

Gesa Schwantes, PhD

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Over 15 years of experience in physical conservation of wall paintings, murals and decorated architectural surfaces on historic built heritage sites in China, Hong Kong, Switzerland and Germany. Work with a wide range of materials including stone, rammed earth, lime plaster, clay plaster, lime paint, tempera paint and watercolour. Perform surveys and analyses of building fabric, decoration and interior finishes and develops conservation and intervention strategies.

Education

2017	PhD in Architectural Conservation College of Architecture and Urban Planning (CAUP), Tongji University, Shanghai, China Dissertation: "In situ Conservation of Historic Plaster on Earthen Support with Lime-Mud Injection Grout"
2011	Master of Science in Conservation The University of Hong Kong
2006	Conservation/Restoration Diplom (University) Bern University of Applied Sciences, Bern University of the Arts, Switzerland Specialty: Architecture, Mural Painting/Architectural Surfaces and Interior Decoration

Professional Experience

	Division of Architectural Conservation Programmes, Faculty of Architecture, The University of Hong Kong
2017/04- present	<i>Director of Architectural Conservation Laboratory (ACLab)</i>
2018/03 - present 2017/07 - present	<i>Honorary Assistant Professor Post-Doctoral Fellow</i>
	Conduct academic research in architectural and material conservation with a focus on building finishes and murals. Carry out on-site and laboratory investigation of plaster and paint finishes via contract research for clients outside the university. Lecture and teach in material conservation and basics of application of scientific analysis methods, identification of deterioration processes and design of sustainable conservation interventions using compatible materials.
	Research
	<ul style="list-style-type: none">• Conduct laboratory and academic research in the field of architectural conservation, scientific analysis of paint and plaster finishes and mural conservation• Perform site and laboratory-based contract research:
	Principal investigator (PI) for the following projects:
2019/02	Paint finishes investigation and analysis for St. Pauls Catholic Primary School in Happy Valley, Hong Kong. Client: Able Engineers Ltd.

2018/08	Paint and mortar sample analysis for the Green Island Light House Compound, Green Island Hong Kong. Client: Purcell Asia Ltd.
2018/02	Paint and plaster finish investigation and preliminary analysis at the Pun Uk Mansion in Yuen Long, New Territories, Hong Kong. Client: China Point Ltd.
2018/04	XRF analysis of the bronze alloy <i>A Grain of Rice</i> sculpture at HSBC Headquarters, Central, Hong Kong. Preparation of its conservation by Roger Griffith, Museum of Modern Art, NY. Client: Jones Lang Lasalle, Facility Management HSBC.
2017/09	Paint and plaster finishes analysis at the Old Central Government Offices, West Wing, Hong Kong. Client: Gammon Construction Ltd. Hong Kong and Purcell Miller Tritton HK Branch.

Teaching

- **Lead teacher and course designer**
 - since 2015 **CONS4002 Conservation Laboratory**
Topics: Introduction in material science and instrumental analysis applied in conservation
Course format: Lectures, laboratory and field demonstrations, lab-based group assignment tutorials
- **Co-teach/ lecture on conservation intervention, technology and application of science in conservation in the following courses:**
 - since 2015 **CONS2003 Materials and Techniques in Conservation (BA Cons)**
 - since 2016 **CONS2005 Conservation Studio (BA Cons)**
Field study (4-5 days). Kaiping Diaolou and Villages UNESCO World Heritage site, Guangdong, China (2016/17) and Shaxi Valley Traditional Vernacular Architecture, Yunnan, China (2018)
 - 2016-2018 **CONS1001 Introduction into Conservation (BA Cons)**

Management

- Manages research projects, handles administration and oversees the budget of the ACLab
- Organizes hiring process and supervises laboratory staff

Division of Architectural Conservation Programmes, Faculty of Architecture, The University of Hong Kong

2011/10 - 2016/04

Research Associate

- Planned and designed the laboratory space and objectives and set up the ACLab
- Selected and purchased laboratory equipment and set up a network for equipment collaborations with other laboratories on campus
- Taught graduated classes on conservation intervention, technology and application of science in conservation:
 - ARCH8105 Materials and Techniques in Conservation (MSc Cons)
 - ARCH8202 Advanced Materials and Techniques in Conservation (MSc Cons)
- Performed site and laboratory-based contract research:
 - Principal investigator (PI) for the following projects:

- 2016/02 **Paint finish analysis at the Blue House Complex, Wan Chai, Hong Kong.** Client: St. James Settlement, NGO, Wan Chai, Hong Kong.
- 2016/03 **Paint samples analysis at Central Market, Hong Kong.** Client: AGC Design Ltd, Architecture Office, North Point, Hong Kong.
- 2015/03 **Paint finish analysis at the Blue House Complex, Wan Chai, Hong Kong.** Client: St. James Settlement, NGO, Wan Chai, Hong Kong.
- 2012/05 **Paint finish analysis at the Old Central Police Station Compound, Hong Kong.** Client: Techoy Construction Ltd. Hong Kong and Purcell Miller Tritton HK Branch.

Gesa Schwantes Conservation Consultancy GSCC.
Consultancy for the conservation of architectural finishes, building materials and wall paintings

2012/06- present

Founding Director

- Consult for heritage conservation projects providing recommendations for conservation processes
- Develop and carry out conservation treatments
- Prepare technical reports presenting and interpreting findings

2019- 2020 **Bund 12, Former HSBC Building Chinese Banking Hall, Shanghai China.**

Investigation of the paint finishes of the interior surfaces of the Former Chinese Banking hall in preparation of the planned restoration of the interior decoration by order of Zhejiang DeSaiBao Materials Technology Co Ltd

2017/10 – 2018/04 **VHILS Mural, Tsuen Wan District, Hong Kong**

Planning and implementation of conservation works at a street art mural by VHILS (artist studio) by order of Nan Fung Group Ltd. at the façade of The Mills, Tsuen Wan (Mills 6 Adaptive Reuse Project).

2017/05 – 2017/07 **Wellington Street 120, Central Hong Kong**

Consultancy for conserving and restoring one of the last 19th century shop houses in the Central District of Hong Kong by order of the Urban Renewal Authority, Hong Kong.

2013/10 **Jenny Holzer. Bench with inscriptions. White marble**

Consultation for restoration and carrying out treatment for removal of staining on marble by order of Studio Jenny Holzer NY and Peal Lam Galleries Hong Kong.

2013/08 **Jenny Holzer. Bench with inscriptions. Black basalt**

Consultation for treatment for removal of staining by order of Studio Jenny Holzer NY and Peal Lam Galleries Hong Kong.

Architectural Conservation Laboratory (ACL), College of Architecture and Urban Planning (CAUP), Tongji University, Shanghai

2013/09- 2017/03

PhD Candidate under Dr. rer nat. DAI Shi Bing

- Conducted on-site, laboratory and academic research on the deterioration processes of historic building fabric as well as mural and paint finishes conservation
- Conducted laboratory and academic research on the conservation of earthen architecture including adhesion and stress testing of plaster consolidation mock-up's and microscopic analysis of the interfaces
- Investigated and analysed as an ACL consultant on the conservation of architectural finishes

- National Key Pillar Research Fund 2012BAC11B01-02 for the Preservation of Built Heritage in the Jinggangshan area, China, research project of the ACL
Performed in-situ and laboratory analyses for the development of injection grouts for the conservation of building facades of earthen architectural heritage.
- Conservation of the decorative lime plaster facade of Liu's Family Ancestral Hall in Sanmentang, Guizhou, China, research project of the ACL
Performed testing of plaster consolidation and paint finish restoration. Assisted in preparing the application for the UNESCO Asia Pacific Award for Cultural Heritage Conservation (received in 2016).

Mogao Cave 465 Conservation Project, Dunhuang, Gansu, China. Collaboration of Dunhuang Academy and the Isabel+Balz Baechi Foundation, Switzerland

2014/09
2013/06
2012/09

Wall Painting Conservator

- Conducted wall painting surveys, evaluations and deterioration investigations as basis for the conservation plan
- Prepared report documenting findings and recommendations

Canton of Basel Landschaft, Office for Preservation of Monuments and Historic Buildings, Liestal, Switzerland

2010/03- 2010/07

Conservator

- Conducted primary and secondary archival building research
- Conducted building surveys and evaluations as part of the designation process
- Performed paint and material investigations
- Prepared reports documenting findings and made recommendations for future action for heritage designation

White Temple, Tholing Monastery, Wall Painting Conservation Project Ngari, Tibet. Isabel + Balz Baechi Foundation, Switzerland

Summers 2006-2009

Wall Painting Conservator

- Conducted wall painting survey and evaluation, damage mapping and deterioration analysis of the 16th century wall paintings in the White and Red Temple
- Performed cleaning and consolidation test panels
- Designed and formulated a conservation action plan
- Cleaned, consolidated and conserved wall paintings
- Prepared report documenting the conservation work and intervention strategies including desktop research on the architectural history of the monastery buildings and execution of the wall paintings in four buildings of the site
- Supervised interns as they performed conservation work

**Buess AG
Gelterkinden, Switzerland**

2007/01- 2009/05

Conservator of Decorated Architectural Surfaces and Wall Paintings

- Conducted primary and secondary archival building research
- Conducted building surveys, evaluations and damage mapping
- Collected paint and material samples for analysis
- Performed physical conservation and restoration of decorated architectural surfaces and wall paintings
- Prepared reports documenting conservation methods and outlining procedures
- Recommended future conservation and development of intervention strategies

Project Examples:

- Basel Spiesshof (Heuberg 5) 13th century with Renaissance and Baroque modifications. Performed finishes investigation and excavated overpainted renaissance ceiling
- Basel Gyrengarten (Hebelstrasse 15) Baroque mansion. Performed finishes investigation and documentation of fragments of a roman previous building
- Muttenz, Fortified Church of St. Arbogast, 16th century church and charnel house. Performed documentation, condition report, and repair works on the murals
- Riehen, Hörnli Cemetery Halls (Abdankungshallen) built 1932. Performed finishes analysis

Xingjiao Temple Wall Painting Conservation, Shaxi Rehabilitation Project, Si Deng, Shaxi, Yunnan, China

2005/05- 2005/07

Wall Painting Conservator

Wall painting conservation component of the collaboration project between the Institute for Spatial and Landscape Planning, Swiss Federal Institute of Technology Zürich, Switzerland and the Government of Jianchuan County, China.

- Conducted wall painting surveys, evaluations, damage mapping and deterioration analysis and collected paint and material samples for analysis
- Performed cleaning and consolidation test panels
- Analysed plaster and paint samples in Bern University conservation laboratory
- Prepared report documenting the wall painting structure and condition and recommended actions for conservation and development of intervention strategies.

Atelier Olivier Guyot Romont, Switzerland

2003/07-2003/08

Wall Painting and Stone Conservation Trainee

- Performed cleaning and consolidation tests on medieval plaster fragments
- Performed cleaning of medieval masonry surfaces

Werkstätten Wiegerling Gaissach (Bad Tölz), Germany

1999/02 -2002/08

Wall Painting Conservation Trainee

- Experienced practical training in documentation, technical research, analysis of material deterioration and hand skills such as plaster infills, consolidation and cleaning compress application and retouches
- Gained experiences in basic craftsman skills and application of lime and gypsum plastering and decorative painting techniques
- Performed wall painting consolidation, repair and retouches

Project Examples:

- Benediktbeuern, Basilica. 17- century church with murals by Hans Georg Asam. Performed cleaning, consolidation and retouches at the ceiling paintings in the nave
- Günzburg, Church of our Lady, 17- century church built by Dominicus Zimmerman. Performed ceiling painting consolidation, cleaning and retouches
- Munich Bogenhausen, St. Georg. 15- century church. Performed cleaning and consolidation at the ceiling paintings in the nave and excavated mural fragments in the entrance hall
- Bad Tölz, Kalvarienberg, Kerkerkapelle (dungeon chapel) 18th century. Excavated and documented murals fragments

Research Grants

- 2018/07 | Gallant Ho Experiential Learning Fund (50,000HK\$). PI: Gesa Schwantes
“Hands-On Heritage: Shared Conservation of an Historic Hakka Mansion”
- 2018/08 | Knowledge Exchange Impact Project Fund (85,000HK\$). PI: Gesa Schwantes
“Pulling back the Curtain on Conservation to show the Individual Steps, Trade-offs and Results of a Heritage Project”
- 2018 | Small Equipment Grant. PI: Dr. Joe Michalski, Department of Earth Science, HKU; Co-Investigator: Gesa Schwantes.
“Micro- infrared and Micro-Raman mapping of Inorganics and Organics in Planetary Materials”

Publications

In Preparation

ZOU Luli, **Schwantes, Gesa**, Trachet, Alison and Hua ZHOU. “Analysis of Paint Materials of Early Tang Dynasty Tomb Murals”. Planned submission 2020.

Schwantes, Gesa; Trachet, Alison and Jia Fang LIANG. “Differentiation between Iron-II-Sulfate (Copperas) Staining and Ochre Pigmented Finishes on Lime Plaster”. Planned submission early 2020.

LIANG, Jiafang and **Gesa Schwantes**. “**Fibre additives in the plaster of historic buildings in Hong Kong**”. Submitted, awaiting response, 02/2020.

Schwantes, Gesa. “Nano- and Microlime and their Application in Conservation” in: Dai Shi Bing (Ed.) *Lime for Cultural Heritage Conservation*, Tongji University Press. To be published 2020..

Schwantes, Gesa. Contributor, Technical note: “In situ conservation of decorated lime plaster by injection grouting with Natural Hydraulic Limes (NHL)”. In: *UNESCO Bangkok. Asia Conserved Vol IV: Lessons Learned from the UNESCO Asia -Pacific Awards for Cultural Heritage Conservation (2015-2019)*. SEU Press, 2020. In Press.

Published

CHEN Yan; ZHU Xiao Min; **Schwantes, Gesa** and Shi Bing DAI. Discussion on the significance of investigation and using original painting techniques and colours for the conservation of plaster surfaces in historic districts. *Urbanism and Architecture 城市建筑*. No. 270, p.27-30, 1/2018. ISSN: 1673-0232.

Schwantes, Gesa and Shi Bing DAI. Research on water free injection grouts using sieved soil and micro-lime. *International Journal of Architectural Heritage*. Vol.11, Iss. 7/2017
<http://dx.doi.org/10.1080/15583058.2017.1323251>).

Schwantes, Gesa and Shi Bing DAI. “Grouting in Conservation of Earthen Wall Paintings Using Water-free Sieved Soil-micro Lime Grouts”. Conference paper. Mural Forum of Shaanxi History Museum. International Symposium of art and Technique: Conserving, Studying and Making the Ancient Murals of China, Xi’an, Shaanxi, 18-22 October 2016.

Schwantes, Gesa and Shi Bing DAI. “Preliminary results for using micro-lime – clay soil grouts for plaster reattachment on earth support”. Paper presented at the 10th International Conference on Structural Analysis of Historical Constructions (SAHC 2016). 13-15 September 2016, Leuven, Belgium.

DAI Shi Bing and **Gesa Schwantes**. “Conservation of Built Heritage in China – with a Focus on Material Conservation”. Conference paper. 32nd International WTA- Colloquium 2016: Building Restoration+ Building Physics. Hildesheim Germany, 10-11 March 2016.

DAI Shi Bing, LU Di and **Gesa Schwantes** (as Editor and Researcher). „On Material Monitoring Techniques for the Conservation of Stone Built Heritage in China“. Refereed conference paper. 2015 China International Symposium on Stone Cultural Heritage Conservation, Dazu Chongqing, 13-14 June 2015.

Schwantes, Gesa. “Research and Practice in In-Situ Conservation of Architectural Surfaces in China – with a focus on injection grouting for plaster reattachment”. Chapter in: *Architectural Conservation and Technology*, Ed: Dr. DAI Shi Bing, LU Di, ZHANG Peng. Shanghai: Tongji University Press, 2015, p. 12-21. ISBN: 978-7-5608-5819-7.

Schwantes, Gesa. „Guarding the guardians: a closer look at clay statues of guardian gods in Hong Kong temples: materials, techniques and damages“. Masters Thesis. The University of Hong Kong 2011. Published Online at HKU Scholars Hub <http://hub.hku.hk/handle/10722/161566>.

Schwantes, Gesa. *Lehm in der Konservierung – Lehmputz als Träger von Wandmalerei im asiatischen Raum*. (Publication of the edited dissertation submitted at Bern School of Arts), Saarbrücken: Verlag Dr. Müller, 2009.

Public Lectures & Training Courses

01/2020	Public Lecture. “Beyond the Surface – How Paint Conservation Tells the Identity of a Building”. Tai Kwun Centre for Heritage and Arts, JC Cube Lecture series “Tai Kwun Conversations”
02/2018	UNESCO WHITRAP Advanced Course on Conservation and Restoration Techniques of traditional Architecture for the Asia Pacific Region “Lime for cultural heritage conservation and restoration”, Suzhou, 5-10. 2.2018 Workshop and symposium on traditional and modern lime technology and its application in conservation. <i>Workshop instructor together with Dr. rer. nat Dai Shi Bing (Tongji Shanghai), Dr. rer. nat. Gerald Ziegenbalg (HTW Dresden) and Dr. Jan Valek (Czech Academy of Science, Prag).</i>
01/2018	Guest Lecture. “Introduction into Science Applied in Architectural Conservation” Postgraduate Diploma in Cultural Heritage Management Course: Built Heritage Conservation in Asia Hong Kong School of Professional and Continuing Education
2016/04	Guest Lecture. “Analysis of Cross sections and non-destructive analysis of Chinese murals (Case study Mogao)“ BA Conservation Course: Conservation Science at Tongji University Shanghai
09/ 2013	Public Lecture. “The Old Central Police Station in HK – Investigations of the Decorative History” Tongji University, International Conference on Sustainable Building Restoration and Revitalisation 2013 organized by Tongji University, Shanghai, China; HAWK Hildesheim, Germany; UNESCO WHITRAP (Shanghai); WTA-International (International Association for Science and Technology of Building Maintenance and Monument Preservation); Key Lab of Ecology and Energy Saving in High-density Human Settlements. At Tongji University. Shanghai, China.
01/2013	Public Lecture. “On the conservation of wall paintings: Two case studies” Hong Kong Institute for Architectural Conservationists (HKICON)
08/2012	Workshop on Materials and Techniques used in the Conservation of Heritage Buildings, Georgetown, Penang, Malaysia.

Workshop organized by Georgetown Heritage Inc. and Dr. Donald Ellsmore (APT Convenor Australasia).
Assisted with preparation, teaching and practical demonstrations

08/2012 | Public Lecture. "Conservation of Architectural surfaces – Investigating and Understanding the fabric"
Georgetown World Heritage Inc. Symposium "Materials and Processes in the Conservation of Heritage Buildings" Wawasan Open University, Penang, Malaysia

Professional affiliations

since 2014 | **International Institute for Conservation (IIC) of Historic and Artistic Works**
Individual member

since 2013 | **Asian Academy for Heritage Management (AAHM)**
Individual member and member AAHM Secretariat

since 2012 | **Association of Preservation Technology (APT), Australasia Chapter**
Institutional member with the Architectural Conservation Laboratory ACLab

since 2011 | **The Hong Kong Institute of Architectural Conservationists (HKICON)**
Professional member

Awards

2016 | **UNESCO Asia-Pacific Awards for Cultural Heritage Conservation. Honourable Mention**
Credited conservation consultant for the project "Guizhou Cultural and Natural Heritage Protection - Liu Ancestral Hall Preservation and Renovation Project of Sanmentang Village, Guizhou Province, China"

Additional skills

Languages | German (mother tongue)
English (full professional proficiency)
Mandarin Chinese (limited working proficiency, passed HSK Level 4)

Computer | Microsoft Office
Adobe Photoshop/Illustrator etc.
S1PXRF & Artax

Scientific analysis | Microscopic analysis of cross- and thin sections (Stereo/ PLM)
p-XRF
SEM, SEM-EDX and FTIR (basic application experience)
Licensed for the use of Irradiating Apparatus in HK SAR

Updated March 2020