

CONSERVATION GILDING: HERITAGE SKILL DEFICIENCIES



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The Pratt Foundation/ISS Institute Overseas Fellowship

Fellowship supported by The Pratt Foundation



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Executive Summary

In 2006, the Collections Council of Australia conducted the *Conservation Survey 2006*, a survey of current and projected human and financial resources in Australian conservation and preservation between 2003 and 2008. The report identified an increasing demand by employers for suitably trained conservation and preservation workers in all traditional and emerging conservation specialisation and skill areas. The report confirms that historic frame conservation and restoration is an area in which there is current and projected demand for suitably trained workers.

The *Conservation Survey 2006* report recommends developing a nation-wide strategy for educating and training people in the specialised skills to adequately care for Australia's moveable cultural heritage. Until this strategy is developed and implemented, it is necessary for motivated students and workers in highly specialised areas, such as historic frame conservation and restoration, to seek training overseas. The Collections Council supports the concept of Continuing Professional Development, and sees it as part of the nation-wide education and training solution in this field (Collections Council of Australia, 2007).

The aim of this Fellowship was to undertake a study tour to Illinois, USA. This included attending a two week gilding conservation workshop at the Campbell Center for Historic Preservation Studies, Mount Carroll, Illinois. It also included one week in Chicago visiting conservation laboratories and art museums, which assisted in developing a comprehensive understanding of conservation and restoration gilding and historic picture frame documentation for the making of reproduction picture frames.

A specific benefit to Australia of training in the area of frame conservation is that the methods, techniques and skills will now be passed on to others, thus increasing the local and national pool of knowledgeable practitioners.

Of particular benefit will be the broader appreciation of conservation philosophies and practices and the incorporation of these values into the work being undertaken by framer and furniture restorers.

Further benefits will be seen in the improved care and better-informed treatment of gilded frames and objects in private and public collections.

Well researched and executed reproduction frames and the skilled conservation of original frames are seen to be a crucial contemporary aspect in the display of works of art. A direct benefit to Australia is the improved and refined techniques employed within the Fellow's daily work on the conservation of the frame collection at QAG|GoMA where the visiting public enjoys exhibitions of works of art that have been framed to reflect, as closely as possible, the original historical context or the artist's intent.

The transfer of knowledge obtained from the study tour in Illinois is being passed on via lectures, seminars and workshops, through organisations such as Commonwealth, State and Regional Art Galleries, Museums and Libraries, picture framing and arts related industries, the Australian Institute for the Conservation of Cultural Materials (AICCM), the Gilded Objects Conservation Special Interest Group (GOCSIG), the Collections Council of Australia (CCA), the National Trust of Australia (NTA), the International Council on Monuments and Sites Australia (ICOMOS) and other conservation heritage related bodies.

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Abbreviations and Acronyms

AIC	Art Institute of Chicago
AICCM	Australian Institute for the Conservation of Cultural Materials
CCA	Collections Council of Australia
CCC	Chicago Conservation Center
CCHPS	Campbell Centre for Historic Preservation Studies
CCMC	Centre for Cultural Materials Conservation
CoOL	Conservation on Line
DSC	Decorators Supply Corporation
GOCSIG	Gilded Objects Conservation Special Interest Group
ICOMOS	International Council on Monuments and Sites Australia
ICOM-CC	International Council of Museums – Committee for Conservation
ICON	Institute of Conservation
ISS Institute	International Specialised Skills Institute
LUMA	Loyola University Museum of Art
NTA	National Trust of Australia
PFGA	Picture Framers Guild of Australia
QAG GoMA	Queensland Art Gallery Gallery of Modern Art
SMA	Smart Museum of Art

Acknowledgments

Robert Zilli wishes to pay respect to the traditional and original owners of this land, and to his wife, family and friends who have supported him through this process. He would also like to thank the following individuals and organisations who gave generously of their time and their expertise to assist, advise and guide him throughout the Fellowship program.

Awarding Body - International Specialised Skills Institute (ISS Institute)

We know that Australia's economic future is reliant upon high level skills and knowledge, underpinned by design and innovation.

The International Specialised Skills Institute Inc (ISS Institute) is an independent, national organisation, which has a record of nearly twenty years of working with Australian industry and commerce to gain best-in-the-world skills and experience in traditional and leading-edge technology, design, innovation and management. The Institute has worked extensively with Government and non-Government organisations, firms, industry bodies, professional associations and education and training institutions.

The Patron in Chief is Sir James Gobbo AC, CVO. The ISS Institute Board of Management is Chaired by Noel Waite AO. The Board comprises Franco Fiorentini, John Iacovangelo, Lady Primrose Potter AC and David Wittner.

Through its CEO, Carolynne Bourne AM, the ISS Institute identifies and researches skill deficiencies and then meets the deficiency needs through its *Overseas Skill Acquisition Plan (Fellowship Program)*, its education and training activities, professional development events and consultancy services.

Under the Overseas Skill Acquisition Plan (Fellowship Program) Australians travel overseas or international experts travel to Australia. Participants then pass on what they have learnt through reports, education and training activities such as workshops, conferences, lectures, forums, seminars and events, therein ensuring that for each Fellowship undertaken many benefit.

As an outcome of its work, ISS Institute has gained a deep understanding of the nature and scope of a number of issues. Four clearly defined economic forces have emerged out of our nearly twenty years of research. The drivers have arisen out of research that has been induced rather than deduced and innovative, practical solutions created - it is about thinking and working differently.

A Global Perspective. 'Skills Deficiencies' + 'Skills Shortages'

Skill deficiencies address future needs. Skill shortages replicate the past and are focused on immediate needs.

Skill deficiency is where a demand for labour has not been recognised and where accredited courses are not available through Australian higher education institutions. This demand is met where skills and knowledge are acquired on-the-job, gleaned from published material, or from working and/or study overseas. This is the focus of the work of ISS Institute.

There may be individuals or firms that have these capabilities. However, individuals in the main do not share their capabilities, but rather keep the IP to themselves; and over time they retire and pass way. Firms likewise come and go. If Australia is to create, build and sustain Industries, knowledge/skills/understandings must be accessible trans-generationally through nationally accredited courses and not be reliant on individuals.

Our international competitors have these capabilities as well as the education and training infrastructure to underpin them.

Addressing skill shortages, however, is merely delivering more of what we already know and can do to meet current market demands. Australia needs to address the **dual** challenge – skill deficiencies and skill shortages.

Acknowledgments

Identifying and closing skills deficiencies is vital to long-term economic prospects in order to sustain sectors that are at risk of disappearing, not being developed or leaving our shores to be taken up by our competitors. The only prudent option is to achieve a high skill, high value-added economy in order to build a significant future in the local and international marketplace.

The Trades

The ISS Institute views the trades as the backbone of our economy. Yet, they are often unseen and, in the main, have no direct voice as to issues which are in their domain of expertise. The trades are equal, but different to professions.

The ISS Institute has the way forward through its 'Master Artisan Framework for Excellence. A New Model for Skilling the Trades', December 2004. The Federal Government, DEEWR commissioned ISS Institute to write an Australian Master Artisan School, Feasibility Plan.

In 2006, ISS Institute Inc. set up a new ISS advisory body, the **Trades Advisory Council**. Members are Ivan Deveson AO; Martin Ferguson AM, MP, Federal Labor Member for Batman; Geoff Masters, CEO, Australian Council of Educational Research; Simon McKeon, Executive Chairman, Macquarie Bank, Melbourne Office; Richard Pratt, Chairman, Visy Industries and Julius Roe, National President Australian Manufacturing Workers' Union.

Think and Work in an Holistic Approach along the Supply Chain - Collaboration and Communication

Our experience has shown that most perceive that lack of skills is the principal factor related to quality and productivity. We believe that attitudes are often the constraint to turning ideas into product and a successful business; the ability to think laterally, to work and communicate across disciplines and industry sectors, to be able to take risks and think outside the familiar, to share – to turn competitors into partners.

Australia needs to change to thinking and working holistically along the entire Supply Chain; to collaborate and communicate across industries and occupations - designers with master artisans, trades men and women, Government agencies, manufacturers, engineers, farmers, retailers, suppliers to name a few in the Chain.

'Design' has to be seen as more than 'Art' discipline – it is a fundamental economic and business tool for the 21st Century

Design is crucial to the economic future of our nation. Australia needs to understand and learn the value of design, the benefits of good design and for it to become part of everyday language, decision making and choice.

Design is as important to the child exploring the possibilities of the world, as it is to the architect developing new concepts, and as it is to the electrician placing power points or the furniture designer working with a cabinet-maker and manufacturer. As such, design is vested in every member of our community and touches every aspect of our lives.

Our holistic approach takes us to working across occupations and industry sectors and building bridges along the way. The result has been highly effective in the creation of new business, the development of existing business and the return of lost skills and knowledge to our workforce, thus creating jobs - whereby individuals gain; industry and business gain; the Australian community gains economically, educationally and culturally.

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Fellowship Supporter

The Pratt Foundation was established in 1978 by Richard and Jeanne Pratt with the shared vision of supporting charitable enterprises and adding value to philanthropy. The Foundation is now one of the largest private sources of philanthropy in Australia. In the words of its mission statement, it aims “*to enrich the lives of our community*” and, in the words of Jeremiah, it works to fulfil this aim in a spirit of “*kindness, justice and equity*”. Zilli would like to thank them for providing funding support for this Fellowship.

Supporters

- The Queensland Art Gallery|Gallery of Modern Art (QAG|GoMA) whom Zilli would like to thank for their support.
- The Campbell Center for Historic Preservation Studies, for offering the course and Hubert Baija Senior Frames Conservator, Paintings Department, Rijksmuseum, Amsterdam, The Netherlands.
- Zilli would like to thank the following people who work for organisations that provided letters of support, assisting in the application process:
 - Stewart Armstrong, Executive Director of the National Trust of Queensland
 - Tamara Lavrencic, President of the Australian Institute for the Conservation of Cultural Materials (AICCM)
 - Margaret Birtley, Chief Executive Officer of the Collections Council of Australia
 - Andrew Clark, Deputy Director, Programming and Corporate Services, QAG|GoMA

Australian Organisations and Key Industry Bodies Impacted by the Overseas Fellowship Program

- Commonwealth, State and Local funded art galleries and museums
- Picture framing and arts related industries
- Australian Institute for the Conservation of Cultural Materials (AICCM)
- Gilded Objects Conservation Special Interest Group (GOCSIG)
- Private, tertiary, training and secondary educational institutions
- Privately run art galleries and museums

About the Fellow

Name: Robert Zilli

Employment: Conservation Framer, QAG|GoMA

Qualifications

- Diploma of Antique Wood Restoration, Institute for Art and Restoration Florence, Italy, 1992
- Certificate III in Furniture Making (Cabinet Making) SkillsTech Australia, 2007

Memberships

- Member of the Australian Institute for the Conservation of Cultural Materials (AICCM)

Robert Zilli is a conservation framer and cabinetmaker with over 15 years of experience in restoration, conservation and construction of reproduction picture frames implementing traditional materials and techniques. After graduating from the Institute for Art and Restoration in Italy in 1992, with a diploma of antique wood restoration, he returned to Australia and worked both for himself and numerous furniture restorers in Brisbane.

In 1993 Zilli commenced at QAG as a volunteer under Paul Curson within the conservation department and in 1995 was the successful applicant for the newly created position of Trainee Framer. In 1996 Zilli successfully applied for the position of Artisan Framer, developing the role of this position by 2003 to Conservation Framer. Zilli's primary duties include the conservation and restoration of picture frames and furniture and the making of reproduction picture frames for QAG|GoMA.

Employing traditional and non-traditional materials, techniques and practices, Zilli conducts workshops and lectures for both public and private galleries, secondary and tertiary institutions and relevant arts organisations such as the Queensland Arts Council. Via recognition of prior learning, Robert recently received a Certificate III in cabinet making from Skills Tech Australia. This accreditation enables him to supervise a future apprentice.

Zilli believes that it is essential to the fields of picture frame and furniture conservation and restoration to have a specific accredited course within this country. Such a course will ensure future students are trained nationally, as opposed to being forced to study internationally, which limits both the number of students able to afford to travel and subsequently a diminishing skill base in Australia.

Aims of the Fellowship

The aim of the Fellowship was to undertake a study tour to Chicago to develop a comprehensive understanding of conservation gilding and to return to Australia equipped with the necessary skills and knowledge to effectively share this information with others.

Key Objectives

To engage with learning techniques and practical skills in traditional and contemporary:

- gesso texturing and re-cutting
- mould-making, casting and ornamentation
- clay mixes and advanced gold leafing techniques
- modelling, carving, and colour toning

Develop a comprehensive knowledge of:

- the design and manufacture of period frames
- ornamentation selection
- contemporary cleaning techniques of gilt surfaces
- finishing and patination of gilt surfaces

Additional Objectives

- Researching and developing conservation practices that combine the treatment and restoration of original materials with the replication of missing elements.
- Investigation and documentation of historical frame styles to be used as a reference when re-framing art works.
- Strengthening international ties with various institutions and peers.

The Australian Context

A Brief Description of the Industry

Frames have a unique place in the history of art. They are both an object of art whilst simultaneously serving their primary function as a protective device (CCMC 2007).

Conservation makes an essential contribution to the whole of society, to education, to the advancement of knowledge, to tourism and to the economy; it ensures that our shared heritage is cared for and protected for the benefit, use and enjoyment of the public today and for generations to come (ICON 2007).

Adhering to a strict code of ethics and standards in their work practices, conservators are highly-qualified people who meet required standards of education, training and professionalism. They have responsibilities towards objects of public or personal significance from the past – a building, a book, a piece of jewellery, a steam engine, a painting, a christening dress or a treasured photograph.

Conservators combine their knowledge of the most up-to-date science with an understanding of the properties of materials and construction techniques to determine the best means of conservation of these objects. Aesthetic awareness is also essential – conservators use their knowledge of art history, architecture, changing fashions and lifestyles to understand the context of the objects they work with, and to conserve them sensitively and appropriately (ICON 2007).

In the last thirty years there has been an emergence of the conservation profession, beginning with the University of Canberra – which offered Australia's only tertiary conservation degree. However, no specialised frame conservation training has been, or is currently included, in Australian training centres. Henceforth all picture frame conservators need to complete international training and education to receive national recognition.

The main employers of qualified picture frame conservators in Australia are public institutions, the private sector, and to a lesser extent the wider public.

The main avenue for dissemination of information, techniques and methods can be undertaken through the AICCM Special Interest Group network. Follow-on training, discussions forums, lectures and workshops benefit not only those working in the conservation of picture frames but also related conservation practitioners such as objects and sculpture conservators, furniture conservators, curators, heritage architects, historians and artists.

In 2006, the Collections Council conducted the *Conservation Survey 2006*, a survey of current and projected human and financial resources in Australian conservation and preservation between 2003 and 2008. The report identified an increasing demand by employers for suitably trained conservation and preservation workers in all traditional and emerging conservation specialisation and skill areas. The report confirms that historic frame conservation and restoration is an area in which there is current and projected demand for suitably trained workers.

The *Conservation Survey 2006* report recommends developing a nation-wide strategy for educating and training people in the specialised skills to adequately care for Australia's moveable cultural heritage. Until this strategy is developed and implemented, it is necessary for motivated students and workers in highly specialised areas, such as historic frame

The Australian Context

conservation and restoration, to seek training overseas. The Collections Council supports the concept of Continuing Professional Development, and sees it as part of the nation-wide education and training solution in this field (Collections Council 2007).

The AICCM recognises a skills deficiency in the conservation treatment of period and historic frames, which was identified in *Attainable and Sustainable: Skills Gaps in Conservation in Australia*, a report delivered to the Department of Communications and the Arts in June 2000. The report notes that people wishing to train in frame conservation must travel overseas to undertake specialised workshops and skills-based programs.

Training opportunities in Australia focusing on frame conservation theory and techniques remain scarce. There are no structured training programs in Australia and frame conservation is not offered as a specialisation in the Master of Arts (Cultural Materials Conservation) at the University of Melbourne, currently the only training program for conservation in Australia.

Our collective cultural heritage is an irreplaceable and treasured resource, whether it is in the public domain or in private hands. Its conservation demands the skills not only of professional conservators, but also of scientists, engineers, technicians, curators, educators, advisors, volunteers and many others. Conservation activities include examination, documentation, treatment, and preventive care, supported by research and education (ICON 2007).

The threat of lack of research, education and training is apparent in every private and public collection of art. Well intended treatments by an unqualified workforce may result in irreversible damage by the implementation of incorrect materials and techniques, which is evident across Australia.

A specific benefit to Australia of training in the area of frame conservation is that the methods, techniques and skills can be passed on to others, thus increasing the local and national pool of knowledgeable practitioners. Of particular benefit would be the broader appreciation of conservation philosophies and practices and the incorporation of these values into the work being undertaken by framer and furniture restorers. Further benefits would be seen in the improved care and better-informed treatment of gilded frames and objects in private and public collections.

Well researched and executed reproduction frames and the skilled conservation of original frames are seen to be a crucial contemporary aspect in the display of works of art. A direct benefit to Australia is the improved and refined techniques employed within the Fellow's daily work on the conservation of the frame collection at QAG|GoMA, where the visiting public enjoys exhibitions of works of art that have been framed to reflect, as closely as possible, the original historical context or the artist's intent.

SWOT Analysis of Conservation Gilding in Australia

Strengths

- Capacity for restoration of frames and furniture
- Capacity to apply skills and knowledge to the construction of reproduction frames
- Potential for developing education and training

The Australian Context

Weaknesses

- Lack of trained conservators
- Small peer base to exchange information

Opportunities

- Strengthen international ties
- Exposure to wider international knowledge base
- Expand historical framing knowledge
- Introduce historical Australian frame styles to international colleagues
- Disseminate international knowledge amongst Australian colleagues
- Advancing practical skills in the conservation of gilt frames

Threats

- Difficulties in keeping up with current trends
- Knowledge base is predominantly overseas
- Limited training opportunities

Identifying the Skills Deficiencies

Definition – Skill Deficiencies

Skill deficiency is where a demand for labour has not been recognised and where accredited courses are not available through Australian higher education institutions. This demand is met where skills and knowledge are acquired on-the-job, gleaned from published material, or from working and/or studying overseas. This is the key area targeted by the ISS Institute (ISS Institute, 2007).

Identifying and Defining the Skills Deficiencies

Gesso Texturing and Re-cutting

Gaining knowledge and developing skills in gesso texturing and re-cutting provides an opportunity to apply a traditional technique that replicates surfaces for the construction of historically accurate reproduction frames.

Mould Making, Casting and Ornamentation

The repair or replacement of ornamentation requires skills in mould-making and casting, modelling and carving. New materials and techniques for moulding, casting and modelling are continually being developed and improved. Trialling a wide variety of new materials provides an excellent opportunity to compare material working properties and applications and would allow for refining material selections and utilising them in treatments that will achieve better end-results.

Clay Mixes and Advanced Gold Leafing Techniques

Knowledge and understanding of the use of various bole colours and methods of application are critical to achieving an authentic finish in both conservation treatments and reproduction framing. Gold leaf application methods have evolved throughout history along with aesthetics and technological advances. Understanding changes and developing skills in the replication of these methods is an important step in achieving a successful treatment outcome.

Cleaning

Gilt surfaces over time accumulate dirt and particulate matter that discolours and damages the original surface. There are various methods and techniques both traditional and non traditional which are employed to clean the surface of gilt objects. As a trained restorer, Zilli is familiar with methods used in his field, however the methods used by conservators of gilt objects are unfamiliar and the opportunity to study and apply these techniques would greatly expand the Fellow's approach to treatments.

Finishing and Patination of Gilt Surfaces

Finishing and patination techniques have dual purposes – aesthetics and protective coatings. Finishing treatments for gilt surfaces can include toning, chemical alteration and coating of the gold or silver leaf. The finishing process aims at achieving a look that is in keeping with the original materials or reflects a historically accurate representation for a reproduction frame. The finishing techniques, particularly chemical patination, are complicated procedures that require thorough training and practice to perfect.

Identifying the Skills Deficiencies

In-gilding Retouching and Integrating Repairs Into Original Material

Learning techniques and skills for in-gilding that seamlessly integrates new leaf into areas of loss is a great advantage in the conservation of frames. In-gilding is a technique whereby new leaf is applied, using either traditional or non-traditional gilding methods, to areas where the gilding has been lost. In-gilt areas must be carefully incorporated into the original gilt surface to match the surrounding material. Methods and techniques for colour matching, shading and karat selection are used to determine the most suitable combination of treatments to achieve excellent integration in the treatment of areas of loss.

Documentation of Historical Frame Styles

Research is a fundamental part of frame conservation and reproduction. Making reproduction frames not only requires a comprehensive knowledge of materials, methods and techniques to design, construct and finish frames, it also requires a thorough understanding of the vast array of frame styles that have been used throughout 500 years of European picture framing history.

Why it Needs to be Addressed

Frames are increasingly seen as valuable assets to collections and frame conservation is respected as a professional discipline as are paintings, paper and sculpture conservation.

As outlined by the surveys conducted by the Collections Council, *Conservation Survey 2006*, and the AICCM's *Attainable and Sustainable: Skills Gaps in Conservation in Australia, 2000*, the need to implement skills gained through international workshops in frame conservation is an essential part of Australia's ongoing commitment to the preservation of cultural materials. Contemporary thought is to ensure skills are not lost, knowledge transcends time and information dissemination should no longer be held solely in international destinations but available locally and nationally.

The International Experience

Campbell Center for Historic Preservation Studies (CCHPS)

Location: Mount Carroll, Illinois, USA

Courses: Gilding II and Gilding III

Instructor: Hubert Baija, Senior Conservator of Frames, Rijksmuseum, Amsterdam.

Objectives

- Gesso texturing and re-cutting
- Mould making, casting and ornamentation
- Clay mixes and advanced gold leafing techniques
- Cleaning
- Finishing and patination of gilt surfaces
- In-gilding retouching and integrating repairs into original material
- Networking

Outcomes

Gesso Texturing and Re-cutting

Both traditional and non-traditional techniques were tested. Traditional gesso re-cutting, the use of lace, pastiglia, sand ground and punching were discussed and employed on sample frames. The use of modern fillers was shown to have many advantages in repairs to gesso loss using non-traditional repairing techniques.

Mould Making, Casting and Ornamentation

Traditional techniques included new compo recipe. Non-traditional materials included the use of dental plaster, silicones and dental wax as alternatives when repairing composition ornament.

Clay Mixes and Advanced Gold Leafing Techniques

Unfortunately due to time constraints this area was not covered.

Cleaning

Acetone and various gels were used for the removal of non-original surface coatings such as bronze paint and varnishes. Layers of dirt were cleaned with a solution of non-ionic surfactant and tri-ammonium citrate.

Finishing and Patination of Gilt Surfaces

Patination of re-gilded passages using acrylic, gouache, watercolours, casein, shellac and asphaltum were tested. Commercial dyes mixed with Mowolith 20 were also used to patinate gilt surfaces.

In-gilding Retouching and Integrating Repairs Into Original Material

The use of Plextol B500 as a non-traditional adhesive for in-gilding was tested. Diatomaceous earth was shown to be a very effective mild abrasive when distressing newly gilt areas, as was chamois – either dry or moistened with ethanol.

The International Experience

Networking

The contacts made at the CCHPS will provide opportunities not only directly related to frame conservation but other disciplines within conservation and non-related fields.

Outline of the CCHPS Gilding Courses

The CCHPS (*Figure 1*) is located in the town of Mount Carroll, some 230 kilometres west of Chicago. The 14-acre park-like campus was purchased in 1979, when Shimer College, which had occupied the location since 1854, relocated to Waukegan, Illinois. A fire destroyed the original campus buildings in 1906. The architectural firm of Shepley, Rutan, and Coolidge, of Boston, designed 12 of the current Georgian Revival buildings in the early 20th century. This firm also designed Stanford University and the main building of the Art Institute of Chicago. The two more modern dormitories that make up the campus were built in the late 1950's and feature original Eames designed furniture.



Figure 1: Tolma House, CCHPS

On arrival to the CCHPS, the beauty of the campus in both its architecture and flora struck the Fellow (*Figure 2*). The on-campus accommodation was single, dormitory style rooms, which were clean and spacious, and modestly furnished with towels and linen. The communal showers and bath facilities were located on each floor of the three-story dormitory. Breakfast and lunch were provided by the centre, whereas dinner had to be organised individually. The local restaurants and food store were well frequented, usually with other course participants and instructors.



Figure 2: CCHPS Grounds

The International Experience

On the first night at the CCHPS there was an invitation to attend a reception at Sawyer House, the residence of the Program Director, Kathy Cyr of the CCHPS. There Zilli met the other participants of the three courses on offer that week: 'Gilding II Workshop', 'Care of Textiles I' and 'Exhibition Lighting', and the relevant instructors. Following the formalities of the reception, Zilli had talks with the other students attending the course, who were predominantly from the United States.

Gilding II and III were held in Tolma House. Zilli had found out the previous evening that most of the participants knew each other from attending Gilding I in 2006. Through his prior experience and knowledge Zilli was exempt from attending Gilding I, which is a prerequisite to attending Gilding II. There were seven students in total, including the Fellow. There were five students who were currently employed in private practice in the field of gilding conservation/restoration. The remaining two students were interested in personal skill building.

Hubert Baija, Senior Frames Conservator from the Rijksmuseum in Amsterdam, was the instructor for both workshops. With nearly twenty years at the Rijksmuseum and co-chairing of the ICOM-CC wood, furniture and lacquer working group, his extensive knowledge underpinned two four-day workshops (*Figure 3*). Each entailed the participants working intensively on skill development and a series of lectures on the history of picture frames.



Figure 3: Participants in Gilding II workshop

In Gilding II, techniques of gesso texturing and re-cutting were explored in the lab and in the lecture room. In the practical lesson Hubert provided each student with sections of raw timber picture frame moulding. To this the students applied several layers of gesso, made specifically to a traditional recipe (a combination of rabbit skin glue dissolved in water then mixed with calcium carbonate) in various methods to the raw moulding. These methods consisted of stippling, spraying and brushing the gesso onto the raw timber picture frame moulding (*Figure 4*).

Other texturing techniques involved gluing various materials, such as lace or sand, in between layers of gesso, resulting in a textured surface. 'Reparer', the French term for re-cutting gesso, is another highly skilled traditional technique used in the making of picture frames and furniture which are to be gilded. The carved and gessoed ornamentation is re-cut to add more detail to the gessoed surface. Hubert supplied the reparer irons, the traditional tools used in re-cutting gesso, and the participants experimented re-cutting various patterns and designs into prepared gessoed picture frame mouldings (*Figure 5*).

The International Experience

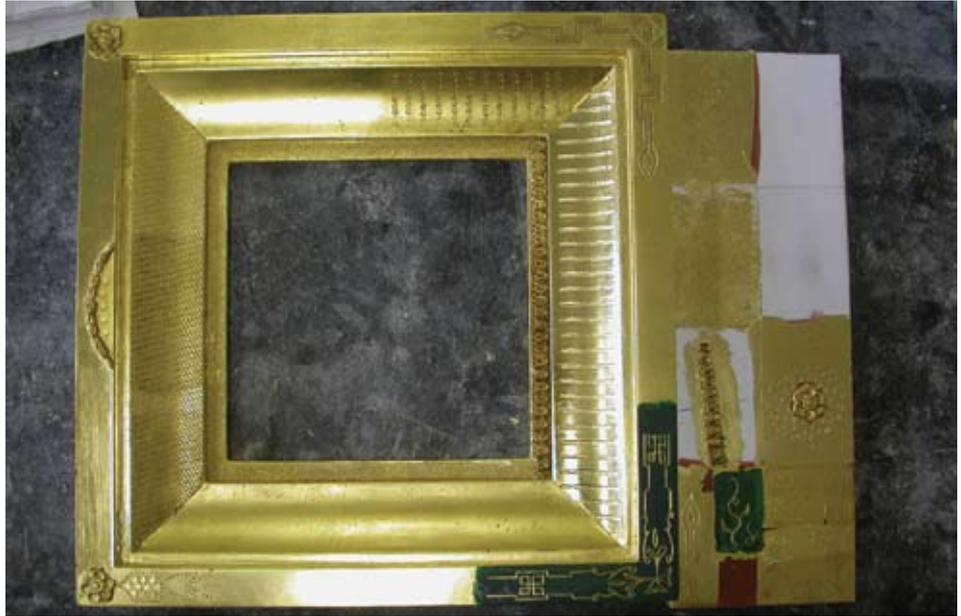


Figure 4: Various decorative techniques used in picture frames



Figure 5: Repairer re-cutting gesso

The practice of traditional mould making, the use of reversed carved boxwood moulds; casting, through the use of composition/compo; and ornamentation, identifying and understanding historical picture frame vernacular; were examined both practically and theoretically. The participants learnt the complexities in making traditional boxwood, *Buxus sempervirens*, moulds. This is a highly developed skill in which the artisan would carve the intended ornament design into the boxwood, in the negative or in reverse. Due to time constraints and the high level of skill required to make these traditional moulds, the students did not undertake this as a practical component of the course.

The International Experience

Compo recipes not only varied from country to country but also from frame maker to frame maker, which would be guarded with the utmost secrecy. Hubert generously shared his recipes and participants made their own compo material to be pressed into the moulds (*Figure 6*). This material was a thermo-plastic consisting of varying quantities, depending on the recipes, of calcium carbonate, linseed oil, rosin, hide glue and water. The students carefully heated in one pan the rosin and linseed oil mixture, while the hide glue and water were heated in a separate pan. When they both reached the required consistency the two were combined. Sufficient calcium carbonate was then added to the glue/rosin/oil mix to create a putty/dough like mixture. The students then pressed the warm compo into boxwood moulds, creating a positive that would then be removed from the mould and applied to the picture frames surface. During the 19th century to the early 20th century the vast majority of picture frame ornamentation was made using compo pressed in reverse carved boxwood moulds (*Figure 7*).



Figure 6: Compo ornament on gessoed frame



Figure 7: 19th century boxwood mould



Figure 8: Polyester resin moulds

Clay mixes, bole, and advanced gilding techniques were discussed and tested. Understanding and being able to identify different bole colours, based on country of origin, is a vital step in the conservation and restoration of gilt objects. Traditional bole is still commercially available and comes in two forms – wet and dry. Both need to be mixed with an adhesive prior to being applied to the gessoed surface. The wet bole can be mixed straight from the jar where as dry bole has to be ground and then added to an adhesive. Non-traditional boles were also examined. These synthetic boles play an important role in the conservation and restoration of gilt objects. The adhesive in these boles is different to traditional boles, making them ideal in conservation treatments where reversibility is essential.

The laying of gold leaf is yet another highly skilled step in both the conservation/restoration and manufacturing of historical picture frames. Here the participants learnt various methods of laying gold leaf onto different surfaces. The tools and techniques have not changed in hundreds of years, however understanding environmental conditions and the correct preparation of the preceding layers of gesso and bole are essential in achieving high quality gilding.

In the Gilding III course the participants examined non-traditional mould making, casting and ornamentation methods. In some applications, modern materials such as silicon, epoxies, dental wax and dental plaster, provide solutions that are not only time saving but

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also practical. Boxwood moulds used in the past can now be made from polyester resins. A cast is taken from an original ornament in silicon, and a positive cast is then taken from the silicon in plaster. A hard negative mould can then be made from the plaster cast in polyester resin, from which compo can be pressed in (*Figure 8*).

Cleaning gilt surfaces requires an understanding not only of the various methods of gilding but also of being able to identify varnish layers and different surface treatments employed in gilding. Acetone and various gels were used to experiment with the removal of non-original surface coatings such as bronze paint, non-original varnish layers and paint. Layers of dirt and other particulate matter were cleaned with a solution of non-ionic surfactant and tri-ammonium citrate. Non-traditional in-gilding using Plextol B500 as a non-traditional adhesive was tested, with very good results.

The retouching and integrating repairs into original material using various materials was explored. Diatomaceous earth was shown to be a very effective mild abrasive when distressing newly gilt areas, as was chamois either dry or moistened with ethanol. Acrylics, gouache, watercolours, casein, shellac and ashphaltum were tested in creating suitable and convincing patinas. Commercial dyes mixed with Mowolith 20 were also used to patinate gilt surfaces to harmonise the newly gilt areas to the original surface. The historical examination, identification and the vernacular of picture frame ornamentation provided the participants with an opportunity to explore the vast array of styles used in the past 500 years of European picture framing. Unable to cover all aspects of this vast and varied field of study, Hubert focussed on specific periods and cultures, beginning from the Italian Renaissance through to Victorian England.

Art Institute of Chicago (AIC) Frame Conservation Department

Location: Chicago, Illinois, USA

Contact: Kirk Viulemon, Senior Frames Conservator

Objectives

- Networking
- Historical frame documentation
- Work practices
- Suppliers
- Applied knowledge
- Workshop layout
- Conservation studio

Outcomes

Networking

Contacts made at the Art Institute of Chicago Frame Conservation Department will provide an invaluable source of information for future frame conservation, restoration and reproduction frame treatments.

Historical Frame Documentation

The AIC was founded in 1879 and opened on its present site at Michigan Avenue and Adams Street in 1893 (*Figure 9*). The collection of over 300,000 works of art encompasses more than 5,000 years of human cultures from around the world. Zilli's meeting with Kirk Viulemon, Senior Frames Conservator at the AIC, proved to be the most fruitful of all the meetings organised prior to his departure from Australia. Kirk put aside over four hours of his time to spend with the Fellow, showing him through his workshop, walking through the galleries

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discussing various frame conservation treatments and reproduction frames he has made. Viulemon and Zilli also discussed the AIC's approach to re-framing works in their collection and the processes involved to get the frame just right. Some works in the collection have been re-framed more than once. There was ample opportunity to digitally document frames of specific interest on permanent display at the institute (*Figures 10-13*). Due to museum policies, no precise measurements could be taken. However, through networks developed within the frame conservation department, measurements and detailed information can be provided by the department at request. Kirk and Zilli have since been in contact discussing various framing matters, with the Zilli seeking advice relating to projects he has been working on.



Figure 9: AIC from Michigan Avenue



Figure 10: Frame profile documented at the AIC



Figure 11: Frame profile documented at the AIC



Figure 12: Frame profile documented at the AIC



Figure 13: Frame profile documented at the AIC

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The Chicago Conservation Center (CCC)

Location: 730 N. Franklin Street, Suite 701 Chicago, Illinois, USA

Contact: April Hann, Vice President of Conservator Relations and Custom Framing

Note: Due to CCC policies, the tour was very controlled, brief and photos were not allowed.

Objectives

- Networking
- Historical frame documentation
- Work practices
- Suppliers
- Applied knowledge
- Workshop layout
- Conservation studio

Outcomes

Networking

Contacts made will prove useful, however the CCC policy restrictions which were in place did not allow any opportunity to meet with conservators and other staff. As mentioned above, digital images were also not allowed.

Historical Frame Documentation, Work Practices, Suppliers, Applied Knowledge, Workshop Layout, and Conservation Studio

The CCC studios (*Figures 14-16*) were located around a half hour walk from where Zilli was staying. The centre was founded over twenty-five years ago and has grown to include 40 conservators, artisans and administration staff. The Fellow was very much looking forward to his meeting at the CCC, to see one of America's leading private art restoration and conservation laboratories.



Figure 14: Exterior view of the CCC



Figure 15: Exterior view of the CCC

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On arrival, Zilli was met by April Hann, Vice President of Conservator Relations and Custom Framing. Hann and Zilli had a brief chat about the Fellow's background and the QAG|GoMA, The Pratt Foundation/International Specialised Skills Institute Overseas Fellowship study trip and what it entailed. Zilli was then told that no photography was allowed in the CCC at all and he was not to talk to any of the conservation staff. The lab space was very well laid out with good natural and artificial light. The CCC occupied the entire floor with the art storage area dividing the space in two – on one side was the mounting and framing area and on the other was the conservation/restoration space. They also had a well-equipped photography studio where all documentation was carried out. The tour lasted all of ten minutes, then Hann indicated that she had to get back to work, and the meeting concluded.



Figure 16: Inside view of the CCC (obtained from <http://www.chicagoconservation.com>)

Decorators Supply Corporation (DSC)

Location: 3610 S. Morgan Street, Chicago, Illinois, USA

Contact: Jack Meingast, CEO

Objectives

- Document alternative compo recipes
- Mould making, casting and ornamentation
- Gesso texturing and re-cutting
- In-gilding retouching and integrating repairs into original material
- Documentation of historical frame styles
- Develop a relationship with the company

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Outcomes

Document Alternative Compo Recipes

Historically, trade secrets have played a strong role in many traditionally based skill sets. This has had both positive and negative effects on knowledge retention. Recipes for making composition ornament vary greatly and recipes are still very closely guarded. No specific details were divulged, however, the mention of a higher percentage of glycerin was noted as being one of the contributing factors to the company's compo.

Develop a Relationship with the Company

Contacts made at the DSC will prove invaluable in maintaining knowledge in the manufacture and use of composition ornament and related traditional and non-traditional mould making and casting techniques.

The DSC (*Figure 17*) traces its history back to 1883, and is a manufacturer of compo and plaster decorative ornament, predominantly for the architectural trade. The DSC also supplies the picture framing industry with traditional compo ornaments from their vast store of original 19th century reversed carved moulds (*Figure 18*).



Figure 17: Approaching the DSC



Figure 18: 19th century reversed carved oak and walnut compo moulds

Jack Meingast, CEO, was Zilli's contact at the DSC. As the Fellow walked into Meingast's office he was greeted with little enthusiasm and was immediately reminded of his previous day at the CCC. Once again, this appeared to be another privately run business where 'time is money' and showing someone around the workshop meant loss of productivity. However after the introduction and a few technical questions from Meingast, in which he was testing Zilli's knowledge, Meingast called his secretary to cancel all the other meetings he had that afternoon. Meingast then gave the Fellow a brief run down of the history of the company, and how at the end of World War II, William Grage Sr purchased the DSC. With his three children (Elmer, Bill Jr and Marie), Grage ran the company until his death in 1978.

The DSC remains a family business with two third generation Grages and one son-in-law, (Meingast, running the business). As Meingast and Zilli walked from the modern surrounds of the offices down to the workshop it was like stepping back in time. The factory had changed very little over the years. The process of making compo has not changed in centuries, however Meingast was very proud to show Zilli their compo-making machine that was originally designed to make chewing gum. Zilli had never seen compo made on this scale.

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Meingast told Zilli that in its 'heyday' the DSC employed over 150 people, however now the business employs around 20 highly skilled artisans, from carvers, cabinetmakers, plasterers and compo casters. Meingast took Zilli into the mould store, where there were shelves stacked with beautifully carved reverse moulds.

Unlike the British moulds carved from boxwood, these moulds were carved in American white oak (*Quercus alba*), or American walnut (*Juglans nigra*). Meingast then took Zilli over to the compo making area to show me his pride and joy – the chewing gum making machine that had been converted to make compo (Figure 19).



Figure 19: Converted chewing gum machine to make compo



Figure 20: Compo ornament shop

From here the fresh compo is taken to the ornament shop (Figure 20) where artisans press compo, using both original reversed carved moulds and contemporary resin moulds.

The compo is then taken to the mounting shop (Figure 21) where the ornament is applied to wooden substrates which are made in the cabinet shop, for capitals, fireplace surrounds, brackets, etc. Compo destined for picture framing studios are sent loose to be applied to frames by the frame maker.



Figure 21: DSC mounting shop



Figure 22: 19th Century time clock

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Another major branch of the business is the production of decorative plaster ornament. Although this does not directly apply to the Fellow's field of interest, there are examples of historic picture frames made from applied plaster. The majority of the plaster ornament is used in historic internal architectural restoration work and in historic reproduction interior designs.

Traditional horsehair plaster ornaments are still made by the DSC, as opposed to contemporary plaster manufacturers, who use synthetic materials in their products. There is a very high demand for this traditional DSC product. After around two and a half hours the tour came to the end with Meingast showing Zilli the original time clock (another favourite item in the workshop), which is no longer in use – however it is a reminder of the history and tradition of the DSC (*Figure 22*).

Personal note: As Meingast walked Zilli back up to his office to collect his bag he asked how Zilli had arrived at the DSC. Zilli recounted the morning's trials in getting to the workshop. Meingast asked Zilli to wait in his office and within a minute he returned to tell Zilli that he would drive him back to the hotel. Zilli said that he could find his own way and that Meingast had spent more than enough time with Zilli. However, Meingast insisted and drove Zilli back into town. Zilli was very appreciative of Meingast's hospitality and the time he took out of his day to accommodate him.

Loyola University Museum of Art (LUMA)

Location: 820 N. Michigan Avenue, Chicago, Illinois, USA.

Contact: Jonathan Canning, Curator of Art

Objectives

- Documentation of Historical Frame Styles
- Finishing and patination of gilt surfaces
- Networking

Outcomes

Documentation of Historical Frame Styles

Frames of specific interest:

- *Scenes from the Legend of David and Goliath*, Florentine, c. 1450, tempera on panel (*Figures 23-25*)
- *St. Jerome*, 2nd half of the 15th century, Niccoló di Liberatore da Foligno, called l'Alunno (Italian, 1425/30-1502), tempera and gold on panel (*Figures 26-28*)
- *The Adoration of the Magi*, c. 1565, Jacopo Bassano (Italian, c. 1510-1592), oil, Verona marble laid on slate (*Figures 29-30*)

Finishing and Patination of Gilt Surfaces

Examination of the frames provided a unique opportunity to study original 13th and 14th century surface finishes. Identifying the materials used and understanding applied techniques assists in the conservation, restoration and constructing reproduction picture frames.

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Networking

Zilli met with Jonathan Canning, Curator of Art, providing an opportunity to share his knowledge of frames, which in turn gave the Fellow access to many works that would have been otherwise inaccessible.

LUMA was founded in 2005 on the Water Tower campus of Loyola University, Chicago. The museum contains eight exhibition galleries. LUMA's Martin D'Arcy Collection is one of the finest collections of medieval, renaissance and baroque art in the Midwest. LUMA is located at the Water Tower in Lewis Towers, an historic 1927 Gothic Revival building.

Canning was expecting Zilli when he arrived at LUMA. What was not made clear to the Fellow in his correspondence with LUMA was that they were still in the process of moving into their new premises on the campus, and the majority of the works Zilli was interested in documenting were still in crates. The Fellow was very fortunate that Canning was more than willing to open up crates for the Fellow to document some of the works in the LUMA collection. Of the works that were accessible, three were of particular interest as mentioned on the previous page.



Figure 23: 'Scenes from the Legend of David and Goliath'



Figure 24: Detail of 'Scenes from the Legend of David and Goliath'



Figure 25: Detail of 'Scenes from the Legend of David and Goliath'

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Figure 26: St. Jerome'



Figure 27: Detail of 'St. Jerome'



Figure 28: Detail of 'St. Jerome'



Figure 29: 'The Adoration of the Magi'



Figure 30: Detail of 'The Adoration of the Magi'

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Studying these three frames enabled the Fellow to get a close up look at frame making techniques, which have not changed in hundreds of years. Being able to examine the methods of construction and various surface treatments has improved Zilli's ability to make reproduction frames, by understanding the methods of traditional frame making. These methods (as described in the CCHPS Gilding II workshop information), are now employed in the Fellow's current position as Conservation Framer at QAG|GoMA.

Smart Museum of Art (SMA), University of Chicago

Location: 5550 S. Greenwood Avenue, Chicago, Illinois, USA.

Contact: Richard Born, Senior Curator

Objectives

- Documentation of historical frame styles
- Finishing and patination of gilt surfaces
- Networking

Outcomes

Documentation of Historical Frame Styles, Finishing and Patination of Gilt Surfaces, and Networking

Founded in 1974 on the University of Chicago's Hyde Park campus, the SMA houses a permanent collection of over 10,000 objects, spanning five millennia of both Western and Eastern civilisations. Of particular interest to Zilli was the SMA collection of European and American modern and contemporary works, in which the documentation of original and standard frames and the way in which works were displayed, was important.

Zilli's contact was Richard Born, Senior Curator, whom the Fellow had corresponded with prior to departing Australia. Prior to leaving Australia, Zilli had organised a time to meet with Born, explaining the reasons for travelling to Chicago, and why he was intending to visit the Smart museum. Unfortunately the day before the meeting Born advised the Fellow that he was unable to attend the scheduled meeting, due to unforeseen matters. They tried to re-schedule but unfortunately in the time given this proved to be impossible.

Concluding Remarks

The international component of the Fellowship experience has provided a significant opportunity to further develop the Fellow's skills in conservation/restoration and in the making of reproduction picture frames.

Also through this experience, Zilli has developed a network of contacts, working in both the public and private sectors, of picture frame conservation/restoration and professionals working in related fields. In terms of achieving the stated aims and objectives of the Fellowship, Zilli feels that he was successful in achieving the majority of the outlined aims and objectives. Due to circumstances outlined through this report, some of the aims/objectives were missed.

In order to optimise the outcomes of the learning experience it is essential that opportunities be created to engage in effective knowledge transfer activities.

Knowledge Transfer: Applying the Outcomes

After returning from the overseas portion of the Fellowship, Zilli presented a lecture to the Queensland division of the School Archives Special Interest Group of the Australian Society of Archivists, at Calvary Christian College, Carbrook campus, in Brisbane, Queensland.

Added to the lecture was a report on the recently completed re-framing of Picasso's *La Belle Hollandaise*, 1905, QAG collection. The DVD presentation, *Contemplating the Edge*, was an overview of five hundred years of western picture framing history and manufacturing techniques, concluding with an account of the processes employed in the re-framing of *La Belle*. Mention was made of contacts made during the Fellowship in the USA which provided information relating to the Picasso re-framing project. A minimum of 45 minutes was required to present the lecture and an additional 15 to 20 minutes for subsequent questions.

Why: The aim of the lecture was to educate and disseminate information relating to frame history and traditional picture frame making techniques.

Who attended: Art history students, qualified picture framers and apprentices, art gallery and museum curators, frame conservators and restorers, special interest groups, the general public.

When: 15th May 2008

Where: A lecture theatre with appropriate technical equipment – data projector, DVD player, computer and internet access.

One area for further investigation regarding knowledge transfer activities pertains to the delivery of practical workshops. Practical workshops would be the most effective means of disseminating the information gained at the CCHPS.

Delivery of a proposed lecture on historical frames styles and traditional manufacturing techniques would also provide achievable and practical outcomes. However, not having a conservation degree may be problematic in terms of running frame conservation workshops. This, however, is an issue that can be actively addressed.

Recommendations

The skills deficiencies, as identified and defined in the 'Identifying the Skills Deficiencies' chapter, are addressed under the following headings.

Industry

Two industries directly related to Zilli's overseas study are the commercial picture frame industry and the conservation/restoration industry. Recommendations to these industries address the concept of professional development and a greater commitment to the upskilling of their staff. This could include provision of financial and time support, more professional secondment relationships and the encouragement of international industry specialists to visit Australia.

Professional Associations

Following the above recommendation, professional associations could provide a closer relationship between industry and education and training. Professional associations such as the Picture Frame Association or the AICCM could act as facilitators of conferences locally, state-wide and nationally, to build relationships and provide forums for skill development.

However, it is important to note that a specific professional organisation for conservation/restoration of picture frames does not exist. A special interest group for the conservation/restoration of gilt objects does exist within the AICCM, however, it is exclusive to conservation only and does not recognise the wider field of restoration or the specific field of picture frames.

Education and Training

The education and training options within the field of conservation/restoration of picture frames is equally very limited and near non-existent within Australia. A wide variety of TAFE courses are geared exclusively to address the needs of the commercial picture framing industry and the only conservation course is at the University of Melbourne's Centre for Cultural Materials Conservation. This course only addresses the conservation of gilt objects, leaving frames completely off the curriculum. Therefore the Fellows recommends the development of a specialised course addressing the needs and skills of conservation/restoration of picture frames.

Community

If the above is addressed then a 'snowball' effect impacts the community, through community based information dissemination processes. A review of these processes and a greater commitment to disseminate information is a vital component of this recommendation.

ISS Institute

Assistance can be provided through networks and contacts of the ISS Institute in related fields ie: firms, universities, TAFE institutes, Industry Skills Councils, professional bodies and practitioners along the Value Chain.

ISS Institute has an holistic approach to education and training, encompassing the professions and trades alike.

Recommendations

The ISS Institute has significant experience in designing and delivering activities such as conferences, seminars and demonstrations locally, state-wide and nationally, so those at each point of the Value Chain across conservation and restoration benefit – sharing skills, knowledge and insights, particularly in heritage related disciplines.

Those attending activities are drawn from government, businesses, the university and TAFE sectors, peak bodies, professional associations and key individuals.

It is, therein, recommended that ISS Institute design and deliver a conference and workshop program to assist in disseminating the Fellowship findings.

Note: Zilli's Fellowship builds on two previous Specialised Skills Training Fellowships awarded to Sandra Cockburn (Melbourne, Victoria), a framer/conservator at the National Gallery of Victoria and self-employed. The first Fellowship was awarded in 1992 to study at the National Gallery of London and the second in 1993 to study at the Metropolitan Museum of Art, New York, in Frame Gilding, Gessowork and Conservation, Documentation, Display of Treatment of Frames. The sponsors were the Palladio Foundation • Australian Bicentennial Multicultural Foundation.

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Attachments

List of notes from the CCHPS Gilding Course (notes are held at the ISS Institute):

Research into non-traditional gilding techniques as a substitute for traditional matte water-gilding method, Published in the 13th Triennial Meeting Rio De Janeiro Preprints Vol II pg. 524-532

Cambell Center Gilding Workshop II, 2007 (Advanced Gilding Techniques), Hubert Baija, Instructor

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An Introduction to Traditional Gilding, Stanley Robertson

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Grove Dictionary of Art, MacMillan, Jane Turner, Editor, 1996

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Studies in Conservation, Volume 31, Number 1, 1986, IIC The Journal of the International Institute for Conservation of Historic and Artistic Works

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Zacharias Paulus: the Old Guards Men of Alkmaar, Dutch 'box frame' 1621

Empire Frame: Emperor Napoleon I, Copy after the portrait by FPS Gerard in Versailles, dated 1805, Canvas 226.5 x 146cm.

ArtMasters, Volume 3, Netherlands Technical Studies in Art

Attachments

An Overview of the Gilded Objects Treated for the British Galleries, Christine Powell (Senior Furniture Conservator), Fi Mallinson (Furniture Conservator) and Zoe Allen (Furniture Conservator)

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The Surface Layers of Baroque Gildings: Examination, Conservation, Restoration, Christine Cession

Cyclododecane: Technical Note on Some Uses in Paper and Objects Conservation, Irene Bruckle, Jonathan Thornton, Kimberly Nichols, and Gerri Strickler

A Tip on Mica Pigments, and a Note on my Experience with Hydrogenated Hydrocarbon Varnishes, Chris Augerson, 1999

Emulsions, Emulsions: Definition, Cleaning Painted Surfaces

Material Safety Data Sheet, Sigma-Aldrich, Version 1.60

Paintings: Paintings on a Canvas Panel

The Fellows' own notes from the courses, including suppliers' contact details in the USA