies employ more than 20 people. This reflects the higher percentage of government organisations and private practices amongst the respondents. A quarter (25.9%, 7) employ less than 10 people and the remainder (18.5%, 5) employ between 10 and 20 people.

Nature of Employment

The vast majority (85%) of Australian Respondents are employed on a full-time basis. Around 10% are volunteers.

All but one of the NZ organisations (96.3%) employed personnel on a full-time basis. The one 'other' specified that the organisation employed four full-time and four part-time/casual persons. None of personnel in the respondents' organisations were volunteers or student/apprentices.

Age of Employees

In 80% of the Australian agencies, companies and organisations represented, the average age of employees is 30–50 years. Twelve percent were over 50 and only 4% under 30 years of age.

In all but one of the NZ organisations or companies the average age of employees is 30–50 years (96.3%, 26). The average age was under 30 in the only other organisation represented.

Trade or Primary Professional Activities

Australian Respondents

Thirty percent of respondents identified the primary professional role of their organisation or company as 'heritage management' and 20% as archaeologist. Thirty-nine respondents used the 'other' category to identify their role. These included five conservators, three planners, two horticulturalists, one archivist and several specialist decorators.

Aotearoa/New Zealand Respondents

Eleven of the 28 NZ respondents to this question used the 'other' category to identify their role. These included two conservators (including an architectural conservation specialist), two planners, one structural engineer, and one trainer.

Ten respondents could be grouped as heritage manager/administrators (five of these specified in 'other' as a media manager, support-fund-raiser, administrator, and team leader urban design and heritage). Five identified as architects, nine as heritage managers and five as bureaucrats. Three were archaeologists, two were historians, and no one responding was a tradesperson.

'In-house' Training Opportunities

When asked whether their company or organisation provided 'in-house' training opportunities, two thirds of Australian respondents answered 'occasionally', 25% 'regularly' and 10% 'never'.

When NZ respondents were asked whether their company or organisation provided 'in-house' training opportunities, just over half (57%, 16) of respondents answered 'occasionally', just over one-third (36%, 10) 'regularly', and one answered 'never'.

4.4.4 Summary of Skills in Use and Priorities for Future Training

The primary aim of the survey was to identify skills needs and priorities for future training in the heritage industry. Respondents to the survey were provided with a list of key words (skills) under these broad areas or sub-disciplines within heritage conservation and management: physical conservation; recording; management; consultation; interpretation; archaeology; historic landscape; and legislation and policy (see Table 4.1).

Full survey data is provided in Appendix D.

4.5 Individual Responses (Section B)

Against each keyword individual respondents were asked to identify the:

- skills that are most used by them in the work place;
- skills in which they have received formal training;
- skills in which they have received informal or on-the-job training; and
- skills that they see as a priority for training in future.

Number of Australian respondents in each area or sub-discipline of heritage management and conservation

Physical conservation	112
Recording	162
Management	164
Consultation	161
Interpretation	148
Archaeology	85
Historic Landscape Management	111
Legislation and Policy	159

Number of Aotearoa/New Zealand respondents in each area or sub-discipline of heritage management and conservation	
Physical conservation	28
Recording	47
Management	45
Consultation	46
Interpretation	45
Archaeology	26
Historic Landscape Management	35
Legislation and Policy	45

The numbers of responses for individual key words are discussed below.

Table 4.1 Keyword breakdown.

Physical Conserv-ation	Recording	Management	Consultation	Interpret-ation	Archaeology	Historic Landscape Management	Legislation and Policy
Thatching	Fabric survey	Significance assessment	Stakeholder engagement	Communica-tion skills	Research design	Landscape assessment	ICOMOS Charter (NZ and AUS)
Bricklaying	Site survey	Thresholds	Public speaking	Multimedia skills	Archaeologic-al site survey	Aboriculture	Resource Management Act (NZ)
Mortar analysis	Mapping	Policy development	Recording information	Tour guiding	Archaeologic-al excavation	Horticulture	Historic Places Act (NZ)
Paint analysis	GIS	Risk management	Survey development and analysis	Visitor management	Permit applications	Landscape architecture	EPBC Act
Gilding	Inventory preparation	Issues analysis	Plain English publication	Historical themes	Artefact analysis	Historic map/plan analysis	State heritage legislation
Traditional tool making and or use	Cata-loguing	Implementa-tion		Content development	Artefact conservation	Curtilage analysis	State planning legislation
Painting and decorating	Data manage-ment	Tolerance for change		Audience analysis	Report writing	View analysis	International agreements and conventions
Interior finishes	Photo-graphy	Legislative/ statutory context		Interpretation strategies/ plans	Diving		OH&S requirements
Glass conservation and/or replacement	Sketching	Comparative analysis			Underwater survey and recording		Building codes
Stone masonry	Photo-grammetry	Legislative compliance					Natural heritage legislation
Metalwork/ forging/ blacksmithing	Measured drawing	Conservation strategy					Aboriginal heritage legislation
Roofing	Oral history	Conservation management planning					Burra Charter
Plastering	Historical research	Site analysis					
Carpentry	Archival research						
Joinery							
Engineering							
Traditional mechanical skills							
Architectural analysis							

4.5.1 Physical Conservation

Australian Respondents (112 Respondents)

Included within the area or sub-discipline of 'Physical Conservation' were the traditional trades commonly used in the conservation of historic structures plus architectural analysis, mortar analysis and paint analysis (see Table 4.1). There was a total of 112 respondents.

Although only 14 respondents identified themselves as tradespeople, many more respondents indicated that they use trades such as stone masonry (35), roofing (29), joinery (26) and plastering (26) in their work.

Under physical conservation:

Skills Most Used

1. Architectural analysis (62)
2. Paint analysis (37)
3. Stone masonry (35)

Priority Areas for Further Training (based on number of respondents)

1. Architectural analysis (30)
2. Stone masonry (26)
3. Mortar analysis (23)

Aotearoa/New Zealand Respondents (28 Respondents)

Skills Most Used

1. Architectural analysis (12)
2. Carpentry (10) and joinery (8)
3. Stone masonry (8) and roofing (8)

Priority Areas for Further Training (based on number of respondents)

1. Architectural analysis (13)
2. Mortar analysis (6)
3. Stone masonry (5)

Skills Training—Formal or Informal

In Australia, for all skills included in Physical Conservation, training is far more likely to have taken place on-the-job than through formal (institutional) training. In most cases there was roughly twice the number of responses for on-the-job training as compared to formal training.

Training in the area of physical conservation in Aotearoa/New Zealand was equally as likely to have taken place in a formal course as in an 'informal' context or on-the-job.

Findings/Issues

Australian Respondents

- For all keywords (except mortar analysis) only around half the number of respondents who identified a particular skill indicated that further training was a priority. Although this was the case for 'architectural analysis', the large number of respondents who use this skill suggests it is a priority for future training.
- In three skills areas—mortar analysis, gilding and traditional mechanical skills—the number of respondents who see these as priorities for future training is greater than the numbers of respondents who identify them as 'most used', possibly indicating a perceived future skills need in these areas.

Aotearoa/New Zealand Respondents

- Architectural analysis was identified by respondents as the most used skill and also as the top priority for future training.
- All other 'most used' skills were also listed as priorities for further training, suggesting that those working in physical conservation are all interested in further training opportunities specific to their heritage work.
- Whilst no one indicated that they use thatching or gilding skills in their work, nor had any training in these areas, two respondents did indicate both these as a priority to enhance their current work.

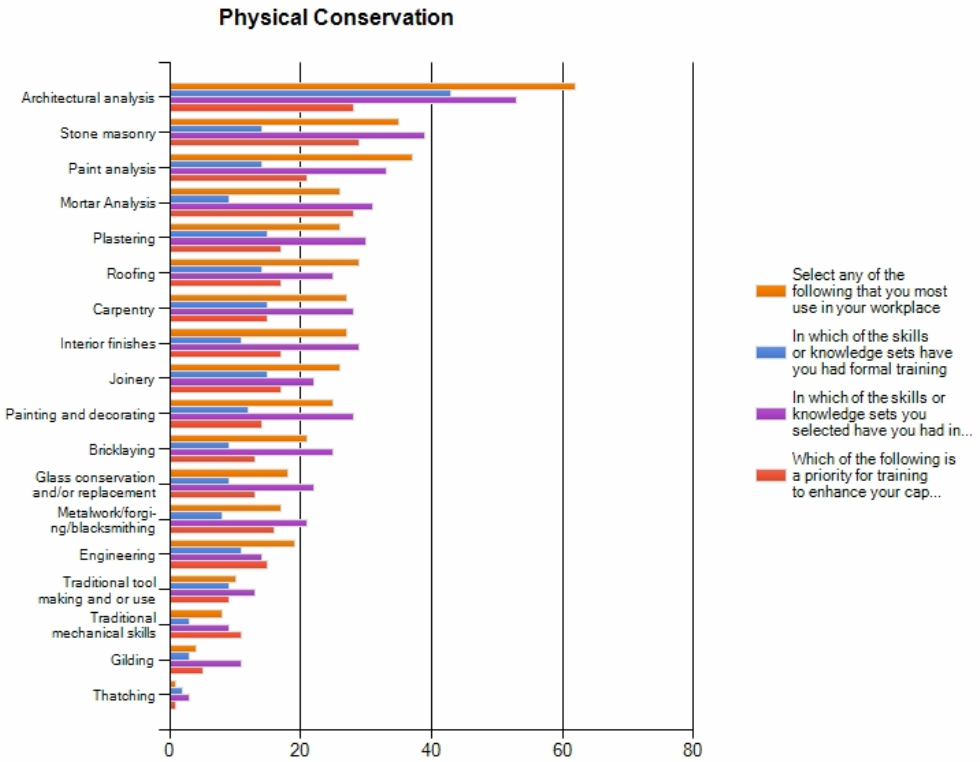


Figure 4.11 Keyword responses (Section B)—physical conservation (Australia).

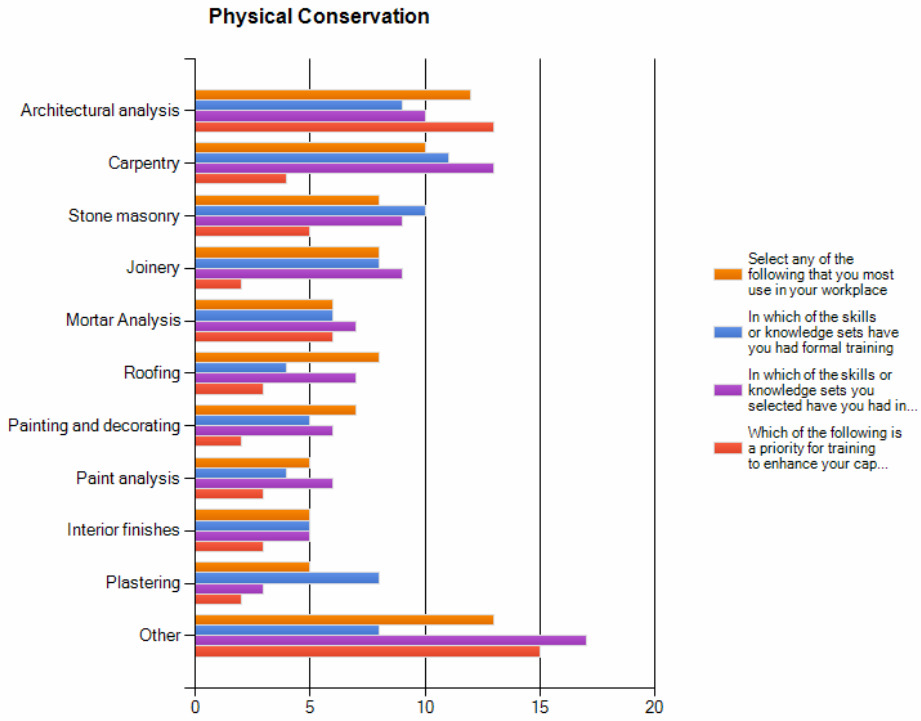


Figure 4.12 Keyword responses (Section B)—physical conservation (Aotearoa/New Zealand).

4.5.2 Recording

Australian Respondents (162 Respondents)

Included within the area or sub-discipline of 'Recording' are generic skills including survey, mapping, cataloguing and historical research that are used throughout the heritage industry (see Table 4.1). The large response to each keyword (with the exception of photogrammetry) reflects the generic nature of theses skills.

Skills Most Used

1. Historical research (139)
2. Photography (136)
3. Site survey (125)

Priority Areas for Further Training

1. Historical research (40)
2. Archival research (37)
3. GIS (35)

Aotearoa/New Zealand Respondents (47 Respondents)

Skills Most Used

1. Photography (37) and historical research (35)

2. Archival research (32)
3. Site survey (26) and inventory preparation (21)

Priority Areas for Further Training

1. Geographic Information System (GIS) (19)
2. Fabric survey (11); mapping, data management and archival research (all 10)
3. Historical research (9) and oral history (8)

Skills Training—Formal or Informal

Although in general Australian respondents have had more training on-the-job than in a formal capacity in almost all of the skills in this section (the exceptions being measured drawing and historical research, fabric survey, inventory preparation, data management, photography and oral history) the extent to which training is informal rather than formal is quite marked and suggests that these skill sets are not being catered for through established formal education. Although in none of these areas is there a significant need for training identified.

In Aotearoa/New Zealand, 'recording' training was equally as likely to have taken place in a formal course as informally or on-the-job. There was about one-and-a-half to twice the number of on-the-job training responses to formal training responses for the recording skills of: GIS (8 formal, 15 informal), photography (12 and 22), inventory preparation (11 and 15), cataloguing (11 and 16), data management (10 and 14) and archival research (18 and 23). In contrast, formal training was more likely for the remaining five recording skills (about one-and-a-half to twice the number of formal training responses to on-the-job training), that is for: fabric survey (12 formal and 9 informal), site survey (21 and 13), photogrammetry (3 and 1), measured drawing (15 and 12), oral history (15 and 10).

Findings/Issues

Australian Respondents

- Although photography was one of three skills most used, relatively few respondents saw training as a priority, possible reflecting the adequacy of informal training and/or self-taught skills.
- Relatively few respondents identified GIS as a skill most used but the largest number of respondents identified it as a priority, suggesting respondents see the need for skills in GIS as increasing in the future.

Aotearoa/New Zealand Respondents

- Although photography was one of three skills most used, relatively few respondents had formal training (12, 33%) and very few (3, under 10%) rated training as a priority. This may suggest that current patterns of learning on-the-job and current formal training is adequate.
- In contrast, a similar number of respondents identified historical research as a skill most used but approximately equal numbers had both formal and informal training in this, and such skills were also a mid-range training priority.

- Relatively few respondents identified GIS as a skill most used, amongst whom training was twice as likely to have been on-the-job, and the largest number of respondents identified GIS as a training priority.
- Both 'other' skills listed were electronic/digital recording skills (high definition digital survey, and electronic measured drawing training), probably a reflection of technological directions.

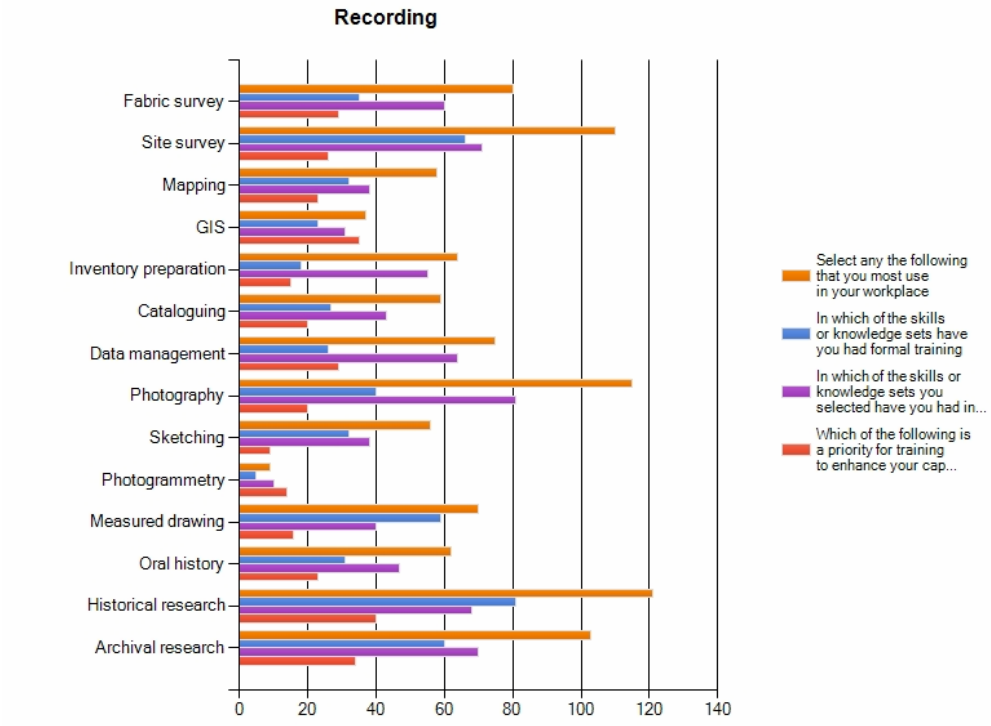


Figure 4.13 Keyword responses (Section B)—recording (Australia).

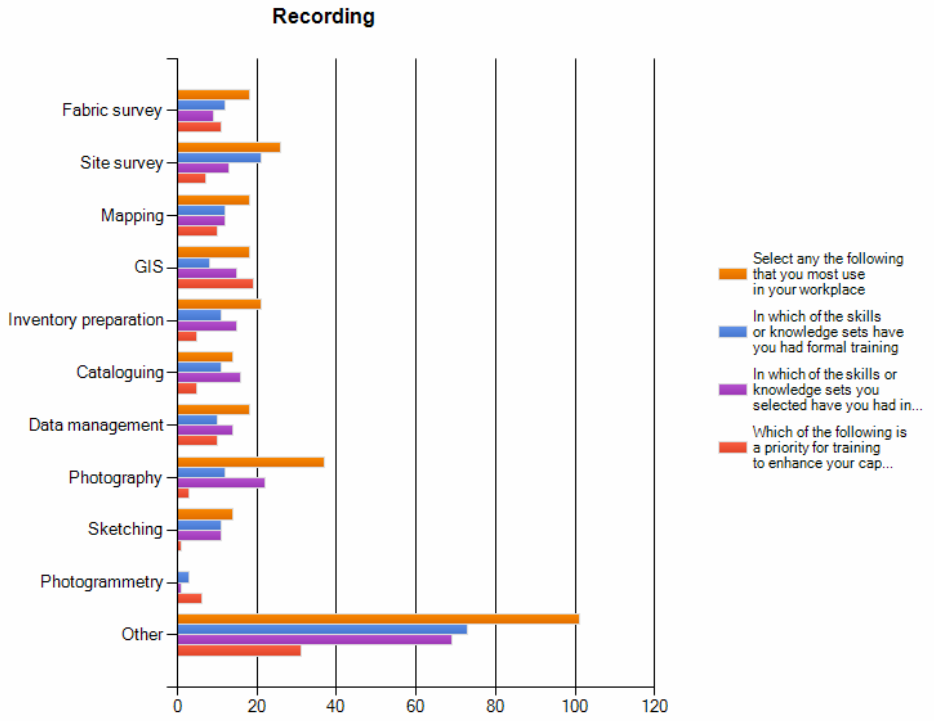


Figure 4.14 Keyword responses (Section B)—recording (Aotearoa/New Zealand).

4.5.3 Management

Included within 'management' are a number of skills including risk management, comparative analysis and issues analysis. There were a relatively high number of responses to all the keywords in this section.

Australian Respondents (164 Respondents)

Skills Most Used

1. Significance assessment (147)
2. Conservation management planning (132)
3. Legislative/statutory context (123)

Priority Areas for Further Training

1. Conservation management planning (53)
2. Conservation strategy (45)
3. Significance assessment (43)

Aotearoa/New Zealand Respondents (46 Respondents)

Skills Most Used

1. Significance assessment (35)

2. Legislative/statutory context (29) and site analysis (29)
3. Conservation management planning (27) and legislative compliance (26)

Priority Areas for Further Training

1. Conservation management planning (17) and significance assessment (16)
2. Policy development (12)
3. Conservation strategy (11)

Skills Training—Formal or Informal

For all skills listed under 'management' (with the narrow exception of significance assessment) more than twice the Australian respondents have had informal, on-the-job training as compared to formal training.

Almost all training in management skills in Aotearoa/New Zealand were equally as likely to have taken place in a formal course and informally/on-the-job. The only exceptions were for: thresholds skills which were almost one-and-a-half to twice as likely to be learnt on-the-job (4 formal, 7 informal), legislative compliance (12 and 19), and Conservation management planning (13 and 18).

Findings/Issues

Australian Respondents

- Although significance assessment is the most used skill in this section, it does not stand out to the same extent in the training priorities, suggesting current formal and informal, 'in house' training is adequate.
- Conservation management planning, conservation strategy and risk management have the highest number of responses for future training priorities relative to skills most used. Although not highly significant this does suggest a greater need for training in these areas as compared to the other skills in management

Aotearoa/New Zealand Respondents

- Significance assessment is the most used management skill amongst respondents, and also is one of two top training priorities.
- The other top training priorities included conservation management planning and conservation strategy skills, which were also almost amongst some of the more used skills, along with site analysis and legislative skills and knowledge.
- Policy development also featured as a high training priority.

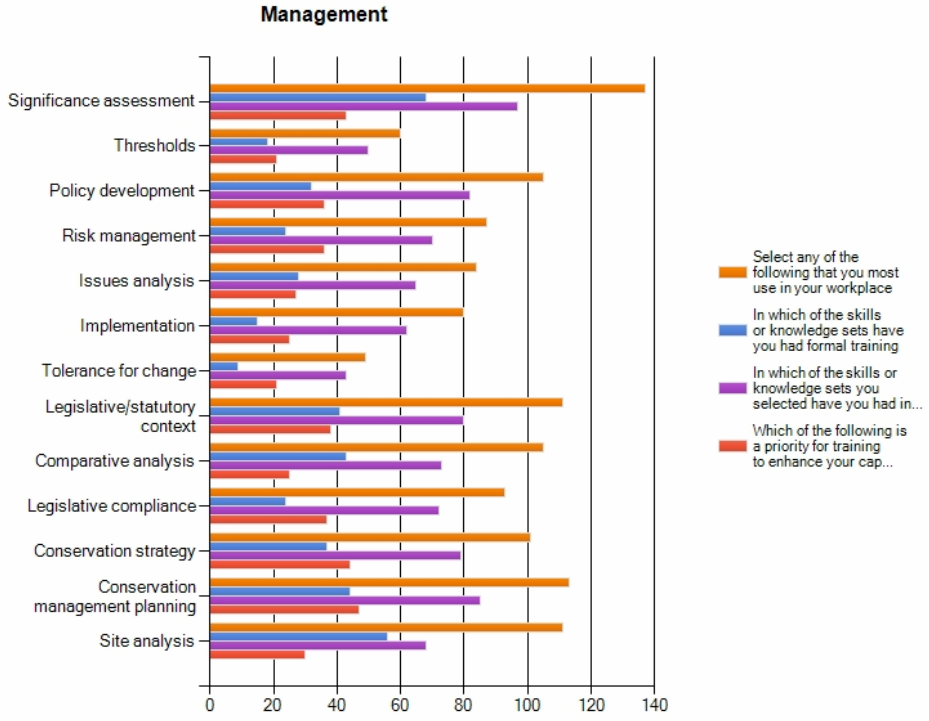


Figure 4.15 Keyword responses (Section B)—management (Australia).

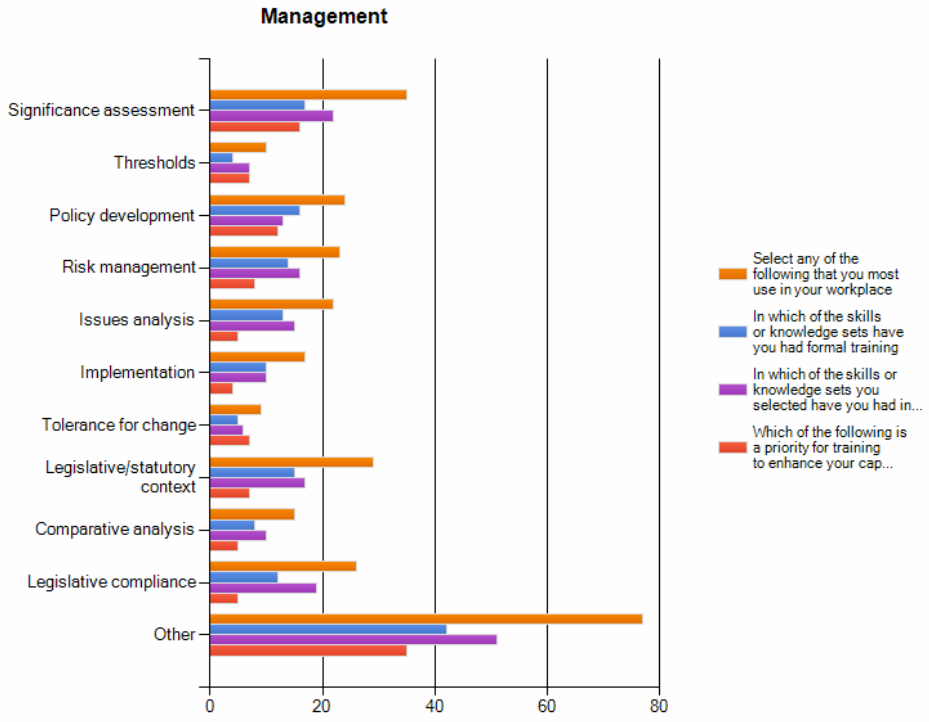


Figure 4.16 Keyword responses (Section B)—management (Aotearoa/New Zealand).

4.5.4 Consultation

The section on 'consultation' includes only five skills or sub-disciplines such as public speaking and survey development and analysis. Again these are generic and to a varying extent used across a range of heritage professions and trades. The large number of responses indicates the importance of consultation.

Australian Respondents (161 Respondents)

Skills Most Used

1. Stakeholder engagement (133)
2. Recording information (131)
3. Public speaking (121)

Priority Areas for Further Training

1. Stakeholder engagement (47)
2. Public speaking (40)
3. Plain English publication (35)

Aotearoa/New Zealand Respondents (46 Respondents)

Skills Most Used

1. Public speaking (37)
2. Stakeholder engagement (34)
3. Recording information (31)
4. Plain English publication(27)

Priorities for Further Training

1. Stakeholder engagement (16)
2. Public speaking (13) and plain English publication (12)
3. Recording information (11) and survey development and analysis (10)

Skills Training—Formal or Informal

More Australian respondents have had informal or on-the-job training than formal training in all of these skills; however, this is most marked in relation to stakeholder engagement.

The number of Aotearoa/New Zealand respondents with on-the-job training rather than formal training was 1.5 to 2.5 times more likely for stakeholder engagement, public speaking, and plain English publication skills. Training was more common in both contexts for: recording information (17 formal and 18 informal) and survey development and analysis skills (13 and 10).

Findings/Issues

Australian Respondents

More respondents identified 'stakeholder engagement' as a skill most used than any of the other keyword skills under consultation. Three times the number of respondents identified that their training in stakeholder engagement was informal rather than formal. A relatively high number also identified this as a priority for future training. While training in stakeholder consultation is obviously occurring in the workplace, this does not appear to meet current training needs.

Aotearoa/New Zealand Respondents

- Just over two times the number of respondents identified on-the-job training (21) in stakeholder engagement than formal training (10), and this was also the top priority for future training (16).
- Responses regarding public speaking skills indicated a similar pattern. Public speaking was the other most used skill, learnt predominantly on-the-job and respondents' second highest priority for further training.

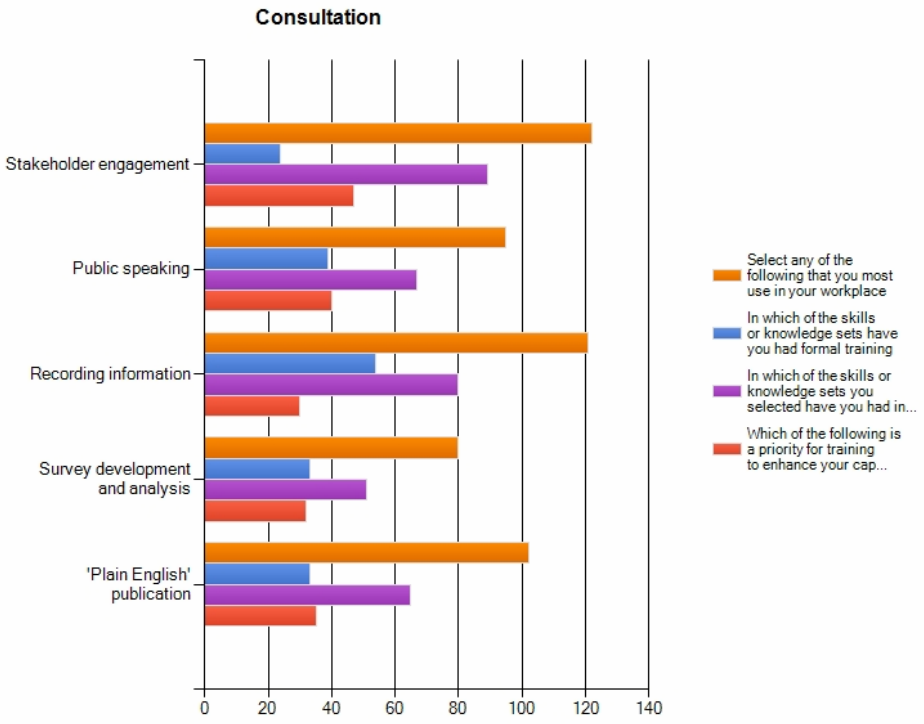


Figure 4.17 Keyword responses (Section B)—consultation (Australia).

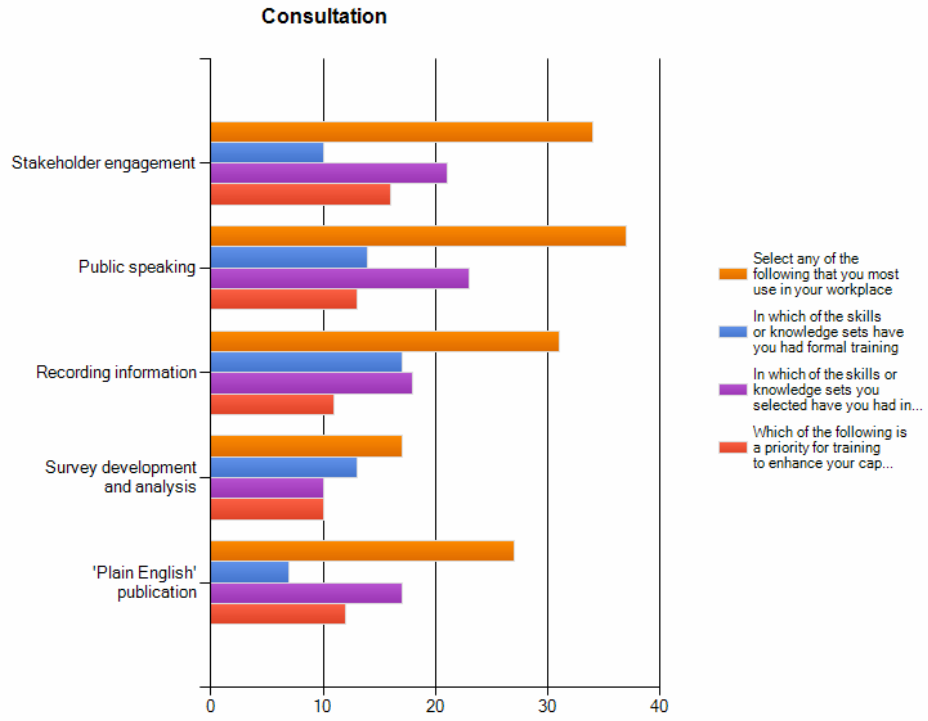


Figure 4.18 Keyword responses (Section B)—consultation (Aotearoa/New Zealand).

4.5.5 Interpretation

The section covering skills under the heading of 'interpretation' include those specifically associated with tourism activities such as 'audience analysis' and 'tour guiding' and those more generally associated with interpretation and presentation of information such as 'content development'. The wide range in the number of responses to individual keywords in this section reflects the specificity of some skills and the generic nature of others.

Australian Respondents (148 Respondents)

Skills Most Used

1. Communication skills (129)
2. Interpretation strategies/plans (102)
3. Historical themes (97)

Priority Areas for Further Training

1. Interpretation strategies/plans (51)
2. Multimedia skills (35)
3. Content development (32)

Aotearoa/New Zealand Respondents (45 Respondents)

Skills Most Used

1. Communication skills (40)

2. Historical themes (28) and multimedia skills (27)
3. Interpretation strategies/plans (23) and content development (19)

Priority Areas for Further Training

1. Multimedia skills (14) and communication skills (13)
2. Historical themes (11) and interpretation strategies/plans (11)
3. Audience analysis (10) and content development (9)

Skills Training—Formal or Informal

In Australia, with the exception of 'historical themes', informal or on-the-job training received at least twice the number of responses to that of formal training for the skills under 'interpretation'. 'Historical themes' is more likely to have been taught on-the-job than through formal training.

In Aotearoa/New Zealand, all but two of the skills (communication and historical themes) had more than 1.5 to 2 or 3 times the number of respondents, indicating they had on-the-job training rather than formal training.

Findings/Issues

Australian Respondents

- 'Multimedia skills' and 'content development' received relatively few responses as skills 'most used' but both are clearly identified as priorities for training, perhaps indicating the future direction for the industry.
- Although 'communication skills' were identified as most used by the greatest number of respondents this skill is, relatively, the least identified as a priority for future training. It is also an area that is well served in both formal and informal training.
- The overall number of responses in relation to 'audience analysis' was low; however, the number of responses indicating this is a priority for future training is relatively high.

Aotearoa/New Zealand Respondents

- The more specific interpretation skills have been most commonly learnt on-the-job to date.
- Multimedia skills are not identified as the most used (27) but are identified as of equivalent priority for training as the most used skill (communication, 40), possibly in response to the current increase in use of multimedia in heritage interpretation.
- Visitor management (10) and audience analysis (7) are the least used skill sets, have the least 'formal training' responses, and are lower priorities in training.
- The lowest training priority is tour guiding (3), which is also the skill most likely to be learnt on-the-job, and one of the lesser used skills (12).

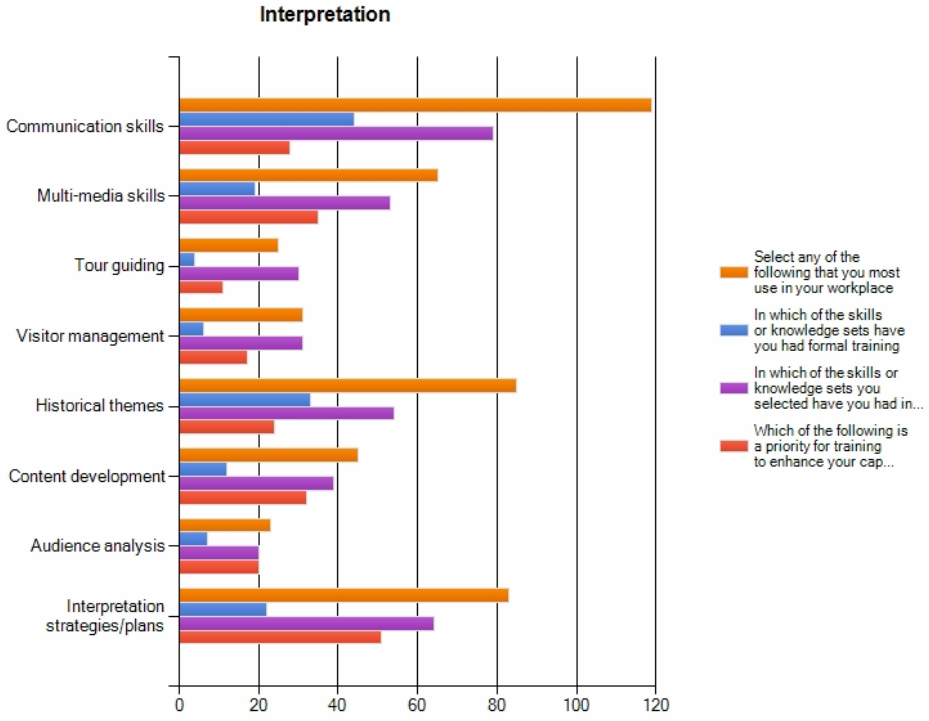


Figure 4.19 Keyword responses (Section B)—interpretation (Australia).

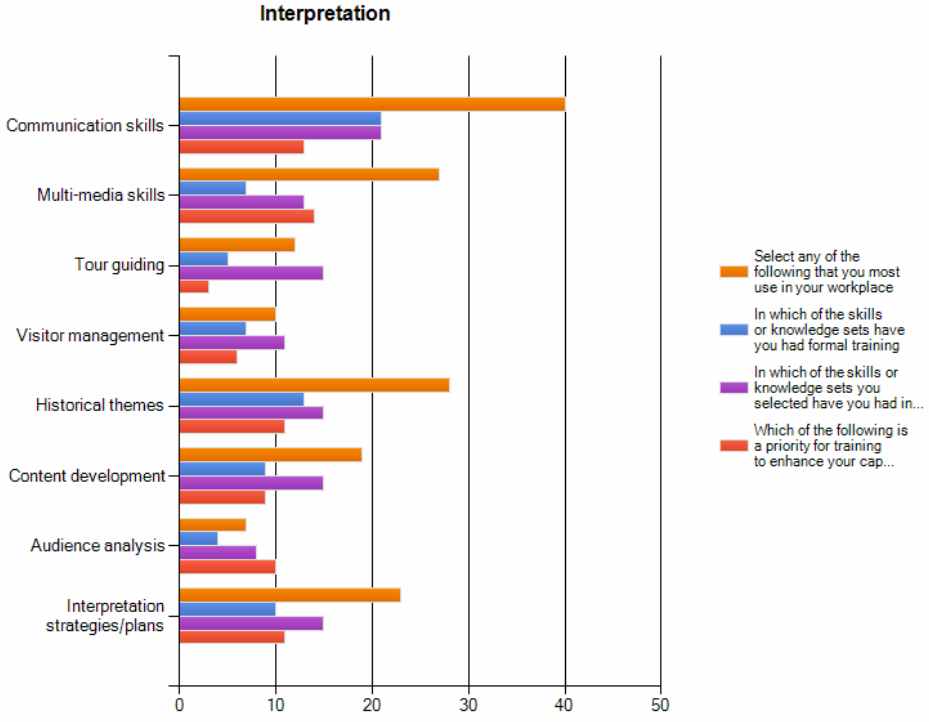


Figure 4.20 Keyword responses (Section B)—interpretation (Aotearoa/New Zealand).

4.5.6 Archaeology

Archaeology is a specialist discipline within the heritage industry, with particular skills not captured in the other areas or sub-disciplines. Archaeologists represent a significant proportion of the total number of individual respondents to the survey. 39 respondents indicated that they had specialised in archaeology (historic, Indigenous or maritime) in their formal education.

Australian Respondents (85 Respondents)

Skills Most Used

1. Report writing (61)
2. Archaeological site survey (51)
3. Research design (46)

Priority Areas for Further Training

1. Artefact conservation (20)
2. Research design (18)
3. Artefact analysis (17)

Aotearoa/New Zealand Respondents (26 Respondents)

Skills Most Used

1. Archaeological site survey (16) and permit applications (16)
2. Report writing (14) and archaeological excavation (13)
3. Research design (10) and artefact analysis (10)

(Remainder ≤3, with no respondents using diving, or underwater survey and recording skills)

Priority Areas for Further Training

1. Research design (7) and archaeological site survey (7)
2. Artefact analysis (5)
3. Archaeological excavation (4)

Skills Training—Formal or Informal

With exception of 'permit applications' and 'artefact conservation', skills were learned in formal training more than on-the-job training, reflecting the specialist university training required for archaeologists to be able to work as consultants in the Australian heritage industry.

In Aotearoa/New Zealand, only archaeological excavation skills were more likely to be learnt in formal courses. All other skills used by respondents were learned either about equally in both formal and informal contexts (archaeological site survey, artefact analysis, artefact conservation), or 1.5 to 4.5 times more often on-the-job (research design, permit applications, report writing). Permit applications skills were more than 4.5 times more likely to be learnt on-the-job.

Findings/Issues

Australian Respondents

- Low numbers of responses to skills used in underwater archaeology probably reflect the small number of maritime archaeologists in the heritage industry.
- With the exception of 'artefact conservation', the overall low number of responses to 'priority for future training' in relation to 'skills most used' suggests that current training in the archaeological skills listed is generally adequate.
- Archaeology differs markedly to the other sections in that, with the exception of 'permit applications' and 'artefact conservation', skills were more likely to have been learnt through formal education or training.
- Training in 'artefact conservation' was identified as a priority by 20 respondents but only 28 identified it as a skill most used. This may suggest a perception that this skill may increase in importance in future or that its current limited use is an outcome of a lack of training opportunities.

Aotearoa/New Zealand Respondents

- Archaeology differs markedly to the other areas in that, with the exception of permit applications and artefact conservation (just), all skills had more responses to formal than on-the-job training. This may suggest that formal archaeology courses are covering the industry needs, or it could mean that there is very little on-the-job training in archaeology.
- Training in artefact conservation was identified as a priority by 22 respondents but only 29 of the respondents identified it as a skill most used. This may suggest this is anticipated as an area of future need.

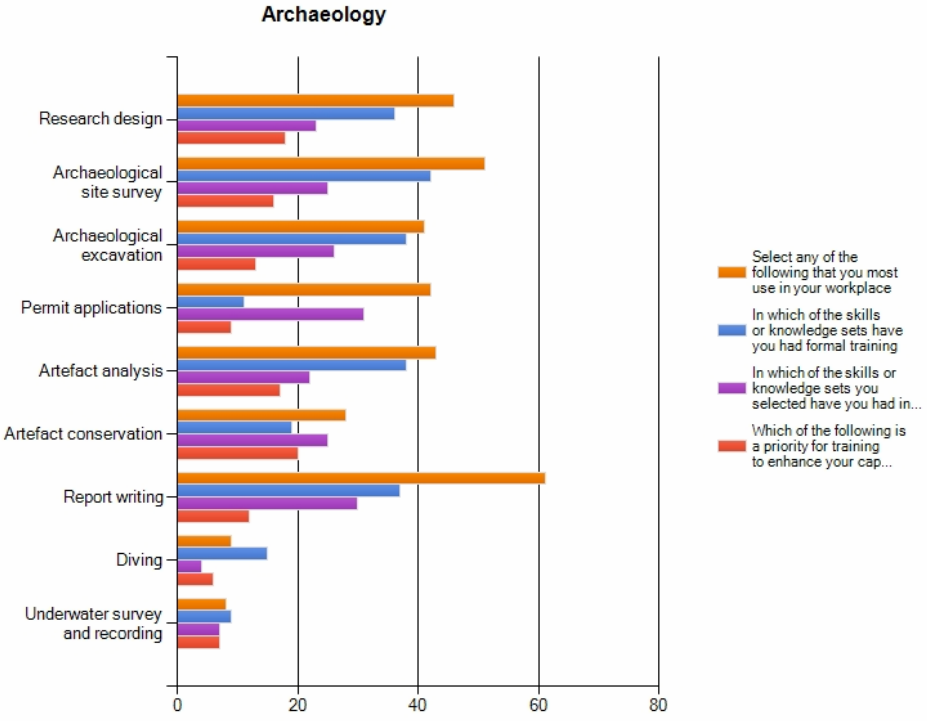


Figure 4.21 Keyword responses—archaeology (Australia).

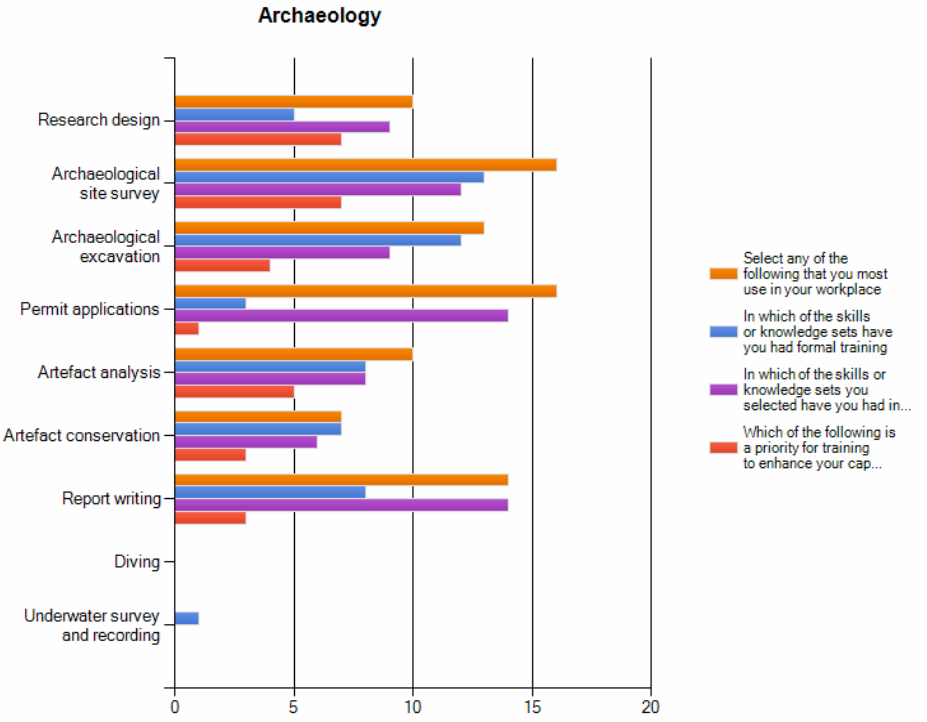


Figure 4.22 Keyword responses (Section B)—archaeology (Aotearoa/New Zealand).

4.5.7 Historic Landscape Management

The sub-discipline or area of historic landscape management received a relatively high number of responses although only a single respondent to the survey identified landscape management as the area in which they specialised in their studies—indicating that historic landscapes are being assessed and managed by people across the heritage industry, without necessarily any formal specialist training in the field.

Australian Respondents (111 Respondents)

Skills Most Used

1. Historic map/plan analysis (76)
2. Landscape assessment (61)
3. Curtilage analysis (50)

Priority Areas for Further Training

1. Landscape assessment (37) and historic map/plan analysis (37)
2. Landscape architecture (27) and curtilage analysis (27)

Aotearoa/New Zealand Respondents (35 Respondents)

Skills Most Used

1. Historic map/plans (26) and landscape assessment (23)
2. Curtilage analysis (12) and landscape architecture (11)
3. View analysis (8)

Priority Areas for Further Training

1. Landscape assessment (14)
2. Historic map/plan analysis (11), curtilage analysis (10) and landscape architecture (9)
3. View analysis (7)

Skills Training—Formal or Informal

Similarly to all other sections or sub-disciplines in the survey, the training in skills listed under 'historic landscape management' in Australia has been primarily informal, even for the specialist areas of 'horticulture' and 'aboriculture'.

Without exception, all NZ respondents were more likely to have developed their historic landscape management skills on-the-job, with the greatest likelihood being for curtilage analysis (1 formal, 10 informal).

Findings/Issues

Australian Respondents

- Overall 'historic landscape management' has a relatively high number of responses against 'priority for training' as compared to 'skills most used'. This is particularly marked for

'aboriculture', 'horticulture', 'landscape architecture' and to a slightly lesser extent for 'landscape assessment', 'curtilage analysis' and view analysis'. In each of these skills the formal training responses are relatively very low.

Aotearoa/New Zealand Respondents

- The most used skills (landscape assessment, historic map/plan analysis) were also more likely to be associated with some formal training as well as more on-the-job training, and were two of the highest training priorities.
- Landscape architecture and curtilage analysis were the second most-used skills and also amongst the training priorities.

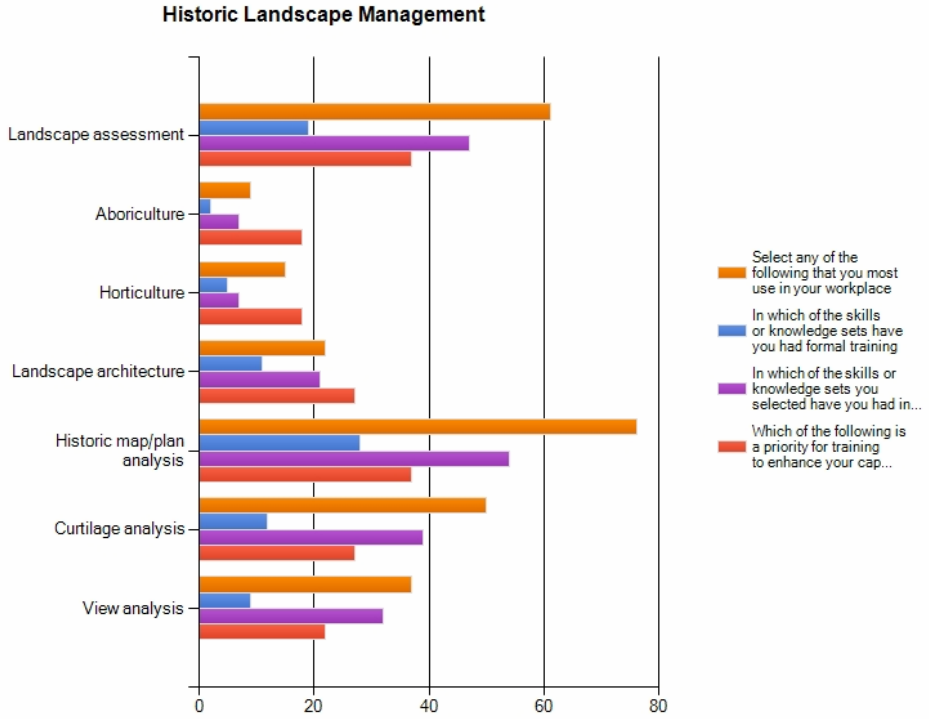


Figure 4.23 Keyword responses (Section B)—historic landscape management (Australia).

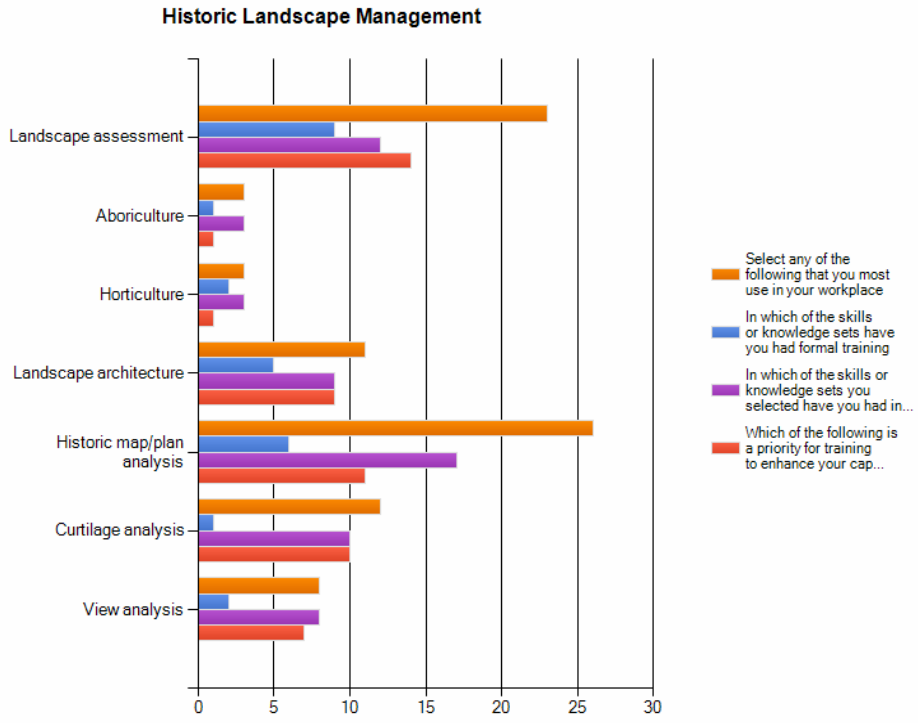


Figure 4.24 Keyword responses (Section B)—historic landscape management (Aotearoa/New Zealand).

4.5.8 Legislation and Policy

The keyword skills included under 'legislation and policy' relate to the use and therefore knowledge of various legislation and policy that governs and frames professional heritage management in Australia and Aotearoa/New Zealand, which is reflected in the large number of respondents to this section.

Australian Respondents (159 Respondents)

Skills Most Used

1. State heritage legislation (141)
2. Burra Charter (145)
3. State planning legislation (112)

Priority Areas for Further Training

1. State heritage legislation (40)
2. Aboriginal heritage (39) and Burra Charter (39)
3. State planning legislation (37)

Aotearoa/New Zealand Respondents (45 Respondents)

Skills Most Used

1. *Historic Places Act* (NZ) (28)

2. *Resource Management Act* (NZ) (24)
3. Building Codes (19)

Priority Areas for Further Training

1. *Historic Places Act* (NZ) (14)
2. *Resource Management Act* (NZ) (13)
3. International agreements and conventions (10)

Skills Training—Formal or Informal

There is a similar pattern to the other section or sub-disciplines, except archaeology, with informal or on-the-job training receiving a far larger number of responses than formal training. For the more recent legislation such as the EPBC Act and the building codes this may reflect the age of the respondents to the survey, over 60% of Australian respondents having completed their formal training prior to 2000.

The NZ Respondents have for most sections of the question undertaken informal or on-the job training. Areas in which respondents have undertaken formal training include the *Resource Management Act* (NZ), OH&S requirements and the Burra Charter.

Findings/Issues

Australian Respondents

- Although identified as skills 'most used', the number of responses for 'priority for training' in 'state heritage legislation', 'Burra Charter', 'state planning legislation' or 'OH&S requirements' is relatively low. Once legislation or policy has been learnt—on-the-job or formally—there will not be a need for up grading knowledge of the legislation or policy unless it changes or new legislation is introduced, at which point it is likely to become a priority.
- The overall number of responses to 'natural heritage legislation' and 'Aboriginal heritage legislation' is low compared to most other keyword skills in this section, while the priority for training for both is relatively high.

Aotearoa/New Zealand Respondents

- During the course of the survey the keyword breakdown in this section was altered slightly to better reflect the NZ Context. It seems that some respondents undertook the survey before this occurred and this may have slightly skewed the results.

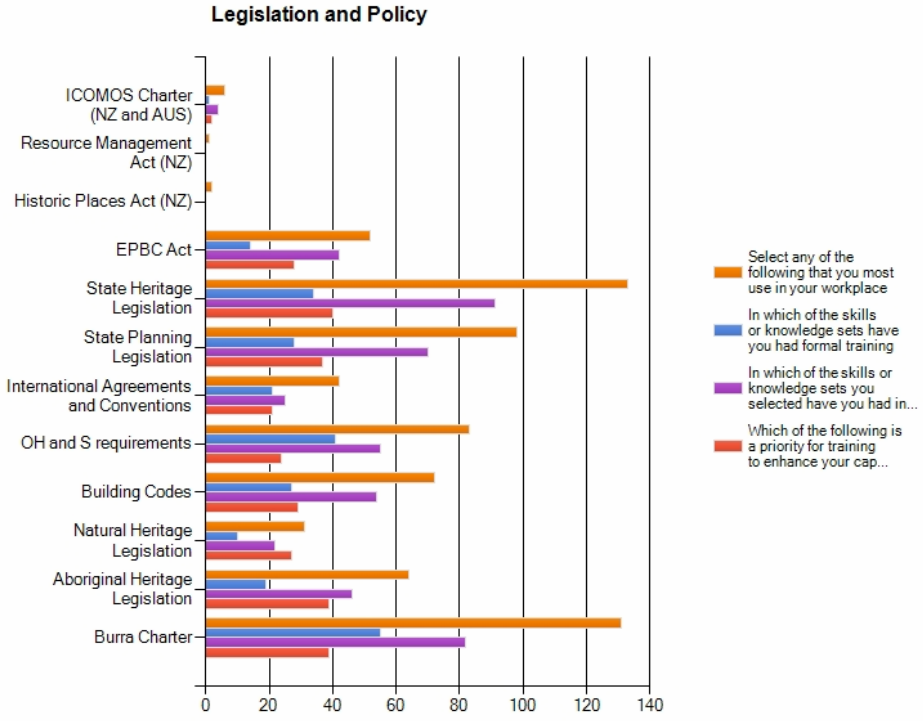


Figure 4.25 Keyword responses (Section B)—legislation and policy (Australia).

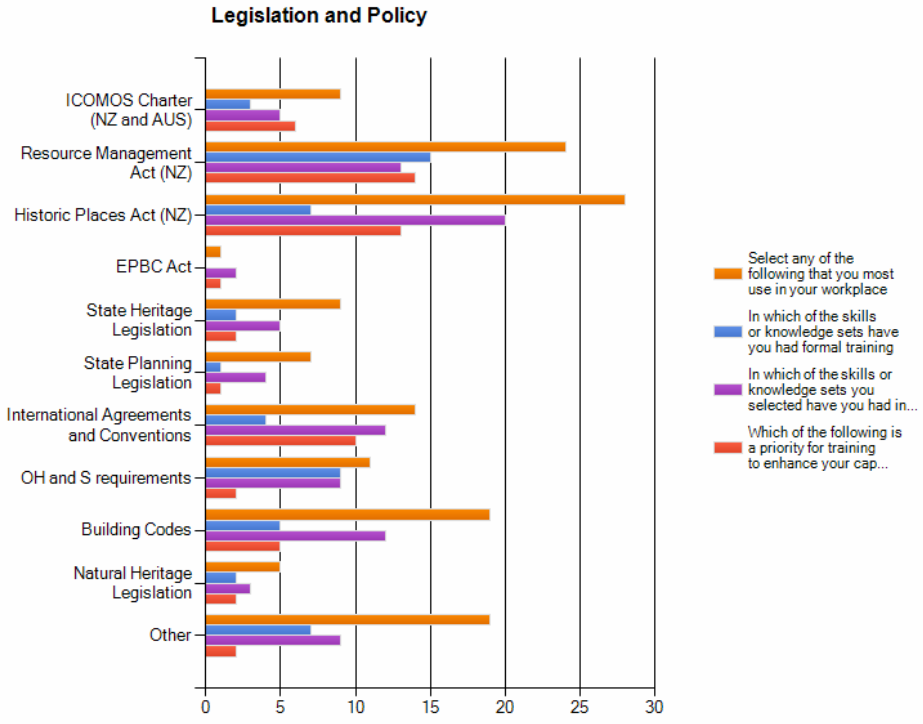


Figure 4.26 Keyword responses (Section B)—legislation and policy (Aotearoa/New Zealand).

4.6 Representatives of a Heritage Agency, Institution or Private Company (Section C)

Against each keyword (see Table 4.1) people responding on behalf of a heritage agency, company or organisation were asked to identify the:

- skills that are most used by the heritage agency, company or organisation they represent;
- skills they consider lacking in their agency, company or organisation; and
- skills that they see as a priority for staff training in future.

Number of Australian Respondents/Section	
Physical conservation	21
Recording	24
Management	24
Consultation	23
Interpretation	21
Archaeology	14
Historic landscape	16
Legislation and policy	24

Number of Aotearoa/New Zealand Respondents/Section	
Physical conservation	10
Recording	14
Management	16
Consultation	14
Interpretation	12
Archaeology	9
Historic landscape	8
Legislation and policy	12

Note: In general, in Section C the number of responses to individual keywords is small, limiting the interpretation of results. The findings of the survey should be seen in this light.

4.6.1 Physical Conservation

Australian Respondents (21 Respondents)

Skills Most Used in your Institution

1. Architectural analysis (17)
2. Paint analysis (11)
3. Painting and decorating (9) and roofing (9)

Skills Lacking in your Institution

1. Bricklaying (5), plastering (5), glass conservation/replacement (5) and roofing (5)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Architectural analysis (10)
2. Stone masonry (7) and carpentry (7)

Aotearoa/New Zealand Respondents (10 Respondents)

Skills Most Used in your Institution

1. Architectural analysis (7)
2. Carpentry (5)
3. Roofing (4)

Skills Lacking in your Institution

1. Mortar analysis (4)
2. Paint analysis (3), traditional tool making/use (3), metalwork/forging/blacksmithing (3) and engineering (3)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Architectural analysis (4)

Findings/Issues

Australian Respondents

- Few respondents indicated that skills in architectural analysis were lacking but a significant number of respondents indicated that this is a priority for future training.
- A number of skills or trades such as ‘glass conservation’, ‘interior finishes’, ‘roofing’ and ‘engineering’ were identified by four or more respondents as lacking but these are not identified as a priority for the future.
- ‘Stone masonry’, ‘carpentry’, ‘mortar analysis’ and ‘joinery’ were identified as both lacking in the organisation and as priority skills for their company or organisation’s staff in future, although it should be noted that the responses to each are small in number.

Aotearoa/New Zealand Respondents

- Thatching and gilding were identified as lacking, but were not identified as priority training areas.
- As in the Australian results, architectural analysis was identified as being commonly used, but lacking—it was also identified as a priority training area.

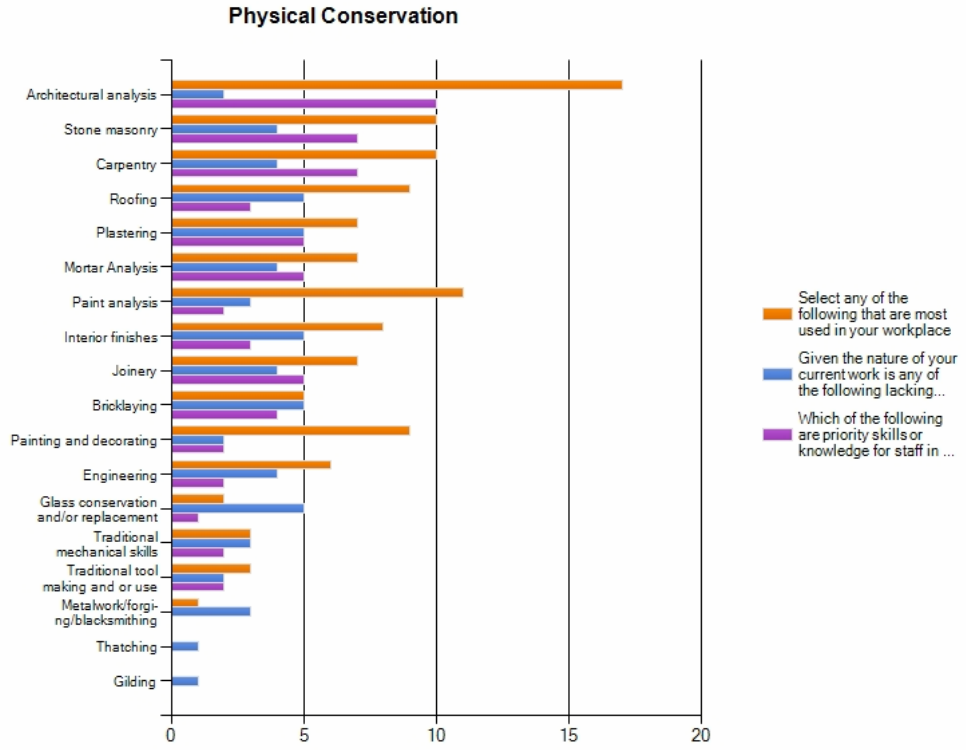


Figure 4.27 Keyword responses (Section C)—physical conservation (Australia).

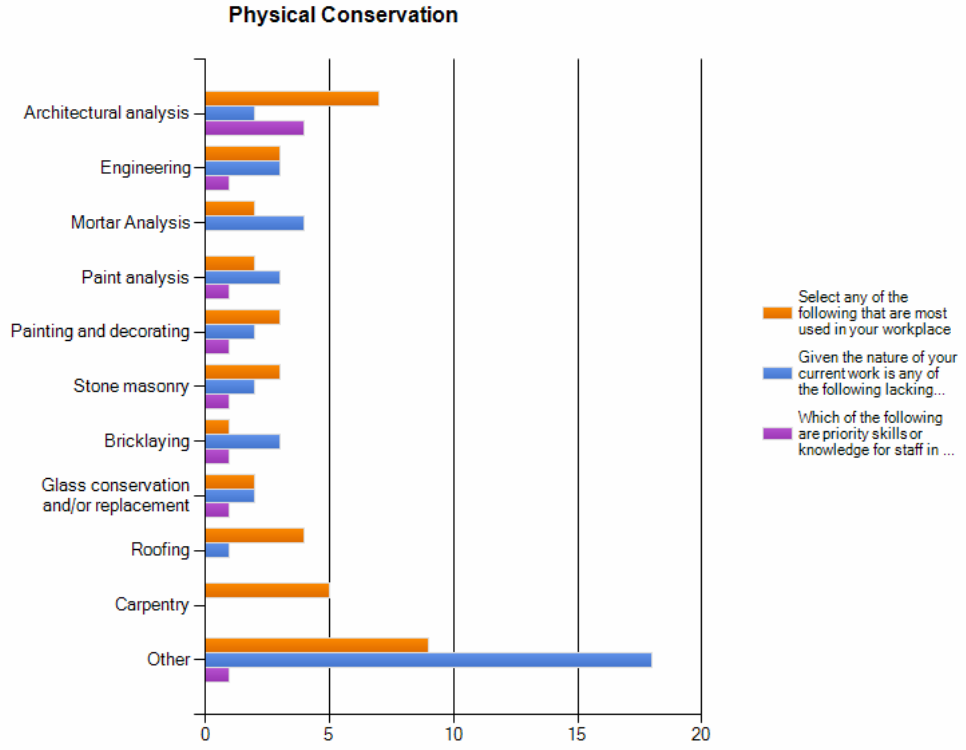


Figure 4.28 keyword responses (Section C)—physical conservation (Aotearoa/New Zealand).

4.6.2 Recording

Australian Respondents (24 Respondents)

Skills Most Used in your Institution

1. Historical research (21)
2. Site survey (20)
3. Photography (19)

Skills Lacking in your Institution

1. GIS (6)
2. Oral history (4), historical research (4) and archival research (4)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Site survey (10) and historical research (10)
2. Data management (9) and archival research (9)

Aotearoa/New Zealand Respondents (14 Respondents)

Skills Most Used in your Institution

1. Historical research (9) and photography (9)
2. Archival Research (8) and site survey (8)
3. Data Management (7) and inventory preparation (7)

Skills Lacking in your Institution

1. GIS (4)
2. Sketching (3), cataloguing (3) and fabric survey (3)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Historical research (8)
2. Archival research (6) and GIS (6)
3. Fabric survey (5)

Findings/Issues

Australian Respondents

- Overall the number of responses identifying skills lacking in the work place is small.
- With the exception of GIS, the priority skills or knowledge for staff in the future are the generic skills identified as most commonly used in the workplace.
- Although the number of responses is low, GIS appears to be both currently lacking and a priority skill for staff in the future.

Aotearoa/New Zealand Respondents

- Although the number of responses is low, GIS, fabric survey and cataloguing appear to be both currently lacking and priority skills for staff in the future.

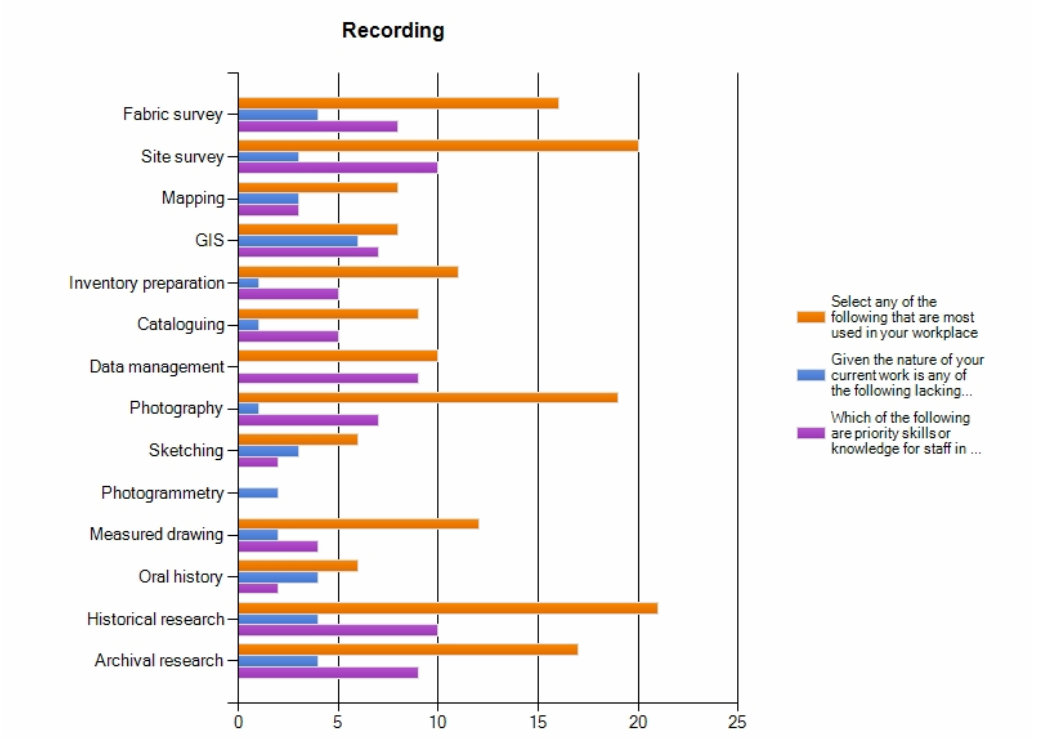


Figure 4.29 Keyword responses (Section C)—recording (Australia).

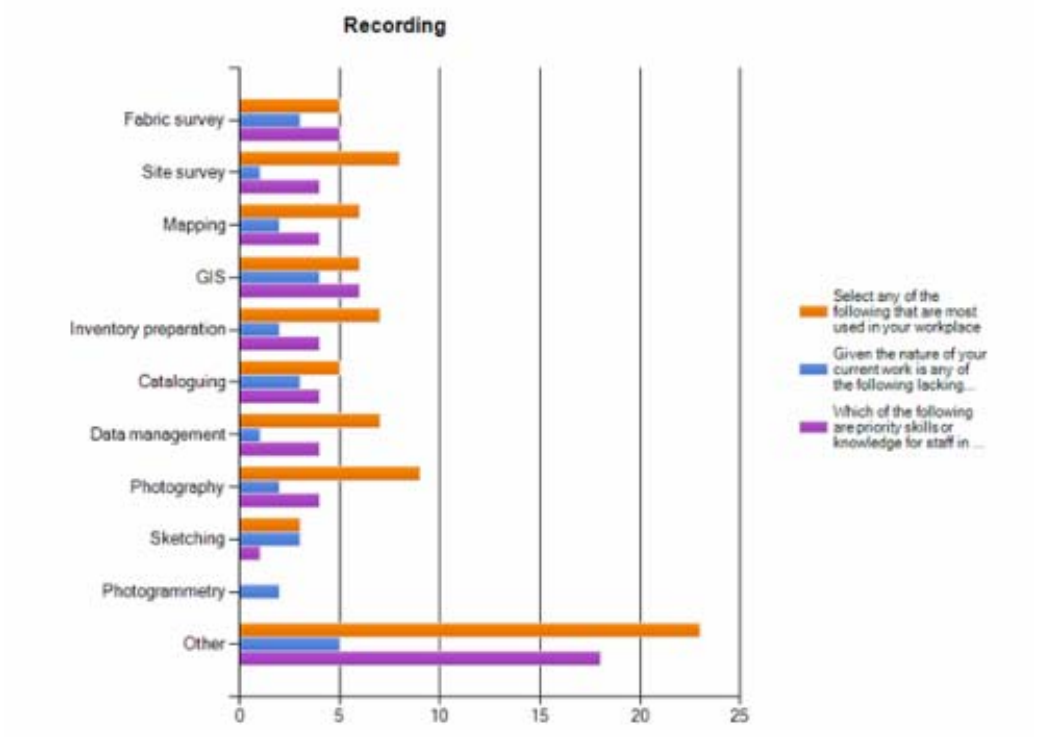


Figure 4.30 Keyword responses (Section C)—recording (Aotearoa/New Zealand).

4.6.3 Management

Australian Respondents (24 Respondents)

Skills Most Used in your Institution

1. Conservation management planning (21) and significance assessment (21)
2. Legislative compliance (19) and conservation strategy (19)

Skills Lacking in your Institution

All keyword skills received ≤5 responses to this question

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Conservation management planning (13)
2. Significance assessment (11) and conservation strategy (11)
3. Legislative/statutory context (10)

Aotearoa/New Zealand Respondents (16 Respondents)

Skills Most Used in your Institution

1. Significance assessment (21), issues analysis (9) and legislative/statutory context (9)
2. Policy development (8) and conservation management planning (8)
3. Legislative compliance (7) and risk management (7)

Skills Lacking in your Institution

1. Conservation strategy (5)
2. Risk management (4)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Significance assessment (7)
2. Risk management (5), issues analysis (5), conservation strategy (5) and conservation management planning

Findings/Issues

Australian Respondents

- There are relatively fewer responses to 'skills lacking' in the management section that in any other section.
- The generic skills in 'significance assessment', 'conservation management planning', 'conservation strategy' and 'legislative statutory context' stand out as priority knowledge or skills for staff in future.

Aotearoa/New Zealand Respondents

- Significance assessment received only one response as a skill that is lacking, but received the highest number of responses for priority future training—a strange anomaly.

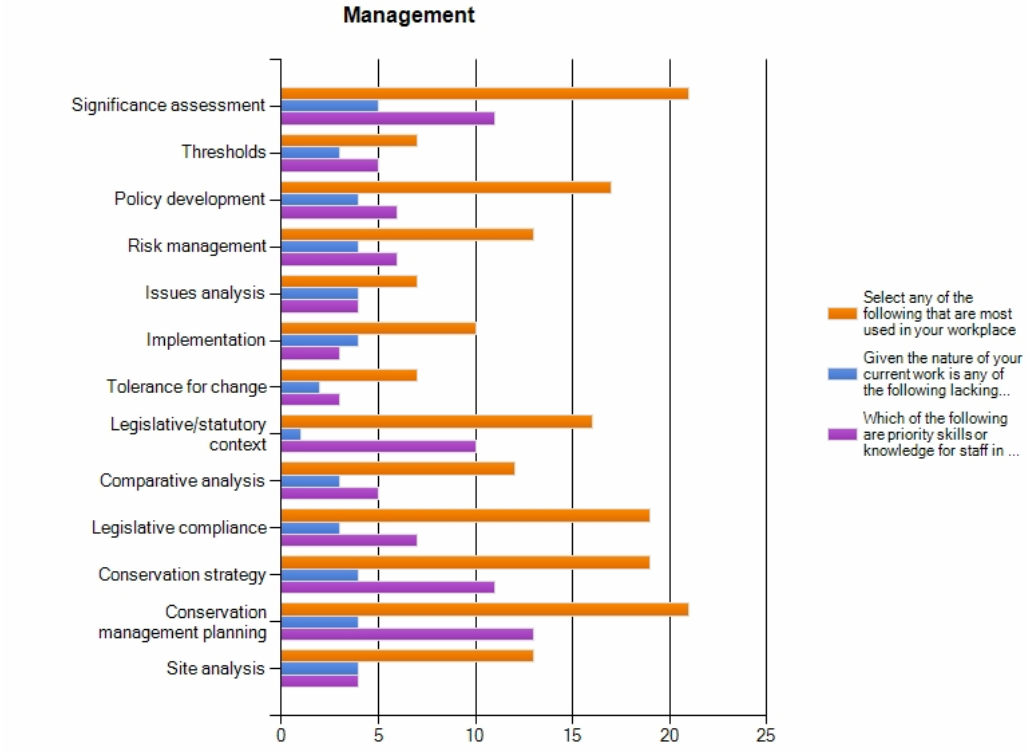


Figure 4.31 Keyword responses (Section C)—management (Australia).

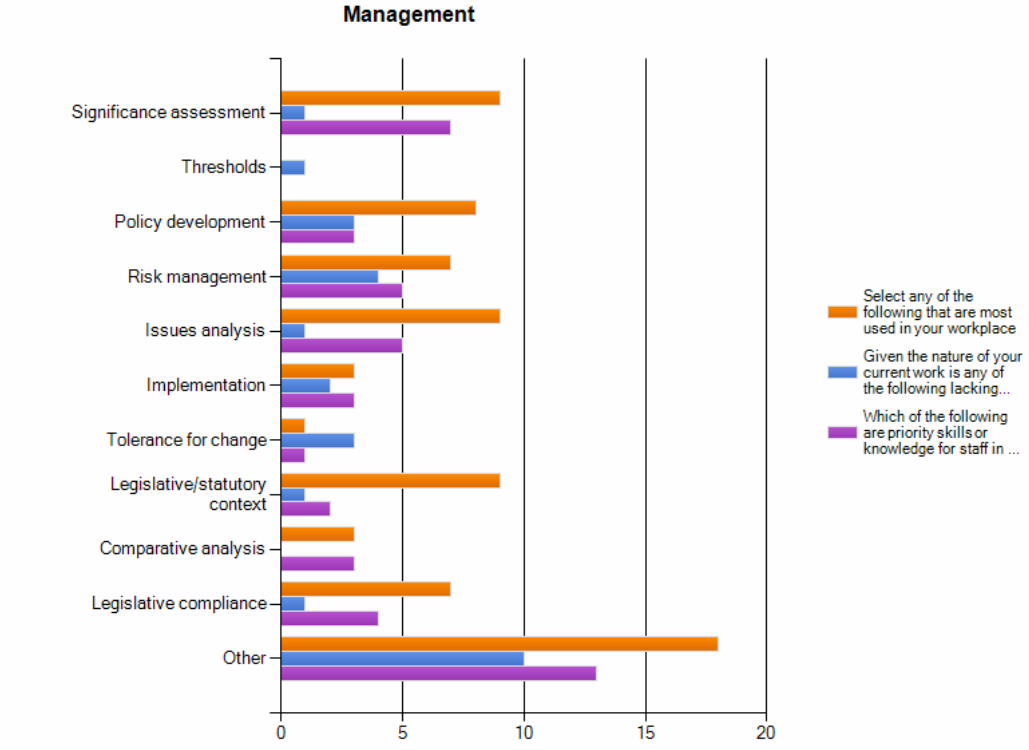


Figure 4.32 Keyword responses (Section C)—management (Aotearoa/New Zealand).

4.6.4 Consultation

Australian Respondents (23 Respondents)

Skills Most Used in your Institution

1. Stakeholder engagement (18)
2. Recording information (15)
3. Public speaking (11) and survey development and analysis (11)

Skills Lacking in your Institution

1. Public speaking (6)
2. Plain English publication (5)
3. Survey development and analysis (4)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Stakeholder engagement (11)
2. Plain English publication (10)

Aotearoa/New Zealand Respondents (14 Respondents)

Skills Most Used in your Institution

1. Stakeholder engagement (10) and public speaking (10)
2. Recording information (7)

Skills Lacking in your Institution

1. Survey development and analysis (6)
2. Plain English publication (2)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Survey development and analysis (7)
2. Stakeholder engagement (7)

Findings/Issues

Australian Respondents

- Skills in plain English publication appear to be a priority for future staff, albeit in a relatively small number of respondents

Aotearoa/New Zealand Respondents

- Skills in survey development and analysis are identified as lacking and of high priority for future training.

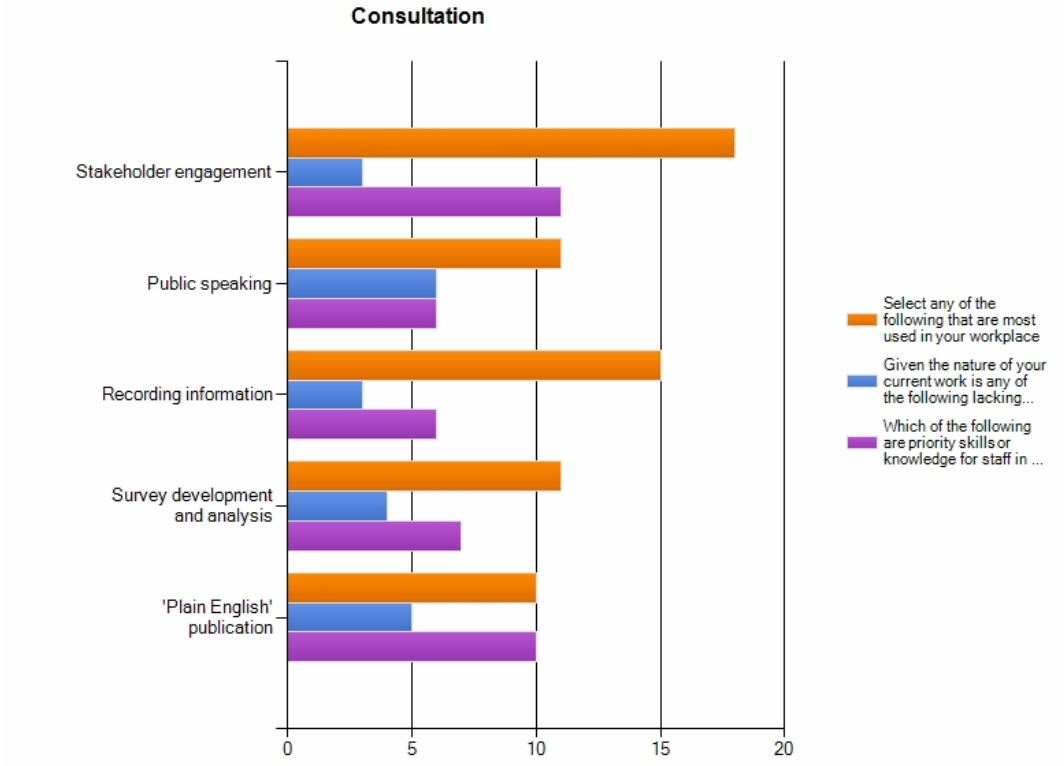


Figure 4.33 Keyword responses (Section C)—consultation (Australia).

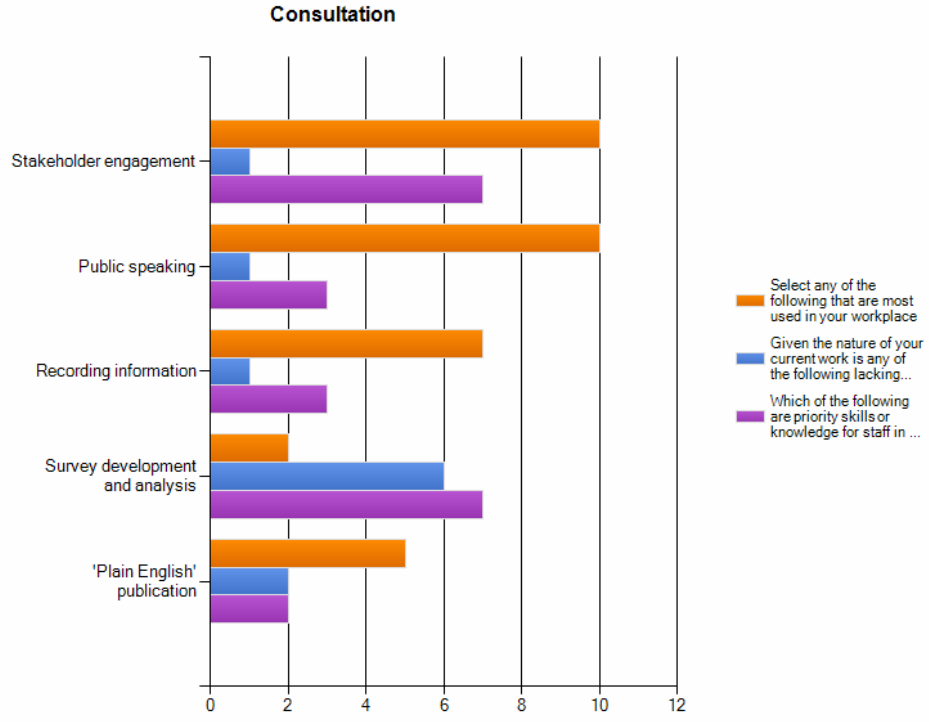


Figure 4.34 Keyword responses (Section C)—consultation (Aotearoa/New Zealand).

4.6.5 Interpretation

Australian Respondents (21 Respondents)

Skills Most Used in your Institution

1. Communication skills (17)
2. Interpretation strategies/plans (15)
3. Historical themes (11) and content development (11)

Skills Lacking in your Institution

1. Multimedia (5) and audience analysis (5)
2. Visitor management (4)

Remainder ≤3

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Interpretation strategies/plans (10)
2. Communications skills (9) and multimedia (9)

Aotearoa/New Zealand Respondents (21 Respondents)

Skills Most Used in your Institution

1. Communication skills (11)
2. Multimedia skills (7) and visitor management (7)
3. Content development (6) and interpretation strategies/plans (6)

Skills Lacking in your Institution

1. Audience analysis (3)
2. Interpretation strategies/plans (3)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Interpretation strategies/plans (4)
2. Communications skills (4)

Findings/Issues

Australian Responses

- The number of responses that identify 'visitor management' and 'audience analysis' as priority skills for staff in future is higher than for skills 'most used'.

Aotearoa/New Zealand Respondents

- The highest number of respondents identified 'communication skills' as the most commonly used in their workplace, and there is no identification of a lack in this area—although it also received the highest number of responses for priority future training

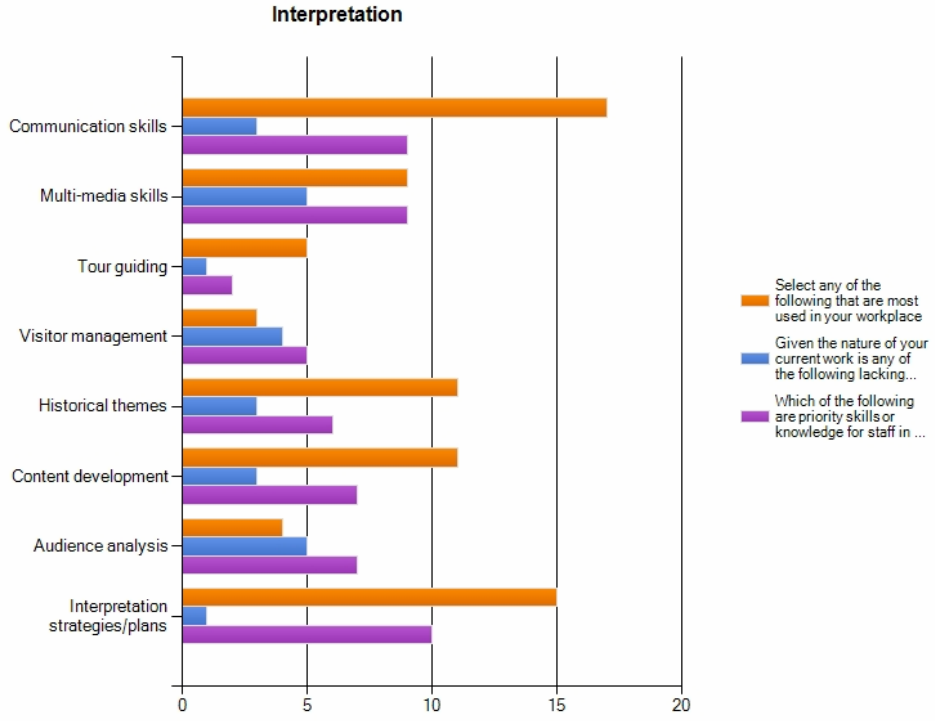


Figure 4.35 Keyword responses (Section C)—interpretation (Australia).

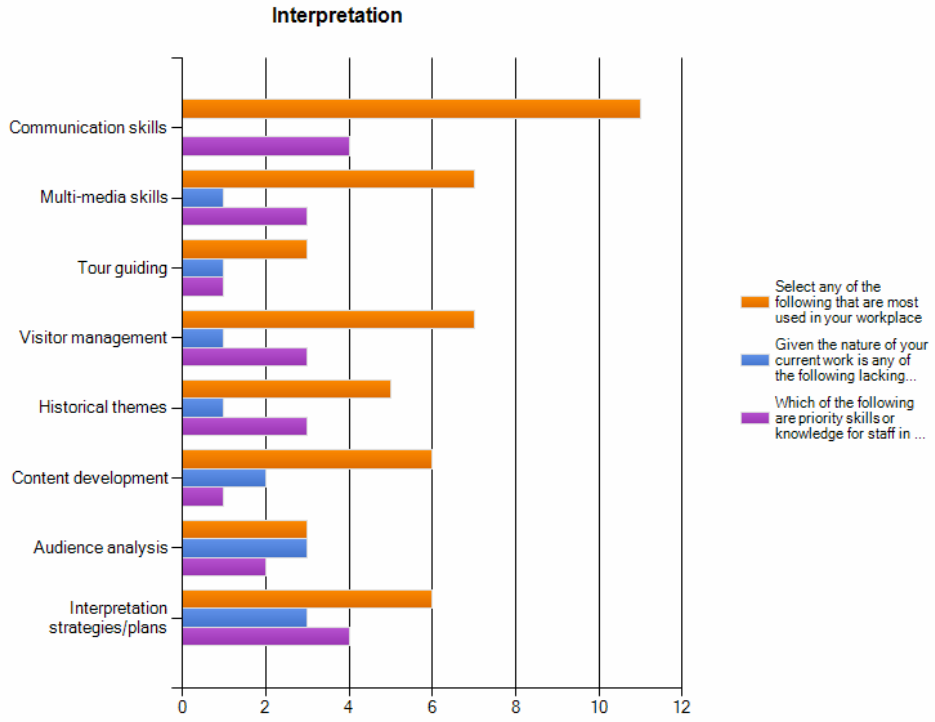


Figure 4.36 Keyword responses (Section C)—interpretation (Aotearoa/New Zealand).

4.6.6 Archaeology

Australian Respondents (14 Respondents)

Skills Most Used in your Institution

1. Permit applications (9)
2. Report writing (6) and archaeological site survey (6)
3. Research design (5) and artefact analysis (5)

Skills Lacking in your Institution

1. Archaeological excavation (6)
2. Archaeological site survey (5), artefact analysis (5) and artefact conservation (5)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Artefact analysis (6)
2. Research design (4)

Remainder ≤3

Aotearoa/New Zealand Respondents (9 Respondents)

Skills Most Used in your Institution

1. Permit applications (6)
2. Report writing (5)
3. Archaeological site survey (4)

Skills Lacking in your Institution

1. Archaeological site survey (3)
2. Archaeological excavation (2)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Archaeological site survey (3)
2. Archaeological excavation (3)
3. Report writing (2)

Findings/Issues

Australian Respondents

- Artefact analysis was seen as a priority skill for future staff by more respondents than any other archaeological skill included in this section.

Aotearoa/New Zealand Respondents

- Archaeology received the second lowest number of responses from NZ respondents and therefore the data is difficult to extrapolate.

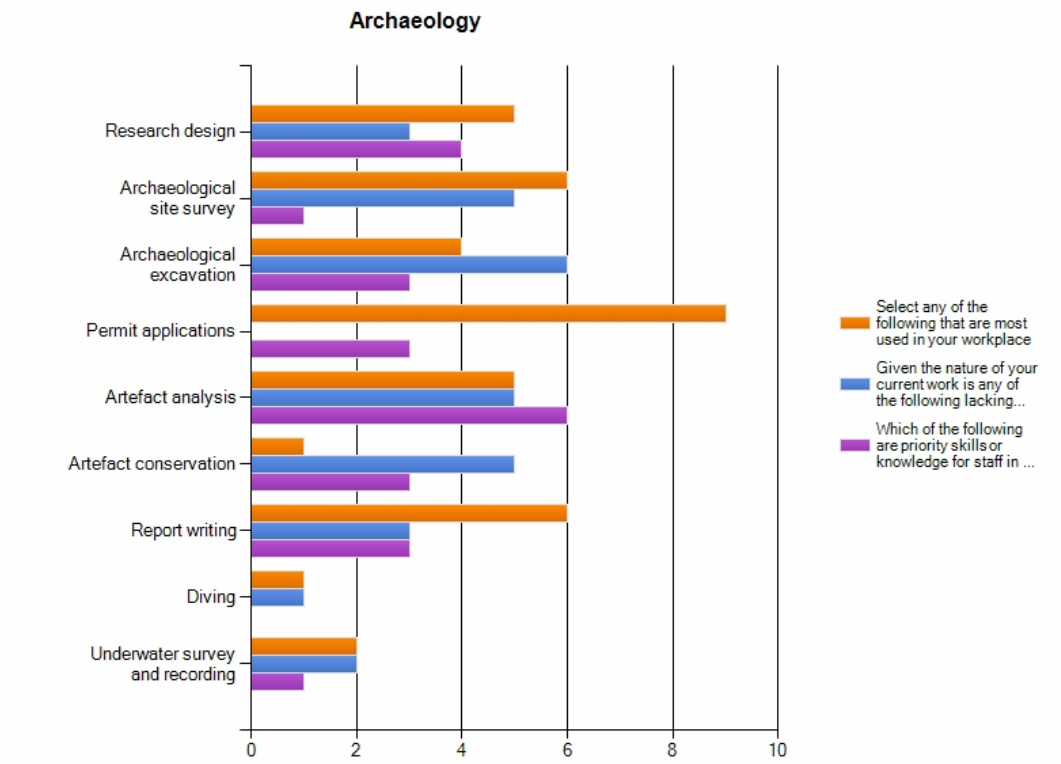


Figure 4.37 Keyword responses (Section C)—archaeology (Australia).

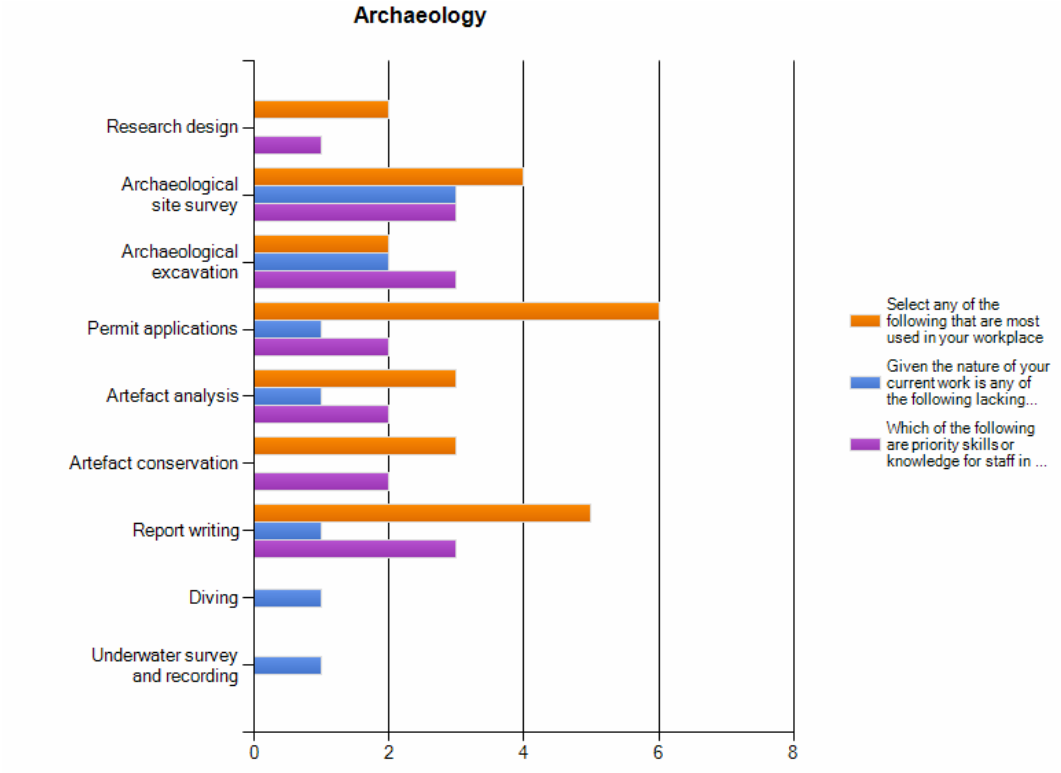


Figure 4.38 Keyword responses (Section C)—archaeology (Aotearoa/New Zealand).

4.6.7 Historic Landscape Management

Australian Respondents (16 Respondents)

Skills Most Used in your Institution

1. Curtilage analysis (13)
2. Landscape assessment (11)
3. Historic map/plan analysis (10)

Skills Lacking in your Institution

1. Landscape assessment (7)
2. Landscape architecture (5) and view analysis (5)

Aotearoa/New Zealand Respondents (8 Respondents)

Skills Most Used in your Institution

1. Landscape assessment (4), curtilage analysis (4) and historic map/plan analysis (4)
2. Landscape architecture (5) and view analysis (5)

Skills Lacking in your Institution

2. Landscape architecture (5) and view analysis (5)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. Landscape architecture (4)
2. Landscape assessment (3)
3. Historic map/plan analysis (2)

Findings/Issues

Australian Respondents

- Responses indicate skills in landscape assessment are both currently lacking and a priority for future staff.

Aotearoa/New Zealand Respondents

- As with 'archaeology' the low number of responses to this section makes the data difficult to analyse.

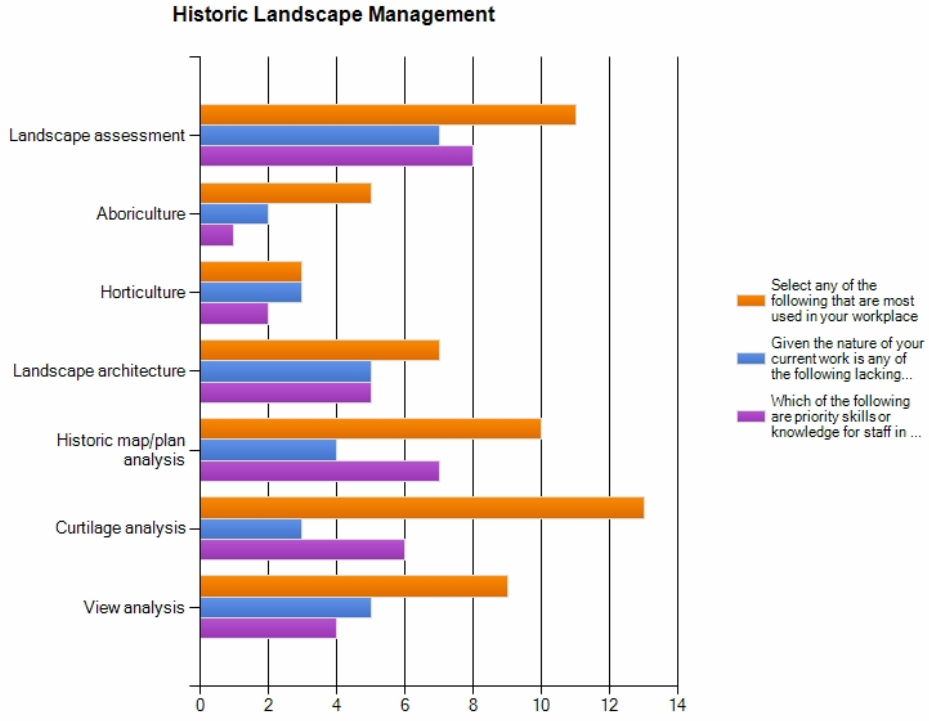


Figure 4.39 Keyword responses (Section C)—historic landscape management (Australia).

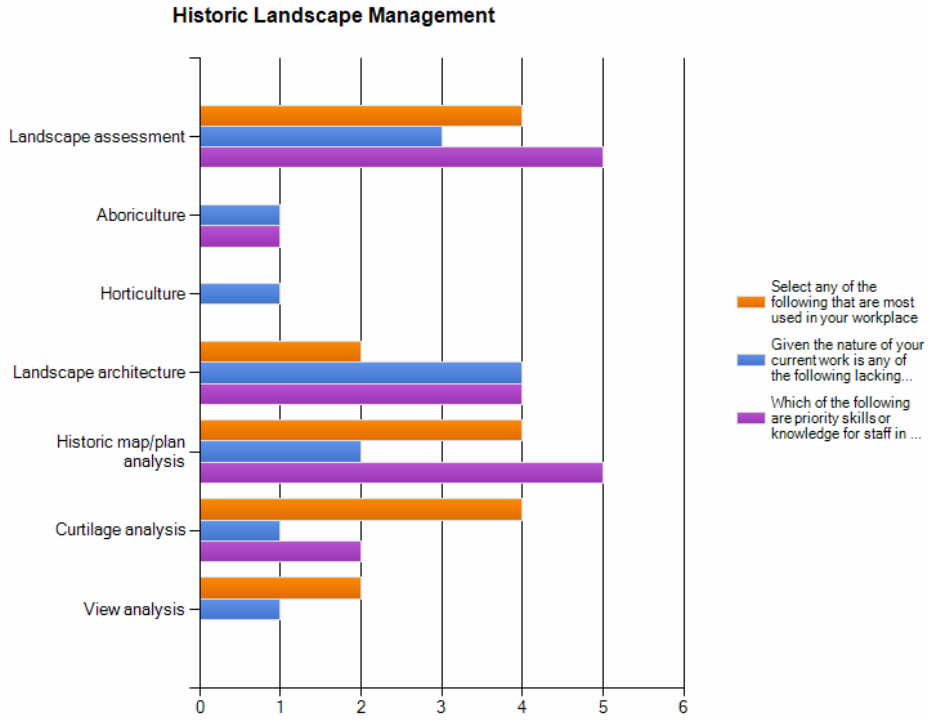


Figure 4.40 Keyword responses (Section C)—historic landscape management (Aotearoa/New Zealand).

4.6.8 Legislation and Policy

Australian Respondents (24 Respondents)

Skills Most Used in your Institution

1. State heritage legislation (22)
2. Burra Charter (21)
3. State planning legislation (19)

Skills Lacking in your Institution

All ≤4

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. State heritage legislation (14)
2. Burra Charter (11)
3. State planning legislation (9)

Aotearoa/New Zealand Respondents (12 Respondents)

Skills Most Used in your Institution

1. *Historic Places Act* (NZ) (11)
2. *Resource Management Act* (NZ) (8) and building codes (8)
3. ICOMOS Charter (NZ) (5)

Skills Lacking in your Institution

1. Building codes (2)

Priority Skills or Knowledge for Staff in your Workplace Now and/or in the Near Future

1. *Historic Places Act* (NZ) (6)
2. *Resource Management Act* (NZ) (5) and building codes (5),
3. Burra Charter (3)

Findings/Issues

Australian Respondents

- The generic keyword skills or knowledge of state legislation and the Burra Charter in this section are most used and are not lacking in the organisations or companies but are still considered priorities for future staff.

Aotearoa/New Zealand Respondents

- Top ranking skills identified in the 'most used' section of this question matched those identified for priority future training, demonstrating that although the skills are used commonly, the industry is keen for further training in these areas.

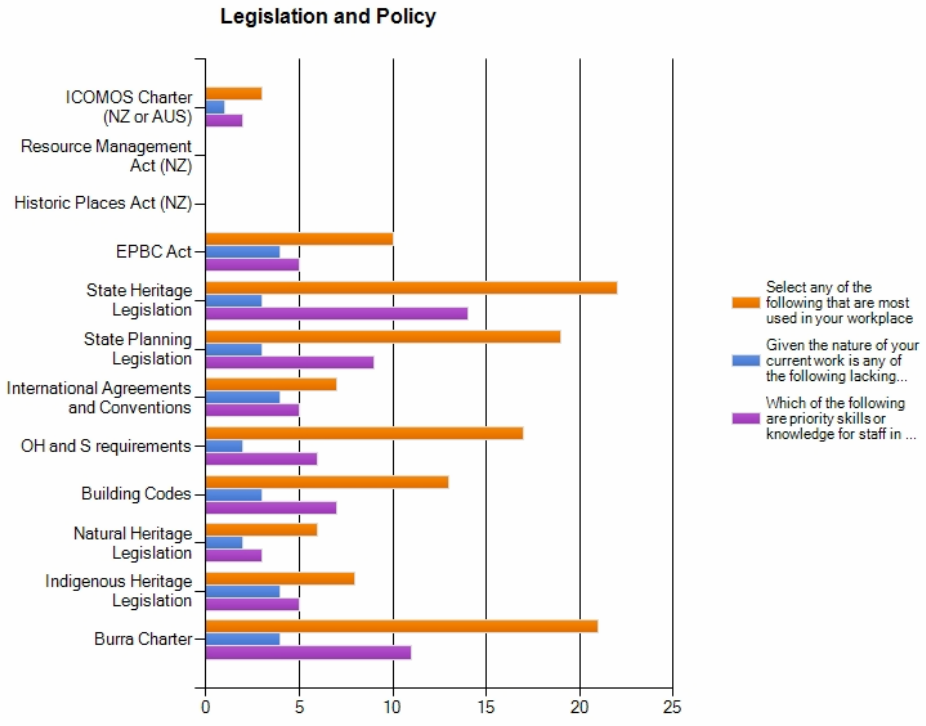


Figure 4.41 Keyword responses (Section C)—legislation and policy (Australia).

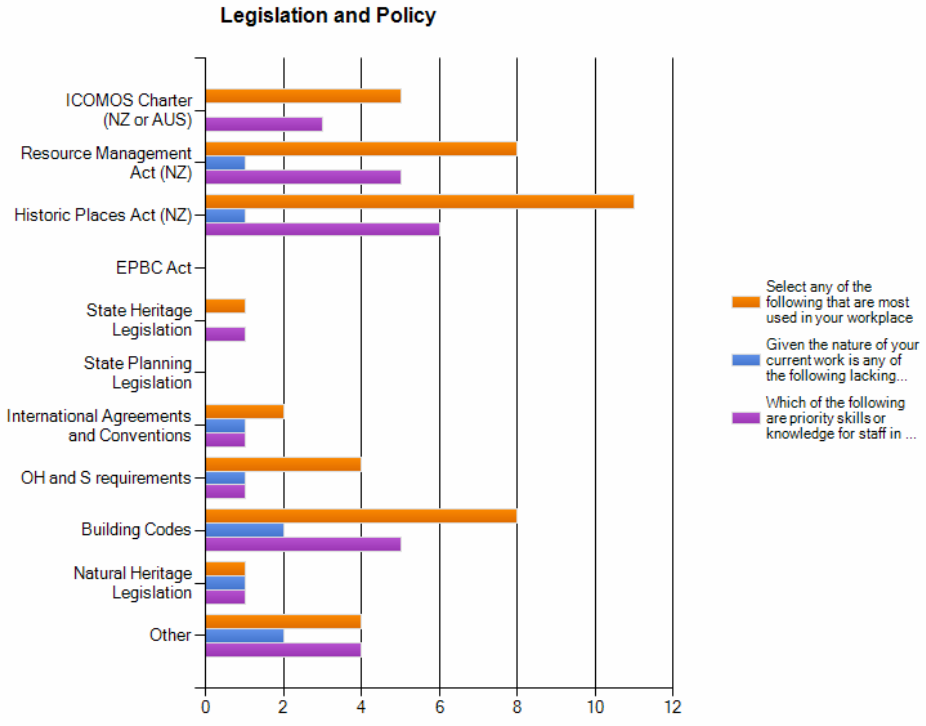


Figure 4.42 Keyword responses (Section C)—legislation and policy (Aotearoa/New Zealand).

5.0 Physical Conservation Supplementary Surveys: Summary and Analysis of Results

5.1 Background

Following the initial Skills Needs Analysis survey (see Section 4.0) the project team received representations from key stakeholders in the heritage industry who felt the survey did not adequately address the diversity of skills and knowledge that may be considered within 'physical conservation' and that the results of this survey may therefore not provide a clear picture of the conservation skills and knowledge in use in Australia or current or future skills needs.

The experiences of these stakeholders and anecdotal evidence within the heritage industry suggested that in Australia there is a growing lack of people with specialist skills in physical conservation and a need for training in traditional trades commonly used in the conservation of traditional buildings and structures.

However, this need was not reflected in the findings of the Skills Needs Analysis which indicated training in specialist skills or trades required in physical conservation was not a priority. Given that only 14 respondents to the Skills Needs Analysis identified themselves as tradespeople; it seemed likely that the initial survey had not reached many people working in trades such as plastering and woodwork who are involved in work on traditional buildings and structures.

To ensure that the industry as a whole—and its training needs—is represented in the study, two supplementary targeted surveys were developed by Steering Committee in consultation with a group of experienced practitioners and professionals. The surveys are based on models successfully used in the United Kingdom, and aim to assess the skills and needs in professional physical and technical conservation and in heritage trades. The data generated by these surveys is not directly comparable with that of the Skills Needs Analysis survey.

These targeted surveys were sent to recipients identified by the reference group and included heritage professionals, individual tradespeople, organisations or companies working in the physical conservation of traditional buildings and structures. Because of time and resource constraints, the supplementary surveys were mostly targeted at those based in NSW and Victoria.

Survey 1. Professional Physical and Technical Conservation Survey was intended for specifiers of works to traditional buildings and structures such as architects and structural engineers.

Survey 2. Trades Physical and Technical Conservation Survey, was intended for those involved in physical construction works (eg trades, builders and building company project managers). Along with those people identified by the Steering Committee and reference group this survey was also forwarded to the Master Builders Association of NSW who sent it out to their membership, significantly increasing the number of respondents to this survey.

Both surveys are similarly structured to provide information about the respondents location and type of work and/or profession; details of their training and experience; the size and type of business in which they work; issues in recruitment of staff and staff training; the specialist skills they use in their work and the ease or otherwise of locating people with these skills.

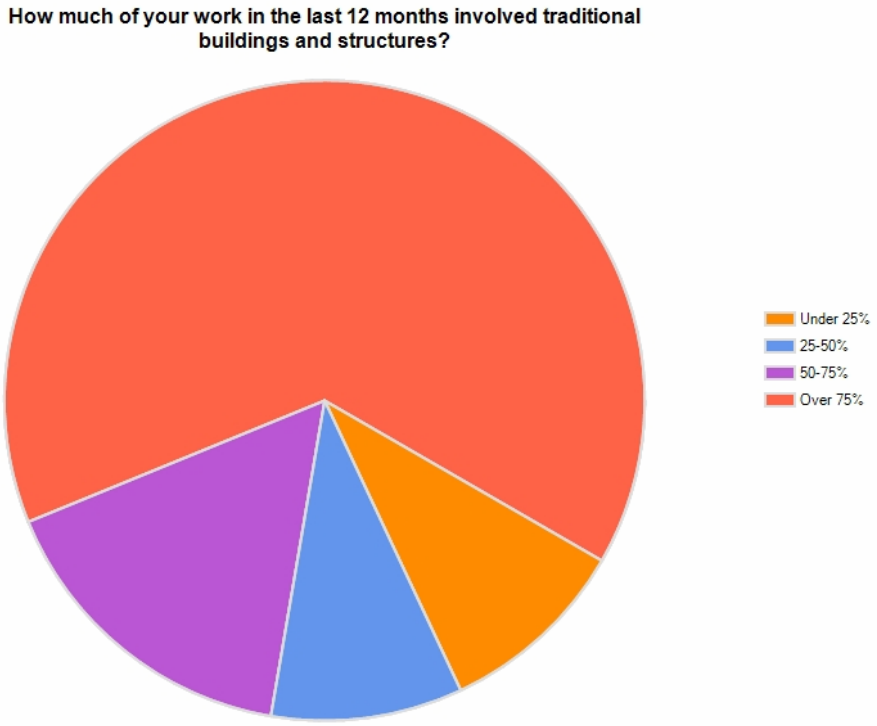
Initial analysis of the survey results included data from all respondents to each survey. At the request of a member of the reference group[1] the analysis was extended to look specifically at the responses of those respondents for who more that 50% of their work is with traditional buildings and structures. A filter was applied to the data to provide this information.

The results each survey are discussed below.

Note: On the advice of the Steering Committee and reference group the term 'traditional buildings and structures' is used in these surveys to denote buildings and structures dating prior to World War II.

5.2 Survey 1: Professional Physical and Technical Conservation Survey

A total of 34 respondents began the survey and 25 (73%) of these respondents indicated that they undertake over 50% of their work on traditional buildings and structures.



No significant differences were identified in the responses of those with more than 50% of their work being on traditional buildings and structures as compared to the respondents as a whole (average variance of 2-4%).

Given this, the results of Survey 1 discussed reflect the total number of respondents unless otherwise stated.

5.2.1 General Observations and Key Issues

- The majority of respondents are from NSW and Victoria and the results of the survey best reflect the situation in these two states. The majority of respondents live and work in capital cities. No responses to Supplementary Survey 1 were received from Aotearoa/New Zealand.
- Half the respondents are over the age of 45, half have been working on traditional buildings and structures for more than 20 year and half completed their formal training over 20 years ago.

Assuming the respondents reflect the range of professionals working in building conservation, then the results of the survey suggest an aging of the profession and a lack of professionals in the 30–45 year age range.

- A large proportion of respondents consider their formal education did not adequately prepare them for work on traditional buildings and structures and most consider that their skills in this area were learnt on 'on the job' (most received formal training more than 20 years ago).
- Almost all those respondents with responsibilities for recruiting staff felt recruits are poorly prepared for work on traditional buildings and structures, pointing to a lack of appropriate training and a missing link between education providers and the industry. The majority of these respondents offer their staff training on average 10-20 days per year; however, almost all found it difficult to access specialist training for their staff owing to cost and lack of availability.
- Qualified people have difficulty in finding people who want to learn their skills, particularly in specialist trades; however, people also noted that specialist 'in service' training is difficult to access.
- In relation to the availability of, and needs for, specific skills referred to in the survey, in general there is a high level of 'in-house' skills and moderate demand for training in key skill areas of physical conservation, while a higher demand is identified in trade skills.

5.2.2 The Respondents

- Of the total respondents, 45% are from NSW (14) and almost 26% are from Victoria (8). The remaining respondents represent all other Australian states except Western Australia and Tasmania. A similar distribution is seen in those respondents who work more than 50% of their time on traditional buildings or structures. 48% are from NSW (13), 28% are from Victoria (7). The remaining five respondents represent all other Australian states except Western Australia and Tasmania.
- 51% of total respondents are undertaking the majority of their work in NSW and almost 28% in Victoria, indicating that the work of nearly all respondents is within the state in which they reside. A similar pattern is evident in the respondents who work more than 50% of their time on traditional buildings or structures.
- 84% of respondents are located in capital cities, 6.5% in rural centres of more than 20,000 and almost 10% in rural areas. Again, a similar pattern is evident in the respondents who work more than 50% of their time on traditional buildings or structures.
- 61% (19) of respondents were between 45-60 years of age. Only one of the respondents was under 30, 25% of respondents were over 60% and just under 10% were aged between 30 and 45 years.
- Over 60% of respondents stated 'architect' as their occupation, with 13% structural engineers and other stating 'other' including consultant, historian and conservator. In the free text responses 29% (9) respondents identified their occupations as: heritage adviser, historian, historian and heritage consultant, writer and conservation advisor, architectural historian, some material conservation, stained glass artist and restorer, building/grounds maintenance, architectural conservator, consultant—materials conservation. Of those respondents who work more than 50%

of their time on traditional buildings or structures, 64% gave 'architect' as their occupation, 8% as 'structural engineer' and 32% stating 'other'.

- The majority of the applicants (61%) have been undertaking work on traditional buildings and structures for over 20 years. Only one respondent had been working on traditional buildings and structures for less than 5 years.
- All respondents had at least an undergraduate degree, with 42% having undertaken postgraduate study and almost 10% with a doctorate. The percentage of respondents who work more than 50% of their time on traditional buildings or structures who have undertaken postgraduate study was slightly higher 48%; however, the percentage who have a doctorate (4%) is lower than for the total number of respondents.
- 53% of both the total number of respondents and the subset of those who work more than 50% of their time on traditional buildings or structures completed their education over 20 years ago.
- Of the 27 respondents who answered question 8—regarding their professional memberships and affiliations 17 were members of ICOMOS, 8 are members of the National Trust, 8 members of the Australian Institute of Architects. 10 respondents are members of Association of Preservation Technology, 3 members of the NSW Technical Advisory Group. Other memberships included the Engineering Heritage Committee, Building Limes Forum, Traditional Paint Forum and the Professional Historians Association.

5.2.3 Training and Experience (31 Respondents)

- Over 77% of respondents indicated that their formal education did not adequately prepare them for work on traditional buildings and structures. Free text additional information confirms that degree courses were not focused on this kind of skill and knowledge development, but on theory and 'modern' or contemporary construction.
- 26 of the 31 respondents (84%) stated that they learnt the majority of their skills 'on the job'
- Almost half of the respondents to this survey had completed the previous heritage training skills needs analysis survey

5.2.4 The Respondents' Businesses (29 Respondents)

- Almost 38% of respondents' business had less than 5 staff members, over 27% had 5-10 staff members, and the remaining percentage (almost 35%) had more than 10 (and up to 50 or more) staff members. For those respondents who work more than 50% of their time on traditional buildings or structures, nearly 44% of their businesses have less than 5 staff members.
- In the case of almost 42% of respondents, fewer than 25% of their staff members undertake work on traditional buildings and structures (as expected this percentage was slightly lower at 30% for those respondents who work more than 50% of their time on traditional buildings or structures). 8 of the 29 respondents (27.6%) said that 75% of their staff undertake work on traditional buildings and structures. 7% of respondents specified that no other staff members (besides them) undertake work on traditional buildings and structures, and 20.7% stated they were sole practitioners.

- Over 82% of respondents stated that their staff obtained their knowledge about traditional buildings and structures informally (on the job, or via colleagues).
- Of the total respondents, 41% stated that more than 75% of their business' work was on traditional buildings and structures, 75% with more than 50% of their work traditional buildings and structures and 17% have under 25% of their work involved traditional buildings and structures. These results reflect the targeted nature of the survey.
- Over 65% of the total respondents anticipate their workload on traditional buildings and structures will remain the same over the next three years and 35% anticipate their workload will increase. For those respondents with more than 50% of their work traditional buildings and structures, 74% of anticipate their workload on traditional buildings and structures will remain the same over the next three years and 26% anticipate their workload will increase. No respondent anticipated a decrease in their workload on traditional buildings and structures.
- 51.7% of respondents stated that the majority of their work on traditional buildings and structures is undertaken in NSW, 28% in Victoria, 13.8% in ACT and Northern Territory (NT) and 10% in QLD and less than 7% in SA and Tasmania (TAS), and 1 respondent answered 'Hong Kong'. No respondents specified undertaking work in New Zealand or WA.
- 93% of respondents work on traditional buildings or structures located in capital cities.

5.2.5 Recruitment and Training (12 Respondents)

Only 12 respondents answered questions in this section as they undertake recruitment and employment of new staff.

- Over 91% believed newer recruits were poorly prepared for work on traditional buildings and structures.
- Over 46% of respondents stated they 'always' have difficulty recruiting staff that are adequately prepared for work on traditional buildings and structures, over 30% said they 'usually' have difficulty and over 15% say they occasionally have difficulty recruiting adequately prepared staff. Only one respondent stated that they 'never' have difficulty recruiting adequately prepared staff.
- When asked how they deal with this difficulty in recruiting adequately prepared staff respondents answers included cyclical recruitment, mentoring and on the job training, upskilling through short courses and seminars and simply not employing new staff.
- 61.5% of respondents stated they had a training strategy in place for their staff and 38.5% stated they did not have a training strategy in place.
- The respondents stated that in the last 12 months they and their staff have undertaken between 1 and 45 days of training. Most respondents stated an average of 10-20 days per year that their staff are participating in training activities (1 firm 45 days, 1 firm 20-30 days, 1 firm 25 days, 3 firms 10 days, 4 firms 2-10 days.)
- Respondents stated that they pass on their knowledge to their employees on a project-by-project basis, through mentoring, site visits, informal discussions/sessions and by recommended reading.

- 90% of respondents stated that they have difficulty locating accessible specialist training for their employees, stating that these courses are expensive, rare and often not repeated.

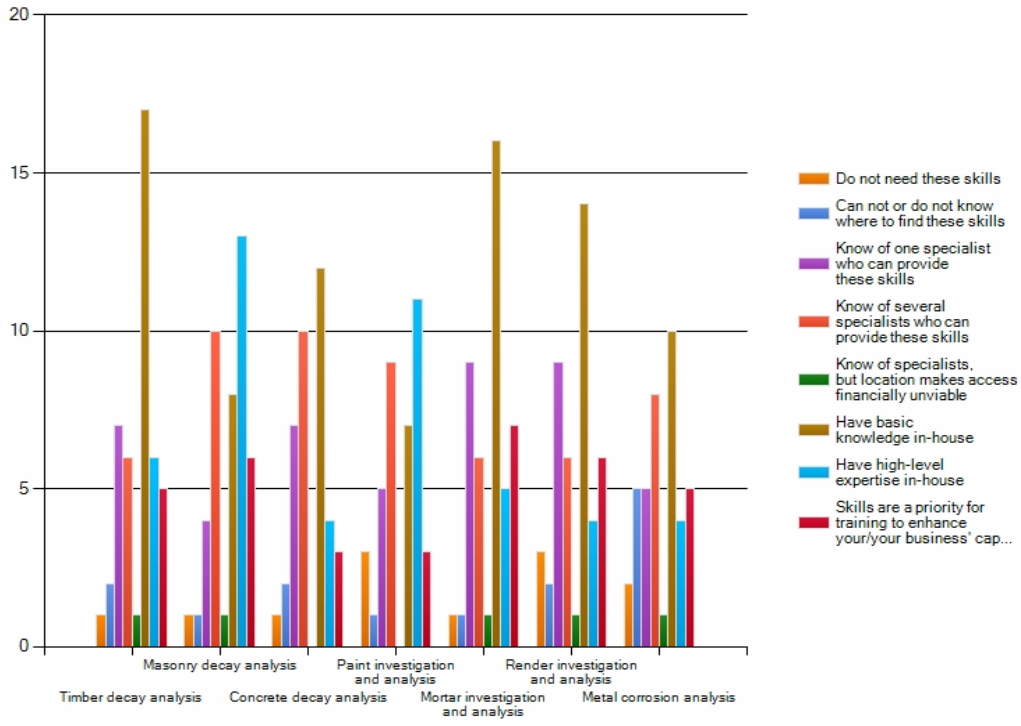
5.2.6 Specialist Skills (27 Respondents)

In this section, respondents were given a list of skills in a matrix asking them to identify if each skill is needed in their work, is easily accessible, is already accessible in their workplace or is a priority for future training.

As noted above, the responses to each question in the Specialist Skills section were very similar, if not identical, regardless of whether the responses are considered in total or the information is filtered to identify only those respondents with more than 50% of their work traditional buildings and structures.

Note: Owing to the small number of respondents, the results in this section are difficult to interpret.

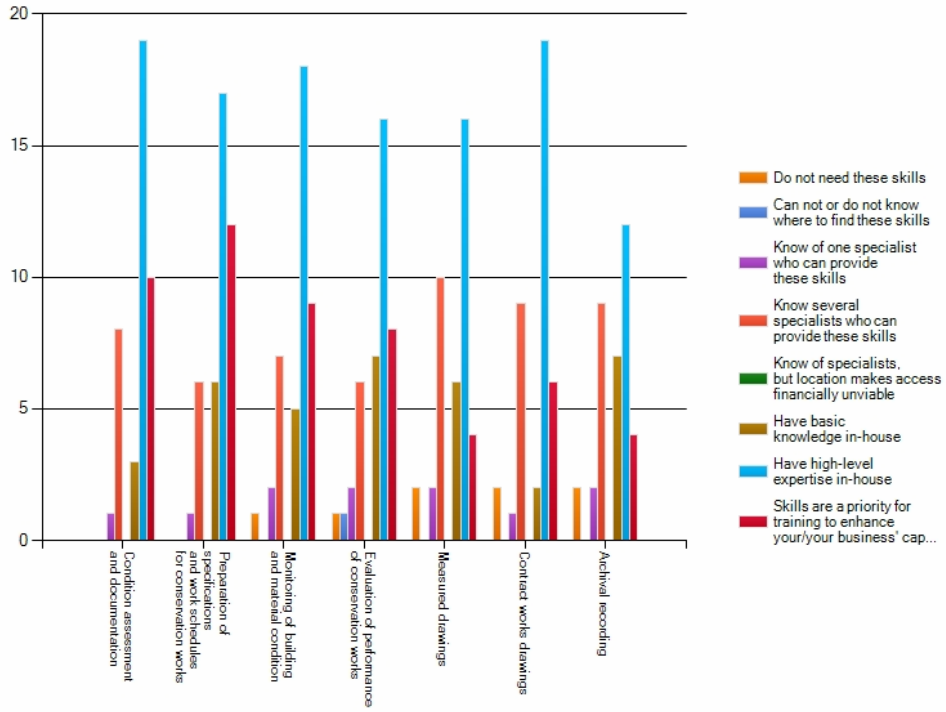
Materials Investigation, Testing, Diagnosis and Analysis



- 63% of respondents have in-house knowledge of timber decay analysis, with 18.5% identifying this as a priority for future training.
- 11.5% of respondents identified that they do not need skills in render or paint investigation and analysis, with 27% and 54% of respondents respectively having these skills in house.
- 19% of respondents can not, or do not know where to find skills in metal corrosion analysis.
- 26% of respondents identified mortar investigation and analysis as a priority for future training.
- The following skill/knowledge areas were identified in the free text responses: close analysis of glass, glass paints, lead calmes and other structural materials would be really useful to have

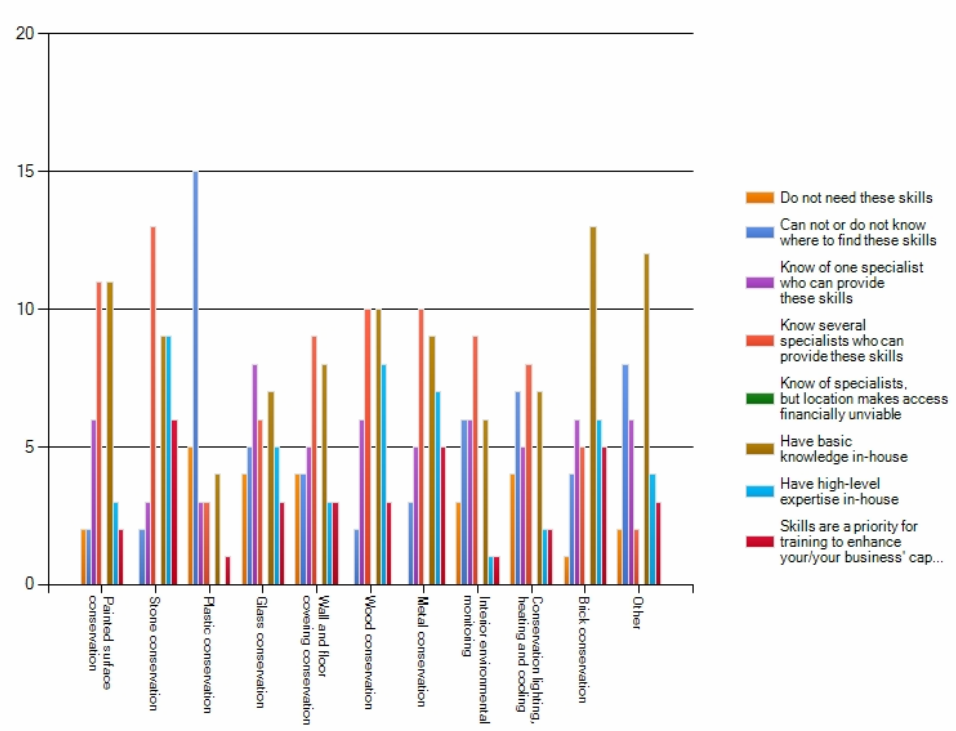
access to metallurgist rather than metals conservator, glass defects, sealant deterioration and waterproof membrane deterioration.

Specification and Documentation



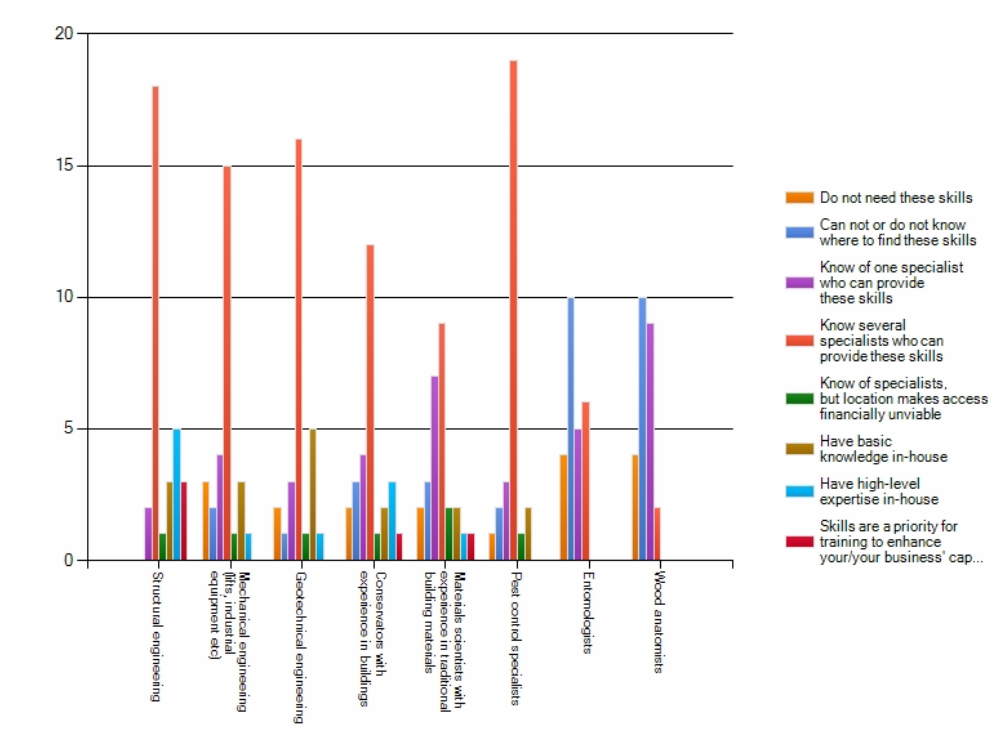
- 70% of respondents have in-house expertise in condition assessment and documentation and contracts works drawings.
- 37% of respondents felt that condition assessment and documentation was a priority for future training.
- 37% of respondents knew several providers who can prepare measured drawings.

Materials Conservation



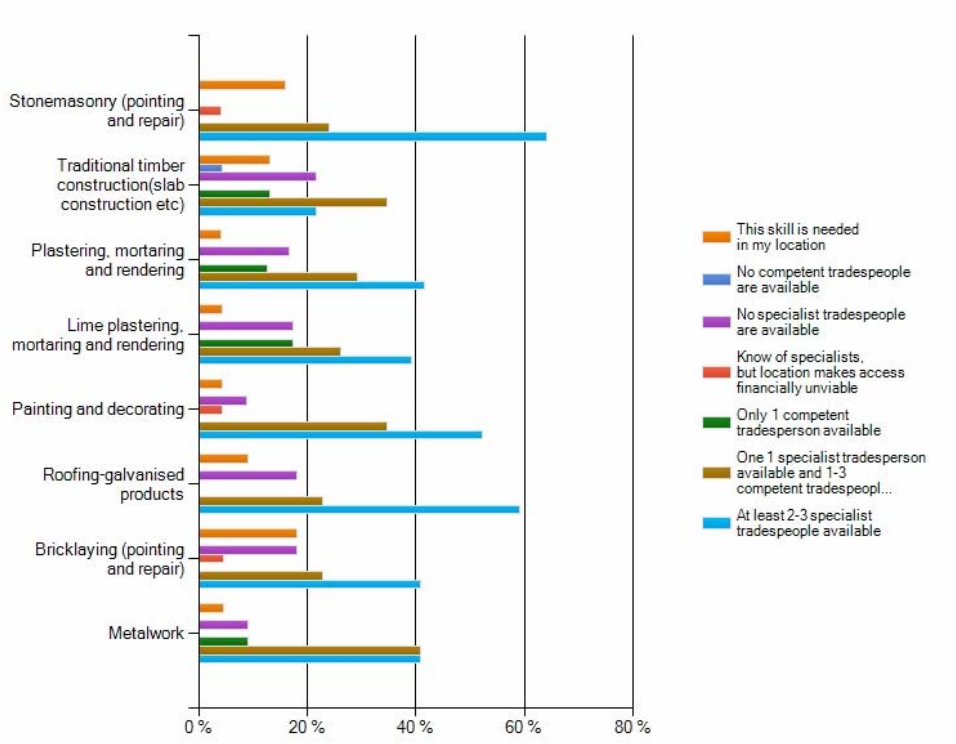
- 19% of respondents stated they do not need skill in plastic conservation, and 15% stated that they do not need skills in wall and floor covering conservation or conservation lighting, heating and cooling.
- Over 40% of respondents knew several specialists who could provide services in painted surface conservation, stone conservation and metal conservation. This figure was slightly higher at 55% in those respondents with more than 50% of their work traditional buildings and structures.
- 39% of respondents had basic level in-house knowledge of wood conservation, with 31% having high level expertise in-house.
- 22.2% of respondents see stone conservation as a priority for future training.

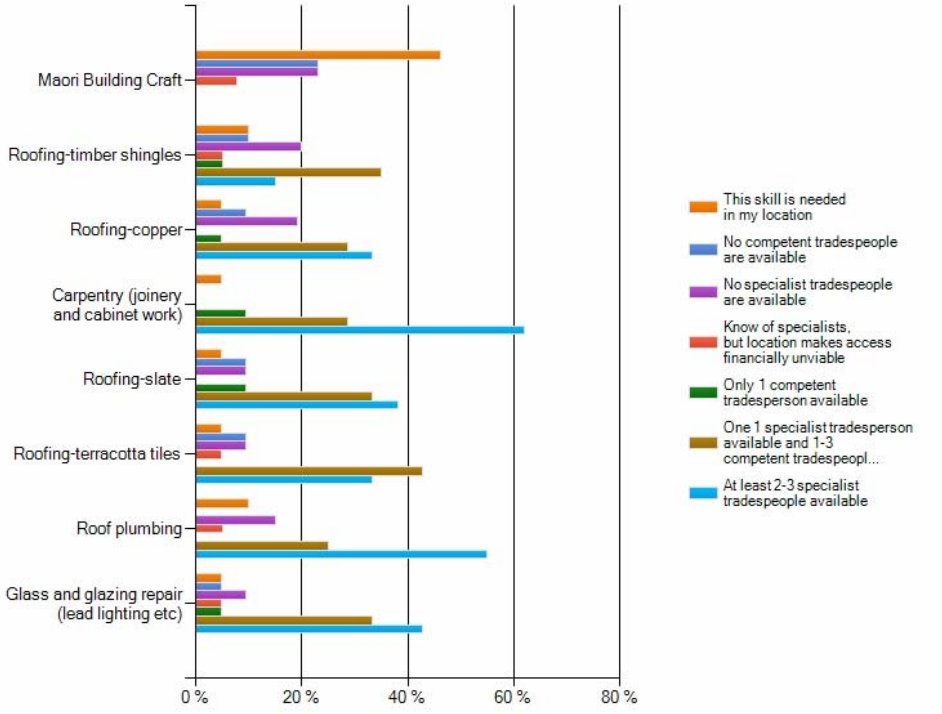
Availability of Other Specialist Skills



- 67% of respondents knew several specialists who could provide service in structural engineering, 56% knew several specialists in mechanical engineering and 62% knew several specialists in geotechnical engineering.
- 11% of respondents identified structural engineering as a priority for future training. Only 5% of those respondents with more than 50% of their work traditional buildings and structures identified structural engineering as a priority for future training.
- 40% of respondents could not, or did not know where to find skills in entomology or wood anatomy.

Heritage Trades





This matrix asked respondents to identify the availability and necessity of heritage trades skills in their location.

- 64% of total respondents know of 3-4 specialists available in stonemasonry, 62% in carpentry and 52% in painting and decorating. Interestingly, only 50% of those respondents with more than 50% of their work traditional buildings and structures knew of 2-3 specialists available in stonemasonry.
- 13% of respondents identified the need for traditional timber construction skills in their location, with 22% of respondents stating there were no tradespeople available to undertake this work in their area.
- 13 respondents stated reasons for their difficulty in locating competent or specialist tradespeople, these included that there is simply not enough qualified people, that those who claim to be qualified lack the appropriate knowledge 'they don't know what they don't know', that as these are only few qualified people, they are very busy and not readily available, location of tradespeople can make accessibility difficult and qualified people come at a high cost.
- When writing specifications for work on traditional buildings and structures, 60% of respondents include requirements to have appropriately qualified specialists be used. Almost 35% state they usually specify the use of specialist tradespeople and 4% only do this occasionally. 71% of respondents with more than 50% of their work traditional buildings and structures include requirements to have appropriately qualified specialists be used. Free-text responses mention requirements to supply evidence of competency, training, past experience and qualifications.
- In stating how they specify these requirements, responses included that a tenderer should demonstrate their experience on similar projects, show previous examples of their work and include recommendations for approval by project architects. One respondent stated the difficulty in specifying the use of a 'specialist' as Australia does not have an accreditation scheme for work of this nature. Free-text comments refer to context dependent specification of traditional materials.
- 68% of respondents answered that they 'usually' specify the use of traditional materials when preparing specification. 24% stated they 'always' specify the use of traditional materials and 12% say they do this 'occasionally'.
- In specifying the use of traditional materials, respondents stated that: these are only used when they are appropriate as newer materials often offer better results, they use materials dependant on the nature of the work and they often specify the mutual use of old and new materials for the best outcome.
- When not specifying the use of traditional materials, the majority responded stated that this is due to the inability to source materials and the inability of builders to use the materials properly. Other highly chosen options included the high cost of traditional materials (40%) and regulatory issues.
- Respondents answered that their clients are 'usually' (52%) aware of the importance of using traditional materials (and the danger of using inappropriate substitutes), with 40% stating they are 'occasionally' aware of this. Some respondents stated that they ensure they inform the client of the importance of using traditional materials.
- 48% of respondents stated that they have difficulty locating information on traditional materials and 52% stated they do not have difficulty. For respondents with more than 50% of their work

traditional buildings and structures, 58% have difficulty locating information on traditional materials. Respondents noted that many of the best sources of relevant information are older and not easily accessible online.

- Respondents experienced difficulty in locating information on areas where information on traditional materials has been difficult to obtain, control of drainage in traditional buildings, carpentry and joinery, brickwork—tuckpointing, brickwashes, mortars for stonework and brickwork, use of galvanized roofing products over time, timber shingles, timber, render, stone, glass, painting, stained glass, metals, paint on metal, papier mache, wrought iron, encaustic tiling.
- 68% of respondents stated that the lack of knowledge on how to guide tradespeople makes it difficult to specify their use.

5.2.7 Additional Comments from Respondents

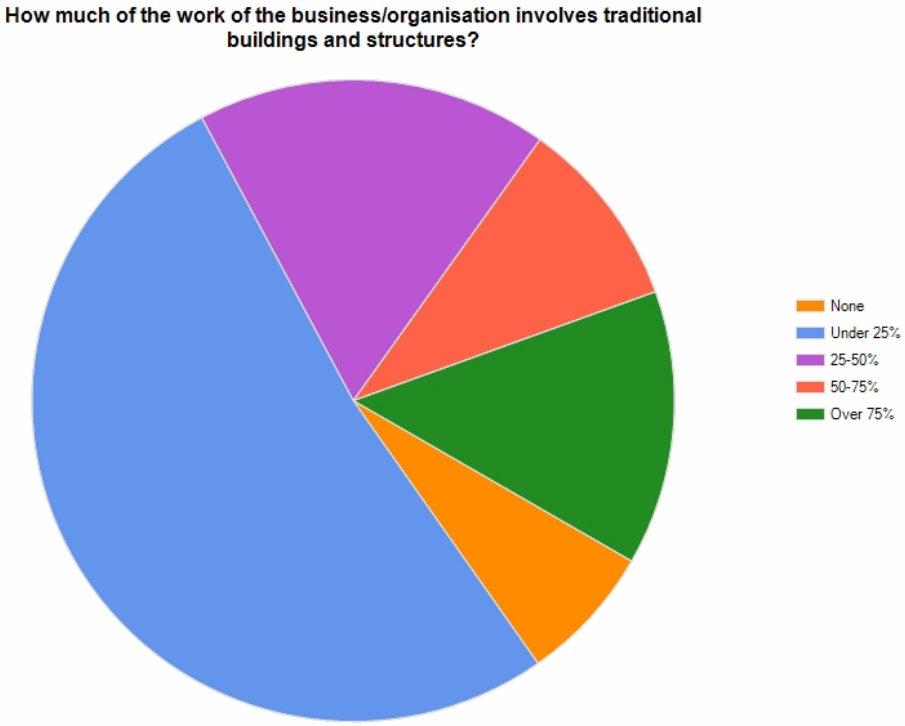
The survey offered the opportunity for respondents to comment on the survey and/or their experiences. These included the following:

- *Short courses, particularly with hands-practical applications of methods showing different stages of applied conservation solutions/products, or workshops with small numbers of attendee would increase the knowledge gained as well as the skills.*
- *Your survey did not seem relevant to me as I have mainly done heritage assessment reports (and these are a minor part of my overall professional work as a regular architect) and very rarely done specs for physical work.*
- *I see a frequent poverty of skill in the preparation of contract documents for work on traditional buildings. It is not possible to go from a Conservation Management Plan directly to site works without the careful preparation of what work is required, at what quality and where. If this does not occur, the quality of the resulting work is almost always poor.*
- *Good to see surveys of this type being done. In our field of stained glass restoration we have often felt like voices crying in the wilderness.*
- *This questionnaire is unaware of the real world of the contemporary construction industry; head contractors, sub-contractors, suppliers sourcing their materials from any cheap source.*
- *Our office has the knowledge and know enough traditional tradespeople to be able to address most of our needs, but most architectural firms do not. The greatest danger is that they are not aware that they do not know enough.*

5.3 Survey 2: Trades—Physical and Technical Conservation Survey

A total of 285 responses were received for Survey 2. Trades—Physical and Technical Conservation Survey. As noted in the introduction, the Master Builders Association of NSW sent this survey out to its membership, significantly increasing the number of respondents to this survey and providing a broad snapshot of the construction industry albeit primarily in NSW from where 256 or nearly 90% of respondents are located.

As for Survey 1, the results of this survey were filtered to provide a subset of data from those respondents who spend more than 50% of their time working on traditional buildings and structures, in this case, 60 of the total 285 respondents or 21%.



In some sections of the survey the responses of those who spend more than 50% of their time working on traditional buildings and structures differed significantly from the total respondents but overall there was a general similarity between the results.

Where there are significant differences between the results, these are discussed below.

5.3.1 General Observations and Key Issues

- The majority of respondents are from NSW and Victoria and the results of the survey best reflect the situation in these two states. The majority of respondents live and work in capital cities.
- Over 60% of respondents are over 45 years of age. Less than 2% of the respondents are under 30. The majority completed their training more than 20 years ago. This proportion was even higher for those respondents who spend more than 50% of their time working on traditional buildings and structures. Assuming the respondents reflect the range of tradespeople working in building conservation, then the results suggest an aging of the profession and a lack of skilled tradespeople in the 30–45 year age range.

- Only one third of the total respondents received training in building conservation work as part of their trades training. However, the large majority of these respondents felt their formal training adequately prepared them for work on traditional buildings and structures. Similar results were found for those respondents who spend more than 50% of their time working on traditional buildings and structures, suggesting that where training is provided it is adequate, although it should be noted that the majority received their training more than 20 years ago and this may not reflect current training. This is also suggested by over 60% of the respondents who recruit staff, who consider that the majority of the apprentices do not receive adequate information about traditional buildings and structures in their training.
- Over 70% of respondents received training in traditional buildings and structures 'on the job'.
- In relation to the availability of specialist skills, in almost all skills listed in the survey, some skills appear to be available, being either in house or through respondents knowledge of tradespeople with these skills. However, as is discussed below, there are some difficulties in interpreting the data as elicited from the survey.
- In relation to priorities for training to enhance the business' capacity, all the skills listed are of low priority—each being considered a priority by less than 17% of respondents and most by under 10% of respondents.

5.3.2 The Respondents

All Respondents

- Nearly 90% of the respondents are from NSW (246), 10% are from Victoria (29). The remaining 2% represent all other Australian states and one respondent is from Aotearoa/New Zealand. The survey results therefore reflect the situation in NSW, but the extent to which these may be generalised to the other states is unclear. These statistics are virtually mirrored in responses to where people work, that is, the work of nearly all respondents the is within the state in which they reside.
- Half of the respondents are located in capital cities, primarily Sydney, 30% in rural centres of more than 20,000 and 20% in rural areas.
- 65% (181) of respondents are over 45 years of age. Less than 25% of the respondents are under 30.

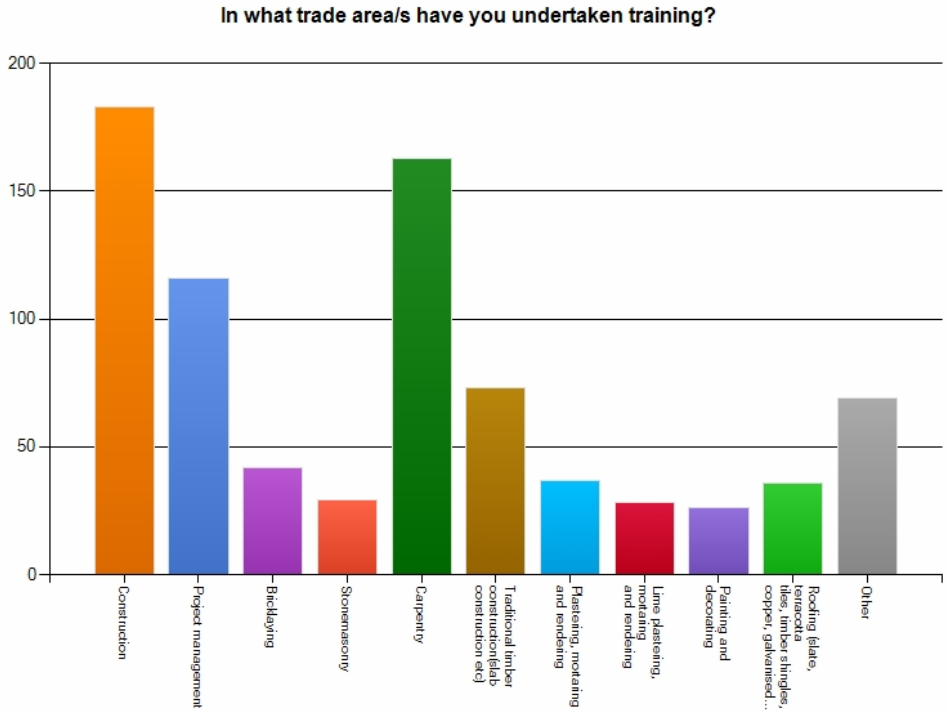
Respondents with more than 50% of work on traditional buildings and structure

- 21% (60) respondents undertake more than 50% of their work on traditional buildings and structure
- 76% of these respondents are from NSW (45), 22% are from Victoria (13). The remaining respondents represent SA, QLD and TAS. No respondents are from WA, ACT, NT or New Zealand. These statistics are virtually mirrored in responses to where people work, that is, the work of nearly all respondents work is within the state in which they reside. The geographical spread of these respondents is wider than for the total respondents, reflecting the respondents targeted in the survey in contrast to the respondents who are members of the Master Builders Association of NSW.

- 52% of these respondents are located in capital cities, 23% in rural centres of more than 20,000 and 27% in rural areas.
- 52% of these respondents are over 45 years of age. Less than 2% of the these respondents are under 30.

5.3.3 Training and Experience

All Respondents



- Respondents also identified a range of other trade areas in which they have had training including:
  - Tuckpointing
  - Use of lime mortars
  - Scagliola (plaster marble)
  - Heritage wallpapers/ Hanging
  - Heritage Colours
  - Asbestos
  - OH&S
  - Site safety management
  - Waterproofing

- Adze work
- Joinery replica and restoration including traditional Asian construction methods
- Carpentry and joinery
- Stonemasonry
- Traditional style building specialising in timber and earth
- Straw bale construction
- Electrical work
- Engineering (civil design)
- Surveying
- Traffic control design
- Scaffolding and rope access
- Architectural drafting
- French polishing/revival of old polish
- Cleaning of fire-damaged brickwork, stonework
- Leadpaint and asbestos removal
- Commercial swimming pools and water features
- Demolition
- Air-conditioning and ventilation
- Fencing
- Landscape Gardening
- Kitchens and bathrooms

- The highest qualification gained by the majority of respondents is a trade licence (68%) and 42% have a received a TAFE or Polytechnic certificate or diploma.
- For 53% of respondents, their highest qualification was reached over 20 years ago, reflecting the age range of respondents (see above).
- 32% of respondents have had training in building conservation work as part of their trades training. 67% of these respondents felt their formal training adequately prepared them for work on traditional buildings and structures. 52 respondents provided further information on why they felt their formal training did not prepare them for work on traditional buildings and structures—most responses stated that their instruction focused on contemporary practice, that traditional construction did not make up a large part of the market and therefore was not a focus for

instruction—several mentioned the importance 'of on the job' or tradesperson to tradesperson learning of traditional skills.

- When asked about professional memberships or affiliations, of the 201 respondents who answered this question 181 belong to Master Builders Associations in various states. Other organisations cited include: Housing Industry Association, Architectural Glass Design Association, American Glass Guild, The Guild of Master Craftsmen UK, British Society of Master Glass Painters, AICCM, Building Limes Forum Ireland, Building Limes Forum UK, Building Commission, Building Practitioners Board, Institute of Management, Institute of Arbitrators and Mediators, Building Consultants, Australian Institute of Building, Australian Concrete Repair Association, Australasian Corrosion Association, Australian Institute of Steel, Master Painters, Green Woodworkers Association, regional Furniture Society UK, Australian Professional Engineers and Scientists Managers Association, ICOMOS, Mawson's Huts Foundation, National Trust, LCA, CIOB, AIQS, RICS, FMA.
- Most people (72% of respondents) have had 'on the job' training in traditional buildings and structures. 51% have been self taught (given the numbers of respondents to these questions, most people are likely to have had both). The relative percentages of staff in the respondents' businesses who have obtained informal on the job training and formal training are the same as for individual respondents.

Respondents with more than 50% of work on traditional buildings and structure

- The highest qualification gained by 76% of these respondents is a trade licence, 10% higher than for the total number of respondents, and 47% have a received a TAFE or Polytechnic certificate or diploma.
- For 65% of these respondents, their highest qualification was reached over 20 years ago.
- 40% have had training in building conservation work as part of their trades training. 72% of these respondents felt their formal training adequately prepared them for work on traditional buildings and structures. These percentages are similar to those for the total number of respondents.
- Most people (76% of respondents) have had 'on the job' training in traditional buildings and structures. 53% of respondents have been self taught. The relative percentages of staff in the respondents' businesses who have obtained informal on the job training and formal training are the same as for individual respondents. In both cases these figures are very similar to those from the total number of respondents.

5.3.4 The Respondents' Businesses

All Respondents

- 72% of the total respondents are in businesses with less than five employees.
- 37% are in businesses that specialise in traditional building and structures. Despite this, only 14% (36) of the respondents said their businesses are engaged in work involving traditional buildings and structures for 75% or more of the time. Over half of businesses (53%) are engaged in work on traditional buildings or structures for less that 25% of their time.

- 20% of businesses do not have staff engaged in working on traditional buildings and structures and 43% have less than 25% of their staff engaged in such work. In only 20% of businesses are over 75% of staff engaged in working on traditional buildings and structures.
- When asked what evidence what evidence of experience is required when tendering on traditional and heritage buildings nearly 50% said they were not required to show any evidence of their experience or training as they have an established reputation. The remaining categories of training records (10%), qualifications (23%) and experience on traditional or heritage buildings (38%) were not mutually exclusive and respondents may have selected more than one answer. 121 respondents skipped this question, so the results are difficult to interpret.
- 46% of businesses employ apprentices. Of these, 87% send their apprentices to formal training. 74% of these (ie 63 businesses) responded that the apprentices do not receive adequate information about traditional buildings and structures in their training.
- 37 businesses send their staff to short training sessions on traditional skills, 85% of which are at TAFE/Polytechnics. The remainder are provided by a heritage organisation (9) or university (2). 'Other' training sources include MBA, HIA, ISS, Earth Building Association of Australia, and Master Painters Association. 93% of these 37 respondents were happy with the short training sessions on traditional skills their staff received through these providers, however those who added free text comments (8) suggested that training tended to be theoretical not practical.

Respondents with more than 50% of work on traditional buildings and structures

(Please note: 'more than 50% of work on traditional buildings and structures' refers to the individual not to their business)

- 70% of these respondents are in businesses with less than five employees.
- 80% of these businesses have over 50% of staff engaged in working on traditional buildings and structures. 7% have less than 25% of their staff engaged in such work.
- When asked what evidence of experience is required when tendering on traditional and heritage buildings 51% said they were not required to show any evidence of their experience or training as they have an established reputation. The remaining categories of training records (15%), qualifications (32%) and experience on traditional or heritage buildings (54%) were not mutually exclusive and respondents may have selected more than one answer. These percentages are similar to those from the total respondents. However, as noted above, 121 respondents skipped this question. The results are therefore difficult to interpret.
- 50% of businesses employ apprentices. Of these, 83% send their apprentices to formal training. 59% of these responded that the apprentices do not receive adequate information about traditional buildings and structures in their training. The percentage of these respondents whose businesses employ apprentices and who send their apprentices to formal training are similar to those for the total number of responses are similar however a slightly lower percentage of these respondents with more than 50% of their work on traditional buildings and structures feel the apprentices do not receive adequate information about traditional buildings and structures in their training.

- 12 businesses send their staff to short training sessions on traditional skills, 89% of which are at TAFE/Polytechnics. The remainder are provided by a heritage organisation (4) or university (1).
- In relation to priorities for training to enhance the business' capacity, all the skills listed are of low priority—each being considered a priority by less than 17% of respondents and most by under 10% of respondents.

5.3.5 Specialist Skills

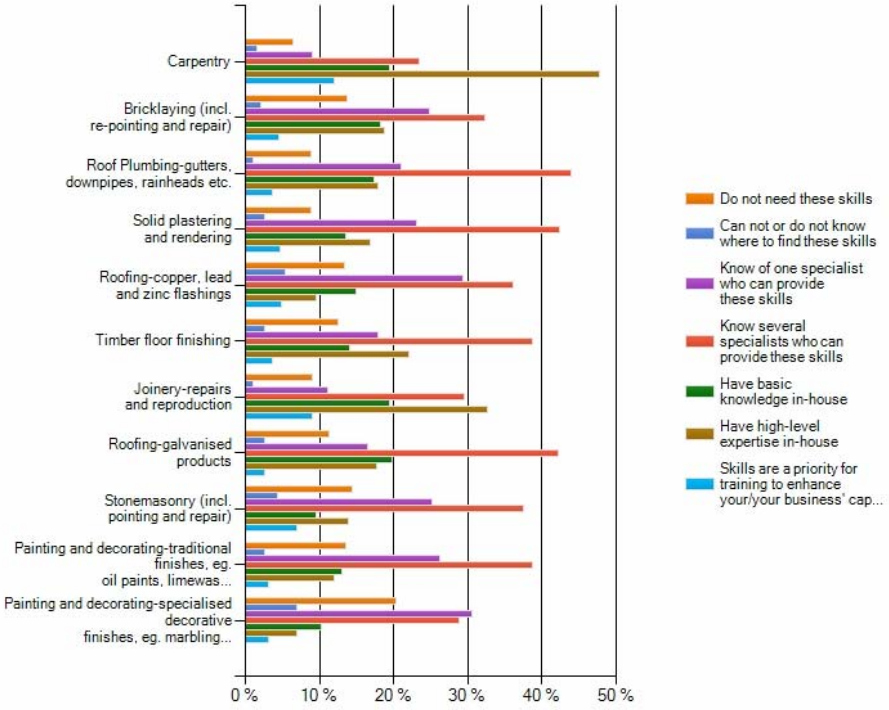
In this section, respondents were given a list of skills in a matrix asking them to identify if each skill is needed in their work, is easily accessible, is already accessible in their workplace or is a priority for future training.

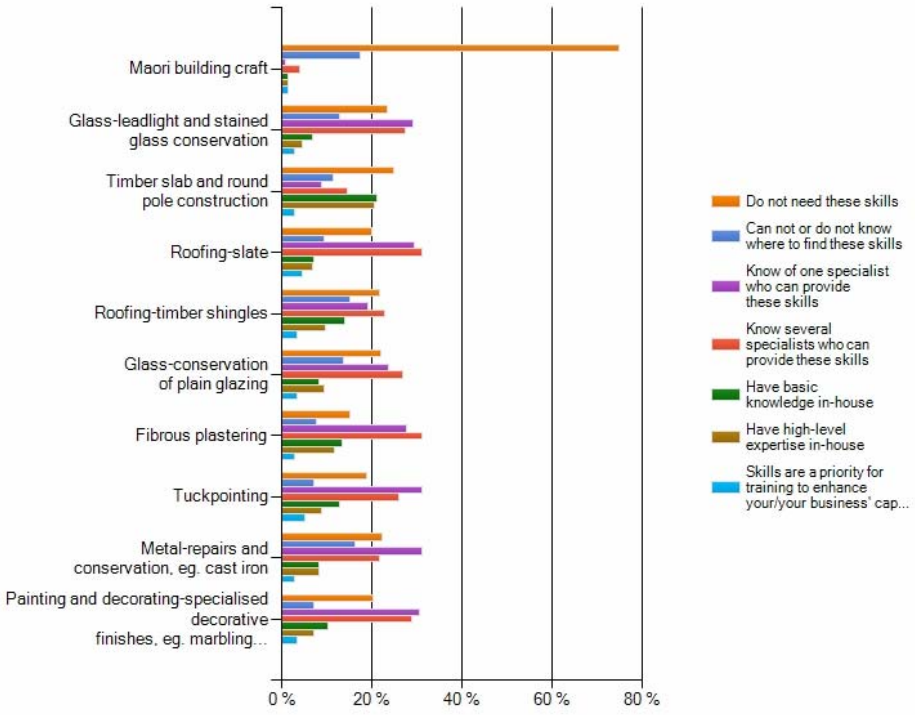
As noted above, the responses to each question in the Specialist Skills section were similar regardless of whether the responses are considered in total or the information is filtered to identify only those respondents with more than 50% of their work traditional buildings and structures. In interpreting these results it should be noted that the results relate primarily to NSW and that the questions asked in the survey in relation to each skill are not mutually exclusive and therefore a respondent could, for example, for one skill select both 'know of a specialist who can provide these skills' and 'have basic knowledge in house'.

- In relation to priorities for training to enhance the business' capacity, all the skills listed are of low priority–each being considered a priority by less than 12% of respondents and most by under 5% of respondents. Training in carpentry (12%) and joinery (9%) were considered a priority by the greatest number of respondents. For respondents with more than 50% of their work being traditional buildings and structures, no specific skill was identified as a priority for training to enhance the respondent's business by more than 20% (12) of these respondents. Only carpentry, roofing—copper lead and zinc flashing, stonemasonry, joinery and solid plastering and rendering were seen as a priority by more than 10% (6) of these respondents.
- In relation to the availability of skills, for 13 of the 20 skills listed respondents 'know several specialists who can provide these skills'. Where this was not the case, ie for carpentry and joinery-repairs and reproduction, the highest number of responses were 'have high level expertise in house' and for tuck pointing and painting, decorating etc. most respondents 'know of one specialist who can provide these skills'.
- In relation to the need for particular skills, between 20% and 25% of respondents do not need timber slab and round pole construction; painting and decorating; roofing-slate; roofing-timber shingles; glass conservation of plain glazing; glass lead-light and stained glass conservation; metal repairs and conservation. Timber slab and round pole construction and glass conservation—plain glazing were the only skills identified as 'not needed' by more than 20% of those respondents with more than 50% of work on traditional buildings and structures (Maori building craft is not need by more than 75% of respondents).
- The skill sets that respondents appear to have least knowledge of how to access and least in-house skills are (excluding Mori building craft) timber slab and round pole construction, roofing—timber shingles and metal—conservation and repairs, although more that 15% of respondents also indicated that they do not need these three skills.

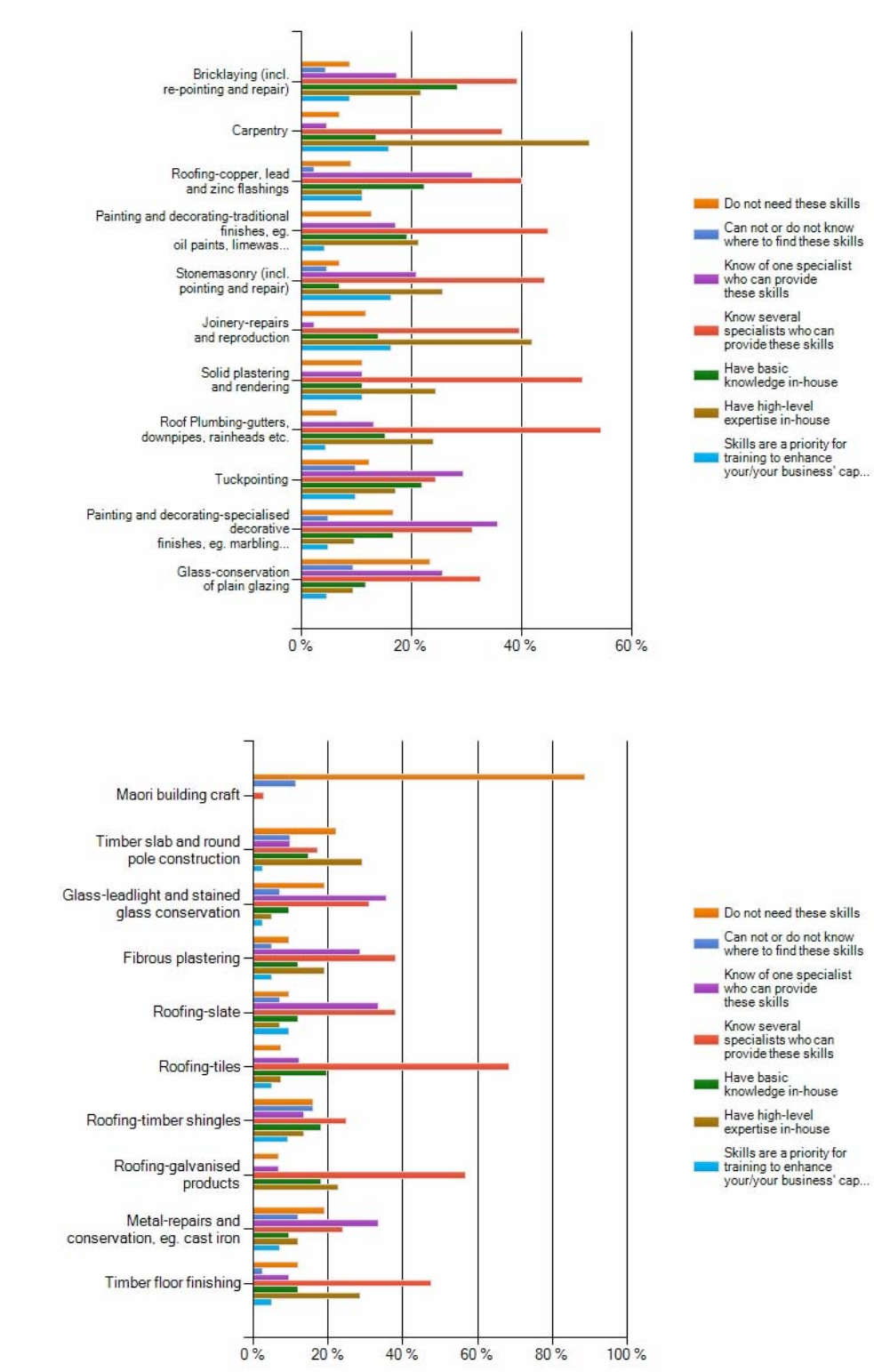
- Skill sets mentioned in the 'other' free text category include rammed earth, mud brick, wattle and daub, scaffolding including difficult access solutions, repair maintenance and reproduction of traditional details, classical renovation of swimming pools and run mouldings in plaster, cement, GRC and epoxy, sandstone to match existing.

All Respondents





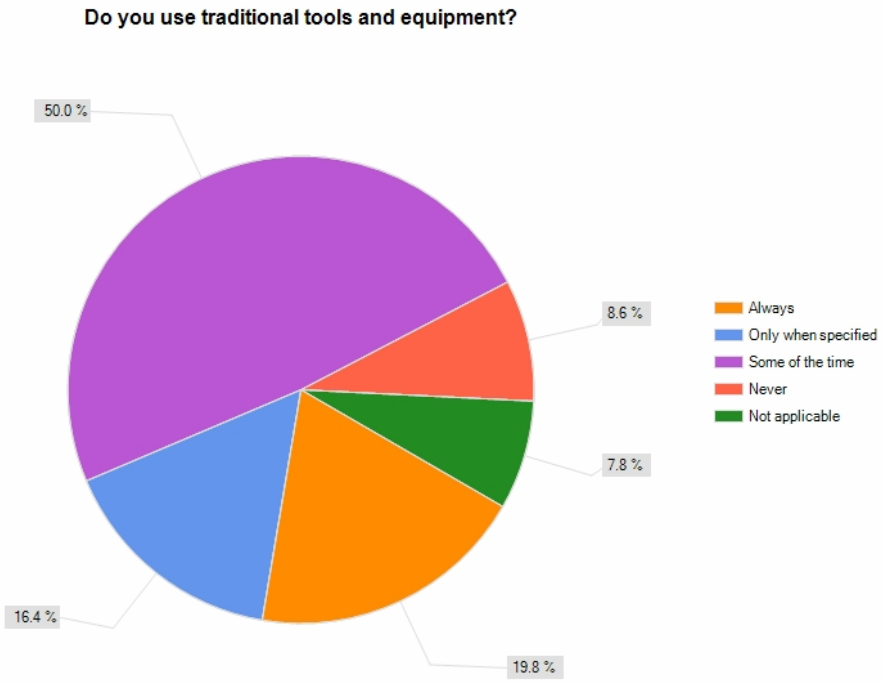
Respondents with more than 50% of work on traditional buildings and structure



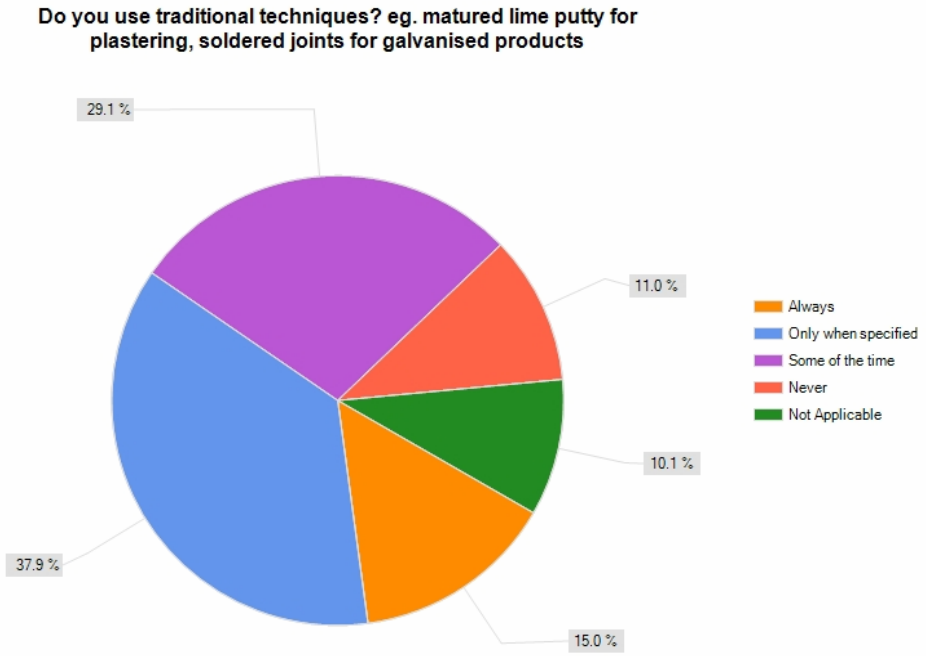
5.3.6 Using Traditional Methods and Materials

All Respondents

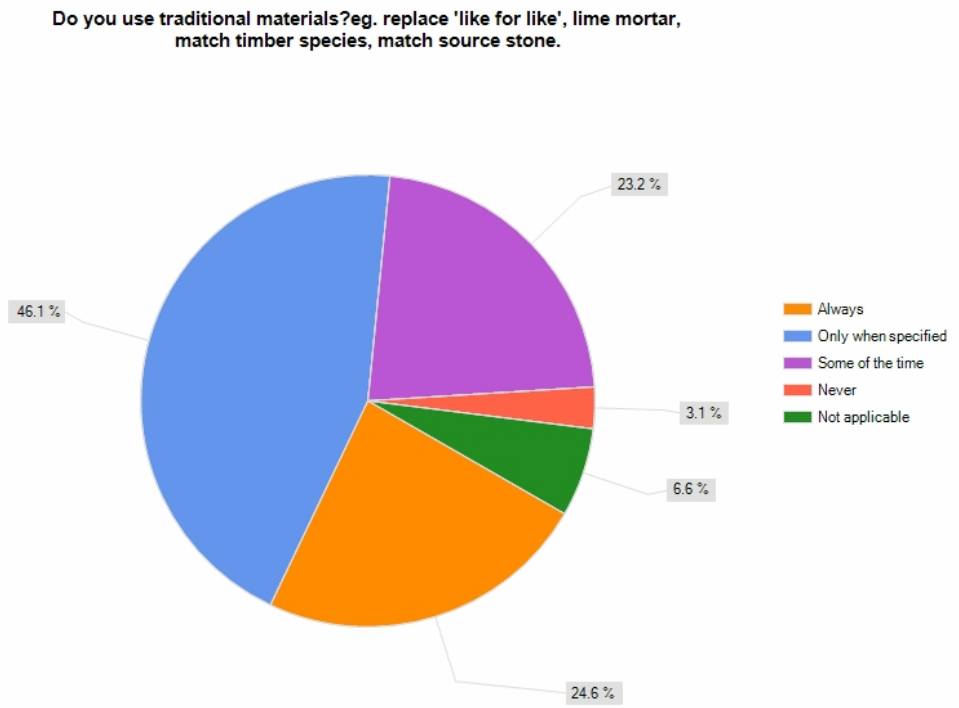
- 50% of the total respondents use traditional tools some of the time, 20% always use them and 16% use them when this is specified.



- The response to use of traditional *materials* is similar to that of traditional *tools.* 38% of respondents only use traditional materials when specified. 30% use traditional materials some of the time.



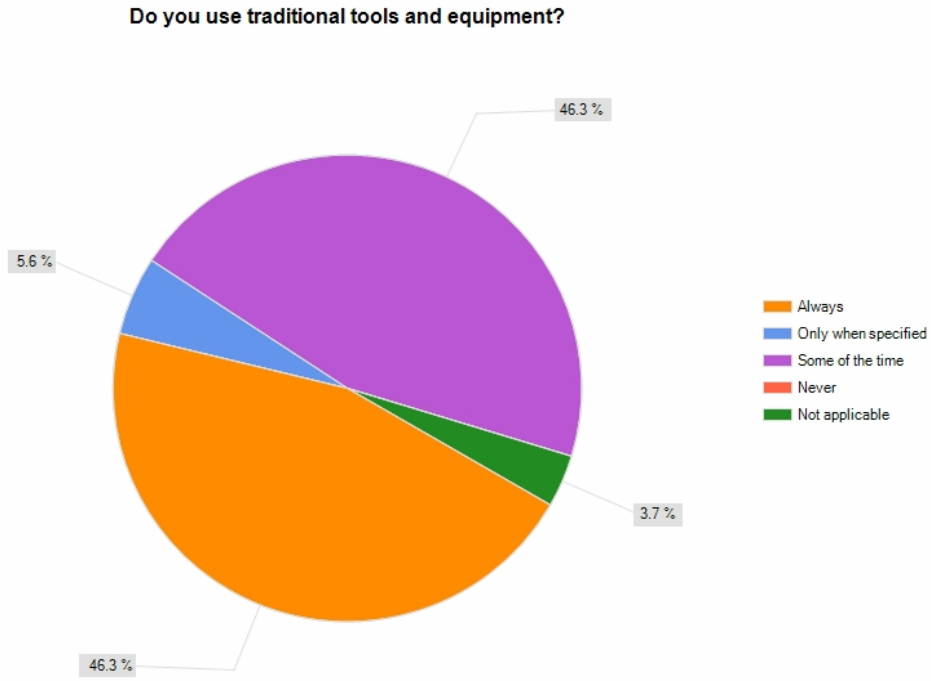
- The extent to which these statistics relate only to work on traditional buildings and structures is unclear. For both of the above questions, the 'some of the time' response may reflect the proportion of overall work on traditional structures rather than the proportion of work on traditional structures using traditional tools and/or materials.
- 46% of respondents only replace 'like with like' when this is specified. 25% always replace 'like with like'.



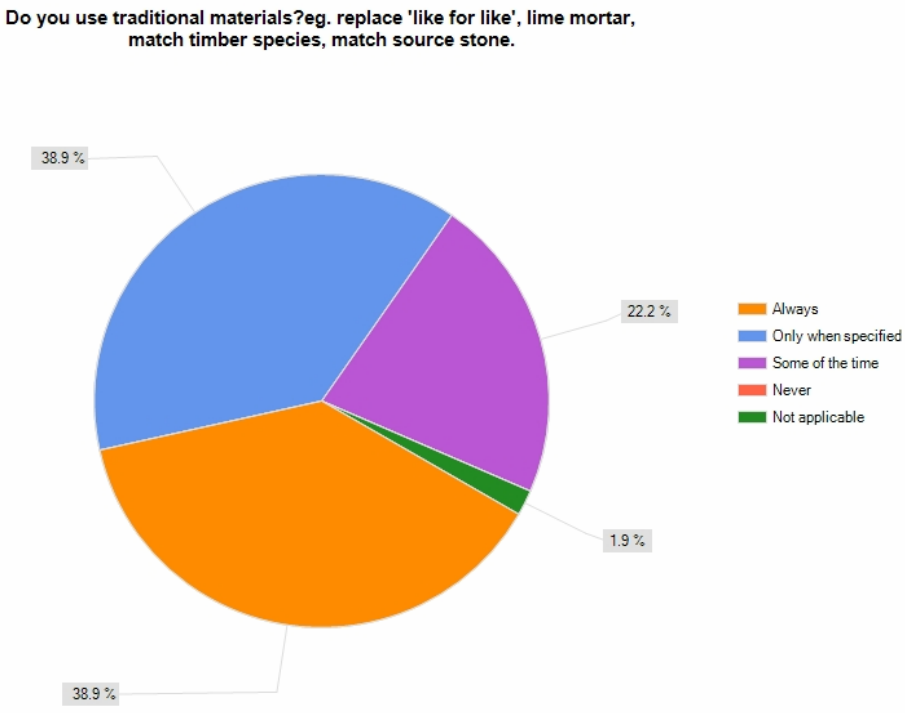
- Over half of respondents (55%) receive detailed documentation that directs the work required in less than 25% of their work on traditional buildings and structures. 44% of respondents consider the quality of these specifications to be 'satisfactory' , 20% to be 'good' and 20% to be 'poor'. When such specifications are received, 65% of respondents noted that the work is closely or very closely supervised.

Respondents with more than 50% of work on traditional buildings and structures

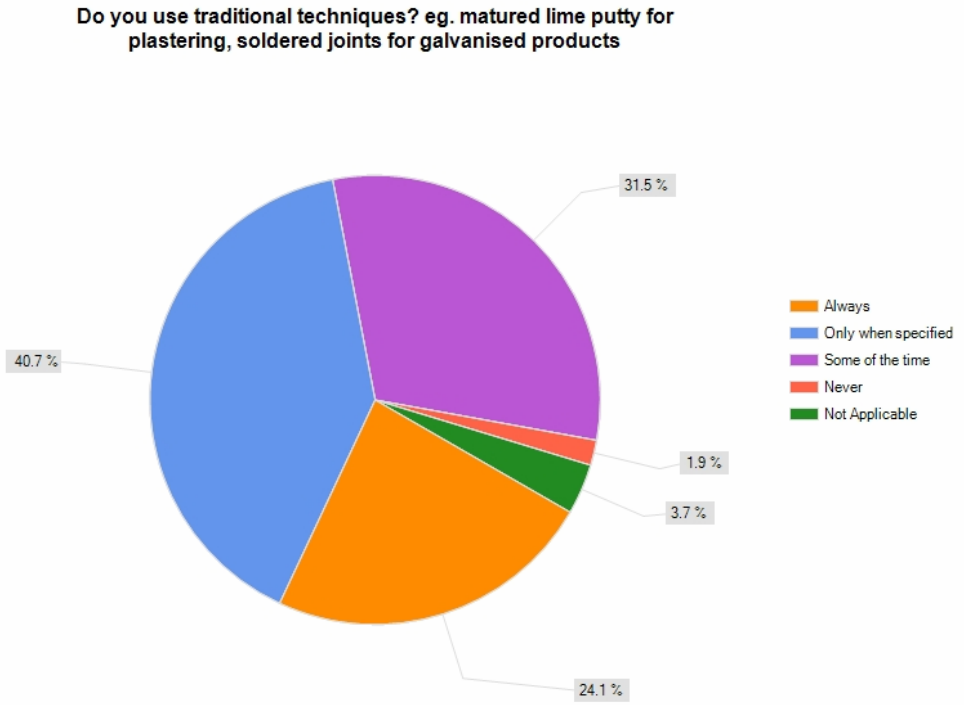
- 46% of these respondents use traditional tools some of the time, 46% always use them and 6% use them when this is specified. The relatively high percentage of these respondents (46%) who always use traditional tools is to be expected given that more than 50% of their work is on traditional buildings and structures.



- The response to use of traditional *materials* is similar to that of traditional *tools.* 40% of these respondents only use traditional materials when specified. 32% used traditional materials some of the time. This mirrors the results for the total number of respondents.



- 39% of these respondents only replace ‘like with like’ when this is specified, 39% always replace ‘like with like’.



- 37% of these respondents say they receive detailed documentation that directs the work required in less than 25% of their work on traditional buildings and structures. 56% of respondents consider the quality of these specifications to be 'satisfactory', 25% to be 'good' and 12% to be 'poor'. When such specifications are received, 47% of respondents noted that the work is closely or very closely supervised.

5.3.7 Additional Comments from Respondents

The survey offered the opportunity for respondents to comment on the survey and/or their experiences. These included the following:

- *Traditional stained glass painting takes many years to learn but the training opportunities are not available other than short hobby courses. These skills are being lost.*
- *Emphasis has to be put on the development and the testing of techniques for heritage repair work. Too often we are reliant on theories that are untried in the Australian context or for which there is not general agreement.*
- *I still do not get enough work in my specialist field, despite being one of only a few in NSW and having a web site. My feelings are that some clients are still not well enough informed about the destructive result of using materials unsuitable for heritage buildings, e.g. using cement instead of lime mortar or using lime mortar incorrectly.*
- *Due to the financial downturn I had to retrench one tradesman and two apprentices. As well as attending TAFE College, I gave them on the job training regards lime mortar but sometimes felt they were confused between the TAFE information, the commercial aspect of the trade and what I was relating to them.*

- *Long overdue, we hope you are successful with upskilling trades. We hope people will realise the importance of preserving the existing stock of buildings and the long term sustainable benefits we gain from restoring existing stock which often is (skilled) labour intensive as opposed to the enormous environmental costs of demolish and rebuild.*
- *We work in an unusual area, there are not many renovations of traditional pools, but they do come up and we have the trades able to handle such projects.*
- *Would like to see more courses done at local TAFEs where possible.*
- *Most work is domestic renovations and are the ideas and specification of owners. Most structures are in poor condition or badly renovated previously.*
- *Heritage works is a lost trade in Sydney. Modern houses are created with a short life span. If we could go back to the heritage ways building as they did then would last for 100s of years and not just 20.*
- *The better documented projects tend to be those associated with government as few private property owners will under their own volition undertake authentic works.*
- *I would like to see extra training at TAFE in the use of hand tools for this type of work most carpenters have no idea what to do.*
- *It concerns me overall that building qualifications are being fast tracked in order to cover a trade shortage. I've noticed particularly in Sydney that the standard of trade work is already poor and fast tracking training can only increase the problem across all facets of construction.*
- *I mostly deal with the carpentry and joinery aspects and this usually requires looking at the surrounding neighbourhood to replicate features. Patience is also needed but can not be taught.*

5.4 Endnotes

[1] David Young (24/3/10).

6.0 Gap Analysis

6.1 Introduction

The aim of the analysis in this section is to identify apparent gaps or over supply of training opportunities in Australasia, as well as other trends and issues which emerge from a comparison of the survey data presented in Sections 4.0 and 5.0 and the audit data presented in Section 3.0.

6.2 Summary of Specialist Heritage Professional Training Opportunities in Australia

Table 6.1 summarises the results of the audit of professional heritage training opportunities (discussed in Section 3.0) in Australia, in terms of the coverage of the key skill areas defined in the skills needs surveys (discussed in Sections 4.0 and 5.0). The table shows that there is a concentration of training opportunities in the ACT and Victoria—where all skill areas are taught. Few training opportunities exist in Tasmania or the Northern Territory; (those identified are heritage interpretation taught in tourism courses). South Australia has the highest number of training opportunities (57) because of the high number of specialist heritage management, historical and maritime archaeology degree and short courses run at Flinders University. South Australia is closely followed by the ACT (55) with a concentration of specialist heritage, materials conservation and archaeology degrees and short courses offered by the University of Canberra and the ANU. Victoria also features a concentration of training opportunities (46) based on the number of specialist heritage postgraduate and short courses at Deakin University, heritage architecture and materials conservation courses at Melbourne University and the specialist heritage and historical archaeology focus of the archaeology degree at La Trobe University. New South Wales features only about half (24) the number of training opportunities in the key skill areas compared to those offered in Victoria (46), followed by Western Australia with 16 opportunities and only 9 identified opportunities in Queensland. A number of these courses are offered as distance education, making the training more accessible.

The physical conservation data summarised in Figure 6.1 contrast with the results from supplementary survey 1 (for which 70% of respondents were from New South Wales and Victoria), which suggest that 90% of those responsible for recruiting found it difficult to locate accessible training for their staff. This indicates a mismatch between the nature of the courses being offered and the market demand.

Table 6.1 Keyword hits—number by state—professional training only—degree, diploma, certificate and short courses

State	Physical Conserv-ation	Record-ing	Manage-ment	Consulta-tion	Interpret-ation	Archae-ology	Historic Land-scape Manage-ment	Legis-lation and Policy	Totals
NSW	3	9	4		1	2		5	24
VIC	10	8	10	4	5	1	2	8	46
QLD			3			4		2	9
SA		10	12		8	15		12	57
WA			4		5	3		4	16
TAS					1				1
NT					1				1
ACT	4	6	11	1	6	8	7	8	55
Total	17	33	34	5	27	33	9	39	

6.3 Generic Skills—Gaps

These are the skills identified as both 'most used' and 'in use' by a large number of respondents to the surveys, as well the highest priorities for future training. These generic skills are used across the specialist subfields of the heritage industry and lend themselves to being taught through university undergraduate or postgraduate courses. Table 6.2 set outs the generic skills identified by survey respondents as priority training areas and comments upon the training and education options identified for these areas in the audit of training and education opportunities set out in Section 3.0.

Table 6.2 Priority training areas for generic skills.

INDUSTRY AREA OR SUB-DISCIPLINE	SKILL OR KNOWLEDGE	Priority for Training (Individuals)	Priority Skills for Staff in Future (Agencies etc)	Courses/Training Currently Available & Comments
Physical Conservation	Architectural analysis	✓	✓	Currently training opportunities available in NSW, VIC and ACT only. Undergrad, postgrad and short courses available. No identified training opportunities in QLD, SA, WA, NT or TAS.
Recording	Historical research		✓	Currently training opportunities in these areas available in NSW, VIC, ACT and SA in specialist university heritage undergraduate and postgraduate courses. Currently not taught in identified short courses.
	Site survey (general)		✓	
	Archival research	✓	✓	
	Archaeological site survey		✓	
Management	Significance assessment		✓	Training opportunities exist in all states except TAS and NT. Undergrad, postgrad and short courses available.
	Conservation management planning	✓	✓✓	
	Legislative/statutory context	✓	✓✓	
	Conservation strategy	✓	✓	
Consultation	Stakeholder engagement	✓	✓✓	Few training opportunities in this area, as not widely taught in specialist heritage courses. Identified opportunities—postgraduate courses in VIC and a short course in ACT.
	Communication skills		✓	
Interpretation	Interpretation strategies and plans	✓✓	✓✓	Training opportunities identified in all states except QLD. Undergrad, postgrad and short courses available.
Historic Landscape Management	Historic map/plan analysis	✓	✓	Does not appear to be widely taught in the context of specialist heritage courses. Undergraduate, postgraduate and short course opportunities available in the ACT and VIC.
	Landscape assessment	✓✓	✓✓	
Legislation and Policy	State heritage legislation	✓	✓✓	Most widely taught generic skill area. Undergraduate, postgraduate and short course opportunities available in all states except TAS and NT. However still high priority for training.
	Burra Charter	✓	✓	
	State planning legislation	✓		

Summary of Issues—Generic Skills

This analysis reveals geographic gaps in the provision of training in these generic skills, as well as a possible under supply of training in particular skill areas. The data does not illuminate the issue of over supply of training—presumably if training is oversupplied it will be withdrawn as not economically sustainable for the provider, owing to lack of market demand.

- Physical/technical building conservation skills—are taught in only a small number of courses/degrees in New South Wales, Victoria and the ACT.

- Historic landscape management and consultation skills—are the least taught of the generic skill areas and are offered in Victoria and ACT only. Stakeholder engagement and historic landscape assessment are two areas which received high priority ratings for skills in demand but there are few training opportunities in these areas.
- Legislation and policy—is the most taught of the generic skills but remains a constant need in terms of training because of frequent change.
- Archaeology—is more likely to be taught in a heritage management focused or specialist course than the other relevant heritage discipline areas of engineering, architecture, history geography and so on. This means there are more opportunities for students studying archaeology to receive training in the generic heritage skills in their undergraduate and postgraduate university courses. Other discipline areas, therefore, must tend to rely more heavily on specialist postgraduate degrees and/or short courses.

6.4 Specific Skills—Gaps

Specific skills are those skills which are less widely used across the industry but are identified as a high priority for training. These skills are more specialised than the generic skills discussed above, and are therefore less likely to be taught within a generalist heritage undergraduate or postgraduate university course. The audit of training opportunities is not fine grained enough to identify comprehensively where these specialist skills might be taught within the scope of existing courses; however, a number of comments can be made on each area based on the information collated as part of the audit exercise. Further, these specific skills tend to be skills which are of growing importance in the heritage industry, but were not commonly taught when most of the survey respondents were educated, ie prior to 2000. These specific skills are more likely to need to be delivered through intensive short courses or specialist postgraduate courses as they are not as widely used as the generic skills above.

Table 6.3 Priority training areas for specific skills.

INDUSTRY AREA OR SUB-DISCIPLINE	SKILL OR KNOWLEDGE	Priority for Training (Individuals)	Priority Skills for Staff in Future (Agencies)	Courses/Training Currently Available and Comments
Recording	GIS	✓✓	✓✓	Undergraduate and postgraduate geography and archaeology degrees are tending to offer more opportunities for training in GIS and other forms of data management and analysis. Tailored courses tend to be more useful to heritage practitioners than generic courses. GIS courses for archaeologists are sporadically offered—none were documented as current by the audit.
	Data management	✓	✓	
Management	Thresholds		✓	A specialist heritage management concept which is generally specific to a particular legislative and policy regime.
Consultation	Public speaking	✓		As with GIS, training in these areas is available outside the heritage industry; however, tailored short courses tend to be more desirable and accessible.
	Survey development and analysis		✓	
Interpretation	Audience analysis	✓	✓	Training in most of these areas is available in a

INDUSTRY AREA OR SUB-DISCIPLINE	SKILL OR KNOWLEDGE	Priority for Training (Individuals)	Priority Skills for Staff in Future (Agencies)	Courses/Training Currently Available and Comments
	Content development	✓	✓	
	Visitor management		✓	
	Plain English publication		✓	
	Multimedia skills	✓	✓	
Archaeology	Artefact conservation	✓	✓	Undergraduate and postgraduate training in these areas is currently offered in a number of archaeology and materials conservation undergraduate and postgraduate degrees. Demand for skills in this area is likely to be perceived because they were less likely to be taught in the past and existing professionals would like access to 'catch up' courses. Therefore, intensive short courses, as well as continued integration in established university curricula, would be most likely to service this need.
	Artefact analysis		✓✓	
Historic landscape management	Curtilage analysis	✓	✓	Landscape architecture courses are widely available but this perceived training need probably reflects the need for heritage practitioners with skills and knowledge in historic landscape, design, assessment and management more generally, as well as to attract more professionals with these skills to the area of heritage management. As discussed above in generic skills, historic landscape management is currently the least frequently taught skill area along with consultation skills. This gap probably reflects the fact that landscapes have risen in importance as a category of heritage place over the past decades leading to a commensurate rise in the numbers of skilled practitioners needed for assessment and management.
	Landscape architecture	✓	✓	
	View analysis	✓		
Legislation and policy	Building codes		✓	While legislation and policy is the most frequently taught of the generic skills, legislation and policy change frequently, leading to constant need for updating skills and knowledge in these areas. Building codes, Aboriginal heritage legislation and the EPBC Act are areas of relatively new legislation, or codes which have undergone significant change in recent years. While most new heritage professionals will gain grounding in legislation and policy at university this specific skill area needs to be serviced with access to frequent refresher courses.
	Aboriginal heritage legislation	✓✓		
	EPBC Act	✓		

Summary of Issues—Specific Skills

This analysis clearly reveals gaps in the provision of training, as well as growth in the demand for skills in a number of key areas which tend to reflect recent (or at least evolving) change in the nature of heritage industry in Australia.

- GIS and data management—most large scale or regionally based heritage projects will now require some form of GIS based mapping and data management in order to facilitate analysis of large quantities of data in a manner that is compatible with government and other researchers' databases. Training in these skills is quite readily available; however, courses tailored to heritage management would be more accessible to most heritage professionals who wish to gain a baseline of expertise in this area.

- Significance thresholds, building codes, Aboriginal heritage legislation and the EPBC Act—these are all areas of public policy subject to recent change in the Australian context. Training in these areas can be partly seen as the responsibility of the government agency responsible for the administration of the legislation, especially in the area of Aboriginal heritage legislation where there is a responsibility to educate communities in legislation which affects them.

- Artefact conservation and analysis—the fact that this specific skill area has been identified as a priority for future training reflects changing practice in archaeological heritage management. A growth in emphasis on the conservation and management of excavated collections has occurred in some jurisdictions, while more exacting standards of artefact analysis are required as a result of increased research, publication and regulation in this area.

- Interpretation skills—the need for training in this area may respond to an increasing requirement by regulators, the growth in the use of new technologies for heritage interpretation (such as multimedia), and to a growing need for more rigorous evaluation and visitor management methodologies and techniques. It also appears that heritage interpretation has become a more specialised set of skills within the broader heritage industry over the course of recent decades.

- Consultation skills—this is another area of the heritage industry that has become more closely regulated and more critically researched in recent years. All heritage practitioners active in community-based projects need to develop (or develop access to) specialist skills and knowledge in this area. The audit clearly shows that this is one of the least frequently taught skill areas. These skills could be taught more frequently in undergraduate and postgraduate courses as well as through professional development courses.

6.5 Specialist Skills—Gaps

These skills are less frequently used in the heritage industry than those discussed above, but constitute a crucial aspect of conservation practice. Training options need to be developed to address gaps in these areas, despite the low numbers of practitioners involved.

Table 6.4 Priority training areas for specialist skills.

INDUSTRY AREA OR SUB-DISCIPLINE	SKILL OR KNOWLEDGE	Priority for Training (Individuals)	Priority Skills for Staff in Future (Agencies)	Courses/Training Currently Available and Comments
Physical conservation	Stone masonry	✓	✓	Discussion of these skill areas is deferred pending ongoing discussions with the client and stakeholders on how to strengthen the project data collection and findings in this area.
	Carpentry		✓	
	Mortar analysis	✓		
	Engineering	✓		
	Traditional tool making or use	✓		
	Traditional mechanical skills	✓		
Recording	Photogrammetry	✓		Current computer technology makes this previously highly specialist cartographic skill more accessible to heritage practitioners. Training could be delivered through online modes.
Archaeology	Underwater survey and recording	✓		This specialist skill may require a large component of on-the-job training and mentoring, which may be difficult in commercial contexts.
Historic landscape management	Landscape architecture	✓	✓	As discussed above, landscape architecture, horticulture and arboriculture courses are widely available but this perceived training need probably reflects the need to attract more professionals with these skills to the area of heritage management as well as the need to allow heritage practitioners to train in this area as a specialisation. As discussed above, historic landscape management is currently the least frequently taught skill area along with consultation skills. This skills gap probably reflects the fact that landscapes have risen in importance as a category of heritage place over the past decades leading to a commensurate rise in the numbers of skilled practitioners needed for assessment and management.
	Aboriculture	✓		
	Horticulture	✓		

Summary of Issues—Specialist Skills

- Historic landscape management—as discussed above historic landscape management is the least frequently taught skill area after consultation. There is a need to work co-operatively in this area with other professions to supply skill needs, but this does not obviate the need for increased training opportunities for perhaps already qualified landscape architects, horticulturalists and arborists who may be interested in extending part of their practice into

the historic heritage arena. However, the first hurdle in this area may be in attracting these professionals to heritage work.

- Photogrammetry and underwater survey—there is unlikely to be a huge demand for these highly specialised skills. The first need may be met through access to online training while the latter may reflect a need for on-the-job mentoring of graduates.

6.6 Heritage Trades Skills—Gaps

The skills gaps in heritage trades are derived from the data collected during the supplementary survey (2) (March 2010), and the subsequent analysis (Section 5.0), as there was relatively low representation from the trades sector in the initial skills needs analysis survey (October 2009).

As the supplementary survey was not structured in the same way as the skills needs analysis, the information gathered and analysed did not translate into tabular format (as provided in tables 6.1-6.4). The primary gaps are therefore summarised in text below.

Summary of Issues—Trade Skills

- Geographic gaps in the provision of training for heritage trades skills are difficult to analyse, owing to the likely bias created by the high number of NSW respondents to the survey. No survey response data was provided from Aotearoa/New Zealand.
- There is a good supply of generic trades training in Australia. However, the inclusion of traditional ('heritage') trade skills in these courses is rare. Only one third of the total respondents to the supplementary survey received training in building conservation work as part of their generic trades training.
- Notwithstanding a large percentage of respondents indicating a lack of training in heritage trades, a large percentage of respondents nevertheless considered themselves adequately prepared to undertake work on traditional buildings and structures. This could be linked to high quality 'on the job' training, or a misconception on how prepared one must be to undertake this work (ie 'they don't know what they don't know').
- Specific courses on heritage trades are not at all common, with only 3 core courses offered in Australia and 9 in New Zealand (all in Maori building craft).
- Carpentry, joinery, stonemasonry, roofing and tuck pointing are the skills identified as a high priority for training to enhance the capacity of businesses. Other skills only received responses from less than 5% of respondents.
- The age of those with skills in heritage trades is high and demonstrates an upcoming issue in the supply of these skills as practitioners retire.
- A large proportion of practitioners who posses skills in heritage trades gained their qualification more than 20 years ago; not only does this demonstrate the high age of the workforce, but also a definite shortage of training for new practitioners, or refresher training for those in the industry.
- Most training on heritage trades is administered on the job, demonstrating a gap in tertiary or accredited training courses.

- Almost all heritage trades skills listed in the survey appear to be 'available', with practitioners being either in house or accessible through respondents' knowledge of tradespeople with these skills.

- A large proportion of business owners suggest that new staff recruits and apprentices do not receive adequate training, and are therefore on the whole unprepared to undertake work on traditional buildings and structures.

6.7 Conclusions

This gap analysis has revealed some clear trends in the perceived training needs in the heritage industry in Australasia and in the availability of training and education on both a skills needs and geographic basis. Trends derived from the changing and evolving nature of heritage practice are also revealed. Key findings include the following.

Heritage Professional Training

- Training opportunities, in the form of specialist heritage related courses, are clustered in the southeast of Australia in Canberra and Melbourne, with another significant cluster in South Australia owing to the wide range of historical and maritime archaeology and heritage related courses offered by Flinders University. This does not appear to mirror the distribution of active heritage practices and the requirements of the active management of heritage places, and one would expect greater concentrations of opportunities in Sydney and Brisbane at least.

- The need for improved skills in consultation and historic landscape management is also reflected clearly in the data. These skills are not widely taught and their identification as priority needs for training clearly reflects the growth in importance and specialisation of these skills over recent decades.

- The need for access to GIS is also clearly borne out, and while many organisations and companies may buy in specialist skills in this area, the data still seems to reflect the desire of some heritage practitioners to be a 'jack of all trades' and develop a baseline of skills in this area themselves.

- The fact that the specific skill area of artefact conservation and analysis has been identified as a priority for future training reflects changing practice in archaeological heritage management. A growth in emphasis on the conservation and management of excavated collections has occurred in some jurisdictions, while more exacting standards of artefact analysis are required as a result of increased research, publication and regulation in this area.

- Legislation and policy is the most taught of the generic skills but remains a constant need in terms of training because of frequent change. Training in these areas can be partly seen as the responsibility of the government agency responsible for the administration of the legislation, especially in the area of Aboriginal heritage legislation where there is a responsibility to educate communities in legislation which affects them.

- Specialist skills in building conservation and architectural analysis are in high demand. Training in these areas exists, but only in New South Wales, Victoria and the ACT in

undergraduate and postgraduate courses. Two short courses in this area are also available, one in Canberra and the other in Melbourne. Very few specialist courses in heritage trades exist in the TAFE/Polytechnic system.

- Short courses struggle to maintain numbers, it is difficult to determine whether issues such as the geographic location of these courses and their cost prevent broader participation in professional development in this area.

Heritage Trades Training

- Standards of practice in the heritage trades are recognised as poor by senior experts in the field, presenting significant risks for the conservation and retention of heritage buildings and places. However, there is not widespread recognition of the low level of practice standards and the relative lack of specialist skills by younger practitioners. Indeed, anecdotal evidence suggests that the more 'experienced and specialised' the practitioner is, the more concern he or she has about inadequate standards and training. This lack of awareness creates a systemic problem for the stimulation of specialist skills acquisition.
- There is a limited 'demand' for true specialists, arising from a combination of the quantum of available heritage trades work, value perceptions on the part of clients and builders and absence of any contractual or legal requirement for practitioners to have such skills. These factors appear to have combined to cause a substantial drop off in the number of younger specialist heritage trades practitioners.
- High quality technical skill derives from a combination of both high quality formal and informal 'on the job' training.
- The difficulty faced in the use of traditional materials is a lack of knowledge on how to guide tradespeople in the use of traditional materials, resulting in difficulty specifying them.
- There is a high demand for skills in specification and schedule writing; condition assessment and documentation as well as materials investigation and conservation.
- Over the last 20 years there have been a number of attempts to re-introduce specialist curricula and training courses in the heritage trades. These courses have all failed owing to lack of demand, creating a major continuing gap and looming crisis for heritage conservation in Australasia.
- Survey data suggests that specialist trade skills for heritage practices are now concentrated in a few hands and that expert heritage trades professionals are ageing (as a population); many will retire in the next 10 years. This will leave a major gap in future opportunities for 'on the job' training, as well as a vastly diminished pool of resources to 'do the job'.
- Available skills and experts who can mentor heritage trades practitioners are geographically concentrated—in urban areas on the east coast of Australia.
- Despite the availability of courses in physical conservation in New South Wales and Victoria, survey respondents report difficulty in locating available specialist training.
- Maori building craft is widely taught in Aotearoa/New Zealand.

7.0 Findings

7.1 Introduction

This section of the project report outlines the range of issues identified in the various research processes undertaken for this study (including the audit of education and training, the skills needs analysis survey, the two supplementary surveys on trades and professional conservation and the stakeholder workshop). The key findings of the study are discussed in detail in the sections below, with a summary table provided at 7.4 Key Findings.

7.2 Building a Sustainable Heritage Conservation Sector

In policy terms, a range of systemic factors make it impossible to recommend any 'quick fix' responses to the issues identified in this study, in terms of the availability of training and education, and perceptions of gaps in skills and future training priorities. These systemic issues are discussed below, including the lack of:

- overarching policy;
- industry benchmarks for education and training outcomes;
- appropriate models for training in various sectors and at different career stages; and
- quality standards and mechanisms for their enforcement.

Building a sustainable heritage management and conservation sector relies not only on developing these critical support mechanisms, but also the continued promotion and celebration of heritage as an irreplaceable aspect of environment and culture. Drawing talented practitioners to the heritage industry and keeping them gainfully employed, relies on continued emphasis on building the profile of cultural heritage in Australasia and the perceived prestige of high quality conservation and management of cultural heritage. This includes recognition of the 'intangible heritage' value of some of the practices which are used to maintain and conserve aspects of significant built cultural heritage.

7.2.1 Heritage Training and Education Policy

A key conclusion of the Industry Expert's Workshop (March 2010) was the need for a national/Australasian policy for setting and maintaining standards in conservation practice. Heritage education and training will be an important part of implementing such a policy. The Australian National Cultural Heritage Forum's Vision Statement of 2004 also identified the urgent need for a 'National Heritage Training Strategy'. Training and education for the heritage sector lacks any co-ordination at the national/transnational level and there are no endorsed industry standards or benchmarks against which the quality of training and education can be measured or audited. There are also no identified and agreed core competencies or core knowledge areas for cultural heritage professionals and tradespeople.

This situation puts Australasia's cultural heritage at risk:

- Students of heritage education and training have no formal indication of the adequacy and standard of current educational products in the cultural heritage sector.

- A large proportion of respondents consider their formal education did not adequately prepare them for work on traditional buildings and structures and most consider that their skills in this area were learnt on 'on the job' (most received formal training more than 20 years ago).
- Potential employers have no assurance that graduates and trainees possess core competencies or knowledge areas relevant to their area of heritage work.
- Government and the broader community have no mechanisms to ensure best practice standards are maintained in heritage conservation, management and research.
- Cultural heritage research, conservation, interpretation and management will stagnate and be ineffective without a sustainable educational foundation.

The following key areas need to be addressed in an overarching heritage training and education policy:

- Accreditation of Training and Education—identifying core competencies/knowledge areas and accrediting educational products which deliver these learning outcomes.
- Standards and Quality—developing benchmarks against which standards of practice/quality can be measured and evaluated.
- Guidance—availability of high quality advisory material to support best practice. Development of a range of online or published products which support best practice.
- Research and Development—formulating a research agenda and strategy for cultural heritage which stimulates and informs the development of standards and best practice.
- Compliance and Incentives—supporting the use of statutory approval processes and permits which require accredited or appropriately qualified practitioners, as well as conditions on grant and funding, which reinforce standards of practice and expertise.
- Audit and Evaluation—supporting an ongoing policy for the collection of data about education and training in the heritage sector and the development of tools to evaluate whether or not industry objectives are being met.

7.2.2 Standard, Quality and Quantity of Training and Education

This study could not critique the quality, depth or content of the identified education and training programs relevant to cultural heritage, nor could it comment on the skills needs identified as priorities in the surveys in terms of the core skills requirements of an appropriately qualified heritage practitioner. This is because no accreditation or benchmarking of heritage conservation and management education and training, and no process for registration of appropriately qualified practitioners, currently exist in the Australasian context.

The Australasian heritage industry is a small one by comparison with, for instance, the United Kingdom, Canada and the USA, which may provide a benchmark for comparative policy. Indeed, the size of the heritage industry has not yet been adequately quantified (but is discussed broadly in Section 3.0). However, it is clear from the industry discussions, workshops and survey data, that some form of accreditation is required for heritage sector professional and trades training as a matter of high priority.

Accreditation must be driven by professional bodies but must also be supported by government and the tertiary sector. It is anticipated that there will be problems surrounding courses which cover educational areas that straddle a range of professional or trades organisations and their accreditation will not be straightforward. Further, professional bodies are typically volunteer organisations, so financial and in-kind support from the government would be vital to the success of an accreditation framework for heritage professional and trades training.

Registration of appropriately trained heritage practitioners is generally considered to be a less urgent priority, and indeed should logically only be developed once benchmarks are in place for required training, skills, competencies and knowledge areas for heritage professionals.

The HCOANZ should adopt a support and advocacy role in promoting accreditation for heritage training and education. HCOANZ should invite professional bodies such as ICOMOS, Australian Institute of Architects (AIA), the Australian Institute of Energy, the Master Builder's Association (MBA) and other relevant professional and trades organisations and training providers in Australia and New Zealand to form a heritage training and education accreditation taskforce, with the aim of identifying and adopting core competencies/knowledge areas and accrediting educational products which deliver these learning outcomes.

7.2.3 Need for Co-ordination Among Training and Education Providers

Co-ordination of Education and Training Providers

The need for accreditation, liaison and negotiation across the sector provides a vehicle for increased co-operation and co-ordination on heritage related training and education in the tertiary sector, and for training/education providers to work together towards providing complementary, accessible and appropriate training products and delivery methods. A model for this approach might be the Australia and New Zealand Association of Planning Schools, which is a coalition of training and education bodies that is separate from, although closely allied with, the Planning Institute of Australia. The aim of this body is to provide a forum for research and development into the educational needs in the planning sector. Such a forum for dialogue for heritage education and training does not currently exist and this fact contributes to the fragmentation of the sector and a lack of co-ordination and co-operation between competing training providers.

HCOANZ should support and encourage, through its national policy and its heritage training and education accreditation taskforce, the formation of a body which promotes co-ordination between heritage education and training providers in Australia and New Zealand.

7.2.4 Training and Education Options and Models

The current profile of professional heritage practitioners reflected in the skills needs survey and analysis, is 91% tertiary educated, 66% with postgraduate awards and 63% have also undertaken professional short course training. However, training for the skills identified as most used in heritage workplaces was most likely to have occurred in the workplace. The preferred mode of future training for these respondents was through intensive short courses or 'on the job' training. This suggests that existing formal education programs and curricula do not provide key workplace skills.

While there appears to be a steady demand for broad ranging tertiary training, responsive to changing industry imperatives and standards, the best model for professional development training is not yet clear. Universities do not provide a flexible platform for responding quickly to perceived

industry training needs. University curricula are developed through formal processes involving bodies such as Australian Universities Quality Association (AUQA), University Academic Boards and other forms of scrutiny and approval, as is appropriate for education delivered through the university system. University curricula are often professionally recognised. Curricula can take more than a year to be approved, and must subsequently be re-submitted for approval if any changes are required. University based training/education needs to be long term, sustainable and financially viable—all units/subjects offered usually need a minimum of twenty (and sometimes more) participants each time they are offered. Distance education can vary these requirements but not all heritage skills/competencies can be taught through distance or online education.

How does the market demand for new training compare to the industry's demand for improved skills and standards?

Interviews with practitioners[1] involved in developing and delivering heritage short courses all confirm that is difficult to run short courses on an economically viable basis. The market is unreliable—demand can be low, despite the widespread perception that such training is required. The Holmesglen TAFE established the Specialist Centre for Heritage Trades with support from Skills Victoria in 2006; however, its funding was withdrawn in 2007 after less than 12 months in operation. Demand for its courses was insufficient to support the Centre and those courses which did run tended to have low numbers.[2] Another example is the NSW Heritage Trades Training Strategy, which was developed and offered though the TAFE system between 2000 and 2003. A series of modules were developed conveying bricklaying, carpentry and joinery, painting and decorating, stone masonry, plastering and roof plumbing. However, most modules were never offered, because the numbers were below the level that TAFE could sustain on a cost-recovery basis and none are offered now.[3] David Young has run intensive summer schools at the University of Canberra for 19 years. They are aimed at professional development for people already working in the sector. While these summer schools have been successful, demand has been just sufficient to support a specialist course on building conservation and a more general course on heritage management, run in alternate years.[4]

The audit and survey has identified that building conservation skills are taught in a small number of courses/degrees in NSW, Victoria and the ACT only. A submission to this project made by the Association of Preservation Technology, Australia Chapter, recommended that the current short course on Traditional Building Conservation at the University of Canberra be offered annually, rather than every 2 years. However, this course has not been able to attract sufficient numbers to be offered so frequently. Varying the location of the course from year to year may be an option for attracting required numbers, however this would also mean duplication of the administrative burden, development of new curriculum for site visits etc—all adding to the recurring costs of delivering the course.

Professional development courses provided on a not-for-profit basis by professional organisations may be another means of delivering professional development courses to the heritage sector—and perhaps in the future completion of accredited short courses could be linked to professional registration requirements or grant funding. Participation in the delivery of such training could also be promoted as an appropriate form of industry contribution for senior professionals, in the way that mentoring programs are currently used by ICOMOS, AIA and other professional organisations. Government agencies could lead by example in providing professional development staff training and in the recognition of expert, well trained staff.

How can on the job training be managed, supported and recognised?

It seems likely that a range of training especially for the heritage trades is best delivered on the job. How can the heritage sector support on the job training for both private and public sector employers?

On the job professional development requires a process for recognition. Professional bodies, through the proposed accreditation taskforce and education and training provider network, should develop an 'on the job' learning framework which includes incentives for employers to provide training; incentives to employees to have their training recognised; includes a means to evaluate and audit on the job training; and a way to make information about on the job training publicly accessible.

The sporadic need cycle

Aging of building stock, trends in cultural heritage management and interpretation, (such as growing requirement for *in situ* conservation of archaeological remains, conservation of modernist structures and WWII defence structures, for example), gives rise to peaks in demand for new or rare technical skills in these areas. Sometimes this can be experienced as a rolling cycle. For example, a peak in the need for dry-stone walling repair may occur every ten years or so, as walls repaired during the previous peak in this specialist area of conservation again need attention. These peaks and troughs in demand for conservation skills make sustaining university and TAFE based courses difficult and also challenge attempts to run training courses on a commercial basis.

The variable nature of the natural demand for specialist skills means that external mechanisms are needed to create a 'demand-lead' market for heritage training. To create sustainable demand, specialist training needs to be tied to compliance requirements for statutory approvals and heritage grants for works (using the English Heritage model). Professional/trade bodies and heritage agencies also need to respond to this sporadic or rolling need cycle by developing flexible, low cost training modules and self-learning tools.

Heritage trades training issues

This study has highlighted some systemic problems relating to supply and demand for specialist heritage trade skills. Survey data collected from the trades sector was counterintuitive: while it highlighted issues of the perceived inadequacy of training for new apprentices in relation to work on traditional buildings and structures, it did not identify current gaps in skills or future training priorities. This appears to be, in part, explained by a perceived lack of market demand for traditional trade skills. Obtaining and maintaining such skills is not seen to be matched by financial reward nor by rewards in terms of job satisfaction through regular access to challenging projects on traditional buildings and structures.

This situation is contrasted with data collected from the small numbers of professional materials/technical conservation specialists and through discussion at the expert workshop, which focused on the lack of availability of adequately trained or experienced trades specialists and the resulting low standards of building conservation works. This phenomenon was described by interviewees and workshop participants in terms of mismatched expectations between heritage specialists and some parts of the trades sector—conservation specialists have a perception about what constitutes best practice standards or high quality work by tradespeople, but this perception is not shared by all trades practitioners who, it is argued, may not be aware of how their specialist knowledge or the quality of their work falls short. In short-hand terms this was referred to as the

'*they don't know what they don't know'* factor. This disparity between skill level perception and skill level reality applies to professional heritage practice as well as to trades. Differences may also arise between the cost of what heritage professionals deem to be appropriate and what clients, developers or builders are prepared to spend on diagnostic processes or physical conservation. These differences can create a predisposition towards engaging practitioners with lesser skill sets.

This situation points to a potential market failure in the area of traditional building trades and conservation skills—that is normal market demand has failed to support the maintenance of traditional building techniques and trades. This situation ideally requires further specialist research to investigate the perceived market failure of traditional trades training, and to demonstrate conclusively the resulting lack of capacity for appropriate traditional buildings conservation and the low standards in building conservation works. Such research would require the articulation of benchmarks for the evaluation of quality standards, and this step may in itself go someway towards solving the perceived problem with quality. Clear quality standards could be broadly promoted, publicised and linked to compliance regimes for approvals for works and grant conditions for the conservation of traditional buildings. In this way it may be possible to manage this problem as part of a quality management regime with which the industry is already familiar, such as the introduction of an Australian Standard, use of ISO:9001 to document performance against objectives, or a standard heritage section of a Quality Management Plan/works plan.

Discussion at the Industry Experts Workshop also highlighted that the maintenance of these traditional trades practices is an issue of intangible heritage conservation in itself, as highlighted in the UNESCO *Convention for the Protection of Intangible Cultural Heritage*. Further investigation of methods used to promote and ensure the maintenance of traditional trades practices in other parts of the world could provide relevant methodologies for application in Australasia. In Section 3.0, the relatively high availability of training opportunities in Maori building craft was noted. Doubtless the link between the maintenance of these craft skills with cultural identity and cultural heritage is well understood within the Maori community. It seems that this understanding of the link between traditional building skills, cultural identity and cultural heritage has not been maintained in the non-indigenous, settler communities of Australasia. Promotion of an understanding of the links between traditional skills, cultural diversity and cultural heritage may be a required trigger to maintain this niche within the overall trades sector.

7.3 Research and Development

While professional heritage practitioners undertake substantial amounts of research, 'cultural heritage conservation and management' is itself not a well developed research area in Australasia. Efforts to address training and skills needs should also include the commensurate need to sustain a viable research program to promote the growth and vitality of heritage as a relatively new discipline. In particular, efforts to develop heritage education and training need to give equal consideration to the development of the necessary infrastructure for research. These might include industry scholarships, awards and prizes, promotion of industry research agendas or identification of government and industry resources for heritage related research. Heritage training will also undoubtedly benefit from greater cross-disciplinary teaching, practice and research, for instance museum conservators have a wealth of skills and knowledge that can be applied to buildings and archaeological sites, while cultural heritage research needs to be nourished through strong academic and professional links with history, architecture, landscape architecture and a range of relevant disciplines.

The project team is aware of the development of two Cooperative Research Centre bids related to heritage conservation at the time of writing (Heritage Futures CRC bid led by Flinders University and the Cultural Material Conservation CRC bid led by the University of Melbourne). If these bids are successful they may provide a timely injection of research and development capital into the sector. It is recommended that the HCOANZ should seek appropriate representation within the structure of any successful CRC bid.

7.4 Key Findings

Research Area	Finding
Professional Physical and Technical Conservation Survey	Potential lack of professionals in the 30-45 years age bracket.
	Most skills learnt on the job; formal education received more than 20 years ago.
	New recruits poorly prepared for work on traditional buildings and structures, suggesting missing link between education providers and the industry.
	Apparent willingness from employers to provide professional development training but difficult to access relevant courses and cost issues.
	Specialists have difficulty in finding people to whom they may pass on their skills.
	Moderate demand expressed for training in physical conservation skills with a high level of current in-house skills.
	Higher demand expressed in this survey for future training in specialist trade skills such as: traditional timber construction skills.
	General finding from this sector was that there is a lack of specialist trade skills available and that trades people '*don't know what they don't know*' ie they are not aware of the requirements for specialist traditional knowledge/skills if they have not been taught these skills. A predisposition towards lesser-skilled practitioners can also arise from differences in perception and value of the cost of conservation.
Trades Physical and Technical Conservation Initial Survey	Data from this survey contrasted distinctly with the data collated from the Professional Physical and Technical Conservation Survey, which pointed to a lack of specialist trades people/skills. In the initial survey all skill areas were seen as low priorities for future training and gaps in skill areas were not clearly delineated in the survey data.
	The question concerning 'priorities for future training to enhance business capacity' resulted in all skills being seen as low priority—each considered a priority by less than 17% of respondents and most by less than 10% of respondents. This possibly reflects the perception that the skills listed were not in demand in the marketplace and therefore their acquisition would not enhance business capacity.
	Results suggest an ageing professional group with a lack of skilled tradespeople in the 30-45 year age range. This is a critical issue for future conservation in Australasia.
	Most current practitioners feel that their training was good preparation for their work (NB training received more than 20 years ago in the majority of cases). However they also feel that the majority of new apprentices do not receive adequate information about traditional buildings and structures in their training.
	Over 70% of respondents received training in traditional buildings and structures 'on the job'.

Research Area	Finding
Tertiary Heritage Education	The audit identified: 9 specialist heritage degrees from Bachelor to Masters level across Australia and New Zealand; 9 discipline specific (including architecture, materials conservation and archaeology) heritage degrees from Bachelor to Masters level across Australia and New Zealand; A further 68 courses with significant heritage content in Australia and 16 in New Zealand.
	20 short courses were identified offering professional development programs in heritage professional and trades skills/knowledge areas.
	Significant training opportunities exist in Maori building craft in New Zealand.
	Audit of TAFE sector, institutes of technology, polytechnics and training providers of trades training revealed that many courses touched only briefly on traditional trade skills; the depth of treatment difficult to gauge through the audit.
Gaps in Professional Training/Education	Concentration of professional heritage training and education opportunities in South Australia, ACT and Victoria. NSW offers only half (24) the number of training/education opportunities offered in Victoria (46). Tasmania and NT offer very limited training opportunities only in heritage interpretation.
	No physical conservation/architectural conservation training opportunities were identified in Qld, SA, WA, NT or Tas.
	Historic landscape management and community consultation skills are the least taught of the generic heritage management skill areas and these skills also rated as high priorities for future training.
	Legislation and policy is the most taught of the generic skill areas but remains a high priority for future training.
	Archaeology is more likely to be taught in a heritage management focused or specialist course than the other relevant discipline areas such as architecture, history, engineering etc.
	GIS is identified as a high priority for future training. This skill is widely taught but there may be a need for courses 'tailored' to heritage practitioners.
	Significance thresholds, building codes, Aboriginal heritage legislation and the EPBC Act were all identified as training priorities. These all relate to areas of public policy and legislation administered by government and the responsibility for training in these areas can be seen to partly lie with the responsible agency.
	Future demand for training in artefact conservation and analysis can be seen to derive from changing practice in archaeological heritage management.
Heritage Trades Training—Supplementary Surveys and Expert Workshop	Specialist trade skills for heritage practices are now concentrated in a few hands. Expert heritage trades professionals are ageing (as a population); many will retire in the next 10 years. This will leave a major gap in future opportunities for 'on the job' training, as well as a vastly diminished pool of resources to 'do the job'
	High quality technical skill derives from both formal and informal 'on the job' training.
	Available skills and experts who can mentor heritage trades practitioners are geographically concentrated - in urban areas on the east coast of Australia.
	Standards of practice in the heritage trades are recognised as poor by senior experts in the field, presenting significant risks for the conservation and retention of heritage buildings and places.

Research Area	Finding
	There is limited recognition of the low level of practice standards and the relative lack of specialist skills by younger practitioners. The more 'experienced and specialised' the practitioner is, the more concern he or she has about inadequate standards and training.
	There have been a number of attempts to re-introduce specialist curricula and training courses in the heritage trades. These courses have all failed because demand was below the minimum class size needed to recover costs, thus creating a major continuing gap and looming crisis for heritage conservation in Australasia.

7.5 Endnotes

1 Personal communications between the project team and David Young, University of Canberra, Linda Young, Deakin University and Alexandra Mannell, Holmesglen TAFE.

2 Pers comm., Alexandra Mannell, 10/12/09.

3 Pers comm., David Young 9/12/09 and Elisha Long 2/6/10.

4 Pers comm., David Young 9/12/09.

8.0 Recommendations

8.1 Introduction

This section outlines the key recommendations coming from the findings of the report (outlined in Section 7.0). Recommendations are made about policy responses to address the education and skills needs of the heritage sector, as well as the identified gaps in training and educational options. This section concludes with an 'Indicative—Heritage Training Policy' for consideration by HCOANZ.

8.2 Recommendations

8.2.1 Specific Recommendations to the HCOANZ

1. The HCOANZ should establish and adopt a policy for heritage training and education in Australia and New Zealand which addresses the key findings of this project. An 'Indicative Heritage Training Policy' is provided in Section 8.2.3 (below).

2. The HCOANZ should instigate development of a policy for setting and maintaining standards in conservation practice.

3. The HCOANZ should take a lead role in national/Australasian technical conservation advice and facilitation / co-ordination of heritage professional and trades training, possibly through the appointment of a national technical officer.

4. The HCOANZ should develop a centralised online location for promoting and recording short courses and masterclasses provided by heritage agencies.

5. The HCOANZ should adopt a support and advocacy role in promoting accreditation for heritage training and education. HCOANZ should invite ICOMOS, AIA, AIE, MBA, NTQA and other relevant professional and trades organisations and training providers in Australia and NZ to form a **heritage training and education accreditation taskforce,** with the aim of identifying and adopting core competencies/knowledge areas and accrediting educational products which deliver these learning outcomes. (Allocation of resources to provide short term secretariat support to this taskforce would increase the prospects of timely and effective instigation of accreditation programs and other desirable outcomes, as outlined below.)

6. The HCOANZ should support and encourage, through its **heritage training and education accreditation taskforce**, the formation of a complementary body which promotes co-ordination between heritage education and training providers in Australia and New Zealand.

7. The HCOANZ should support and encourage, through its **heritage training and education accreditation taskforce**, the development of a process for recognition of 'on the job' training. Professional bodies, through the auspices of the proposed accreditation taskforce, should develop an on the job learning framework which includes incentives for employers to provide training; incentives to employees to have training recognised; means to evaluate and audit on the job training; and to make information on the job training publicly accessible.

8. The HCOANZ should support and encourage, through its **heritage training and education accreditation taskforce**, a research agenda covering:

   - The relative size of the heritage industry in Australasia;
   - collection of data on heritage building stock and place types;
   - ongoing collection of data on the demand for skills for heritage works;
   - identified training and skills needs in the heritage sector; and
   - promotion of opportunities for interdisciplinary cross fertilisation in research, training and practice.

9. The HCOANZ should also seek appropriate representation within the structure of any successful CRC bid related to heritage conservation.

10. The HCOANZ should instigate consistent statutory approval and compliance practice among heritage regulators, at all levels of government across Australia and New Zealand, which requires professionals and tradespeople involved in work on heritage buildings and places to hold relevant specialist qualifications and/or demonstrate appropriate specialist skill levels.

11. The HCOANZ should instigate consistent practice among heritage regulators, at all levels of government across Australia and New Zealand, which makes grant funding for works on heritage buildings and places conditional on use of professionals and tradespeople with relevant specialist qualifications and/or experience who can demonstrate appropriate specialist skill levels. Ideally, aligned subject areas for grant funding and training (such as 'plastering', for example), should be selected, so that training providers can be alerted to the likely demand created by grant funding conditions. (English Heritage and their National Heritage Training Group (NTHG) provide a benchmark model for this approach).

12. The HCOANZ should instigate further investigation of the perceived market failure of professional physical conservation and traditional trades training. This research would require the articulation of benchmarks for the evaluation of quality standards for traditional trades work.

13. The HCOANZ should recommend to each of its constituent agencies that they should:

   - note the findings of this report;
   - adopt a consistent 'Heritage Training Policy' (once it has been adopted by HCOANZ); and
   - adopt and implement relevant recommendations of this report.

8.2.2 General Recommendations

14. Professional/trade/training organisations need to respond to the sporadic or rolling need cycle of the heritage industry by developing flexible, low-cost training modules and self-learning tools.

15. Professional/trade/training organisations should be encouraged to develop professional development courses provided on a not-for-profit basis, including the potential for pro bono training by senior professionals as community service.

16. Government heritage agencies should lead by example in providing professional development staff training and in the recognition of expert, well trained staff.

17. A priority for heritage related research should be the maintenance of traditional trades practices as an issue of intangible heritage conservation, as highlighted in the UNESCO *Convention for the Protection of Intangible Cultural Heritage*. Investigation of methods used to promote and ensure the maintenance of traditional trade practices in other parts of the world may provide relevant methodologies for application in Australasia.

18. Heritage education and training providers should form their own liaison group to promote dialogue and co-ordination between heritage education and training providers across Australia and New Zealand.

19. This report (or an amended version which excludes these recommendations) should be published on line, along with the skills and training audit data.

8.2.3 Indicative Heritage Training Policy

This indicative policy statement is provided for consideration by the Heritage Chairs and Officials of Australia and New Zealand.

> *Conservation of the vast array of culturally significant buildings and places in Australia and New Zealand relies on a body of heritage professionals and tradespeople with relevant specialist skills. These skills are acquired through both formal and 'on the job' training. The number of practitioners with these skills has declined in recent years and the population of appropriately skilled practitioners is ageing–leading to a looming crisis in cultural heritage conservation.*
>
> *Heritage agencies, at all levels of government, are able to influence heritage training and the essential skill set that appropriate training creates through a range of initiatives, including: pro-active liaison with training organisations, facilitating professional accreditation, statutory approval requirements and conditional grant funding.*
>
> *The Heritage Chairs and Officials of Australia and New Zealand (HCOANZ) accept the need for leadership in setting and maintaining standards for heritage practice and training in the following areas:*
>
> - *National Co-ordination—HCOANZ will seek to co-ordinate heritage professional and trades training in Australia and New Zealand, as well as provision of technical conservation advice, publications and research.*
> - *Accreditation of Training and Education—HCOANZ will act to facilitate the identification and adoption of core competencies/knowledge areas and accreditation of educational products which deliver these learning outcomes by relevant industry-based professional organisations.*
> - *Standards and Quality—HCOANZ will develop national/international benchmarks against which standards of practice/quality can be measured and evaluated.*

- *Guidance — HCOANZ will co-ordinate and promote the supply of high quality advisory material to support best conservation practice, by liaising with heritage agencies and encouraging the development of a range of online or published products.*
- *Research and Development—HCOANZ will support development of a research agenda and strategy for cultural heritage which stimulates and informs the development of standards and best practice. This agenda will include: collection of data on the heritage industry, heritage building stock and place types, demand for heritage trade skills, training and skills needs in the heritage sector; and promotion of opportunities for interdisciplinary cross fertilisation in research, training and practice.*
- *Compliance and Incentives—HCOANZ will encourage the use of statutory approval processes, permits and incentives which require accredited or appropriately qualified practitioners, as well as conditions on grant and funding, to reinforce standards of practice and expertise.*
- *Audit and Evaluation—HCOANZ will support collection of data about education and training in the heritage sector and ongoing evaluation of the effectiveness of heritage professional and trades training.*
- *Consistency—HCOANZ will encourage all of its constituent agencies to adopt and implement this policy.*

9.0 Appendices

Appendix A

Types of Training

Appendix B

Outline of the Literature Reviewed

Appendix C

Audit Database

Appendix D

Raw Survey Data

Appendix E

Industry Experts Workshop 26 March 2010

Appendix A

Types of Training

Appendix A—Types of Training

1.1 Purpose of this Section

This section discusses and outlines the identified modes of training within the heritage industry, discussing a variety of means for training which are and can be utilised by the heritage industry.

Each type of training is briefly described in terms of how they are offered, the awards they provide and discussion of some of the benefits and/or constraints of each.

1.1.1 Doctorate

A doctorate is an academic/professional degree and stands as the highest level of formal study or research in a field. A doctorate can be gained by undertaking a PhD (Doctorate of Philosophy).

A doctorate award is offered through the university sector—and can only be undertaken following completion of an Undergraduate Degree with Honours.

A doctorate is achieved through original research and the submission of a 'Doctoral Thesis' which is undertaken over three to five years of full time study or the part time equivalent. A student undertaking a Doctorate must carry complete a piece of original research which (by assessment) is of recognised standing, adds substantially to existing knowledge and understanding of the field of study, demonstrates a thorough knowledge of relevant literature in the field of study, and demonstrates a high degree of scholarship.

A Doctorate award, as the highest level of formal study in Australia and New Zealand is a highly regarded and widely recognised accolade. Doctorates are however, offered only through the University sector, and can be both costly (some supported places are available, but these awards can cost over $20,000 per year) and time consuming; another constraint is the compulsory completion of an Undergraduate degree with Honours before becoming eligible for completion of a Doctorate.

1.1.2 Postgraduate Awards

There are several types of Postgraduate Awards available to students who have completed Undergraduate studies. These include a 'Masters' award, a 'Postgraduate Diploma' and a 'Postgraduate Certificate'.

A Masters Award can be completed either by research or by coursework (with a small research component). A Masters by Coursework involves a program of classes in major field of study and typically incorporates a research project or dissertation. A Masters by Research involves intensive, self-directed research and the submission of a thesis or major research project. In Australia a Masters Degree is undertaken for one to two years of full-time study or the part time equivalent.

A Graduate Diploma allows a student to develop new professional skills or extend knowledge gained in an undergraduate degree. A Graduate Diploma consists of one year of full-time study or the part-time equivalent.

A Graduate Certificate involves broadening the skills already gained in an undergraduate program, or assists in developing vocational knowledge in a new professional area. A Graduate Certificate is undertaken for six months of full time study or part time equivalent.

Postgraduate Degrees, in particular a Masters Award are well regarded in the heritage sector, and can be a more viable and flexible option than undertaking a Doctorate (in terms of time and money).

However, as with a Doctorate, Postgraduate Degrees are only offered through the university sector, and can be costly and time consuming.

1.1.3 Undergraduate Degree

Undergraduate Degrees (also referred to as Bachelor Degrees) are typically undertaken for a period of three to four years (full time, or part time equivalent) and provide the fundamental skills and knowledge to the student of a particular discipline. Basic/introductory courses for skills and knowledge building are usually undertaken in the first year of studies, and a choice of 'Major' or 'Minor' fields of studies to specialise and gain further experience are offered from the second year onwards.

Enrolment in an Undergraduate Degree can be obtained by reaching a specified score level in high school studies, through a designated connection course/preparation scheme or as a mature age student (over 21 years of age). An Undergraduate Degree is often regarded as a minimum standard in many professional fields, and forms a solid basis for further professional studies.

Undergraduate degrees are a great way to gain the fundamental skills for many facets of a discipline and in many cases qualify the graduate to go straight into a particular field (such as archaeology or landscape architecture). Undergraduate studies may also allow a student to find a specialisation within the discipline that interests them—and enables them to progress to further study. Undergraduate Degrees can be undertaken with assistance (deferring of fees) from the Government, although in the long term, are fairly costly. Undergraduate degrees are also time consuming and can be intensive.

1.1.4 TAFE/Polytechnic College

TAFE (Technical and Further Education) (Australia) or Polytechnic Colleges (Aotearoa/New Zealand) are designed to assist people preparing for their first job, people looking to train or retrain in certain areas, and prepare people for University studies.

Courses offered at TAFE and Polytechnic Colleges are aimed to provide students with practical skills that are readily transferable to the workplace. Many courses are based on national competency standards. The content of courses is vocationally orientated and many require students to undertake practical placements in the workplace. Most courses are also developed in consultation with industry.

There several levels of courses offered by TAFE and Polytechnic colleges ranging from Certificates to Diploma and Advanced Diploma courses (some TAFE and Polytechnic Colleges also run Bachelor courses in conjunction with the University sector). Many TAFE and Polytechnic awards can be transferred to University studies, with recognition for prior learning.

Education at TAFE and Polytechnic Colleges is flexible and affordable, and the advantage of primarily practical learning ensures students are industry ready. TAFE qualifications are widely regarded as a substantial basis for working in many industries, but professional sectors often require more formal study to have been undertaken.

1.1.5 Intensive/Short Courses

Intensive or Short Courses are offered in a variety of modes, and can be delivered through universities, TAFE/Polytechnic Colleges and also through independent or government training bodies. Short Courses are usually focussed on a very specific subject matter and are run in small groups to enhance the experience. Participants attend short courses as a matter of professional development and skills enhancement.

An example of a well regarded short course in Australia is the 'Conservation of Traditional Buildings' run by David Young at the University of Canberra. This is a 12 day intensive course which gives participants an introduction to many facets of practical building conservation. Dependant on the duration and subject matter, completion of some short courses results with an award (certificate, statement of attainment or similar) but many provide no award.

Short courses are a great mode of training for those with time or money constraints, and offer the opportunity to be highly specific and respond directly to a market need. However short Courses are often are limited in what curricula can be taught in s short period of time, and many do not offer recognisable awards.

1.1.6 Professional Body (Short Courses/Seminars)

Short Courses run by a professional body such as ICOMOS, The Australia Institute of Architects (AIA) or Engineering Australia are usually run purely for professional development purposes, allowing members and/or other participants to brush up on skills, workshop industry issues and enhance industry knowledge.

Professional Body courses are usually offered at no cost, and usually do not result in a recognisable award, but are beneficial in general professional development.

1.1.7 Apprenticeships

Apprenticeships are a beneficial way to combine training and employment at the same time and lead to a nationally recognised qualification. Apprenticeships are available to anyone of working age and do not require entry qualifications of any type. An apprentice can be still in school (completing a school-based apprenticeship), a recent school-leaver, a person re-entering the workforce or someone who is looking for a career change.

Apprenticeships are offered in a variety of fields, including trades, cooking, hospitality, retail, IT and business services. Apprenticeships in trades (in particular heritage trades) are most relevant to this project. Apprenticeships are flexible and include paid work and structured training that can be on-the-job, off-the-job or a combination of both. The training is competency based and apprentices can potentially complete training as fast as the required skills level is reached. Apprenticeships also lead to nationally recognised qualifications.

1.1.8 Mentoring

Mentoring is a process of social, or career, support and knowledge transmission. It is based on the formation of a developmental relationship in which a more experienced or knowledgeable person (a mentor) helps a less experienced or less knowledgeable person (a mentee, or protégé). Mentoring is often an informal arrangement although it is increasingly becoming a formalised arrangement between members of a work place or within sectors of an industry.

In the heritage industry mentoring can be established between people within the same business organisation as an internal business process. Often this is a formalised arrangement that can be tailored to the career aspirations of the mentee. Career based mentoring can also be undertaken on an external basis from a workplace, although this would normally be based on an informal arrangement and may be less directly tailored towards the career aspirations of the mentee within their current workplace environment.

ICOMOS (ACT) is currently trialling a formalised external mentoring scheme between ICOMOS members, businesses and recent University graduates.

Mentoring can be a highly beneficial practice for both the mentor and mentee. The mentee in particular receives the wisdom and insight from the mentor and can use the relationship to help guide and reflect upon aspects of their career and future that may otherwise seem daunting. It is a particularly good personal developmental relationship to have for new graduates/young career professionals. The drawback of mentoring is the lack of a recognised award or certification attesting to the knowledge and skills that maybe acquired during the process.

1.1.9 Self Learning (publications)

Self learning is an unmonitored and totally individual way to gain knowledge. Self learning can involve the use of a specially designed kit with resources and activities on a particular subject, or can include reading of publications to gain knowledge on a subject.

Self learning is not regulated by the educational sector and can be undertaken at any time, anywhere. Self learning also gives an individual the chance to choose exactly what they do and do not learn about.

As self learning is in no way regulated, it is therefore difficult to verify if and how thoroughly it was undertaken. It is also difficult to gauge if the knowledge gained is of relevance to working in the industry as there is a possible lack of critical examination of the learning material. Self learning also offers no recognition or awards.

1.1.10 Offshore

Many heritage professionals in Australia, New Zealand and abroad gained their specialist skills via offshore courses. These courses involve the undertaking of university level studies overseas, being taught by many world regarded heritage professionals.

The benefits of offshore course include gaining a world regarded and highly specialised qualification, and bringing back to Australia and New Zealand great and unique experiences learnt in and international context.

Constraints of offshore learning include the immense cost, not only of the courses but of travel and living expenses abroad. It is also somewhat inconvenient and taxing on career and home life to travel overseas for long periods of time, and although many courses include globally relevant content, some of what may be taught abroad may not be relevant or applicable to the local industry.

Offshore providers of heritage training include ICCROM, Le Mairre, University of Pennsylvania, University of York and the American College of the Building Arts.

Appendix B

Outline of the Literature Reviewed

Appendix B—HCOANZ Heritage Trades and Professionals Training Project: Literature Review

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
National Heritage Training Group	2008 London, UK	Built Heritage Sector Professionals: Skills Needs Analysis of the UK Built Heritage Sector	• Analysis of the UK Built Heritage Sector, skills need and demand for heritage professionals. • Very detailed and conclusive report which makes some relevant parallels to Australia. • Data gathered by questionnaire and interview methodology in additional to statistics gathering and detailed market research.	Both, but not construction industry focussed. Trade mentioned as part of skills professionals could learn, not so much tradespeople.	Both, but for built heritage only.
NSW Department of Planning	12-Sep-07 Parramatta, NSW	National Workshop on Practical Heritage Conservation Skills	• Overview of workshops held by NSW Department of Planning analysing the skills shortage in practical heritage conservation. • UK Perspective given by John Fidler. • Pre-emptive to this project—one of the recommendations is for a National Audit to be undertaken.	Both	Skills Needs Analysis
Trevor Howells	11-Sep-07 Sydney, NSW	Heritage Conservation Training at the University of Sydney	• Overview of current offerings and skills needs at University of Sydney. • Call for accreditation of heritage professionals. • Call for more undergraduate education, as USYD no longer offers this.	Professional sector	Both, covers offerings at USYD, but points to skills need.
National Parks Service	1998,USA	Cultural Resource Management Guidelines	• Appendix of a Management Guidelines report for the National Parks Service, USA. • Contains minimum qualification for personnel working in cultural resource management	Professional sector	Training audit

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
International Specialist Skills Institute Inc	2007 Sydney, NSW	The Lucky Country: Striking out or striking it rich	• PowerPoint presentation • Background to ISS mission and key offerings • Lists tradespeople as the economic backbone of Australia • No structured or accredited course to become a master artisan • Recommends 'heritage' be repositioned as a crucial element of sustainability and environment in the Government forum.	Trades sector	Both, ISS has training opportunities available, but also points to a skills need.
Bob Hook, David Heath, Kate Geary, Amanda Feather, Edmund Lee, Seamus Hanna, Amber Xavier-Rowe and Amanda White	2006 Swindon, UK	Training in the Heritage Sector: Professional Training	• Review of skills need, conservation accreditation, and workplace learning. • Articles in Conservation Bulletin • Review of the skills need in traditional techniques identified by NHTG • References the need for professional accreditation	Professional sector	Skills needs analysis
Seamus Hanna, Alistair Collin & Amanda White	2006 Swindon, UK	Training in the Heritage Sector: Traditional Building Skills	• Articles in the Conservation Bulletin • Skills need analysis of traditional building skills in the UK • Review of National Heritage Training Group studies.	Trades sector	Skills needs analysis

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
English Heritage	2006 Swindon, UK	Architectural Conservators Education and Training in England	• Specifically on the training of architectural conservators in England. • Skills need analysis • Current offerings overview	Both, though mostly focussed on university studies.	Skills need analysis

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
NSW Department of Planning	11 May 2005 Parramatta, NSW	Practical Conservation Skills Workshop	• Perceived declining skills base for practical building conservation and heritage trades. • Mentions that 84% of the industry do not want to train staff, they want to recruit those who already possess the necessary skills. • Apprentices do not receive much opportunity for training in heritage trades, only 2% of heritage work is undertaken by apprentices. • As most practitioners have a good skill base (around 60-70% of the necessary skills)—training should be focussed on gap filling rather than new courses. • Recommends a 'Bond System' for work on heritage buildings, with those who do inappropriate work on heritage buildings being prosecuted. • Recommends accreditation for practitioners—with levels of professional development which must be maintained to retain accreditation. • Recommends the use of derelict unlisted and not likely to be listed buildings to used for training students. • Skilled tradespeople who are retiring may volunteer their time for training. • Linking of accreditation to development application process (only using accredited practitioners to undertake work)	Trades	Both

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
Jeff Cody and Kecia Fong	2007 Oxon, UK	Built Heritage Conservation Education	• Based on 9 contributors • Focuses on deficiencies in current offerings • Recognises the need for fieldwork to fill the gap between theoretical ideas and practical application. • States the importance of an interdicisplanary approach to education. • Recognises the disconnect between global and local ideas. • Reiterates the importance of community participation in training.	Professional sector	Skills need analysis
National Heritage Training Group	2009 London UK	Traditional Building Craft Skills: Skills needs analysis of the built heritage sector (Ireland)	• Review of skills need in Ireland survey methodology, many useful references.	Trades sector	Skills need
National Heritage Training Group	2007 London, UK	Traditional Building Craft Skills: Skills needs analysis of the built heritage sector in Wales 2007	• Review of skills need in Wales survey methodology, many useful references.	Trades sector	Skills need
National Heritage Training Group	2007 London, UK	Traditional Building Craft Skills: Skills needs analysis of the built heritage sector in Scotland 2007	• Review of skills need in Scotland survey methodology, many useful references.	Trades sector	Skills need

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
Ecoconsult Pty Ltd in association with Context Pty Ltd	1995 Charlestown, NSW	Natural and Cultural Resource Management Curricula Audit	• Audit of both natural and cultural resource management curricula nationally • Promotes a multi-disciplinary approach • Realises the need for more practical experience • States that curricula needs to be more in line with the needs of the industry • Calls for accreditation to a national standard • Encourages collaboration between universities and vocational learning institutions • Useful references for literature review	Professional sector	Both, audits training offerings and skills needs of the industry.
National Heritage Training Group	2008, London, UK	Traditional Building Craft Skills: Skills needs analysis of the built heritage sector-England 2008 Review	• Reassessment of England skills needs, as assessed in 2006.	Trades sector	Skills needs
Stephen Frith, John Kinstler, Eric Martin, Robert Sands, Karel Slavicek and Robert Irving (ed)	1980 Sydney, NSW	Conservation Education in Australia: A Survey of Tertiary Training in Conservation of the Man-Adapted Environment	• Detailed analysis of courses and subjects nationally, now outdated. • Useful survey methodology • Useful regional breakdown for online survey • Notes lack of courses in Northern Territory	Professional sector	Training audit
Peter Phillips and Don Truman	1999 Curtin, ACT	Conservation Guidelines for Building Surveyors	• Not particularly relevant to this project. • Targeted at building surveyors—a 'how to survey a heritage building' guide.	Trades	Neither

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
Deakin University Faculty of Arts: Cultural Heritage Centre for Asia and the Pacific	2002 Melbourne, VIC	A Study into the Key Needs of Collecting Institutions in the Heritage Sector	• Collecting institutions are not part of this project, but the methodology and questionnaire techniques in this study are very useful.	Professional	Skills need
Cobb and Co Museum and Southern Institute of TAFE	2008, Queensland	Heritage is in Our Hands: A Review of Heritage Trade Training.	• Notes Australia's increasing awareness of 'cultural heritage' • Decline in skilled heritage tradespeople • Based on 2006 Productivity Commission submissions • Training is currently provided through community groups, heritage societies, museums and is often not accredited • General rise in interest in heritage trades, but not enough in any particular areas • Notes that the market is very small and training providers found it difficult to provide cost effective programs to low number so participants • Points to the term 'heritage' skewing data on training as it is not always mentioned in course or unit titles and is in fact being taught more widely than expected	Trades	Both
Don Godden (ed)	December 1992	Traditional Building Technology Volume 1.	• A how-to guide to rude timber, joinery, painting and plastering. • Part of several volumes on traditional trades.	Trades	Both

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
Stuart Read		Demi Sec: Spanish lessons for Australia in managing dry-climate historic parks & gardens.	• Identification of skills gaps in historic landscape and garden management. • Reiterates that current heritage training is primarily fabric/building based • Useful recommendations for addressing skill gaps in historic landscape management • Highlights the need for a ';landscape' component in all heritage courses to standardise competency • Industry accreditation	Both	Skills Needs Analysis
Eric Wills for Preservation	September/ October 2009	A Hands on Education: An innovative college in Charleston, S.C., teaches the forgotten arts of preservation	• American College of The Building Arts—heritage trade focussed curriculum. • US National trust noted skills shortages in the US as far back as 1968 • Prefabricated and disposable construction techniques have reduced the need for traditional skills. • Use of historic sites (dilapidated) as training resources. • Teaches diagnosis and causation • Great model for use in Australia or for offshore learning opportunities.	Trades	Skills Need Analysis

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
Australia ICOMOS	7 April 2003	Discussion Paper: Standards of Practice—with particular reference to the physical conservation of buildings, structures and sites.	• Paper submitted to HCOANZ. • Recommends a National Working Party and National Technical Advisory Group to develop Standards of Practice. • States that current standards in conservation practice are low compared to other countries—Australia is regarded for values based practice, but not physical conservation. • Recommends accreditation, mentoring, staff exchange and professional development courses to improve skills and experience of practitioners. • Recommends more conservation to be taught at entry level in courses such as architecture and engineering.	Both	Both
Phillip Toner	July 2003	Declining Apprentice Training Rates: Causes, Consequences and Solutions.	• National skills shortage, and lack of government interest in the issues. • Mentions the outsourcing of much work to 'labour hire firms' rather than taking on apprentices. • Recommends incentives be put in place for employers to take on apprentices. • Recommends that schools become more involved in pre-apprenticeship schemes.	Trades	Skills

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
NSW Heritage Office, Department of Education, Training and Department of Public Works and Services	2000	NSW Heritage Trades Training Strategy 2000-2005	• NSW strategy to promote heritage trades training. • Planned the development of a video for promotion within the building industry. • Linking heritage trades training to grants—priority given to grant proposals which involve training opportunities. • Development of over 60 training modules • Establish links with group training companies		
NSW Heritage Office	2007	National Heritage Conservation Skills and Training Workshop John Fidler	• John Fidler: UK Perspective—could be used in Australia • RIBA (aust equivalent AIA) provides conservation accreditation in the UK—of individuals not firms • Scholarships for further education in the industry • Incentives to attract students and clear career guides • Mentions that the 'Market trusts' accredited practitioners • Mentions the conservation community is 'inward thinking' and talks only to itself • Recommends the establishment of specialised training institutions	Both	Both

Author	Date/Place	Title	Summary/ General Comments	Relevant to Professional or Trades Sector	Relevant to Training Audit or Skills Need Analysis
Richard White	2005	Public Hearings: Conservation of Historic Heritage Places	• Noted a flurry of interest from the government in trades training after the Newcastle earthquake, this also highlighted the lack of qualified practitioners in the industry • Notes that heritage work is intermittent, and it is difficult for practitioners to commit solely to conservation work—any increase in practitioners (new) also exacerbates this situation. • Recommends to link the requirement for qualified tradespeople to the award of government projects, this could be through a pre-qualified (or accredited) tenderers list. This would also link to the award of grants. • Recommends a centralised training facility of a high standard, to possibly attract off-shore participants. • Recommends a review of national trade competencies, as they are well below the standards to which many historic buildings were constructed.	Trades	Both

Appendix C

Audit Database

Course Name	Subject Name (if applicable)	Hyperlink	Heritage Focus (core, some, little)	Qualification	Institution	State	1. Physical Conservation	2. Recording	3. Management	4. Consultation	5. Interpretation	6. Archaeology	7. Historic Landscape Management	8. Legislation and Policy	Special Focus
AUSTRALIA															
Bachelor of Archaeological Practice		http://studyat.anu.edu.au/programs/3110XBARCH;overview.html	Some	Undergraduate Degree	Australian National University	ACT		Yes	Yes			Yes		Yes	
Bachelor of Arts History Major		http://studyat.anu.edu.au/majors/ARTSMHIST;overview.html	Core	Undergraduate Degree	Australian National University	ACT									
Bachelor of Arts Archaeology Major		http://studyat.anu.edu.au/majors/ARTSMARCH;overview.html	Core	Undergraduate Degree	Australian National University	ACT			Yes			Yes			
Master of Arts (Archaeology)		http://studyat.anu.edu.au/majors/7100SARCH;overview.html	Core	Masters degree	Australian National University	ACT			Yes			Yes			
Graduate Certificate in Liberal Arts (Cultural and Environmental Heritage)		http://studyat.anu.edu.au/programs/6060XCEH;overview.html	Core	Postgraduate Certificate	Australian National University	ACT		Yes	Yes		Yes	Yes	Yes	Yes	
Graduate Diploma in Liberal Arts (Cultural and Environmental Heritage)		http://studyat.anu.edu.au/programs/6160XCEH;overview.html	Core	Postgraduate Diploma	Australian National University	ACT		Yes	Yes		Yes	Yes	Yes	Yes	
Master of in Liberal Arts (Cultural and Environmental Heritage)		http://studyat.anu.edu.au/programs/7127XCEH;overview.html	Core	Masters degree	Australian National University	ACT		Yes	Yes		Yes	Yes	Yes	Yes	
World Heritage: Conserving Cultural Heritage Values		http://rsh.anu.edu.au/ippha/index.php	Core	Short Course	Australian National University	ACT			Yes						
Best Practice in Managing Heritage Places		http://rsh.anu.edu.au/ippha/index.php	Core	Short Course	Australian National University	ACT			Yes						
Bachelor of Engineering		http://studyat.anu.edu.au/programs/4700XBENG;overview.html	Little	Undergraduate Degree	Australian National University	ACT									
Graduate Diploma of Arts (History)		http://studyat.anu.edu.au/majors/6100SHIST;overview.html	Core	Postgraduate Diploma	Australian National University	ACT									
Master of Arts (History)		http://studyat.anu.edu.au/majors/7100SHIST;overview.html	Core	Masters Degree	Australian National University	ACT									
Bachelor of Cultural Heritage		http://www.canberra.edu.au/courses/index.cfm?action=detail&courseid=955AA	Core	Undergraduate Degree	University of Canberra	ACT	Yes	Yes	Yes		Yes	Yes	Yes	Yes	
Bachelor of Cultural Heritage Conservation		http://www.canberra.edu.au/courses/index.cfm?action=detail&courseid=954AA	Core	Undergraduate Degree	University of Canberra	ACT	Yes	Yes	Yes		Yes	Yes		Yes	
Bachelor of Arts in Architecture		http://www.canberra.edu.au/courses-units/ug/barch	Little	Undergraduate Degree	University of Canberra	ACT									Undergraduate degree in architecture, heritage units available as electives.
Master of Architecture		http://www.canberra.edu.au/courses-units/m-coursework/march	Little	Masters Degree	University of Canberra	ACT									Postgraduate qualification in architecture, no particular heritage focus.
Bachelor of Arts in Landscape		http://www.canberra.edu.au/courses-units/ug/b-landscape	Little	Undergraduate Degree	University of Canberra	ACT							Yes		Undergraduate course in landscape, unit in landscape history , other heritage units available
Master of Landscape Architecture		http://www.canberra.edu.au/courses-units/m-coursework/landscape-architecture	Little	Masters degree	University of Canberra	ACT							Yes		
Bachelor of Interior Architecture		http://www.canberra.edu.au/courses-units/ug/interior-architecture	Some	Undergraduate Degree	University of Canberra	ACT									
Bachelor of Urban and Regional Planning		http://www.canberra.edu.au/courses-units/ug/urp	Some	Undergraduate Degree	University of Canberra	ACT									
Conservation of Traditional Buildings		http://www.canberra.edu.au/faculties/arts-design/conservation-summer-schools/traditional-buildings	Core	Short Course	University of Canberra	ACT	Yes							Yes	Special focus on conservation of building materials
Cultural Heritage Management		http://www.canberra.edu.au/faculties/arts-design/conservation-summer-schools/cultural-heritage-management	Core	Short Course	University of Canberra	ACT	Yes		Yes	Yes	Yes		Yes	Yes	
Diploma of Tourism		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/W_Courses_Interest/E80049E66FFB0DC569257544001EEE18?OpenDocument	Little	Diploma	Charles Darwin University	NT					Yes				
Bachelor of Arts		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/P_Course_Select/C9F16AB9F827CEF669257493007E41C2?OpenDocument	Little	Undergraduate Degree	Charles Darwin University	NT									Units on Indigenous cultural heritage and cultural tourism available
Bachelor of Indigenous Knowledges		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/P_Course_Select/2A43CBF1FE72E11B69257514002E7FE6?OpenDocument	Little	Undergraduate Degree	Charles Darwin University	NT									A sociological degree with a focus on Indigenous cultural heritage
Bachelor of Arts/Bachelor of Communication And Cultural Studies		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/P_Course_Select/E2591884D072837F69256DE60005EED3?OpenDocument	Little	Undergraduate Degree	Charles Darwin University	NT									
Bachelor of Applied Science/Bachelor of Arts		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/P_Course_Select/B47F6E98BDB81FB669257493007E41B8?OpenDocument	Little	Undergraduate Degree	Charles Darwin University	NT									Units on landscape and indigenous heritage
Bachelor of Design		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/P_Course_Select/CEC7981B701C2BE969257493007E41CE?OpenDocument	Little	Undergraduate Degree	Charles Darwin University	NT									Undergraduate architecture qualification
Bachelor of Engineering		http://www.cdu.edu.au/engit/beng.html	Little	Undergraduate Degree	Charles Darwin University	NT									Undergraduate engineering qualification
Master of Applied Heritage Studies		http://handbook.curtin.edu.au/courses/31/310712.html	Core	Postgraduate Degree	Curtin University of Technology	WA			Yes		Yes			Yes	
Graduate Diploma in Applied Heritage Studies		http://handbook.curtin.edu.au/courses/31/310712.html	Core	Postgraduate Diploma	Curtin University of Technology	WA			Yes		Yes			Yes	
Bachelor of Archaeology		http://www.flinders.edu.au/ehlt/archaeology/undergrad-programs/b-arch.cfm	Some	Undergraduate Degree	Flinders Univeristy	SA		Yes	Yes			Yes		Yes	Undergraduate archaeology degree with heritage focused units avaible
Graduate Certificate in Cultural Heritage Management		http://www.flinders.edu.au/ehlt/archaeology/postgrad-programs/by-coursework/in-chm.cfm	Core	Postgraduate Certificate	Flinders Univeristy	SA		Yes	Yes		Yes	Yes		Yes	
Graduate Diploma in Cultural Heritage Management		http://www.flinders.edu.au/ehlt/archaeology/postgrad-programs/by-coursework/in-chm.cfm	Core	Postgraduate Diploma	Flinders Univeristy	SA		Yes	Yes		Yes	Yes		Yes	
Master in Cultural Heritage Management		http://www.flinders.edu.au/ehlt/archaeology/postgrad-programs/by-coursework/in-chm.cfm	Core	Masters	Flinders Univeristy	SA		Yes	Yes			Yes		Yes	
Graduate Certificate in Maritime Archaeology		http://www.flinders.edu.au/ehlt/archaeology/postgrad-programs/by-coursework/in-maritime-archaeology.cfm	Core	Postgraduate Certificate	Flinders Univeristy	SA		Yes	Yes			Yes		Yes	
Graduate Diploma in Maritime Archaeology		http://www.flinders.edu.au/ehlt/archaeology/postgrad-programs/by-coursework/in-maritime-archaeology.cfm	Core	Postgraduate Diploma	Flinders Univeristy	SA		Yes	Yes			Yes		Yes	
Master of Maritime Archaeology		http://www.flinders.edu.au/ehlt/archaeology/postgrad-programs/by-coursework/in-maritime-archaeology.cfm	Core	Masters	Flinders Univeristy	SA		Yes	Yes			Yes		Yes	
Graduate Certiticate in Archaeology		http://www.flinders.edu.au/ehlt/archaeology/postgrad-programs/by-coursework/in-archaeology.cfm	Core	Postgraduate Certificate	Flinders Univeristy	SA			Yes		yes	Yes		Yes	
Graduate Diploma in Archaeology		http://www.flinders.edu.au/ehlt/archaeology/postgrad-programs/by-coursework/in-archaeology.cfm	Core	Postgraduate Diploma	Flinders Univeristy	SA			Yes		Yes	Yes		Yes	
Master of Archaeology		http://www.flinders.edu.au/ehlt/archaeology/postgrad-programs/by-coursework/in-archaeology.cfm	Core	Masters	Flinders Univeristy	SA		Yes	Yes		Yes	Yes		Yes	
Graduate Certificate in Applied History and Heritage Studies		http://www.flinders.edu.au/calendar/vol2/pg/GCAppHist.htm	Core	Postgraduate Certificate	Flinders Univeristy	SA		Yes	Yes			Yes		Yes	
Graduate Diploma in Applied History and Heritage Studies		http://www.flinders.edu.au/calendar/vol2/pg/GDAppHist.htm	Core	Postgraduate Diploma	Flinders Univeristy	SA		Yes	Yes			Yes		Yes	
Graduate Certificate in Tourism (Interpretation)		http://www.flinders.edu.au/courses/postgrad/tr-interp/tr-interp_home.cfm	Core	Postgraduate Certificate	Flinders Univeristy	SA					Yes				
Graduate Diploma in Tourism (Interpretation)		http://www.flinders.edu.au/courses/postgrad/tr-interp/tr-interp_home.cfm	Core	Postgraduate Diploma	Flinders Univeristy	SA					Yes				
Master of Tourism (Interpretation)		http://www.flinders.edu.au/courses/postgrad/tr-interp/tr-interp_home.cfm	Core	Masters	Flinders Univeristy	SA					Yes				
Conservation Field School		http://www.flinders.edu.au/ehlt/archaeology/professional-development/short-courses.cfm	Core	Short Course	Flinders Univeristy	SA						Yes			
Introductory Archaeological Geophysics		http://www.flinders.edu.au/ehlt/archaeology/professional-development/short-courses.cfm	Some	Short Course	Flinders Univeristy	SA						Yes			
Human Osteology		http://www.flinders.edu.au/ehlt/archaeology/professional-development/short-courses.cfm	Some	Short Course	Flinders Univeristy	SA						Yes			
Bachelor of Social Science (Environment and Heritage)		http://cms.jcu.edu.au/courses/cd_search_results/JCUPRD_048016	Core	Undergraduate Degree	James Cook University	QLD								Yes	Focus on Indigenous and natural heritage
Master of Social Science (Environment and Heritage)		http://cms.jcu.edu.au/courses/cd_search_results/JCUPRD_050796	Core	Masters	James Cook University	QLD		Yes	Yes			Yes		Yes	
Bachelor of Arts (History)		http://cms.jcu.edu.au/courses/cd_search_results/JCUPRD_026043	Some	Undergraduate Degree	James Cook University	QLD		Yes	Yes						
Bachelor of Arts (Archaeology)		http://cms.jcu.edu.au/courses/cd_search_results/JCUPRD_025796	Core	Undergraduate Degree	James Cook University	QLD						Yes			
Bachelor of Arts		http://www.arts.usyd.edu.au/future_students/courses/undergraduate/arts.shtml	Core	Undergraduate Degree	University of Sydney	NSW						Yes			Majors in history, heritage studies, archaeology, geography
Bachelor of Science		http://www.geosci.usyd.edu.au/undergrad/ug_geog.shtml	Little	Undergraduate Degree	University of Sydney	NSW									Major in geography available
Bachelor of Engineering		http://www.eng.usyd.edu.au/apply/courses.shtml	Little	Undergraduate Degree	University of Sydney	NSW									Broad range of specialisations available
Bachelor of Design in Architecture		http://www.arch.usyd.edu.au/programs_of_study/undergraduate/Design_in_Arch/index.shtml	Core	Undergraduate Degree	University of Sydney	NSW									
Graduate Certificate in Heritage Conservation		http://www.usyd.edu.au/courses/?detail=1&course_sef_id=Graduate_Certificate_in_Heritage_Conservation_99	Core	Postgraduate Certificate	University of Sydney	NSW	Yes	Yes	Yes					Yes	
Graduate Diploma in Heritage Conservation		http://www.usyd.edu.au/courses/?detail=1&course_sef_id=Graduate_Diploma_in_Heritage_Conservation_86	Core	Postgraduate Diploma	University of Sydney	NSW	Yes	Yes	Yes					Yes	
Master of Heritage Conservation		http://www.usyd.edu.au/courses/?detail=1&course_sef_id=Master_of_Heritage_Conservation_49	Core	Undergraduate Degree	University of Sydney	NSW	Yes	Yes	Yes					Yes	
Graduate Certificate of Cultural Heritage		http://www.deakin.edu.au/future-students/courses/course.php?course=A585&stutype=local&continue=Continue#OVERVIEW	Core	Postgraduate Certificate	Deakin University	VIC	Yes	Yes	Yes	Yes	Yes			Yes	
Graduate Diploma of Cultural Heritage		http://www.deakin.edu.au/future-students/courses/course.php?course=A685&stutype=local&continue=Continue	Core	Postgraduate Diploma	Deakin University	VIC	Yes	Yes	Yes	Yes	Yes			Yes	
Master of Cultural Heritage		http://www.deakin.edu.au/future-students/courses/course.php?course=A785&stutype=local&continue=Continue	Core	Masters	Deakin University	VIC	Yes	Yes	Yes	Yes	Yes			Yes	
Master of Cultural Heritage (Honours)		http://www.deakin.edu.au/future-students/courses/course.php?course=A786&stutype=local&continue=Continue	Core	Masters	Deakin University	VIC	Yes	Yes	Yes	Yes	Yes			Yes	
Urban Rural and Regional Planning		http://www.deakin.edu.au/arts-ed/chcap/ch-ms/short-course.php	Core	Short Course	Deakin University	VIC								Yes	
New Policy Directions—Heritage Places		http://www.deakin.edu.au/arts-ed/chcap/ch-ms/short-course.php	Core	Short Course	Deakin University	VIC								Yes	
Intangible Heritage		http://www.deakin.edu.au/arts-ed/chcap/ch-ms/short-course.php	Core	Short Course	Deakin University	VIC			Yes						
World Heritage Management		http://www.deakin.edu.au/arts-ed/chcap/ch-ms/short-course.php	Core	Short Course	Deakin University	VIC			Yes					Yes	
Sustainable Cultural Tourism		http://www.deakin.edu.au/arts-ed/chcap/ch-ms/short-course.php	Core	Short Course	Deakin University	VIC			Yes						
Cultural Landscapes		http://www.deakin.edu.au/arts-ed/chcap/ch-ms/short-course.php	Core	Short Course	Deakin University	VIC			Yes				Yes		
Heritage Interpretation		http://www.deakin.edu.au/arts-ed/chcap/ch-ms/short-course.php	Core	Short Course	Deakin University	VIC					Yes				
Architectural Conservation		http://www.deakin.edu.au/arts-ed/chcap/ch-ms/short-course.php	Core	Short Course	Deakin University	VIC	Yes	Yes	Yes						
Postgraduate Diploma in Arts (Cultural Materials Conservation)		http://www.culturalconservation.unimelb.edu.au/courses/pgdip.html	Core	Postgraduate Diploma	University of Melbourne	VIC	Yes								Object focus rather than places
Master of Cultural Material Conservation		http://www.culturalconservation.unimelb.edu.au/courses/mcoursework.html	Core	Masters	University of Melbourne	VIC	Yes								Object focus rather than places
Bachelor of Environments		http://www.benvs.unimelb.edu.au/	Little	Undergraduate Degree	University of Melbourne	VIC									Foundation course for architecture, landscape Architeture, Design and planning no specific heritage focus

Course Name	Subject Name (if applicable)	Hyperlink	Heritage Focus (core, some, little)	Qualification	Institution	State	1. Physical Conservation	2. Recording	3. Management	4. Consultation	5. Interpretation	6. Archaeology	7. Historic Landscape Management	8. Legislation and Policy	Special Focus
Master of Landscape Architecture		http://www.abp.unimelb.edu.au/graduate-school/master-of-landscape-architecture.html	Little	Masters	University of Melbourne	VIC							Yes		Electives on Landscape heritage and history available.
Master of Architecture		http://www.abp.unimelb.edu.au/graduate-school/master-of-architecture-3year.html	Little	Masters	University of Melbourne	VIC	Yes								
Postgraduate Diploma in Planning & Design (Arch.History & Conservation)		https://app.portal.unimelb.edu.au/CSCApplication/view/2008/933-AA	Core	Postgraduate Diploma	University of Melbourne	VIC	Yes	Yes							
Graduate Diploma Planning & Design(Architectural History & Conservation)		https://app.portal.unimelb.edu.au/CSCApplication/view/2008/153-AA	Core	Postgraduate Diploma	University of Melbourne	VIC	Yes	Yes							
Bachelor of Architectural Design		http://www.monash.edu.au/pubs/2009handbooks/courses/3119.html	Some	Undergraduate Degree	Monash University	VIC									
Bachelor of Interior Architecture		http://www.artdes.monash.edu.au/study/areas/interior.html	Some	Undergraduate Degree	Monash University	VIC									
Bachelor of Science		http://www.sci.monash.edu.au/prosp/undergraduate/bsci.html	Some	Undergraduate Degree	Monash University	VIC									Major in geography
Bachelor of Arts		http://www.monash.edu.au/study/coursefinder/course/0002/study-area.html	Some	Undergraduate Degree	Monash University	VIC									Major in Australian Studies, geography and history
Bachelor of Engineering		http://courses.utas.edu.au/portal/page?_pageid=53,32959&_dad=portal&_schema=PORTAL&P_COURSE_CODE=N3A&P_YEAR=2010&P_CONTEXT=NEW	Little	Undergraduate Degree	University of Tasmania	TAS									
Bachelor of Environmental Design		http://courses.utas.edu.au/portal/page?_pageid=53,32959&_dad=portal&_schema=PORTAL&P_COURSE_CODE=73E&P_YEAR=2010&P_CONTEXT=NEW	Little	Undergraduate Degree	University of Tasmania	TAS									Undergraduate degree in architecture and related design
Bachelor of Tourism		http://courses.utas.edu.au/portal/page?_pageid=53,32959&_dad=portal&_schema=PORTAL&P_COURSE_CODE=33F&P_YEAR=2010&P_CONTEXT=NEW	Little	Undergraduate Degree	University of Tasmania	TAS					Yes				
Bachelor of Arts		http://courses.utas.edu.au/portal/page?_pageid=53,32959&_dad=portal&_schema=PORTAL&P_COURSE_CODE=13A&P_YEAR=2010&P_CONTEXT=NEW	Little	Undergraduate Degree	University of Tasmania	TAS									Majors in history and geography available
Bachelor of Design Studies (specialisations in Landscape or Architecture)		http://www.adelaide.edu.au/programfinder/2010/bdest_bdesignst.html	Little	Undergraduate Degree	Adelaide University	SA									Undergraduate degree in architecture/landscape architecture.
Master of Architecture by coursework M.Arch-cwk		http://www.adelaide.edu.au/programfinder/2010/march_marchcswk.html	Little	Postgraduate Degree	Adelaide University	SA									Post graduate degree in Architecture
Master of Landscape Architecture M.LArch-cw		http://www.adelaide.edu.au/programfinder/2010/mlack_mlarchcswk.html	Little	Postgraduate Degree	Adelaide University	SA									Post graduate degree in landscape architecture
Master of Planning M.Planning		http://www.adelaide.edu.au/programfinder/2010/mplan_mplanning.html	Little	Postgraduate Degree	Adelaide University	SA									Postgraduate degreee in planning
Master of Planning (Urban Design) M.PlanUrbD		http://www.adelaide.edu.au/programfinder/2010/mpud_mplanud.html	Little	Postgraduate Degree	Adelaide University	SA									
Master of Architecture with Master of Landscape Architecture M.Arc/M.LA		http://www.adelaide.edu.au/programfinder/2010/marml_marc/mlarc.html	Little	Postgraduate Degree	Adelaide University	SA									
Graduate Diploma in Design Studies GD.DesSt		http://www.adelaide.edu.au/programfinder/2010/gddes_gddesst.html	Little	Postgraduate Degree	Adelaide University	SA									
Graduate Diploma in Design Studies (Landscape) GD.DeSt(L)		http://www.adelaide.edu.au/programfinder/2010/gddsl_gddesstl.html	Little	Postgraduate Degree	Adelaide University	SA									
Graduate Certificate in Design Studies GC.DesSt		http://www.adelaide.edu.au/programfinder/2010/gcdes_gcdesst.html	Little	Postgraduate Degree	Adelaide University	SA									
Graduate Certificate in Design Studies (Landscape) GC.DeSt(L)		http://www.adelaide.edu.au/programfinder/2010/gcdsl_gcdesstl.html	Little	Postgraduate Degree	Adelaide University	SA									
Bachelor of Archaeology		http://www.latrobe.edu.au/coursefinder/local/2010/Bachelor-of-Archaeology.5109.html	Some	Undergraduate Degree	La Trobe University	VIC		Yes	Yes			Yes		Yes	
Master of Arts (Heritage Studies)		http://www.une.edu.au/ahss/pgrad.php#MA	Core	Postgraduate Degree	University of New England	NSW									Major in Heritage studies
Bachelor of Arts		http://www.une.edu.au/ahss/ba.php	Little	Undergraduate Degree	University of New England	NSW									Majors available in Archaeology and Palaeoanthropology; Geography and Planning; History; Local Family and Applied History
Bachelor of Archaeology (Hons)		http://www.une.edu.au/ahss/undgrad.php#Barch	Core	Undergraduate Degree	University of New England	NSW		Yes				Yes			
Bachelor of Urban and Regional Planning		http://www.une.edu.au/ahss/undgrad.php#BUrb	Little	Undergraduate Degree	University of New England	NSW								Yes	
Grad Dip in Local, Family and Applied History		http://www.une.edu.au/ahss/pgrad.php#GDLocal	Some	Postgraduate Diploma	University of New England	NSW									
Bachelor of Arts with Majors		http://www.arts.uwa.edu.au/courses/undergrad	Some	Undergraduate Degree	University of Western Australia	WA									Majors in Archaeology, History, Geography
Bachelor of Science		http://www.see.uwa.edu.au/courses	Little	Undergraduate Degree	University of Western Australia	WA									Majors in Archaeology, Geography, earth sciences, planning etc
Bachelor of Engineering		http://www.ecm.uwa.edu.au/courses/undergrad	little	Undergraduate Degree	University of Western Australia	WA									Wide range of specialisations
Graduate Certificate in Applied Maritime Archaeology		http://www.arts.uwa.edu.au/courses/postgrad/coursework/gradcertmararch	Some	Postgraduate Certificate	University of Western Australia	WA						Yes			
Graduate Diploma in Applied Maritime Archaeology		http://www.arts.uwa.edu.au/courses/postgrad/coursework/graddipmararch	Some	Postgraduate Diploma	University of Western Australia	WA			Yes			Yes		Yes	
Master of Applied Martiime Archaeology		http://www.arts.uwa.edu.au/courses/postgrad/coursework/masmararch	Core	Postgraduate Degree	University of Western Australia	WA			Yes			Yes		Yes	
Bachelor of Architecture		http://www.alva.uwa.edu.au/courses/undergrad/ugacourses?section=getmajor&majorid=22	Little	Undergraduate Degree	University of Western Australia	WA									Undergraduate degree in architecture
Bachelor of Landscape Architecture		http://www.alva.uwa.edu.au/courses/undergrad/ugacourses?section=getmajor&majorid=128	Little	Undergraduate Degree	University of Western Australia	WA									Undergraduate degree in landscape architecture
Graduate Certificate in Urban Design		http://courses.handbooks.uwa.edu.au/courses/c2/25210	Little	Graduate Certificate	University of Western Australia	WA									
Graduate Diploma in Urban Design		http://courses.handbooks.uwa.edu.au/courses/c2/25310	Little	Graduate Diploma	University of Western Australia	WA									
Master of Urban Design (coursework)		http://courses.handbooks.uwa.edu.au/courses/c2/25510	Little	Postgraduate Degree	University of Western Australia	WA									
Master of Urban Design (thesis and coursework)		http://courses.handbooks.uwa.edu.au/courses/c2/25610	Little	Postgraduate Degree	University of Western Australia	WA									
Master of Architecture (Design)		http://courses.handbooks.uwa.edu.au/courses/c2/25760	Little	Postgraduate Degree	University of Western Australia	WA									
Bachelor of Science		http://www.science.mq.edu.au/	Little	Undergraduate Degree	Macquarie University	NSW									Specialisation in human geography, engineering etc
Bachelor of Science with Bachelor of Arts in Natural and Cultural Heritage and Museums		http://www.science.mq.edu.au/areas_of_study/museum_studies_and_heritage	Little	Undergraduate Degree	Macquarie University	NSW									Offers a major in cultural heritage.
Graduate Diploma in GIS		http://www.humgeog.mq.edu.au/graduate_diploma_gis.html	Little	Graduate Diploma	Macquarie University	NSW		yes							
Bachelor of Architectural Studies		http://www.fbe.unsw.edu.au/futurestudents/undergrad/BArchStudies/	Little	Undergraduate Degree	University of NSW	NSW									Undergraduate architecture degree
Bachelor of Planning		http://www.fbe.unsw.edu.au/futurestudents/Undergrad/BPlanning/	Some	Undergraduate Degree	University of NSW	NSW									Undergraduate planning degree
Bachelor of Landscape Architecture		http://www.fbe.unsw.edu.au/futurestudents/Undergrad/BLandArch/	Some	Undergraduate Degree	University of NSW	NSW									Undergraduate landscape architecture degree
Bachelor of Interiror Architecture		http://www.fbe.unsw.edu.au/futurestudents/undergrad/BIntArch/	Little	Undergraduate Degree	University of NSW	NSW									Undergraduate interior architecture degree
Master of Architecture		http://www.fbe.unsw.edu.au/futurestudents/PGCoursework/MArch/	Little	Postgraduate Degree	University of NSW	NSW									
Master of Planning		http://www.fbe.unsw.edu.au/futurestudents/PGCoursework/MPlanning/	Little	Postgraduate Degree	University of NSW	NSW									
Master of Urban development and design		http://www.fbe.unsw.edu.au/futurestudents/PGCoursework/MUrbanDev/	Little	Postgraduate Degree	University of NSW	NSW									
Bachelor of Engineering		http://www.eng.unsw.edu.au/futurestudents/high_school/areas_of_study/degrees_offered.html	Little	Undergraduate Degree	University of NSW	NSW									
Bachelor of Arts		http://www.arts.unsw.edu.au/future-students/what-you-can-study/	Little	Undergraduate Degree	University of NSW	NSW									majors in archaeology, history
Bachelor of Design in Architecture		http://datasearch.uts.edu.au/dab/courses/architecture-details.cfm?spk_cd=C10004&spk_ver_no=5	Little	Undergraduate Degree	University of Technology Sydney	NSW									
Bachelor of Design in Interior Design		http://datasearch.uts.edu.au/dab/courses/details.cfm?spk_cd=C10057&spk_ver_no=8	Little	Undergraduate Degree	University of Technology Sydney	NSW									
Bachelor of Engineering Diploma in Engineering Practice		http://www.eng.uts.edu.au/courses/undergraduate/BEDipEngPrac.htm	Little	Undergraduate Degree	University of Technology Sydney	NSW									
Bachelor of Architectural Design		http://www.rmit.edu.au/browse;ID=uuchnh4q0kb9z	Little	Undergraduate Degree	RMIT	NSW									
Master of Architecture		http://www.rmit.edu.au/browse;ID=7ws42n4f9glaz	Little	Postgraduate Degree	RMIT	VIC									
Bachelor of Design (Interior Design)		http://www.rmit.edu.au/browse;ID=ao6b3yafyctm	Little	Undergraduate Degree	RMIT	VIC									
Bachelor of Design(Landscape Architecture)/Bachelor of Applied Science (Planning)		http://www.rmit.edu.au/browse;ID=ox9o12nfibv6	Little	Undergraduate Degree	RMIT	VIC									
Master of Landscape Architecture		http://www.rmit.edu.au/browse;ID=8dut16c8ca0q1	Little	Postgraduate degree	RMIT	VIC									
Bachelor of Engineering (Civil and Infrastructure)		http://www.rmit.edu.au/browse;ID=BP198	Little	Undergraduate Degree	RMIT	VIC									
Bachelor of Engineering (Civil)		http://courses.swinburne.edu.au/Courses/ViewCourse.aspx?mi=100&id=35983	Little	Undergraduate Degree	Swinburne University of Technology	VIC									
Associate Degree in Applied Science (Parks, Recreation and Heritage		http://www.csu.edu.au/courses/undergraduate/parks_heritage_ad/index.html	Core	Undergraduate Degree	Charles Sturt University	NSW									
Bachelor of Applied Science(Parks, Recreation and Heritage)		http://www.csu.edu.au/courses/undergraduate/parks_heritage/index.html	Core	Undergraduate Degree	Charles Sturt University	NSW		Yes	Yes		Yes			Yes	
Grad Certificate in GIS and Remote Sensing		http://www.csu.edu.au/courses/postgraduate/gis_remote_sensing/index.html	Little	Postgraduate Degree	Charles Sturt University	NSW		Yes							
Grad Diploma in GIS and Remote Sensing		http://www.csu.edu.au/courses/postgraduate/gis_remote_sensing/index.html	Little	Postgraduate Degree	Charles Sturt University	NSW		Yes							
Master of GIS and Remote Sensing		http://www.csu.edu.au/courses/postgraduate/gis_remote_sensing/index.html	Little	Postgraduate Degree	Charles Sturt University	NSW		Yes							
Bachelor of Arts		http://www.scu.edu.au/coursesin2010/?action=matrix&command=matrix_temp_load&spk_no=301070	Little	Undergraduate Degree	Southern Cross University	NSW									Unites in place, history and culture
Bachelor of Architectural Design		http://www.uq.edu.au/study/program.html?acad_prog=2293	Little	Undergraduate Degree	University of Queensland	QLD									
Master of Architecture		http://www.uq.edu.au/study/program.html?acad_prog=5429	Little	Postgraduate Degree	University of Queensland	QLD									
Bachelor of Engineering		http://www.uq.edu.au/study/program.html?acad_prog=2001	Little	Undergraduate Degree	University of Queensland	QLD									
Bachelor of Arts		http://www.uq.edu.au/study/program.html?acad_prog=2000	Little	Undergraduate Degree	University of Queensland	QLD		Yes	Yes			Yes			Majors in archaeology and history
Bachelor of Science		http://www.uq.edu.au/study/program.html?acad_prog=2030	Little	Undergraduate Degree	University of Queensland	QLD									Major in geographical science
Graduate Diploma in Geographical Information Science		http://www.uq.edu.au/study/program.html?acad_prog=5086	Little	Postgraduate Diploma	University of Queensland	QLD									
Bachelor of Regional and Town Planning		http://www.uq.edu.au/study/program.html?acad_prog=2063	Little	Undergraduate Degree	University of Queensland	QLD									
Masters of Regional and Town Planning		http://www.uq.edu.au/study/program.html?acad_prog=5219	Little	Postgraduate Degree	University of Queensland	QLD									
Bachelor of Design		http://www.courses.qut.edu.au/cgi-bin/WebObjects/Courses.woa/wa/selectMajorFromMain?pres=sf&courseID=10958	Little	Undergraduate Degree	Queensland University of Technology	QLD									Majors in Architectural Design, Interior Design, Landscape Architecture
Bachelor of Engineering		http://www.courses.qut.edu.au/cgi-bin/WebObjects/Courses.woa/wa/selectMajorFromMain?pres=sf&courseID=9351	Little	Undergraduate Degree	Queensland University of Technology	QLD									Range of specialisations available
Bachelor of Urban Development		http://www.courses.qut.edu.au/cgi-bin/WebObjects/Courses.woa/wa/selectMajorFromMain?pres=sf&courseID=10953	Little	Undergraduate Degree	Queensland University of Technology	QLD									Specialisations in urban and regional planning available
Master of Architecture		http://www.courses.qut.edu.au/cgi-bin/WebObjects/Courses.woa/wa/selectMajorFromMain?pres=sf&courseID=8990	Little	Postgraduate Degree	Queensland University of Technology	QLD									
Master of Urban Design		http://www.courses.qut.edu.au/cgi-bin/WebObjects/Courses.woa/wa/selectMajorFromMain?pres=sf&courseID=9163	Little	Postgraduate Degree	Queensland University of Technology	QLD									
Master of Urban Design (Urban and Regional Planning)		http://www.courses.qut.edu.au/cgi-bin/WebObjects/Courses.woa/wa/selectMajorFromMain?pres=sf&courseID=9150	Little	Postgraduate Degree	Queensland University of Technology	QLD									

Course Name	Subject Name (if applicable)	Hyperlink	Heritage Focus (core, some, little)	Qualification	Institution	State	1. Physical Conservation	2. Recording	3. Management	4. Consultation	5. Interpretation	6. Archaeology	7. Historic Landscape Management	8. Legislation and Policy	Special Focus
Bachelor of Enviornmental Design		http://www17.griffith.edu.au/cis/p_cat/admission.asp?ProgCode=1356&Type=overview	Little	Undergraduate Degree	Griffith University	QLD									
Master of Urban and Environmental Planning		http://www.griffith.edu.au/environment-planning-architecture/urban-environmental-planning	Little	Postgraduate Degree	Griffith University	QLD									
Bachelor of Engineering		http://www17.griffith.edu.au/cis/p_cat/admission.asp?ProgCode=1310&type=overview	Little	Undergraduate Degree	Griffith University	QLD									
Bachelor of Arts		http://www.usc.edu.au/Students/Handbook/Undergrad/AR301/#overview	Little	Undergraduate Degree	University of the Sunshine Coast	QLD									Major in history and units in cultural heritage available
Bachelor of Civil Engineering		http://www.usc.edu.au/Students/Handbook/Undergrad/SC383/SC383.htm	Little	Undergraduate Degree	University of the Sunshine Coast	QLD									
Bachelor of Urban and Regional Planning		http://www.usc.edu.au/Students/Handbook/Undergrad/AR382/AR382.htm	Little	Undergraduate Degree	University of the Sunshine Coast	QLD									
Bachelor of Design (Architecture)		http://www.newcastle.edu.au/program/archive/undergraduate/2008/10028.html	Some	Undergraduate Degree	University of Newcastle	NSW									
Master of Architecture		http://www.newcastle.edu.au/program/archive/postgraduate/2008/12060.html	Some	Postgraduate Degree	University of Newcastle	NSW									
Bachelor of Engineering (Civil)		http://www.newcastle.edu.au/program/10100.html	Some	Undergraduate Degree	University of Newcastle	NSW									
Bachelor of Arts		http://www.newcastle.edu.au/program/10435.html	Some	Undergraduate Degree	University of Newcastle	NSW									Major in history available
Bachelor of Social Science		http://www.newcastle.edu.au/program/10716.html	Little	Undergraduate Degree	University of Newcastle	NSW									Major in history and human geography available
Bachelor of Science		http://www.newcastle.edu.au/program/10323.html	Little	Undergraduate Degree	University of Newcastle	NSW									
Bachelor of Science (Land and Heritage Management)		http://www.uow.edu.au/handbook/yr2005/dept_LandMgmt.html	Some	Undergraduate Degree	University of Wollongong	NSW									
Holmesglen TAFE Short Courses		http://www.shortcourses.holmesglen.vic.edu.au/diy_skills.html	Core	Certificate of Completion	Holmesglen TAFE	VIC									
Furnishing (Leadlighting and Stained Glass)		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=23522&AllRegions=yes	Little	Certificate III	Holemsglen TAFE	VIC	Yes								
Bachelor of Arts (Humanities and Social Studies)	Historical and Heritage Studies Major	http://www.ballarat.edu.au/ard/bssh/heritage_course.shtml	Some	Undergraduate Degree	University of Ballarat	VIC									
Conservation and Land Management		http://www.ballarat.edu.au/vfed/applied_sciences/primary_industries/clm.shtml#Short_Courses	Some	Certificate III	University of Ballarat	VIC			Yes						
Conservation and Land Management		http://www.ballarat.edu.au/vfed/applied_sciences/primary_industries/clm.shtml#Short_Courses	Some	Diploma	University of Ballarat	VIC			Yes						
Reading and Interpreting Maps		http://www.ballarat.edu.au/vfed/applied_sciences/primary_industries/clm.shtml#Short_Courses	Some	Short Course	University of Ballarat	VIC							Yes		
Fine Arts	Heritage and Cultural Objects	https://www.tafensw.edu.au/howex/servlet/Course?Command=GetUnitDetails&UnitCode=7859K	Some	Certificate IV	TAFE NSW	NSW									
Living with World Heritage Status		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=23708&tpInd=Y	Core	TAFE Plus Statement	TAFE NSW	NSW									
Mining Explorations	Identify and assess environmental and heritage concerns	https://www.tafensw.edu.au/howex/servlet/Course?Command=GetUnitDetails&UnitCode=MNMOR210A	Some	Certificate III	TAFE NSW	NSW									
Interior Design	Prepare drawing for heritage works	https://www.tafensw.edu.au/howex/servlet/Course?Command=GetUnitDetails&UnitCode=BCGBC4037A	Some	Advanced Diploma	TAFE NSW	NSW									
Interior Design and Decoration	Prepare drawing for heritage works	https://www.tafensw.edu.au/howex/servlet/Course?Command=GetUnitDetails&UnitCode=BCGBC4037A	Some	Diploma	TAFE NSW	NSW	Yes								
Outdoor Recreation (Specialising in General Interpretive Activities)	Prepare specialised interpretive content (cultural and heritage environments)	https://www.tafensw.edu.au/howex/servlet/Course?Command=GetUnitDetails&UnitCode=THTFTG14A	Some	Certificate IV	TAFE NSW	NSW					Yes				
Tourism (Guiding)	Prepare specialised interpretive content on cultural and heritage environments	https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=18054	Some	Certificate IV	TAFE NSW	NSW					Yes				
Horticulture (Arboriculture)		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=1605	Little	Certificate II-Diploma	TAFE NSW	NSW									
Horticulture (Landscape)		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=1705	Little	Certificate II-Diploma	TAFE NSW	NSW									
Horticulture		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=676	Little	Certificate I-Advanced Diploma	TAFE NSW	NSW									
Horticulture Studies		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=676	Little	Statement of Attainment	TAFE NSW	NSW									
Horticulture (Parks and Gardens)		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=676	Little	Certificate II-Diploma	TAFE NSW	NSW									
Stone Carving		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=23537&tpInd=Y	Little	TAFE Plus Statement	TAFE NSW	NSW									
Sustainable Building Design		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=6441	Little	Advanced Diploma	TAFE NSW	NSW									
Tourism (Guiding)	Specialist knowledge: cultural/heritage	https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=18054	Some	Certificate IV	TAFE NSW	NSW					Yes				
Forest Soil and Water Protection (Operator)	Work with cultural heritage requirements	https://www.tafensw.edu.au/howex/servlet/Course?Command=GetUnitDetails&UnitCode=NSWTFPI309A	Some	Short Course	TAFE NSW	NSW									
Outreach Access	Historic Renovation	https://www.tafensw.edu.au/howex/servlet/Course?Command=GetUnitDetails&UnitCode=8063P	Some	Statement of Attainment	TAFE NSW	NSW	Yes								
Decorating for Traditional Trades		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=27154&tpInd=Y	Core	TAFE Plus Statement	TAFE NSW	NSW	Yes								
Stonemasonry (Monumental and Installation)		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=8119	Some	Certificate III	TAFE NSW	NSW	Yes								
Tuck Pointing to Brickwork		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=27756&tpInd=Y	Core	TAFE Plus Statement	TAFE NSW	NSW	Yes								
Glass and Glazing		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourseModules&CourseNo=7137&RowNum=0	Little	Certificate III	TAFE NSW	NSW									
Foundry Metal Casting		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourse&CourseNo=8228	Little	TAFE Statement	TAFE NSW	NSW	Yes								
Bricklaying/Blocklaying		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourseModules&CourseNo=4427&RowNum=0	Little	Certificate III	TAFE NSW	NSW									
Engineering-Fabrication Trade (Casting and Moulding)		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourseModules&CourseNo=9283&RowNum=0	Little	Certificate III	TAFE NSW	NSW									
Painting and Decorating		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourseModules&CourseNo=4434&RowNum=0	Little	Certificate III	TAFE NSW	NSW									
Roof Tiling		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourseModules&CourseNo=4442&RowNum=0	Little	Certificate III	TAFE NSW	NSW									
Carpentry		https://www.tafensw.edu.au/howex/servlet/Course?Command=GetCourseModules&CourseNo=4429&RowNum=0	Little	Certificate III	TAFE NSW	NSW									
Solid Plastering	Repair and Renovate Solid Plasterwork	https://www.tafensw.edu.au/howex/servlet/Course?Command=GetUnitDetails&UnitCode=BCGSP3004B	Some	Certificate III	TAFE NSW	NSW	Yes								
Solid Plaster Acrylic Based Trowel Finishes Short Course		http://www.courses.tafesa.edu.au/xml/course/sc/sc_T864491595.aspx	Little	Short Course	TAFE SA	SA									
Certificate One in Furnishing (Floor Covering)		http://www.courses.tafesa.edu.au/xml/course/aw/aw_GZK.aspx	Little	Certificate I	TAFE SA	SA									
Bricklaying Basics Short Course		http://www.courses.tafesa.edu.au/xml/course/sc/sc_T831849038.aspx	Little	Short Course	TAFE SA	SA									
Interior Design and Decoration		http://www.courses.tafesa.edu.au/xml/course/aw/aw_T65.aspx	Little	Diploma	TAFE SA	SA									
Bricklaying Advanced		http://www.courses.tafesa.edu.au/xml/course/sc/sc_T831867670.aspx	Little	Short Course	TAFE SA	SA									
General Construction (Specialising in Bricklaying, Tiling and Plastering)		http://www.courses.tafesa.edu.au/xml/course/aw/aw_EHX.aspx	Little	Certificate I	TAFE SA	SA									
General Construction (Specialising in Plumbing Services)		http://www.courses.tafesa.edu.au/xml/course/aw/aw_EHK.aspx	Little	Certificate I	TAFE SA	SA									
General Construction (Specialising in Painting and Decorating)		http://www.courses.tafesa.edu.au/xml/course/aw/aw_EHT.aspx	Little	Certificate I	TAFE SA	SA									
Sign Industry Training		http://www.courses.tafesa.edu.au/xml/course/aw/aw_ADN.aspx	Little	Certificate II	TAFE SA	SA									
Furnishing (Specialising in Glass and Glazing)		http://www.courses.tafesa.edu.au/xml/course/aw/aw_GZL.aspx	Little	Certificate I	TAFE SA	SA									
Tourism		http://www.courses.tafesa.edu.au/xml/course/aw/aw_WDD.aspx	Little	Certificate II-Advanced Diploma	TAFE SA	SA									
Conservation and Land Management and Horticulture		http://www.courses.tafesa.edu.au/xml/course/aw/aw_034.aspx	Some	Double Certificate III	TAFE SA	SA			Yes						
Horticulture	Protect Heritage & Cultural Assets	http://www.courses.tafesa.edu.au/xml/module/crsemod_EWE.aspx?src=\xml\course\aw\aw_EWE&Y=2010	Little	Diploma	TAFE SA	SA			Yes						
General Construction (Specialising in Wood Trades - Carpentry, Furnishing and Joinery)		http://www.courses.tafesa.edu.au/xml/course/aw/aw_EHZ.aspx	Little	Certificate I	TAFE SA	SA									
Conservation and Land Management		http://www.tafe.qld.gov.au/dds/search/openCourse.do;jsessionid=KNV4Mpjym5gW8nGY3pXByBgMpwhdLyLfvXWHbkcCtLSg1L9N6Wy8!247182386?instituteID=&keyword=heritage&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=15537&courseTypeFilter=&ins_spec=false	Little	Certificate II-Diploma	TAFE QLD	QLD			Yes						
Horticulture		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=cultural&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=16139&courseTypeFilter=&ins_spec=false	Little	Certificate II-Diploma	TAFE QLD	QLD									

Course Name	Subject Name (if applicable)	Hyperlink	Heritage Focus (core, some, little)	Qualification	Institution	State	1. Physical Conservation	2. Recording	3. Management	4. Consultation	5. Interpretation	6. Archaeology	7. Historic Landscape Management	8. Legislation and Policy	Special Focus
Environmentally Sustainable Building		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=traditional&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=22984&courseTypeFilter=&ins_spec=false	Little	Vocational Graduate Certificate	TAFE QLD	QLD									
Bricklaying/Blocklaying		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=brick&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=27794&courseTypeFilter=&ins_spec=false	Little	Certificate III	TAFE QLD	QLD									
Horticulture (Parks and Gardens)		http://www.courses.tafesa.edu.au/xml/course/aw/aw_034.aspx	Little	Certificate II-Diploma	TAFE QLD	QLD									
Horticulture (Arboriculture)		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=horticulture&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=16121&courseTypeFilter=&ins_spec=false	Little	Certificate II-Diploma	TAFE QLD	QLD									
Horticulture (Landscape)		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=horticulture&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=16135&courseTypeFilter=&ins_spec=false#summary	Little	Certificate II-Diploma	TAFE QLD	QLD									
Wood Carving		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=carpentry&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=false&course_id=12240&courseTypeFilter=&ins_spec=false	Little	Adult Education Course	TAFE QLD	QLD									
Carpentry		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=carpentry&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=27795&courseTypeFilter=&ins_spec=false	Little	Certificate III	TAFE QLD	QLD									
Interior Decoration		http://tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=interior&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=17084&courseTypeFilter=&ins_spec=false	Little	Certificate IV	TAFE QLD	QLD									
Interior Decoration and Design		http://tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=interior&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=false&course_id=12197&courseTypeFilter=&ins_spec=false	Little	Adult Education Course	TAFE QLD	QLD									
Leadlighting		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=glass&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=false&course_id=12224&courseTypeFilter=&ins_spec=false	Some	Adult Education Course	TAFE QLD	QLD		Yes							
Wall and Floor Tiling		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=glass&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=16532&courseTypeFilter=&ins_spec=false	Little	Certificate III	TAFE QLD	QLD									
Glass and Glazing		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=glass&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=15916&courseTypeFilter=&ins_spec=false	Little	Certificate III	TAFE QLD	QLD									
Painting and Decorating		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=masonry&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=16520&courseTypeFilter=&ins_spec=false	Little	Certificate III	TAFE QLD	QLD									
Stonemasonry (Monumental and Installation)		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=masonry&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=14617&courseTypeFilter=&ins_spec=false	Little	Certificate III	TAFE QLD	QLD									
Roof Plumbing		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=metal+&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=16437&courseTypeFilter=&ins_spec=false	Little	Certificate III	TAFE QLD	QLD									
Painting and Decorating		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=decorating&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=16520&courseTypeFilter=&ins_spec=false	Little	Certificate III	TAFE QLD	QLD									
Solid Plastering		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=plaster&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=16529&courseTypeFilter=&ins_spec=false	Little	Certificate III	TAFE QLD	QLD									
Tourism (Guiding)		http://www.tafe.qld.gov.au/dds/search/openCourse.do?instituteID=&keyword=tourism&call_centre_mode=false&externalCallMode=false&breadCrumbsBase=%3Ca+href%3D%22%2F%22+title%3D%22Home%22%3EHome%3C%2Fa%3E&accredited=true&course_id=23614&courseTypeFilter=&ins_spec=false	Little	Certificate III	TAFE QLD	QLD									
Interior Design		http://www.cit.act.edu.au/future/courses/interior_design_advanced_diploma	Little	Advanced Diploma	Canberra Institute of Technology	ACT									
Conservation and Land Management		http://www.cit.act.edu.au/future/courses/conservation_and_land_management_certificate_iii	Little	Certificates II and III	Canberra Institute of Technology	ACT									
Horticulture (Landscape)		http://www.cit.act.edu.au/future/courses/horticulture_landscape_certificates_ii_iii_and_iv	Little	Certificate II-IV	Canberra Institute of Technology	ACT									
Glass and Glazing		http://www.cit.act.edu.au/future/courses/glass_and_glazing_certificate_ii_and_iii	Little	Certitifcates II and III	Canberra Institute of Technology	ACT									
Engineering (Hand Tools)		http://www.cit.act.edu.au/future/courses/engineering_hand_tools_statement_of_attainment	Little	Statement of Attainment	Canberra Institute of Technology	ACT									
Painting and Decorating		http://www.cit.act.edu.au/future/courses/painting_and_decorating_certificate_iii	Little	Certificate II	Canberra Institute of Technology	ACT									
Solid Plastering		http://www.cit.act.edu.au/future/courses/plastering_solid_certificate_iii	Little	Certificate III	Canberra Institute of Technology	ACT									
Interior Design		http://www.cit.act.edu.au/future/courses/interior_design_advanced_diploma	Little	Advanced Diploma	Canberra Institute of Technology	ACT									
Carpentry		http://www.cit.act.edu.au/future/courses/carpentry_certificate_iii	Little	Certificate III	Canberra Institute of Technology	ACT									
Tiling (Wall and Floor)		http://www.cit.act.edu.au/future/courses/tiling_wall_and_floor_certificate_iii	Little	Certificate III	Canberra Institute of Technology	ACT									
Roof Plumbing		http://www.cit.act.edu.au/future/courses/roof_plumbing_certificate_iii	Little	Certificate III	Canberra Institute of Technology	ACT									
Conservation and Land Management		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=12048&AllRegions=yes	Some	Certificate I-Advanced Diploma	TAFE VIC	VIC			Yes						
Horticulture (Landscape)		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=6240&AllRegions=yes	Little	Certificate II-Diploma	TAFE VIC	VIC									
Horticulture (Parks and Gardens)		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=6230&AllRegions=yes	Little	Certificate II-Diploma	TAFE VIC	VIC									
Horticulture (Arboriculture)		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=6252&AllRegions=yes	Little	Certificate II-Diploma	TAFE VIC	VIC									
Horticulture		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=6252&AllRegions=yes	Little	Certificate II-Diploma	TAFE VIC	VIC									
Bricklaying/Blocklaying		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=41161&AllRegions=yes	Little	Certificate III	TAFE VIC	VIC									
Carpentry		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=41162&AllRegions=yes	Little	Certificate III	TAFE VIC	VIC									
Glass and Glazing		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=21537&AllRegions=yes	Little	Certificate III	TAFE VIC	VIC									
Stonemasonry (Monumental and Installation)		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=5348&AllRegions=yes	Little	Certificate III	TAFE VIC	VIC									
Diploma of Arts- Interior Decoration and Design		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=16726&AllRegions=yes	Little	Diploma	TAFE VIC	VIC									
Painting and Decorating		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=41200&AllRegions=yes	Little	Certificate III	TAFE VIC	VIC									
Solid Plastering		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=41199&AllRegions=yes	Little	Certificate III	TAFE VIC	VIC									
Roof Tiling		http://www.tafe.vic.gov.au/tafecourses/search/Courses/Detail.asp?ID=41198&AllRegions=yes	Little	Certificate III	TAFE VIC	VIC									
Carpentry		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/P_Course_Select/80C80403D271D2906925739F0026D03B?OpenDocument	Little	Certificate III	Charles Darwin University	NT									
Horticulture		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/P_Course_Select/1DCC297B27C21AF76925739F0026D0B7?OpenDocument	Little	Certificate III and IV	Charles Darwin University	NT									
Engineering		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/P_Course_Select/D946D11ADA79BFE56925739F0026D09B?OpenDocument	Little	Certificate I and II	Charles Darwin University	NT									

Course Name	Subject Name (if applicable)	Hyperlink	Heritage Focus (core, some, little)	Qualification	Institution	State	1. Physical Conservation	2. Recording	3. Management	4. Consultation	5. Interpretation	6. Archaeology	7. Historic Landscape Management	8. Legislation and Policy	Special Focus
Tourism (Guiding)		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/P_Course_Select/6921CB2E319C48CF69257544001EA0BD?OpenDocument	Little	Certificate III and IV	Charles Darwin University	NT									
Conservation and Land Management		http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/W_Courses_Interest/EE953724DBF2508E6925739F0026D0AB?OpenDocument	Some	Certificate II and III	Charles Darwin University	NT			Yes						
General Construction	Read and interpret plans and specifications	http://eagle.cdu.edu.au/NTU/Apps/coursere.nsf/W_Courses_Interest/919DF2D9902D9CC56925739F0026D03A?OpenDocument	Little	Certificate II	Charles Darwin University	NT									
Horticulture		http://polycourses.yourchoice.tas.gov.au/Controller;jsessionid=A67AB573ACDB46DF394948AB10320301?entity=search&command=view&id=27	Little	Certificate I-IV	Tasmanian Polytechnic	TAS									
Conservation and Land Management		http://polycourses.yourchoice.tas.gov.au/Controller;jsessionid=A67AB573ACDB46DF394948AB10320301?entity=search&command=view&id=34	Some	Certificate I-Advanced Diploma	Tasmanian Polytechnic	TAS									
Building and Construction		http://polycourses.yourchoice.tas.gov.au/Controller;jsessionid=A67AB573ACDB46DF394948AB10320301?entity=search&command=view&id=552	Little	Certificate IV	Tasmanian Polytechnic	TAS									
Building Design and Technology		http://polycourses.yourchoice.tas.gov.au/Controller;jsessionid=A67AB573ACDB46DF394948AB10320301?entity=search&command=view&id=560	Some	Diploma	Tasmanian Polytechnic	TAS		Yes							
General Construction (Bricklaying)		http://polycourses.yourchoice.tas.gov.au/Controller;jsessionid=C5D7E9737FD52ABE28FA7903AFAAF160?entity=search&command=view&id=1661	Little	Certificate I	Tasmanian Polytechnic	TAS									
Engineering		http://polycourses.yourchoice.tas.gov.au/Controller;jsessionid=1596DA6B48D62CF5CDB710CA9AE1761E?entity=search&command=view&id=194	Little	Certificate IV	Tasmanian Polytechnic	TAS									
Painting and Decorating		http://polycourses.yourchoice.tas.gov.au/Controller;jsessionid=1596DA6B48D62CF5CDB710CA9AE1761E?entity=search&command=view&id=688	Little	Certificate III	Tasmanian Polytechnic	TAS									
Apprenticeships		http://www.skillsinstitute.tas.edu.au/index.php	Little	Various	Tasmanian Skills Institute	TAS									
Bricklaying/Blocklaying		http://tafecoursesearch.tafe.wa.edu.au/Lists/Courses/DispCourse.aspx?ID=263434	Little	Certificate III	TAFE WA	WA									
Carpentry and Joinery		http://tafecoursesearch.tafe.wa.edu.au/Lists/Courses/DispCourse.aspx?ID=263430	Little	Certificate III	TAFE WA	WA									
Furnishing (Glass and Glazing)		http://tafecoursesearch.tafe.wa.edu.au/Lists/Courses/DispCourse.aspx?ID=262252	Little	Certificate I	TAFE WA	WA									
Horticulture		http://tafecoursesearch.tafe.wa.edu.au/Lists/Courses/DispCourse.aspx?ID=262076	Little	Certificate-Diploma	TAFE WA	WA									
Horticulture (Arboriculture)		http://tafecoursesearch.tafe.wa.edu.au/Lists/Courses/DispCourse.aspx?ID=263351	Little	Certificate III	TAFE WA	WA									
Plastering (Housing)		http://tafecoursesearch.tafe.wa.edu.au/Lists/Courses/DispCourse.aspx?ID=263380	Little	Certificate III	TAFE WA	WA									
Roof Plumbing		http://tafecoursesearch.tafe.wa.edu.au/Lists/Courses/DispCourse.aspx?ID=263389	Little	Certificate III	TAFE WA	WA									
Australian Languages and Cultural Heritage		http://tafecoursesearch.tafe.wa.edu.au/Lists/Courses/DispCourse.aspx?ID=263259	Some	Certificate III and IV	TAFE WA	WA				Yes	Yes				
Tourism (Natural and Cultural Heritage)		http://tafecoursesearch.tafe.wa.edu.au/Lists/Courses/DispCourse.aspx?ID=263264	Some	Certificate IV	TAFE WA	WA				Yes	Yes	Yes			
Short Courses		http://www.issinstitute.org.au/train/index.html	Core	Short Course	International Specialised Skills Institute	VIC									
Fellowships		http://www.issinstitute.org.au/os/index.html	Core	Fellowship	International Specialised Skills Institute	VIC									
Heritage		http://home.vicnet.net.au/~u3abgo/	Core	Short Course	University of the Third Age	VIC									
AIMA Avocational courses in Maritime Heritage		http://maritime.heritage.nsw.gov.au/public/research.cfm?pagename=Training	Core	Short Course	AIMA	Various States						Yes			
NEW ZEALAND															
Bachelor of Tourism Studies	Single paper -216001 Tourism heritage and Culture	http://www.aut.ac.nz/papers/sport-and-recreation/ak3730/216001?paper_code=216001&pgID=1096&SQ_DESIGN_NAME=papers	Some	Undergraduate degree	AUT	NZ						Yes			
Bachelor of Architectural Studies (BAS)		http://www.auckland.ac.nz/uoa/home/about/programme-courses/programmes?cid=17650	Little	Undergraduate degree	University of Auckland	NZ									
Planning	Planning 757 Cultural heritage planning	http://www.calendar.auckland.ac.nz/courses/prescriptions/nicai/planning.html	Some	Undergraduate degree	University of Auckland	NZ									
Bachelor to Master of Arts in Museums and Cultural Heritage		http://www.arts.auckland.ac.nz/subjects/index.cfm?P=864	Some	Postgraduate degree	University of Auckland	NZ				Yes					
The Bachelor of Arts (BA) in Anthropology	Includes archeology option	http://www.arts.auckland.ac.nz/online/index.cfm?P=1059	Some	Undergraduate degree	University of Auckland	NZ									
Heritage Tourism Management (2010)	TOMG510-10B (HAM)	http://wms-soros.mngt.waikato.ac.nz/education/papers/outline.asp?crs_off_id=TOMG510-10B+(HAM)&crsid=TOMG510&year=2010	Little	Post graduate paper	University of Waikato	NZ						Yes			
Bachelor to Doctorate of Applied Science with Honours (BApplSc(Hons))	Some landscape and horticulture	http://www.massey.ac.nz/massey/study/programme-course-and-paper-search/programme.cfm?prog_id=93020	Little	Undergraduate degree	Massey University	NZ									
Bachelor to Doctorate of Architectural Studies (BAS).	Includes landscape architecture	http://www.victoria.ac.nz/home/study/undergrad/bacharchstudies.aspx	Little	Undergraduate to doctorate	Victoria University of Wellington	NZ									
Bachelor to Doctorate of Building Science		http://www.victoria.ac.nz/home/study/undergrad/bachbuildingscience.aspx#degreestructure	Little	Undergraduate to doctorate degree	Victoria University of Wellington	NZ									
Museum and Heritage Studies		http://www.victoria.ac.nz/home/study/subjects/coursecatalogue.aspx?d=Museum+and+Heritage+Studies&l=all&t=0&res=d#det200	Some	Undergraduate to doctorate degree	Victoria University of Wellington	NZ				Yes					
Diploma to MSc in Heritage Materials Science	Mostly arefact materials	http://www.victoria.ac.nz/home/study/subjects/offered/hmsc.aspx#overview	Some	Postgraduate diploma, certificate and degree	Victoria University of Wellington	NZ									
Bachelor of Tourism Management	One paper only	http://www.lincoln.ac.nz/Degrees-Diplomas-and-Certificates/Undergraduate/Undergraduate-Degrees/List-of-programmes/Bachelor-of-Tourism-Management/	Little	Undergraduate degree	Lincoln University	NZ									
Bachelor of Tourism (BTour)	One paper only	http://www.otago.ac.nz/courses/qualifications/btour.html	Little	Undergraduate degree	University of Otago	NZ									
Bachelor to Doctorate of Arts (BA) - Anthropology	May specialise in archaeology	http://www.otago.ac.nz/anthropology/anth/archaeology.html	Some	Undergraduate to doctorate degree	University of Otago	NZ				Yes					
Bachelor of Architectural Studies		http://www.unitec.ac.nz/?C388C90F-67F5-47BF-AA3E-481120FC0EF0&welcome=yes#courses	Little	Undergraduate degree	Unitec	NZ									
Bachelor of Landscape Architecture		http://www.unitec.ac.nz/?E7F0A646-2843-4C13-ADEC-276AF5EF5818&welcome=yes#courses	Little	Undergraduate degree	Unitec	NZ									
National Certificate in Fibrous Plaster (installation)	Optional master classes through apprenticeships	http://www.bcito.org.nz/qualifications/interior_systems/natcert-fibrous.html	Little	National certificate - apprenticeship	Building and Construction Industry Training Organisation	NZ									
National Certificate in Fibrous Plaster Manufacture	Optional master classes through apprenticeships	http://www.bcito.org.nz/qualifications/interior_systems/natcert-fibrous-manufacture.html	Little	National certificate - apprenticeship	Building and Construction Industry Training Organisation	NZ									
National Certificate in Solid Plastering	Optional master classes through apprenticeships	http://www.bcito.org.nz/qualifications/solidplastering/natcert-plastering.html	Little	National certificate - apprenticeship	Building and Construction Industry Training Organisation	NZ									
National Maori Carving, Weaving and Pounamu Programmes	Building decoration	http://www.tepuia.com/education/index.html	Core	Pokairua diploma	Te Puia -New Zealand maori Arts and Crafts Institute	NZ		Yes							
Marae Built Heritage Programme	Contact; Dean Whiting	http://www.historicplaces.org.nz/en.aspx	Core	No formal qualification	Historic Places Trust	NZ		Yes							
Bachelor of Maori Visual Arts - Maunga Kura Toi, Whakairo (Level 7)		http://www.twoa.ac.nz/	Core	Undergraduate degree	Te Wananga o Aotearoa	NZ		Yes							
Certificate in Nga Mahi Whakairo (level 4)		http://www.waiariki.ac.nz/course.asp?course_ID=249	Core	Certificate	Waiariki Institute of Technology	NZ		Yes							
Certificate in Whakairo (Visual arts)		http://www.northtec.ac.nz/Programmes/Lists/Courses/courses.aspx?List=3d3f2ef0-a3f1-4049-bfff-e6bcfa3888de&ID=96&RootFolder=%2fProgrammes%2fLists%2fCourses	Core	Certificate	Northtech Northland Polytechnic	NZ		Yes							
Diploma in Maori Design (He Toi Whakairo He Mana Tangata L5		http://www.cpit.ac.nz/	Some	Diploma	Christchurch Polytechnic Institute of Technology	NZ									
Diploma in Whakairo (Advanced)-Toiere Whakairo (Level 6)		http://www.whitireia.ac.nz/programme_selector.php?key=114&path=interest&interest_id=Maori	Core	Diploma	Whitireia Community Polytechnic	NZ		Yes							
Pokairua Whakairo		http://www.northtec.ac.nz/searchcenter/Pages/Results.aspx?k=Pokairua%20Whakairo	Core	Diploma	Northtech Northland Polytechnic	NZ		Yes							
Poutuārongo Toi Whakarākai, PToi		http://www.twor.ac.nz/?q=node/78	Core	Undergraduate degree	Te Wananga o Raukawa	NZ		Yes							
National Certificate & Diplomain Whakairo		http://www.wananga.ac.nz/visualarts/ncdiw.html	Core	Certificate and Diploma	Te Whare Wananga o Awanuiarangi	NZ		Yes							
Historic Heritage - Basic Principles Training		http://www.doc.govt.nz/getting-involved/in-your-community/training/field-based-courses/historic-heritage-basic-principles-training/	Core	Short courses and workshops	Department of Conservation	NZ		Yes							

Appendix D

Raw Survey Data

- Skills Needs Analysis Survey October 2009
- Supplementary Survey March 2010
- Supplementary Survey 2 March 2010

1. Your Location and Postcode

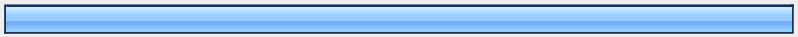
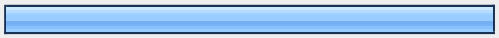
	Response Percent	Response Count
City	**100.0%**	**435**
Postcode	97.5%	424
answered question		**435**
skipped question		**21**

2. State (including New Zealand)

State

	ACT	NSW	VIC	QLD	TAS	WA	SA	NT	New Zealand	Response Count
Please Select	5.8% (24)	23.5% (97)	**25.9% (107)**	6.8% (28)	3.6% (15)	7.5% (31)	4.1% (17)	0.7% (3)	22.0% (91)	413
answered question										**413**
skipped question										**43**

3. Are you responding to this questionnaire as:

		Response Percent	Response Count
An individual who works in a heritage trade or profession? If so, press 'Next' to be taken to Section B		**61.8%**	**248**
A representative of a heritage agency, institution or private company? If so, press 'Next' to be taken to Section C		38.2%	153
	answered question		**401**
	skipped question		**55**

4. Employment status?

	Response Percent	Response Count
Volunteer	4.9%	14
Consultant/freelance worker	28.9%	82
Full-time paid employee	**52.1%**	**148**
Part-time or casual paid employee	11.3%	32
Apprentice/student	3.9%	11
Retired	2.1%	6
Other (please specify)	5.6%	16
answered question		**284**
skipped question		**172**

5. Your age range?

	Response Percent	Response Count
Under 30	10.4%	29
30-50	**49.3%**	**138**
50-65	38.2%	107
66 or over	2.1%	6
answered question		**280**
skipped question		**176**

6. How would you best define you place of work?

	Response Percent	Response Count
Commonwealth Government Agency	4.6%	13
State Government Agency	25.7%	73
Local Government Agency	7.4%	21
Educational Institution	6.3%	18
Heritage Site	4.2%	12
Trades Company	3.5%	10
Private Practice/Consultancy	**43.7%**	**124**
Non-government Organisation	5.3%	15
Other (please specify)	4.6%	13
answered question		**284**
skipped question		**172**

7. How would you best define your trade or profession?

	Response Percent	Response Count
Archaeologist	22.8%	64
Historian	13.5%	38
Architect	19.2%	54
Heritage Manager	19.9%	56
Tradesperson	6.0%	17
Academic/Teacher	2.1%	6
Bureaucrat	2.8%	8
Other (please specify)	**27.8%**	**78**
	answered question	**281**
	skipped question	**175**

8. What is your highest level of education?

	Response Percent	Response Count
Secondary School	1.8%	5
Trade Apprenticeship	1.1%	3
TAFE, Polytechnic or Vocational Education Certificate or equivalent	3.5%	10
Undergraduate Degree	24.7%	70
Post-Graduate Award	**56.2%**	**159**
Doctorate	10.2%	29
Other (please specify)	2.5%	7
	answered question	**283**
	skipped question	**173**

9. When did you complete this study?

	Response Percent	Response Count
Current	4.9%	14
2007-2009	12.4%	35
2004-2006	15.9%	45
2001-2003	12.0%	34
2000 or before	**56.5%**	**160**
answered question		**283**
skipped question		**173**

10. If in this formal education you specialised in a particular heritage field, what was it?

	Response Count
	167
answered question	**167**
skipped question	**289**

11. What other types of heritage training have you undertaken?

	Response Percent	Response Count
Professional Short Course or Workshop	64.3%	173
Internship	8.6%	23
Informal or 'On the Job' Training	**77.7%**	**209**
Self-taught	37.5%	101
Other (please specify)		16
answered question		**269**
skipped question		**187**

12. Physical Conservation

	Select any of the following that you most use in your workplace	In which of the skills or knowledge sets have you had formal training	In which of the skills or knowledge sets you selected have you had informal or 'on the job' training	Which of the following is a priority for training to enhance your capacity in your current work?	Response Count
Thatching	12.5% (1)	25.0% (2)	**37.5% (3)**	**37.5% (3)**	8
Bricklaying	52.8% (28)	22.6% (12)	**64.2% (34)**	32.1% (17)	53
Mortar Analysis	50.0% (33)	22.7% (15)	**59.1% (39)**	53.0% (35)	66
Paint analysis	**62.9% (44)**	25.7% (18)	57.1% (40)	34.3% (24)	70
Gilding	23.5% (4)	17.6% (3)	**64.7% (11)**	41.2% (7)	17
Traditional tool making and or use	46.4% (13)	39.3% (11)	**57.1% (16)**	35.7% (10)	28
Painting and decorating	54.1% (33)	27.9% (17)	**59.0% (36)**	27.9% (17)	61
Interior finishes	**58.6% (34)**	27.6% (16)	**58.6% (34)**	36.2% (21)	58
Glass conservation and/or replacement	46.5% (20)	25.6% (11)	**62.8% (27)**	32.6% (14)	43
Stone masonry	61.3% (46)	32.0% (24)	**68.0% (51)**	45.3% (34)	75
Metalwork/forging/blacksmithing	50.0% (22)	18.2% (8)	**54.5% (24)**	45.5% (20)	44
Roofing	**66.7% (40)**	30.0% (18)	56.7% (34)	35.0% (21)	60
Plastering	58.6% (34)	39.7% (23)	**62.1% (36)**	34.5% (20)	58
Carpentry	59.7% (40)	38.8% (26)	**65.7% (44)**	29.9% (20)	67
Joinery	**63.8% (37)**	39.7% (23)	56.9% (33)	32.8% (19)	58

Engineering	**62.2% (23)**	32.4% (12)	48.6% (18)	48.6% (18)	37
Traditional mechanical skills	36.0% (9)	16.0% (4)	44.0% (11)	**52.0% (13)**	25
Architectural analysis	**73.8% (79)**	52.3% (56)	63.6% (68)	40.2% (43)	107
				Other (please specify)	20
				answered question	**149**
				skipped question	**307**

13. Recording

	Select any the following that you most use in your workplace	In which of the skills or knowledge sets have you had formal training	In which of the skills or knowledge sets you selected have you had informal or 'on the job' training	Which of the following is a priority for training to enhance your capacity in your current work?	Response Count
Fabric survey	**82.8% (106)**	38.3% (49)	57.8% (74)	33.6% (43)	128
Site survey	**88.0% (146)**	55.4% (92)	55.4% (92)	21.7% (36)	166
Mapping	**78.1% (82)**	43.8% (46)	52.4% (55)	33.3% (35)	105
GIS	**58.4% (59)**	32.7% (33)	49.5% (50)	55.4% (56)	101
Inventory preparation	**76.9% (93)**	27.3% (33)	62.0% (75)	18.2% (22)	121
Cataloguing	**69.9% (79)**	37.2% (42)	56.6% (64)	23.9% (27)	113
Data management	**78.9% (101)**	30.5% (39)	66.4% (85)	32.0% (41)	128
Photography	**85.7% (162)**	29.6% (56)	57.7% (109)	14.3% (27)	189
Sketching	**72.5% (74)**	44.1% (45)	51.0% (52)	11.8% (12)	102
Photogrammetry	22.5% (9)	20.0% (8)	30.0% (12)	**55.0% (22)**	40
Measured drawing	**73.8% (93)**	61.9% (78)	42.9% (54)	18.3% (23)	126
Oral history	**68.9% (82)**	39.5% (47)	50.4% (60)	27.7% (33)	119
Historical research	**87.0% (168)**	57.5% (111)	53.4% (103)	27.5% (53)	193
Archival research	**84.0% (142)**	48.5% (82)	58.0% (98)	27.8% (47)	169
				Other (please specify)	11
				answered question	**223**

	skipped question	**233**

14. Management

	Select any of the following that you most use in your workplace	In which of the skills or knowledge sets have you had formal training	In which of the skills or knowledge sets you selected have you had informal or 'on the job' training	Which of the following is a priority for training to enhance your capacity in your current work?	Response Count
Significance assessment	**93.0% (185)**	44.7% (89)	65.3% (130)	31.2% (62)	199
Thresholds	**81.7% (76)**	24.7% (23)	68.8% (64)	32.3% (30)	93
Policy development	**85.6% (137)**	30.6% (49)	64.4% (103)	33.1% (53)	160
Risk management	**80.7% (117)**	27.6% (40)	62.1% (90)	31.7% (46)	145
Issues analysis	**85.0% (113)**	32.3% (43)	64.7% (86)	24.8% (33)	133
Implementation	**85.8% (103)**	21.7% (26)	65.8% (79)	24.2% (29)	120
Tolerance for change	**72.9% (62)**	17.6% (15)	63.5% (54)	32.9% (28)	85
Legislative/statutory context	**89.8% (150)**	34.7% (58)	64.1% (107)	29.9% (50)	167
Comparative analysis	**88.7% (126)**	37.3% (53)	62.7% (89)	23.2% (33)	142
Legislative compliance	**82.5% (127)**	25.3% (39)	64.3% (99)	29.2% (45)	154
Conservation strategy	**80.0% (132)**	31.5% (52)	63.0% (104)	37.6% (62)	165
Conservation management planning	**82.7% (148)**	33.5% (60)	62.6% (112)	39.1% (70)	179
Site analysis	**91.5% (150)**	45.7% (75)	57.9% (95)	24.4% (40)	164
				Other (please specify)	7

	answered question	**226**
	skipped question	**230**

15. Consultation

	Select any of the following that you most use in your workplace	In which of the skills or knowledge sets have you had formal training	In which of the skills or knowledge sets you selected have you had informal or 'on the job' training	Which of the following is a priority for training to enhance your capacity in your current work?	Response Count
Stakeholder engagement	**91.2% (165)**	19.9% (36)	65.2% (118)	37.0% (67)	181
Public speaking	**80.9% (140)**	32.9% (57)	56.1% (97)	32.4% (56)	173
Recording information	**91.6% (163)**	41.0% (73)	60.1% (107)	25.3% (45)	178
Survey development and analysis	**84.4% (103)**	38.5% (47)	54.1% (66)	37.7% (46)	122
'Plain English' publication	**86.3% (138)**	26.9% (43)	56.9% (91)	31.3% (50)	160
				Other (please specify)	6
				answered question	**221**
				skipped question	**235**

16. Interpretation

	Select any of the following that you most use in your workplace	In which of the skills or knowledge sets have you had formal training	In which of the skills or knowledge sets you selected have you had informal or 'on the job' training	Which of the following is a priority for training to enhance your capacity in your current work?	Response Count
Communication skills	**94.4% (170)**	38.3% (69)	58.9% (106)	25.0% (45)	180
Multi-media skills	**78.4% (98)**	22.4% (28)	56.0% (70)	42.4% (53)	125
Tour guiding	56.9% (37)	16.9% (11)	**70.8% (46)**	21.5% (14)	65
Visitor management	56.8% (42)	17.6% (13)	**58.1% (43)**	32.4% (24)	74
Historical themes	**88.6% (117)**	36.4% (48)	55.3% (73)	27.3% (36)	132
Content development	**73.6% (67)**	25.3% (23)	63.7% (58)	47.3% (43)	91
Audience analysis	**51.6% (32)**	17.7% (11)	48.4% (30)	**51.6% (32)**	62
Interpretation strategies/plans	**82.5% (113)**	24.8% (34)	60.6% (83)	48.9% (67)	137
				Other (please specify)	5
				answered question	**205**
				skipped question	**251**

17. Archaeology

	Select any of the following that you most use in your workplace	In which of the skills or knowledge sets have you had formal training	In which of the skills or knowledge sets you selected have you had informal or 'on the job' training	Which of the following is a priority for training to enhance your capacity in your current work?	Response Count
Research design	**76.9% (60)**	57.7% (45)	46.2% (36)	35.9% (28)	78
Archaeological site survey	**79.8% (71)**	65.2% (58)	46.1% (41)	29.2% (26)	89
Archaeological excavation	**69.5% (57)**	64.6% (53)	47.6% (39)	24.4% (20)	82
Permit applications	**78.5% (62)**	20.3% (16)	60.8% (48)	15.2% (12)	79
Artefact analysis	**70.7% (58)**	61.0% (50)	40.2% (33)	30.5% (25)	82
Artefact conservation	**50.7% (37)**	38.4% (28)	47.9% (35)	37.0% (27)	73
Report writing	**85.9% (79)**	52.2% (48)	50.0% (46)	17.4% (16)	92
Diving	40.9% (9)	**77.3% (17)**	22.7% (5)	31.8% (7)	22
Underwater survey and recording	36.4% (8)	**59.1% (13)**	36.4% (8)	36.4% (8)	22
				Other (please specify)	7
				answered question	**117**
				skipped question	**339**

18. Historic Landscape Management

	Select any of the following that you most use in your workplace	In which of the skills or knowledge sets have you had formal training	In which of the skills or knowledge sets you selected have you had informal or 'on the job' training	Which of the following is a priority for training to enhance your capacity in your current work?	Response Count
Landscape assessment	**76.1% (89)**	24.8% (29)	53.8% (63)	47.9% (56)	117
Aboriculture	40.6% (13)	9.4% (3)	31.3% (10)	**59.4% (19)**	32
Horticulture	**57.1% (20)**	20.0% (7)	31.4% (11)	**57.1% (20)**	35
Landscape architecture	59.7% (37)	27.4% (17)	53.2% (33)	**61.3% (38)**	62
Historic map/plan analysis	**85.7% (108)**	27.8% (35)	59.5% (75)	41.3% (52)	126
Curtilage analysis	**80.2% (65)**	16.0% (13)	61.7% (50)	48.1% (39)	81
View analysis	**74.2% (49)**	16.7% (11)	65.2% (43)	48.5% (32)	66
				Other (please specify)	4
				answered question	**154**
				skipped question	**302**

19. Legislation and Policy

	Select any of the following that you most use in your workplace	In which of the skills or knowledge sets have you had formal training	In which of the skills or knowledge sets you selected have you had informal or 'on the job' training	Which of the following is a priority for training to enhance your capacity in your current work?	Response Count
ICOMOS Charter (NZ and AUS)	**100.0% (15)**	26.7% (4)	60.0% (9)	53.3% (8)	15
Resource Management Act (NZ)	**83.3% (25)**	50.0% (15)	43.3% (13)	46.7% (14)	30
Historic Places Act (NZ)	**94.1% (32)**	20.6% (7)	61.8% (21)	38.2% (13)	34
EPBC Act	**68.3% (56)**	18.3% (15)	61.0% (50)	37.8% (31)	82
State Heritage Legislation	**93.9% (153)**	22.1% (36)	65.6% (107)	28.2% (46)	163
State Planning Legislation	**87.0% (114)**	24.4% (32)	64.1% (84)	32.8% (43)	131
International Agreements and Conventions	**69.0% (60)**	28.7% (25)	47.1% (41)	37.9% (33)	87
OH and S requirements	**80.3% (102)**	42.5% (54)	55.1% (70)	22.0% (28)	127
Building Codes	**84.2% (101)**	29.2% (35)	59.2% (71)	30.8% (37)	120
Natural Heritage Legislation	**61.9% (39)**	19.0% (12)	44.4% (28)	47.6% (30)	63
Aboriginal Heritage Legislation	**76.3% (71)**	20.4% (19)	55.9% (52)	45.2% (42)	93
Burra Charter	**89.1% (156)**	37.7% (66)	56.6% (99)	25.1% (44)	175
				Other (please specify)	23
				answered question	**220**
				skipped question	**236**

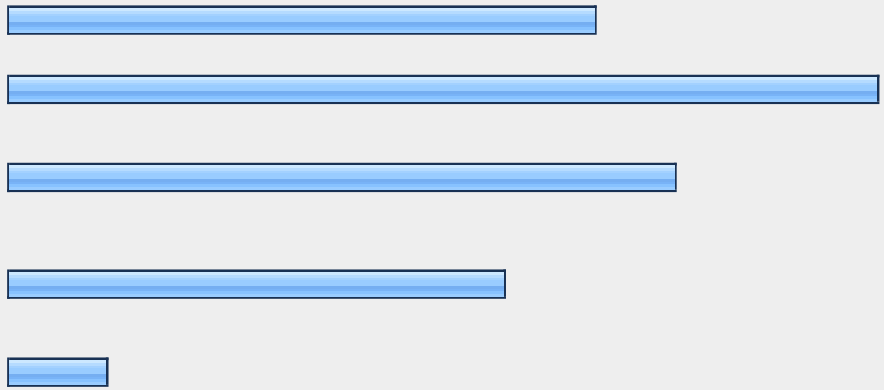
20. Are you aware of training opportunities that would provide the skills and knowledge you have identified as a priority?

	Response Percent	Response Count
No	**69.9%**	**151**
Yes	25.9%	56
If 'Yes', please describe	24.5%	53
answered question		**216**
skipped question		**240**

21. What is your preferred mode of delivery for training? (you may select more than one)

	Response Percent	Response Count
Full-time study	4.9%	11
Part-time study	20.4%	46
Intensive short course	**81.3%**	**183**
By distance or online	39.1%	88
'On the Job'	41.3%	93
Other (please specify)	3.6%	8
answered question		**225**
skipped question		**231**

22. What factors limit you undertaking further skills training?



	Response Percent	Response Count
Cost	46.0%	103
Time	**68.3%**	**153**
Lack of appropriate training opportunties	52.2%	117
Lack of training opportunites in the lcoal area	38.8%	87
Other (please specify)	7.6%	17
answered question		**224**
skipped question		**232**

23. How would you best define your place of work?

	Response Percent	Response Count
Commonwealth Government Agency	6.3%	9
State Government Agency	**39.4%**	**56**
Local Government Agency	9.2%	13
Education Institution	4.9%	7
Heritage Site	2.1%	3
Trades Company	7.0%	10
Private Practice/Consultanct	26.1%	37
Non-government Organisation	10.6%	15
Other (please specify)	7.7%	11
answered question		**142**
skipped question		**314**

24. How many staff are there in your workplace?

	Response Percent	Response Count
<10	31.7%	44
10-20	18.7%	26
>20	**49.6%**	**69**
answered question		**139**
skipped question		**317**

25. Are the majority of staff in your workplace?

	Response Percent	Response Count
Volunteers	5.7%	8
Full-time paid employees	**85.8%**	**121**
Part-time or casual paid employees	5.0%	7
Apprentice/students	0.7%	1
Other (please specify)	2.8%	4
answered question		**141**
skipped question		**315**

26. What is the average age of staff in your workplace?

	Response Percent	Response Count
Under 30	3.6%	5
30-50	**84.1%**	**116**
50-65	10.9%	15
66 or over	1.4%	2
answered question		**138**
skipped question		**318**

27. How do you define your trade or profession?

	Response Percent	Response Count
Archaeologist	18.3%	26
Historian	7.7%	11
Architect	18.3%	26
Heritage Manager	28.9%	41
Tradesperson	5.6%	8
Academic/Teacher	2.1%	3
Bureaucrat	11.3%	16
Other (please specify)	**32.4%**	**46**
	answered question	**142**
	skipped question	**314**

28. What is the average level of education of staff in your workplace?

	Response Percent	Response Count
Secondary School	4.4%	6
Trade Apprenticeship	7.3%	10
TAFE, Polytechnic College, Vocational Education Certificate or Equivalent	11.7%	16
Undergraduate Degree	**46.0%**	**63**
Post-graduate Award	38.0%	52
Doctorate	4.4%	6
	answered question	**137**
	skipped question	**319**

29. How many staff in your workplace have undertaken professional development training in heritage related skills?

	Response Percent	Response Count
None	6.6%	9
Few	**50.7%**	**69**
Most	33.8%	46
All	8.8%	12
answered question		**136**
skipped question		**320**

30. Does your workplace provide 'in-house' training opportunities?

	Response Percent	Response Count
Never	9.4%	13
Occasionally	**63.8%**	**88**
Regularly	26.8%	37
answered question		**138**
skipped question		**318**

31. Physical Conservation				
	Select any of the following that are most used in your workplace	Given the nature of your current work is any of the following lacking in your workplace?	Which of the following are priority skills or knowledge for staff in your workplace now and/or in the near future?	Response Count
Thatching	0.0% (0)	**100.0% (3)**	0.0% (0)	3
Bricklaying	46.2% (6)	**69.2% (9)**	46.2% (6)	13
Mortar Analysis	**60.0% (9)**	53.3% (8)	40.0% (6)	15
Paint analysis	**68.4% (13)**	31.6% (6)	15.8% (3)	19
Gilding	20.0% (1)	**80.0% (4)**	20.0% (1)	5
Traditional tool making and or use	50.0% (4)	**62.5% (5)**	25.0% (2)	8
Painting and decorating	**70.6% (12)**	29.4% (5)	23.5% (4)	17
Interior finishes	**52.9% (9)**	47.1% (8)	29.4% (5)	17
Glass conservation and/or replacement	30.8% (4)	**53.8% (7)**	23.1% (3)	13
Stone masonry	**68.4% (13)**	36.8% (7)	47.4% (9)	19
Metalwork/forging/blacksmithing	22.2% (2)	**66.7% (6)**	11.1% (1)	9
Roofing	**72.2% (13)**	33.3% (6)	22.2% (4)	18
Plastering	**66.7% (10)**	53.3% (8)	40.0% (6)	15
Carpentry	**78.9% (15)**	26.3% (5)	42.1% (8)	19
Joinery	**56.3% (9)**	37.5% (6)	37.5% (6)	16
Engineering	**60.0% (9)**	46.7% (7)	20.0% (3)	15

Traditional mechanical skills	44.4% (4)	**55.6% (5)**	22.2% (2)	9
Architectural analysis	**86.2% (25)**	13.8% (4)	51.7% (15)	29
			Other (please specify)	2
			answered question	**33**
			skipped question	**423**

32. Recording

	Select any of the following that are most used in your workplace	Given the nature of your current work is any of the following lacking in your workplace?	Which of the following are priority skills or knowledge for staff in your workplace now and/or in the near future?	Response Count
Fabric survey	**84.6% (22)**	26.9% (7)	53.8% (14)	26
Site survey	**96.8% (30)**	16.1% (5)	51.6% (16)	31
Mapping	**66.7% (14)**	23.8% (5)	38.1% (8)	21
GIS	**53.6% (15)**	39.3% (11)	**53.6% (15)**	28
Inventory preparation	**79.2% (19)**	12.5% (3)	41.7% (10)	24
Cataloguing	**80.0% (16)**	20.0% (4)	50.0% (10)	20
Data management	**86.4% (19)**	4.5% (1)	63.6% (14)	22
Photography	**90.6% (29)**	9.4% (3)	37.5% (12)	32
Sketching	**56.3% (9)**	37.5% (6)	25.0% (4)	16
Photogrammetry	20.0% (1)	**80.0% (4)**	20.0% (1)	5
Measured drawing	**85.0% (17)**	15.0% (3)	25.0% (5)	20
Oral history	**56.3% (9)**	37.5% (6)	43.8% (7)	16
Historical research	**91.2% (31)**	14.7% (5)	55.9% (19)	34
Archival research	**89.7% (26)**	17.2% (5)	55.2% (16)	29
			Other (please specify)	0
			answered question	**40**

skipped question	**416**

33. Management

	Select any of the following that are most used in your workplace	Given the nature of your current work is any of the following lacking in your workplace?	Which of the following are priority skills or knowledge for staff in your workplace now and/or in the near future?	Response Count
Significance assessment	**93.9% (31)**	18.2% (6)	60.6% (20)	33
Thresholds	**66.7% (8)**	41.7% (5)	58.3% (7)	12
Policy development	**83.9% (26)**	22.6% (7)	32.3% (10)	31
Risk management	**67.7% (21)**	25.8% (8)	38.7% (12)	31
Issues analysis	**70.8% (17)**	20.8% (5)	41.7% (10)	24
Implementation	**73.7% (14)**	31.6% (6)	36.8% (7)	19
Tolerance for change	**50.0% (8)**	31.3% (5)	31.3% (5)	16
Legislative/statutory context	**92.9% (26)**	7.1% (2)	50.0% (14)	28
Comparative analysis	**84.2% (16)**	15.8% (3)	47.4% (9)	19
Legislative compliance	**90.0% (27)**	16.7% (5)	43.3% (13)	30
Conservation strategy	**75.8% (25)**	27.3% (9)	51.5% (17)	33
Conservation management planning	**88.2% (30)**	17.6% (6)	55.9% (19)	34
Site analysis	**82.6% (19)**	30.4% (7)	34.8% (8)	23
			Other (please specify)	1
			answered question	**42**

skipped question	**414**

34. Consultation

	Select any of the following that are most used in your workplace	Given the nature of your current work is any of the following lacking in your workplace?	Which of the following are priority skills or knowledge for staff in your workplace now and/or in the near future?	Response Count
Stakeholder engagement	**88.2% (30)**	11.8% (4)	55.9% (19)	34
Public speaking	**82.1% (23)**	25.0% (7)	35.7% (10)	28
Recording information	**92.3% (24)**	15.4% (4)	38.5% (10)	26
Survey development and analysis	53.8% (14)	38.5% (10)	**57.7% (15)**	26
'Plain English' publication	**68.0% (17)**	28.0% (7)	52.0% (13)	25
			Other (please specify)	1
			answered question	**39**
			skipped question	**417**

35. Interpretation

	Select any of the following that are most used in your workplace	Given the nature of your current work is any of the following lacking in your workplace?	Which of the following are priority skills or knowledge for staff in your workplace now and/or in the near future?	Response Count
Communication skills	**93.8% (30)**	9.4% (3)	43.8% (14)	32
Multi-media skills	**72.0% (18)**	24.0% (6)	52.0% (13)	25
Tour guiding	**80.0% (8)**	20.0% (2)	40.0% (4)	10
Visitor management	**62.5% (10)**	31.3% (5)	56.3% (9)	16
Historical themes	**85.7% (18)**	19.0% (4)	47.6% (10)	21
Content development	**78.3% (18)**	21.7% (5)	39.1% (9)	23
Audience analysis	44.4% (8)	44.4% (8)	**55.6% (10)**	18
Interpretation strategies/plans	**78.6% (22)**	14.3% (4)	53.6% (15)	28
			Other (please specify)	0
			answered question	**35**
			skipped question	**421**

36. Archaeology

	Select any of the following that are most used in your workplace	Given the nature of your current work is any of the following lacking in your workplace?	Which of the following are priority skills or knowledge for staff in your workplace now and/or in the near future?	Response Count
Research design	**61.5% (8)**	30.8% (4)	53.8% (7)	13
Archaeological site survey	**58.8% (10)**	**58.8% (10)**	35.3% (6)	17
Archaeological excavation	42.9% (6)	**64.3% (9)**	50.0% (7)	14
Permit applications	**88.9% (16)**	11.1% (2)	33.3% (6)	18
Artefact analysis	57.1% (8)	50.0% (7)	**64.3% (9)**	14
Artefact conservation	40.0% (4)	**60.0% (6)**	**60.0% (6)**	10
Report writing	**75.0% (12)**	31.3% (5)	43.8% (7)	16
Diving	25.0% (1)	**75.0% (3)**	25.0% (1)	4
Underwater survey and recording	33.3% (2)	**66.7% (4)**	33.3% (2)	6
			Other (please specify)	1
			answered question	**25**
			skipped question	**431**

37. Historic Landscape Management

	Select any of the following that are most used in your workplace	Given the nature of your current work is any of the following lacking in your workplace?	Which of the following are priority skills or knowledge for staff in your workplace now and/or in the near future?	Response Count
Landscape assessment	**64.0% (16)**	44.0% (11)	56.0% (14)	25
Aboriculture	**62.5% (5)**	50.0% (4)	37.5% (3)	8
Horticulture	50.0% (3)	**83.3% (5)**	50.0% (3)	6
Landscape architecture	50.0% (9)	**55.6% (10)**	**55.6% (10)**	18
Historic map/plan analysis	**68.2% (15)**	31.8% (7)	59.1% (13)	22
Curtilage analysis	**90.0% (18)**	25.0% (5)	45.0% (9)	20
View analysis	**75.0% (12)**	43.8% (7)	31.3% (5)	16
			Other (please specify)	0
			answered question	**26**
			skipped question	**430**

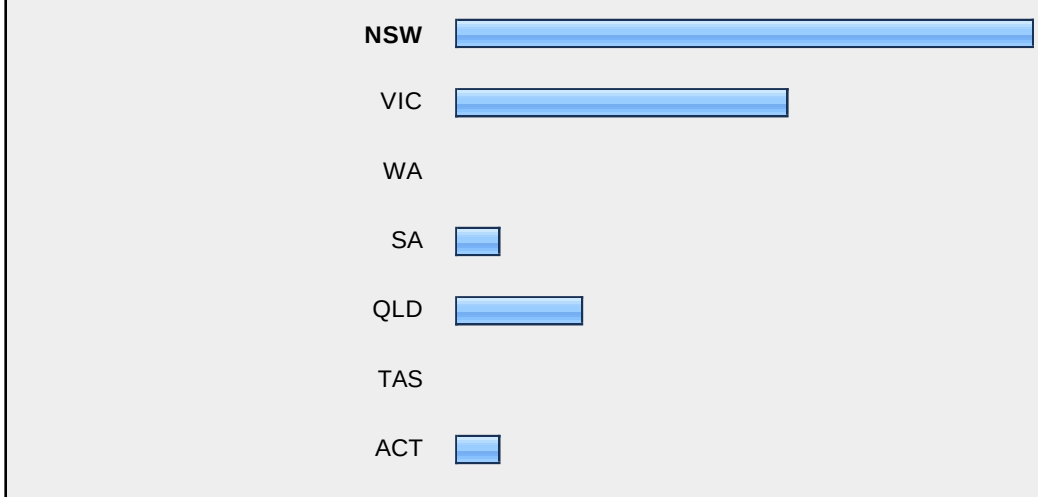
38. Legislation and Policy

	Select any of the following that are most used in your workplace	Given the nature of your current work is any of the following lacking in your workplace?	Which of the following are priority skills or knowledge for staff in your workplace now and/or in the near future?	Response Count
ICOMOS Charter (NZ or AUS)	**100.0% (8)**	12.5% (1)	62.5% (5)	8
Resource Management Act (NZ)	**100.0% (8)**	12.5% (1)	62.5% (5)	8
Historic Places Act (NZ)	**100.0% (11)**	9.1% (1)	54.5% (6)	11
EPBC Act	**84.6% (11)**	30.8% (4)	46.2% (6)	13
State Heritage Legislation	**96.0% (24)**	16.0% (4)	64.0% (16)	25
State Planning Legislation	**90.9% (20)**	18.2% (4)	45.5% (10)	22
International Agreements and Conventions	**75.0% (9)**	50.0% (6)	58.3% (7)	12
OH and S requirements	**91.7% (22)**	16.7% (4)	33.3% (8)	24
Building Codes	**92.0% (23)**	20.0% (5)	52.0% (13)	25
Natural Heritage Legislation	**58.3% (7)**	33.3% (4)	41.7% (5)	12
Indigenous Heritage Legislation	**69.2% (9)**	46.2% (6)	53.8% (7)	13
Burra Charter	**92.6% (25)**	22.2% (6)	55.6% (15)	27
			Other (please specify)	1
			answered question	**38**
			skipped question	**418**

39. Is there anything else you would like to add, to help us identify the needs for and training in heritage trades and professional skills?	
	Response Count
	148
answered question	**148**
skipped question	**308**

Survey 1--HCOANZ Heritage Trades and Training Project--Physical Conservation

1. Where do you live?



	Response Percent	Response Count
NSW	**45.2%**	**14**
VIC	25.8%	8
WA	0.0%	0
SA	3.2%	1
QLD	9.7%	3
TAS	0.0%	0
ACT	3.2%	1
NT	12.9%	4
North Island--NZ	0.0%	0
South Island--NZ	0.0%	0
	answered question	**31**
	skipped question	**3**

2. Do you live in a:

	Response Percent	Response Count
Capital city	**83.9%**	**26**
Large regional centre (over 20,000)	6.5%	2
Rural area	9.7%	3
Other (please specify)		0
answered question		**31**
skipped question		**3**

3. Please specify your age range

	Response Percent	Response Count
under 30	3.2%	1
30-45	9.7%	3
45-60	**61.3%**	**19**
60 or over	25.8%	8
answered question		**31**
skipped question		**3**

4. What is your occupation?

	Response Percent	Response Count
Architect	**61.3%**	**19**
Structural Engineer	12.9%	4
Materials Conservator	0.0%	0
Other (please specify)	29.0%	9
answered question		**31**
skipped question		**3**

5. How long have you been working on traditional buildings and structures?

	Response Percent	Response Count
0-5 years	3.2%	1
5-10 years	6.5%	2
10-15 years	6.5%	2
15-20 years	22.6%	7
Over 20 years	**61.3%**	**19**
answered question		**31**
skipped question		**3**

6. What is your highest level of education?

	Response Percent	Response Count
Secondary (high school or college)	0.0%	0
TAFE/Polytechnic College award	0.0%	0
Apprenticeship	0.0%	0
Undergraduate degree	**48.4%**	**15**
Postgraduate award	41.9%	13
Doctorate	9.7%	3
Other (please specify)		0
answered question		**31**
skipped question		**3**

7. When was this education completed?

	Response Percent	Response Count
0-5 years ago	7.1%	2
10-15 years ago	14.3%	4
15-20 years ago	25.0%	7
Over 20 years ago	**53.6%**	**15**
Other (please specify)		3
answered question		**28**
skipped question		**6**

8. Please specify any professional organisations/bodies or specialist reference groups of which you are a member

	Response Count
	27
answered question	**27**
skipped question	**7**

9. How much of your work in the last 12 months involved traditional buildings and structures?

	Response Percent	Response Count
Under 25%	10.0%	3
25-50%	10.0%	3
50-75%	16.7%	5
Over 75%	**66.7%**	**20**
Additional comments		4
answered question		**30**
skipped question		**4**

10. Do you feel that your formal education adequately prepared you for work on traditional buildings and structures?

	Response Percent	Response Count
Yes	22.6%	7
No	**77.4%**	**24**
If 'No', why not?		21
answered question		**31**
skipped question		**3**

11. Where did you obtain the specialist knowledge you have about traditional buildings and structures?

	Response Percent	Response Count
Formal (University, TAFE, Polytechnic)	41.9%	13
Informal (on-the-job, via colleagues)	**83.9%**	**26**
Self-taught	61.3%	19
Short course	29.0%	9
Other (please specify)		5
answered question		**31**
skipped question		**3**

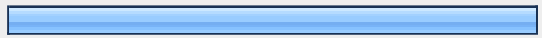
12. Did you undertake the previous Heritage Trades and Professional Training project survey (October 2009)?

	Response Percent	Response Count
Yes	40.0%	12
No	**43.3%**	**13**
I did not know about the previous survey	33.3%	10
answered question		**30**
skipped question		**4**

13. How many staff does your business/organisation have (including you)?

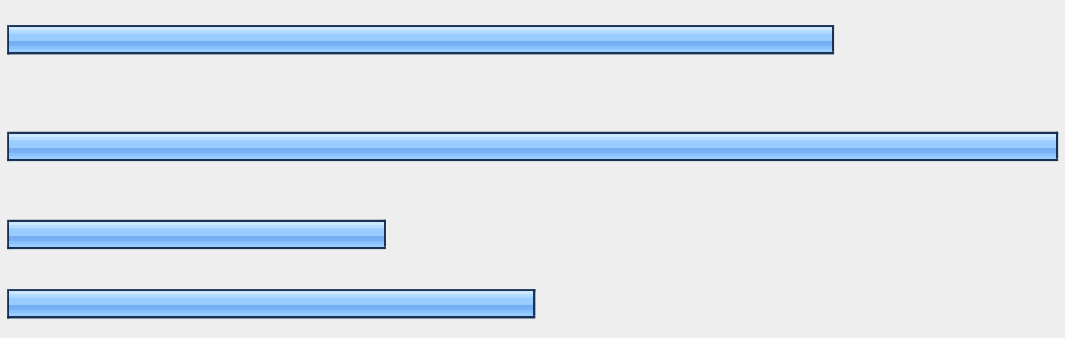
	Response Percent	Response Count
Under 5	**37.9%**	**11**
5-10	27.6%	8
10-20	3.4%	1
20-50	20.7%	6
Over 50	10.3%	3
answered question		**29**
skipped question		**5**

14. Other than you, what percentage of the staff in your business/organisation undertake work on traditional buildings and structures?



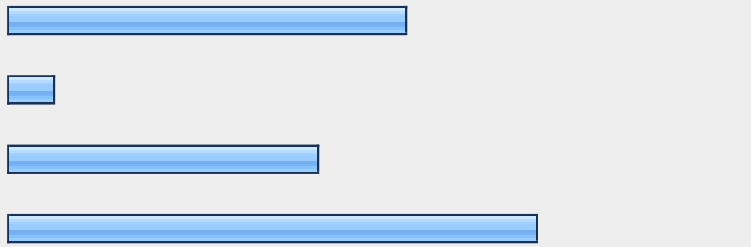
	Response Percent	Response Count
Under 25%	**41.4%**	**12**
25-50%	0.0%	0
50-75%	3.4%	1
Over 75%	27.6%	8
No other staff work on traditional buildings and structures	6.9%	2
There are no other staff/I am a sole practitioner	20.7%	6
answered question		**29**
skipped question		**5**

15. If you have staff who undertake work on traditional buildings and structures, where did they obtain their specialist knowledge?



	Response Percent	Response Count
Formal (University, TAFE, Polytechnic)	64.7%	11
Informal (on-the-job, via colleagues)	**82.4%**	**14**
Self-taught	29.4%	5
Short course	41.2%	7
Other (please specify)		5
answered question		**17**
skipped question		**17**

16. How much of the work undertaken by your business/organisation involves traditional buildings and structures?

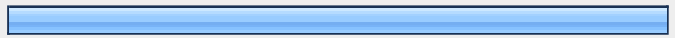


	Response Percent	Response Count
Under 25%	31.0%	9
25-50%	3.4%	1
50-75%	24.1%	7
Over 75%	**41.4%**	**12**
answered question		**29**
skipped question		**5**

17. Do you anticipate that your workload on traditional buildings and structures will over the next three years:

	Response Percent	Response Count
Increase	34.5%	10
Remain the same	**65.5%**	**19**
Decrease	0.0%	0
answered question		**29**
skipped question		**5**

18. Where do you undertake the majority of your work on traditional buildings and structures?



	Response Percent	Response Count
NSW	**51.7%**	**15**
VIC	27.6%	8
QLD	10.3%	3
TAS	3.4%	1
SA	6.9%	2
WA	0.0%	0
ACT	13.8%	4
NT	13.8%	4
North Island-NZ	0.0%	0
South Island-NZ	0.0%	0
Other (please specify)		1
answered question		**29**
skipped question		**5**

19. Is your business/organisation's work mainly located in:

	Response Percent	Response Count
Capital city	**93.1%**	**27**
Large regional centre (over 20,000)	20.7%	6
Rural area	10.3%	3
answered question		**29**
skipped question		**5**

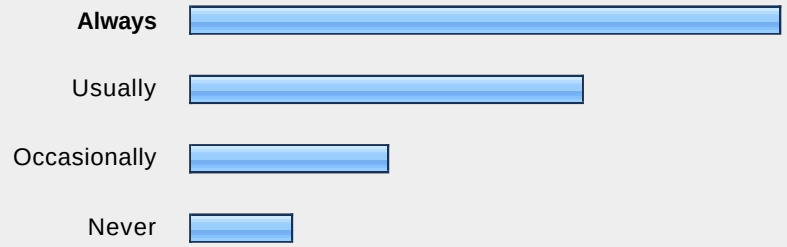
20. Do you participate in the recruitment and employment of new staff?

	Response Percent	Response Count
Yes, please continue	41.4%	12
No, please skip to Section D--Specialist Skills	**58.6%**	**17**
answered question		**29**
skipped question		**5**

21. Do you consider that your newer recruits are:

	Response Percent	Response Count
Well prepared for work on traditional buildings and structures	0.0%	0
Adequately prepared for work on traditional buildings and structures	8.3%	1
Poorly prepared for work on traditional buildings and structures	**91.7%**	**11**
Additional comments		4
answered question		**12**
skipped question		**22**

22. Do you have difficulty in recruiting staff who are adequately prepared for work on traditional buildings and structures?



	Response Percent	Response Count
Always	**46.2%**	**6**
Usually	30.8%	4
Occasionally	15.4%	2
Never	7.7%	1
Additional comments		3
answered question		**13**
skipped question		**21**

23. If you have difficulty in recruiting adequately prepared staff, how do you deal with it?

	Response Count
	11
answered question	**11**
skipped question	**23**

24. Do you have a training and development strategy in place for your employees?

	Response Percent	Response Count
Yes	61.5%	8
No	38.5%	5
answered question		13
skipped question		21

25. During the last 12 months how many days (in total) did you or your employees engage in formal or informal training relating to work on traditional buildings and structures?

	Response Count
	12
answered question	12
skipped question	22

26. How do you pass on your knowledge and experience to your employees?

	Response Count
	12
answered question	12
skipped question	22

27. Do you have difficulty locating accessible specialist training for your employees?

	Response Percent	Response Count
Yes	**90.9%**	**10**
No	18.2%	2
Additional comments		4
answered question		**11**
skipped question		**23**

28. Materials Investigation, Testing, Diagnosis and Analysis

	Do not need these skills	Can not or do not know where to find these skills	Know of one specialist who can provide these skills	Know of several specialists who can provide these skills	Know of specialists, but location makes access financially unviable	Have basic knowledge in-house	Have high-level expertise in-house	Skills are a priority for training to enhance your/your business' capacity	Response Count
Timber decay analysis	3.7% (1)	7.4% (2)	25.9% (7)	22.2% (6)	3.7% (1)	**63.0% (17)**	22.2% (6)	18.5% (5)	27
Masonry decay analysis	3.7% (1)	3.7% (1)	14.8% (4)	37.0% (10)	3.7% (1)	29.6% (8)	**48.1% (13)**	22.2% (6)	27
Concrete decay analysis	4.0% (1)	8.0% (2)	28.0% (7)	40.0% (10)	0.0% (0)	**48.0% (12)**	16.0% (4)	12.0% (3)	25
Paint investigation and analysis	11.5% (3)	3.8% (1)	19.2% (5)	34.6% (9)	0.0% (0)	26.9% (7)	**42.3% (11)**	11.5% (3)	26
Mortar investigation and analysis	3.7% (1)	3.7% (1)	33.3% (9)	22.2% (6)	3.7% (1)	**59.3% (16)**	18.5% (5)	25.9% (7)	27
Render investigation and analysis	11.5% (3)	7.7% (2)	34.6% (9)	23.1% (6)	3.8% (1)	**53.8% (14)**	15.4% (4)	23.1% (6)	26
Metal corrosion analysis	7.7% (2)	19.2% (5)	19.2% (5)	30.8% (8)	3.8% (1)	**38.5% (10)**	15.4% (4)	19.2% (5)	26
								Other (please specify)	5
								answered question	**27**
								skipped question	**7**

29. Specification and Documentation

	Do not need these skills	Can not or do not know where to find these skills	Know of one specialist who can provide these skills	Know several specialists who can provide these skills	Know of specialists, but location makes access financially unviable	Have basic knowledge in-house	Have high-level expertise in-house	Skills are a priority for training to enhance your/your business' capacity	Response Count
Condition assessment and documentation	0.0% (0)	0.0% (0)	3.7% (1)	29.6% (8)	0.0% (0)	11.1% (3)	**70.4% (19)**	37.0% (10)	27
Preparation of specifications and work schedules for conservation works	0.0% (0)	0.0% (0)	3.7% (1)	22.2% (6)	0.0% (0)	22.2% (6)	**63.0% (17)**	44.4% (12)	27
Monitoring of building and material condition	3.7% (1)	0.0% (0)	7.4% (2)	25.9% (7)	0.0% (0)	18.5% (5)	**66.7% (18)**	33.3% (9)	27
Evaluation of performance of conservation works	3.7% (1)	3.7% (1)	7.4% (2)	22.2% (6)	0.0% (0)	25.9% (7)	**59.3% (16)**	29.6% (8)	27
Measured drawings	7.4% (2)	0.0% (0)	7.4% (2)	37.0% (10)	0.0% (0)	22.2% (6)	**59.3% (16)**	14.8% (4)	27
Contract works drawings	7.4% (2)	0.0% (0)	3.7% (1)	33.3% (9)	0.0% (0)	7.4% (2)	**70.4% (19)**	22.2% (6)	27
Archival recording	7.4% (2)	0.0% (0)	7.4% (2)	33.3% (9)	0.0% (0)	25.9% (7)	**44.4% (12)**	14.8% (4)	27
								answered question	**27**
								skipped question	**7**

30. Materials Conservation

	Do not need these skills	Can not or do not know where to find these skills	Know of one specialist who can provide these skills	Know several specialists who can provide these skills	Know of specialists, but location makes access financially unviable	Have basic knowledge in-house	Have high-level expertise in-house	Skills are a priority for training to enhance your/your business' capacity	Response Count
Painted surface conservation	7.7% (2)	7.7% (2)	23.1% (6)	**42.3% (11)**	0.0% (0)	**42.3% (11)**	11.5% (3)	7.7% (2)	26
Stone conservation	0.0% (0)	7.4% (2)	11.1% (3)	**48.1% (13)**	0.0% (0)	33.3% (9)	33.3% (9)	22.2% (6)	27
Plastic conservation	19.2% (5)	**57.7% (15)**	11.5% (3)	11.5% (3)	0.0% (0)	15.4% (4)	0.0% (0)	3.8% (1)	26
Glass conservation	14.8% (4)	18.5% (5)	**29.6% (8)**	22.2% (6)	0.0% (0)	25.9% (7)	18.5% (5)	11.1% (3)	27
Wall and floor covering conservation	15.4% (4)	15.4% (4)	19.2% (5)	**34.6% (9)**	0.0% (0)	30.8% (8)	11.5% (3)	11.5% (3)	26
Wood conservation	0.0% (0)	7.7% (2)	23.1% (6)	**38.5% (10)**	0.0% (0)	**38.5% (10)**	30.8% (8)	11.5% (3)	26
Metal conservation	0.0% (0)	12.0% (3)	20.0% (5)	**40.0% (10)**	0.0% (0)	36.0% (9)	28.0% (7)	20.0% (5)	25
Interior environmental monitoring	11.5% (3)	23.1% (6)	23.1% (6)	**34.6% (9)**	0.0% (0)	23.1% (6)	3.8% (1)	3.8% (1)	26
Conservation lighting, heating and cooling	15.4% (4)	26.9% (7)	19.2% (5)	**30.8% (8)**	0.0% (0)	26.9% (7)	7.7% (2)	7.7% (2)	26
Brick conservation	3.8% (1)	15.4% (4)	23.1% (6)	19.2% (5)	0.0% (0)	**50.0% (13)**	23.1% (6)	19.2% (5)	26
Terracotta conservation	7.7% (2)	30.8% (8)	23.1% (6)	7.7% (2)	0.0% (0)	**46.2% (12)**	15.4% (4)	11.5% (3)	26
							answered question		**27**
							skipped question		**7**

31. Availability of Other Specialist Skills

	Do not need these skills	Can not or do not know where to find these skills	Know of one specialist who can provide these skills	Know several specialists who can provide these skills	Know of specialists, but location makes access financially unviable	Have basic knowledge in-house	Have high-level expertise in-house	Skills are a priority for training to enhance your/your business' capacity	Response Count
Structural engineering	0.0% (0)	0.0% (0)	7.4% (2)	**66.7% (18)**	3.7% (1)	11.1% (3)	18.5% (5)	11.1% (3)	27
Mechanical engineering (lifts, industrial equipment etc)	11.1% (3)	7.4% (2)	14.8% (4)	**55.6% (15)**	3.7% (1)	11.1% (3)	3.7% (1)	0.0% (0)	27
Geotechnical engineering	7.7% (2)	3.8% (1)	11.5% (3)	**61.5% (16)**	3.8% (1)	19.2% (5)	3.8% (1)	0.0% (0)	26
Conservators with experience in buildings	7.7% (2)	11.5% (3)	15.4% (4)	**46.2% (12)**	3.8% (1)	7.7% (2)	11.5% (3)	3.8% (1)	26
Materials scientists with experience in traditional building materials	8.0% (2)	12.0% (3)	28.0% (7)	**36.0% (9)**	8.0% (2)	8.0% (2)	4.0% (1)	4.0% (1)	25
Pest control specialists	3.8% (1)	7.7% (2)	11.5% (3)	**73.1% (19)**	3.8% (1)	7.7% (2)	0.0% (0)	0.0% (0)	26
Entomologists	16.0% (4)	**40.0% (10)**	20.0% (5)	24.0% (6)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	25
Wood anatomists	16.0% (4)	**40.0% (10)**	36.0% (9)	8.0% (2)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	25
								answered question	**27**
								skipped question	**7**

32. Heritage Trades Please tell us about your understanding of the need for and availability in your location of 'competent' or 'specialist' tradespeople with the following skills for work on traditional buildings and structures. NB: 'Competent' is defined as capable of undertaking the work with direction. 'Specialist' is defined as capable of determining what work needs to be done as well as undertaking this work.

	This skill is needed in my location	No competent tradespeople are available	No specialist tradespeople are available	Know of specialists, but location makes access financially unviable	Only 1 competent tradesperson available	One 1 specialist tradesperson available and 1-3 competent tradespeople available	At least 2-3 specialist tradespeople available	Response Count
Bricklaying (pointing and repair)	18.2% (4)	0.0% (0)	18.2% (4)	4.5% (1)	0.0% (0)	22.7% (5)	**40.9% (9)**	22
Stonemasonry (pointing and repair)	16.0% (4)	0.0% (0)	0.0% (0)	4.0% (1)	0.0% (0)	24.0% (6)	**64.0% (16)**	25
Carpentry (joinery and cabinet work)	4.8% (1)	0.0% (0)	0.0% (0)	0.0% (0)	9.5% (2)	28.6% (6)	**61.9% (13)**	21
Traditional timber construction(slab construction etc)	13.0% (3)	4.3% (1)	21.7% (5)	0.0% (0)	13.0% (3)	**34.8% (8)**	21.7% (5)	23
Plastering, mortaring and rendering	4.2% (1)	0.0% (0)	16.7% (4)	0.0% (0)	12.5% (3)	29.2% (7)	**41.7% (10)**	24
Lime plastering, mortaring and rendering	4.3% (1)	0.0% (0)	17.4% (4)	0.0% (0)	17.4% (4)	26.1% (6)	**39.1% (9)**	23
Painting and decorating	4.3% (1)	0.0% (0)	8.7% (2)	4.3% (1)	0.0% (0)	34.8% (8)	**52.2% (12)**	23
Roofing-slate	4.8% (1)	9.5% (2)	9.5% (2)	0.0% (0)	9.5% (2)	33.3% (7)	**38.1% (8)**	21
Roofing-terracotta tiles	4.8% (1)	9.5% (2)	9.5% (2)	4.8% (1)	0.0% (0)	**42.9% (9)**	33.3% (7)	21
Roofing-timber shingles	10.0% (2)	10.0% (2)	20.0% (4)	5.0% (1)	5.0% (1)	**35.0% (7)**	15.0% (3)	20
Roofing-copper	4.8% (1)	9.5% (2)	19.0% (4)	0.0% (0)	4.8% (1)	28.6% (6)	**33.3% (7)**	21
Roofing-galvanised products	9.1% (2)	0.0% (0)	18.2% (4)	0.0% (0)	0.0% (0)	22.7% (5)	**59.1% (13)**	22

Roof plumbing	10.0% (2)	0.0% (0)	15.0% (3)	5.0% (1)	0.0% (0)	25.0% (5)	**55.0% (11)**	20
Glass and glazing repair (lead lighting etc)	4.8% (1)	4.8% (1)	9.5% (2)	4.8% (1)	4.8% (1)	33.3% (7)	**42.9% (9)**	21
Metalwork	4.5% (1)	0.0% (0)	9.1% (2)	0.0% (0)	9.1% (2)	**40.9% (9)**	**40.9% (9)**	22
Maori Building Craft	**46.2% (6)**	23.1% (3)	23.1% (3)	7.7% (1)	0.0% (0)	0.0% (0)	0.0% (0)	13
							answered question	**25**
							skipped question	**9**

33. If you experienced difficulty in locating competent or specialist tradespeople for work on traditional buildings and structures, please explain why the appropriate skills could not be obtained.

	Response Count
	13
answered question	**13**
skipped question	**21**

34. If you write specifications for work on traditional buildings and structures, do you include requirements that tradespeople must be competent (with appropriate experience) or specialists, that have particular qualifications in the relevant trade?

	Response Percent	Response Count
Always	**60.9%**	**14**
Usually	34.8%	8
Occasionally	4.3%	1
Never	0.0%	0
Details of how you specify these requirements		10
answered question		**23**
skipped question		**11**

35. When preparing specifications for work on traditional buildings and structures, do you require the use of traditional materials?

	Response Percent	Response Count
Always	24.0%	6
Usually	**68.0%**	**17**
Occasionally	12.0%	3
Never	0.0%	0
Additional comments		10
answered question		**25**
skipped question		**9**

36. If you do not usually require the use of traditional materials, why not? (more than one response can be chosen)

	Response Percent	Response Count
High cost	40.0%	4
No demand from client	10.0%	1
Difficult to source, non-availability	**50.0%**	**5**
Builders do not have skills to use traditional materials	**50.0%**	**5**
Not necessary-modern materials are as good or better (or may not be compatible with new uses)	10.0%	1
Modern materials are easier to use	10.0%	1
Traditional materials do not meet building regulations/other regulatory issues	20.0%	2
Other (please specify)		4
answered question		**10**
skipped question		**24**

37. Are your clients (owners and managers) aware of the importance of using traditional materials and of the potential damage caused by using inappropriate substitutes?

	Response Percent	Response Count
Always	8.0%	2
Usually	**52.0%**	**13**
Occasionally	40.0%	10
Never	0.0%	0
Additional comments		7
answered question		**25**
skipped question		**9**

38. Have you experienced difficulty in locating information on traditional materials or trades?

	Response Percent	Response Count
Yes	48.0%	12
No	**52.0%**	**13**
Additional comments		3
answered question		**25**
skipped question		**9**

39. If you have experienced difficulty finding information, please identify the areas that you have had the most difficulty with.

	Response Count
	13
answered question	**13**
skipped question	**21**

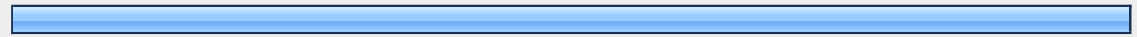
40. Does a lack of knowledge on how to guide tradespeople in the use of traditional materials make it difficult for you to specify them?

	Response Percent	Response Count
Yes	**68.0%**	**17**
No	32.0%	8
Additional comments		8
answered question		**25**
skipped question		**9**

41. Any further comments?

	Response Count
	8
answered question	**8**
skipped question	**26**

1. Where do you live?



	Response Percent	Response Count
NSW	**87.9%**	**246**
VIC	10.4%	29
WA	0.0%	0
SA	0.4%	1
QLD	1.4%	4
TAS	0.4%	1
ACT	0.4%	1
NT	0.0%	0
North Island--NZ	0.0%	0
South Island--NZ	0.4%	1
answered question		**280**
skipped question		**5**

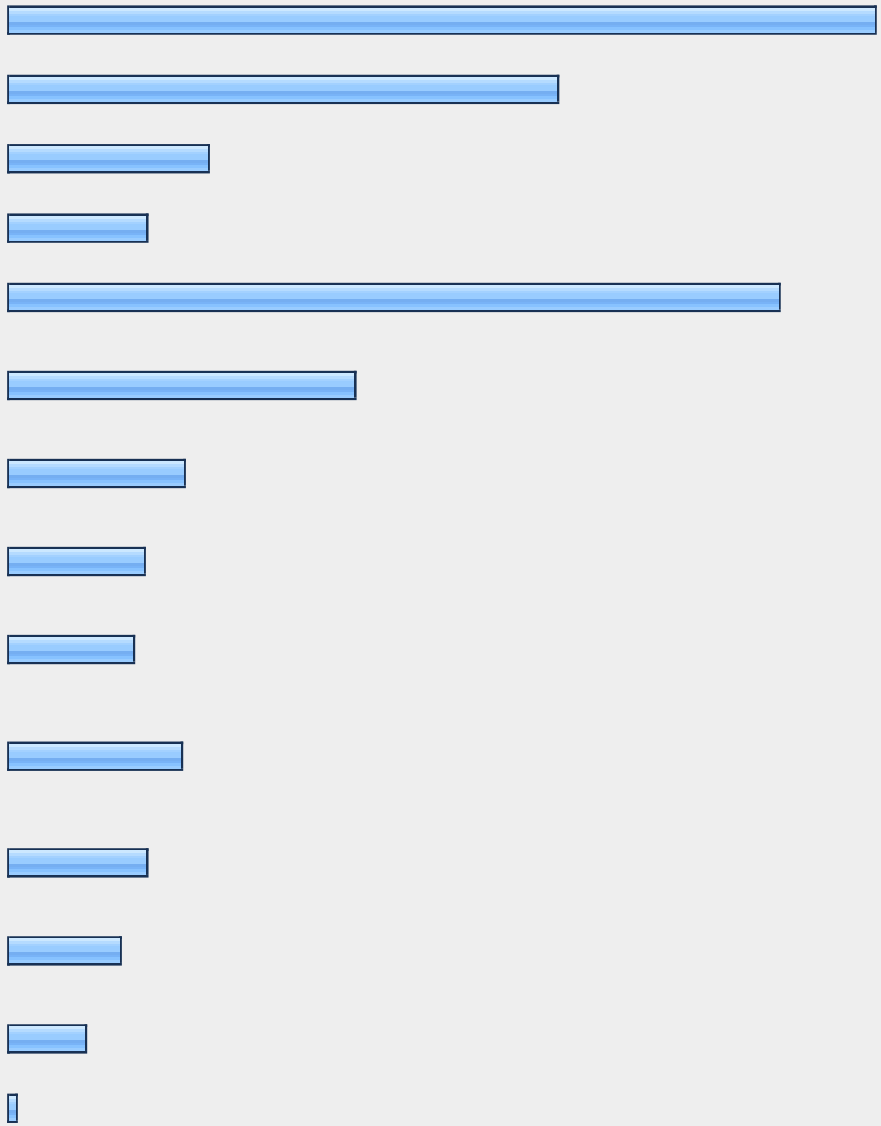
2. Do you live in a:

	Response Percent	Response Count
Capital city	**51.4%**	**142**
Large regional centre (over 20,000)	29.7%	82
Rural area	19.9%	55
Other (please specify)		10
answered question		**276**
skipped question		**9**

3. Please specify your age range

	Response Percent	Response Count
under 30	1.8%	5
30-45	33.6%	94
45-60	**51.8%**	**145**
60 or over	12.9%	36
answered question		**280**
skipped question		**5**

4. In what trade area/s have you undertaken training?



	Response Percent	Response Count
Construction	**68.0%**	**183**
Project management	43.1%	116
Bricklaying	15.6%	42
Stonemasonry	10.8%	29
Carpentry	60.6%	163
Traditional timber construction(slab construction etc)	27.1%	73
Plastering, mortaring and rendering	13.8%	37
Lime plastering, mortaring and rendering	10.4%	28
Painting and decorating	9.7%	26
Roofing (slate, terracotta tiles, timber shingles, copper, galvanised products)	13.4%	36
Roof plumbing	10.8%	29
Glass and glazing repair (lead lighting etc)	8.6%	23
Metalwork	5.9%	16
Maori Building Craft	0.4%	1
Other (please specify)		34

answered question	**269**
skipped question	**16**

5. What is the highest level of qualification you have gained in that/those trades?

	Response Percent	Response Count
Secondary school trade program	3.0%	8
Apprenticeship	25.8%	69
TAFE/Polytechnic certificate/s or diploma	42.3%	113
Trade license	**67.8%**	**181**
Undergraduate degree	9.4%	25
Postgraduate award	3.7%	10
Other (please specify)		32
answered question		**267**
skipped question		**18**

6. When was this qualification completed?

	Response Percent	Response Count
0-5 years ago	13.7%	37
10-15 years ago	16.7%	45
15-20 years ago	20.0%	54
Over 20 years ago	**53.0%**	**143**
Other (please specify)		6
answered question		**270**
skipped question		**15**

7. In your trades training- did you get particular training about heritage conservation work?

	Response Percent	Response Count
Yes	32.8%	87
No	**67.5%**	**179**
Additional comments		29
answered question		**265**
skipped question		**20**

8. If you undertook formal training in your trade/s, do you feel it adequately prepared you for work on traditional buildings and structures?

	Response Percent	Response Count
Yes	**66.9%**	**160**
No	33.5%	80
If 'No', why not?		52
answered question		**239**
skipped question		**46**

9. Where did you obtain the knowledge you have about traditional building techniques?

	Response Percent	Response Count
Formal (University, TAFE, Polytechnic)	34.8%	94
Informal (on-the-job, via colleagues)	**71.9%**	**194**
Self-taught	51.1%	138
Short course	7.8%	21
answered question		**270**
skipped question		**15**

10. How long have you been working on traditional buildings and structures?

	Response Percent	Response Count
0-5 years	12.3%	33
5-10 years	12.6%	34
10-15 years	12.6%	34
15-20 years	11.5%	31
Over 20 years	**50.9%**	**137**
answered question		**269**
skipped question		**16**

11. Please indicate any professional organisations/bodies or specialist reference groups of which you are a member.

	Response Count
	201
answered question	**201**
skipped question	**84**

12. Does your business specialise in traditional buildings and structures?

	Response Percent	Response Count
Yes	37.4%	96
No	**63.0%**	**162**
Additional comments		30
answered question		**257**
skipped question		**28**

13. How many staff does your business/organisation have (including you)?

	Response Percent	Response Count
Under 5	**71.3%**	**184**
5-10	13.2%	34
10-20	9.3%	24
20-50	3.5%	9
Over 50	3.5%	9
answered question		**258**
skipped question		**27**

14. How much of the work of the business/organisation involves traditional buildings and structures?

	Response Percent	Response Count
None	7.0%	18
Under 25%	**52.3%**	**135**
25-50%	17.8%	46
50-75%	9.7%	25
Over 75%	14.0%	36
answered question		**258**
skipped question		**27**

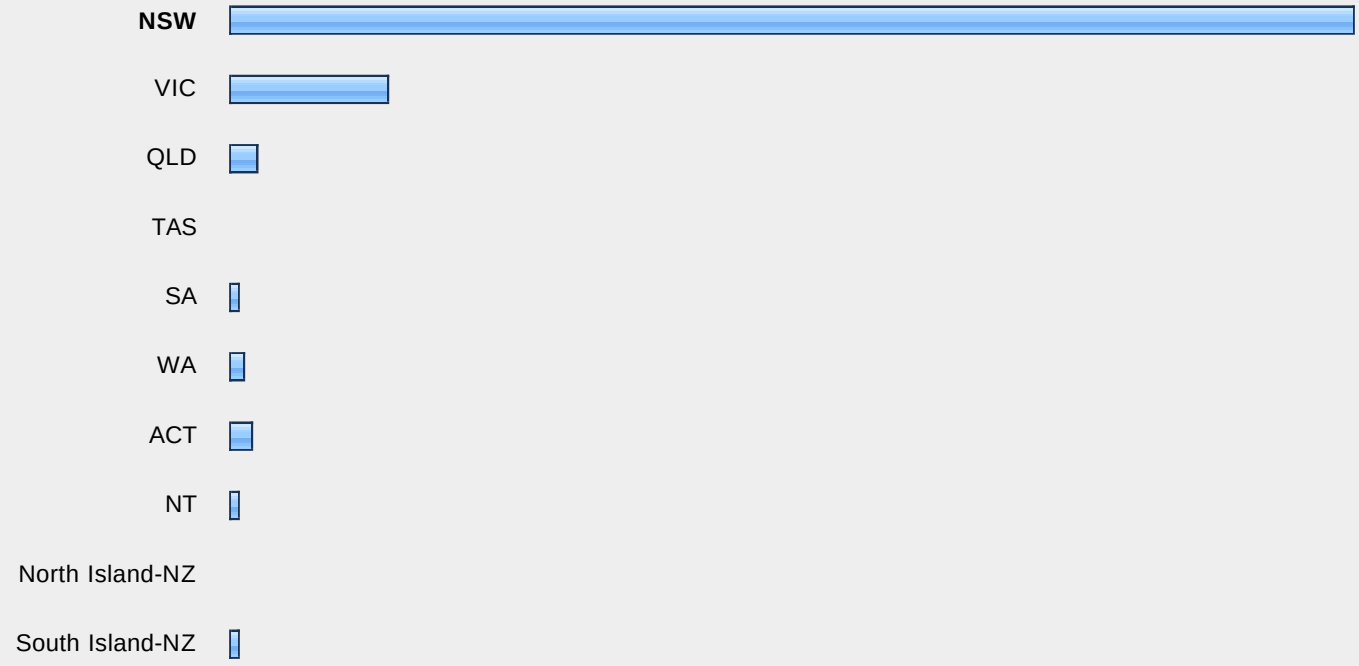
15. How many of your employees work on traditional buildings and structures?

	Response Percent	Response Count
None	21.0%	54
0-25%	**42.4%**	**109**
25-50%	8.9%	23
50-75%	7.4%	19
Over 75%	20.6%	53
answered question		**257**
skipped question		**28**

16. If you have staff who undertake work on traditional buildings and structures, where did they obtain their specialist knowledge?

	Response Percent	Response Count
Formal (University, TAFE, Polytechnic)	25.0%	51
Informal (on-the-job, via colleagues)	**78.4%**	**160**
Self-taught	34.3%	70
Short course	4.9%	10
Other (please specify)		20
answered question		**204**
skipped question		**81**

17. Where do you undertake the majority of your work on traditional buildings and structures?



	Response Percent	Response Count
NSW	**88.2%**	**224**
VIC	12.2%	31
QLD	2.0%	5
TAS	0.0%	0
SA	0.4%	1
WA	0.8%	2
ACT	1.6%	4
NT	0.4%	1
North Island-NZ	0.0%	0
South Island-NZ	0.4%	1
Other (please specify)		8
answered question		**254**
skipped question		**31**

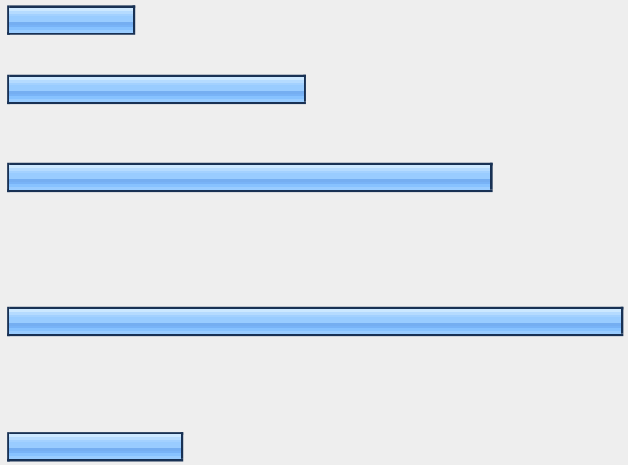
18. Is your business/organisation's work mainly located in:

	Response Percent	Response Count
Capital city	**56.0%**	**145**
Large regional centre (over 20,000)	35.1%	91
Rural area	21.6%	56
answered question		**259**
skipped question		**26**

19. Do you participate in the recruitment and employment of new staff?

	Response Percent	Response Count
Yes, please continue	**58.3%**	**147**
No, please skip to Section D--Specialist Skills	42.5%	107
answered question		**252**
skipped question		**33**

20. Are you asked to provide any of the following evidence when tendering for work on traditional and heritage buildings?



	Response Percent	Response Count
Training records	9.8%	16
Qualifications	23.2%	38
Experience on traditional or heritage buildings	37.8%	62
No, not usually asked for any evidence of experience or training as we have an established reputation	**48.2%**	**79**
Not applicable	13.4%	22
Additional comments		9
answered question		**164**
skipped question		**121**

21. Where do your new staff come from? (multiple choices possible)

	Response Percent	Response Count
New apprentices	**58.3%**	**81**
Recently completed apprenticeships elsewhere	16.5%	23
Other companies in your sector	50.4%	70
Overseas travellers	8.6%	12
Hire from overseas	2.2%	3
Labour hire company	11.5%	16
Othe (please specify		27
answered question		**139**
skipped question		**146**

22. Do you have apprentices?

	Response Percent	Response Count
Yes (go to Question 23)	46.2%	78
No (go to Question 27)	**53.8%**	**91**
answered question		**169**
skipped question		**116**

23. How do you employ apprentices?

	Response Percent	Response Count
Directly	**81.4%**	**70**
Through a group training company	25.6%	22
Other (please specify)		7
answered question		**86**
skipped question		**199**

24. Do you send your apprentices to a registered training organisation for formal training?

	Response Percent	Response Count
Yes	**87.0%**	**80**
No	14.1%	13
Additional comments		5
answered question		**92**
skipped question		**193**

25. Are you happy with the formal training schemes available for apprentices?

	Response Percent	Response Count
Yes	**58.2%**	**53**
No	44.0%	40
If 'No', why not?		41
answered question		**91**
skipped question		**194**

26. In their training, do apprentices receive adequate information about traditional buildings and structures?

	Response Percent	Response Count
Yes	20.0%	17
No	**74.1%**	**63**
Not Applicable	7.1%	6
Additional comments		19
answered question		**85**
skipped question		**200**

27. Do you send your staff to short training sessions (seminars and workshops) on traditional building skills or building conservation?

	Response Percent	Response Count
Yes (go to question 28)	22.6%	37
No (go to question 30)	**78.7%**	**129**
answered question		**164**
skipped question		**121**

28. Where do you send your staff for these training sessions?

	Response Percent	Response Count
TAFE/Polytechnic	**85.3%**	**29**
Heritage Organisation (National Trust, ICOMOS, Government)	26.5%	9
University	5.9%	2
Other (please specify)		19
answered question		**34**
skipped question		**251**

29. Were you happy with the training provided?

	Response Percent	Response Count
Yes	**92.5%**	**37**
No	7.5%	3
If 'No', why not?		8
answered question		**40**
skipped question		**245**

30. If you have not sent your staff to short training sessions, would you like to?

	Response Percent	Response Count
Yes, but the cost is too high	29.5%	46
Yes, but can not find time	23.1%	36
Yes, but can not find appropriate training opportunities	**39.7%**	**62**
No	7.7%	12
Not applicable	24.4%	38
Additonal comments		14
answered question		**156**
skipped question		**129**

31. Heritage Trades Skills								
	Do not need these skills	Can not or do not know where to find these skills	Know of one specialist who can provide these skills	Know several specialists who can provide these skills	Have basic knowledge in-house	Have high-level expertise in-house	Skills are a priority for training to enhance your/your business' capacity	Response Count
Bricklaying (incl. re-pointing and repair)	13.6% (27)	2.0% (4)	24.7% (49)	**32.3% (64)**	18.2% (36)	18.7% (37)	4.5% (9)	198
Tuckpointing	18.8% (34)	7.2% (13)	**30.9% (56)**	26.0% (47)	12.7% (23)	8.8% (16)	5.0% (9)	181
Stonemasonry (incl. pointing and repair)	14.4% (27)	4.3% (8)	25.1% (47)	**37.4% (70)**	9.6% (18)	13.9% (26)	7.0% (13)	187
Carpentry	6.5% (13)	1.5% (3)	9.0% (18)	23.4% (47)	19.4% (39)	**47.8% (96)**	11.9% (24)	201
Joinery-repairs and reproduction	8.9% (17)	1.1% (2)	11.1% (21)	29.5% (56)	19.5% (37)	**32.6% (62)**	8.9% (17)	190
Timber slab and round pole construction	**24.9% (46)**	11.4% (21)	8.6% (16)	14.6% (27)	21.1% (39)	20.5% (38)	2.7% (5)	185
Solid plastering and rendering	8.9% (17)	2.6% (5)	23.0% (44)	**42.4% (81)**	13.6% (26)	16.8% (32)	4.7% (9)	191
Fibrous plastering	14.9% (27)	7.7% (14)	27.6% (50)	**30.9% (56)**	13.3% (24)	11.6% (21)	2.8% (5)	181
Painting and decorating-traditional finishes, eg. oil paints, limewashes and distempers	13.6% (26)	2.6% (5)	26.2% (50)	**38.7% (74)**	13.1% (25)	12.0% (23)	3.1% (6)	191
Painting and decorating-specialised decorative finishes, eg. marbling and graining	20.3% (38)	7.0% (13)	**30.5% (57)**	28.9% (54)	10.2% (19)	7.0% (13)	3.2% (6)	187
Roofing-slate	19.9% (36)	9.4% (17)	29.3% (53)	**30.9% (56)**	7.2% (13)	6.6% (12)	4.4% (8)	181

Roofing-tiles	13.7% (25)	1.6% (3)	23.6% (43)	**50.5% (92)**	10.4% (19)	7.7% (14)	2.2% (4)	182
Roofing-timber shingles	21.6% (40)	15.1% (28)	18.9% (35)	**22.7% (42)**	14.1% (26)	9.7% (18)	3.2% (6)	185
Roofing-galvanised products	11.2% (21)	2.7% (5)	16.6% (31)	**42.2% (79)**	19.8% (37)	17.6% (33)	2.7% (5)	187
Roofing-copper, lead and zinc flashings	13.3% (25)	5.3% (10)	29.3% (55)	**36.2% (68)**	14.9% (28)	9.6% (18)	4.8% (9)	188
Roof Plumbing-gutters, downpipes, rainheads etc.	8.9% (17)	1.0% (2)	20.9% (40)	**44.0% (84)**	17.3% (33)	17.8% (34)	3.7% (7)	191
Glass-conservation of plain glazing	22.0% (40)	13.7% (25)	23.6% (43)	**26.9% (49)**	8.2% (15)	9.3% (17)	3.3% (6)	182
Glass-leadlight and stained glass conservation	23.5% (42)	12.8% (23)	**29.1% (52)**	27.4% (49)	6.7% (12)	4.5% (8)	2.8% (5)	179
Metal-repairs and conservation, eg. cast iron	22.2% (40)	16.1% (29)	**31.1% (56)**	21.7% (39)	8.3% (15)	8.3% (15)	2.8% (5)	180
Timber floor finishing	12.6% (24)	2.6% (5)	17.8% (34)	**38.7% (74)**	14.1% (27)	22.0% (42)	3.7% (7)	191
Maori building craft	**74.8% (116)**	17.4% (27)	0.6% (1)	3.9% (6)	1.3% (2)	1.3% (2)	1.3% (2)	155
							Other (please specify)	8
							answered question	**220**
							skipped question	**65**

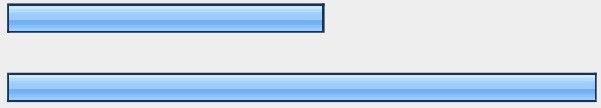
32. Do you use traditional tools and equipment?

	Response Percent	Response Count
Always	19.8%	46
Only when specified	16.4%	38
Some of the time	**50.0%**	**116**
Never	8.6%	20
Not applicable	7.8%	18
Additional comments		4
answered question		**232**
skipped question		**53**

33. Do you use traditional techniques? eg. matured lime putty for plastering, soldered joints for galvanised products

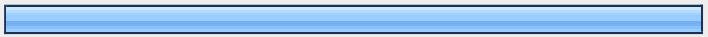
	Response Percent	Response Count
Always	15.0%	34
Only when specified	**37.9%**	**86**
Some of the time	29.1%	66
Never	11.0%	25
Not Applicable	10.1%	23
Additional comments		9
answered question		**227**
skipped question		**58**

34. Do you use traditional materials? eg. replace 'like for like', lime mortar, match timber species, match source stone.



	Response Percent	Response Count
Always	24.6%	56
Only when specified	**46.1%**	**105**
Some of the time	23.2%	53
Never	3.1%	7
Not applicable	6.6%	15
Additional comments		16
answered question		**228**
skipped question		**57**

35. For what proportion of your work on traditional buildings and structures are you provided with detailed documentation (eg specifications, schedules of work and detailed drawings) that direct you on what work is required and where?

	Response Percent	Response Count
Under 25% 	**54.6%**	**119**
25-50% 	17.0%	37
50-75% 	11.9%	26
Over 75% 	16.5%	36
Additional comments		16
answered question		**218**
skipped question		**67**

36. On average, when you receive specifications and other works documentation for projects involving traditional buildings and structures, how closely are they supervised/inspected?

	Response Percent	Response Count
Very closely	24.9%	56
Closely	**40.4%**	**91**
Poorly	14.7%	33
Not supervised/inspected	5.3%	12
Not applicable	15.1%	34
Additional comments		16
answered question		**225**
skipped question		**60**

37. On average, what is the quality of the specifications and works documentation for projects involving traditional buildings and structures you receive?

	Response Percent	Response Count
Good	20.9%	47
Satisfactory	**44.0%**	**99**
Poor	20.0%	45
Can not be used (often start again from scratch)	5.3%	12
Not applicable	13.3%	30
Additional comments		13
answered question		**225**
skipped question		**60**

38. Any further comments?

	Response Count
	43
answered question	**43**
skipped question	**242**

Appendix E

Industry Experts Workshop 26 March 2010

Appendix E—Industry Experts Workshop—26 March 2010

1.0 Introduction

An Industry Experts Workshop was held at the offices of Heritage Victoria on 26 March 2010. Experts from the professional heritage, physical conservation and trades industry were invited to attend the workshop to offer comments on the series of three Skills Needs Analysis surveys and suggestions on possible recommendations for the HCOANZ Heritage Trades and Professional Training Project.

2.0 Background to the Workshop—Workshop Genesis

During 2009, the collaborative team of GML, La Trobe and Donald Horne Institute for Cultural Heritage undertook the first stage of the HCOANZ Heritage Trades and Professional Training Project. This included an extensive literature review, a training audit of available heritage trades and professional training opportunities in Australia and New Zealand, and an Industry Skills Needs Analysis via an online questionnaire. The first draft report was submitted to Heritage Victoria in December 2009.

The Skills Needs Analysis (undertaken in October 2009) resulted in some strong representations from key industry stakeholders expressing concern regarding the survey analysis methodology as it relates to assessment of heritage trades and professional technical conservation skills and needs.

A project team workshop was held in November 2009 with members of the Steering Committee present, to design the best course of action for the next phase of the project. The team workshop resulted in supply of significant additional background documentation by Heritage Victoria and the Heritage Branch of the NSW Department of Planning.

The survey responses, additional documentation and further consultation with these key stakeholders gave rise to a particular issue within the overall project scope in relation to heritage trades training, manifest not only as a skills shortage and training need, but also as a lack of awareness of the need itself.

The result was that the project team, in consultation with the Steering Committee, agreed to extend the project scope to address these issues. The additional work undertaken by the project team included a succinct benchmark review of UK practice and experience, creation of two further targeted surveys, additional analysis of the targeted survey results, a one-day workshop and inclusion of additional data and findings in the final project report.

3.0 Workshop Objectives

The industry experts workshop had two main objectives:

1. To receive and discuss the results and preliminary analysis from the supplementary Physical Conservation and Heritage Trades surveys undertaken in March 2010.

2. To review, discuss and identify potential recommendations arising from the Heritage Trades and Professional Training Project, including overall strategic approaches.

4.0 Additional Surveys

The additional targeted surveys were drafted by the project team, and edited by Heritage Victoria and the Heritage Branch of the NSW Department of Planning. The surveys were sent to an agreed select sample of key practitioners and tradespeople. Workshop participants were provided with copies of these surveys and a preliminary analysis of their results prior to the workshop. Analysis of the additional surveys is outlined in Section 5.0.

5.0 Workshop Attendees

The workshop attendees and their positions are listed below:

- Jim Gard'ner, Executive Director, Heritage Victoria (Project Steering Committee)
- Leanne Handreck, Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) (via telephone) (Project Steering Committee)
- Elisha Long, Heritage Officer, Heritage Branch, NSW Department of Planning (Project Steering Committee)
- Amanda Mulligan, Acting Hearings Officer, Heritage Victoria (Project Steering Committee)
- Jacqui Goddard, Department of Environment, Climate Change and Water, NSW (DECCW)
- Peter Lovell, Director, Lovell Chen Architects and Heritage Consultants
- Donald Ellsmore, Heritage Consultant
- Chris Johnston, Director/Principal Consultant, Context
- David Young, OAM, Heritage Consultant
- Grahame Crocket, DSEWPaC
- Simon Davies, Contract Management Systems (CMS)
- Robert Sands, Director, Robert Sands Pty Ltd
- Mark Goodchild, Master Builders Association (MBA)
- Greg Owen, Director, Period Restoration Services
- David West, Executive Director, International Conservation Services
- Paul Roser, National Trust of Australia (Victoria)
- Prof Richard Mackay, AM, Partner, Godden Mackay Logan Pty Ltd (Project Team)
- Amy Guthrie, Heritage Consultant, Godden Mackay Logan Pty Ltd (Project Team)
- Dr Anita Smith, Charles La Trobe Research Fellow, Archaeology, La Trobe University (Project Team)

- Dr Tracy Ireland, Director, Donald Horne Institute for Cultural Heritage, University of Canberra (Project Team)

Apologies: Alan Croker, Amy Chan, Megan McDougall, David Scanell and Stuart McLennan.

6.0 Workshop Morning Session

The workshop began with an introduction and brief background summary to the project by Jim Gard'ner. Richard Mackay then spoke on the project outcomes to date, the extended project scope, the targeted surveys, the genesis of the workshop and the issues in data collection and analysis.

The workshop participants introduced themselves to the group. The participants were also asked to identify issues or questions which they wanted to be addressed at the workshop; these were noted on a whiteboard.

Anita Smith gave a brief outline of the previous Skills Needs Analysis (October 2009) and a short introduction to the targeted surveys undertaken for the workshop. Amy Guthrie undertook a brief analysis of Survey One—Physical Conservation and presented a summary to the workshop. Anita Smith undertook the analysis of Survey Two—Heritage Trades and provided a summary to the workshop. A brief synopsis of the free text comments included in both surveys were presented by Tracy Ireland.

At the request of workshop participants, the survey results were filtered further to isolate those in the industry who undertake more than 50% of their work on historic buildings and structures. As this was a last minute request, the team were unable to do any substantial analysis of the free text results in the filtered surveys. It was noted that those responses in the filtered survey (50% of their time spent working with traditional buildings and structures) generally had a greater awareness of the industry's issues—'the more people know, the greater they perceive the problem'.

The workshop participants discussed the survey results noting that the survey was sent to 8000 members of the Master Builders Association in NSW which may have slightly skewed the responses. It was also suggested that the targeted surveys might have gone to a wider group of people.

In hindsight, the participants agreed that surveys show only the current situation and do not provide good information about the future of the industry. Suggestions were made that census data about the population in Australia and large regional centres could be compared with the survey results, and that future surveys should be sent to a wider group of industry participants to diversify the results. Detailed data analysis of the two surveys, free text and the filtered results are included in Section 5.0.

7.0 Workshop Afternoon Session

A draft recommendations handout was distributed for review, and provided the basis for discussion in the afternoon session of the workshop. The discussions of this session were recorded on a whiteboard. The workshop discussions were extremely useful and were referenced in forming the recommendations of this project. The main discussion points are listed below. Transcripts of the whiteboard notes are included at the end of this Appendix.

- The participants discussed and agreed on the need for 'National Standards of Practice' and a 'National Training Strategy' across the heritage industry; the Australian market is small, therefore a national strategy is essential to encompass all areas.
- The proposed National Heritage Training Strategy should be accompanied by access to high level advice and materials, through publications, research and development and a national advisory group.
- Calls were made for the active promotion of research and development in the industry, and for the provision of infrastructure for research and development.
- Participants suggested the development of an interface and dialogue between tradespeople and professional specifiers—the reality is that much heritage work is currently unspecified, or not properly specified, and this is having an adverse impact upon traditional buildings and structures. This interface should be encouraged through a statutory driver (ie legal requirement).
- The participants agreed that the industry needs to create a demand for specialist heritage skills; this demand needs to be supported by statutory drivers. An industry-wide demand analysis should be undertaken to determine the actual demand for certain skills by different sectors including the construction sector—without this data, supply could be over or under estimated.
- It was noted that 'Heritage' is often seen as a constraint or irritant, and that the industry itself and potential careers in the industry should be promoted more effectively.
- The proposed demand analysis needs to be linked to this promotion of the heritage industry—as it was agreed that sectors such as construction do not know that they need the specialist heritage skills, and therefore make do without them. This should be regulated to provide better heritage outcomes.
- The issue of industry accreditation was discussed frequently in the workshops, and it was agreed that accreditation must be demand led. Accreditation was also discussed in light of who/what should be accredited—the course/training program or the practitioner or both? And who should be responsible for this accreditation?
- Suggestions for creating demand included the implementation of a compliance regime, in which funding for grants/tenders are linked to accreditation and industry wide standards (UK Model).
- Grant funding should also be available to undertake monitoring and follow up of conservation works; this should be regulated as a requirement of grant receipt. It was noted that this is currently a huge failing in many conservation works projects.
- It was noted that the introduction for incentives for engaging specialists or monitoring works. could be offered to encourage demand.
- Another issue regarding funding for heritage projects is that funding is managed by 'managers' not heritage experts and concern for time and budget is often seen as the main prerogative. This approach often does not necessarily deliver the best heritage outcome.

- From a trades perspective, it was noted that there is a lack of underpinning knowledge on traditional trades (including basic conservation knowledge). It was recommended that basic conservation knowledge and skills should be compulsorily taught throughout all forms of trades training.
- There was a call for national benchmarking in heritage trades and professional training, as there is currently a vacuum in this area. It was recommended that this should be industry led and could be linked to the proposed National Heritage Training Strategy.
- Several discussions were based around the issues of industry compliance and quality management—these discussions were linked to industry accreditation programs and the monitoring of conservation works. It was suggested that compliance and quality management should also be driven by regulation.
- The issue of staff replacement and the ageing heritage industry was a prominent theme in the discussions and this led to calls for methods for quick and effective 'on the job' training for new graduates. It was recommended that this could be done through standardised training modules or competencies as part of an industry benchmarking scheme, these modules could also be delivered as recognised 'on the job' training.

8.0 Workshop Close

The workshop was drawn to a close with a summary by Richard Mackay. The participants were thanked for their time, effort and useful contributions to the workshop. The participants were provided with a copy of the workshop notes for reference.

The project team and project Steering Committee considered the workshop to be a great success and the outcomes provide a basis for the development of policies and recommendations for the project.

9.0 Workshop Minutes and Whiteboard Transcriptions

Morning Session

- Round table introduction from all attendees (morning tea provided)
- Jim Gard'ner introduced the project brief and background to the project explaining that it has evolved from a project focussed on trades and physical conservation to a broader ranging project encompassing professional training opportunities as well.
- Richard Mackay outlined the project so far, where the team are up to and explains the extended project scope: the targeted surveys, genesis of the workshop and issues in data analysis.
- Richard Mackay invited workshop group to identify key questions and issues they would like to see addressed in the report—these were recorded on the whiteboard (see below).

WHITEBOARD NOTES

Screen 1. Key Questions

- Need for a NATIONAL STRATEGY across the heritage industry
- The Australian market is small, therefore a National Strategy is essential
- Develop an interface between trades and specifiers, much work is unspecified
- Create a demand for skills—green building, statutory drivers, accreditation, should be demand led.
- Lack of underpinning knowledge on traditional trades (basic conservation knowledge)—statutory driver for cohesion between trades and specifers
- Compliance regime—funding linked to accreditation and industry standards (UK Model)
- Funding is currently managed by 'mangers' not heritage experts (concern for time and budget does not deliver the best heritage outcome)
- Funding should be available in grants to undertake monitoring of works
- Benchmarking in education—currently a vacuum in this area—should be led by industry
- National Trust lead a high standard for trades—high demand for work on trust properties, which could be used for training purposes
- Further involvement from tradespeople in workshops such as this—looking to the past for skills

Screen 2. Key Questions

- Mid-twentieth-century heritage—lack of information sharing in Australia (philosophical and technical)
- What does the marketplace want? Analysis of construction sector (large scale) demand for heritage training
- Who are the biggest owners? (Defence, Australia Post etc) A demand analysis to link to a National Strategy
- Without a CLEAR, RECOGNISED need, training cannot be developed, the 'need' must be communicated
- A 3-pronged approach should be taken:

  1. Opportunities to learn (training)
  2. No way of measuring quality (accreditation?)
  3. Compliance
- System of 'replacement' is non-existent in the industry
- The future of the industry—what shape will it take, what skills do we need?
- Quantity—what place can training take in attracting people to the industry? Promotion
- Awareness—where to get the skills, how to find people with the skills
- Training of new entrants to the industry—how do we train them quickly and effectively
- New graduates—now possess much different skills than were taught in the past
- In trades-traditional trades were standard teaching in the past, trades now used 'competency based training'

Screen 3. Key Questions

- Heritage is often seen as an irritant, needs to be seen as a mainstream to be easily promoted
- Reality check—need to look at the current industry
- Interaction reducing between trades and heritage professionals as 'managers' are between the tradespeople and the heritage experts
- Green Building Council as a model—drivers
- Contemporary solutions for conservation works—training need—'you get the data, it unlocks the doors'
- Demand data is currently not available—should be taken up as a future project
- Lack of information on building stock in Australia—what do we have, how does it behave?
- Address 'how' and 'what' in the first instance
- Heritage Industry group to articulate the need for heritage trades skills and training to drive a National approach. Projects initiated by individual states alone have failed in the past.
- Responses to trade training need to reflect the scale of the Australian Market. Any heritage trades training cannot be self funding. Heritage agencies may need to seek the funds to make it sustainable.
- A recommendation should include a review of the effect of the enormous changes to the construction industry in recent years and their impact on heritage building projects (the involvement of project managers and the fact that architects may no longer supervise work, etc)
- A recommendation could be to consider issues in relation to staff retention—technical professional and traditional trades
- Specification of conservation building projects is an issue-as the group who can do it well is very concentrated

Summary Survey Analysis

– A brief analysis of the original survey (October 2009) was presented by Anita Smith.

- A brief analysis of Survey One—Physical Conservation was presented by Amy Guthrie.
- A brief analysis of Survey Two—Heritage Trades was presented by Anita Smith.
- A brief analysis of the free text in each survey was presented by Tracy Ireland.
- The workshop discussed the survey results.
- It was noted that the survey was sent to 8000 members of MBA in NSW.
- It was noted that the targeted surveys might ideally have gone to a wider group of people as the results are obviously skewed.
- It was also noted that the surveys only show only the current situation (ie at a precipice) and do not ask any questions about the future of the industry.
- Suggestions were made that census data about the population in Australia and large regional centres could be compared with the survey results.

- It was noted that those with traditional trades skills received their training over 20 years ago, as this was common practice at the time (that traditional skills were taught with all trades).
- It was recommended that the 2 data sets (filtered and unfiltered) be further collated and analysed.
- After independent data analysis, it was noted that those responses in the filtered survey (50% of their time spent working with traditional buildings and structures) generally had a greater awareness of the industry's issues—'the more people know, the greater they perceive the problem'.
- As it was a last minute request, the team were unable to do any substantial analysis of the free text results in the filtered surveys.
- A query was raised regarding our focus on physical conservation and trades for the second phase of the project, as opposed to the many other study areas that were covered in the initial survey. The team explained that this was due to an overwhelming response from the sector to acquire more data on this area, and relates to the original genesis of the project.
- Draft recommendations handout was distributed to be reviewed over lunch and discussed in the afternoon session.

Break—Lunch

Afternoon Session—Recommendations for HCOANZ

- After lunch the preliminary/draft recommendations were discussed by the workshop and were recorded on the whiteboard.

WHITEBOARD NOTES

ISSUE	RESPONSE
Standards of practice (the major issue arising from project)	Heritage Training Strategy Availability of high-level advice and material Research and Development which informs standards Compliance (regulatory with standards) Incentives Standards to be set by the industry
Understanding the market for heritage skills (is there enough demand?)	Gather data (sector size) Audit compliance to assess 'need'
Standard/Quality/Quantity of Training	Accreditation of training By…NTQA (trade), Professional Bodies

ISSUE	RESPONSE
Accreditation Training or Practitioners (or both)	Accredit courses (ICOMOS, National Trust, Professional Bodies) Also accredit practitioners—professional bodies HCOANZ Support Some courses cannot be accredited due to the broad ranging nature of the skills learnt. Should one body be responsible for accrediting all courses? A new professional body? National Trust? HCOANZ: Take an advocacy role High end policy
Evaluation Input or output Practitioners or results	HCOANZ Policy Position: Use grant funding and regulation as demand drivers Audit/measure results and control quality HCOANZ policy that encourages consent authorities to require the use of appropriate practitioners Could HCOANZ prepare guidelines for receiving grants or approvals? (by discipline or practitioner?) (Does this overcome the accreditation issues?)
Research and Development Market/data set Technical Policy Outcomes	HCOANZ: Actively promote R&D: Step 1: Identify needs Step 2: Allocate/get $$$$ (ARC?) Infrastructure for research (also CRC applications programs, PHD subject matter, CRC heritage futures) (Precedent models—Australian housing research or Australian Electricity Supply Industry Research Board)
Building a sustained corpus of skilled people (the gap) and the need	HCOANZ: recognise the issue Raise profile of industry, celebrate heritage Retention rates *Currently becoming a female industry* Get some 'retention' data Government agencies as 'trainers'—this is where people go to get their skills before moving to private practice Heritage 'messaging' into community Incentives for tradies to stay with a quality trainer (retention) eg: offering a second trade
High level technical advice	HCOANZ can: National approach to high level technical advice, publications, source set of documents (basic level), web resources National "TAG Team"/Advisory Committee

ISSUE	RESPONSE
Formal/on the job training How is on the job training managed, supported and recognised?	Recognition of professional development Join/liaise with professional bodies Link project reporting to evaluation/acknowledgement/information sharing—public/web Learning recognition, framework, module (eg: architects/trade logbooks) (with national focus)—incentive to employers (know the level of training of staff) and incentives to employees (have training recognised) Cross industry
Drivers—Accreditation/Standards and Guidance/Compliance via Approvals and Grants	
Demand led (chicken or egg) (UK experience) Is there a continuity of work? Substantial funding to kick start Where is the supply? Need to get builders to want to use traditional techniques Local permits too—standard exemptions	Regulate—require 'accreditation' (appropriate practitioner) for approval—must inspect / monitor / certify Grant conditions Incremental improvement is what we can expect in Australia—supply will slowly build—This is OK—better than 'the man with the truck and ladder' HCOANZ: National grant conditions standards

Break—Afternoon Tea

After Afternoon Tea Session

Real risks in heritage agencies not addressing this (training) problem, as permit conditions cannot be properly fulfilled
Tertiary institutions—how to engage/ensure courses are available
Need for co-ordination— Accreditation (cross institutional) Darwinian principles apply—the best / most appropriate courses will survive
Ongoing HCOANZ role in identification of training needs via the proposed 'taskforce'
HCOANZ could identify/adopt core competencies (for tertiary sector) (US sector for the Interior model)

TRADES TRAINING: some market failure ISSUE
Issues with TAFE—only plumbing 'works' because it is externally examined Issue with high schools forcing kids into uni—trades are no longer getting the 'smart kids'
MBA NSW is a Registered Training Organisation—accredited
Promotion—make heritage 'sexy'—heritage careers online
Market failure—heritage trades HCOANZ to investigate the market failure of appropriate training
Why does market not value quality?
May be a quality issue only
Several proposed heritage courses are scheduled to to start in the near future

ECONOMIC EFFECT
Value (cost vs lifecycle; intangible)
What is significant? (Fabric/design/use/association/meaning)
Conservation of a 'craft' (eg: stonemasonry, Japanese model, value in the technique)
Maintenance of traditional industries themselves (intangible heritage convention)
Why accreditation? Why is heritage different? Heritage section of a QMP/works plan? Compliance and quality control.
ISO:9001 document performance against objectives An Australian Standard could be introduced
Workshop agreed that there are overall issues with standards (works—physical conservation) in Australia (this should be stated upfront in the project recommendations)

Wrap Up

- Summary of workshop outcomes and 'where to from here' was given by Richard Mackay.
- The workshop attendees were thanked for their participation and contributions. END