

ETHICAL FRAMEWORK FOR HERITAGE RECORDING SPECIALISTS APPLYING DIGITAL WORKFLOWS FOR CONSERVATION

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ABSTRACT:

Recording the physical characteristics of historic structures and landscapes is a cornerstone of preventive maintenance, monitoring and conservation. The information produced by such workflows guides decision-making by property owners, site managers, public officials, and conservators. Rigorous documentation may also serve a broader purpose: over time, it becomes the primary means by which scholars and the public apprehend a site that has since changed radically or disappeared.

The development of ethics principles (or a code of ethics) applicable to the heritage recording specialist in their conduct, responsibilities, professional practice and for the benefit of the public and communities is of paramount importance. As indicated by Smith (2019), "the values and principles inherent in the technology itself are more sharply diverging for a reckoning: we must now address not just the practical considerations of the technology we use, but also its moral and ethical implications. If we don't, we risk compromising the values of the heritage we serve." This means that it is important that the practice allow for better planning, recording, processing and dissemination of digital workflows for the conservation of historic places. Also, digital products should improve the practice, including sharing and preserving records among heritage organizations around the world. This contribution seeks to establish a framework to review and apply ethical concepts to improve the field of digital heritage recording.

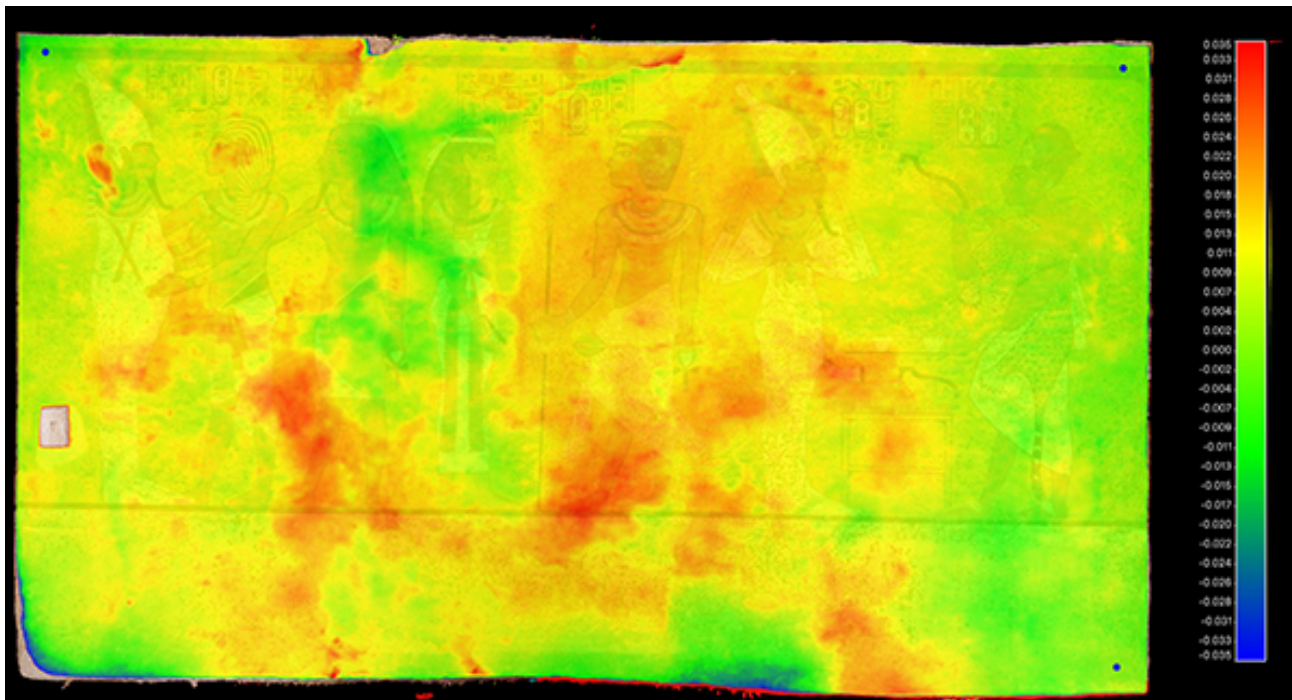


Figure 1: digital 30mm deviation map of the north facade of the burial chamber of the Tomb of Tutankhamen after conservation, The Getty Conservation Institute and Carleton University.

1. INTRODUCTION

This contribution is the result of research work on ethics principles for heritage recording specialists, based on Santana's tenure as a Guest Scholar at the Getty Conservation Institute (GCI).

This work has involved substantial literature review on the existing ethics principles and codes of professional practice available to heritage recording specialists, ranging from the International Council of Monuments and Sites (ICOMOS)

Ethical Principles (ICOMOS, 2014), to the academic literature, to the Royal Institution of Chartered Surveyors' (RICS) Global Professional and Ethical Standards (RICS, 2018).

Furthermore, during this scholarly period a number of interviews were conducted with professionals specializing in the conservation of heritage places, not-for-profit organizations working in the field of digital heritage, and contractors.

As already indicated by Manžuch (2017), the "growing number of case studies on the ethical issues faced in cultural heritage digitization calls for a discussion of this generally neglected dimension of digitization. The importance of the ethical dimension is also supported by implicit and explicit assumptions that well-established approaches to ethics in archives, libraries, and museums do not work with digitization." The aim of this contribution is not to discuss the challenges of digitizing heritage places, but to center the discussion on the specific role of the "heritage recording specialist" to conduct the work according to ethical principles.

For example, in any professional association that serves the public interest, members have to abide by a number of ethical principles, and this is currently missing in the heritage recording field.

1.1 Key definitions

- **Digital heritage recording:** as opposed to hand (or traditional) heritage recording, this type of recording includes all forms of digital data capture, ranging from photographs to rectified images, CAD to photogrammetry, total stations to 3-D laser scanning, and voice to video (Letellier, 2011).
- **A heritage record:** the technical dossier of a cultural heritage place, prepared by heritage recording specialists and consisting of measured drawings, photographs, and technical analysis. It provides necessary basic data for conservation and monitoring activities, as well as posterity records for public archives (Letellier, 2011).
- **Digital workflows:** the methods or approaches utilized by heritage recording specialists to carry out the digital heritage recording of a heritage place (based on Letellier, 2011).
- **Heritage recording specialist:** a professional expert in measured survey and photographic techniques who provides heritage records of heritage places (Letellier, 2011).
- **Heritage recording:** the graphic and/or photographic capturing of information describing the physical configuration, evolution, and condition of a heritage place at known points in time (Letellier, 2011).

1.2 Methodology

The research to develop a tentative framework of ethical principles for utilizing digital workflows for heritage conservation was carried out using four approaches:

- Desk research on existing standards, principles, guidelines and other scientific articles relevant to the acquisition and dissemination of information for decision-making in conservation (e.g., ICOMOS,

UNESCO, RICS, GCI's RecorDIM Guiding Principles, Historic England, Council of Europe, among others);

- Desk research on publications and reports produced by the GCI's projects (e.g., Arches Project, Conserving Modern Architecture Initiative, Los Angeles Historic Resource Survey Project, Conservation and Management of the Tomb of Tutankhamen, Earthen Architecture Initiative, among others); reviewing procedures for planning and implementation of digital workflows for gathering information relevant to the conservation of historic places;
- Group discussions and consultations with GCI professionals and experts on how planning, recording, processing and dissemination work is conducted in their projects, and identifying challenges and opportunities; and
- Meeting experts from other not-for-profit, government institutions and academics working in the field of digital heritage.

1.3 Ethical categories

For the purposes of this approach, six ethical categories were selected from the ICOMOS Ethical Principles (ICOMOS, 2014) and the Canadian Association of Heritage Professionals (CAHP) Code of Professional Conduct and Ethics (CAHP, 2017). These represent the most common ethical issues identified in the literature:

- related to ethical conduct;
- related to best practices;
- related to cultural heritage;
- related to the public and communities;
- related to other heritage recording specialists; and
- related to qualifications.

1.3.1 Ethical conduct

This category relates to the professional behaviour of specialists when conducting their activities: showing respect, integrity, impartiality, accountability and maintaining open, upright and tolerant attitudes. This also addresses issues related to conflicts of interest.

1.3.2 Related to best practices

This category relates to the professional advice and services that heritage recording specialists render to potential clients or community stakeholders. Also, it relates to the accessibility, retrieval and posterity of records produced by specialists for the enjoyment of future generations.

1.3.3 Related to cultural heritage

This category relates to respect for the values and integrity of cultural heritage, as well as preparedness in case of deterioration or damage.

1.3.4 Related to the public and communities

This category relates to acknowledgment of the role of the public and communities in the conservation of cultural heritage. It also relates to the promotion of heritage recording among the public and the transmission to present and future

generations of the information documented. Also, issues concerning the privacy rights of communities to share knowledge about their heritage and rights-based approaches are considered.

1.3.5 Related to other heritage recording specialists

This category relates to the behaviour of recording specialists towards other experts in the cultural heritage field, in terms of collegiality, consideration, exchanging of expertise and mentoring of others. Recognizing and respecting differences of opinion, interdisciplinarity and solidarity are also included.

1.3.6 Related to qualifications

This category relates to the need for heritage recording specialists to have appropriate qualifications, such as certification or university training. In addition, it relates to the commitment of heritage recording specialists to professional development and their participation in specialist conferences in order to present their approaches and obtain valuable feedback.

2. FRAMEWORK

This project to develop ethics principles aims to contribute to the better design, planning, implementation and information-sharing of digital workflows for heritage conservation in a number of relevant ways:

- to assist heritage recording specialists in meeting obligations that will improve the role of digital information in the decision-making process for the conservation of heritage places;
- to assist international governmental and non-governmental organizations to draft terms of reference for the design and implementation of digital workflows in the conservation of heritage places;
- to update the ICOMOS Principles for the Recording of Monuments, Groups of Buildings and Sites (1996) to address new challenges and opportunities presented by digital information in the conservation of heritage places;
- to prevent the use of digital workflows that might negatively affect the communities associated with heritage places;
- to improve the collegiality of heritage recording specialists and encourage the exchange of practice points between members, making digital workflows more effective and sustainable;
- to improve information sharing among stakeholders and the public in general who use digital workflows for the conservation of heritage places; and
- to provide a framework for the preservation of digital records produced by these workflows that will allow for future accessibility.

Furthermore, it is important to point out that there are a number of potential beneficiaries to the correct application of ethical principles in heritage recording:

- The heritage recording specialist. As explained extensively in the literature review, the specialist will benefit from the possibility of practising her/his work without prejudice and in a collaborative manner.

- The public in general, including communities who live on heritage sites and those who are interested in the conservation of cultural heritage.
- Cultural heritage organizations, including for-profit, not-for-profit, government, intergovernmental, academic and funding agencies.

3. ETHICAL OBLIGATIONS

Using a Filemaker relational database, quotes were extracted from the literature review, revealing around 70 ethical obligations that a heritage recording specialist should meet. These obligations were then classified into one or more of the six ethical categories previously described.

RELATIONSHIP BETWEEN ETHICAL CATEGORIES AND MEETING OBLIGATIONS: EXAMPLES

In the following paragraphs, a selection of these obligations and their relation to the ethical categories are provided.

3.1 Obligation to produce high quality records

A clear example of obligations related to the "best practices" category is the production of "high quality" digital records. In the ReACH Declaration (V & A, 2017), this concept is defined as "with a level of quality sufficient to constitute a representation...as faithful as possible".

Further, with respect to the degree of quality, it is also important to take into consideration the following methodological obligations:

- abide by principles of objectivity, reliability and validity of scholarly claims (Munster et al, 2016);
- "appropriate scope, level, and methods of recording" should be applied and "records must clearly and accurately identify and locate the heritage places" (Letellier, 2011); and
- use best approach and justify (ICOMOS 2014).

Furthermore, this obligation can be linked to ethical conduct issues, such as "objective, rigorous and scientific" methods (ICOMOS, 2014) and providing the best service, advice and support according to the terms of agreement (RICS, 2018).

To illustrate these obligations, in 2017, the GCI commissioned the Carleton Immersive Media Studio (CIMS) to record the as-found condition of historic decorated surfaces of KV 62 - Tomb of Tutankhamen in order to produce a high quality post-conservation digital record for posterity.



Figure 2: recording the surface of the burial chamber of the Tomb of Tutankhamen using 3D scanning, The Getty Conservation Institute and Carleton University

Following Letellier (2011), CIMS, utilizing appropriate and suitable technology such as 3D scanning and photogrammetry, produced high-resolution ortho-corrected photographic elevations with millimetre resolution and accurate colour correction (see figures 1, 2 and 3).



Figure 3: ortho-corrected image of the as-found condition of the north facade of the burial chamber of the Tomb of Tutankhamen after conservation, The Getty Conservation Institute and Carleton University.

The production of this deliverable was explained in the project report, meeting the obligation to "be transparent" in the working procedures used so that the work is understood (RICS 2018).

3.2 Obligation to raise awareness with digital heritage records: what about conflict of interest, preventing own benefit and respecting privacy?

This obligation is controversial, especially with the increasing practice of capturing images of heritage places and their communities using Unmanned Aerial Services (UAS) (see figure 4). There are issues related to privacy but also the ability to capture accurate information of as-found conditions, in particular in areas affected by conflict.

For example, the important work conducted by ICONEM and their exhibit at the Arab World Institute in 2018-2019 involved the extensive mapping of the devastation in Syria and production of an impressive immersive experience.

This exhibition raised awareness of the impact of war on heritage, therefore meeting the obligation to "support the promotion of public awareness" and "community involvement in cultural heritage conservation" (ICOMOS, 2014).



Figure 4: UAS device for mapping a heritage place, Ananda Temple (Bagan), Mario Santana.

However, in terms of potential conflict of interest, it can be argued that the organizers have gained a lot of credibility and fame by exposing this work to the public. The CAHP Code of Professional Conduct and Ethics (2017) recommends that all information gathered should be regarded as confidential, and that personal or financial gain shall not be taken. Also, these images could have been taken without the consent of the community, and as suggested by ICOMOS Australia (1998), in conservation it is important to accept "the cultural right of groups to withhold certain information".

An alarming investigation by Thompson on the status of copyright and other intellectual property law considerations of digitization projects in Syria raises "digital colonialism" concerns, given the fact that these projects are conducted by Western experts and that in many cases Western attention has not always proven beneficial for either the historical or modern residents of Middle Eastern sites (Thompson, 2017).

This illustrates the profound need to balance the obligation to raise awareness with the obligation to respect the cultural right to privacy. The potential positive and/or negative impacts of the products of these technologies on local communities requires further attention.

3.3 Obligation to ensure transmission of information to present and future generations

As described by the Archaeology Data Service (ADS), and English Heritage, the two organizations have "collaboratively conducted a project that sets out a programme for investigating preservation (storage methods), reuse (usability) and dissemination (delivery mechanism) strategies for exceptionally large data files generated by archaeologists, researchers and cultural resource managers undertaking fieldwork and other research" (ADS, 2007).

However, "currently there is little understanding of the implications for cost and good practice in data preservation, dissemination, reuse and access. This lack of understanding is potentially exacerbated by the proprietary nature of formats generally used by the new research technologies now being used in archaeology and cultural resource management".

The project seeks to answer immediate questions regarding cost and to develop recommendations and strategies for archaeologists, researchers, cultural resource managers and archivists dealing with 'Big Data'. The project recognizes that computing capacity, both to create and to archive data, will continue to rise.

This project exemplifies obligations related to the best practice category: such as the obligation to ensure that "complete,

durable, and accessible records" (ICOMOS, 2014) are "kept in a central repository" (Letellier, 2011). In this interface, the heritage records are described, stored and retrievable, guaranteeing their longevity for posterity (Cormier, 2018).

Also, in a partnership between York University and Historic England (formerly part of English Heritage), the two organizations have developed a sustainability strategy to "ensure that [digital records] processes and outcomes [are] preserved for transmission to future generations" (Denard, 2009).

3.4 Obligation to ensure procedural transparency when producing records

Cultural Heritage Imaging, a not-for-profit organization is currently developing the Digital Lab Notebook (DLN), "a software pipeline made up of open source software tools and associated good practices. The DLN provides a greatly simplified, ordinary language-based, nearly automatic method to build the digital equivalent of a scientist's lab notebook" (CHI 2018).

This DLN software will allow a heritage recording specialist "to radically simplify the scientific workflow used to digitally capture, build, archive, and reuse the digital representations that document humanity's cultural heritage" (CHI 2018).

The transparency provided by the DLN separates "scientific reliability" from "academic authority."

This initiative is an excellent example of providing procedural transparency by allowing other experts to assess the quality of the records produced and to make use of the data more easily.

3.5 Obligation of sharing technology and collaborating to make it more affordable

The Arches system "is an open-source, geospatially-enabled software platform for cultural heritage inventory and management, developed jointly by the Getty Conservation Institute (GCI) and World Monuments Fund (WMF)" (GCI 2019).



Figure 5: Arches workshop during the 26th CIPA International Symposium on Heritage Documentation, Ottawa, Canada, Mario Santana.

The GCI and WMF have endeavoured to tackle a number of issues in the field of heritage recording, several of which are very relevant to meeting ethical obligations. By organizing workshops and training sessions and supporting an online forum (see figure 5), Arches is promoting the further development of its system through a continuous exchange

between experts, helping to develop the profession by advancing knowledge, and improving methods and technical applications. This, as stated in the ReACH declaration, "encourages sharing technology and collaborate to make them more affordable" (V&A 2017).

Furthermore, the system has been designed with "clear documentation policies" (Letellier 2011) and is transparent and customizable to the needs of specific heritage organizations.

3.6 Obligation to commit to provide training and capacity building to fellow and emerging experts

The Conservation and Rehabilitation Plan for the Kasbah of Taourirt project in Morocco is a project of the GCI and the Centre de Conservation et de Réhabilitation du Patrimoine Architectural des zones atlasiques et subatlasiques (CERKAS).

In this project, CIMS developed a recording and capacity-building approach to record the as-found condition of the Kasbah, that would assist in the training of Moroccan experts.



Figure 6: CIMS team training CERKAS experts on recording techniques, The Getty Conservation Institute.

The Cancino, Marcus, Boussalh (2016) report on the 'CERKAS documentation resources assessment' underlines that an appropriate metric survey of Kasbah Taourirt to produce "as-found" CAD drawings (annotated floor plans, cross sections, and elevations) was needed (see figures 6 and 7).

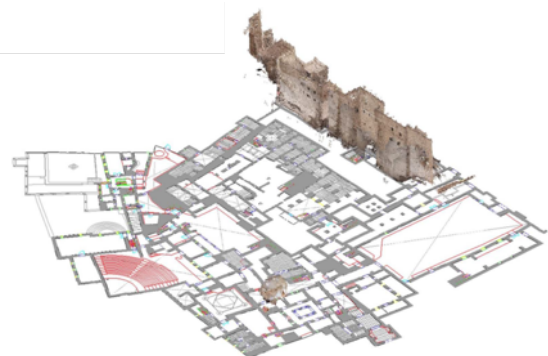


Figure 7: 3D point cloud from photogrammetry used for the preparation of accurate line drawings of the Kasbah of Taourirt, The Getty Conservation Institute and Carleton Immersive Media Studio.

Furthermore, to achieve this as-found record, a combination of image-based survey methods such as photogrammetry and architectural survey methods such as total station was used. These techniques were selected in order to transmit the skills to the CERKAS team utilizing off-the-shelf technology. This aligns with the ICOMOS Ethical Principles "need for capacity building" (ICOMOS 2014) and the Seville principles statement, "heritage recording is a discipline that requires specific training" (International Forum of Virtual Archaeology, 2011).



Figure 8: line drawing used for the rehabilitation plan of the Kasbah of Taourirt, result of the recording work, The Getty Conservation Institute and Carleton Immersive Media Studio.

Lastly, the records were used by an interdisciplinary team to design and implement the rehabilitation plan (see figure 8). The information produced was used to create a posterity record, given that the Kasbah is endangered by the effects of climate change. These approaches illustrate two obligations set out in the ICOMOS Ethical Principles: to obtain "interdisciplinary reflections" in the work and, "where cultural heritage is in immediate danger or at risk, ICOMOS members offer all possible assistance that is practicable and appropriate, provided that it does not put their own health and safety or that of others in jeopardy" (ICOMOS 2014).

3.7 Obligation to participate in professional networks to share experiences and further development of heritage recording practices

The active participation of heritage recording specialists on the ICOMOS/ISPRS scientific committee on heritage documentation (CIPA) as expert members, as well as attending summer schools, biennial symposia and other gatherings are examples of meeting several important ethical obligations, such as:

- exchange with other experts, especially internationally (ICOMOS 2014);
- increased public understanding of professional practice (NCPH, 2007); and
- helping to develop the profession by advancing knowledge, improving methods & technical applications (NCPH, 2007).

Through its website <http://cipa.icomos.org>, CIPA provides not only access to an international body of experts (see figure 9), but also to a considerable amount of research and project papers on the topic of recording cultural heritage for conservation. These contributions provide an informed perspective on the types of approaches and techniques utilized in the field.



Figure 9: CIPA 2017 symposia attendees, Christian Ouimet.

Membership in an expert group allows the heritage recording specialist to acquire credibility and become a better informed specialist. As indicated by Letellier (2011) "heritage recording should be done primarily by professionals".

4. CONCLUSION

The content of this paper focuses on identifying obligations that would form a framework of ethical principles relevant to the duties of heritage recording specialists involved in the conservation of heritage places. One of the key goals of the framework is to ensure that the records produced are shared in the present and the future using sustainable strategies.

This work emphasizes the need to develop ethical benchmarks for utilizing digital workflows that will respect the cultural heritage values of sites and the communities associated with them, while allowing for the dissemination and secure storage of digital knowledge about sites.

FURTHER STEPS

The next steps involve formulating ethical principles or a code of ethics for heritage recording specialists by:

- organizing several panels with heritage recording specialists;
- producing a publication with best (or good) practice examples that illustrate the fulfilment of obligations to meet the ethical principles; and,
- developing, updating and launching new doctrinal documents to assist heritage recording specialists with their work. Based on this, develop a ranking system to assess and accredit organizations recording heritage places.

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