



International Conference 2012

**“Human Resources Development for the Transmission of Traditional Skills:
Building Decoration with a Focus around Painting and Colouring”**

(27 – 29 November, Nara, Japan)



**Cultural Heritage Protection Cooperation Office,
Asia-Pacific Cultural Centre for UNESCO (ACCU)**



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Edited and Published by
Cultural Heritage Protection Cooperation Office,
Asia-Pacific Cultural Centre for UNESCO (ACCU)

Nara Prefecture Nara Branch Office Ground Floor
757 Horen-cho, Nara 630-8113 Japan
Tel: +81 (0)742-20-5001
Fax: +81 (0)742-20-5701
e-mail: nara@accu.or.jp
URL: <http://www.nara.accu.or.jp>

Printed by Meishinsha

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Asia-Pacific Cultural Centre for UNESCO (ACCU) 2013



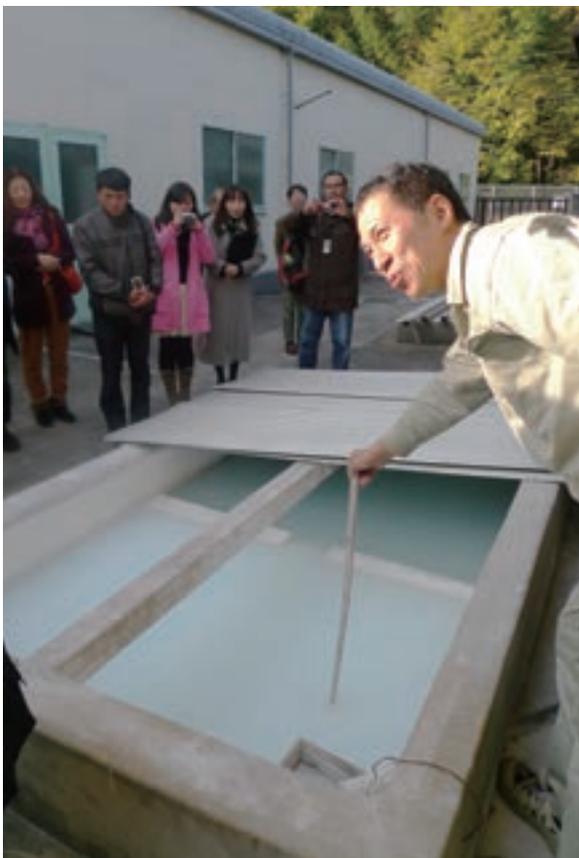


Observing samples of traditional Japanese colouring techniques provided by Dr Kubodera





Excursion: The *suien* (the water flame) of the east pagoda, Yakushi-ji Temple, at the restoration site



Excursion: Visiting the traditional whiting manufacturing plant, *Nakagawa Gofun Enogu Co. Ltd.*

Preface

ACCU Nara Office has been annually holding International Conferences, and in this year it gave us great pleasure that we could host this international conference in attendance of Mr SUGITA Norihide, Vice Governor of Nara Prefecture; Mr NAKAGAWA Gen, Mayor of Nara City; and a number of other distinguished guests, including Dr Stefano De Caro, Director-General ICCROM, together with those who have traveled from overseas to join us.

This conference is a collaborative effort among Agency for Cultural Affairs, Japan; Nara National Research Institute for Cultural Properties; and WHITRAP Shanghai, the UNESCO Category 2 Centre. In light of their close geographical proximity, the ACCU Nara Office and WHITRAP Shanghai agreed in 2010 to jointly organize the projects to protect cultural heritage in the Asia-Pacific region, and we set about collaborating in whatever could be tackled at the time. One result of those efforts is this series of international conferences, the previous round of which was held in Shanghai.

This is the third international conference on human resources development for the transmission of traditional skills. In the first round, we were able to deepen discussions on how we should develop human resources who would carry on traditional skills and pass on traditional materials to future generations by taking an integrated approach to both tangible and intangible heritage. The sub-themes of the first two conferences were woodworking and stone/brick, respectively. For this third conference, we decided to focus on "painting and coloring," which are the processes that provide the finishing touches to structural repair projects. We believe that there are numerous works in the final stages of repair that should be addressed, such as roofs and foundation platforms. However, we decided to concentrate on our themes in order to avoid over-expanding the scope of this conference.

As we took up the issues involved in transmission of traditional skills and human resources development in the course of organizing this third conference, it was impossible not to become keenly aware of the fact that we, as humans, have played a crucial role. This brings to mind the Yamato Declaration, which emerged from "International Conference on the Safeguarding of Tangible and Intangible Heritage: Towards an Integrated Approach" that was also held in this same Nara Prefectural New Public Hall, by UNESCO and Agency for Cultural Affairs, Japan, back in 2004. It is my sincere hope that we can further deepen discussions on this occasion so that, as stated in the Yamato Declaration, "integrated approaches be elaborated to the effect that the safeguarding of the tangible and intangible heritage of communities and groups is consistent and mutually beneficial and reinforcing".

Finally, I would like to take this opportunity to express our heartfelt appreciation to the Nara Prefectural Government, Nara Municipal Government, ICCROM, Japan International Council on Monuments and Sites (ICOMOS) National Committee, the Japanese Association for Conservation of Architectural Monuments (JACAM), and everyone concerned for their very generous support toward making this conference a reality.

NISHIMURA Yasushi
Director, ACCU Nara

Preface

This is my second time here in this meeting hall. I remember I first came here in 2010, attending the International conference Human Resources Development for Cultural Heritage Protection . I had the opportunity at that moment to discuss with Mr. Nishimura about our possible collaboration. Organizing an international conference under a general theme of “Human Resources Development for the Transmission of Traditional skills” was considered then as a start of our collaboration. In the first conference held in Nara in January 2011, we dealt with woodworking, and discussed in details the practical aspects of repair work. During the second conference in Shanghai in December of the same year, we took “the restoration of stone and brick” as a sub-theme, with an eye on deepening the discussions by taking a comprehensive view of both tangible and intangible cultural heritage.

At the last conference of this year, we are going to focus on the restoration of decoration such as painting and coloring of heritage buildings. In addition, we will discuss comprehensively on the development of conservation personnel and technicians who are well equipped with traditional skills as well as the ways to secure traditional materials for repair work.

I totally agree that the theme “Human Resources Development for the Transmission of Traditional skills” is an appropriate and right choice, because nowadays, many countries in Asian-Pacific region are facing challenges such as how to incorporate traditional skills and indigenous materials in the restoration of historic buildings and sites, as well as personnel training and capacity building in this regard. In China, our traditional painting and colored drawing in architectures are very valuable part of the ancient architectural heritage and a brilliant part in the global history of architectural art. From ancient time till now, thanks to the exploration and formation of a set of painting and colored-drawing techniques, some very old paintings are well preserved for hundreds of years. However, due to various reasons, the level of traditional ancient architecture techniques, which have been passed down for many years, is now seeing a tendency of decline or even been lost.

We hope that by taking the opportunity of this conference, we could do a discussion on the problems faced by each country and explore the reasons behind. Then we will move on to more specific issues concerning the technology or skills, as well as the human resources –namely, the craftsmen that are needed on repair/restoration process.

Both WHITRAP and ACCU share the mission of contributing to the protection of cultural heritage in the Asia and Pacific region. We hope we can continue our collaboration in the future, and we believe any cooperation towards our common goals would help to promote and develop World Heritage Convention as well.

Last but not least, I would like to extend my sincere gratitude to all the organizers and guests who have given your valuable advice and support in the organization of this conference. Besides, my special thanks also go to our dear partner Mr. Nishimura from ACCU and his staff for their preparations for this great conference.

ZHOU Jian
Director, WHITRAP Shanghai

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I. Special Speech





Global Trends on Human Resources Development for the Transmission of Traditional Skills

Stefano De Caro

Director General

ICCROM

Summary

Undoubtedly, it is with the notion of World Cultural and Natural Heritage developed through the 1972 UNESCO Convention, that the international community has been aware of its responsibility towards a “world heritage” which transcends, in principle, the political and geographical boundaries.

Today, the notion of Cultural Heritage is an open one which can develop new objectives and put forward new meanings as it reflects living culture rather than an ossified image of the past. Furthermore, we have become aware, over the last decades, that culture and nature, but also the tangible and intangible elements of the artifacts and sites and the communities living with them, cannot be separated in our approach to “heritage” if we are to give true account of the diversity of cultural manifestations and expressions, and in particular those in which a close link is expressed between human beings and their natural environment.

Cultural heritage has therefore become a more complex reality that is all the more fragile and threatened as we are increasingly more conscious of the part it plays in the life and development of societies. Analogously, skills and know-how for traditional crafts are part of communities' heritage and identity, and contribute to social and economic development. Traditional skills are the product of a long history of relationship between men, rather craftsmen, and the material provided by the nature. They are the product of an history of inventions by single brilliant individuals, sometimes real artists or inventor, in other cases of generations of artisans who constantly, through successful trials or faults, improved the techniques inherited as legacy by their masters. Apprenticeship has long been the system ensuring the transmission of these skills. After the Industrial Revolution , in a process continuing until today, apprenticeship is threatened by changing circumstances affecting the social, economic and learning environment within which it used to be embedded.

Director, Professor Nishimura

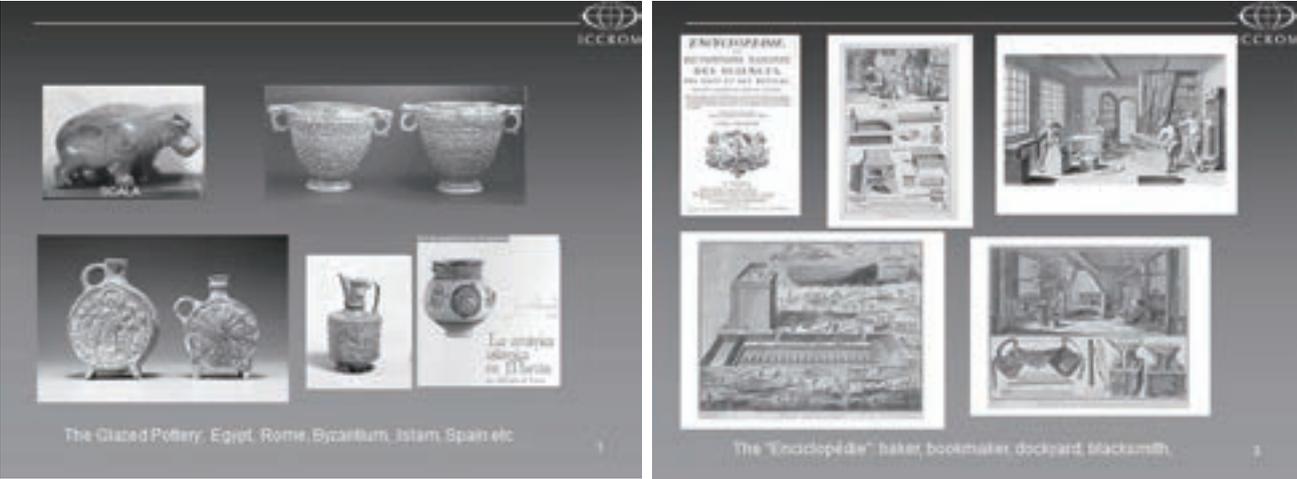
Dear Director of ACCU, Prof. Nishimura, dear representative of the Direction of WHITRAP Shanghai, Ms Lu Wei, Authorities, Colleagues and Friends,

It is a great honour for me to participate at this International Conference coorganized by the ACCU - the Asia/Pacific Cultural Centre for UNESCO and WHITRAP Shanghai, and I would like to express my deep gratitude to the organizers for extending to me a kind invitation to attend such an important gathering and offering me such a warm hospitality.

I feel very honoured to present on behalf of ICCROM such a complex topic as the “**Global Trends on Human Resources Development for the Transmission of Traditional Skills**”. Unfortunately, as an Italian archaeologist specialized in Greek and Roman archaeology, I am not well aware of the theme of the focus “*painting and coloring in building decoration*” in the Asian-Pacific world. So, I will just try to offer you some more general considerations on the issue of the transmission of the traditional skills.

This is not this the first time that Mankind faces this problem. In the western world it arose for the first time at the very beginning of the Industrial Revolution in the XVIII century when the rapid change started provoking the abandonment of many traditional techniques and some philosophers who participated in the discussions, typical of the late Renaissance, about the superiority of the Modern Times or the Classical Greek-Roman Antiquity, (the so called *Querelle des Ancients et des Modernes*, in French), felt the danger that these ancient techniques got lost without recording or before having expressed all their potential.

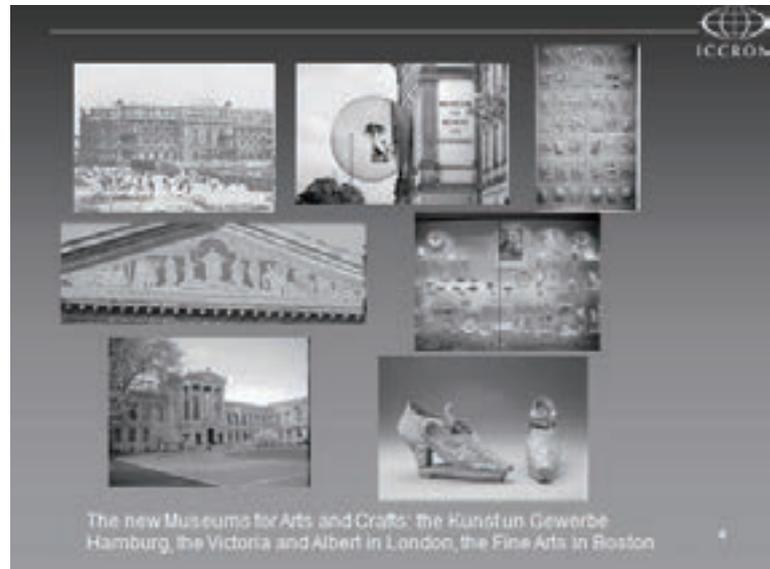
Until this moment, there was not such a sensation of the possible total loss of a tradition. Also in the period of the end of the Roman Empire and the barbarian Invasion, Byzantine Empire succeeded in keeping alive the legacy of the Ancient World, and so did the Arab Culture after the end of the Byzantine Culture, certainly with many changes, but with an uninterrupted line of tradition, as we can see in this slide giving some examples in the sector of the glazed pottery. Now, not the wars or the conquests, but the industrial development made philosophers think that the loss of the tradition was possible.



This was, among others, one of the background elements of the great educational undertaking of the Encyclopédie started in France by Denis Diderot and Jean Le Rond d'Alembert, a moment which is considered also the starting of the Enlightenment. The “Encyclopedia or Systematic Dictionary of the Sciences, Arts and Crafts” (to say it in English) was published in France between 1751 and 1772, in 28 volumes, with 71,818 articles and 3,129 illustrations. Its declared goal was to “*assemble all the knowledge scattered on the surface of the earth, to demonstrate the general system to the people with whom we live, & to transmit it to the people who will come after us, so that the works of centuries past is not useless to the centuries which follow, that our descendants, by becoming more learned, may become more virtuous & happier, & that we do not die without having merited being part of the*

human race". Here we see some of the magnificent plates depicting the traditional techniques, described at length in the articles, which still today are useful as a precious documentary source for the historian.

Another important moment in the western history of the transmission of traditional skills occurred a century after, when in the full of the Industrial Revolution, after hundreds of thousands of craftsmen and farmers had abandoned their traditional work for the modern manufacturing plants and cities and landscapes were drastically changing their appearance, some thinkers of the European bourgeoisies started thinking about the necessity to create besides the



traditional Museums keeping the masterpieces of the traditional Great Art, like painting or sculpture, new Museums to collect and preserve the products of the traditional techniques, both ancient and modern, to provide learned models for the modern craftsmen educated in the new professional schools. The creation of these new Museums, like the *Kunst und Gewerbe Museum* in Hamburg, the *Victoria and Albert Museum* in London, the *Musée des Arts et Métiers* in Paris, the *Museum of Fine Arts* in Boston, to quote only the most renowned, was accompanied by the birth of the *Arts and Crafts* movements, an international design movement that flourished between 1860 and 1910, inspired by the writings of John Ruskin (1819-1900) and Augustus Pugin (1812-1852). It was largely a reaction against the impoverished state of the decorative arts at the time and the conditions in which they were produced. It stood for traditional craftsmanship using simple forms and often applied medieval, romantic or folk styles of decoration. It advocated economic and social reform and has been said to be essentially anti-industrial, sometimes in a utopian way dreaming a society of free craftspeople, which they believed had existed during the Middle Ages. "*Because craftsmen took pleasure in their work, the Middle Ages was a period of greatness in the art of the common people. ... The treasures in our museums now are only the common utensils used in households of that age, when hundreds of medieval churches - each one a masterpiece - were built by unsophisticated peasants*". It was not only a Western movement as we know from the case of Soetsu Yanagi, creator of the Mingei style promoting folk art during the 1920s, shared the contemporary Japanese interest in Morris and Ruskin ideas. It was not by chance that Japan was interested, if we consider the great level of industrial development reached at that time by Japan.

In our days we are again facing, at worldwide scale and in terms of globalization, a new wave of industrialization which has reached Countries and continents until now untouched and is so threatening the traditional world of these regions.

Luckily the world of heritage developed since some decades some important means of reaction against these challenges, the most important of them being the 1972 Convention concerning the Protection of the World Cultural and Natural Heritage.

As you know, abundant literature (articles, thesis, books) has been produced on the impact of this convention in terms of safeguarding and management of our common cultural heritage, and subsequently, on Human Resources Development.

I would therefore concentrate my remarks on some major points that would help, hopefully, in continuing to enlarge the discussion and to give elements of reply to challenges such as the adaptation of the educational system to the paradigm of the use and transmission of the traditional skills in protection of the World Cultural and Natural Heritage.

The first point I would tap, relates to the new meaning of Cultural Heritage and the fact that the same notion of heritage has considerably evolved since the years of the Crafts and Arts movements. From the definition of the 1931's Athens Charter - which is considered the starting point for this new phase of the culture of the heritage - as "*the historic and artistic work of the past*", and from that of the Article 1 of the UNESCO Constitutive Act that considered as heritage the "most representative collections of works of art and of monumental remnants of cultures", the notion was gradually extended not only to new categories drawn from non-artistic sectors of activity such as the one of industrial heritage, the modern architecture or the underwater heritage, but, more recently, to the philosophically deeper concepts of intangible cultural heritage and cultural landscapes.

Undoubtedly, the main notion of World Cultural and Natural Heritage developed through the 1972 UNESCO Convention is that the international community has been made aware of its responsibility towards a "world heritage" which transcends, in principle, the political and geographical boundaries.

It is important to note that with this new concept, the creativity and the diversity of the various peoples of the world have been formally recognized by normative international documents.

A formal recognition of this larger notion of heritage is in the Report of the World Commission on Culture and Development, in 1995, when the former U.N. Secretary General, Honorable Javier Perez de Cuéllar, underlined that "*... a right place should be given to diversity in the field of heritage, and that everywhere, it should be recognized that, in this field, there are no universal recipes to be applied*".

Ten years later this principle was more largely developed and consecrated in the UNESCO Convention on Cultural Diversity.

One of the main consequences of the recognition of the principle of cultural diversity was the recognition of the relativity of some of the criteria defining the OUV's of the heritage sites to be considered for the nomination in the WH List. Above all, the criterion of authenticity was redefined as

conditioned by the cultural diversity. If in some periods and cultures, originality was equal to authenticity, in others it was not the case, as substitution, reconstruction, or other means were the normal procedure of maintenance of the monuments. These ideas were expressed in the Nara Conference of 1994 on Authenticity in the namesake Nara Document. Evidently this new concept opened the floor to the discussion of the quality of the maintenance and of the skills, by definition traditional skills, of the operators, and their training in an industrialized world.

In 2003 another important Document, the UNESCO Convention on intangible heritage went to focus on the conceptualisation and the designation of this complementary dimension to heritage. This notion of intangible was the result of a closer focus on the individual or/and community systems of knowledge, both spiritual and philosophical, in which the individual pursues his creative activities. Beyond the quest for the components of the intangible cultural heritage, the concept related to it has taught us that tangible vestiges and remains cannot be appreciated in their own right, but rather necessarily in relation to others, and through an understanding of their interactions with their physical and non-physical environment, both human and natural.



Both these principles, diversity and intangible heritage, define now a frame in which traditional skills play a very important role from at least three viewpoints.

1. As **instruments of knowledge**, through the means of anthropology, but also as through experimental archaeology, to understand the methods by which the objects constituting heritage, tangible and intangible, were produced.

2. As **instruments for implementing** the right conservation procedures.

3. As **creative instruments** for new productions to build – both economically and spiritually - a social environment favorable for the comprehension of the values of the heritage. In this case sometimes they could also play an autonomous role as new intangible heritage as envisaged by the Article 7 of the UNESCO Universal Declaration on Cultural Diversity recognized Cultural Heritage as the wellspring of creativity: *“...heritage in all its forms must be preserved, enhanced and handed over to future generations as a record of human experience and aspirations, so as to foster creativity in all its diversity and to inspire”*.



These functions of the traditional skills toward heritage are largely recognized, and new institutions everywhere are being built to deal with this issue. Here in the slide you see the ITKI - International Traditional Knowledge Institute just created in Florence by Pietro Laureano.

But what are the means to ensure that they pass, as in the past, from a generation to another ensuring quality and sustainability?

We know that this transmission is fragile, linked to social and economic factors. In the human history a great number of traditional skills have been lost, substituted by other more effective. This is a natural historic phenomenon: the same idea of development or of innovation has in itself that of the adoption of new abilities. If today we want that some techniques, to which we attribute a value for the reasons we considered before, would be preserved to future generations, then we must ensure not



only that they are the right ones, in terms of originality and historic relevancy, but also that the men called to implement them can do it in a sustainable way. This means not only study and train, but also to build a system of legal and economic protection of these activities, of social acceptance of the values expressed by them. This is the idea of capacity building. Mechtild Rössler, from UNESCO, recalled in her article "From Training to Capacity Building: the evolution of a concept in the framework of the World Heritage Convention": "*article 5 of this legal instrument asks the States Parties to give the Convention a function in the life of the communities and how could this be achieved without awareness raising and capacity building of professionals in long term heritage conservation, protection and management. It calls specifically for the establishment of specialized institutions by the national authorities*".

On this issue I want also remember the ideas expressed by the colleague Motonaka Makoto in the meeting of last year in Shanghai in his paper about the *Japanese protection system for preservation techniques of the traditional stone wall pertaining to castles*. Together with other provisions written in the guidebook on the maintenance of historic sites, he remembered the one that declares that "*stone wall maintenance projects should involve local community members, so that the projects may foster residents' pride in their hometowns and inspire them to participate in community development*" (p. 51).

Or again from the same proceedings, the words of my ICCROM's colleague Gamini Wijeserujia "*In terms of developing human resources on traditional skills, thinking of craftsmen would not be sufficient. We must talk about capacity development which focuses on:*

- *strengthening the ability of larger and changing audiences*
- *considering "knowledge acquisition" instead of "knowledge transfer"*
- *new learning environments for more effective conservation on heritage.*"

Let me now just to remember some key points in the process of development of these ideas.

In 1995, the ICOMOS–CIF training Committee organized in Helsinki a seminar on Training Needs and Ethics which proposed strategic guidelines for future action. During the discussion on conservation ethics, reference was made to the Nara Conference on Authenticity in relation with the World Heritage Convention and special attention was given to develop conservation training programmes taking into account cultural and heritage diversity as essential to further refine the concept and application of authenticity as it relates to cultural heritage.

So, if national traditional skills are evidently essential, but also comparative studies are important, and this can be achieved by a wider panel of international scholars, like today in this Conference. As noted in 1995 by Prof. Jukka Jokilehto, former President of the ICOMOS International Scientific Committee on Training, *“The international courses should be an essential part of the professional curriculum, especially in terms of important positions at the national level.”*

ICOMOS also emphasized that conservation must make use of a variety of technologies and *“that it is possible to safeguard a part of the immovable cultural heritage with simple and effective means and technologies within the scope of local labour, in as much as traditional techniques have survived or have been re-introduced”*. It therefore recommended *“that the public authorities avoid launching preservation projects employing high level technology without having explored all possibilities of using local methods. It has been emphasized that the authorities should encourage the establishment of research laboratories on the technologies suited to the specific problems of the country. These research laboratories would have the task of defining the nature of the practices which ensure the authenticity of each heritage. This research could also be applied in contemporary architecture for it could well result in the rediscovery of an architectural vocabulary specific to the culture”*.

These important considerations should be carefully studied when preparing the strategies for training courses whether for long or short duration. Furthermore, academic programmes should be always linked with practitioners and space should be given to non formal education, which still constitute an important part of the dissemination of knowledge and “savoir-faire”, as transmitted by “traditional masters”, for example in earth architecture or in wood constructions.

Traditional skill does not mean uncultivated skill, just manual ability unaware of the principles of the modern science. The traditional craftsman can be a restorer even an artist using ancient techniques, but if he works on heritage, then he has to join the wisdom of the past to the modern science.

Conclusions

I would like to conclude in apologizing for having addressed too quickly some issues which should be more thoroughly analyzed and discussed but I am sure that the works during the following days will set the basis to collect more elements for the debate on this very important subject that is bringing us together in this prestigious ACCU Nara Centre.

I would like to refer to some of the ideas expressed last year here by my colleague Wijeseruiya. *“Traditional skill should not be considered in isolation, but as the sum of all knowledge, skills and people that have contributed to the final results that we see as heritage today, reflected in both tangible and intangible forms”*. A monument, like a site, is not just the product of the simple skill of one or many workers, but is a part of a complex system involving many levels of knowledge. Brick and stones testify deep religious ideas, a long history of development of architectural principles, the ability of generations of masons, often being still living heritage. *“We cannot separate these [continuity of the connected community] from most of our heritage, although there is always a tendency among the conservation community to disassociate from this important point and focus only on the material aspects”*. This theme of the living heritage, of the continuity between monuments and present community, often considered broken forever in the western world, and on the contrary well alive here in the Asian region, is crucial in the research of ICCROM since the time of my predecessor Paul Philippot”.

Like my colleague Wijeseruiya, I too I am optimistic about the ability of the scientific institutions of this region to deal with the issue to develop human resources to promote the transmission of traditional skills. I am ready to learn from the experiences of all of you, my distinguished colleagues, and continue to lead ICCROM in supporting and sharing your studies.



II. Keynote Speech





Transmission of Traditional Skills for Preservation of Cultural Properties in Japan

YAMATO Satoshi

Councilor for Cultural Properties
Agency for Cultural Affairs, Japan

1. Cultural Properties and "Selected Preservation Skills"

Japan has been acknowledged as a country of product making. Industrial products mass-produced in Japan today still have a reputation for high quality. Japanese-made items are used at the core of advanced scientific systems and industrial products. It is frequently said that without them, cutting-edge science and technology would not be possible. The manufacture of such products has been enabled by skilled and experienced engineers and technicians, who mastered and sophisticated the artisanal handicraft. Japan clearly has a long established tradition of product making, though rapid changes in industrial structure have caused its manufacturing businesses to go overseas; the transmission and development of the aforementioned techniques and skills are presently considered uncertain. That tradition is readily discernible in the domain of cultural properties, where handicraft is dominant, though it is not readily recognized with industrial products. The essence of superb product making, an ability still alive today, is abundant in the domain of cultural properties, including those from modern times. All types of Japanese cultural properties commonly manifest a high level of elaboration and perfection. This is the most conspicuous of Japan's cultural characteristics, as acclaimed by people of other countries. Underlying such characteristics is the long history of traditional techniques essential for the creation of cultural properties, and for their transmission to future generations through repairs. Also underlying is a deep and profound knowledge of raw materials, knowledge procured through symbiosis with nature.

Nevertheless, the traditional techniques used to create tangible cultural properties and to pass down and refine intangible cultural properties are bound, through the passing of time and changes in society, to be lost, diminished or replaced by other techniques. Once an intangible legacy has been lost, it is difficult to restore. It is true that many traditional techniques essential to the preservation and passing on of cultural properties must be urgently protected.

In Japan, traditional techniques used to protect cultural properties are stipulated as "preservation skills" in the Act on Protection of Cultural Properties (Articles 147 through 152). The national government (the Minister for Education, Culture, Sports, Science and Technology) selects a host of individual "selected preservation skills" from among those used for cultural property repairs, repair materials production, and repair tool making. In addition, to provide various kinds of support for skills transmission, the national government certifies individuals as skill holders who are conversant in and have mastered these techniques and skills, and it certifies organizations whose activities are aimed at conserving selected preservation skills ("conservation organizations"). As of November 2012, selected preservation skills number 68, certified skill holders 53, and certified conservation organizations 31

(the actual number of certified organizations is 29, due to duplicated certification of organizations having more than one selected skill).

2. Programs for Protecting Traditional Techniques in Days before Selection of Preservation

Skills

Japanese cultural properties (and equipment used in intangible cultural properties) are largely made of relatively vulnerable materials such as wood, earthen plaster, paper and fabric. Most paintings included in them are drawn on surfaces of these materials. Moreover, these materials are generally processed through a high level of division of labor, each process comprising extremely delicate steps of handicraft. This is a major feature of Japanese cultural properties, which distinguishes them from cultural properties of other countries. Incidentally, Japanese folk cultural properties, created from locally procured materials through production methods indigenous to individual localities, are essential to elucidating diverse styles of life and culture extant in various parts of Japan. Periodic repairs are needed to preserve these properties for future generations. In each relevant area, a high level of expertise, traditional techniques backed by years of experience, and techniques of skilled technicians for actually providing repairs are needed. Furthermore, raw materials used for repairs and special equipment used in producing, gathering, or processing raw materials are a necessity. Various repair techniques, raw materials, provision of equipment and transmission of knowledge are also essential. Preservation, repair and the traditional techniques used therein comprise major elements in the protection of cultural properties in Japan.

In 1954, soon after enactment of the Act on Protection of Cultural Properties, the First Japan Traditional Art Crafts Exhibition was held. The purport of the exhibition contained the text shown below, which reveals trends in traditional crafts techniques in those days.

The excellent features of traditional Japanese crafts are recognized widely and internationally. However, this superb tradition is on the verge of extinction, with the march of the times. Japan's handicraft and traditional crafts techniques declined as a result of the emergence of modern industries around the late 1890s. Subsequently, the dramatic growth of modern industries pushed traditional crafts techniques to the margins of society. Some traditions died out and some others barely survive. The traditional crafts still alive today have been maintained by the extraordinary enthusiasm and sacrificial efforts of a small number of strongly willed persons. (Excerpts from First Japan Traditional Art Crafts Exhibition catalog)

This indicates an early awareness of the crisis: that excellent techniques used in traditional handicraft in Japan could be lost as a result of obsolescence and alienation from the industrial production styles pertaining since modern times. Consequently, in 1950, the Act on Protection of Cultural Properties was enacted as a system of legislation unique in the world, which clearly stipulated the protection of intangible cultural properties with an aim to protect craft techniques, as well as performing arts. Since then, various traditional techniques used for repairing cultural properties have been classified into one category of intangible cultural properties to be subsidized and carefully protected on a relatively broad

scale. Techniques essential for repair of cultural properties were selected as "craft techniques and other intangible cultural offspring," including *kiku-jutsu* (the technique of applying a construction drawing to timbers with a square), essential in repairing shrine and temple buildings, gold brocade mounting, *maki-e* equipment making, vegetable dyeing and production of *ubai*, a mordant used in vegetable dyeing. Later, in 1975, when the amendment to the Act on Protection of Cultural Properties introduced a new protection program for preservation skills, these techniques were selected anew as "selected preservation skills." Additionally, skill holders and conservation organizations were certified and relevant protection measures were implemented for them.

Other programs aimed at passing down cultural property repair techniques included technician training workshops held in fiscal 1953 and 1954 in the field of arts and crafts, and in fiscal 1958 and 1959 in paper/fabric mounting and repairs. In addition, since fiscal 1962, the Repair Techniques Workshop for Designated Cultural Properties (Fine Arts) has been held annually. Furthermore, for building and structure repairs, workshops have been held annually for repair technicians since fiscal 1955, as part of the efforts by the national government to train people of talent and pass down cultural property preservation and repair techniques.

3. Recent Programs for Protecting Traditional Techniques

Measures have been implemented, as described in the preceding section, for preserving and transmitting traditional techniques and skills used to protect tangible and intangible cultural properties, principally by programs designed to conserve selected preservation skills stipulated in the Act on Protection of Cultural Properties, against difficulties arising from rapid changes in social trends and technical schemes. The national government has subsidized training, successor development, record documentation and other projects promoted by the aforementioned individuals and organizations. In fiscal 2011, in addition to the preceding subsidy plans, the national government began to subsidize the provision of raw materials and equipment essential for the additional protection of techniques and skills, as well as the development of persons involved in such work. The portion of national budget allotted to supporting these projects increased by approximately 40% from the previous fiscal year (the same amount is also listed in the fiscal 2012 national budget). This indicates the national government's recent increasing focus on the area discussed herein.

Other topics relating to the preservation of traditional techniques include the 2004 amendment to the Act on Protection of Cultural Properties, which stipulated folk techniques as one category of intangible folk cultural properties. Consequently, measures were added to protect (select and designate) traditional indigenous production and living techniques inherited, in every part of the country for the provision of food, clothing and housing, in production or occupation, and in folkways. This differs from selected preservation skills in that, in taking preservative measures, techniques themselves were considered cultural properties. A type of measure intended to protect traditional techniques in Japan, this can be viewed as enhanced effort in the area of traditional technique protection.

In recent years, the Agency for Cultural Affairs has been promoting public relations and education of the general public on traditional techniques, as well as directly subsidizing the

transmission of traditional techniques and skills and the development of successors. Since fiscal 2003, the Agency has annually organized a symposium titled "Masters of Traditional Techniques for Protection of Cultural Properties" in cooperation with the Japan Federation of Groups for Cultural Property Preservation skills, a group formed by local governments and certified conservation organizations. The symposium has featured lectures by specialists in preservation skills, explanatory displays of panels and samples, and demonstrations of techniques, in order to present information on preservation skills used for repair of cultural properties, efforts made to provide raw materials, and activities conducted by conservation organizations. Profound knowledge developed through years of experience in vegetable, mineral and other natural materials, and sophisticated techniques that make the most of the materials' characteristics, are in themselves attractive exhibitions. The event has many participants each year, and is being established as a popular project. The symposium was held in Nagoya City in 2011 and in Himeji City this year. Conservation organizations set up their respective exhibition booths to present information on their activities, through exhibition of equipment and raw materials, demonstrations, and workshops. This meaningful occasion helps the public acquire a deeper understanding of preservation skills.

Educational opportunities such as described above include building and structure preservation and repair sites open to the public. Such places reveal concealed features of cultural property buildings and structures that are not usually viewable. In addition, they provide valuable opportunities to access various traditional techniques used in such features, which attract many visitors on every occasion at each site. The Kyoto Prefectural Government manages many preservation and repair sites each year. Opening such sites to the public is becoming a customary program in autumn in the prefecture. Similar preservation and repair activities are also open to the public in gardens designated cultural properties, in order to enhance public understanding of the traditional landscape techniques used to maintain historic gardens.

These activities are useful in deepening general understanding and recognition of traditional techniques, and in helping increase social concerns regarding the protection of cultural properties. Furthermore, such activities are effective in motivating technicians and skilled persons involved in the preservation and repair of cultural properties to be willing to work and upgrade their skills. Another benefit of such activities is the potential facilitation of information exchange and collaboration among technicians, skilled persons and different industries.

Concrete approaches are also used to provide raw materials, which are as important as, and mutually and closely related with, preservation skills for protecting cultural properties. The present report briefly covers the provision of raw materials for preserving cultural properties, since that is another theme that should be discussed separately in detail. In the category of cultural property buildings and structures, the Project for Promoting Cultural Property Forest System is conducted to ensure a stable supply of various vegetable materials used for repairs. Detailed surveys were conducted on material demand and supply by fiscal 2006. Six Cultural Property Forest Centers were founded nationwide to serve as a base for training and education. The establishment of Cultural Property Forests began in fiscal 2006 (45 forests have been established in 24 prefectures). The forests supply repair materials, and at the same time serve as training sites for conservation organizations to

provide training in raw material-gathering techniques. Subsequently, in fiscal 2011, subsidies began to be granted to cover expenses required in managing and conducting operations (pruning, weeding etc.) in the forests.

Concerning equipment and raw materials used for protecting folk cultural properties, it became especially difficult to supply materials for the repair or construction of floats used in festival parades. In fiscal 2002, nationwide demand and supply fact-finding surveys were commenced regarding such materials. Relevant measures are being devised based on the acquired data.

In the category of performing art as part of intangible cultural properties, continuous surveys are under way regarding the equipment and raw materials essential for such art. Since it is becoming difficult to provide some equipment and raw materials, efforts toward protection of performing arts have been exhaustive.

Recent developments include subsidizing efforts to transmit traditional techniques on the fringes of preservation skills, such as raw material production and equipment construction. It is desirable that, making wise use of these aid programs, the conservation and transmission of traditional techniques for protection of local cultural properties be promoted, and that systematic protection be provided in this category, encompassing a wide range of supporting businesses.

4. Approaches to Enhanced Protection of Preservation Skills

In Japan, in many cases traditional techniques are organized into highly sophisticated systems, which feature specialization, advanced division of labor, diversity of techniques and skills requiring protection, as well as use of a variety of raw materials. If a partial loss occurs, the entire system of techniques may be on the verge of extinction. Recently, comprehensive support has been provided to selected preservation skills as well as to marginal techniques and skills, with increased potential for enhanced protection. This is a significant advance. However, there are still many endangered preservation skills in each category of cultural properties. Consequently, it is urgent to extend categories for protection, before individuals who can pass down traditional techniques are lost.

To meet this challenge, active participation is desired, not only from the national government, but also from local governments in the protection of preservation skills. Preservation skills largely have features indigenous to localities. In principle, it is desirable that prefectural or municipal governments promote protection.* There are local governments that already have cultural property protection ordinances to designate preservation skills. However, there is only a small number of them nationwide. Individual small districts may face challenges such as small volume of preservation and repair work, limited opportunities to continuously practice preservation skills, and difficulties in providing protection in a self-supporting manner within the district. Nevertheless, local governments should at least raise local awareness about the preservation of techniques, designating cultural assets indigenous to localities. The national government has recently begun to provide financial support for the protection of preservation skills.

* The need to promote the protection of traditional techniques by local governments was also mentioned by KAMEI Nobuo, (then) Councilor on Cultural Properties, in the prefatory note

"Traditional Techniques for Protection of Cultural Properties" in the previous feature article "30 Years of Selected Preservation Skills" (September 2006, monthly Cultural Properties).

It is also desired that persons who pass down preservation skills and conservation organizations be organized to a higher level. In providing preservation and repair job opportunities, which can serve as a basis for technical training, successor development, provision of raw materials and transmission of traditional techniques, the encouragement of cooperation and information exchange among parties concerned should produce more mutual benefits than can be achieved through separate efforts by individual persons or organizations.

In the modern world, traditional techniques can no longer be passed down in a self-supporting manner. Indeed, they are barely surviving in protected categories of cultural properties. Product-making reliant upon a technically high level of handicraft is no match, in terms of economy, for industrial high-volume, low-cost production. What is needed is to disseminate information on the attractiveness and advantages of traditional techniques, to enhance societal recognition and understanding about the protection of such techniques, and, through concerted societal effort, to pass those techniques on in conjunction with cultural properties.



Traditional and Modern Coloring of Stone Inscription in China: An Example from World Heritage Wuyishan, PR China

DAI Shibing

Professor

Architecture Conservation Laboratory, Tongji University

Yu Zelan, Zhong Kaiyi, Su Dezheng, Yu Jian'an

Administrative Committee of Wuyishan Scenery Area, Fujian
Province, PR China

Li Lei

Shanghai DS Building Materials Co Ltd. , Shnanghai, PR China

Abstract:

In its narrow term, the stone inscription specifically means writings and scriptures carved on the natural stones, which are represented by Taishan Mountain in the north and Wuyishan Mountain in the south, both of which are listed World Natural and Cultural Heritage of UNESCO. Those inscriptions can be seen in most of the well-known mountains and rivers in China with their wide spread in almost all provinces of China, among which many have been listed as national monuments. The inscription of writings covers a wide range of calligraphic types such as seal script, official script, regular script, cursive script and running script. In ancient times, the entire inscription procedure contains several steps, consisting selection of stones and locations, selection of carving methods, trial and testing for pens and knives, carving and coloring. According to the types of the surface, the carving falls into three categories of positive, negative and line. There are also overlapping types between negative and positive carvings and between positive and line carvings. Cinnabar-red is the most common color used for inscriptions in old times, followed by lime white. Blue and green were also applied depending on natural pigments occurred in various regions.

As an integral part of Mount Wuyi cultural heritage, the stone inscriptions in cliffs of Wuyishan Mountains are an important epitome of local culture. According to the oral records, inscriptions in early times were usually colored in red, some in white. 2 decades ago most of them were coloured in yellow.

But it is well-known that the cinnabar under natural weathering is not durable, and the repeated coloring has hampered the artistic value, accelerating the damages of caved stones. Based on tests in labs and observation on sites since 2010, a water-borne translucent colorant with same tone as cinnabar-red, but based on iron-oxide pigments and PU-acrylic emulsion as the binder has been successfully developed. With excellent compatibility with natural stones and the old paints, the pigment is very close to the traditional cinnabar in toning but contains no heavy metals. It has been applied during the maintenance and refreshing work of stone inscription in Mount Wuyi areas since November 2012.

As a traditional means of record, stone inscriptions have seen a continuous passed-down among generations as a traditional artistic skill. Though there are no laws and regulations on the training and skill transmission at the national level, various training courses and workshops have been organized around the country, most of which however, are aimed to increase the employment among farmers instead of skill transmission. Instead of using the traditional paints, modern pigments and lacquers are applied, resulting in a rigid style and shortened duration of the inscriptions.

1. Introduction

1.1 Artistic Significance of Stone Inscriptions in the history

As a typical artistic form with the most Chinese characteristics, the stone inscription, in its broad sense, contains all of the contents carved and inscribed onto natural stones, including characters and writing carving, stone sculptures and rock paintings. While in its narrow sense, the term “stone inscription” specifically means writings and scriptures carved on the natural stones. They are represented by Taishan Mountain in the north and Wuyishan Mountain in the south, both of which have been listed as World Natural and Cultural Heritage. Those inscriptions can be seen in most of the well-known mountains and rivers in China with their wide spread in provinces including Shandong, Shaanxi, Hunan, Hubei, Sichuan, Yunnan and Fujian etc, among which many have been listed as national monuments. The inscription of writings covers a wide range of calligraphic types such as seal script, official script, regular script, cursive script and running script.

1.2 Steps to Stone Inscription

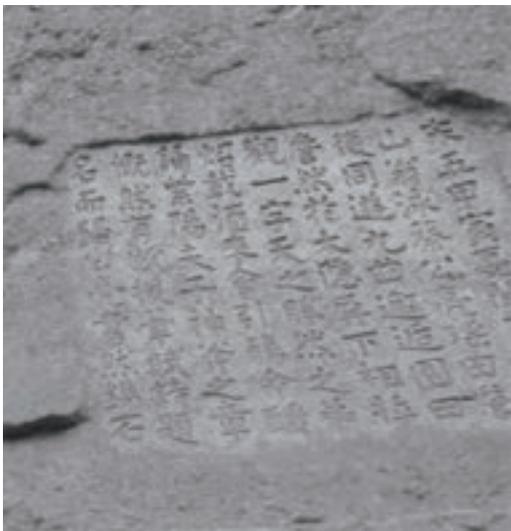


Figure 1. Both carver and calligrapher of the inscriptions has been recorded in Mount Wuyi areas: the inscription of “公亮书，然铸石”in Yixiantian Scenic Spots, dating to 1254, which is rare in China

In ancient times, the entire inscription procedure contains several steps, consisting selection of stones and locations, selection of carving methods, trial and testing for right chisel and knives, carving and coloring. One of the techniques named “Mo Le Shan Shi” was to cover the original writings with oil-papers and had the scripts outlined with ink on the back side of the paper, then pressed the side of paper which had ink trace against the stones. The scripts were printed onto the surface of stones, on which the artists might start carving. The other technique was called “Shu Dan”, which meant to write down the scripts directly on the surface of stones or rocks in red color, and had them carved by artists. Though with a much more simplified procedure, the inscription used the latter technique is often not identical to the original handwritings. In ancient time, most of authors of writings were recorded, but very few inscriptions have recorded carvers and calligraphers (Fig. 1).

1.3 Types of Carving

According to the types of surface, the carving falls into three categories namely positive, negative and line. Negative carving means the scripts are concave against the stone surfaces; positive carving refers to the bulged scripts against the lower stone surface that has been grinded; and the line carving is to outline the strokes of the characters along the lines of the scripts. There are overlapping types between negative and positive carvings and between positive and line carvings. Except for scripts with consideration to their special significance, such as the character “寿” (meaning longevity) is usually carved with positive type, the choices of types are often determined by the property of rocks. Those with medium intensity like sandstone and limestone are suitable for each type of carving.

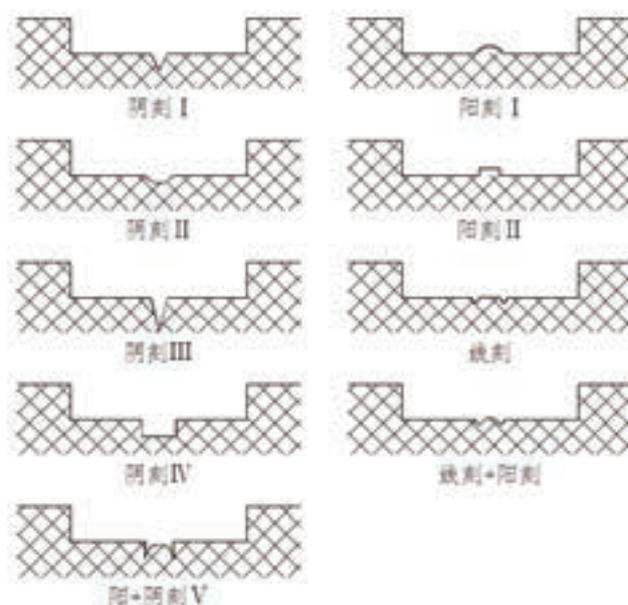


Figure 2. Types of Carving

1.4 Coloring of Stone Inscription

The coloring of stone Inscription intends to highlight the inscription arts on the stone surface. Coloring is not necessary for those with very deep carves. According to historic and oral records, cinnabar was the most common color used in the inscriptions in old times, followed by lime white. Blue and green were also applied depending on the pigments occurred in various regions. The technique “Shu dan shang shi — writing in red on the stone”, also known as “Shu Dan” for short, means to write down the scripts directly on the surface of stones or rocks in red color, and have them carved by artists.



Figure 3. Non-colored stone inscription (Hechuan, Chongqing, Date: 1946)



Figure 4. Inscriptions with different colors

2. Inscriptions on Cliffs of Mount Wuyi

Located in the northwestern part of China's south-east province of Fujian, Wuyishan Mountains was listed as a World Natural and Cultural Heritage Site by UNESCO in 1999 for its natural and cultural resources such as rock shelters with wooden boat coffins (dating to the 2nd millennium BC), archaeological site of the Han city of Chengcun, culture of neo-Confucianism, stone inscriptions and tea culture, as well as the Danxia Landform and its extremely rich flora and fauna.



Figure 5. Inscriptions in Mt Wuyi

2.1 Historic and Artistic Value of the Stone Inscriptions of Mount Wuyi

As an integral part of cultural heritage in Mount Wuyi, the stone inscriptions are important epitome of local culture and a treasure of calligraphic art. Over 416 pieces (FANG) of inscriptions have been identified and recorded up to date, among which 38 dates back to SONG Dynasty (960-1279), 11 to

YUAN Dynasty(1206-1368), 142 to MING (1368-1644) , 61 to QING (1644-1911) and 15 to Republican period(1911-1949). The date of 105 pieces is unknown yet and 44 are contemporary ones. Most of the inscriptions are carved in negative type, largely due to the property of gravel-sandstones in Wuyishan Mountain areas, most of which consists of quartzite gravels as aggregates, making it more adaptable to negative carving instead of the other two methods.



Figure 6. Types of Carving in Mount Wuyi: most are negative (left) and few are of positive character of “寿”(right)

2.2 Color Evolvement of Stone Inscriptions in Mount Wuyi

Due to the humid climate in the area, the stone inscriptions are very apt to be covered by mosses and algae grown on the stone, if, without the sheltering of cliffs. According to oral records, inscriptions in early times were usually in red, some in white. Yellow was applied 1-2 decades ago; however because yellow was the symbolic color of the imperial, and looks similar to the color of mountains, particularly those withering mosses and fungus, yellow will not be dominate color in Wuyi. Red is more often used nowadays to highlight the artistic quality of inscriptions.



Figure 7. Inscription colors in history (original lime white and yellowish colored in history)

2.3 Coloring-related Damages

Thick layers of colorant not only reduce the third-dimension effects of the original inscriptions, but also with its low vapour permeability lead to the seeping of moisture and salinity from the uncolored

edges, accelerating the weathering of stones. Therefore, it is necessary to develop a new specialized colorant adaptive to the environment of Mount Wuyi.



Figure 8. Accelerated deterioration caused by thick coatings

2.4 Research on New Coloring Materials

2.4.1 Technical Requirements

With high relative humidity, the stones in Mount Wuyi are rather damp, part of which are even submerged by flooding in summer. Therefore, the colorant materials to be applied are expected to have qualities such as minimizing microbe growth like mosses, excellent water resistance and good permeability in addition to those regular functions of being adaptable to moist environment and color fastness. The permeability determines the moisture balance inside and outside the colored surface of inscription, otherwise there will be problems like cracking, peeling and discoloring, as well as accelerating the weathering of the edges of fonts. In 2010, an R&D group composed by personnel from Administrative Committee of Wuyishan Scenery Area and Tongji University launched a pilot project to develop new colorant for Mount Wuyi areas.

2.4.2 Laboratory Research

The group has conducted comparative studies among 19 formulas including a comparison with properties of Chinese traditional paint, which means to respect the history and traditional culture and to verify the quality of traditional materials at the same time.



Figure 9. Laboratory tests for colorant properties

Upon comprehensive consideration to properties like bonding, color fastness and resistance to flushing, following materials are chosen to run the field tests: cinnabar with natural resin dissolved in alcohol, water-borne PU-acrylic dispersion, water-borne acrylic-silicone-resin emulsion, sili-sol with acrylic emulsion.

2.4.3 Field Tests

On November 6th to 8th, 2010, the group worked on 3 sites to do the surface trials in Mount Wuyi. The first site is the inscription “兴来独往”, where to directly cover the old paint with new colorant on the top without stripping the original one. The inscription “兴来独往” faces south and has slope of app. 60 degree, a optimum location to understand the UV-stability and fastness of new colorant.



Figure 10. Comparison between the colored scripts and the uncolored ones (a total of five formulas was used, including Formula W-PF-01, W-PF-19, W-PF-18, W-PF-17-1, W-PF-13 from left to right)

The second site is the inscription of “武夷山第十六洞天方白张信海书” at the entrance of Zhi Zhi Taoist Nunnery, where the old color was stripped prior to a new coloring. This spot is always wet even during the trial period, water was flowing from substrate.



Figure 11 New coloring of formula W-PF-01, W-PF-19, W-PF-18, W-PF-17-1, W-PF-13 from left to right

The third site is the inscription on the stone of “有缘” inside the bell tower in Zhi Zhi Taoist Nunnery, where the old color was stripped prior to a new coloring.



Figure 12. Formula W-PF-01, W-PF-17-1, W-PF-13 from left to right, repainting after removal agent

During the paint-removing process, multiple layers of diversified types of paints were found covering one on top of another, up to 3mm in the thickness, which requires repeated cleansing before being totally removed.

According to field testing results, the newly-developed water-borne PU-acrylic dispersion colorant is compatible to old paints in terms of bonding and color fastness, showing good historic effects of the inscription after removing and re-coloring process. Though with very excellent bonding property, the traditional cinnabar colorant appears discoloration within a short period of less than 6 months; and because the cinnabar-colorant contains harmful heavy metals after weathering, it is abandoned. Since November 2012, new coloring materials have been applied to stone inscriptions in Mount Wuyi. The materials can either be used directly onto the old color or be re-colored on the surface after the old is removed. In this article, the latter is recommended to better highlight the third-dimension effects of the inscriptions.



Figure 13. Inscription “兴来独往”: fading of different pigments one year later (the cinnabar in the left has turned dark purple)



Figure 14. Coloring process began in November 2012

As a traditional means for record and signing, stone inscriptions have seen a continuous passed-down in generations as a traditional artistic skill. Though there are no laws and regulations on the training and skill transmission at the national level, various training and workshops have been organized around the country, most of which however, are aimed to increase the employment among poor farmers instead of skill transmission. Moreover, the inscription work is processed by modern tools like computer, sand blasting machine and electric cutter and grindings, and then colored with modern paints that could be commercially available. The artificial color and short duration have hampered the artistic value of inscriptions.



Figure 15. The characters are written with modern technology and caved manually.
(Ancient Diaoyu City in Hechuan, Chongqing, photographed in October 2012)

4. Conclusions and Discussions

Stone inscription is a typical artistic form in China. According to the types of the surface, the carving falls into three categories of positive, negative and line. There are also overlapping types between negative and positive carvings and between positive and line carvings. According to historic and oral records, cinnabar-based colorant was the most common color used in the inscriptions in old times, followed by lime white. Blue and green were also applied according to the pigments occurred in various regions.

As a representative in south, the stone inscriptions in cliffs of Wuyishan Mountains are an integral part of Mount Wuyi cultural heritage and an important epitome of local culture as well as the treasure of calligraphic art. According to the oral records, inscriptions in the early times are usually in red, some in white. Yellow was also applied for a while along the history. But the cinnabar used today is not durable, and the repeated coloring has hampered the artistic value, accelerating the damages. Based on tests in labs and on sites since 2010, a water-borne translucent colorant with iron-oxide pigments as its base and PU-acrylic emulsion as the binder has been successfully developed, whose color is very close to the traditional cinnabar but contains no heavy metals with excellent compatibility with natural stones and the old paints. The colorant has been applied in the stone inscription maintenance in Mount Wuyi areas since November 2012.

As a traditional means for record and signing, stone inscriptions have seen a continuous passed-down among generations as a traditional artistic skill. Though there are no laws and regulations on the training and skill transmission at the national level, various training and workshops have been organized around the country, most of which however, are aimed to increase the employment among farmers instead of skill transmission. The new cinnabar-imitation colorant is developed on the basis of a modern scientific and environmental-friendly formula, which could be the future in terms of the maintenance and presentation the art of stone inscriptions.

Acknowledgment

The authors wish to thank Associate Professor Tang Zhong from Tongji University, Mr. Zhang Ximi, an inscription artist of Mount Wuyi, Mr. Zhu Shangyou from Shanghai DS Building Materials Co. Ltd., and Karin Toegel from HAWK Hochschule für angewandte Wissenschaft und Kunst, Hildesheim, Germany for their support and involvement in the work. The authors also would like to thank Ms. Zhou Yue'e from Shanghai DS Building Materials Co. Ltd. for her help to review the manuscript.

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III. Paper by Participant





Traditional Building Skills in the Conservation of Heritage Mosques in Malaysia

A Ghafar Bin Ahmad

Professor

School of Housing, Building and Planning
Universiti Sains Malaysia

1 Introduction

Malaysia is a multi-ethnic, multi-lingual and multi-cultural country. The country's 29.2 million population comprises 51% Malay; 26% Chinese; 7% Indians; 16% other indigenous ethnic groups of Sarawak and Sabah States of the island of Borneo, as well as Eurasians and immigrants. The history of Malaysia reveals remarkable influences of immigration, trading and cultural exchanges over time with the Arab nations, China, India and the rest of the Malay Archipelago. Today, Malaysia inherits an enriched intangible and tangible cultural heritage of ethnic attributes, languages, traditions and buildings. The country's vibrant ethnic diversity is evident in the religious buildings, sacrosanct rituals and cultural festivities, which encapsulate the foregoing national spirit of social integration and ethnic harmony.

Malaysia's built heritage is facing a potential threat. This relates to issues of inadequate supply of local skilled craftsmen to conduct appropriate repair works, assess material needs and other traditional building skills related to heritage building conservation. This paper presents experiences of traditional building skills as illustrated in the conservation projects of three heritage mosques conducted under the auspices of the Department of National Heritage Malaysia during 2008-2010. The paper puts forward some recommendations to address the key issues of traditional skills deficiency in heritage building conservation works.

2 Overview of Traditional Building Skills

Built heritage including building, monument or structure is a testimony of human skills and ingenuity of traditional building skills. It is important to protect the heritage property by using only the appropriate methods and materials in building repair and restoration works. Traditional building skills refer to those skills utilised in the construction, maintenance and repair of traditional heritage buildings and their building elements. Such skills include brick laying and stone masonry, carpentry and joinery, plastering, roof slating and tiling, lead works, steeple jacking, painting and decorating, and other specialised traditional building skills.

Many countries around the world including Malaysia, Japan and China are challenged to keep their traditional building skills alive as the skills pool needed to repair and preserve the heritage buildings is on a decline. Heritage buildings are in danger of falling into disrepair as the pool of workers in the built heritage sector is shrinking relative to the number of heritage buildings in need of maintenance and upgrading. This situation calls for orchestrated efforts to help develop the traditional buildings skills necessary for conserving the integrity and authenticity of heritage property to posterity.

3 Legislative Instrument: The National Heritage Act 2005 (Act 645)

In Malaysia, the National Heritage Act 2005 (Act 645) is instrumental in protecting and conserving the National Heritage, natural heritage, tangible and intangible cultural heritage, underwater cultural heritage, treasure trove and other national heritage matters. Since 2005, more than 370 cultural heritage subjects have been listed as National Heritage including buildings, archaeological sites, museum collections, National Art Gallery collections, National Archive collection, archaeological collection, food items, arts and cultural items; and living heritage treasures. In May 2012, the National Heritage Act 2005 has recognised one traditional building skill which is bamboo-weaving for traditional wall panel as National Heritage of Malaysia (see 5.1 for further explanation of the bamboo-weaving panel). This is perceived as a good move by the Government of Malaysia to protect and safeguard its traditional building skills.

The National Heritage Act 2005 also allows the Minister to declare any living individuals possessing high skills and local knowledge of the cultural heritage as the Living Heritage Treasures of Malaysia. However, since the establishment of the Act, none of the Living Heritage Treasures has a background of traditional building skills, particularly in the building industry. After the National Heritage Act 2005 came into place, the Department of National Heritage Malaysia was established in 2006 as custodian of the country's heritage including in overseeing the practice of traditional building skills in building conservation. The Department has organised heritage forums, seminars, workshops and training programmes to develop traditional building skills, especially among building contractors and skilled workers.

4 Building Defect Diagnosis in Conservation Works

In the practice of building conservation, conducting building defect diagnosis is an important task as it relates to traditional building skills and local skilled craftsmen. Thus, a dilapidation survey should be carried out prior to any building conservation work to ascertain the extent of building problems and defects. In Malaysia, the dilapidation survey results often reveal common problems of heritage buildings including rising damp, salt attack, termite infestation, broken plaster walls renderings, harmful plant growth, peeling paint, roof leakage and damaged rainwater goods. The dilapidation survey also discusses remedial treatments for termite treatment, salt desalination, restoring timber panels, re-plastering, repainting; and mechanical and electrical works.

Multidisciplinary expert advice is necessary in the building conservation. This includes architects, structural and mechanical engineers, quantity surveyors, interior designers, fine artists, historians, botanists, chemists; and other local experts. A comprehensive building defect diagnosis is important to ensure that the conservation work is conducted appropriately in accord with the principle of minimum intervention, which adopts only the proven methods and techniques, and is based on scholarly scientific and technical analyses.

5 Conservation of Heritage Mosques in Malaysia

This section highlights the conservation projects of three heritage mosques in Malaysia which required traditional building skills, local knowledge and experts; from bamboo-weaving skills and painting to roof layering and wall mural restoration. The buildings are Old Mosque of Kampung Kuala Dal in the state of Perak; Kedai Mulong Old Mosque in the state of Kelantan which is at the East Coast of Malay Peninsula; and Old Machap Mosque in the historic state of Malacca. All projects

were funded by the Government of Malaysia through the Department of National Heritage during 2008-2010.

5.1 Conservation of the Old Mosque of Kampung Kuala Dal, Padang Rengas, Perak

The Old Mosque of Kampung Kuala Dal was built in 1936. It is also known as the Ihsaniah Iskandariah Mosque after a Perak State Sultanate. The architectural quality of the mosque is evident in its distinctive diamond-shaped bamboo weaving decorations (known as *tepas*) found on the exterior walls. Local artisans had made the intricate weaving design by hand using a special bamboo called *buluh minyak* (*Babbusa vulgaris*). The colours of the original bamboo carvings and weavings were based on the Perak State flag of yellow, black and white. Skilled craftsmen also carved fine flower motifs of *Meranti* timber (*Shorea parvifolia*) on fanlights and decorative panels above the windows of the mosque.

The conservation of the Old Mosque of Kampung Kuala Dal began in 2008. Skilled carpenters were employed to restore timber lattice panels and bamboo-weaving walls, which were damaged due to prolonged dampness from rainfall and insect attacks. The workers identified the original timber species and size of timber panels prior to replacing the defective timber carvings. New timber carvings were hand-made by skilled local carpenters.



Views of the Old Mosque of Kampung Kuala Dal before and after conservation

Likewise, the skilled workers prepared an inventory of the original bamboo weavings by building section and location prior to replacing the damaged bamboos. Since the bamboo type and skilled craftsmen were unavailable locally, the material and skills were out-sourced from the town of Arau, Perlis, some 2.5 hour drive north of the site. All traditional bamboo weavings were hand-made by a handicraft entrepreneur, Mrs. Meriah Ahmad of Perlis. Her team workers soaked fresh bamboos and leave them to dry to soften their texture and enhance their flexibility for the traditional weaving process. Treated bamboos were weaved by skilled hand into diamond-shaped designs and painted based on the original colours. Skilled workers fastened new bamboo weavings onto the exterior walls of the Old Mosque to finish the effect.



All traditional bamboo weavings were hand-made by a female handicraft entrepreneur.



Local villagers were involved in repainting the bamboo-weaving panels.

5.2 Conservation of The Kedai Mulong Old Mosque, Kota Bharu, Kelantan

The Kedai Mulong Old Mosque was built in the early 1900. It was originally built as a royal hall, constructed as part of the state regal complex. The original building was built raised on timber stumps of Chengal hardwood (*Neobalanocarpus heimii*). The building portrays excellent Malay carpentry work of wood carvings, lattice panels, columns, walls, ceiling, and two-tier roofs of curved fascia boards. In 1958, the building was bought by a local, who dismantled and relocated the building to its present site at Kedai Mulong about 7 miles away from the royal palace. The building was resized with new additions including asbestos roofing, verandah and toilets to accommodate its new function as a mosque.

Conservation works of the Old Mosque began in 2008 which involved repositioning the building alignment due to disputes over boundary line; replacing asbestos roofing with *Singgora tiles* clay slates; building a verandah at entrance; demolishing an old toilet, and re-wiring works. A major obstacle was faced in moving the building to its new location of 25 feet distance away. The local workers lifted the building using a 20-tonne jack to place temporary timber beams and GI pipes

underneath the timber stumps. With the help of 3 units of chain lock and man power, the building was shifted to its designated site. The workers also fixed concrete blocks onto the timber stump base to ensure building support and stability.



The Kedai Mulong Old Mosque was repositioned to its new location of 25 feet distance away



Views of the Kedai Mulong Old Mosque before and after conservation

The conservation of the Kedai Mulong Old Mosque involved local community participation. Local villagers, mostly women, had been engaged in repairing the timber lattice panels. Other skilled workers were employed to replace the asbestos sheets on the roof with clay slates, which were obtained from a nearby town of Bachok. Skilled workers also fixed new battens on the roof trusses to hold the clay slates in place. The original roof design of curved fascia boards was reinstated. Only the *Chengal* hardwood was used in the new timber structures and elements to retain the building authenticity. New timber structures were tagged using metal plates for future references and archival records.



Local women were engaged in repairing the timber lattice panels of the mosque

5.3 Conservation of Wall Murals at the Old Machap Mosque, Alor Gajah, Malacca

Built in 1902, the Old Machap Mosque was designed with two-tier roof structures and a small domed roof. During the World War II, the mosque committee helped the local Chinese community; and in return, the Chinese community raised much money for the mosque renovation. A marble plaque found on the exterior wall lists, in Chinese characters, the donors' names and their respective donations.

Apart from its unique roof design, the mosque is well known for its 27 wall murals depicting the images of plants, flowers, fruits and vases as Islamic teachings forbade the use of figurative motifs like people or animals on religious buildings. However, over the years, the wall murals suffered serious problems of over painting from past restorations; chipping and breaking of plasters on mural surface; and scratches on plaster and original painted surfaces. Only a few murals, mainly located above the window and door frames, were left untouched, portraying the original colours of the paintings. The mural colour scheme, design and painting methods are similar to that found in China.



The Old Macap Mosque was designed symmetrically with two-tier roof structures and a small domed roof

Building diagnosis report revealed that the wall murals of the Old Machap Mosque suffered over painting from past restoration works; broken plasters on mural surface; and scratches on painted surfaces. Several murals located above windows and door frames remained intact in their original colours. Conservation works of the mosque took place in 2009.

The conservation works involved removing old paint layers from the original pieces; identifying defective murals and demarcating them on scaled drawings; and determining weather conditions, humidity levels and UV-ray intensity at the site. The skilled workers removed the old paint layers meticulously using both dry and wet cleaning techniques. In the dry cleaning process, the workers used soft brush, wire brush and scraping tools; while in the wet cleaning technique, the workers used ethanol and trichloroethylene solutions for cleaning. Paper pulp technique was applied onto wall murals of high moisture content. All wall murals were finally protected with a synthetic resin coating of methacrylates (paraloid B 72). Due to lack of skilled building workers, experts from the National Art Gallery, Malaysia were engaged to document the conditions of the wall murals, and also to give advice on the cleaning techniques and remedial treatments. Each wall mural was tagged with a special code for documentation references and archival purposes.



The wet cleaning technique involved the application of cotton tips and chemical solutions to remove the new layers of paints



Views showing one of the wall murals at the Old Machap Mosque before (left) and after (right) conservation

6. Concluding Remarks

The three case studies of mosque conservation projects discussed in this paper have shown the important contributions of the local craftsmen and building workers in terms of their traditional building skills and long experience in the building industry. Most building conservation works require multidisciplinary feedbacks and contributions from diverse expertise including the local craftsmen. This input is necessary to establish authentic assessment and verification of heritage resources in parallel with the Nara Document on Authenticity (1994). Diverse inputs and interpretations by building experts provide reliable and validated evidence based on scholarly scientific methods.

The establishment of National Heritage Act 2005 is a milestone in the cause of protecting and safeguarding the country's tangible and intangible heritage resources. The Act has provisions to recognise prominent Malaysian figures as the Living Heritage Treasures. This is an honour dedicated to Malaysian men or women who acquire specialised skills in the intangible heritage of performing arts. However, the provision of the Act should be extended to acknowledge any Malaysians who possess outstanding traditional building skills and craftsmanship, particularly in the building industry, as the Living Heritage Treasures. Such recognition is important to ensure their mastery skills on building repair and maintenance could be passed on to the next generation.

An effective system of traditional building skills training and skills qualifications should be developed systematically within the public and private sectors. A pragmatic response to the issues of ongoing skills shortage is providing more access and incentives for building contractors, construction workers and interested persons to attend building skills training and re-training courses for re-tooling qualifications. Training courses could be held at historic sites so that trainees could learn first-hand about repairing a structure or building within a heritage site. Trainees should be exposed to the traditional methods and techniques for the conservation and repair of the heritage buildings using lime

plaster, stone, sand and timber to demonstrate the value and relevance of traditional building skills. It is clear that the overall vision of protecting and conserving Malaysia's heritage buildings could not be completely achieved without making sure that the building workers at all levels are equipped with the necessary knowledge, materials, skills as well as a positive attitude and outlook to retain and upkeep the legacy of the country's timeless built heritage.

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Safeguarding Traditional Painting Skills in Nepal

Kai Weise

Chairperson / Architect

Planners' Alliance for the Himalayan and Allied Regions - Nepal

Abstract

Most traditional buildings throughout Nepal will have used various colours of clay to give their houses a pleasing appearance. However there are several examples of very highly developed traditional forms of painting on buildings. This paper will introduce three such examples: *Mithila* Art, Buddhist wall paintings and *Malla* murals. *Mithila* Art might be considered a folk art which is transitional and the paintings are redone during important occasions. The Buddhist wall painting and the Malla murals are however highly developed forms of art with examples several centuries old still being preserved. The conservation efforts of these art forms are dependent on retaining or reintroducing craftsmanship which ensures the required quality to maintain the paintings. This has in some cases lead to the introduction of commercial enterprises to ensure the viability of such a trade.

Keywords:

Mithila Art, Mustang wall paintings, Malla murals, painting conservation, skill transmission

1. Introduction - Traditional Building Decoration in Nepal

Painting has always been an important component of architecture. Paints can have a protective function, but is generally associated with colours and ornamentation. In turn colours have a psychological impact and are used to create a certain atmosphere or might be linked to some symbolic meaning. Traditionally paints have been used in a sparing manner. Gazing across Nepal, there doesn't seem to be too many examples of extravagant use of paints. There are clearly two considerations that need to be made here: paints are expensive and when used as ornamentation, require a certain degree of craftsmanship.

Therefore most traditional buildings throughout the country will have used various colours of clay to give their houses a pleasing appearance. Earth in various hues of ochre to deep red is often mixed with cow dung to be applied regularly on the floors and lower portions of the wall to clean and strengthen them. The upper parts of the walls are often plastered with white clay. The application of lime wash is also used to safeguard from insects infestation. The application of these natural materials has more to do with functionality than aesthetics; though the aesthetics does motivate the continued application of these methods. For example in Upper Mustang religious buildings stand out painted in strips of red, ochre, gray and white. The external earthen surfaces of the monasteries are covered in a striking deep

red. The secular buildings are however only whitewashed, with a black band around the windows as a protection against evil spirits. The various colours of clay are available in the surrounding landscape. An additive which functions as an adhesive is required for the clay applied on wall surfaces. This can either be collagen derived from boiling animal bones and skin or then molasses and fibres from grain are used.

However there are several examples of very highly developed traditional forms of painting on buildings. This paper will introduce three such examples: *Mithila* Art, Buddhist wall paintings and Malla murals. *Mithila* Art might be considered more folk art which is not preserved however repainted during important occasions. The Buddhist wall painting and the Malla murals are however highly developed forms of art with examples that are several centuries old still being preserved. The conservation efforts of these art forms are dependent on retaining or reintroducing craftsmanship which ensures the required quality to maintain the paintings. This has in some cases lead to the introduction of commercial enterprises to ensure the viability of such a trade.

2. *Mithila* Art

2.1. Context

Mithila is an ancient region from the period of the great epics, which today straddles the border between Nepal and India. The capital of *Mithila* was Janakpur, home to Sita, the consort of Lord Rama of the great epic the Ramayana. This city in south-eastern Nepal is where the Janaki Temple is located: a site on the tentative list for World Heritage. The Maithili speaking people retained their ancient ritual practices over centuries. One of their unique forms of cultural expression was the tradition of the women to paint on the floor and the walls of their dwellings. Floor drawings or line drawings on the ground are known as Aripana and wall or mural paintings are known as *Mithila* art. These activities have been deeply rooted in the daily practices of all castes of women in the Maithili community. The paintings which are prepared to beautify the dwelling as well as for ritual purposes, are comprised of simple and colourful forms depicting the everyday life and the important occasions of the Maithili communities.

2.2. Motifs

The motifs of the paintings are closely linked to the daily lives as well as the traditional rituals of the community. For example the walls will be painted on special occasions such as births, sacred thread ceremonies, weddings and on religious festivals. Weddings are



Figure 1: Wedding of Rama and Sita. Image by Alessandra Campoli

important occasions and various motives would be painted on the walls of the bride's home often depicting the wedding party itself. The important annual festivals are for example *Deepawali* (the festival of lights), *Naag panchami* (festival of worshipping the god of snake) and

Durgasthami (the eighth day of the Goddess Durga festival). Accordingly decorative motifs, mythological scenes, images of snakes and Goddess *Durga* astride a tiger are painted on the walls.

Additionally motives that occur in daily life are presented in an abstract manner. Motives can be based on the images of birds and animals such as peacocks, tortoises, and scorpions. *Mithila* art can also depict the sun and moon or human figures that narrate stories. The motives are given special meaning. For example an elephant stands for good luck and a parrot for love and affection. A fish is a symbol of fertility, which is also shared by the lotus. The lotus however also symbolizes female beauty and represents the female sexual organs, while bamboo represents the male sexual organ. The parrot couple is meant to encourage the union of the bridegroom and bride. The motif of a female and male bird symbolizes the future destiny of the married couple (Misra 2003 and Praween 2008).

The floor paintings or *Aripans* are usually more diagrams for ritual purposes. The motives can be human and animals, flowers and plants, gods and goddesses or natural settings with mountains and rivers. Very designs can also represent *yantras*, cosmological diagrams of Tantra. Tantra is an esoteric belief system followed by both Hindus and Buddhist that originated in South Asia around the fifth century C.E.

2.3 Materials and Application

The Janakpur Handicraft Centre website provides interesting information on the materials and applications in *Mithila* art. The various bright colours used in *Maitili* art were derived from natural sources, such as from clay, leaves, petals, bark, roots and soot. Yellow is obtained from petals of flowers or turmeric while red is obtained from local clay. Black is generally obtained by lamp spot and white from powdered rice. Pink is obtained by drying the bark of the *peepal* tree (*Ficus religiosa*) and then boiling it in water. Blue is obtained by crushing wild blue berries, locally called *sikkar*. Dark green is made from the leaves of the Saim creepers. Parrot green is obtained from the sepals of the gulmohar tree (*Delonix regia*). Natural gum from the Babul tree (*Acacia nilotica*) is added to the pigments for durability. A light colour is obtained by mixing cow-dung and gum in fresh water. They also sometimes use watercolour mixed with rice powder and vermilion.

The wall or ground surface is usually prepared by smearing with clay or cow dung before drawing. The designs are then drawn using fingers. Generally brushes are not used and the colours are applied using a piece of raw cotton wrapped around one end of a twig, bamboo splint or matchstick. Special rituals are required for the preparation of the *Aripans* which represent purified spaces for rituals and domestic ceremonies. Cow dung is usually applied over the clean swept ground of the courtyard or room so that the ground is sanctified for the painting of the tantric *yantras*.

2.4 Issues on Restoration / Conservation

With the need to renew the earthen floors and walls, the illustrations needed to be regularly repainted. The paintings fade, are washed away or deteriorate with the walls. Therefore they might last only five to six years. That meant that the paintings themselves were not conserved. However the tradition of painting has continued along with the persistence of the *Mithila* culture. Painting on walls of buildings has however slowly become fashionable. Resorts such as Machan in the Chitwan National Park have decorated their huts with *Mithila* paintings.

The *Mithila* art has become widely known through the promotion of handicrafts and painting on traditional paper. It was in the 1990s that local handmade paper from the bark of the *lokta* shrubs was introduced. Today, the natural colours have often been replaced by acrylic paint which is applied using modern brushes. With the introduction of painting on paper, even the motives have slowly evolved. The symbolism and ritual meaning has become less important. The colourful images are also prepared on commercial goods such as cards, stationary, ceramics, clothes, bags, cushion covers, tapestry and even ashtrays. The expanding market has provided a definite income and much needed financial empowerment to the local women. However, the form of art and its deeply rooted traditions are changing. The motifs are changing as per the demand of the market. The rituals that go with the preparation of the art are being lost. Along with this, even male members of the community have begun to paint.

In general, this form of art is surviving especially since it has been able to adapt to the changing circumstances. That which has lasted over generations has been what girls have learnt watching the work of their mothers, grandmothers and other relatives and neighbours, while they draw and paint on the walls and floor of their homes (Misra 2003).

3. The Malla Murals of Kathmandu Valley

3.1 Context

The close link between the artists of the Kathmandu Valley and the sphere of Buddhist influence toward the north of Nepal is evident as early as the seventh century CE. Many celebrated Nepalese craftsmen were commissioned to produce works of art by rulers as far away as Beijing and possibly the caves at Dunhoung. It is said that King Srong-btsang sgam-po had the Nepali craftsman Khre-ba to have eleven images of *Avalokitesvara* made in the *Jokhang* in Lhasa. It is said that in 1262 Kublai Khan commissioned a Nepali architect A-ni-ko to design the Golden Pagoda in Tibet which then was followed by the White Pagoda in Beijing. However a very important influence for the region was the painting of *mandalas*. This was especially the case in the fifteenth century CE; Nepali artists from the Kathmandu Valley were taken to decorate the *Ngor* Monastery with exquisite wall paintings. Within the Kathmandu Valley we however do not find many examples of this legendary craftsmanship (Kramrich 1964: 43-44).

In the Kathmandu Valley one finds the most exquisitely decorated buildings of brick, wood, bronze and gold. This was one set of attributes which allowed for inscription on the List of World Heritage. “The cultural traditions of the multi-ethnic people who settled in this remote Himalayan valley over the past two millennia, referred to as the *Newars*, ... are manifested in the ornamentation of the buildings, the urban structure and often the surrounding natural environment, which are closely associated with legends, rituals and festivals. ... A high degree of ornamentation was achieved specific to each of the styles. This is especially the case with ornamental fired bricks, intricate carving of wooden elements and stucco ornamentation of the *Rana* style buildings. The use of stone and carved stone elements was limited to some temples. The correct interpretation and employment of these elements is an important aspect in respect to authenticity” (Department of Archaeology 2007: 4-8).

However in the Kathmandu Valley there are very few historical mural paintings remaining. The painting of intricate murals on the interior walls seems to have been a pursuit of some Malla kings. In the Malla palace complex in Bhaktapur we have a mural painting in the fifty-five window palace and in the Taleju Bhawani temple in Mul Chowk. In Patan there are remains of mural paintings in the Sundari Chowk section of the medieval palace. Even in the Hanuman Dhoka palace in Kathmandu there are supposedly mural paintings in some of the sections of the palace that are not open to the public.

When famed Chinese envoy Wang Hsüan-tse visited Nepal in the seventh century, he noted many architectural marvels and houses embellished with sculptures and paintings. (Kramrich 1964: 18) However there aren't any murals that have survived from this period. The earliest examples of Nepali painting that have survived are in the form of manuscript illustrations on palm leaves from the eleventh century CE. The *Paubha* painting on cloth most probably originated in the Kathmandu Valley and was later introduced to Tibet where it is known as a *Thangka*. The oldest preserved *Paubha* is of *Ratnasambhava* from the thirteenth century, today at the Los Angeles County Museum (Shakya 2011).



Figure 2: Mural with central figure of Lord Shiva Vishworupa, Fifty-five window palace, Bhaktapur

3.2 Motifs

The motifs of the murals found in the Kathmandu Valley are highly influenced by religious motives. These are supplemented with images of the rulers along with community activities. The palace in

Bhaktapur has one of the best examples of murals from the early eighteenth century. “Beside the architecture itself and the carved fifty five windows, the significant contribution of King Bhupatindra Malla is the 'tempera paintings' on the first floor walls of the palace. The tempera paintings represent a rare example depicting different *devis* (goddesses), along with dances, social life and culture of the people and the self-portrait of the king and the queen. The central figure of the painting is dedicated to Lord Shiva Vishworupa. This has been classified as one of the rarest paintings of Nepal” (Shrestha 2006: 2). These paintings are the depiction of different stories as narrated in the Hindu epics: *Ramayana* and *Mahabharat*.

“*Mandala* painting strictly does not lend itself to the creative experience of the artist. Where it does, it approximates the form of a *pata*, a painting of images. Although this, too, is guided by prescription so that it conforms to the original conception and to its religious significance, it demands from the artist identification with his work. He, who wants to paint an image, if he cannot be it, cannot paint it. Over and above its prescribed iconography, a *pata* may be great art. Mandalas painted in Nepal are less rigorously controlled in their organization than those painted in the Tibetan monasteries” (Kramrich 1964: 46). Such *patas* can be found in the Taleju Bhawani temple located in the Mul Chowk of the Bhaktapur palace.

3.3. Materials and Application

Painting in the Kathmandu Valley was carried out by the *Chitrakar* caste or guild. Like with many of such specialized guilds, the techniques of producing the materials and instruments and their application has been a tightly guarded trade secret. According to Dr. Rohit Ranjitkar of the Kathmandu Valley Preservation Trust, all this information is collected in books which are not published and on the cover there is written a curse to anyone who shows the book to the uninitiated.

“The murals, of which only a few instances are known, are executed mostly with water soluble ingredients, in tempera techniques, on a mud plastered base” (Banerjee 1980:162). The basic information that we do know is that water soluble vegetable and mineral pigments were used along with egg as a binding material. The Tempera technique is a fast-drying painting medium which is usually applied in numerous thin, semi- opaque or transparent layers. Though the colours might not seem very



Figure 3: Devi Bhairav, Taleju Bhavani Temple, Bhaktapur 17. C. Image from M. Singh

saturated, the paints are lasting and do not change over time. Today the traditional tempera paint has been replaced by poster paints with a gum binder.

The *Taleju Bhawani* temple in Bhaktapur displays exquisite examples of Malla period murals. “The method adopted in preparing the surface, drawing and colouring is, with slight variations, very similar to that adopted in the Ajanta caves at the beginning of the Christian era. The wall was first covered with two or three layers of slaked lime mixed with water and animal glue. The surface of the thickened and dried lime was then polished by rubbing it with a smooth substance. (Contrary to practice at Ajanta, in Nepal rice husk was not employed to increase the tenacity of the plaster.) The surface having been thus prepared, the figures were traced in black with soot from oil lamps, always beginning with the central figure as the nucleus around which the secondary scenes were then drawn. Paintings belonging to a later period also used black outlines, sometimes with Indian ink replacing the soot. The colours, mainly from mineral sources, were then filled in, prominent colours being red, yellow, vitriol green, carmine, indigo, lime white, and blue from lapis - lazuli” (Banerjee 1980: 214-5).

As with the materials, the Chitrakar or painters guild were given specific painting tasks within the community. For example they would be required to annual repaint various ritual and symbolic portions of temples and community buildings. This less intricate form of painting has continued in many places. The quality of these paintings is clearly of degenerated quality, though even this tradition seems to be dying out.

Dr. Ranjitkar, who is working on the restoration of the Sundari Chowk of the palace complex in Patan mentioned the ongoing discourse on the age of the painting which can be found on the carved wooden struts. The traditional construction materials in Newari architecture are not normally known to be painted. Stone, wood and burnt earthen bricks and tiles are left with their natural finish. Therefore the painting of wooden elements and even stone statues would have been a very recent development.

3.4. Issues on Restoration / Conservation

“Apart from the factor of moisture in the humidity affecting the colours, these have been affected by streaks of water running down the leaks in the roofs. Some of these are on the outer walls of temples, where they are subject to too much exposure to the sun’s rays and heat, rainfall and moisture. They are



Figure 4: Ratnasambhava 12. C. Newari Artist in Tibet Image from Bangdel and Huntington

also, particularly in the lower levels, easily accessible to the human hand and its evil affects. Besides, as animal sacrifice is an inescapable ritual in Nepal and the frenzy of the devotees leads to directing splashes of the blood spurting from the freshly cut up arteries of the sacrificed animals onto the painted deities. The problem of organic invasion and intrusion upon the murals is further accentuated” (Banerjee 1980: 162).

Restoration of the fifty-five window palace in Bhaktapur was complicated by the fact that the central load-bearing wall was covered with exquisite mural paintings. This meant that any reconstruction works such as the replacement or strengthening of structural elements could not be done in this section. Additionally the painting needed to be protected during the restoration period. Most of the palace was restored over a period spanning practically three decades and was completed in 2008. Restoration work on the murals was carried out by a team from the *Istituto Italiano per il Medio ed Estremo Oriente* (IsMEO) over numerous years. These delicate paintings might however not last too long if the current trend of allowing visitors is not controlled. The exquisite paintings on the Taleju Bhawani temple of the Mul Chowk are however in danger due to their restricted access and linkages to mysterious tantric rites and rituals.

During a survey carried out by a UNESCO team in 1995 on Sundari Chowk (part of the Royal Palace in Patan), some murals were discovered that had been covered by whitewash. The condition of these murals was however in precarious condition possibly even before they were painted over. It might have actually been the reason for covering up the murals, since there were no interest, resources and knowhow to preserve these. This further supports the theory that mural paint probably died out rather early due to their susceptibility to earthquakes.

There have also been major discussions on when the painting of stone and wooden elements and statues was introduced. This topic was raised in discussions with Dr. Rohit Ranjitkar. There are various temples and parts of the royal palaces of the Mallas where wooden elements, mainly struts have been painted in numerous colours. The general painting of wooden doors and windows was introduced in the Rana period in the late nineteenth century with the influence of European architecture. There is great probability that the painting of elements in the Malla style building was also introduced only after this influence of the Rana period took root. Even the huge stone statue of Kal Bhairab at Hanuman Dhoka was originally not painted.

Impact on conservation has also been due to the *Chitrakar* guild being a secretive society. Additionally the changes in their customs and rituals have had a major impact on the maintenance of various monuments. The regular painting of the protective deities in front of the Mul Chowk of the Patan palace has stopped over the past few years. Soon the images will disappear and the custom of having this painting will die out and be forgotten.

4. The Buddhist Wall Paintings: Case Upper Mustang

4.1. Context

One of the great traditions of wall paintings in the country would clearly be that of the Buddhist monasteries. The tradition has spread along the entire Himalayan range and continues to be practiced in the new monasteries that are being built. The wall paintings of the monasteries in Lo Manthang, Upper Mustang have come to highlight due to a restoration project that was launched over a decade ago. Lo Manthang has also been put on the tentative list for World Heritage and the State Party is in the process of nominating the property.

During the fourteenth and fifteenth centuries CE, Upper Mustang was an independent kingdom of Lo within the sphere of influence of the western states of Tibet. During this period, of the four major school of Tibetan Buddhism, (*Nyingma-pa*, *Sakya-pa*, *Kagyü-pa*, and *Geluk-pa*) the *Sakya-pa* school of Tibetan Buddhism was predominant. It was the *Sakya-pa* lama Ngorchen Kunga Zangpo who founded the great Ngor Monastery in Tibet in 1429 which then became the centre of cultural activities. The Ngor Monastery was famous for its mandala paintings, many done by Newari painters brought in from Kathmandu. Lo gained its wealth from the trade that flourished along the main route that wound along the Kali Gandaki River through the Himalayan range. The king was thus able to commission the building of two gompas or monasteries: *Thupchen* and *Jampa*. It was under the cultural influence of the *Ngor* style with the help of Newari craftsman from Kathmandu that these magnificent monasteries were built (Selter 2006: 25-29).

Ngor was completely destroyed during the Cultural Revolution, leaving the monasteries in Lo as sole remaining examples of this style from the Ngor period. Upper Mustang remained a restricted area for foreigners until 1992. There were a few adventurers and Tibetologists such as Giuseppe Tucci, who was allowed to visit Mustang in 1952, and reported on the state of the exquisite wall paintings.

“The great temple of Thugchen is on the verge of collapsing. ... The frescoes running round the walls are excellently done and of a good period; beneath them, in letters of gold, a long inscription explains their meaning and commemorates the king, the nobles who provided the illustrious work at their own expense, and the names of the artists. ... The other temple is dedicated to Chamba, Maitreya. It used to be two storeys high, but the upper storey is completely ruined and numerous



Figure 5; Mandala Wall Paintings in Jampa Gumpa, Lo Manthang. Image from E. Selter, UNESCO Kathmandu

cracks are splitting the lower chapel too. To the left of the entrance there are frescoes from the same period by the same artists as those in the preceding temple, portraying *Dorje Sempa*, *Metabarba*, the mandala of *Dorje Sempa* and to the right *Tigten Gompa*. The paintings are blackened, in some parts erased by the water dripping from the ceilings” (Tucci 1953: 62).

4.2 Motifs

Jampa gompa is covered with hundreds of mandalas over the entire wall surface of the three floors, linking the temple to the Ngor tradition. “*Mandalas* are visual supports of concentration and meditation, ritual aids on the way toward the Centre of the cosmos and self. Cosmos and self coincide in the image of the central and main divinity of the *mandala*. ... *Mandala* painting is an art applied to an instrument (*yantra*). It must be correctly made to fulfill its purpose, which is to serve as a chart or guide out of the chaos of the unconscious and the entanglements of the world. The execution of these instruments demands correctness and precision from the painter. *Mandala* painting strictly does not lend itself to the creative experience of the artist (Kramrich 1964: 44).

The murals were painted in *secco* technique on several preparatory layers on clay. Strict rules of iconometry govern the figure of a Buddha. Therefore to begin a painting, an iconometrically correct diagram must first be prepared. Since the images are to express religious concepts and to serve devotional and spiritual practice, they will only function and have the power if they are correctly drawn. The Buddha is said to have been of perfect proportions and the reproduction of these proportions are essential. The portrayal of the *mudras* or hand positions, the pose, the dress along with the colours must be correctly followed.

4.3. Issues on Restoration / Conservation

Due to the remoteness and isolation of Lo Manthang, the *gompas* and their murals were preserved. Due to the economic downfall of the kingdom, not even the custom of painting over the faded murals was undertaken. However the state of the main structure of the *gompas* were in a precarious state and leakages from the roof had allowed many parts of the murals to be damaged. In 1998 these *gompas* were put on the World Heritage Fund Watch List and a restoration project under the American Himalayan Foundation was started. The wall painting conservators for the American Himalayan Foundation were led by an Italian expert: Luigi Fieni. The main structures of the *gompas* were secured and the leaking roof of Thupchen



Figure 6: Repainted portions of Wall Paintings at Thupchen Gompa, Lo Manthang. Image from J. Sanday in SPACES

replaced using the traditional technique of round timbers, river stones, and local clay for waterproofing. The wall paintings were then cleaned of the soot that had accumulated from the burning of butter lamps. Detached parts of the plaster were secured using mud plaster and the paint was consolidated using chemical adhesives. More detailed information can be obtained on the following website: <http://www.luigifieni.com/>.

Numerous painters included locals who then took pride in their own heritage were trained through this project. This was done through the knowledge of masters in *thangka* painting. The painting skills have been well preserved through *thangka* painting, which has a much better commercial viability. However various new issues arose in respect to the usage of the *gompas*. The community was supposedly not satisfied with the conservation of the paintings and wanted the parts that were lost to be repainted. This was discouraged by the foreign specialists. Even though earlier attempts of poor quality repainting were found, it was possible to remove them. “In answer to the question of worshipping handicapped divinities noted scholars, of Tibetan art and the Italian conservators themselves agreed that it is best to outline the missing parts of the figures, depicting this new work by using a single colour and that a lacuna or “divide” should separate the new from the old” (Sanday 2011: 55). This method was however not followed and an attempt was made to actually recreate the lost portions of the paintings.

A further example of a much less extravagant project was the proposed restoration of monasteries in Rasuwa district. The UNESCO Office in Kathmandu was to support the Community Learning Centres (CLC) in Dhunche, Thulo Bharku and Syabrubesi. Since *Gompas* (Tibetan for “A solitary space”) are the centre of traditional community activities for the Tamangs, it was found necessary to help the communities with the restoration of their *Gompas*. Through the process of restoration of the *Gompas*, the communities would become aware of the importance of conserving their heritage, architecture and handicrafts. The walls needed to be secured, especially where cracks were found. The roof structures needed to be strengthened and traditional slate roofing fixed or reintroduced. The flooring in and around the *Gompa* needed to be improved or covered with flagstones or thick slate. The paintings on the internal walls need to be repaired and painted with traditional murals or preserved where possible (Piya and Weise 2003).

5. Transmitted to the next Generation

The transmission of traditional painting skills requires a holistic approach. This means that along with the actual skills in painting, it also requires the knowledge in preparing the paints and the necessary instruments. This is often linked to traditional rituals during all stages of such activities, which again is linked to the social context. Additionally, the motivation of the craftsman must also be taken into consideration. It could be that the motivation is purely religious; however economy and prestige often play an important role in ensuring the continued survival of a given trade.

The craftsmanship required for *Mithila* art is being preserved through the introduction of painting on

local paper that has become a commercial enterprise such as at the Janakpur Handicraft Centre. These paintings are not dependent on the specific religious or social event and can be painted anytime and anywhere. However, through the commercialization of this art form, certain changes have taken place which includes the material, the instruments, the motifs and the quality of the product. The painting on paper does not consider the rituals that are the basis for the creation of such art. Nevertheless, the art is flourishing and the continued use of this art-form on the buildings has already been reintroduced.

There are few historic murals remaining in the Kathmandu Valley. Possibly due to their susceptibility to destruction by earthquakes and other forms of impact, this form of art seems to have died out. Painting within the Newari community has been the occupation of the Chitrakar guild. They have however been very secretive and have not allowed for their trade secrets to be openly disseminated. In many cases, their guild has however not been able to continue carrying out their duties in maintaining the painting on monuments. Mural painting as such has totally died out.



Figure 7: Malla Murals at Sundari Chowk, Patan Durbar.
Image K. Weise

The skills of the Newari artists have been kept alive through the commercialized production of *thangkas*. Various schools for *thangka* painting have emerged which teach the correct iconography as well as the painting techniques. There are however many contemporary interpretations of motifs and varying quality of *thangkas* on the market. The skills seem to have survived and new generations of artists are being trained. These same artists have been utilized in the restoration of the Buddhist monasteries in Lo Manthang. The international restoration project also trained local artisans. The local philosophy of conserving the historic wall paintings however diverged drastically and lost portions of the paintings were recreated.

With these examples we see that a strategy can be developed to ensure the continued transmission of skills over generations. This would require awareness of the importance and need of painting. It would require the enabling of such transmission through the possibility of trainings and apprenticeships. It would also require the consideration of economic return and social prestige for those who choose to dedicate their lives to this discipline.

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Preserving the Painted Heritage of Sri Lanka

Jagath Weerasinghe

Professor

Postgraduate Institute of Archaeology

History of painted heritage of Sri Lanka goes as far back as to 2nd century BC. The earliest reference to painting is found in the ancient chronicle, *Mahavamsa*, compiled in the 6th century BC, where a drawing of a palace drawn in cinnabar on cloth is mentionedⁱ. The first reference to wall paintings is the description of *jataka* (stories of the previous births of the Buddha) in the relic chamber of the *Mahastupa* built by King *Dutugamunu*, 161-137 BC in Anuradhapuraⁱⁱ, the first capital of Sri Lanka. However, the earliest and best-preserved mural paintings of Sri Lanka are found at Sigiriya, which is a World Heritage site. These murals belong in the 5th century AD. The latest period of traditional Sri Lankan murals began in the late 19th century, which can be seen in the Buddhist temples in the coastal regions of Sri Lanka. These murals while preserving many thematic and stylistic features of the previous periods also constitute a pictorial idiom that can be best described as ‘post-traditional’ and ‘proto-modern’. In this essay I shall be presenting the history of Sri Lankan painted heritage, the history of conservation of this heritage and the current issues pertaining to the preservation of this heritage. **First part** of the essay will present the important mural sites and cycles in Sri Lanka and the **second part** of the essay will discuss the materials and techniques of these murals. The **third part** of the essay will present the history of conservation of painted heritage in Sri Lanka with special attention to a few restoration projects in which I have been involved with. The **fourth part**, which is the concluding section of the essay, will look into the current issues pertaining to the conservation of painted heritage of Sri Lanka while addressing the aspects pertaining to training of conservators, current methods and techniques of conservation, and managing mural conservation activities.

1. Painted heritage of Sri Lanka: a very brief history

History of painted heritage in Sri Lanka is presented in this essay following the periodization proposed by Senake Bandaranayake; Early Historical Period (EHP), Middle Historical Period (MHP), Late Historical Period 1 (LHP1), Late Historical Period 2 (LHP2), and Modern Transition Period (MTP)ⁱⁱⁱ.

Early and Middle Historical Periods (EHP and MHP) [250 BC to 1250 AD]

Early and Middle Historical periods are considered together since the murals of these two periods share so many stylistic and technical features. The best-preserved earliest painted heritage belonging in this period is found at the Sigiriya World Heritage Site. Sigiriya is an ancient rock-shelter monastery site, which later converted to a fortified palace and city in the 5th century AD by Kashyapa 1 (AD477-95). The central feature of this site is a massive rock. The western façade of the rock, which



The best-preserved earliest painted heritage belonging to the early and middle historical periods is found at the Sigiriya World Heritage site.

has a prepared rock-surface protected by drip-ledges, which has originally been plastered and decorated with painted celestial female figures. This must have been a gigantic mural painting, approximately measuring 140 meters long and 40 meters high. Currently there remains only a fragment of this gigantic mural in a depression on the western faced consisting about 22 celestial female figures, popularly known as ‘*apsaras*’ of Sigiriya.



After Sigiriya, the next most important and sufficiently well preserved murals are found at the *Tivamka* Image House, 12th century AD, in Polonnaruwa, belonging in the Middle Historical Period. The interior wall surfaces of the Image House have been decorated with murals of *Jataka* Stories and those of Buddha’s life. The built spaces of the Image house consist of an entrance, a vestibule, an *antrala* and the sanctum. The murals in the entrance and the vestibule present the *jataka* stoies, the *antrala*, the space that link the vestibule to the sanctum is adorned with the incident of gods inviting the Bodhisattva in heaven to be born in the world of humans, and the high walls of the sanctum are painted with scenes from Buddha’s life. The murals of *Tivamka* Image House

is of utmost art historical importance since, as Bandaranayake has argued illustrate the continuity of the Sri Lankan mural tradition from Early Historic Period to the Late Historical Period 2 of the 18th to early 19th centuries.

Late Historical Period Murals (LHP1 and LHP2) [1250AD to 1800 AD]

Evidence for murals for the period that immediately followed the MHP is scant. The MHP is popularly known as the Polonnaruwa Period, named after the Kingdom of Polonnaruwa that came into prominence after the fall of the Kingdom of Anuradhapura towards the beginning of the 11th century AD. After Polonnaruwa, in the 13th century, the main centers of political and cultural activity shifts from dry zone plains of the north-central and eastern regions to the wet lowlands of the southwest and the central highlands of the island. Painted heritage in the form of murals are rare between the late 13th and the mid-18th centuries. However the painted manuscript boards and some traces of old murals present a glimpse of the painting activities of this period. In the mid-18th century one can see a resurgence of murals activities with the coming of the Kadyan Kingdom in the central hills of Sri Lanka.

The largest portion of Sri Lankan painted heritage is composed of traditional wall paintings found in Buddhist temples that came up with the great surge of religious and cultural activity that came about during the reign of Kirti Sri Rajasinha, 1747-81, and his successor, Rajadhi Rajasinha, 1782-98. Construction of new temples as well as the restoration of older ones took place during this time. The murals of this surge are popularly known as the Kandyan school of art, named after the ancient city of Kandy, the last kingdom of Sri Lanka.



Modern Transition Period (MTP)

Murals belonging to this period are mostly found in the southern and western coastal regions of the country. These were the areas that were under the influence and control of Portuguese, Dutch and the English in the 16th, 17th and the 18th centuries respectively. Stylistically these murals share many features with the Kandyan style but present much more



densely decorated pictorial compositions that have incorporated elements of everyday-life under the colonial influence. This articulation of the Sri Lankan mural tradition is popularly known as the Southern style. By the end of the 19th century, there emerged a Buddhist mural style that seems more departed, in terms of style, from the traditional aspects, nevertheless rooted more or less in the same themes and in the imagination of a religious world. Murals of this tradition are abundant with motifs taken from European art and the popular theater that came from India. Stylistically this was a highly hybrid expression of artistic styles, and thematically both a traditional and a modern one. I have termed these murals as ‘proto-modern’.

2. Materials and techniques of Sri Lankan painted heritage

The Sri Lankan mural painting technique has always been the ‘secco’ technique; the technique of painting on dry plaster with pigments mixed in a binding medium. However, in terms of use of paint material one can suggest three broad technical phases. The first being ‘inorganic material phase’, the second being the organic and inorganic material phase’ and thirdly the ‘oil paint phase’.

Materials and techniques of Early Historical Period (EHP) [250 BC to 1100 AD]

The murals that are now extant of this period are to be found in the most durable support, rock surfaces, which served as the walls and ceilings of shrines and buildings. The surface of the rock support was artificially roughened to give key to the adherence of the first layer of ground, which was made of clay, sand, a vegetable binding medium consisting of a plant gum and drying oil and vegetable fibers. Over the course of this period one can see that ground for murals are made with a clay-lime-sand mixture. The paint-receiving layer consisted of a thin application of fine lime^{iv}. It’s important to note here that the paint-receiving layer of Hindagala, a site belonging in this period but located in the Kandyan region shows the presence of clay instead of lime in the paint receiving layer. This technique is best illustrated at the Sigiriya murals. However, it has been recorded that in certain cases the binding medium had been only a plant gum. The pigments commonly used were lime for white, red ochre, yellow ochre, green *terre verte* and carbon black. The rare blue pigment *lapis lazuli* has also been found in Sigiriya murals.

Materials and techniques of Middle Historical Period (MHP) [1100 to 1250AD]

There is no significant difference in materials and techniques of mural painting of this period from the previous one, except that murals of this period are found not only on rock support but also on masonry walls. The pigments used are not different from the previous period, but the blue pigment *lapis lazuli* is absent. As in the previous period the binding medium had been an emulsion made with a plant gum and a drying oil and in certain cases only a plant gum.

Materials and techniques of the Late Historical Period 1 and 2

Materials and techniques of Sri Lankan murals begin to change with this period. However, we can still find at a place like Gadaladeniya, in the vicinity of Kandy, retaining the lime-clay-sand ground, which has been used since the EHP. The paint-receiving layer from this period onward is a white clay layer, a

special clay variety found in the Kandyan regions. The binding medium in the ground continues to be an emulsion of a plant gum and a drying oil and the binding medium in the paint layer is only a plant gum. Pigments used in this period are both inorganic and organic.

Materials and techniques of the transition period

The mural painting technique of this period, as one can imagine becomes a practice mixed with various traditions. Ground making technique of the previous period is continued as well as changing it by making the ground with only lime and sand, as can be found in some sites in Sabaragamuwa region, an area that lie between the Kandyan hills and the western and southern littoral regions. The paint used is a lacquer-paint, which was commercially available at that time.

3. History of preservation of Sri Lankan painted heritage

Sri Lanka has over a hundred years of experience in monuments conservation. Since the inception of the Department of Archaeology in the late 19th century, restoration and conservation of architectural remains was constituted as one of the main objectives of the Department.

Modern interests in the study of materials and techniques of the historic and traditional paintings of Sri Lanka can be traced at least to the early 19th century. The first scientific examination of the pigments and techniques of Sri Lankan paintings was published by John Davy in his *Account of Ceylon* (1821:186-88). Sir James Emerson Tenenet (1859) also made some brief observations on fine arts in Sri Lanka including painting. Some sixteen years later, the Orientalist scholar, Rhys Davids (1875:209-11) appended to his description of Sigiriya a long report on traditional painting techniques gathered from an interview with a practicing artist craftsman. The first systematic collection of information on the materials and techniques of Sri Lankan mural paintings was that of Ananda Coomaraswamy in his classic monograph *Medieval Sinhalese Art* (1908). Raja de Silva carried out the first scientific study on the techniques and materials of Sri Lankan murals for his doctoral dissertation at the University of Oxford entitled 'The evolution of the technique of Sinhalese wall paintings' (unpublished) in 1962. D.B. Nandadeva's doctoral theses submitted to the University of Delaware (2000), USA can be considered as the next serious scientific examination on the materials and techniques of Sri Lankan mural paintings.

Department of Archaeology, Sri Lanka

Conservation of mural paintings was formally incorporated into the Department only in the 1950's. The mural painting conservation section of the Department was formed adopting the principals and methods of conservation and conservation management practiced by the Indian Archaeological Survey. Khan Bhadur Sana Ullah, who was an Archaeological Chemist at the Archaeological Survey of India made two visits to Sri Lanka in 1943 and 1947 and worked at several mural sites in Sri Lanka, such as Sigiriya, and Hindagala Temple in Kandy (de Silva 1990:19). On the guidelines proposed by Sanna Ullah, the Departemnt of Archaeology (then the Archaeological Survey of Ceylon) established a 'Conservation Unit' in 1951 to conserve and study the murals and other polychrome objects and

artifacts found in the Island (de Silva 1969).

Conservation interventions carried out in hundreds of mural sites by the Archaeological Department has ensured the survival of many mural sites in the country. However, it can be suggested that these interventions have not been accompanied with appropriate conservation methodologies. For instance systematic documentation processes have been often neglected and the treatment techniques have not been sufficiently tested and the materials used have not been critically considered. Nevertheless, the reattaching of the collapsed fragments of the relic chamber murals of Mahiyangana and those of Mihintale and the cleaning of the Sigiriya murals after they were vandalized in 1967 can be regarded as the high-points of the Department's 'Conservation Unit'.

The management and organization of the 'Conservation Unit' of the Archaeological Department was modeled after the Archaeological Survey of India. As such the conservation section of the Department was considered as a part of the scientific or laboratory division of the Department and a conservator was considered as a specialist in chemistry who managed a team of skilled or unskilled laborers in the field, who cleaned and consolidated mural paintings with the 'chemicals' approved by the Chief Chemist. Conservation of murals and artifacts was considered as a field in the domain of chemistry, not as a field in its own right. It was 'chemical conservation', whatever this means, that the 'Conservation Unit' attempted to do! Unfortunately this extremely outdated approach to the conservation of murals and to murals conservators can still be seen in practice in the Archaeological Department of Sri Lanka (and also in India?).

Central Cultural Fund (CCF) and the international support

A different approach to the conservation of mural paintings, an approach that considered mural painting conservation as a profession of its own right was introduced to Sri Lankan archaeology in the early 1980s by the conservators of the Central Cultural Fund's (CCF) UNESCO – Sri Lanka Cultural Triangle Program.

This Program consists of five large archaeological projects that received funding support from UNESCO, and the World Food Program, in the 1980s and 90s, and as well as from the Government of Sri Lanka. Several academic and scientific institutions of international repute were also involved in this Program. In 1983 the UNESCO-Sri Lanka Cultural Triangle Program started a mural conservation program and recruited ten trainees in Mural Conservation. The Trainees in Mural Conservation were first trained at Dambulla Golden Rock Temple under Dr. Raja de Silva. Mural painting conservation activities of the Cultural Triangle Program received much support from several international institutes and individuals. Garry Thompson, The Scientific Advisor to the National Gallery, London visited the Cultural Triangle sites in 1984 and advised on issues pertaining to painting conservation, especially on lighting and humidity control. The Institute of Archaeology, University of London sent two of its young graduates, Ms. Gill Julleff and Ms. Annie Mc Clain to undertake artifact conservation in Sri Lanka in the mid 1980s. Ms. Julleff played a very important role in developing the conservation

program and training of conservators in Sri Lanka. International Center for the Scientific Study of Cultural Property (ICCROM) in Rome supported the mural painting conservation program by training Sri Lankan conservators in Rome, and also by sending two ICCROM training missions to Sri Lanka that involved many important Mural Painting conservators such as Paul Schwartzbaum, Elizabeth Hollford, and Werner Schmidt. These international inputs to Sri Lankan murals conservation practice did definitely play an important role in the making of mural conservators in Sri Lanka. If it were not for this long period of training in the field, with international experts, Sri Lankan mural painting conservators wouldn't have reached the high level of proficiency in the discipline that enabled them to successfully cope with a problem as difficult as the conservation of the bomb damage murals of the Tooth Relic Temple.

The late 1980's was a crucial period in the development of new ethos in the conservation of cultural property, especially in relation to mural and artifacts. During this time the CCF's conservation team, the Directors of Archaeology and Conservation and the CCF's Laboratory Steering Committee seriously engaged in critical and constructive discussions on various issues pertaining to the profession of mural painting conservation. Those numerous discussions and debates finally culminated in accepting three main principles by the CCF's management.

1. Conservation of murals is a profession in its own right with its own professional ethic and regulations with inseparable links to other professions that intervene with ancient buildings.
2. 'A conservator is a conservator', he or she is not an artist, a chemist or an art historian but a person specially trained to intervene with mural paintings and who has a flexible and pragmatic approach based on aesthetics, cultural and material consciousness of the cultural property concerned.
3. Any conservation program irrespective of its scale should be accompanied with a systematic documentation program that records before, during and after conservation procedures and situations.

As the culmination of this long process in institutionally understanding the importance and the specific aspects of a profession, the CCF made history in the field of mural and artifact conservation in South Asia in 1991 by creating a new category of positions titled murals/ artifact conservator. This was an important achievement in the context of Sri Lankan archaeology, which had treated conservation of murals and artifacts as part of a Chemist's work.

In 1986, the Postgraduate Institute of Archaeology, University of Kelaniya with the support of the UNESCO-Sri Lanka Cultural Triangle Program began a training program in the conservation of cultural property: 'Certificate Course in the Conservation of Cultural Property' with murals and artifact options. The entire conservation team of the CCF has gone through this training program. CCF also developed a system to employ most of the trainees of this program as 'Freelance Conservators' in the Cultural Triangle projects, a scheme that worked successfully for over 10 years. By 1992 the CCF murals conservators could develop a comprehensive management system and a complete conservation intervention methodology with a versatile documentation system that is informed by social and

cultural aspects of the Sri Lankan context in relation to mural conservation.

Traditional practices and the conservation training



This is the last member of the famous artist family hailing from the Kandyan period, Mr. Jeevan Naide, whose service was acquired for training murals conservators at the CCF. He passed away a few years ago.

It is a compulsory part of the training of conservators that they undertake practical works in preparing and using traditionally used materials and techniques in mural painting. The emphasis of this section of the curriculum is not only on Sri Lankan methods but also of Indian traditional mural techniques. The trainee mural conservators are also taught with the technical, chemical, and physical aspects governing the behavior of traditional materials used in mural paintings. This has enabled them to take intelligent decisions regarding the use of traditional materials. It has been proven that traditional techniques in the preparation of grounds and plasters are useful and work well in conserving and restoring murals but the use of traditional materials and techniques for the restoration of paint-layers is not efficient and long lasting.

The CCF murals conservation activities are currently carried out in various parts of the country. The major conservation projects that it handled in the past include the conservation of murals of the Dambulla Golden Rock temple, conservation and restoration of the bomb damaged murals of the sacred Tooth Relic Temple in Kandy, and the murals of Sigiriya. All these three sites are World Heritage Sites.

4. Current status and issues on conservation of painted heritage

Conservation of murals in Sri Lanka is currently carried out by the conservators of the Central Cultural Fund and the persons attached to the Laboratory section of the Department of Archaeology. The CCF conservation activities are managed and supervised by two Assistant Directors, who work as consultants. Their contribution is both at policy and method development levels as well as at direct supervision of the activities along with the Head Murals Conservator of the CCF. The practice of

assigning mural conservation projects to experienced and trained individuals is also done, but only in very rare occasions.

One of the main problems that threaten the preservation of ancient murals in Sri Lanka is the attempts by devotees and traditional custodians to repair and re-paint ancient Buddhist temples with new murals. This situation has become rather increased in the recent times with a certain increase in wealth amongst village folks who have relatives working abroad, in the Middle East, Europe and South East Asia. This situation has become a common problem in managing heritage in Sri Lanka. This problem is somewhat managed by continued discussions with the traditional custodians, who are at times extremely amicable to the need for preserving ancient murals without repainting. I have been involved with programs that addressed this problem of heritage management through art projects that involved children and natural village-leaders.

Procedures and materials used

Certain basic procedures pertaining to murals conservation, such as ‘pre-, during-, and post-intervention documentation; using of only analytical grade chemicals, using of traditional materials for renderings, grouts, and plasters, preparation of preliminary investigation reports, are generally practiced by both the CCF and the Department of Archaeology murals conservators, but at varying degree and scale. These procedures are, however, mandatory for CCF murals conservators who are under my supervision. One of the mostly used traditional materials in murals conservation in Sri Lanka is anthill clay. Finely ground anthill clay seems to work well for grouting and fillings. Use of traditional binding media is not popular amongst conservators. This is because the preparation of them is time consuming; therefore the widely used binding medium is either Parloid B72 or PVA solution.

Service of the traditional crafts persons in conserving murals is encouraged but is not usually practiced since the traditional crafts people of mural painting is almost non-existent now. However, the knowledge in traditional techniques is imparted to conservators as part of their training.

In concluding this essay, I’d like to mention that, in general the profession of murals conservation has developed by many folds over the past 25 years. But, there still remains a gap in researching murals conservation methods, techniques and materials used. The reason for this is that there is no laboratory dedicated for cultural material analysis in the country as yet. But the Postgraduate Institute of Archaeology has taken the initial steps to establish such a center with an initial funding of Rs.16M received from the University Grants Commission of Sri Lanka. This center will be in operation from 2013, which means in about two months from now. In addition to this, a comprehensive program in awareness enhancement amongst the traditional custodians and the lay-devotee groups at village level is also of immediate need. The Heritage Program of the Postgraduate Institute of Archaeology with the assistance of the Central Cultural Fund and the Department of Archaeology are currently engaged in developing a scheme to address this situation.

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- ⁱ Geiger, W. 1908. Ed. *Mahawamsa*, Oxford University Press, London. Chapter xxvii, v.18
- ⁱⁱ Geiger, W. 1908. Ed. *Mahawamsa*, Oxford University Press, London. Chapter xxv, v.18 and 96.
- ⁱⁱⁱ Bandaranayake, Senake 1986. *Rock and Wall Paintings of Sri Lanka*. Lakehouse, Colombo
- ^{iv} De Silva, R.H. 1962. The evolution of the technique of Sinhalese wall paintings: a study employing museum laboratory techniques. D.Phil thesis, University of Oxford.



Report on the Restoration of Interior Decoration of Khai Tuong Pavilion, An Dinh Palace Hue City, Vietnam

Lê Phước Tân
Technical Staff
Technical Department
Hue Monuments Conservation Center

Introduction

Hue city is in the central part of Vietnam, it used to be the capital and the centre of economics, politics and culture of Dang Trong (in the period of 17th and 18th century) and under the Nguyen dynasty (1802-1945), the last feudal dynasty of Vietnam. With that long history, Hue inherited relics of high value on culture, art and architecture with systems of fortresses, palaces, mausoleums... The relics are not only a worthless property of Vietnam but also the cultural heritage of humanity recognized by UNESCO on 11 December, 1993.

Besides the historical and cultural values, the royal monuments, Hue is also famous for outstanding values on artistic decoration, especially the wall paintings. The typical work of wall paintings in Hue royal architecture in the early 20th century was An Dinh Palace. In this palace, apart from the decorative details on the ceiling and walls, there are also six other wall paintings in the main hall, all of which were made by Vietnamese talented artists in the early 20th century with traditional color techniques and oil painting techniques drawn directly on lime mortar material.

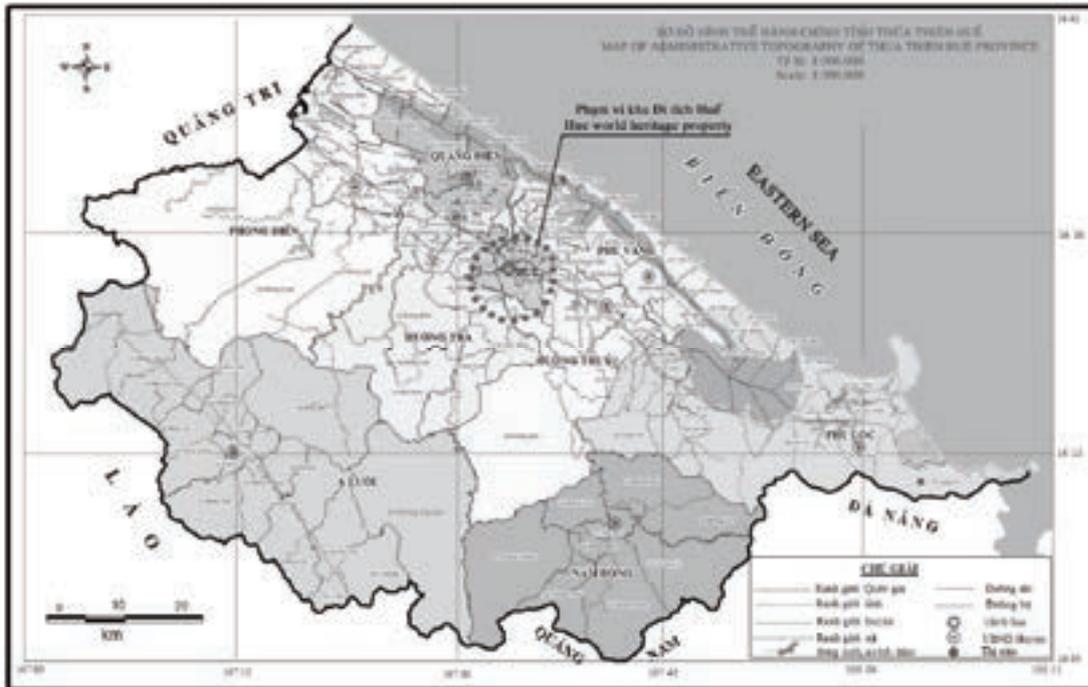


Map of Viet Nam

A. An Introduction To An Dinh Palace And The Conservation And Restoration Of An Dinh Palace Interior Decoration

I. An Dinh Palace

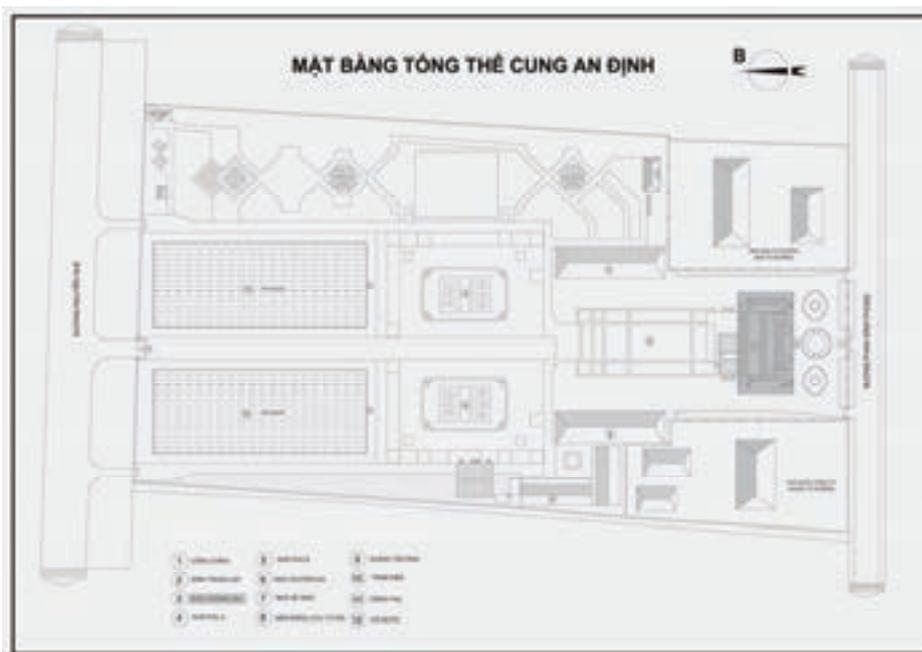
An Dinh Palace, together with other monuments of the Complex of Hue monuments, was recognized as the World Cultural Heritage of Humanity by UNESCO on 11 December, 1993.



Thua Thien Hue Province map

1. History of the Palace

An Dinh Palace was built during 1917 -1919 with the area of about 3ha and located in the South of Hue city. An Dinh Palace consists of 10 subordinate constructions which are systematically arranged according to North-South axis.



The overall design of the An Dinh Palace

In 1916 the French colonial government installed Khai Dinh on the throne, the twelfth and penultimate emperor of the Nguyen dynasty (1802-1945). Khai Dinh lived in the illusory world of the imperial court, playing the role of puppet ruler more perfectly than any of his predecessors. His passion was architecture in general and French Baroque in particular. Of the many buildings he created, only the An Dinh Palace and his mausoleum have survived. Khai Dinh's materials of choice for the former were European: it was built with bricks, iron, steel and cement. He also modified traditional Vietnamese interior design: patterned wallpapers, ornamental stucco and wall paintings had now to incorporate Western motifs.

Soon after coming to throne, he dedicated the palace to his son Bao Dai, who became Vietnam's final emperor when Khai Dinh died in 1925. After the Vietnamese liberation movement under Ho Chi Minh had forced his abdication, Bao Dai moved with his mother Tu Cung, his wife and his children into the An Dinh Palace. When the Indochina War was over, he settled permanently in Paris. An Dinh Palace was controlled by the contemporary government of South Vietnam until the reunification of country in 1975. The Palace's function had been changed many times and finally, it was included in the complex of Hue monuments managed by Hue Monuments Conservation Center.

2. Characteristics of arts and the decorative themes

In the early years of the 20th century, the neoclassic in European architecture, especially the French architecture penetrated into Vietnam and strongly influenced the architecture and art in Vietnam. And one of the typical works of this style is An Dinh Palace. An Dinh Palace is an intercultural masterpiece and is the combination between the West and the East in many aspects. It is one of the special works of art of Hue architecture in particular and in Vietnam architecture in general. With the effort of French architects in corporation with Vietnamese artists and traditional artisans, the interior and exterior decoration of An Dinh Palace is the peak of the combination between wall painting style and decorative relievos.



Wall paintings inside Khai Tuong Pavilion

Especially, the European materials and decoration models have shown skillfully in combination with the traditional decoration themes denoting a very high aesthetic effectiveness for the palace. We can also see a very unique combination of the constructive technique between the European reinforced concrete, steel truss form and the Vietnamese art configurations made from pasted traditional ceramic and porcelained chips; which contribute to make up a very typical and unique An Dinh Palace. The decorative themes in the interior space of the palace include floral decoration and European decorative motifs in combination with Hue traditional decoration themes. Particularly, the main hall is decorated with six large wall paintings depicting the mausoleums of six Nguyen emperors, with the central perspective descriptive technique of painting in Europe, a very strange technique to the Vietnamese in the early years of the 20th century.

3. Materials in use

Although the main composition of this work was reinforced concrete, a rather new composition to Vietnamese people in the early years of the 20th century, the interior walls and ceilings of the palace were covered by lime mortar, a very traditional mortar of Vietnamese people which is mainly composed from sand, lime, molasses and some other botanic additives. The majority of the walls in the palace were covered by **barnacle lime**, a popular type of lime used in many buildings in the Central of Vietnam. The decorative details of the palace were painted by European oil paint and traditional Vietnamese pigments.

4. An Dinh Palace after the collapse of Nguyen Dynasty (1945).

After nearly 100 years of existing with the time, the harsh weather of the Central as well as the juggernaut of the Vietnam war, An Dinh Palace was badly damaged. Particularly, with the impact of the Vietnam war during the years of 1945-1975, Cuu Tu Dai Theatre, a royal theatre in the complex of An Dinh Palace, totally collapsed; and many other exterior items were also damaged which made An Dinh Palace an abandoned place for a long time. After the year 1975, some governmental authorities took over to work or even to live here. Due



Khai Tuong Pavilion-Documentary photo

to the tight financial condition, the restoration and maintenance of An Dinh Palace were not paid attention. Therefore, the quality of the palace was seriously deteriorated. Moreover, due to the high moisture in the atmosphere, one of the typical features of Thua Thien Hue climate, the mould species incorporated the time has destroyed some structure which influenced the surface of the

interior decoration in the Palace.

5. The situation of the palace before restoration

There are 3,610 m² of paintings and decorative details on the walls and the ceiling of the third floor in the palace which are in the following condition:

- The majority of the walls were covered by a layer of coats of monochrome paint
- Many parts of the paintings were lost and discolored
- In some place, the lime mortar layers were destroyed and peeled off because the iron girders were corroded by natural factors.
- The decorative details on the walls and the ceiling were peeled off, dulled or painted over
- The interior structure of the palace was changed.



Decorative details covered by the lime mortar layers



Decayed decorative detail

II. The Process of Restoration and Conservation

With the purpose of restoring and refurbishing as well as promoting the value of An Dinh monument, an incorporate project between Hue Monuments Conservation Centre and the German Leibniz Beklin Cultural Exchange Organization was carried out to safeguard the architectural, artistic and cultural value of the An Dinh Palace. The focus was on researching and preserving the interior decoration of Khai Tuong pavilion, the theory and practice training about ways and techniques of wall painting restoration and conservation for Vietnamese restorers. Firstly, the main point is to find ways to conserve the patterns of wall paintings and interior decorated details which have been in partly or totally damaged condition and give back its original look. Through the process of researching and conserving the interior decoration of the palace, the on-site training and the transfer of conservation and restoration technology according to international standard for Vietnamese experts have been parallel carried out.

The process of restoration and conservation

Under the guidance of Cultural Heritage laws and other legal documents of Socialist Republic of Vietnam government as well as the international charters about conservation, restoration, refurbishment and use of historic monuments, the restoration and conservation of An Dinh Palace decoration was based on the following principles:

- Respecting the long-term accumulated experiences in monuments restoration, the knowledge about traditional architecture as well as using the traditional materials that were used to build the palace in order to preserve the original architectural and artistic value of the monument.
- Maximum use of the traditional restoration and refurbishment methods and techniques. If these ones show their shortcomings, other modern techniques can be applied. But it is necessary that these techniques have to be completely appropriate with the work of conservation and restoration.
- Necessary possible effort in conservation should be made in order to limit and eliminate the short-term and long-term bad impact on the monument for protecting the monument from further deterioration and damage, especially the dominant, unique and original values.

We have incorporated with German specialists, those who have experience and skills coming from Posdan city, to restore the interior decoration of Khai Tuong Pavilion (An Dinh Palace) following this procedure:

- Investigating the overall structure of the palace, paintings and decorative patterns in order to make up the restoration and conservation concept and procedure scientifically. The specimens have been analyzed in a specialized laboratory in Germany to determine their compositions so as to determine the fabrication techniques of the paint layers, the chemical elements of the pigments and the solvent used. From those analyzed results, the restoration and conservation were carried out.
- After surveying many positions in the palace, we have carried out to demolish the recently-built walls and restore the windows which were bricked up.

The restoration of the artwork on the walls and ceilings

After investigating decorative details on the ceiling, the arch and the walls, we have found the original artwork which was in different levels of damage under the paint layers. We determined the fragments needed restoring and then removed the unnecessary painted surfaces to maintain the restoring layers for the whole ceiling and walls of Khai Tuong Pavilion- An Dinh Palace.

In order to conserve the original interior decorative details of the pavilion, first of all, we took photographs all the details shown after removing the painted surfaces, and made the conservation plan for the decayed ceiling panels with decorative details which were peeled off, consolidated the eroded steel truss by cleansing the corroded parts and renewing in order to conserve the original decorative details of the work in the best way.



Consolidating the eroded steel truss



Restored decorative details

Next, we determined the material and the colors of the details in order to restore. The *rignatino* technique, an Italian restoration method developed in the middle of the 20th century, was used to restore the badly damaged part of the artwork.



Restoring the decorative details on the walls



Restored decorative details on the walls

We tested the colors on the sample lime mortar and observed the penetration of the colors on that specimen, then we carried out to restore directly on the original patterns. This method has proven to be the optimal one in restoring the artwork on the walls. Short, fine, usually vertical lines are superposed in alternatively warm and cool tones. With this technique, the restored part is in harmony with the original colored layers and the restoration is seen clearly.

Wall paintings restoration

The interior of the hall in Khai Tuong pavilion was decorated with 6 wall paintings drawn directly on the walls by oil paints, with the measurement of 1.40 m x 1.80 m. According to a variety of sources, these pictures were painted by Luong Quang Duyet artist (a mandarin in Thanh Thai time) in 1917. These paintings have finely carved frames and endowed with an opulent gilt timber architrave. All these six paintings depict the mausoleums of six Nguyen emperors. After a very long time, there were some cracks and color changes on the surfaces of these paintings, some parts were already lost, the frames were seriously damaged.



Existing situation of the wall paintings before restoration



Wall paintings after restoration

With appropriate techniques that guarantee the work of conservation, we have eliminated the stains on the surfaces of the paintings so that the original paint was seen. Besides, the damaged parts on the six paintings were also restored with pointillism technique. This technique guarantees that the restoration looks similar to but still remains distinguishable from the original artifact. After three years of working, the restoration and conservation of the interior decoration in Khai Tuong Pavilion were successfully completed by the enthusiastic and dedicated German and Vietnamese specialists as well as the members of Hue Monuments Conservation Centre.

B. Related Issues

The results of the conservation and restoration of the interior decoration in An Dinh Palace have confirmed the necessity of the balance between the traditional and modern skills in conserving the paint colors. Through the research of traditional materials, the pre-eminent features of the paint color which mainly consist of barnacle lime and ocher color were determined. The traditional production technology of the two major materials is still handed down in the local area. In addition to the advantages, these materials also show some shortcomings such as: low durability and easily influenced by natural factors. Due to these discoveries, the ancient craftsmen have skillfully combined the traditional materials (produced manually) with different types of paints (originally from Europe, produced by industrial line) when decorating the interior of An Dinh Palace. For large wall patterns, they used the traditional lime mortar, which was cheap and easy to use, as a base. For the decorative details, the oil paints, which had pre-eminent durability, cheerful colors and were easy to mix; were used. These oil paints in An Dinh Palace still remained their basic features in Hue five- color palette, which were basically popular in Vietnam. From these valuable experiences, the reintegration of the interior artwork of An Dinh Palace was carried out on the basis of the combination between the traditional skills and the modern ones. The traditional skills of colored plaster production and methods of drawing traditional patterns were analyzed and skillfully used by the specialists and craftsmen. Modern materials such as oil paints, Acrylic color, and some other modern chemicals for cleansing process were scientifically used in order to preserve and restore the artwork; but also maintain the true accuracy of materials, lines and colors of the interior decoration of An Dinh Palace.

One extremely important purpose of the An Dinh Palace interior decoration restoration project is to conserve and hand down to posterity the skills of processing and using colored plaster in decorating the interior with traditional patterns. During the restoration procedure, groups of young trainees from

schools of art, construction units.... have eagerly joined the training course. With the knowledge gained at schools as well as the guidance of the experts, they have realized the values of materials, the sophistication of traditional techniques in reality use at the construction site. After they have completed the restoration and conservation of the An Dinh Palace, they are proud to have contributed to preserve and convey the message of the past for future generations so that they know the value of the cultural heritage of humanity in a genuine way. This has attracted many tourists to visit and enjoy the Palace. The mass media were also interested in this process and provide domestic and foreign readers with issues related to the value of the heritage as well as popularize the basic restoration techniques. This has appealed to young generation, those who are indifferent to traditional cultural values. They have paid more attention to traditional skills, and are interested in experiencing their learning in related work. In reality, experiences in preserving paint colors and decorative patterns at An Dinh Palace were applied in the restoration of Buu Thanh Gate (at Tu Duc mausoleum), Toi Linh Temple (The Forbidden City- Hue) by young restorers at Hue Monuments Conservation Centre. These successes have helped to get back the inherent values of Hue cultural heritage as well as the world cultural heritage.



“Lai Rod Num” on Traditional Building in Thailand

Jeetheng Piyakarn

Senior Conservation Architect

The Fine Arts Department, Ministry of Culture, Thailand.

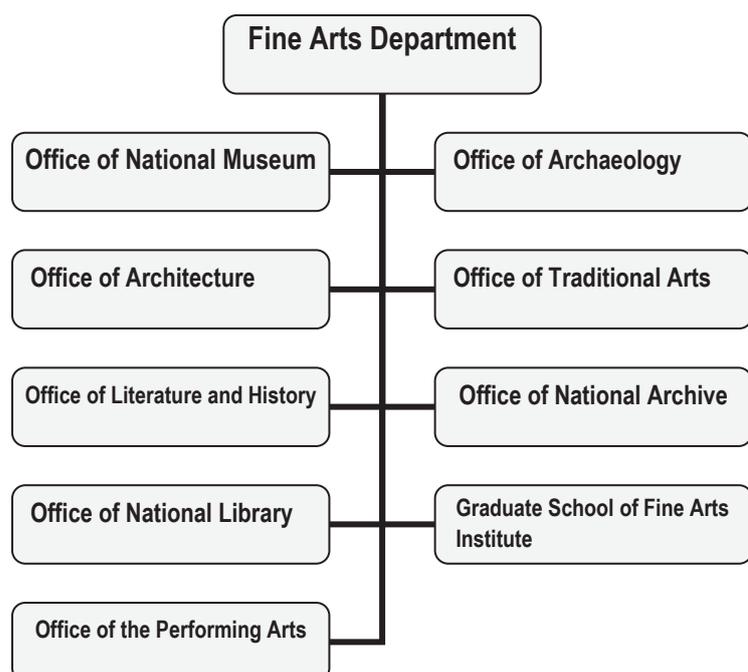
The Fine Arts Department

Thailand has an ancestry dating back over 1,000 years of history, over and above its oral tradition of great antiquity. The many diverse forms of its arts and culture are the foundation of nation-building, progressively sustained and harmoniously blending external influences and indigenous ingenuity to give the unique Thai-ness and a strong sense of identity as we see today.

The official management of the country’s arts and culture is under the authority of the Ministry of Culture, of whose agencies the Fine Arts Department is one. Specifically, the department is responsible for the conservation, promotion and development of the following offices: archaeology, museums, architecture, Thai visual arts and Thai traditional arts, performing arts, literature and history. In other words, it cares for and keeps alive the classical traditions of the country, manifest through intellectual interpretation, performing culture, and material monuments and objects. The department also supervises the depository of the historical, educational, scholarly records of knowledge and information: the National Library and National Archive. The Fine Arts Department’s authority extends over all the regions of the country; moreover, it works in an official capacity with overseas institutions, organizations and specialists dedicated to the conservation of culture, historic monuments and sites worldwide.

Throughout its history, the department, apart from tirelessly advancing academic work and the cause of conservation, has served, through all its arms, both government and private agencies and the general public. It works in tandem with society and individuals at various levels towards the achievement of the common goal of promoting and preserving the cultural heritage.

The Fine Arts Department’s major tasks are exclusively focused on the



nation's heritage of arts and culture. Its operations fall within the perimeter of these terms-protection, defending, conservation, preservation, restoration, promotion, creation, dissemination, education, research, analysis, development, passing the torch of national art, treasures and cultural heritage. The ultimate purpose is to hold aloft the aesthetic delicacy and unique cultural expressions of the Thai Ways, which are eminently evocative of nationhood, national ideals and identity, forming the basis for the sustainable development of Thai society and security. Its duty and responsibilities thus grow directly out of the above commitments, as follows.

1. To implement the Act on Ancient Monuments, Antiques, objects of Art and National Museums, related laws and regulations.
2. To preserve, conserve, restore, promote, create, and disseminate the nation's arts, sciences and cultural heritage through the specialized activity and proliferation of museums, archaeology, ancient monuments, languages, literature, history, customs and traditions, national library, national archive, performing arts, music, architecture, works of art.
3. To perform the study, research, analysis, and be the information centre for the preservation and enhancement of cultural heritage through the activity of museums, archaeology, ancient monuments, languages, literature, history, traditions and customs, national library, national archive, performing arts, music, architecture, works of art.
4. To provide education and perform research and analysis on performing arts, music, traditional arts, and other matters bearing on arts and culture.
5. To supervise all operations related to the nation's arts and culture.
6. To fulfill any other obligations which, under law, falls within the authority of the department or as commanded by the Ministry of Culture and the Cabinet.

As the government agency responsible for overseeing national arts and culture, the Fine Arts Department joins the networking of international agencies and organizations to engage in dialogue, exchange, and constructive work in the conservation of arts and culture, through technical sharing, field work and training workshops. Participation takes the form of signatory to bilateral and multi-lateral agreements and pacts of cooperation, membership of international cultural organizations, service-providing and knowledge sharing to promote Thai arts and culture, and dissemination of Thai culture in the international community.

The Fine Arts Department, as the government agency responsible for overseeing national arts and culture, by 15 regional offices of FAD, include 2,100 registered monuments and about 7000 non registered monuments in Thailand. These monuments can be categorized into world heritage sites, historical parks, archaeology sites, traditional old buildings (temple, palace), historic buildings and sites.

On “Lai Rud Num”

Most of monuments in Thailand are wooden architectures and brick work architectures that some parts of them are wooden structure, such as roof structure, gable, ceiling, doors and windows and their ornaments. All these wooden structure were painted on surface, main purpose is for

conserve the wooden structure. Some are painted in plain color. For those important monuments such as temples, Royal palaces buildings, are decorated with high refinement work of Thai arts craft, such as gold gilded lacquer arts (“*Lai Rud Num*”), and, in later period, glass mosaic, mother-of-pearl inlaid work etc, on red or black lacquer painted on wooden surface of those wood structures and ornaments. Causes of deterioration of wood and painted surface on wood are sunlight, heat, moisture, insects etc. Conservation implementations in Thailand are to conserve the original forms materials, colours, technique, art, architecture and structure.

“*Lai Rud Num*” is the specific term in Thai traditional gilded lacquer art with high refinement work of Thai arts craft. Produced by painting Thai tradition art pattern (*kranok*) on prepared lacquer surface (black *rak* or red chat), coating glue (*horadan*) on space outside the pattern, gilding gold leaves on surface inside the pattern, and clean off glue by water to have only gold leaves left. With written sources and material evidence dating back to the 13th century, in Sukhothai Period, Thailand imported *Rak* resin from China, created and developed gilded lacquer arts and work. “*Lai Rud Num*” has been widely used for interior and exterior decoration of architectural structures, as well as courts and Buddhist utensils and furniture, particularly cabinets for the keeping of Buddhist texts. “*Lai Rud Num*” has the multiple functions of protecting the structural and architectural elements, decorating a building, as well as contributing to the beauty of the environment, and indicating their status (architectural hierarchy). Most of those traditional buildings built before late Ayuthaya period were destroyed, because of deterioration due to the nature of material used, environmental condition, and wars. The important remains of “*Lai Rud Num*” art works, first, from Sukhothai period can be two wooden Buddhist images, Prasrisakayamuni and Praputthachinnarach, with “*Lai Rud Num*” decoration, second, the teak wooden pavillion of King Pra Jao Seur from middle Ayuthaya period, it has been located in the temple named Wat Sai in Bangkok, the pavillion with “*Lai Rud Num*” on whole exterior structure surface and mural painting on whole interior structure surface.



“*Lai Rud Num*” has been widely used for interior and exterior of architectural structures.



Interior of Vihara Laikam, Wat Phra Sing temple

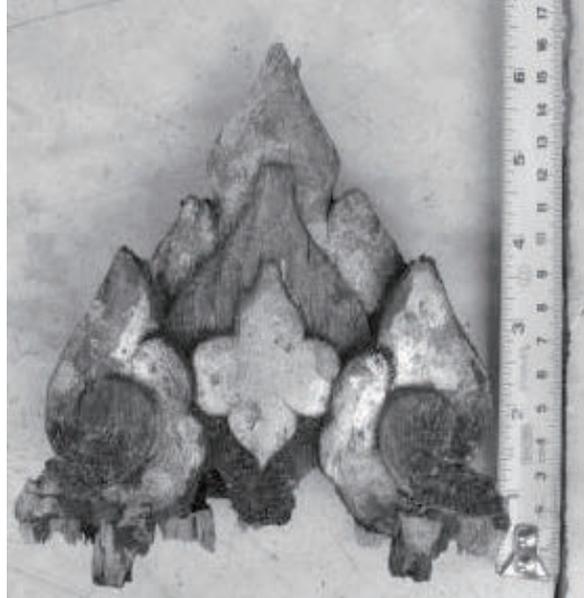
Case: The conservation of Salasumran pavilion, Bangkok, National Museum



Sala (pavilion) Sumran is the wooden Pavilion built in 1903, during King Rama the Fifth's reign, designed by Prince Krom Praya Naritsaranuwattiwong. It's original site was in the Ngae Tang Garden in Dusit Palace, Function for King kame the Fifth's Birthday ceremony, During King Rama the Sixth's reign, The King decided to build the new pavilion and removed the old one to Praratchawangbowornsathanmongkal where is now National Museum.

Architecture of Sala Sumranmukhmart is Thai style pavilion with two split level gable roof, wooden roof structure, and wooden red-oil painted roof tile, wood carve gable and roof ornaments, Most of exterior wooden surfaces ornaments and structures are decorated with gild gold-lacquer painted, except the roof-tile surface is red-oil-painted surface. The plan of the building is square shape with sixteen gold-filled lacquer painted wooden column, interior marble floor is fifty centimetres high from ground level, with four side three level marble stairs, interior wooden ceiling, wall and architectural ornament are decorated with gild gold-red oil plaint. On wooden surface, except structure component are decorated with gold-filled lacquer works.

Present Condition



Before the restoration, the pavilion was badly deteriorated, especially all the wooden surface expose to sunlight and rain the painted surface came out and the wooden surface was damage some parts of the wood are damage by termite, especially base of the column, some part of structure became unstable. Causes of deterioration of wood and painted surface on wood are sunlight, heat, moisture, insects etc.

Restoration Implements

Before restoration works, the design team, architect and engineer and landscape-architect should conclude and study the information data to the history, architecture and art characteristics, traditional technique, construction, material, present physical condition, of the monument, summarize, analyse, design and define appropriate use of material and methodology implementation is restoration which emphasized the following aspects: conserve the original material and techniques art and architectural characteristic.

The restoration implementation was set up as follows:

1. The restoration work of damaged parts of wood in the main architectural and construction material of the monument, was done by repair, or replace of the damage and lost parts only; the materials were with the same size, color, and type of the original material; also fixed the structure and architecture at the right way.
2. The wooden roof tiles were replaced all by the new ones, with the same material, color, and type as the original ones.
3. The restoration of the original painted surfaces was done.
4. The gold-filled lacquer painted surface was done by conserving the original good condition parts by cleaning painted surface and refilling gold leaves on only damage parts.

For those damaged parts, the surface support technique was very important steps that would result to maintain permanent beauty of accomplishment.



Rak Surface Preparation

Different schools of artisans have different gilded lacquer work crafting steps and techniques in terms of surface preparation, reagent preparation or *Rak* mixture techniques. Such differences are due to the fact that the art has been traditionally transmitted through oral tradition and are subjected to variation and distortion of information. *Rak* surface preparation is a crucial step for the durability and exquisiteness of the final gilded lacquer art work.

Type of material used must be taken into consideration for surface preparation. Wood is the favor natural material. The majority use the teak wood and another hard wood such as Takian

(*Dipterocarpaceae*)(Hopea wood), Daeng (*Xylocarpus xylocarpa var kerrii*) (Inferior wood), and Makha (*Azadirachta xylocarpa*)(Ormosia wood). Preparation steps for wood surfaces are as follows:

1. Apply raw *Rak* (resinous substance from the *Mellanorrhoea Ushitata* trees), the resin (which at present can be obtained from the Buddhist monk-offering item shops in Bangkok, Sao Ching Cha area) is sifted and applied on wood surface to create smooth surface which is subsequently left to be partially dried for another 5-7 days. The resin gradually penetrates wood surface and acts as preservative and adhesive for *Samok* and wood grains.
2. Apply *Rak Samok*, this is the mixture of raw *Rak* resin and ashes from dried ground banana leaves, coconut shell charcoal, or *lalang* grass ashes. These ashes are preferred by traditional artisans for their availability and lightness. After *Rak Samok* application, the work should be left for 7-10 days to dry out completely before being polished with sand paper.
3. Apply *Rak Num Gliang* (*Livinga*) liquid. This liquid is obtained by sifting from raw *Rak* resin through cotton wool sandwiched between two layers of thin white clothes to eliminate as much resin impurities as possible. The resin is traditionally placed on top of the sifter and put out in the sun for melting and dripping into a container. Soft and highly elastic brushes are used to apply the sifted resin on the work surface in alternating horizontal and vertical direction for an even spread. 4-5 layers of *Rak Num Gliang* application are required, and 5-7 days of surface drying are needed between each application. The surface is polished after each application except the last one. The

achievement of beautiful glossy surface depends on proper techniques of *Rak* application, quality of the resin, and elimination of resin impurities through careful sifting.

Curing of *Rak* resin is required at each step of surface preparation to ensure a completely dry and glossy surface appearance. The process is done in a completely dry and sealed cabinet to prevent dust, the cabinet is covered with wet cloth for the cooling and speeding up of the drying process.

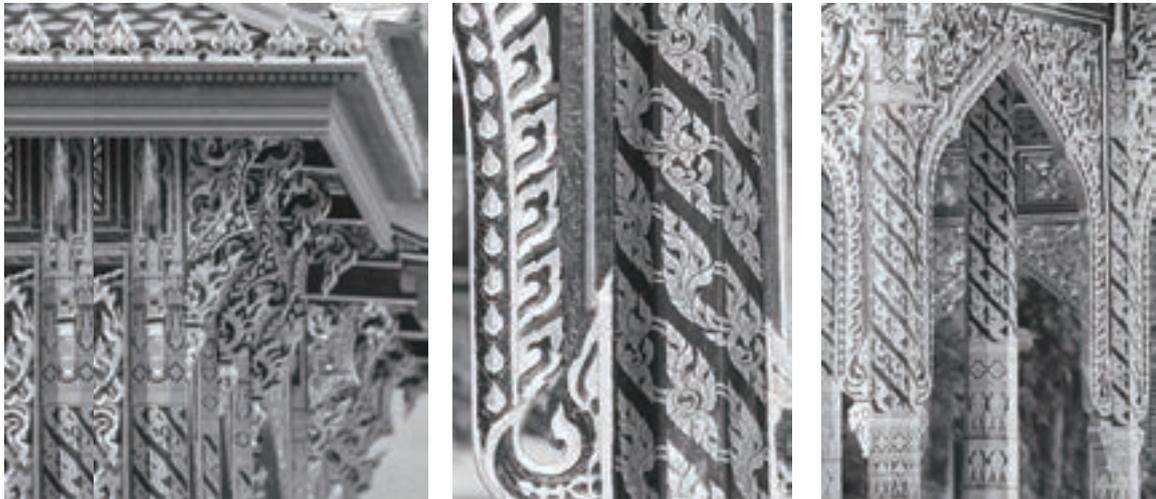
In the ancient period, *Rak* surface preparation for gilded lacquer work painting required a lot of time as well as meticulous effort and skills with refinement and experience of artisan, by observation from accomplishment *rak* surface in decorating architecture.



The success of these techniques is evident in the durability of *Rak* surface. In various architectural decorations, especially the exterior decorations, that have withstood the tests of time and weather for hundreds of years. Lacquer work with poor surface preparation will flake or fade in a short time, destroying the quality, the beauty of the works.

The traditional technique of making painted surface on wood is an artistic peculiarity. The process involves coating paint layer by layer over the surface. One of the disadvantages of the process is quite complicated and it requires a long time for drying some craftsmen now prefer to use new chemical paint.

Nowadays we face some problems in conservation of these monuments, such as lack of skillful craftsmen and materials (such as *Rak* lacquer, wood), to conclude, spread out, share the knowledge and cooperation with other countries is the best way to define the proper implement to conserve and prolong the monument.





Traditional Painting of Bhutan

Lhaten Dorji

Project Manager

Paro Dzong Conservation Project

Division for Conservation of Heritage Sites

Department of Culture, Ministry of Home & Cultural Affairs

Introduction

Bhutanese art is based upon Vajrayana Buddhism, with its pantheon of divine beings.

The thirteen arts and crafts also known as *Zorig Chusum*, keeps the Bhutanese arts and architecture alive.

The thirteen traditional arts and crafts comprises of painting, carpentry, carving, sculpture, casting, black

smithy, bamboo work, weaving, embroidery, masonry, paper work, leather work and silver and gold smithy. The great 15th century treasure finder (*tertön*), Pema Lingpa is traditionally credited with introducing the arts into Bhutan. In 1680, Shabdrung Ngawang Namgyal ordered the establishment of the school for instruction in the 13 traditional arts. Although the skills existed much earlier, it is believed that the *zorig chusum* was first formally categorized during the rule of Tenzin Rabgye (1680-1694), the 4th Druk Desi (secular ruler).



Painting

Like arts and crafts, every Bhutanese painting is religious by nature. Bhutanese paintings are anonymous without painter's signature. *Lhazo* is the Bhutanese tradition of painting. *Lhazo* refers to all types of painting including traditional paintings, called *thangkhas*. Thankhas are scroll paintings of Buddhist iconography executed in mineral paints. *Thangka* painting follow strict geometric proportions.

- They are reflected on the prayer flags that adorn the mountain-tops and the sacred sites and valleys, in the intricately designed woven cloths, on wooden furniture and on the altars. Undeniably, every material aspect of Bhutan is reflected in these shades of colors. Indeed, paintings represent the most amply people's beliefs and ideas, feelings and thoughts and aspirations and hopes, way of life, and the colors epitomize the Bhutanese art.

- Painting is as old as the people themselves and the art of painting has been passed down from generation to generation, from a master painter, lharip to novice students. This profession, like most others, is considered an act of reverence and devotion and painters are believed to accumulate merit and influence their karma.



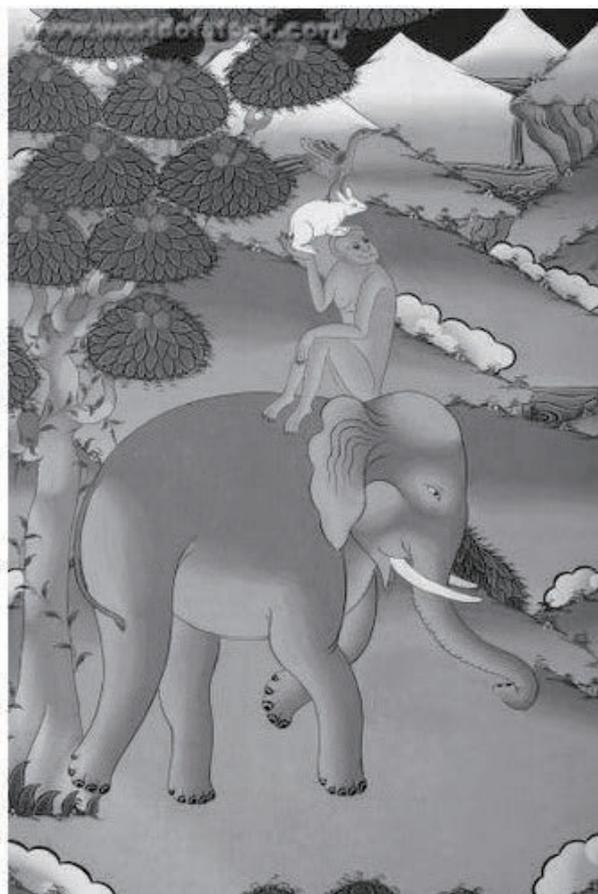
- Painters work on a wide range including painting simple motifs and the eight lucky signs to undertaking painting huge scrolls of Thangka and Thongdroel. These are paintings of images of Buddhist deities that are often painted on the wall, or in simple cloth. Thongdroels are bigger in size and a mere sight of these huge scrolls is believed to deliver us to nirvana. Thus, it brings merit not only to the believers but for the painters as well. A lharip can decorate a house, an altar; paint a Thangka or Thongdroel, the statues of deities or on any other article and piece that need painting.





Types

- 1) *Dang-tshon* (Shading paint)



2) *Ser-Tshon* (Gold paint)



3) *Sum-Dang* (Three layers of paint fading away)



Lhaten
Dorji

4) Yug-tshon (Paint applied over large surface ཡུག་མཚོན་པ་ and which is usually applied as base for the main paint)



Materials

The materials used in Bhutanese painting are the natural pigmented soils that are found in most places in the country. These natural soil pigments are of different colors and are named accordingly. The black lump of soil is known as sa na and the red lump as tsag sa, for instance. The yellow colors can be obtained from Gasa and Bumthang, the red color from Wamrong, black from Phuntsholing and Trashigang and white from Paro.

Transferring of Skills

At present we have two national institutes teaching the 13 arts & crafts of Bhutan. Through work experience while attached with master painter.

1. The National Institute for Zorig Chusum is located at Kawajangsa, Thimphu. The entry qualification is class X pass from 2007.
 - Lhadri (Painting) 6 years
2. Trashiyangtse Institute for Zorig Chusum(TIZC) The Trashiyangtse Institute for Zorig Chusum (TIZC) is located in Trashiyangtse. The entry qualification is class X pass from 2007.
 - Lhadri (Painting) 2 and 6 years*
 - * (2 years - short courses; 4 and 6 years - regular courses.)

Present practice and promotion of traditional painting

As per the building rules & regulation, it is mandatory to provide traditional painting on the traditional architectural components like cornice, window and door frames, etc.



Otherwise, in village and remote areas, the people are still adopting the traditional painting on their house. Also very important structures promoting the traditional paint is the religious structures like monastery, stupa, fortress, etc.





Current Issues of and Future Tasks for Restoration of Coloring and Painting in Japan

KUBODERA Shigeru

Director

Historical Research Institute for Architectural Decoration Technology

In Japan, since the government-led initiative for conservation and restoration of cultural properties was launched in 1897, restoration of several buildings has been implemented. For such work, traditional techniques have been employed in principle. The same is true for restoration of painting and coloring, for which traditional materials, as well as techniques, have been basically used. However, as society has become modernized, techniques and materials for manufacturing have changed substantially, making it difficult to maintain the conventional production methods.

Under these circumstances, to ensure stable conservation and restoration of cultural heritages in the future using traditional techniques and materials, having firm determination and good planning, or, in other words, more proactive national strategies, is crucial. This is what I basically believe.

In this presentation, I will first show the ongoing changes in paint restoration in Japan, then present two examples of restoration work completed recently and some examples of the attempts for succession of traditional techniques and development of human resources, and finally discuss the future prospect for painting restoration.

1. Introduction – Historical changes in paint restoration

The Japanese policy for restoration of painting of cultural property buildings came to a turning point around 1950. The basic policy before that was to maintain the current state of painting of buildings as much as possible. This means that repainting was not conducted for most buildings even though they were painted, except for the buildings such as Nikko Toshogu Shrine for which lacquering or coloring was employed as an important part of their architecture.



Fig.1. Yomeimon gate of Nikko Toshogu Shrine

However, after around 1950, buildings with ornamental architecture were increasingly designated as cultural properties, and to demonstrate their architectural features, repainting of buildings, especially their exterior, was conducted more frequently. This trend was seen not only for the buildings with many ornamental elements but also for the buildings having limited components that were lacquered or colored. Conservation treatment or repainting was often provided in the case of damage found in the lacquered or colored portions. I used

to be engaged in design supervision of cultural property buildings as an engineer for restoration of cultural properties, and have personally experienced several paint restoration projects.

Thus, repainting of cultural buildings is actively promoted in Japan today. Meanwhile, lack of careful consideration means a complete loss of traditional architectural painting. It is therefore needless to say that careful consideration in determining paint restoration plans is crucial to ensure the authenticity of cultural properties.

2. Examples of restoration work in recent years

Japanese paint restoration usually employs traditional pigments and solvents, as well as traditional tools and techniques. This approach has been utilized since the launch of the government-led initiative of restoration of buildings, and will continue to be maintained in the future. To perform restoration with traditional methods, however, it is first of all necessary to understand accurately how the target building was originally painted, which requires thorough and careful research before starting the work. Here, I will present two cases of paint restoration in the past and explain the details.

2.1. Myogi Shrine buildings

Myogi Shrine is a Shinto shrine located in Tomioka City, Gunma Prefecture. Its *honden* (main hall), *heiden* (offering hall) and *haiden* (worship hall), as well as the Karamon gate, constructed in 1756, are designated as important cultural properties. The work for conservation and restoration of these buildings was conducted for four years and six months from 1985 to 1989, focusing mainly on restoration of painting. The restoration policy for interior painting was to basically maintain the paint as it was, and therefore, traditional materials of glue solution and *funori* solution were used for conservation of colors to prevent paint from shedding. Meanwhile, the exterior of the buildings was almost totally repainted. Paint before restoration was scraped off before repainting. Since the colors of part of the *haiden* (*gagyō*), the front of the building, were kept in a relatively good condition, treatment for preventing paint shedding was provided for this portion using synthetic resin (Binder 17 and Paraloid B72).



Fig.2. Myogi Shrine *honden*, *heiden* and *haiden*



Fig.3. Making layout sketches for coloring work

At the same time, fluorescent X-ray analysis and X-ray diffraction analysis were conducted to identify the original materials used, by using a total of 27 samples collected from the *honden*, *heiden* and *haiden*, and also the Karamon gate. The results of the analyses were reflected in the restoration

work. To reproduce the colors, current condition was recorded by photography and making layout sketches. Based on precise observation, a total of 103 sketches for the *honden*, *heiden* and *haiden* and 18 for the Karamon gate were made for coloring restoration. In the restoration work of the Karamon gate, the original painting of a dragon on the ceiling board was provided treatment for preventing paint from shedding and kept in its original position, below which a newly painted dragon picture was then installed.

This restoration work is unique in that it discovered, from material analyses and investigation of historical documents, the fact that a special base coat called *chudei-shitaji*, which was a prevailing technique in the Edo Period, had been used, and subsequently reflected this finding in the restoration work. This was the first case of reproducing this traditional base coat in restoration of cultural properties.



Fig.4. Original painting of a dragon on the ceiling board of the Karamon gate, with the painter's signature remaining



Fig.5. Copying the design of the dragon for the new painting to be put on the ceiling board of the Karamon gate



Fig. 6. The reproduced ceiling dragon painting of the Karamon gate installed



Fig.7. *Chudei-shitaji* base coat seen in initial coloring material analyses revealed that it is a coloring base coat material composed of green verditer, whiting and brass powder.

2.2 Shotendo Hall of Kangiin Temple

Kangiin Temple is located in Kumagaya City, Saitama Prefecture. Construction of its Shotendo Hall was commenced in 1735 and mostly completed in 1760. The preservation and restoration work was conducted from 2003 to 2010, a duration of seven years. The materials used for painting before

restoration were identified through scientific analyses and the findings were reflected in the actual restoration work, while the layout sketches were made in preparation for repainting. These are in common with the preservation/restoration work for Myogi Shrine. In addition to these, the restoration of this case adopted a procedure of repainting that has rarely been adopted for coloring restoration in Japan.

In this procedure, the remaining colors of the exterior of the subject building were preserved to the maximum possible extent before repainting of colors. Colored coating of most of the cultural property buildings is physically fragile due to deterioration over time, and it was therefore common to scrape off the coating before starting the work of paint restoration. The coloring restoration project of the Kangiin Temple Shotendo Hall challenged this practice. As the basic policy of repainting without scraping off the original paint had been decided from the initial stage, steps to fully implement the restoration work were thoroughly discussed by the restoration committee consisting of academic experts, restoration experts, building owners, etc. Consequently, the method of protecting the existing colors with Japanese paper was selected. The steps of the work are as follows:

[Steps for restoration of external colors]

- (1) Remove dust on the colored surface with Japanese paint brushes, etc.
- (2) Take photographs for record.
- (3) Study the color paint and prepare record data.
- (4) Make layout sketches for the coloring work.
- (5) Provide treatment to prevent shedding of the existing colors using special glue solution.
- (6) Provide treatment for preservation/protection of colored surface – Pasting Japanese paper using *shofu* (wheat starch) glue
- (4) Repaint colors.

Before these steps, test coloring was conducted in advance to confirm the validity of the preservation treatment using Japanese paper and to ensure that the Japanese paper will not leave any impact on the colored layers after the paper is removed in the future.



Fig.8. *Okuden* and *Chuden*, Kangiin Temple Shotendo Hall



Fig.9. Side of *Okuden* (a part), Kangiin Temple Shotendo Hall



Fig.10. Pasting Japanese paper, and test coloring



Fig.11. Pasting Japanese paper to protect existing colors (*Photograph reprinted from p.112 of Reference 3 graphic data)

3. Future tasks for restoration of painting

Architectural paint is inevitably subject to changes over time due to impacts of the natural environment, such as deterioration or defacement of the painted surface. Therefore, I believe that to maintain cultural property buildings in a healthy state, actions to restore the painting of such buildings must be continued.

Meanwhile, functions of architectural paint are roughly categorized into the role of highlighting the building's solemnity and design, and the role of protecting the building's construction materials. When the selected goal is to ensure both, the basic principle should be to preserve/maintain as much the existing paint as possible even if repainting is planned, and it is important to carefully examine which method should be selected for this purpose. This requires highly specialized techniques and historical knowledge. Based on these principles, I would like to point out the following issues as necessary tasks to stably continue restoration work using traditional techniques and materials.

3.1. Problems in succession of techniques and securing human resources

3.1.1. Problems in succession of techniques and human resources development

In the past, traditional techniques were handed down through the traditional apprentice system. However, it has long been pointed out that there is a limitation in this way of succession. Today, traditional techniques should be handed over through specialized educational programs in schools and workplaces. At the same time, to constantly secure human resources, it is necessary to ensure sufficient working opportunities for them. Thus, for constant succession of techniques and stable securing of human resources, it is urgently necessary to create educational opportunities not only at schools but also at worksites and to secure sufficient opportunities to make effective use of the techniques.

Now, it should be noted that what we call "traditional techniques" today may be just a part of the techniques that existed in the past. In other words, when working on restoration of a cultural property building, we should remember that its painting may have been conducted using a technique

or method that was subsequently lost at some point in the past. It is therefore necessary to support research/studies on traditional techniques on one hand, and to establish a practical education system that can offer programs to deal with restoration of cultural properties as a whole on the other.

Moreover, to secure human resources, the work of restoration of cultural properties should look attractive to young people. To this end, it is necessary to raise the social status of this job. I believe that it is important to create an environment where those who have acquired professional skills and knowledge for restoration of cultural properties can receive high social recognition. In Japan, such an environment has not yet been established.

3.1.2 Practical examples for succession of techniques and human resources development

The Japan Association for Historical Art and Architecture (<http://www.shabikyō.org>) is composed of the technicians and their companies who perform the work for preservation/restoration of architectural ornamentations of historical buildings. It was approved by the Ministry of Education, Culture, Sports, Science and Technology as an organization to perform the selected preservation technique [building ornamentation] in 2007, and covers four categories of lacquering, coloring, *ninuri* (red-painting) and metal fittings.

The Association continuously supports various activities and projects for succession of techniques and development of human resources. Among them are the practical technical training courses to improve the proprietary skills of each technique and to develop successors of the techniques. In the training for the latter purpose, those who are interested in restoration of buildings are invited as trainees and accepted by the workshops of the Association members. The aim of the training is to secure human resources for the future by providing the trainees with opportunities to experience the actual work. On-site exercise with actual buildings is included in such training. The trainers are experts in actual preservation/restoration work.

Meanwhile, an interesting 5-year training program was launched in 2010. Young technicians of the four categories mentioned above work on architectural models of one-tenth size of the actual buildings. When the work is completed, the models are planned to be displayed publicly to communicate to the general public the details of ornamentations of historical architectures and their restoration work. This project was designed based on the architectural ornamentation techniques in Japan in the 17th century, and even the painting techniques that were lost in the modern period are also employed for this project so that the technicians can experience them. In short, the goal of this project is to show almost all historical ornamentation techniques in these one-tenth models.

It is also important to communicate to the public through various media the details of these efforts by the parties actually engaged in restoration of cultural properties, for the purpose of enhancing the significance of existence of cultural property restoration.



Fig.12. Training program of making architectural ornamentation models, lacquering section



Fig.13. Training program of making architectural ornamentation models, coloring section

3.2. Procurement of traditional materials

Traditional materials used for paint restoration include mineral materials such as pigments and organic materials such as lacquer and animal glue. Although mineral materials may be depleted in the future, some pigments, for example red lead and vermillion, have traditionally been produced artificially. From a viewpoint of protecting the global environment, a shift to dominant use of artificial pigments seems inevitable.

Organic materials, on the other hand, include plant-based materials such as lacquer and natural dye. These are renewable materials. It is necessary to actively promote their stable procurement by establishing a system to produce these materials as a national strategy. Needless to say, production of these materials cannot be ensured without producers of them. But it is becoming increasingly difficult to procure the materials and producers. Securing a certain amount of demand for these materials is also crucial to ensure stable production of them.

Today, the world of restoration of cultural properties is faced with many difficult challenges. As one of the countermeasures to address the issue of materials procurement, the Agency for Cultural Affairs designates several forests nationwide as model supplier forests and training forests to procure lumber and other plant-based materials necessary for restoration of cultural properties. These forests are named “Furusato Bunkazai no Mori (forests for our cultural properties).” At the same time, the Ministry has also launched the “Furusato Bunkazai no Mori System Promotion Project,” to provide training for collecting materials and educational programs. (<http://www.bunka.go.jp/bunkazai/hozon/system.html>) For procurement of the materials necessary for paint restoration, sumac forests in Iwate, Yamagata and Kyoto Prefectures have been designated as of March 2012.



Fig.14. Sumac forest in Jobojimachi, Iwate Prefecture



Fig.15. Sumac tree after tapping



Fig.16. Sumac sap (collected in Joboji, Iwate Prefecture)



Fig.17. Lacquer tapping (Jobojimachi, Iwate Prefecture)



Fig.18. Tools for lacquer tapping (old stock of Kiyotaro Omori in Jobojimachi)



4. Conclusion

Restoration of cultural properties requires highly specialized techniques and knowledge. What we simply call “traditional” comprises a wide range of things, some of which cannot be known to us today. The key to accurately identifying the techniques and materials that constitute a historical building is to thoroughly observe the building and make proper judgments based on the observations. To make this process reliable, use of scientific research approaches is indispensable. I would like to emphasize at the end of my presentation that implementation of such research approaches must be included in the system of restoration projects.

Based on what I have discussed so far, it is also important to examine the significance of maintaining cultural properties. And to conduct restoration work with the aim of enhancing their significance will be increasingly important. And we must re-recognize that securing human resources who are capable of conducting such work appropriately is the most important task for protection/preservation of cultural properties.

References

Reference 1

Concept and Techniques of Preservation and Restoration of Wooden Buildings, edited by Nara National Research Institute for cultural Properties, 2003

Reference 2

Report on Restoration Work of the Important Cultural Properties Myogi Shrine honden, heiden, haiden, tsuketari-shinsensho, tsuketari-sukibei, karamon, and somon, edited by The Japanese Association for Conservation of Architectural Monuments, 1989

Reference 3

Report on Conservation/Restoration Work of the Important Cultural Property Kangiin Temple Shotendo Hall, edited by The Japanese Association for Conservation of Architectural Monuments, 2011



Summary Report of the ACCU International Conference Presentations for the Discussion on November 29, 2012

MASUDA Kanefusa

*Secretary, ICORP (Risk Preparedness), ICOMOS ISC. /
Visiting Researcher, Ritsumeikan University*

1. Over the three years since 2010, we have successively presented international reviews on human resource development for the transfer of traditional techniques/skills to safeguard historical architecture under the framework of cultural heritage in the Asia-Pacific region.
2. The conference this year adopted a field on painting/coating and decoration for the conservation of historical architecture. Throughout the two days of the conference, we held two special speeches, two keynote speeches, and seven case study reports, with Q & A and discussion sessions after each presentation.
3. To introduce the theme above, the first presenter, Dr. Stefano De Caro, director-general of the ICCROM, shared broad-scale perspectives on how traditional techniques/skills of painting and decoration should be treated, based upon a wide spectrum of viewpoints covering a range of topics from the ancient earthenware of the Mediterranean Civilizations, mainly represented by the Greek and Roman civilizations, to modern tourist souvenirs, as well as related international efforts by UNESCO and other organizations.
4. Secondly, Mr. YAMATO Satoshi of the Japanese Agency for Cultural Affairs, provided a detailed explanation of the current state of efforts being made in this field in Japan, including specifics of various projects such as; (i) the selection and recognition of traditional "conservation-techniques" in accordance with the Law for the Protection of Cultural Properties; (ii) support for training of successors by recognized holders of the traditional conservation techniques above; (iii) training/education of conservation architects as well as carpenters/coloring technicians for the repair of building structures; and, (iv) the "Hometown Forest" projects to secure woods necessary for repairs.
5. In addition, Professor Dai of Tongji University, China, presented a case study of the inheritance of techniques/skills to preserve epigraphs inscribed on the rocks of Mt. Wuyi, a World Heritage site, focusing on the historical/cultural values of the epigraphs and the diverse problems encountered.
6. Since then, we had various case studies presented by seven experts. Four lecturers made their

presentations yesterday; Mr. Aghafar Bin Ahmad from Malaysia, Mr. Kai Weise from Nepal, Prof. Jagath Weerasinghe from Sri Lanka, and Mr. Le Phuoc Tan from Viet Nam. Three lecturers, Ms. Jeetheng Piyakarn from Thailand, Mr. Lhaten Dorji from Bhutan, and Mr. KUBODERASHigeru of Japan, will present today.

7. These diverse case studies describe a wide range of historic buildings or other study objects, including the difference between; (i) construction time periods, use applications, and structural materials; (ii) types and materials of architectural decorations used for such structures; (iii) social/cultural backgrounds in which each cultural heritage exists; and, (iv) traditional techniques. These reports may show the similar status and challenges described below.
8. In most cases, because they serve as the finish of a building, architectural decorations have properties/characteristics that make enormous contributions to the artistic and historical values of the architectural cultural heritage, and their deterioration leads directly to a reduction in the value of the architectural cultural heritage. Furthermore, compared to building structures, aspects of decorations such as coloring are completely physically vulnerable, apt to deteriorate quickly through discoloration and/or peeling off, and unavoidably, need to be repaired and repainted for maintenance frequently within a comparatively short time period. These factors also result in situations in which; (i) despite the long time-span of traditional cultures capable of maintaining decorations, within just a few decades, sponsors/backers providing funds to repair structures undergo changes/substitutions, or that; (ii) the artistic trend/vogue of any one era may be adopted for the repair work, and the decoration skills and materials are disposed to change in each time period. For instance, in the case a decoration is considered worthless in modern times, it could deteriorate quickly, while the value as historical memento accumulated therein may no longer be maintained. When an architectural decoration is valued due to its use in a religion, in some cases, periodical repaints will occur as a mode of expression of faith, and some modes could result in vandalizing the decorative layers accumulated through history by new decorations. In this case, the question may arise concerning which factor should be valued as a cultural heritage. Depending on the religion, there may be instances in which the religion could reject the function of cultural heritage to transfer historical information. However, one may define it as an aspect of living traditional cultures.
9. It may therefore be said that present architectural decorations as cultural heritage generally face the following danger. First of all, if the decorations are disregarded through modernization, they become liable to disappear automatically and physically in a short period of time, along with their traditional, technical, and artistic foundations. In this case, as is obvious, the technicians capable of producing the decorations will disappear with knowhow of traditional materials and tools, causing difficulty not only in reproduction but also even in ill-effected restoration. Generally, the maintenance of conservation techniques and skills is based on the premise that there continuously exists a body of work necessary for craftsmen/technicians to earn their living. On the other hand, as mentioned above, there are cases in which cultural traditions are living/active, and in which

historical values may be lost due to periodical repainting undertaken for religious/ritual purposes. Even in cases of decoration works created in the past and which have a certain worth/value, many cannot maintain their value. There are cases in which preservation records of the decorations of especially high value should be made, or wherein such decorations should be preserved by museums or other facilities, in order to enable the revival and accession of related techniques. However, in some cases there is the difficulty of removing the decorations from the building structure itself without highly advanced techniques. At any rate, it can be said that in order to maintain and pass on such architectural decorations, technicians and craftsmen in various fields play an extremely important role.

10. It is necessary to take into account the following factors for reviewing the fundamental concepts of the preservation, repair, and restoration of architectural decorations as cultural heritage. First, considering the vulnerability of decoration materials, it is essential to provide good maintenance suitable for each characteristic of the materials. Regular repairs are also indispensable for preventing the deterioration of the cultural heritage. In case deterioration is advanced, it may be effective to apply reversible, connectable fixing using traditional methods or restoration using preservation science. Furthermore, it is necessary to establish appropriate policies for conservation taking into account the diversity of each cultural heritage and culture, while conforming to the Venice Charter, the general philosophy for safeguarding building structures of cultural heritage. Architectural decorations necessitate conservation planning with a view to comprehensive safeguards of the diverse cultural heritage, in addition to coordination between related specialized fields. (The report made by Mr. KUBODERA Shigeru as a conservation and restoration expert of architectural decorations acquires significant importance in its technical aspects.)
11. Considering the above, the following recommendations will be addressed to related international organizations and the governments, groups of the skills/techniques holders, and the parties concerned with the conservation of cultural heritage. As a prerequisite for modern society in which traditional culture has faded, the creation of a nationwide inventory of the key people for education/training programs for successors is urgently needed. In addition, to ensure the maintenance of the quality of the techniques and skills, continuous policy support is required (including, if necessary, the creation of works using conservation techniques capable of contributing to modern culture) that enables the holders of the techniques/skills to gain social respect, to build an economic foundation, and to pass along their techniques/skills collectively as an expert group. In addition, taking into consideration the changes and deterioration of decorations within a short period of time, as well as targeting the procurement of raw materials, manufacture and distribution of tools, and decoration techniques for paintings and sculptures, policies should be implemented as rapidly as possible, as a preservation measure for intangible techniques, in order to facilitate; (i) making videos, drawings, and/or text records of the skills, techniques, tools, etc. and; (ii) the training/education of the next generation while expert technicians are still alive.

Effective prior case examples in each and every country should be referred to in order to review these policies. For instance, a series of Japanese policies, based on the Law for the Protection of Cultural Properties, to select conservation techniques, to secure the materials for repair, and to designate the safeguard of intangible cultural heritage and folklore techniques may serve as an effective case example.

12. Through these discussions, it would appear that the overall situation and challenges with respect to human resource development related to the succession of traditional techniques/skills of decoratively representing historical architecture in this Asian region have been addressed extensively and satisfactorily. I am uncertain that my report could do justice to all of the points under consideration, but I hope that this summary will be of some help for the overall discussions scheduled this afternoon.



IV. Recommendation



Recommendations of International Conference 2012

"Human Resources Development for the Transmission of Traditional Skills: Building Decoration with a Focus around Painting and Colouring"

1. Nature of Cultural Heritage (Painting and Colouring)

- Colouring and paintings include designs, patterns, furnishings and renderings by applying coatings on the elements or surfaces of buildings, panels and reliefs.
- Cultural heritage in the form of decorations by paintings and colourings have tangible and intangible dimensions. The tangible dimension consists of the physical elements, while the intangible dimension consists both the skills and knowledge of the craftspeople who produce them and the meanings that people using the buildings assign to them
- Furthermore, the tangible form of paintings and colourings are of two kinds. One is connected with living traditions and is susceptible to continuous renewal by the custodians, while the other belongs to the past that is no longer in use.
- Decorations such as paintings and colourings convey different values in the society, which may be defined by the experts, local community and associated socio-religious belief systems and functions. They convey meanings or tell stories through their figures, designs and patterns, the process of their creation and preservation. The art form and style of paintings, use of materials and the complex skills, procedures, workmanship and tools needed to produce them are all part of their values.
- They are intimately connected to contemporary lives of people either through religious, social activities, ethnic identities or through their commercial/business interests. Therefore these reflect multiple values depending on who defines these and for what purpose.
- Paintings and colourings also are living part of the contemporary society which may give new meanings, form and designs according to new tastes and needs, which may contribute to the values.
- Paintings and colourings are part and parcel of the architecture/built form and landscape, which form their immediate context and from which they derive raw materials for pigments, binding mediums, finishing and preservation techniques.

2. Threats to Traditional Skills in Painting and Colouring

- Traditional skills in painting and colouring face threat due to changing perception of values because of which people may lose the meanings thereby threatening their continuity.
- Traditional paintings and colourings may be at increasing risk due to conflicts in the perceptions of values defined by the experts, local community and other stakeholders.
- These may also be threatened due to changes in the functions of the buildings (for example when residential houses get converted to restaurants and shops).
- The craftsmen who possess the knowledge and skills to carry out traditional paintings and colourings are diminishing due to lack of demand, which can lead to loss of knowledge, skills and techniques that are difficult to recover once lost. As a result these can be easily replaced by modern materials, which are easier and faster to apply.
- Traditional materials used for painting and colouring may not be easily available and thus their production and maintenance may become unaffordable.
- Paintings and colourings are becoming increasingly fragile to the environment due to local factors such as pollution, global factors such as climate change and natural and human caused disasters.
- Paintings and colourings may be at risk due to improper physical and chemical interventions , lack of maintenance and monitoring.

3. Principles of Conservation, Repair and Restoration of Painting and Colouring

- Conservation of painting and colourings require both protecting the physical elements as well as retaining the knowledge and skills needed for creating/renewing them.
- The social and religious values of paintings and colourings should be considered for their conservation.
- Traditional renewal process and repairs should be encouraged where these are an inherent character of the living heritage. However these should not compromise their heritage values.
- In-situ conservation of paintings and colouring is preferable to keep their original context and social meaning.
- Their conservation should respect not only the material but also the structure of the building on which they are carried out.

- Original materials and workmanship should be used to the best possible extent for the restoration of paintings and colouring.
- Scientific research of traditional materials and techniques should be carried out before restoration of paintings and colourings and where possible, original parts should be retained and preserved in-situ
- In case removal of paintings is absolutely essential, these should be properly documented and researched at every stage; before, during and after the removal, storage and conservation process. These procedures should be carried out under strict technical supervision.
- All the historical layers for paintings and colourings should be considered and documented for their conservation.
- Preventive conservation through regular maintenance, monitoring and appropriate response to local environment should be encouraged.

4. Recommendations of Regeneration and Transmission of Traditional Skills in Painting and Colouring

- The responsible authorities should establish legal and financial supporting systems, including subsidies to encourage protection of traditional skills and their bearers (craftspeople).
- Paintings and colourings of scientifically assessed special value(s) in the material and/or structure as historic evidence should be preserved in a state that protects these values.
- Natural resources needed for raw materials for paintings and colourings should be protected for their sustainability.
- Knowledge and skills for carrying out paintings and colourings should be officially designated as heritage to secure their protection and conservation.
- Research on traditional materials and historical layers of paintings and colourings should be encouraged for recovering original techniques. The results of such researches should be published and disseminated.
- Capacity building of human resources in traditional skills and knowledge for paintings and colourings and their conservation should be encouraged, especially to transmit these to the future generations.
- The potential of traditional paintings and colourings to contribute towards the benefit of contemporary society and economy should be explored.

- A dialogue between experts and the community members should be encouraged in order to achieve a balance between technical needs for conservation and retaining the social/religious meanings of paintings and colourings.

Considering that the Asia-Pacific region is characterized by a very large and articulated heritage with paintings and colourings with common elements and regional differences, there is a need and an opportunity for establishing international shared tools for research in the field of traditional skills. Such tools could be a multi-language specialized online thesaurus, a web-based database of current research and conservation works, a peer reviewed scientific digital journal and literature review.



V. Appendix



1. General Information of the Conference

International Conference 2012

“Human Resources Development for the Transmission of Traditional Skills: Building Decoration with a Focus around Painting and Colouring” (27 – 29 November, Nara, Japan)

1. Organisers

This conference is jointly organised by the Agency for Cultural Affairs, Japan (*Bunkacho*); the Asia-Pacific Cultural Centre for UNESCO; National Institutes for Cultural Heritage, National Research Institute for Cultural Properties, Nara and Tokyo; and WHITRAP Shanghai in co-operation with the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), the JAPAN ICOMOS National Committee, the Japanese Association for Conservation of Architectural Monuments (JACAM), Nara prefectural government and Nara municipality.

2. Background and Objective

International Conference 2012 is the third and last in a series, which began in January 2011, with conferences held once each fiscal year over three years, under the general theme of “Human Resources Development for the Transmission of Traditional Skills”.

The first conference aimed at achieving a common understanding of the theme’s current status by presenting different national approaches and policy measures regarding the restoration of historic buildings. The sub-theme of the first conference was woodworking, and the practical aspects of repair work were discussed in detail. Following on from this, the second conference took up the restoration of stone and brick as a sub-theme while deepening the discussion by taking a comprehensive view of both tangible and intangible cultural heritage.

At the last conference, this year, we will take up the restoration of decorations such as painting and colouring of the heritage building as a sub-theme. In addition, for the purpose of transmission of traditional skills and materials that are necessary for restoration of traditional heritage buildings, how to develop conservation professionals equipped with traditional skills and how to secure traditional materials for repair work will be discussed comprehensively at the conference.

3. Dates and Venues

Dates: From 27 to 29 November 2012

Venues: Nara Prefectural New Public Hall (101 Kasugano-cho, Nara City), etc.

4. Provisional Schedule

Day 1 Tuesday, 27 November

08:45~16:40 Participants will visit to the East Pagoda of Yakushi-ji Temple, a restoration site and Nakagawa whiting manufacturing plant.

Day 2 Wednesday, 28 November

09:15 ~ Opening Session

10:00 ~ Special Speech

11:00 ~ Keynote Speech I - II

13:50 ~ Case Study Report I - IV

Day 3 Thursday, 29 November

09:30 ~ Case Study Report V-VII

11:35 ~ Summary of the Conference

13:30 ~ General Discussion

16:00 ~ Closing Session

5. Working Language

The working language of the conference is English. Simultaneous interpretation between English and Japanese will be provided when necessary.

6. Financial Arrangement

Organisers will provide each of the participants with:

1. Travel Expense: A round trip air ticket (economy class) between the international airport nearest to the participant's residence and Osaka (Kansai) International Airport.
2. Daily Subsistence Allowance (DSA): A fixed amount of DSA from 26 to 30 November to cover the participant's meals; and a hotel room (including breakfast) will be also provided.

7. Correspondence

All enquiries and correspondence concerning the Conference should be addressed to

❖ **ACCU Nara**

Cultural Heritage Protection Cooperation Office,
Asia-Pacific Cultural Centre for UNESCO (ACCU)
Nara Pref. Nara Branch Office
757 Horen-cho, Nara 630-8113 JAPAN
Tel: (+81) 742-20-5001 Fax: (+81) 742-20-5701
E-mail: nara@accu.or.jp

❖ **WHITRAP Shanghai**

World Heritage Institute of Training and Research for the Asia and
the Pacific Region under the Auspices of UNESCO (Shanghai)
3F Wen Yuan Building, Tongji University
No. 1239 Siping Road, Shanghai 200092 P.R. CHINA
Tel & Fax: (+86) 21 6598 7687
e-mail: whapshanghai@gmail.com

2. Schedule of the Conference

Day 1 (Tuesday, 27 November)

Excursion: Participants visited Yakushi-ji Temple and had the on-site lecture of the temple by Rev. MATSUKUBO Kashu, a Buddhist priest; and proceeded to the restoration site at East Pagoda in the precincts under the guidance of Mr NAKAMURA Nobuo, Head of Yakushi-ji Field Office, Cultural Assets Preservation Division Nara Prefectural Board of Education. In the afternoon, they visited the Nakagawa whiting manufacturing plant guided by Mr NAKAGAWA Haruo, President & CEO and Mr NAKAGAWA Hiroyuki, Production /Technical Manager of the company at Uji city, Kyoto.

Day 2 (Wednesday, 28 November)

09:15 – 10:00 Opening Session

Welcome addresses by organisers and guests: Mr YAMATO Satoshi, Councillor for Cultural Properties, Agency for Cultural Affairs, Japan; Mr SHIMAZU Masakazu, Secretary General of Asia-Pacific Cultural Centre for UNESCO; Mr FUKASAWA Yoshiki, Deputy Director General, National Institute for Cultural Heritage, Nara National Research Institute; Ms Lu Wei on behalf of Prof. ZHO Jian, *Director*, WHITR-AP Shanghai, World Heritage Institute of Training and Research-Asia and Pacific (Shanghai); Mr SUGITA Norihide, *Vice-Governor*, Nara Prefectural Government; and Mr NAKAGAWA Gen, *Mayor*, Nara City.

10:00-10:45 Special Speech: Mr Stefano De Caro (ICCRROM)

“Global Trends on Human Resources Development for the Transmission of Traditional Skills”

11:00-11:45 Keynote Speech I: Mr YAMATO Satoshi (Japan)

“Transmission of Traditional Skills for Preservation of Cultural Properties in Japan”

11:45-12:30 Keynote Speech II: Mr DAI Shibing (China)

“Traditional and Modern Coloring of Stone Inscriptions on Precipices in China: an Example from World Heritage Wuyishan, PR China”

13:50-14:25 Case Study Report I: Mr A Ghafar Bin Ahmad (Malaysia)

“Traditional Building Skills in the Conservation of Heritage Mosques in Malaysia”

14:25-15:00 Case Study Report II: Mr Kai Weise (Nepal)

“Safeguarding Traditional Painting Skills in Nepal”

15:20-15:55 Case Study Report III: Mr Jagath Weerasinghe (Sri Lanka)

“Preserving the Painted Heritage of Sri Lanka”

15:55-16:30 Case Study Report IV: Mr Le Phuoc Tan (Viet Nam)

“Restoration of Interior Decoration of Khai Tuong Pavilion - An Kinh Palace, Hue City - Viet Nam”

18:30-20:00 Reception

Day 3 (Thursday, 29 November)

09:30-10:05 Case Study Report V: Ms Jeetheng Piyakarn (Thailand)

“Lai Rod Num on Traditional Building in Thailand”

10:05-10:40 Case Study Report VI: Mr Lhaten Dorji (Bhutan)

“Traditional Painting of Bhutan”

11:00-11:35 Case Study Report VII: Mr KUBODERA Shigeru (Japan)

“Current Issues of and Future Tasks for Conservation of Coloring and Painting in Japan”

11:35-12:00 Summary of the Conference: Mr MASUDA Kanefusa

13:20-16:30 General Discussion: All participants

“Human Resources Development for the Transmission of Traditional Skills”

16:30- Closing Session

3. List of Participants

ICCROM

Stefano De Caro

ICCROM

e-mail: sdc@iccrom.org

BHUTAN

Lhaten Dorji

Project Manager (Paro Dzong Conservation Project)

Division of Heritage Sites, Department of Culture,

Ministry of Home and Cultural Affairs

e-mail: lhatendorji@hotmail.com

CHINA

DAI Shibing

Professor, College of Architecture and Urban Planning

Tongji University

e-mail: ds_build@163.com

ZHOU Jian, *Director*

LU Wei, *Executive Vice Director*

QU Ying, *Staff*

World Heritage Institute of Training and Research
for the Asia and the Pacific Region under the Auspices
of UNESCO (WHITRAP Shanghai)

e-mail: whapshanghai@gmail.com

INDIA

Rohit Jigyasu

Professor, Research Centre for Disaster Mitigation
Of Urban Cultural Heritage, Ritsumeikan University

e-mail: rohit.jigyasu@gmail.com

JAPAN

FUJIMOTO Masayuki

Associate Fellow

International Research Centre for Intangible Cultural
Heritage in the Asia-Pacific Region (IRCI)

e-mail: guu1925@unesco-c2jp.jp

INABA Nobuko

Professor, Graduate School of Comprehensive Human
Sciences, University of Tsukuba

e-mail: inaba@heritage.tsukuba.ac.jp

KUBODERA Shigeru

Director, Historical Research Institute for Architectural
Decoration Technology

e-mail: cosmos0707@gmail.com

MASUDA Kanefusa

Secretary of ICORP (Risk Preparedness), ICOMOS ISC

Visiting Researcher, Ritsumeikan University

e-mail: pfe02120@nifty.ne.jp

NARUMI Yoshihiro

Restoration Architect / Ex-Technical Staff

(Wakayama Pref. Archaeological Center)

e-mail: syohaku2005@yahoo.co.jp

NISHIMURA Yasushi

Director, Cultural Heritage Protection Cooperation Office,

Asia Pacific Cultural Centre for UNESCO (ACCU)

e-mail: nishimura@accu.or.jp

YAMATO Satoshi

Councilor for Cultural Properties

Agency for Cultural Affairs, Japan (*Bunkacho*)

MALAYSIA

A Ghafar Bin Ahmad

Professor, School of Housing, Building and Planning
Universiti Sains Malaysia

e-mail: aghafar@usm.my / aghafar7788@yahoo.com

NEPAL

Kai Weise

Chairperson, Planners' Alliance for the Himalayan &
Allied Regions (PAHAR Nepal)

e-mail: paharnepal@gmail.com

SRI LANKA

Jagath Weerasinghe

Professor, Postgraduate Institute of Archaeology

e-mail: jagath.weerasinghe@gmail.com

THAILAND

Jeetheng Piyakarn

Senior Conservation Architect

The Fine Arts Department, Ministry of Culture

e-mail: jeethengpiyakarn@hotmail.com

VIET NAM

Le Phuoc Tan

Technical Staff, Hue Monument Conservation Center

e-mail: lelep2004@gmail.com

 ACCU  WITRAP