



**Virtual reunification, virtual preservation and enhanced conservation**

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**Meeting:**

**163. Rare Books and Manuscripts, Preservation and Conservation and Library History**

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**Abstract**

*The digitisation of dispersed collections offers the opportunity to do much more than simply image collections. The paper centres on major initiatives involving the British Library which are virtually reunifying significant collections dispersed around the world. Such virtual reconstruction of virtual heritage creates a different digital entity.*

*The Codex Sinaiticus project has worked towards the July 2009 web launch of the virtual re-unification of all the leaves of one of the earliest extant Bibles. The c.400 leaves are physically located in St Catherine's Monastery, Mount Sinai, Leipzig University Library, the National Library of Russia, St Petersburg, and the British Library, London.*

*The International Dunhuang Project is a very mature project that has been digitising material from the Dunhuang caves and the Eastern Silk Road dispersed in London, Beijing, Dunhuang, St Petersburg, Berlin, Paris, Stockholm and Kyoto.*

*These complex programmes have broad application to other cultural-historical projects, and some of the wider political, diplomatic and stewardship themes are developed.*

## Slide 1




# VIRTUAL REUNIFICATION VIRTUAL PRESERVATION ENHANCED CONSERVATION

**HELEN SHENTON**  
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IFLA  
Milan 26 August 2009

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# VIRTUAL REUNIFICATION VIRTUAL PRESERVATION

**THEMES**

- Virtual Reunification
- Virtual Preservation
- Enhanced Conservation
- Cultural Diplomacy

■ **PROJECTS**

- Codex Sinaiticus
- International Dunhuang Project
- Endangered Archives Programme

## INTRODUCTION

The digitisation of dispersed collections offers the opportunity to do much more than simply image collections. This paper centres on major initiatives in which the British Library is involved that are virtually reunifying significant collections dispersed around the world. They not only enable the virtual reconstruction of cultural heritage but enable vastly enhanced general access and enable greatly enhanced revelation of both the intellectual and physical elements of collections.

I will use examples in which the British Library is involved, namely the Codex Sinaiticus Digitisation project; the International Dunhuang Project and the Endangered Archives Programme to make some comments about virtual reunification, virtual preservation, enhanced conservation and cultural diplomacy. These comments are a combination of observation, of personal involvement and discussions with many colleagues.

### Slide 3



**BRITISH LIBRARY**

## CODEX SINAITICUS PROJECT

### INTERNATIONAL COLLABORATION

- St Catherine's Monastery, Mount Sinai, Egypt
- Leipzig University Library, Germany
- National Library of Russia, St Petersburg, Russia
- British Library, London, UK
- Institute for Textual Scholarship and Electronic Editing, University of Birmingham, UK
- Institute for New Testament Textual Research, University of Münster, Germany
- The Center for Retrospective Digitization, Göttingen State and University Library, Germany
- Society of Biblical Literature, Atlanta, USA

## CODEX SINAITICUS

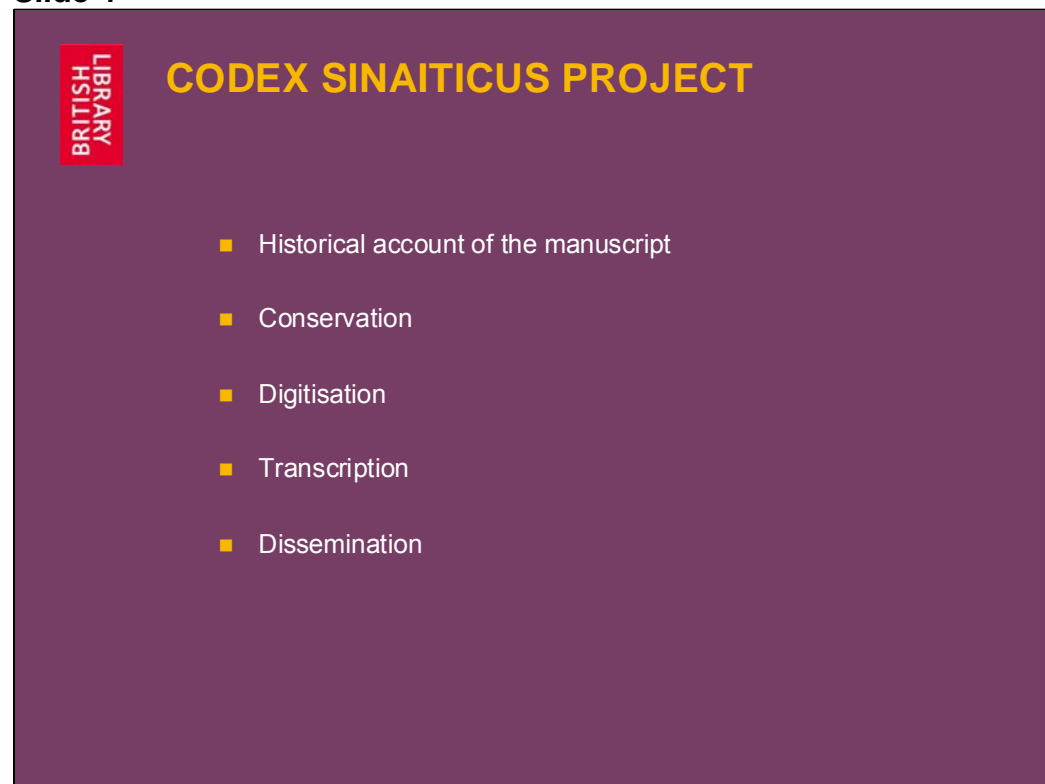
Codex Sinaiticus is the earliest manuscript containing the complete New Testament and the earliest and best witness for several books of the Old Testament. For scholars of the Bible it is the pre-eminent manuscript, known as aleph or 01. This Bible was written on parchment in the middle of the fourth century, after Constantine the Great contributed to Christianity becoming the dominant religion in the Roman Empire.

The Codex Sinaiticus Project has, over the past seven years, worked towards the July 2009 web launch of images of all the leaves.<sup>1</sup> The parchment leaves and fragments are physically located in St Catherine's Monastery, Mount Sinai, Leipzig University Library, the National Library of Russia, St Petersburg, and the British Library, London.

Over 400 leaves of the Codex remain, divided between the four locations. There are 347 leaves in the British Library in London; 43 leaves in Leipzig University Library; fragments of four leaves in the National Library of Russia in St Petersburg and 18 complete or fragmentary leaves in St Catherine's Monastery in Egypt.

The leaves are being re-unified – virtually – in July 2009 for the first time since at least the mid-19<sup>th</sup> century. The opportunity has been created to create a new digital resource with features that the physical original could not itself provide. This was achieved by creating an inter-disciplinary project, comprising curatorial, conservation, technical, fund-raising and publications working groups with international membership. The pre-digitisation conservation assessment looked at many aspects of both curatorial and conservation interest and the resulting documentation sets a new high watermark.

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**BRITISH LIBRARY**

## CODEX SINAITICUS PROJECT

- Historical account of the manuscript
- Conservation
- Digitisation
- Transcription
- Dissemination

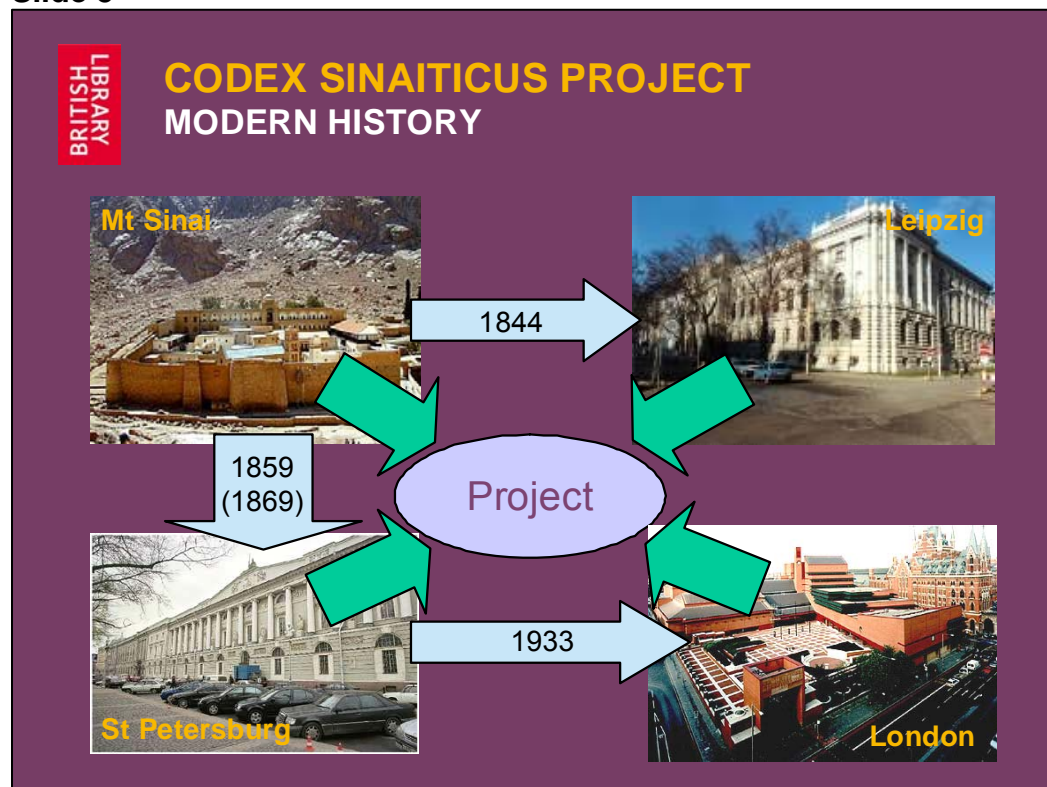
<sup>1</sup> Codex Sinaiticus website <http://www.codexsinaiticus.org>

## The Codex Sinaiticus Project

Before July 2009, I had the privilege of being one of only two people alive who had seen all the Codex Sinaiticus in all four locations. From July 2009, it is available to anyone with a PC, power and an internet connection to view.

The digitisation project was set up following a roundtable meeting in November 2002 between the four partners holding the dispersed leaves together with international experts. There are five main strands to the project, namely the production of an historical account of the manuscript, conservation, digitisation, transcription and dissemination.

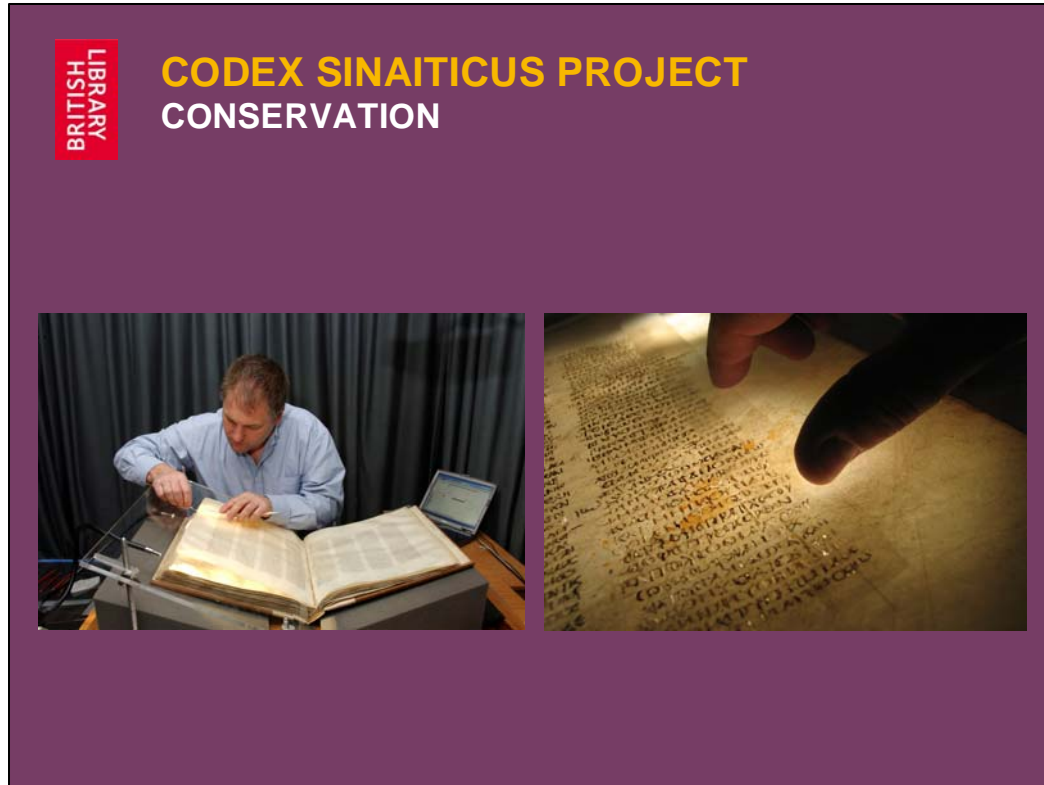
### Slide 5



#### 1. Historical account

Research into the history of the Codex and an objective account of its history of dispersal is a key part of the project. The Codex Sinaiticus is named after the Monastery of Saint Catherine, Mount Sinai, where it was preserved for many centuries. Leaves and fragments of the manuscript were taken by Constantine Tischendorf so that they might be published in 1844, in 1853 and in 1859. In 1933, the main surviving portion of the Codex was sold by the Soviet government. These are the 347 leaves now held by the British Library. There are 43 leaves held at the University Library in Leipzig and parts of five leaves are held at the National Library of Russia in St. Petersburg. The 18 complete or fragmentary leaves remaining at Saint Catherine's Monastery were recovered by the monks from the northern wall of the monastery in June 1975. The research into the history of the dispersal of the manuscript has had access to previously unseen archival material.

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### 2. Conservation

Before the Codex Sinaiticus was photographed, the condition of the leaves and fragments needed to be assessed to make sure that they were stable enough to be digitised.

A method of recording the condition was designed that could be used in all four locations. The collaborative nature of the Conservation Working Party meant that the partners agreed to use the same documentation. It was developed in English with hypertext links to images of features, for example, erasures, over-writing and offsetting of the ink, distortion and creasing of the parchment and previous repairs. It was further translated into German, Greek and Russian. The information entered onto the spreadsheet has then been transposed onto the digitised leaves on the website.

This conservation assessment has led to an internationally-agreed terminology for describing and analysing the physical features of a manuscript. The working method was inter-disciplinary across the Codex Sinaiticus project and collaborative with other international projects. There was extensive consultation between scholars and conservators to define what curatorial and codicological questions could also be addressed during the leaf by leaf examination for example, work on the composition of the inks might assist with the identification of the different scribes.

This led to a very inter-disciplinary approach involving recording over 300 fields of information, documenting everything from the characteristics of the parchment such as the follicle patterns (as an aid to identification of animal type) and colour (using international colour standards) to codicological

features such as pricking and ruling and marks on the fore-edge of the central bi-folium of quires.

Moreover, the collaborative nature extended beyond the four partners into working with other established projects. For example, the requirement for systematic, reproducible measurement and comparative documentation of the parchment linked into the work of the EU-funded IDAP network Improved Damage Assessment of Parchment.<sup>2</sup>

The principle for all the analysis and examination was to use non-invasive, non-destructive techniques. For specific questions, a combination of “high-tech” and “low-tech” methods was used. For example, a technique adapted from diagnosing cancer using ultra violet and infra red light was investigated for looking at the composition of the ink and areas where the writing has been corrected. In the event, the quality of the digitised images under standard and raking light revealed the connections. DNA techniques were investigated for their potential to identify the type of animal from which the parchment was made (the reference by Tischendorf was to “antelope”).<sup>3</sup> Current DNA techniques are destructive<sup>4</sup>, requiring a small sample; therefore, international experts were asked to look at images of the parchment under high magnification and give their expert opinion about the species of animal, based on the follicle pattern etc. and thought the parchment was both calf and wool sheep.

The aim of the conservation was to minimise the risk of damage to the leaves and to carry out only the minimum amount of conservation. Archival records of previous conservation were reviewed where possible and the physical evidence of previous conservation was recorded during the examination. The leaves and fragments in the four locations were in different conditions, and different degrees of conservation have been carried out. For fuller accounts of

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<sup>2</sup> IDAP; Damage Assessment of Parchment <http://www.idap-parchment.dk/portal/DesktopDefault.aspx?tabindex=1&tabid=1>

Larsen, R., Poulsen, D.V., Juchauld, F., Jerosch, H., Odlyha, M., De Groot, J., Wess, T., Hiller, J., Kennedy, C., Della Gatta, G., Badea, E., Mašić, A., Boghosian, S., Fessas D., (2005) Damage assessment of parchment: complexity and relations at different structural levels 14th ICOM-CC Preprints, The Hague, NL, vol. 1, pp. 199-208.

<sup>3</sup> “When seeking those animals whose skins might be most suitable for making parchment, it can hardly be doubted that before all others, the species of antelope which is even now most common in the deserts of Libya, Egypt and Arabia supplied the parchment from which the Frederick-Augustus Codex was made.”

*Translation from:*

Tischendorf, C., Codex Friderico-Augustanus sive fragmenta Veteris Testamenti e codice Graeco omnium qui in Europa supersunt facile antiquissimo in Oriente detexit in patriam attulit ad modum codicis edidit Constantinus Tischendorf., Leipzig, 1846

Vol. 1 on f.6\* of the Prolegomena (introduction) to:

Tischendorf, C., *Bibliorum codex Sinaiticus Petropolitanus: Ex tenebris protraxit in Europam transtulit ad iuvandas atque illustrandas sacras litteras edidit C. Tischendorf*, 4 vols. St Petersburg, 1862

<sup>4</sup> Bower, M. A., Campana, M. G., Checkley-Scott, C., Knight, B., Howe, C. J., “The potential for extraction and exploitation of DNA from parchment.” *The Conservator, in press.*

aspects of the conservation please see the Codex Sinaiticus website<sup>5</sup> and for specific conservation of the British Library leaves see John Mumford's paper<sup>6</sup>.

### 3. Digitisation

It was agreed to digitise the manuscript *in situ* in the four locations. As this meant four different venues using different equipment, technical standards and imaging practices were formulated by the technical working group with expert advice from other major digitisation projects to ensure consistency. It was important that the writing was legible and the appearance of the parchment and ink faithfully reproduced. Each leaf was digitised using standard lighting and raking lighting, the latter to reveal physical characteristics of the manuscript.

### 4. Transcription

A transcription has been made of the manuscript, reproducing each letter in the text. The electronic transcription includes corrections and layout features which are tagged and subsequently searchable. Working from the digital images, two initial transcriptions were made by researchers which were then automatically compared by software to identify differences, before a final definitive transcription was agreed.

The transcription has enabled the first full comparison of the leaves for codicological and palaeographical research, of especial importance given that the manuscript was copied by at least three scribes and corrected by a series of hands.

This virtual, machine-readable, transcription of the Codex Sinaiticus will be of enormous benefit to scholars in the future. Each word is linked to the images of the manuscript enabling new analysis and research. Furthermore, different transcriptions can be linked for future research.

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<sup>5</sup> Knight, B., Marzo F., Mazzarino, S., Moorhead, G., Shenton, H., essays on the "The Conservation of the Codex Sinaiticus",  
<http://www.codexsinaiticus.org/en/project/conservation.aspx>

<sup>6</sup> Mumford, J., "The International Codex Sinaiticus Project: condition, assessment and conservation." *Care and conservation of manuscripts*, vol 10, *Proceedings of the tenth international seminar held at the University of Copenhagen 19<sup>th</sup>-20<sup>th</sup> October 2006*, ISBN 978-87-635-0794-3, Edited by Gillian Fellows-Jensen and Peter Springborg, 2008

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**LIBRARY HSLIBRB**

## VIRTUAL REUNIFICATION

Codex Sinaiticus - See The Manuscript | 2 Esdras | - Windows Internet Explorer provided by The British Library - Internet

Address: <http://www.codexsinaiticus.org/en/manuscript.aspx?Submit%20Query&folioNo=4&inputControl=420&id=en&quireNo=36&side=6&zoomSlider=4>

**Codex Sinaiticus** Contact | Copyright Advanced search →

HOME ABOUT CODEX SINAITICUS ABOUT THE PROJECT SEE THE MANUSCRIPT go TO: (Book)

choose a passage: 2 Esdras Chapter 21 Verse 15 choose a page: Quire 36 Folio 4 display options:  Image  Translation  Transcription  Physical Description

2 Esdras, 21:15 - 22:17 library: LUL folio: xii zombi: A

**Image** Standard Light Raking Light

**Physical Description**

- parchment
- scribalConservation
- codicology
- previousTreatment
- condition
- conditionRepairs
- conservationTreatment

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# Slide 8

**LIBRARY HSLIBRB**

## VIRTUAL REUNIFICATION

Codex Sinaiticus - See The Manuscript | Proverbs | - Windows Internet Explorer provided by The British Library - Internet

Address: <http://www.codexsinaiticus.org/en/manuscript.aspx?Submit%20Query&folioNo=4&inputControl=420&id=en&quireNo=64&side=6&zoomSlider=9>

**Codex Sinaiticus** Contact | Copyright Advanced search →

HOME ABOUT CODEX SINAITICUS ABOUT THE PROJECT SEE THE MANUSCRIPT go TO: (Book)

choose a passage: Proverbs Chapter 7 Verse 27 choose a page: Quire 64 Folio 4 display options:  Image  Translation  Transcription  Physical Description

Proverbs, 7:27 - 8:34 library: BL folio: 131b scribe: A

**Image** Standard Light Raking Light

**Physical Description**

variance 10

Opacity 90,67

Hair or flesh side F

Follicle marks h

Axilla marks h

Striation h

Colour

Surface app

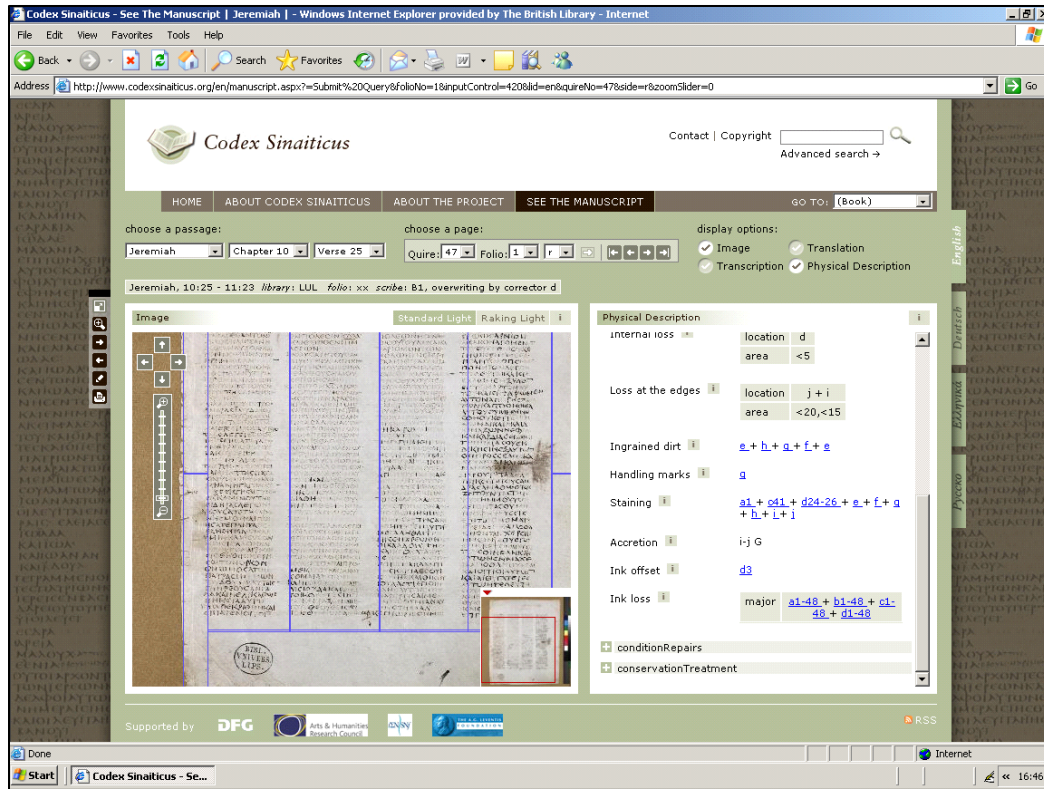
**scribalCon** The knives used by parchment makers to scrape the stretched skin could leave marks on the parchment. The action of the knives to thin down the skin could sometimes cause an uneven surface when the blade digs and jumps, leaving a pattern of several, usually parallel

**codicology** marks. The conservator recorded the location of such striation marks or N when no striation feature was found.

- scribalConservation
- codicology
- previousTreatment
- condition
- conditionRepairs
- conservationTreatment

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### 5. Dissemination

The core of the dissemination is the website on which the manuscript is virtually reunified in July 2009. The images are presented in standard light and raking light with a transcription on each page, translations of selected passages and the detailed physical description of each leaf derived from the very extensive conservation assessment documentation. So, for example, this screen shot shows the text on the left (there is a choice of standard or raking light) and on the right is the physical description detailing the parchment, scribal features, codicology, previous treatment, condition and conservation.

At the same time as the web launch in July 2009, there is a major international conference, a conservation seminar, an exhibition with a series of events, and hard-copy publication.

### **Virtual Reunification of Codex Sinaiticus**

The virtual reunification of Codex Sinaiticus in July 2009 is in many ways the beginning, rather than the end, of the project. A new digital entity has been created by Codex Sinaiticus project which enables current and future researchers at every level to mine the images, the text, the physical information and transcriptions in ways previously impossible. The project has created a heightened collation of information now cast independently out for an international community of researchers, whether scholarly or public, to mine, interpret, add to and use into the future. It has not only enabled the virtual reconstruction of cultural heritage but enabled vastly enhanced general

access and enabled greatly enhanced revelation of both the intellectual and physical elements of the earliest manuscript of the complete New Testament.

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### VIRTUAL REUNIFICATION VIRTUAL PRESERVATION

THEMES

- Virtual Reunification
- **Virtual Preservation**
- Enhanced Conservation
- Cultural Diplomacy

## Slide 11



### VIRTUAL PRESERVATION

**2008 position paper**

- Archival quality microfilm is currently the preservation formatting medium of choice
- Microfilm is viewed primarily as a preservation medium, with access dividends
- Digitisation is currently seen primarily as an access medium with potential preservation dividends rather than as a preservation tool *per se*
- Current exceptions are for analogue sound recordings and for the accurate capture and reproduction of fugitive colour values in photographic items
- Archival polyester microfilm is anticipated to last c.300 years

**2009 position**

- Under Review
- Key criterion for digital switch as a preservation medium is a proven trusted digital repository

## Virtual Preservation

There is continuing debate as to whether digitisation is a preservation medium *per se* or whether it is an access medium with preservation dividends.

For example, the British Library 2008 position paper on “Preservation Copying Policy; Microfilm to Digital”<sup>7</sup>, states

“The British Library’s preferred current option for preservation copying is microfilm, whose longevity (where standards are met) is widely accepted by the heritage community as fulfilling the preservation requirements of a long-term copying solution.”

Archival quality microfilm is currently the preservation formatting medium of choice. Microfilm is viewed primarily as a preservation medium, with access dividends. Digitisation is currently seen primarily as an access medium with potential preservation dividends rather than as a preservation tool *per se*. Current exceptions are for analogue sound recordings and for the accurate capture and reproduction of fugitive colour values in photographic items. Archival polyester microfilm is anticipated to last c.300 years.

The criteria for determining the change in preservation copying policy are identified, ranging from trusted digital asset management and standards being in place to the prevention of legacy preservation issues (such as “vinegar syndrome” from the earlier microfilm carrier cellulose acetate.)

The position paper then considers the “Digital Cut-Over: the move from microfilm to digital”, stating

“The advantages of digital copying for access are significant, as are the potential benefits to reader services. However, as a custodian of a significant heritage collection, it is vital to the Library’s stewardship role that confidence in any proposed alternative to microfilm for long-term storage and access is proven”.

Balancing digital access with long term preservation is crucial to the way forward for establishing digital copying as a preservation medium, and in this respect the BL is adopting a short-to-medium term strategy that will facilitate the development of the library’s preservation copying programme from 2008 – 2012”.

The paper goes on to define an interim hybrid model for digital preservation copying. This position paper on preservation copying policy is currently being reviewed, as part of a larger reassessment of the stewardship and the sustainability of the British Library’s physical and digital collections.

For many libraries and archives that have a responsibility to retain collections in perpetuity, preservation microfilm remains the proven surrogacy method. A

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<sup>7</sup> British Library position paper on “Preservation Copying Policy; Microfilm to Digital”, <http://www.bl.uk/aboutus/stratpolprog/ccare/introduction/preservation/policy&position/Position%20Paper-Preservation%20Copying%20Policy.pdf>

recent international snapshot of some national libraries' policy towards preservation surrogacy (undertaken in 2006 and updated in 2009 as part of reviewing the BL's position) revealed that while all were embracing the multiple advantages of digitisation for access, most had not stopped microfilming for long-term preservation purposes; two national libraries regarded both microfilm and digitisation as preservation mediums; one had stopped microfilming and migrated to solely digitisation. Whilst there were a multitude of reasons for and against digitisation as a preservation medium, these could be distilled to one key criterion for any switch in policy towards digitisation – namely that it was critical to have a trusted, proven digital repository for the long-term preservation of the digitised content.

There are many preservation dividends of digitisation, from reduction of usage of the original (though often anecdotal – and equally, often anecdotally, usage can increase), to newer virtual preservation bonuses of enhanced revelation. Concealed text can be revealed for example, Rinascimento Virtuale (Greek palimpsest project) and the undulating topography of substrate such as parchment virtually flattened. Surface features can be captured under different light spectra, for example by hyperspectral imaging. Digitisation allows comparison of different volumes and can prevent potentially damaging handling of very large volumes from comparison, for example, two volumes of the Gutenberg Bibles at the British Library (one on paper, one on vellum) can now be virtually compared side by side, thereby overcoming the physicality and materiality of their size. These can all be seen as preservation dividends of the virtual.

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### VIRTUAL REUNIFICATION VIRTUAL PRESERVATION

THEMES

- Virtual Reunification
- Virtual Preservation
- **Enhanced Conservation**
- Cultural Diplomacy

## **Enhanced Conservation**

The meticulous and very detailed documentation of Codex Sinaiticus for the conservation assessment was designed to simultaneously address scholarly questions about the codicology and scribal hands of the manuscript. (I would refer you to the essays on Codex Sinaiticus website for more detail.)

Building on the concept of “enhanced curation” described at the “Digital Lives” conference earlier this year<sup>8</sup>, this can be seen as “enhanced conservation” which adds new information to the curatorial knowledge during a condition assessment.

Enhanced curation acknowledges intervention by the curatorial process and uses new technological techniques to provide information for future researchers to interpret and develop. So, for example, when visiting the living author Graham Swift, curators used panoramic digital photography to record a 3-D simulation of the authors’ workspace, so that future researchers can see what, for example, was on an author’s bookshelves at a particular time.<sup>9</sup> “Enhanced conservation” can perhaps be seen as taking the unique opportunity afforded during a minute technical condition assessment to record observations and information that may be interpreted by future codicological researchers - these are just some early observations and thoughts that I would like to develop further.

By disaggregating the massive spreadsheet of information and overlaying the specific findings about the parchment, ink, repairs, condition etc onto the web images of each leaf, the conservation assessment of Codex Sinaiticus is adding to the web experience and enhancing the curatorial knowledge. A softer aspect of enhancement is also the amount of staff development that such an approach gives. Conservators have worked collaboratively with scholarly and curatorial colleagues in a very rich and mutually rewarding way.

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<sup>8</sup> Digital Lives website <http://www.bl.uk/digital-lives/>

<sup>9</sup> Graham Swift's archive acquired by the British Library  
<http://www.bl.uk/news/2009/pressrelease20090311.html>

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**LIBRARY HISTORICAL**

# INTERNATIONAL DUNHUANG PROJECT

Welcome to the International Dunhuang Project - Windows Internet Explorer provided by The British Library - Internet

Address: <http://idp.bl.uk/>

**INTERNATIONAL DUNHUANG PROJECT**  
國際敦煌項目

HOME  
ABOUT IDP  
COLLECTIONS  
EDUCATION  
CONSERVATION  
TECHNICAL  
ARCHIVES  
SITE MAP  
HELP  
CONTACT IDP  
IDP DATABASE

SEARCH THE IDP DATABASE  
Enter search value

ADVANCED SEARCH  
CATALOGUE SEARCH  
BIBLIOGRAPHY SEARCH  
SEARCH THIS SITE  
SUPPORT IDP  
SPONSOR A SUTRA  
MAKE A DONATION

**The International Dunhuang Project: The Silk Road Online**

IDP is a ground-breaking international collaboration to make information and images of all manuscripts, paintings, textiles and artefacts from Dunhuang and archaeological sites of the Eastern Silk Road freely available on the Internet and to encourage their use through educational and research programmes.

Tens of thousands of images along with catalogues, translations, historical photographs, archaeological site plans and much more are already freely available to all on the IDP DATABASE (add your search term in the box to the left or go to [advanced Search](#)). The multilingual website and database is hosted by IDP's members in Britain, China, Russia, Japan and Germany.

[Read more about IDP...](#)

**Number of Images in IDP Database as of December 10, 2008**

	UK	China	Russia	Japan	Germany	France
Total	102,293	19,668	13,225	16,783	12,023	0

What's New



## THE INTERNATIONAL DUNHUANG PROJECT

The second exemplar is the International Dunhuang Project. Established in 1994, this very mature project has been digitising material from the Dunhuang caves and the Eastern Silk Road dispersed around the world and now in London, Beijing, Dunhuang, St Petersburg, Berlin, Paris, Stockholm and Kyoto. The project involves cataloguing, conserving, digitising and researching ancient Buddhist manuscripts, paintings, textiles and artefacts.

The project was established following a conference in 1994. The holding institutions wished to work together to reunite all the artefacts through high level digital photography by co-ordinating international teams of conservators, cataloguers and researchers to ensure the objects' preservation and cataloguing and by pushing the limits of new technology to make the material accessible to all. It is the largest such project and has continuously broken new ground with its foresight and insight. By 2015, IDP aims to have catalogued, digitised and made 90% of all the artefacts available freely on-line.<sup>10</sup>

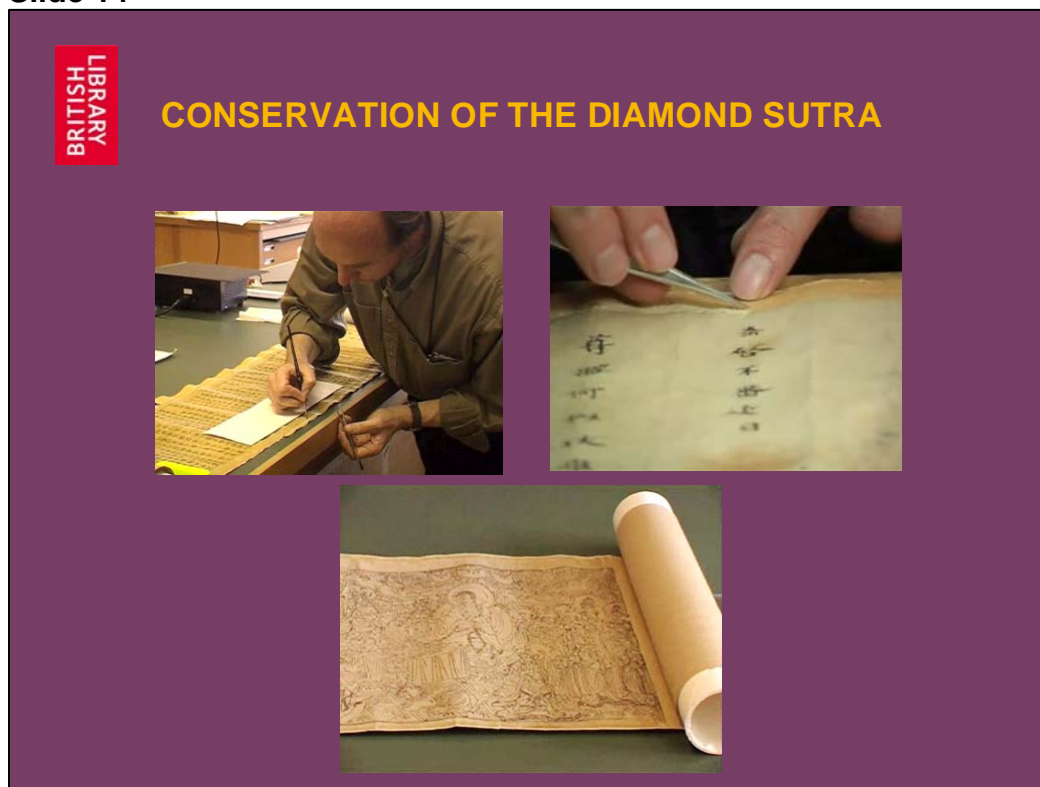
### Enhanced conservation

The IDP project involves not just paper conservation, but textiles, objects and wall paintings conservation and digital preservation (for the long term access to the digitised content).

<sup>10</sup> International Dunhuang Project website <http://idp.bl.uk>

The IDP project has involved substantial research, analysis and collaboration on paper and ink and dye analysis (such as berberine dye), reassessment of earlier treatments leading to new techniques and the co-operative development of the conservation of the scrolls.

#### Slide 14



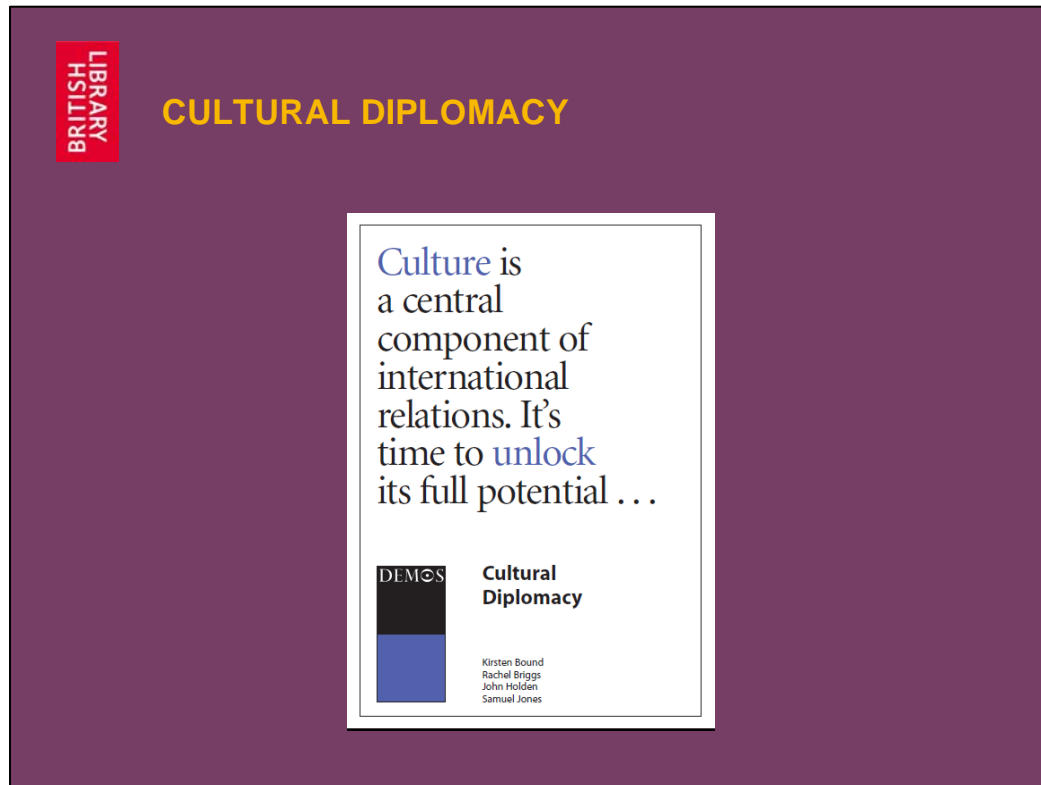
For example the Diamond Sutra, the world's earliest dated complete survival of a printed book of AD868 was deposited by Aurel Stein in the British Museum in 1907. It was exhibited in 1914 when the frontispiece was separated and washed, the early patch repairs removed and the first lining added. There have been at least three subsequent relinings, including a wide, heavy paper border. Ahead of the BL's Silk Road exhibition in 2004, the first stage in the Diamond Sutra's conservation was planned including the removal of the wide paper borders and an approach to removing the first lining. This conservation was filmed for the Silk Road Exhibition and can still be seen in the permanent exhibition that forms part of the recently opened BL Centre for Conservation or viewed on the BL's website.<sup>11</sup>

The very close working between curator and conservator enhances the conservation. Equally, the international co-operation between the different institutions has developed techniques and enhanced the conservation repertoire for treating such early paper scrolls. I would refer you to Frances Woods' and Mark Barnard's chapter in the "Silk Road" on "A Short History of

<sup>11</sup> Film of the conservation of the Diamond Sutra  
<http://www.bl.uk/onlinegallery/whatson/blcc/videos.html> 3.19

the Conservation of the Dunhuang Manuscripts in London”.<sup>12</sup> A softer aspect of this collaborative approach is the enhancement and development of conservation skills. For me, this can be seen as culminating in the final phase of the conservation of the Diamond Sutra, currently underway and due for completion this year.

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## CULTURAL DIPLOMACY

These digitisation programmes have broad application to other cultural heritage projects, and have wider political, diplomatic and stewardship implications.

The British Library is now a firm exponent of the philosophy of virtual reunification, as exemplified by Codex Sinaiticus and International Dunhuang projects. It is one of the criteria for possible digitisation projects – for example, a current project under investigation is to digitise and thereby virtually reunify the Jagat Singh Mewar Ramayana manuscript, a 17<sup>th</sup> century Sanskrit manuscript on paper; the British Library holds 555 folios and collections in India hold 149 folios (120 of the paintings were recently featured as the centrepiece of the Ramayana exhibition at the BL.)

Moreover, the British Library's thinking goes beyond its own institutional remit to consider the value of cultural diplomacy. In partnership with five other major UK institutions (the British Council, the British Museum, the Victoria & Albert Museum, the Natural History Museum and the Royal Botanical Gardens

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<sup>12</sup> Barnard M., Wood, F., "Short History of the Conservation of the Dunhuang Manuscripts in London" *The Silk Road: Trade, Travel, War & Faith*, Edited by Susan Whitfield, 2004

Kew), the think-tank Demos was commissioned to investigate the idea of cultural diplomacy and the role that the six partner institutions do, and might, play.

“Cultural Diplomacy” contends that culture can play a vital, independent role in international relations.<sup>13</sup> Whilst strictly outside politics, connecting cultural heritage around the world can have benefits in terms of international relations and international exchange. It is particularly timely to examine this given the forthcoming Cultural Olympics for the 2012 London Olympics. The “Cultural Diplomacy” pamphlet showed that the partner institutions already contribute to international cultural activities, and suggests how this may be developed.

Reflecting the benefits of this idea of Cultural Diplomacy, the British Library has sought further ways to enhance the preservation of dispersed and endangered collections around the world.

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<sup>13</sup> Holden, J., Briggs, R., Jones, S., Bound, K., *Demos Cultural Diplomacy*  
<http://www.demos.co.uk/publications/culturaldiplomacy>

## THE ENDANGERED ARCHIVES PROGRAMME

The Endangered Archives programme is a £10m programme funded by Arcadia and administered from the British Library. Its objective is to contribute to the preservation of archival material that is in danger of destruction, neglect or physical deterioration world-wide. The main means by which the Programme achieves this is through the creation of digital or microfilm copies of endangered materials and the relocation of the originals to a safe local archival home.<sup>14</sup>

This approach to virtually preserving endangered collections internationally is also, in part a response to the legal and governance situation of the British Library. The BL's collections are international in scope and origin, ranging across time, space, languages, religions, cultures and nations. The British Library recognises its international stewardship role, especially in the culturally diverse UK of today. As one of the world's foremost research libraries, the Library seeks to collaborate internationally with other bodies and institutions to increase the awareness, exploitation, and enjoyment of its world heritage collections. However under the British Library Act of 1972, it would be outside of its legal power to act purely philanthropically and needs to find imaginative ways of acting collaboratively (please see my colleague Oliver Urquhart Irving's further thoughts at the end of the pdf below).<sup>15</sup>

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<sup>14</sup> Endangered Archives website

<http://www.bl.uk/about/policies/endangeredarch/homepage.html>

<sup>15</sup> Oliver Urquhart-Irving, Cultural Property Manager at the British Library writes;

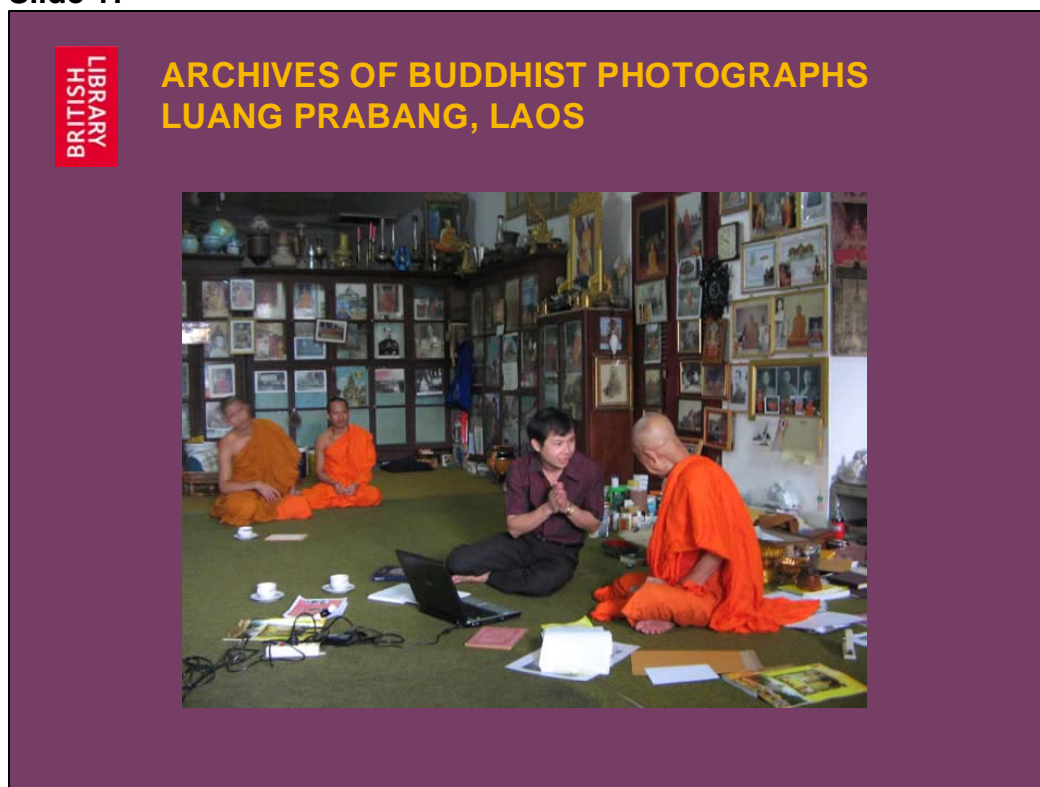
"The British Library's collections are international in scope and origin: they range across time, space, languages, religions, cultures, and nations, and they contribute to the world-wide understanding and celebration of British culture and values, not least the global phenomena of English language and literature. The scope and depth of the Library's collections derive from the British historical experience in the world, and can be said to contain self-consciously the "DNA of civilisation". The Library both recognises and values the international stewardship role it fulfils, particularly in today's culturally diverse Britain. As one of the world's foremost research libraries, the Library seeks to collaborate internationally with other bodies and institutions to increase the awareness, exploitation, and enjoyment of its world heritage collections.

The Library's worldwide remit flows not only in the immensity of its collections - some 150,000,000 items filling over 630km of shelving and growing at rate 12.5 km per year, not to mention the now very significant tide of electronic intake (measured in multiples of terabytes) - but from the governance principles and historical values behind its creation.

The British Library Act 1972 brought together several separate national institutions to establish the UK national library "comprising a comprehensive collection of books, mss, periodicals, films and other recorded matter". In 1973 the British Museum Library, the National reference Library of Science and Invention, the National Lending Library for Science and Technology and the National Central Library were combined in this way. They were joined, a year later, by the British National Bibliography, and the Office for Scientific and Technical Information, in 1982 by the India Office Library and Records, and in 1983, the British Institute of Recorded Sound. Each of these has to some greater or lesser extent varying conditions of ownership, but underpinning them all is the pervasive sentiment expressed in the British Museum Act 1753, under which the British Museum Library has been established.

The Library must act within its governing statute, the British Library Act 1972, but recognises also an ever-expanding and complex non-legal environment, including codes of practice, advisory panels, and other drivers, including UK political, partnership and collaborative opportunities, as well as the challenges of international cultural diplomacy and cultural and public foreign policy.

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Therefore, with the generous funding from Arcadia, the British Library has established the Endangered Archive programme to enable the virtual preservation of archives at risk, by enabling microfilming and digitisation. Projects have been supported across Africa, the Americas, Asia, Europe and Oceania (this follows the United Nations' geographical regional designation). For example, there was a pilot project to preserve and digitise a Buddhist archive of photography in Luang Prabang, Laos, followed by a major project in 2007. The project has made digital copies of all images in accordance with the EAP copying requirements and the original photographs (all very vulnerable) will be relocated in the monastery with conservation standards. Full digital copies of the archive will be held at the British Library and the National Library of Laos in the capital, Vientiane. A reference listing of the archive's images will be produced in Lao and English to facilitate access to the archive for local monastic and lay communities in Luang Prabang after the conclusion of the project.

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Under the British Library Act, responses to opportunities to collaborate by way of pure philanthropy would be *ultra vires*, as would the application of grant-in-aid money beyond the remit of the Act. Furthermore the Act places considerable restraints on deaccessioning and disposal. Nonetheless, the Act provides a disciplined structure to responding to opportunities for collaboration: one in which there must be a benefit to all parties and in which there is a clear demonstration of probity in purpose, governance and funding”.

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**LIBRARY HSLILIB**

### CONCLUSION

**THEMES**

- Virtual Reunification
- Virtual Preservation
- Enhanced Conservation
- Cultural Diplomacy

■ **PROJECTS**

- Codex Sinaiticus
- International Dunhuang Project
- Endangered Archives Programme

■ **ACKNOWLEDGEMENTS**

- With especial thanks to many colleagues across the British Library, St Catherine's Monastery, Leipzig University Library, National Library of Russia, Royal Danish Academy of Fine Arts, Demos

### CONCLUSION

So, these have been a few observations and thoughts about virtual reunification, virtual preservation and enhanced conservation from the perspective of someone working in a national library - and I am aware of the irony of describing a worldwide phenomenon from the local view of one institution. My observations are based on projects that many colleagues at the British Library are engaged with, and on projects involving colleagues in many different countries, and I would like to acknowledge their phenomenal work,

The organisers of this session had a huge response to their call for papers for this session which is perhaps testament to the interest in the ideas and developments.

There are indeed a growing number of initiatives digitising dispersed collections that are also providing the opportunity to do much more than simply image collections. They not only enable the virtual reconstruction of cultural heritage but create a different digital entity; enable vastly enhanced general access; enable greatly enhanced revelation of both the intellectual and physical elements of collections; and engage with cultural diplomacy. As I mentioned, Codex Sinaiticus project very much sees the virtual reunification of the world's earliest New Testament in July 2009 as the beginning not the end of a process. So, all these initiatives are in many ways just the beginning, and it will be fascinating to see how future researchers and users interpret and use and enhance the new information.

Thank you very much for your attention and patience.

## **Acknowledgments**

With thanks to many colleagues across the British Library, St Catherine's Monastery, Leipzig University Library, National Library of Russia, Royal Danish Academy of Fine Arts, Demos. With especial thanks to Kissley Leonor

## **Biography**

Helen Shenton became the first Head of Collection Care at the British Library in 2002. This encompasses about 170 staff working within Conservation, Preservation, Training and Research, Storage, Collection Security and Digital Preservation. Helen has been a member of the Codex Sinaiticus Project Board since its creation in 2002 and has chaired its Conservation Working Group of representatives from St Catherine's Monastery Mount Sinai, Leipzig University Library, the National Library of Russia, St Petersburg and the British Library. She has been involved with international projects, assessing collections for BL exhibitions in China – including visiting Dunhuang - Kazakhstan, Uzbekistan, India, Armenia and Israel.

She sits on a number of national and international groups, such as IFLA Preservation and Conservation Committee and the UK's National Heritage Science Steering Group. She is a founding member of the Digital Preservation Coalition and has chaired the Preservation Division of LIBER, the Association of European Research Libraries.

Helen read English Literature at University College London and trained at the University of the Arts. She is a Fellow of the Royal Society of Arts and the International Institute of Conservation. She joined the British Library in 1998 after 14 years in the Conservation Department of the Victoria and Albert Museum.