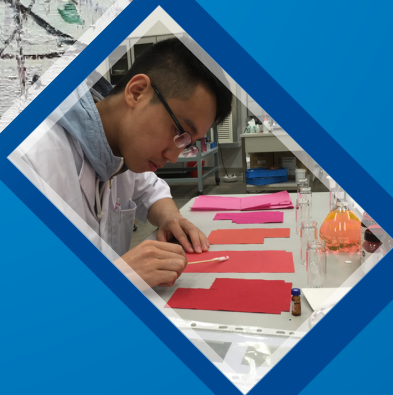




# Conservation Office Annual Report 2015-2016





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# Chapter 1

## Message from the Head of Office

I am deeply honoured to continue leading a team of professional colleagues to conserve local cultural heritage and augment the preservation of the works of art and heritage. We are also committed to enhance recognition and awareness of the public towards conservation and preservation of cultural heritage and fulfill the mission of passing on our cultural heritage to the next generations.

The year 2015 has been packed with numerous magnificent cultural and arts events. Among them, we have helped organise some large-scale exhibitions, including “The Radiant Ming 1368-1644 through the Min Chiu Society Collection” Exhibition, “The Pride of Lingnan – In Commemoration of the 110th Birthday Chao Shao-an” Exhibition and the “Wearable Blessings: Traditional Chinese Children’s Clothing” Exhibition. There were all sorts of challenges and difficulties during the entirety of the various processes which included packaging, delivering, assembling and restoring all these precious works of art comprising porcelains, lacquerwares, cloisonné enamels, wood sculptures, textiles, paintings and calligraphies, etc. With the assiduous endeavours of the staff of the Office, we managed to achieve all the tasks in accordance with the schedules with acclamation from experts and scholars. We were all exhilarated and felt gratified.

In the year, we performed conservation of the sculptures at the Tiger Balm Garden, restoring the lost parts of the lion sculpture with the original and unique “Trencadis” technique and also restored and reinforced the worn out parts of the tiger sculpture. There were also the specific conservation and remounting of the paintings and calligraphies of the renowned artists Wu Guangzhong and Tao Yun so that the majesty and grandeur of these masterpieces could be reshown to the viewers again.

Apart from dedicating to conservation, we also engaged diligently in scientific research to raise the efficiency and applications of scientific equipment. An example was the collaboration with the Chinese University of Hong Kong to jointly develop the “Wireless Environmental Monitoring Sensor Network System” in order to capture real-time data of the environment of exhibition halls and collection repositories so that illumination, temperature and relative humidity are all monitored and maintained at the appropriate levels.

Furthermore, for the purpose of enabling the general public to have a profound understanding of conservation and its significance, we have offered many educational programmes and initiatives. “The Traditional Chinese Bookbinding Workshop” were held on the International Museum Day to draw the attention of the public. To echo with the First Muse Fest HK, the signature event “Conservation Clinic” was held and our conservators played the role of conservation doctors to provide advice on conservation for the family treasures brought in by the participants. The participants then took part in a “clinical” practice session under the guidance of conservators. It was highly encouraging that the programmes were well received by the general public. In 2015, we continued to have conservation volunteers full of selfless dedication to work with us in all aspects of our work and activities. I hereby offer my utmost gratitude to them for their most conscientious commitment to the work of conservation.

We have formulated strategies for our future development and set our targets dedicated to the conservation of cultural heritage and legacies. It is the concerted and conscientious efforts and endeavours of all the staff of the Office that have enabled us to achieve these targets. There are going to be a number of major programmes to be launched in 2016. Let us work together with our talents and professionalism as foundation, to meet what we set out for the coming year.



# 2

## Chapter 2 Vision, Mission and Values

### Vision

Preserving our legacy and keeping history alive

### Mission

- To provide competent and efficient conservation support to the public museums, Art Promotion Office, and the Antiquities and Monuments Office
- To enhance conservation awareness through a range of educational and extension programmes
- To engage the community and generate public support for conservation endeavours
- To strive for professional excellence through continued learning and research as well as the commitment to heightening of work standard and service quality
- To develop local conservation expertise and foster professional exchange with overseas counterparts

### Values

Professional ethics

Accountability

Teamwork

Passion & Integrity

Excellence

Continuous Development

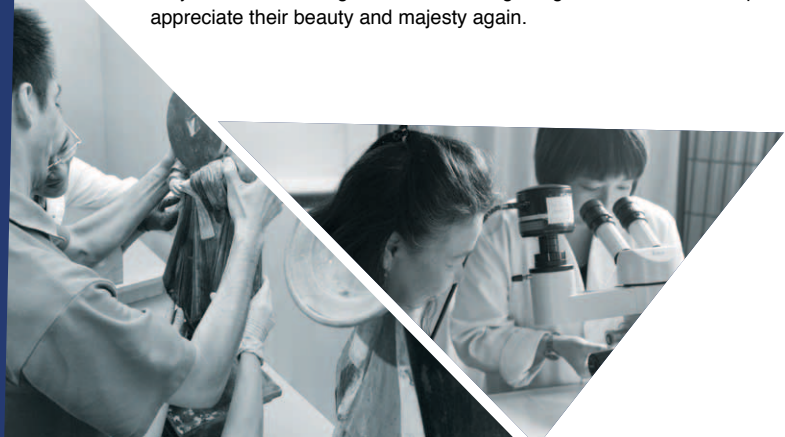
# 3

## Chapter 3 Conservation of Cultural Artefacts

### The Tiger Balm Garden – On Sculptures

The Tiger Balm Garden has been established for more than eighty years in Hong Kong. Apart from the unique architectural features, all mural paintings and sculptures in the Garden also left visitors with indelible impressions. In particular, the lion and the tiger sculptures made of reinforced concrete were the limelight of the Garden.

Both the lion and the tiger sculptures were originally aligned with the rockeries in the Garden. Owing to the years of exposure to the elements of nature and lack of proper maintenance, the Garden was in a dilapidated condition. As the garden needed to be demolished and hence all the sculptures to be removed within a short period of time, all artefacts invariably suffered damages to different extents in the course of their relocation. In the past year, we endeavoured to conserve these two sculptures, with the objective of restoring them to their original grandeur so that the public could appreciate their beauty and majesty again.



### The lion sculpture

The pattern on the body of the lion was composed of colourful tiles of ceramics, done by the technique of “Trencadis” which was seldom practiced in Hong Kong. When the sculpture arrived at the Conservation Office, the four limbs and the tail have been severed from the body. After some careful and detailed examination, it came to our notice that most of the ceramic tiles were covered with other paints and some ceramic tiles were either lost or fractured.

We firstly cleaned the sculpture of the paint using high pressure steam cleaner together with a neutral solvent to recover the original colour of the ceramics; then we fired some special bowls with similar glaze colour and cut some sherds for replacing and restoring the missing parts. Finally, we managed to put back the detached parts of the sculpture to the body using epoxy resin and welding technique so that the lion sculpture could “stand” on its feet again.



▲ The conservation staff used high pressure steam cleaner to clean the lion sculpture

### The tiger sculpture

The structure of the tiger sculpture after its demolition from its original home at the Tiger Balm was in a much better condition than the lion, but the paint on the surface of the sculpture was very fragile and some have cracked and fallen off quite seriously. For the purpose of preserving the striped pattern on its body at the original position, we adopted a brand new “transposition technique in projection”. First, we put the sculpture on a turntable which was free to rotate 360 degrees and pictures were taken at fixed angles to record the pattern of the body; then all the old paints on the body of the tiger sculpture were completely removed and new patterns were painted on the body using the information collected by the “transposition technique” to recover the heroic and majestic posture of the tiger.



▲ The tiger sculpture was placed on a turn table which could be freely rotated 360 degrees

## The Conservation of “Luan Shu”

In the new acquisitions of the Hong Kong Museum of History, there is a “Luan Shu” dated 1948 which was a kind of betrothal documents recording the details of customs and related traditional rituals of marriages in China. The page of the document have deteriorated and turned flimsy and flaky. Signs of cracks and creases were prevalent which literally prohibited opening the folded page and reading the texts inside.



◀ The “Luan Shu” before restoration, showing lots of cracks and creases

Before the treatment, we did a chemical analysis of “Luan Shu” and identified that the red dye used was a synthetic red dye, while the page was made of bamboo fibre with a high lignin content. The page had lesser resilience and decreased in strength due to deterioration and subsequently a higher tendency to break.

Red connotes happiness and fortune in ancient Chinese culture, and hence is often seen and used on festive occasions like marriages. In order to investigate the composition of the red dye used precisely in “Luan Shu”, we extracted the red dye with methanol and analysed it further by liquid chromatography mass spectrometer. The result showed that it was a salt based pink colour dye named Rhodamine. It was low cost dye commonly used in the early 20th century and is water soluble.

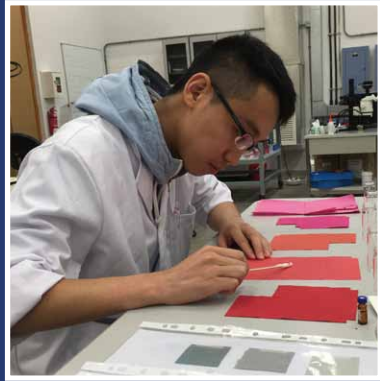
The adhesive used for conserving this paper artefact was the methyl cellulose which involved water in the course of work. We therefore had to be extremely careful and skilful to avoid mobilising the red dyes during the application of the adhesive. We heated the adhesive to a temperature of 75°C and supported the back by lining a sheet of long fibre paper; on the other hand, we used ultrasonic instrument to moisten the paper document gradually but not letting water drops stay on the page. When the fibre of the pages of “Luan Shu” were completely moistened and hence softened and relaxed, the tears and the damaged parts were restored with long fibre paper strips and pre-heated adhesive.



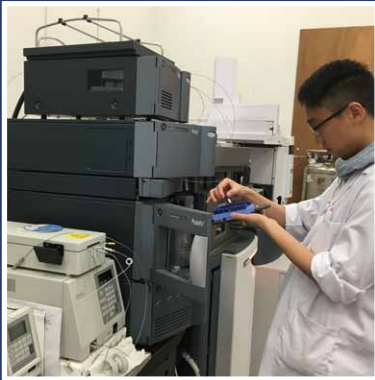
### Chapter 3 Conservation of Cultural Artefacts



▲ Cleaning the surface dirt from the Luan Shu using chemical sponge



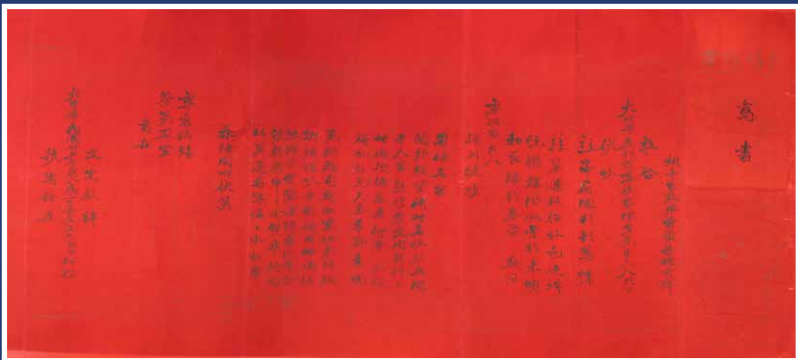
▲ Using solvent to extract samples of dye



▲ Analysing the specimen using liquid chromatography mass spectrometer



▲ Long fibre paper prepared for conservation



▲ The "Luan Shu" could be laid wide open after conservation treatment

## The Oil paintings of Wu Guanzhong

We continued with the restoration of the oil paintings of the late contemporary Chinese painting master Wu Guanzhong. An oil painting titled “Xidi Village” in the series showed symptoms of separation and lifting of paints, besides the need to remove mould from the surface. We used glues prepared from the air bladder of sturgeons, together with the mini temperature control heated spatula to restore the lifting paints to their original positions.



▲ Part of the painting of “Xidi Village” 2001



▲ Before restoration, there were lifting paints in some parts of the painting (above) and the lifting paints were restored and consolidated (below)

In another oil painting “Encounter”, there was the problem of paint losses. By referring to the early photos of the painting taken when it was in pristine condition, we did the refilling, texturing and in-painting in accordance with the shape, colour and brush stroke of the missing areas.

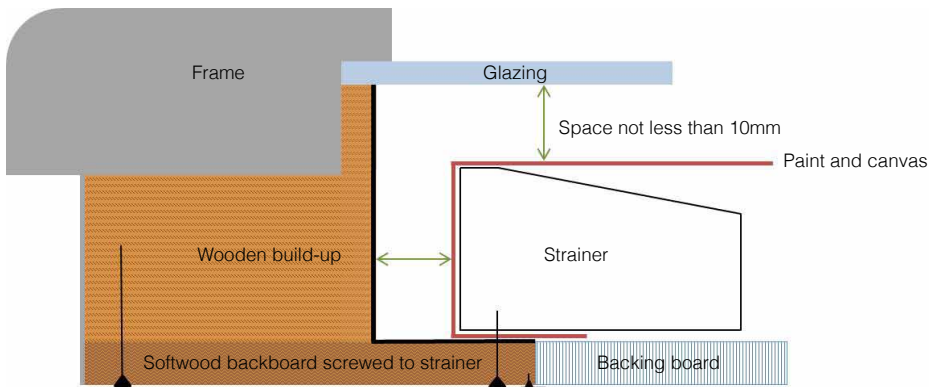


▲ Part of the “Encounter” 1999.



▲ Before restoration, there was an area of paint loss (above), and it was restored to its original appearance (below)

In addition, for the purpose of avoiding any accidental damage to the thick and heavy brushwork of the master, we have designed special frames for this collection of oil paintings so that there is an appropriate separation between the paint surface and the glazing. The new frames not only protect the paintings from dirt, dust, air pollutants and impact, but also reduce the effect of fluctuations in temperature and humidity.



▲ Cross Section of a Frame

## The Conservation of Chinese Paintings of Master Tao Yun

Mr. Tao Yun (1911 – 2004) was a Hong Kong painter, acclaimed particularly for his landscape paintings. The paintings unit conserved and remounted three hanging scroll paintings donated by the family of Mr. Tao to the Hong Kong Museum of Art.

All three hanging scroll paintings were mounted in typical southern style. The paper borders of the painting were in poor condition due to the fact that the paper borders were not as strong as the silk fabric borders. There were also other damages in various parts of the borders, like cracks, holes and water stains. In addition, the painting itself was neither in good condition and there were dirt marks, creases, scratches and stains. The whole painting even looked slightly yellowish and mouldy. All of the above issues desperately needed conservation attention.

One of the two fan paintings in hanging scroll format carried worn surface with creasing along the edges. Part of the edges of the painting were raised owing to the loss of adhesion. The creases were close to the painting core, causing unevenness of the entire scroll. We discovered that these problems were rooted from the use of thin paper material for surrounding borders when it was first mounted. The two fan paintings were much thicker than the surrounding borders, creating the uneven surface of the hanging scroll with a raised layer of the painting itself against the four sides of relatively thin layer of surrounding borders. After numerous rolling and unrolling of the hanging scroll, the raised surface was wearing out gradually and the flat surface of the painting started to warp inwards from the edges. The surrounding borders was too thin and weak and hence formed creases gradually. After we ascertained the causes of the problems of the painting, we formulated a treatment plan, including cleaning and remounting.



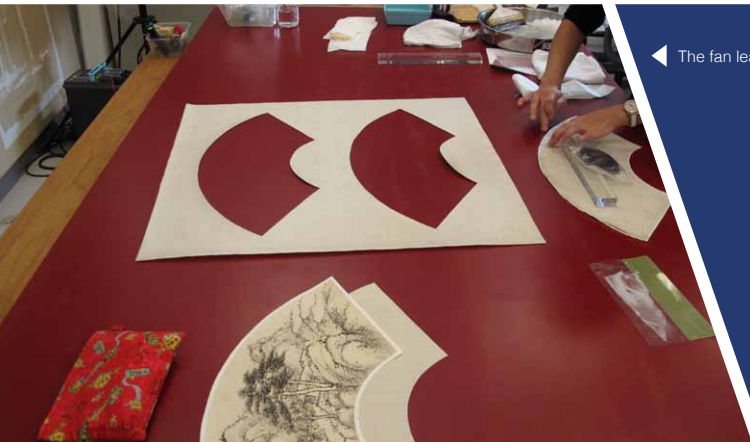
▲ The paper borders showed serious damages and there were cracks near the upper rod



▲ Before restoration (left), dirt marks, traces of mould stains and yellowing were found on the painting's surface. After restoration (right), all the marks and stains had been removed

First, we placed the hanging scroll on the red mounting table and gently applied deionised water by goat brush to wet the painting core until it was drenched. We then absorbed the yellowing water by lightly rolling over the surface of the painting. We repeated this process until the deionised water did not turn yellow. We would then remove the backing from the painting core and started restoring the damages. The painting core would be remounted after.

We generally would remount the painting in its original format, however, it could not be applied in this case. The original support of the two fan paintings was rather thick, adopting the same thickness for the mounting material would definitely cause the hanging scroll too thick to be rolled and unrolled. The same old problems would recur as time passes. We therefore decided to remount the two fan paintings into a Perspex frame so that the fan leaves could be kept level and straight under a good storage environment.



◀ The fan leaves were inlaid into the silk borders



▲ Before restoration (left)



After restoration (right), the fan paintings were remounted in glass frame

## Tina Leung's Cheongsam

A collection of 41 cheongsams belonging to the late actress Tina Leung was donated to the Hong Kong Museum of History. These cheongsams were tailored in 50s – 60s when the entertainment business in Hong Kong was in its heyday. They have become mouldy and desperately needed preservation and restoration.

These cheongsams were probably kept in places where the humidity was high or have been swamped and mould has grown as a result. Mould would not only damage the fabric of the cheongsam but also pollute other collection items and even cause harm to human. Hence all the cheongsams had to be packed and stored separately in sealed plastic bags and to be properly treated in due course. In handling mouldy objects, we also carried out all the necessary procedures to protect our own health. Apart from wearing protective gloves, outfits and masks, we also used vacuum cleaner that was equipped with high efficiency particle filter to clean the cheongsams.

In order to prevent the reoccurrence of mould growth, the cheongsams were stored in the museum stores with relative humidity controlled at 65% after adding the padding support.



▲ The volunteers were using a vacuum cleaner to remove all mould residue on the cheongsam

## Bird Specimen

Tringa, also known as *Tringa stagnatilis*, is a migratory species and would fly pass Hong Kong en route to its destination in the change of seasons. Amongst the specimens that are kept at the Hong Kong Museum of History, there is one missing its lower leg, feet and talons. Owing to the lack of a sound structure, it is not appropriate for display. We reconstructed the missing parts of the specimen so that it could stand on its feet like a Tringa normally does.

When we decided on the materials to be used for the “leg”, the weight of the specimen, the stability of the material used and its durability and appearance are all factors that needed to be taken into consideration. We did various tests and in the end, we chose to use woody material to rebuild the framework of the leg. In order to provide sturdy support for the lower part of the body, we used adhesives to attach the reconstructed part to the existing upper part of its leg, and the talons and the new “feet” would be put together as mortise and tenon with adhesives. We used long fibre Japanese paper to imitate the outer skin and painted the skins with associated patterns. Finally, the imitated skin was wrapped around the new leg with adhesive. The specimen is now on display in the exhibition hall.

The specimen before reconstruction ▶



◀ The specimen after reconstruction



## Rattan Hat

The restoration and preservation of exhibits are the major responsibilities of the Office. The rattan hat was wilfully and badly damaged at the permanent exhibition “The Hong Kong Story” at the Hong Kong History Museum. Some of the rattan strips near the tip of the hat were damaged and missing, with the hay inside the hat disrupted. There were also some loose rattan strips around the rim of the hat.

We first used some nylon fishing line to fix the loosened strips around the rim of the hat and rearranged the top part of the hat with hay. We then used similar rattan strips to weave the top part of the hat again. Considering the security of the exhibits, this restored rattan hat is for the time being stored in the collection repository.



▲ Conservator used rattan strips which were similar to the original material to weave the damaged top part of the hat



▲ Before restoration



▲ After restoration



## The Radiant Ming 1368-1644 through the Min Chiu Society Collection Exhibition

“The Radiant Ming 1368-1644 through the Min Chiu Society Collection” Exhibition featured more than 300 artefacts of the Ming Dynasty which were on loan from members of the Min Chiu Society. The exhibits included porcelains, lacquers, cloisonné enamels, jades, textiles, furniture, gold and silver wares, paintings, calligraphies, stationeries, recreational objects, and religious figurines, etc.

After we have received the artefacts, we examined each of them to record their condition, and with the owner’s approval, we performed various treatments and prepared them for display. Amongst the exhibits, there were two large green and brown glazed male and female pottery figurines, both of which were made up of three integral parts. After detailed examination, it was ascertained that there were places that showed severance and evidence of previous restoration, and there were missing parts on the body which was connected to the base. To display the exhibits safely, preventive conservation was deployed. Brass display gadgets were made according to the shape of the exhibits which would not only facilitate assembly but also be more in line with the posture of the figurines, adding beauty and physical safety to the exhibits.

Conservators assembled the brass display units for the pottery figurines ▶



There was a gown worn by the civil officials of the Ming Dynasty patterned with “cloud and wild goose in red satin”. To avoid putting all the weight on the two shoulders and protecting all the original buckles, we decided to discard the conventional mannequin but to make use of a specially made metallic slanting platform. The artefact was laid on it with magnets evenly distributed on the inside and outside of the gown to fix its position. The exposed magnets were covered with fabric in similar colour to produce an aesthetically pleasing viewing effect

In order to ensure that the exhibits would be displayed under the best possible environment, we used an environmental monitoring system to monitor the environment of the gallery and showcases including temperature, humidity and lighting. For all the items on display which had easily faded dyes or paper based artefacts which are susceptible to damage by light, the light level is controlled and monitored strictly under 50 lux. All the ultra-violet rays inside the gallery were filtered. The humidity of the showcases housing the metallic artefacts has been monitored and maintained below 40%.



- ▲ Deploying principles of magnetism, the conservators put magnets both inside and outside and evenly over the various parts of the gown in order to fix the position of the precious artefact

## The Pride of Lingnan – In Commemoration of the 110<sup>th</sup> Birthday Chao Shao-an Exhibition

To commemorate the 110th birthday of the renowned master of the Lingnan School of Painting, the Hong Kong Heritage Museum and the Guangzhou Museum of Art jointly organised “The Pride of Lingnan – In Commemoration of the 110th Birthday Chao Shao-an” Exhibition. The Exhibition displayed the masterpieces dated 1930s to 1990s of Professor Chao Shao-an, which were mounted and showcased in various formats including scrolls, fans, albums and frames.

The preparation for the Exhibition is extremely challenging. In order to harmonize the different display formats of the two museums, the needs of some artworks in poor condition, and also the time constraint in mounting the exhibits, there has been very close communication and collaboration between the conservation staff, the curators and also the designers in the two museums. An appropriate environment was designed and a uniform mounting format was tailor-made for various artworks from both museums in order to foster a harmonious viewing experience. We also tailor made travelling crates for the purpose of transportation to ensure that the exhibits would be safely delivered back and forth between Guangzhou and Hong Kong.



◀ The conservators worked on the assembly for “The Pride of Lingnan” Exhibition

## Wearable Blessings: Traditional Chinese Children's Clothing Exhibition

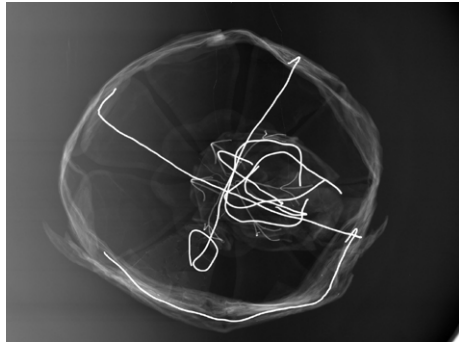
The "Wearable Blessings Exhibition" showcased more than 200 sets of children's clothing from the late Qing Dynasty to the early Republican days including hats, clothes, bibs, footwear, etc. The exhibits bore rich and exquisite embroidery and impressive applique which reflected vividly the true and sublime love and blessings of the parents to their children. These exhibits embodied both aesthetic value and historical significance. Amongst the exhibits, some of them have been damaged to some extent and warranted conservation, and needed special mounts for display.

### Conservation

Firstly, we eradicated the pests in clothing with nitrogen fumigation. The damaged parts in the children's clothing would be repaired by fabrics of similar colour and materials and mended with fine sewing threads and exquisite stitching skills. Most of the children's hats have become deformed. After we had used ultrasonic humidifier to apply cold mists to the hats, the fibre of the hats would relax gradually and be ready for reshaping accordingly.



▲ A conservator was assembling a child hat



▲ The X-ray image of the child hat "Cap with the boy and lotus motifs"

Amongst the various exhibits, the conservation for the “Cap with the boy and lotus motifs” was the most exciting and exhilarating. This hat was made in the 1930s and the lotus boy figure at the top part of the hat was severely deformed. The original metal frame used to hold the figure in its posture was partly exposed and twisted. Most of the framework that supported the hat and the figure was covered by the fabric and other decorations and hence could not be seen with naked eyes. We had performed an X-ray imaging analysis to reveal the inner structure of the hat, including the exact locations of the metallic framework and the various contact points. The analysis enhanced the mapping of the exact location of the figure on the top part of the hat. We also used the ultrasonic humidifier to moisten the linings of the hat and the figure to enhance the resilience of the fabrics, hence enabling us to reshape the hat precisely.

#### Installation, Assembly and Display

For the sake of exhibiting the children’s hats and various clothes in their original styles and forms so that the audience can really appreciate the unique design and pattern of the exhibits, a most appropriate way of assembly is of utmost importance. First and foremost, we had to discuss with the designers and the curator to devise the mounting approaches for different types of objects. According to the profile and format of the hats, custom mounts were designed and made with the use of perspex, foam or Fosshape, etc. It was a meticulous and lengthy process in making the mounts especially the hat mounts; the tasks included taking dimensions, drawing the profile to conform the shape of the hats, preparing the mock up, fitting out and padding. We gratefully thanked the passionate volunteers who had committed to the preparation of these mounts for the exhibition so that the work could be proceeded smoothly as originally scheduled.



▲ A deformed child hat was reshaped after being conserved

## Preservation work for contemporary works of art on loan to external parties

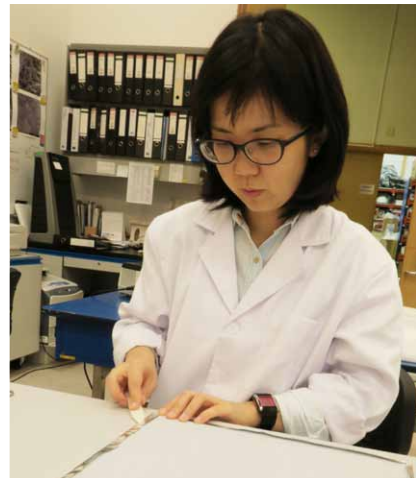
Artists generally use a mix of materials as a medium to present their wild and creative ideas reflected vividly in their works of art. Hence, how to deliver contemporary works of art safely for exhibition always presented a significant challenge to us.

We reframed Contemporary ink paintings which were on loan to Shanghai for exhibition. Owing to their large sizes and the uneven painting surfaces, we specifically selected thinner and non-reflective plastic sheets of thickness less than 3 mm for protection, much lighter than the normally used 4 mm or 6 mm acrylic sheets. The non-reflective sheets also helped audience to have a better viewing of the painting. In addition, we also added a plastic tape of about 1.5mm thick at the inner edges of the frame to separate the surface of the painting from the plastic sheet, so that they would not stick together and damage the surface paints.

On the other hand, exhibits on loan would also come across all sorts of circumstances, particularly changes in relative humidity which would result in expansion or contraction of paper based artefacts owing to the changes in the water content in air. This would subsequently cause distortion or deformation, cracking, even ageing and other damages to the paper. In addition, there were also risks such as flaking of the surface paints on the paintings. We decided to insert the Art-sorb® sheet at the back of the frame and sealed it properly to provide a stable micro-climatic environment for the painting and protect it against the changes in humidity of the external environment during its travel or display.



▲ A conservator was examining the painting



▲ Inserting the Art-sorb® sheet at the back of the frame and sealed it properly to provide a stable micro-climatic environment for the painting

## Moving of the “Contact” to a new home

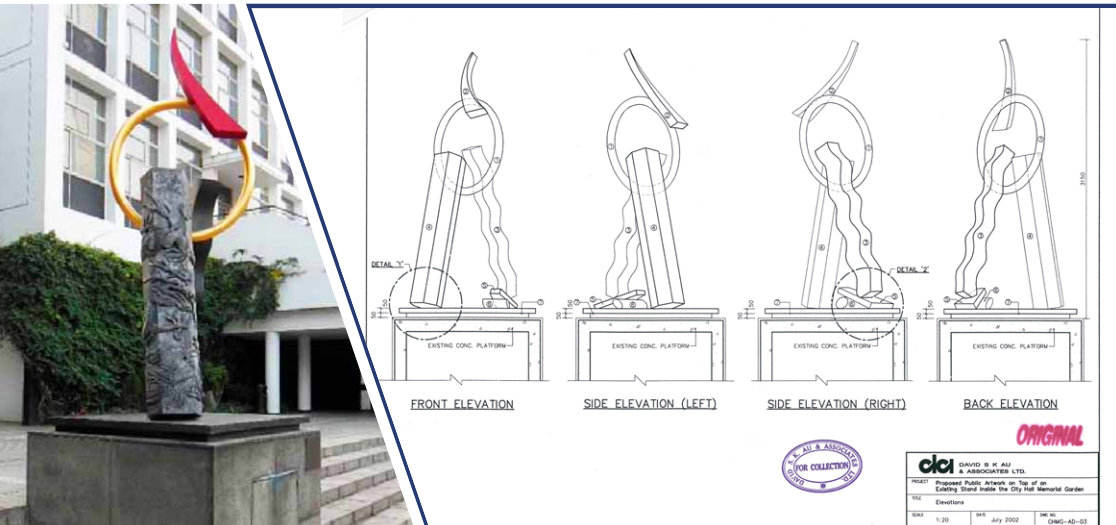
The Art Promotion Office started to plan around the end of 2014 to relocate the sculpture “Contact” which was originally situated at the Memorial Garden of the City Hall in Central to Tin Shui Wai for exhibition on a long-term basis, in order to add cultural ambience to the community.

### Preparation

“Contact” was forged in bronze and brass, and the concept was stemmed from the Chinese traditional culture deploying elements of algebra to construct space with different postures of both a dragon and phoenix to convey messages of happiness, harmony and good fortune. As the surface of the sculpture has been exposed to the elements of nature for years, there were signs of wear and tear as pollutants and salt in the air just helped quicken the process of corrosion. Fortunately, the overall structure of the artwork remain sound which facilitated the subsequent work of demolition and relocation. In the course of the planning and preparation for the relocation exercise, we researched extensively on the details of design and installation plans to help us understand how it was originally installed.

### Demolition and Removal

The concrete base of the original sculpture has a thickness of 40 cm and hence required heavy duty machine for cutting. Advanced cutting machinery not only cut through a concrete structure of close to half a metre’s width, it can also reduce significantly the amount of noise and pollution from the cutting process hence reducing the negative impact on the neighbourhood. After successfully separating the sculpture which weighs 450 kg from its concrete base, the team continued to remove the remaining residues of concrete from the sculpture manually in order to further examine the structure of the base of the sculpture.



▲ “Contact” was originally erected at the Memorial Garden, City Hall in Central

▲ Technical drawings showing the original installation method of “Contact”

### Relocation and Restoration

After travelling through half of Hong Kong, "Contact" has finally arrived at its new residence at the Lynwood Sitting-Out Area in Tin Shui Wai. Before installation, we worked together with the engineering team and examined again the structural condition of the artwork and the dimensions of the new base to ensure that all the details were precise and accurate.

The installation of the sculpture warranted a high degree of precision and efficiency. With the concerted efforts of the engineering team, we managed to install "Contact" at the Lynwood Sitting-Out Area. After several weeks of on-site conservation work including regilding, cleaning of corrosion and reapplication of a protective coating, "Contact" reappeared in front of the public in its original state, engaging the audience to deliberate the true meaning of "Contact" with its ambience.



▲ The engineering team was making the final preparation before the cutting process



▲ The engineering team used a pulley system to re-position "Contact" at an appropriate location



▲ The metal framework of the base of "Contact"



▲ At the Lynwood Sitting-Out Area in Tin Shui Wai, the engineering team used the lifting truck to help installing "Contact"



▲ "Contact" at the Lynwood Sitting-Out Area of Tin Shui Wai added cultural ambience to the community



# 4

## Chapter 4 Research and Development

### The Brand New “Wireless Environmental Monitoring Sensor Network System”

We are pleased with the launch of the “Wireless Environmental Monitoring Sensor Network System” which was developed jointly with the Hong Kong R & D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM) and the Faculty of Engineering of the Chinese University of Hong Kong.

To monitor the temperature, relative humidity, illumination level and other variables have always been top of the list of priorities of conservation personnel and the information collected constitutes the fundamentals for providing proper preventive conservation to cultural heritage and artefacts. With the continuous advancement in technology of wireless sensor network (WSN), there are quite a number of applications which have already been commercialised. However, most of the WSN based sensor systems are hefty priced and sizeable, limiting their applications and usage. Consequently, the Conservation Office collaborated with the local researchers and professionals from 2012 to jointly develop a brand new environmental monitoring system based on Radio Frequency for Identification technology (RFID).



▲ A brand new environmental monitoring system was first used at the “Western Scientific Instruments of the Qing Court” Exhibition in 2015 to monitor the temperature and humidity of the display cases

With the support and assistance from the Hong Kong R & D Centre for LCSM, the team succeeded in developing the “Wireless Environmental Monitoring Sensor Network System” with the following brand new features:

- Pluggable RFID hardware platform and general sensor interface – users can work according to different monitoring needs to connect with up to five external sensors, recording all different environmental data simultaneously;
- Manage all pluggable RFID hardware devices with software modules, in order to enable users to analyse data collected from the monitoring systems;
- To support and connect thousands of sensor devices inside large and comprehensive buildings such as museums and historical buildings wirelessly.

The prototype of this brand new monitoring system has passed the site test at the Hong Kong Museum of History and the Hong Kong Film Archive, and was put in use during the “Western Scientific Instruments of the Qing Court” Exhibition held at the Hong Kong Science Museum with marvellous results. It is hoped that this research application will be commercialised successfully in the coming two to three years.

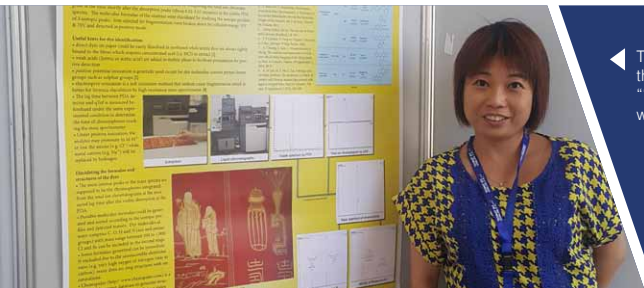
## Academic Papers and International Conferences

We encouraged our team members to participate in academic conferences and present papers for professional exchange.

Conservation Officer (first on the left) with other participants.



◀ The representative of the Conservation Office at the TECHART 2015 presenting the poster entitled “Unveiling Chinese red dyes through the centuries with quadrupole time-of-flight mass spectrometry”



### 1. Monitoring Systems of Temperature and Humidity of the 21st Century

An officer representing the Office participated at the 25th International Symposium of International Committee for Documentation of Cultural Heritage, CIPA, held at Taipei and presented a paper entitled “The Temperature Monitoring System in Museums of the 21st Century”, exploring the latest developments of wireless relative humidity and temperature recording systems deployed by museums.

### 2. Unveiling Chinese red dyes through the centuries with quadrupole time-of-flight mass spectrometry

Our colleague participated in the TEChart 2015 at Catania, Italy, an international conference jointly organized by the International Council of Museums – Committee for Conservation (ICOM-CC) and the Associazione Italiana di Archeometria (AIAR) (Italian Archaeometric Society). At the Conference, a poster namely, “Unveiling Chinese red dyes through the centuries with quadrupole time-of-flight mass spectrometry”, was presented. It discussed the application of liquid chromatography time-of-flight mass spectrometry in identification of the dyes on paper and textile artefacts.

### 3. A Conference on the Future of the Museum and the Gallery

Our two conservation officers attended the Conference “The Future of Museum and Gallery Design” jointly organised by the University of Leicester, K11 Art Foundation and UK Trade and Investment in Hong Kong, and also presented two articles, namely, “A future for the Past and Present – Leveraging on conservation educational programmes” and “Discover the Fascinating History of the Historic Fireboat ‘Alexander Grantham’”. The former focused on how conservators promoted the merging of “conservation” and “exhibition” in an educational programme to become a powerful tool of communication which is a break through from the traditional framework of museum; the latter used the “Alexander Grantham” as an example to illustrate how to augment the overall comprehensiveness of exhibits and apply the approach “exhibition as communicator” in order to enable the viewers to have a better understanding of the exhibits.



◀ A speaker answering questions from the floor

# 5

## Chapter 5 Education and Extension

### School Culture Day Scheme

In the year, we hosted the “Conservation DIY” workshop in line with the School Culture Day Scheme with themes covering oil paintings, wooden carvings and textiles conservation. More than 200 teachers and students from 7 secondary schools joined the program. The students came to know the significance of conservation through these activities and experience the challenge and joy of conservation work.



▲ Students participating in “Conservation DIY” workshop, learning conservation of oil paintings and making miniature frames

## International Museum Day 2015 Hong Kong

To support the “International Museum Day 2015 Hong Kong”, the Conservation Office hosted a total of four sessions of “Classic of Craft Book: Traditional Chinese Bookbinding” workshop, introducing how a book is bound using traditional method, so that 117 participants could also start from the scratch to make one by themselves.



▲ The participants with their finished products



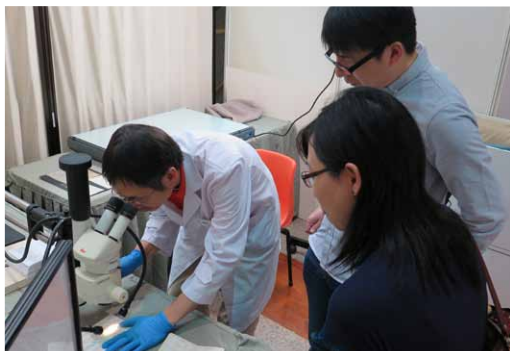
▲ The participants were attentively binding a book using the traditional binding method

## Conservation Clinic

To echo with the Muse Fest HK 2015, we specifically launched an interactive four-day programme “Conservation Clinic” between the end of June and early July in 2015. For the first of its kind, staff of the Office role played as “conservation doctors” at the Hong Kong Museum of History and Hong Kong Museum of Art. It attracted over 200 visitors who brought along their family collection of treasures, including Chinese paintings and calligraphy, archival documents, books, photographs, silverware and coins for conservation consultation. Specialist conservators provided advices to the participants on the condition and care of their treasured objects. The participants came to know more about the techniques and tips on conservation and preservation of their cultural heritage and personally started restoring them under the guidance of the conservators.



▲ Participants carrying out practical conservation treatment under the guidance of the conservators

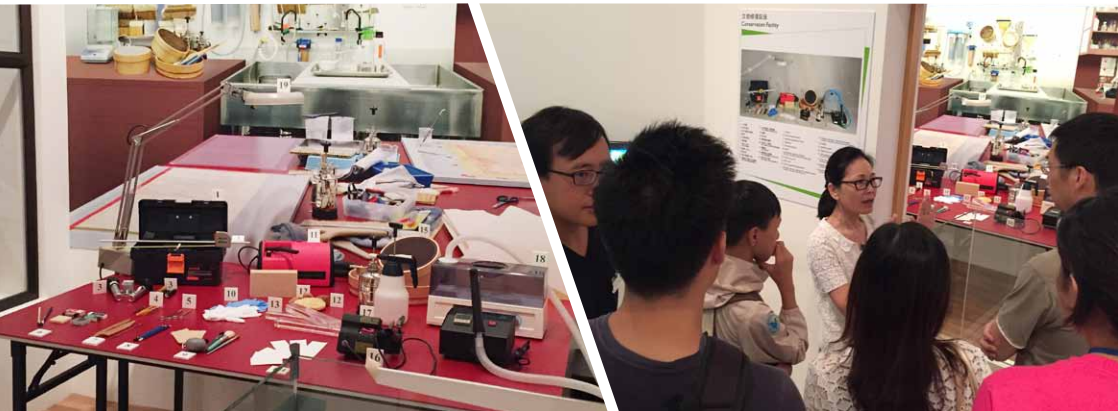


▲ A snapshot of Conservation Clinic

## “Be a curator” Interactive Journey Exhibition – Museum Conservation Hub

The “Be a curator” Interactive Journey was a special event organised to support the 2015 Muse Fest HK, hosted by the Leisure and Cultural Services Department at the Hong Kong Museum of Art for free admission to the public.

We set up a “Museum Conservation Hub” showcasing the scene of a conservation laboratory with a full array of hand tools and equipment, to introduce to the public the behind-the-scenes of conservation in an interesting and spectacular way. During the exhibition, there was also the interactive game “Catch the Killers of Cultural Artefact” so that the visitors would be able to know more about the appropriate environment for preserving cultural artefacts and rectify the adverse environment for preservation.



▲ Museum Conservation Hub

▲ Conservators explained the use of various tools and equipment to the visitors

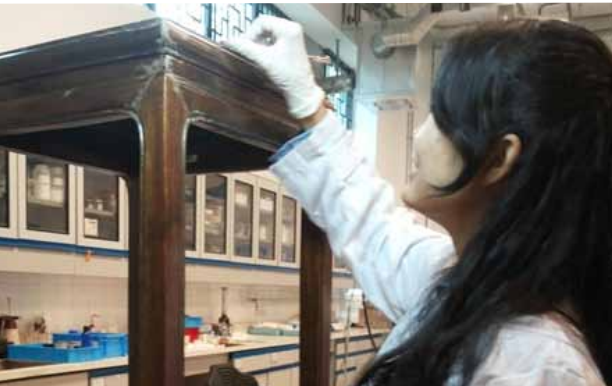


◀ An interactive game “Catch the Cultural Artefact Killers”

## Conservation Intern

The work of this Office covers conservation of historic buildings and hence every year many students in Architectural Conservation Programme would join the internship programme so that they can apply their theoretical knowledge to daily practical work. This year, the interns included Josephine Fu, Margaret Lau and Chow Koon Tong. During the internship, they came to know the conservation process of historic buildings and cultural heritage, and also experience the hardship and happiness of the work of conservation.

Josephine Fu, studying a Master of Science degree (Architectural Conservation Programme) at the University of Hong Kong, and undertook an internship from January to April, 2015. During the internship, she took part in the conservation of the wooden chairs of the Government House. By experiencing the basic procedures of restoring wooden furniture at first-hand, she has strengthened her knowledge of wooden cultural artefacts.



▲ Josephine removing the aged varnish from the surface of the wooden chair with a spatula



▲ Margaret pasted some gold foils onto the wooden couplet of the Tat Tak Communal Hall



▲ Sophie consolidating flaking paint under the microscope

Sophie Tan works at the Heritage Conservation Centre in Singapore and joined the Office in April for a four-month internship, taking part in the conservation and research of oil paintings, including the China Trade oil paintings, the works of the contemporary local artists and the oil paintings of the master Wu Guangzhong. According to Sophie, "This internship is a trip full of learning opportunities, and enhances my understanding of preventive conservation and interventive treatment."

Ng Lok Yung is studying Chinese Studies in Hong Kong and did a seven-month internship with the Office and was involved in the conservation of the Chinese architectural heritage, including the murals of the Wong Uk and the Ha Tsuen, and the clay statue of the deity Che Kung in the I Shing Temple. Lok Yung has learned Chinese calligraphy since childhood and in the course of restoring the murals of the Wong Uk, she conducted researches and collated information on the faded colour poems on the murals for future reference of researchers.



▲ Lok Yung was cleansing the dirt from the murals in Ha Tsuen



▲ Ka Yan was cleansing the dirt on the wooden sticks with laser

Lau Ka Yan is studying anthropology and in her two-month internship with the Office, she participated in the cleansing and recording of many cultural heritage such as the bottle unearthed from the Kai Tak Archaeological Site and also the wooden sticks from the Hung Shing Temple in Kau Sai Chau, Sai Kung. In the course of the internship, Ka Yan also learned the skills and techniques to conserve archaeological finds like reassembling the ceramic sherds, use of filling materials for restoration, etc.

A current graduate from the Faculty of Art and Conservation, University of Delaware, Choi Yan Ling, worked for a two-month period at the Office as an intern. During the internship, she was involved in the conservation of the Foshan Woodblock New Year Paintings and the screenplays of Cantonese operas. She also helped with the preparation of the “The Oral Legacies” Exhibition hosted by the Intangible Cultural Heritage Office.





▲ Yan Ling was restoring the Foshan Woodblock New Year Prints



▲ Yan Ling was inspecting the sample of the Foshan Woodblock New Year paintings

Giorgia Pizzol is a fresh graduate from the Chemistry Department of the University of Venice and has worked for a four-week internship at the Office. The projects that she has taken part in included the “Analysis of Materials of the Lion Sculpture of the Tiger Balm Garden”, the “Salt Erosion Study of the Shi Wan Pottery Figurines” and the “Material Analysis of the Fat Tat Tong”. This is the first time that Giorgia has ever taken part in the research of Oriental cultural artefacts and she really enjoyed this precious learning opportunity.



◀ Giorgia helped with sampling for analysis at the Fat Tat Tong

# 6

## Chapter 6 Community Engagement and Partnership

### Conservation Volunteer Scheme

The Conservation Office has launched the Conservation Volunteer Scheme since 2002 aiming to strengthen the engagement and participation of community in the conservation of priceless cultural heritage, and promoting the knowledge of conservation to the public.

We have recruited a total of 152 volunteers in 2015 and they have contributed a total of 8,733 service hours in the work of conservation as well as in education and extension activities. For the third consecutive year, we were awarded by the Social Welfare Department the “Gold Award for Volunteer Service (Organisation)”.

To pay tribute to the assiduous efforts of all the volunteers committed to the work of conservation, we hosted the “2016 Conservation Volunteer Briefing Session cum Volunteer Award Presentation Ceremony” at the Hong Kong Science Museum Lecture Hall on 16 January, 2016. There was a record breaking of 49 volunteers who have been presented with awards for their outstanding contribution.



▲ A group photo of all the awarded volunteers, the Head and the conservators of the Office



▲ A guided tour for the volunteers, explaining the conservation of the “DC-3 aircraft”

After the Ceremony, the volunteers were invited to visit the largest exhibit – “DC-3 aircraft” ever suspended at the Hong Kong Science Museum and the Exhibition “The Radiant Ming 1368-1644 through the Min Chiu Society Collection” at the Hong Kong Museum of History to share the experience and difficulties of the conservators in the preservation and display of different cultural heritage.

## Airport Display – “Made in Hong Kong”

The manufacturing industries have played a significant role in the economic development of Hong Kong. In the early twentieth century, the manufacturing industries have already created and produced a wide range of products locally.

In order to facilitate Hong Kong citizens and foreign travellers to experience the impact of manufacturing industries in Hong Kong, the Office has collaborated with the Hong Kong Museum of History and the Hong Kong Airport Authority to stage the “Made in Hong Kong” exhibition at Gates 22 and 31 at Terminal 1 of the Hong Kong International Airport.

Showcasing over a hundred collections including traditional, century-old branded products as well as various products manufactured during the industry-boom, the “Made in Hong Kong” exhibition aims to illustrate the heyday of the Hong Kong manufacturing industries in retrospect and manifest the flexibility, adaptability and creativity of the local people.

The “Made in Hong Kong” exhibition has already attracted a total of over 100,000 viewers in a short span of one month after its opening.



▲ The “Made in Hong Kong” Exhibition at Gate 22 (left) and Gate 31 (right) of the Hong Kong International Airport



▲ Exhibits of the textiles industries



▲ A visitor viewing the exhibits of the plastic industry

# 7

## Chapter 7 The Other Conservation Teams of the Leisure and Cultural Services Department

### The Book Conservation Team of the Hong Kong Central Library

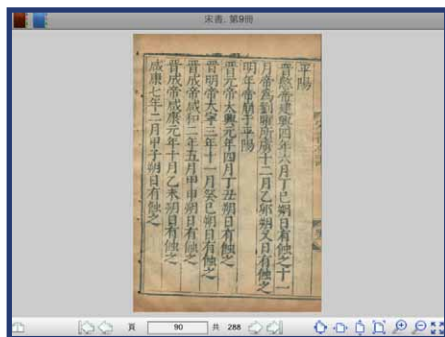
The Book Conservation Team at the Hong Kong Central Library continued to dedicate to the preservation of precious collections of the Library including the conservation of the depository items from the Hok Hoi Library to tie in with the digitisation schedule of the Hong Kong Public Libraries.

The book pages of Ancient Chinese books are particularly flimsy and hence susceptible to damage. Through digitisation, the access to the books would be greatly reduced and thus enable them to be kept safely in their existing condition. In the year, the Book Conservation Team has conserved a total of 125 volumes of precious traditional classical literature. Conservation work included disbinding, separating the pages at the spine, coding, repairing, flattening and scanning followed by rebinding.

The Ancient Chinese books including the “Songshu” authored by Shen Yue of the Southern Liang Dynasty, and also “Tang Lei Han” by Yu Anqi of the Ming Dynasty have been conserved. Of these, the electronic version of the “Songshu” has been uploaded to the Multimedia Information System of the Hong Kong Public Libraries for the public to read in the cyberspace.



▲ The electronic version of the “Songshu” has been uploaded to the Multimedia Information System of the Hong Kong Public Libraries



▲ The electronic version of the “Songshu”

## The Hong Kong Film Archive Conservation Unit “Colourful Youth” (1966) – 2015 New Restored Version

The Hong Kong Film Archive found the film materials of the film “Colourful Youth” at the demolishing Olympia Theatre in North Point, including the reels of picture negatives that could be used for restoration, the soundtrack negatives, and other copies. However, most of the films materials have been badly damaged, leaving behind only a set of nine reels, totalling around 87 minutes, of still manageable quality picture negatives and soundtrack negatives for restoration.

These negatives presented a lot of problems. Firstly, they had been subject to vinegar syndrome leading to fading of colour, discolouration, shrinkage and warping, and some parts even turning sticky. For example, there was one reel of soundtrack negatives which was stuck together and could not be unwound and hence part of the film has lost the soundtrack leaving only the visuals without the accompanying audio; in addition, the soundtrack negatives have deteriorated and also shrunk leading to non-synchronisation of audio and image. Other problems included flickering, jittering, spots on images etc. Luckily, the film materials have not been frequently used, so there were very few scratches.



▲ A very warped and deformed film strip

## The First Phase of Restoration

In 2010, the Conservation Unit of the Archive commenced restoration work, with the objective of restoring both the image and sound information which has been damaged due to film deterioration. It is hoped to restore the film to the look when it was first shown in cinemas and to recreate the viewing experience of the viewers in the cinemas at nearly half a century ago. In addition, the Unit staff also transferred the image and sound information onto archival grade film materials for long term preservation. With appropriate storage environment, these film materials can be kept for up to 200 years.

With regard to the restoration of the picture negatives, the Unit staff firstly cleansed the reels and performed a preliminary repair. With the negatives a film print was then produced for assessing the extent of discolouration and damage of the film negatives, so that appropriate strategies of restoration could be formulated. The restoration work started with scanning all the images on the negatives and digitising them into image files of 2K resolutions for digital restoration. The digital film restoration system was used to reduce the extent of image jittering and flickering, as well as remove the spots and correct the colours; then this was followed by deploying the digital audio restoration system to fix the problem of non-synchronisation of sound with the image. Finally, the restored film was made as a digital film for screening and a copy on archival grade film materials for long term preservation.

After digital colour correction, the images were clearer, the tones more vivid and the contrasts much enhanced, recreating the glamour and brilliance of the musical movies of the 1960s. The restored version of “Colourful Youth” was once shown in 2011 at the Hong Kong Cultural Centre.



▲ Images before (right) digital restoration and after (left).



▲ The reversal image showed that the negatives had signs of fading colour

## The Second Phase of Restoration

In 2015, the Conservation Unit of the Hong Kong Film Archive started working on the second phase of restoring “Colourful Youth” (1966).

The Hong Kong Film Archive obtained a videotape of the film on loan from a passionate movie lover and it was about 22 minutes longer than the copy that the Archive had. The extra footage was about the father of the leading character actress (played by Connie Chan Po Chu) which was critical in the development of the plot of the story. In spite of the inferior quality of the videotape, after discussion and deliberations, it was decided in 2015 to commence phase two restoration of the film, to add back the missing 22 minutes into the restored version.

As the source of the images came from the videotape, the resolution of the image was low and it was in analogue format with a lot of noises as well. The biggest problem was the difference in the colour of the images between the video and the colour in the already restored version, hence the first and foremost task in restoration was to tune the two tones so that there would not be significant inconsistency in colour during image transition. In addition, we also used digital technology to enhance the image resolution to align with the higher resolution of the already restored version. Other processes included removing video noises in the videotape footage, reducing what we called “drop outs” and “sparkles” etc. and adjusting the quality and volume of the sound in the videotape footage.

As the source of the image was a television programme recorded on a videotape, there were great loss of video data after several changes of format and compression, resulting in a huge lowering of the quality of the image compared with the original film, so the results after the restoration were not perfect. Nevertheless, with much efforts, the newly added footage indeed made the story more complete which was remarkable. The Hong Kong Film Archive just hoped that it could come to obtain more materials of this film in the days to come for further restoration, so that this classic film could be presented to the viewers in an even better condition and quality.



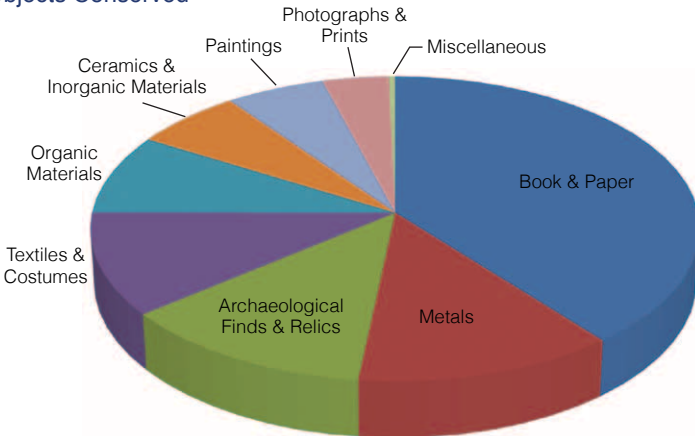
▲ Images before restoration of colours (left) and after (right)

# 8

## Chapter 8 Work Summary and Organisation Chart

The Office has conserved a total of 773 collection items from museums, which could be classified into eight major categories according to the type of materials used, namely, book & paper, paintings, photographs & prints, textiles & costumes, ceramics & inorganic materials, metals, archaeological finds & relics, organic materials, etc.

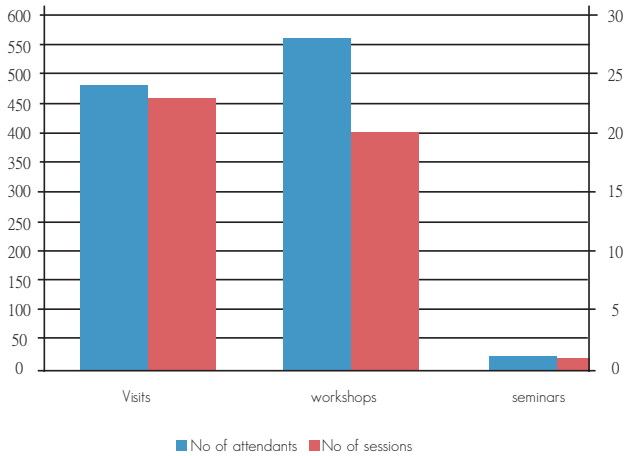
### Objects Conserved





For the purpose of raising the awareness of the public in conservation, the Office has launched a total of 44 education and extension activities, including behind-the-scenes laboratory visits, workshops and seminars, receiving a total of 1,069 visitors.

Education and extension activities





## Conservation Office

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