Digital Heritage: Anticipating an Integrated Way Forward Workshop Abstracts

COTAC Conference 2019

Edited by Ingval Maxwell and Diana Avramica

COTAC

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Edinburgh Group: Workshop Abstracts
Thursday 7 November 2019
Historic Environment Scotland, Engine Shed, Stirling

Edited by Ingval Maxwell and Diana Avramica

Thanks are due to Historic Environment Scotland for hosting the Edinburgh Group Workshop arranged in association with the Group's meeting at The Engine Shed, Stirling on 7 November 2019. The event was enabled by COTAC on behalf of the Edinburgh Group.

Thanks and appreciation are due to all speakers who freely gave their time to prepare for and offer the workshop presentations for discussion. This report offers abstracts of the presented material along with supplementary information on issues raised during the presentations.

Council on Training in Architectural Conservation (COTAC)

COTAC originated in 1959 in response to the need for training resources for practitioners so they could properly specify and oversee work involved in repairing and conserving historic buildings and churches. Since its inception the Charity has persistently and influentially worked to lift standards, develop training qualifications and build networks across the UK's conservation, repair and maintenance (CRM) sector, estimated at over 40% of all construction industry activities. This has involved working partnership with national agencies, professional and standard setting bodies, educational establishments and training interests.

Edinburgh Group

The Edinburgh Group was originally formed in 1999 by Historic Scotland with the aim of brokering commonality in the approach and assessment techniques across the emerging range of professional building conservation accreditation schemes. The fundamental intention was, and remains, to ensure that commissioning clients of an accredited professional can be assured that the appointed individual has relevant competencies appropriate to the task and that they have been formally assessed on an equal basis by their professional body. In 2008 the Group passed from Historic Scotland to the Charity, COTAC, with a remit to continue to enable and facilitate it into the future. Meeting 6-monthly, updated Operational Terms of Reference were agreed to by Group Members in January 2016.

Workshop Programme

In setting the scene for a Round Table discussion on *Digital Heritage: Anticipating an Integrated Way Forward* the following presentations were offered to inform how emerging initiatives might influence future Heritage Education, Training and Assessment requirements for practitioners and others wishing to enter the sector.

Skills, Training and Knowledge Transfer in Cultural Heritage Professions
Nessa Roche, Department of Arts, Heritage and the Gaeltacht

The European Year of Cultural Heritage contained an objective 'to support the development of specialised skills and improve knowledge management and knowledge transfer in the cultural heritage sector, taking into account the implications of the digital shift'. The transmission of knowledge and skills is impacted by the combined effect of Europe's age pyramid, cuts to public budgets, the digital shift and the academisation of society. New skills and competences are needed to progress towards a more integrated and participatory management of cultural heritage and better use of the opportunities offered by new technologies.

The OMC group, from 22 EU countries including the UK, worked over two years and produced a comprehensive report containing a series of recommendations on the four development phases of potential heritage professionals: raising awareness, education and training, lifelong learning and knowledge transfer. The report has contributed to cultural heritage recently being selected under the EU's Blueprint for Sectoral Cooperation on Skills (2017). A call is to be issued in October backed by Erasmus+ funding towards the development of a cultural heritage sector skills strategy.

Following the Workshop Ness Roche emailed the following information to delegates:

The Edinburgh Group workshop requested links to the discussed documents and links relating to two EU-commissioned reports on skills, training and knowledge transfer. See attached extract (Annex A) and the summary and main report link at: http://www.voicesofculture.eu/wp-content/uploads/2018/06/VoC-Skills-and-training-Final-report-with-Appendix1.pdf*).*

These two documents are referenced in the newly opened (November 2019) Erasmus+ funding call for a cultural heritage sectoral skills alliance which is at https://ec.europa.eu/programmes/erasmus-plus/sites/erasmusplus2/files/erasmus-plus-programme-guide-2020_en.pdf*.*

Organisations from public, private and NGO areas are already coordinating on the potential to form a consortium to apply for the call, which is open until 26 February 2020. There is a note relating to British applicants in light of Brexit.

Technological Opportunities and Developments
Paul Bryan, Geospatial Survey Manager, Historic England

The recording of heritage has long been an important stage within the conservation and restoration of historic buildings, monuments and sites. Often seen as the initial platform upon which the required tasks, processes and programmes are then developed, the ever-accelerating use of digital technologies has seen a dramatic change in both the way such primary data is gathered 'in the field' and how it is later used 'in the office' by all the end-users engaged in the project.

Structure from Motion © HE

Emerging technological change, as seen annually on the Gartner Hype Cycle for emerging technologies, invariably brings challenges that must be overcome before a new approach is accepted, adopted and the benefits fully exploited. Within the world of heritage survey 3D scanning and drones have both been through this cycle and matured sufficiently to become accepted technologies within heritage applications.

So far Building Information Modelling (BIM) has not appeared on the cycle in its true form although the digital twin has, appearing in 2017, so is that a sign of where BIM is heading and if so what opportunities and developments might that bring to those involved in heritage conservation?

The Gartner Hype Cycle

The Gartner Hype Cycle is a graphic representation of a pattern that commonly emerges with each new technology or innovation where a similar profile of hype and disillusionment applies. The approach can be relevant to IT and related digital techniques and methodologies. The profile illustrates a typical progression through the stages of:
- *Innovation Trigger (A launch of a new interest)*
- *Peak of Inflated Expectations (Being caught up in the excitement of intentions)*
- *Trough of Disillusionment (When disappointment emerges against expectations)*
- *Slope of Enlightenment (Learning of potential values through experience)*
- *Plateau of Productivity (Benefiting from adopting the proven values)*

See: https://www.gartner.com/en/documents/3887767

Preparing the Next Generation for the Built Environment
Colin Tennant, Historic Environment Scotland

The time is rapidly approaching when an integrated approach is required to reconsider the manner by which the future heritage industry, training and professional educational needs are to be delivered that reflect the reality of current pressures and initiatives.

The Engine Shed interior © HES

Digital Heritage Learning Resources: Go Forth!

Dr Lyn Wilson, Digital Documentation Manager, Historic Environment Scotland

Go Forth!, a major new educational resource is now available to all Scottish schools, which utilises the output of recently completed 3D digital documentation of the three Forth Bridges to support the teaching of STEM subjects and the Curriculum for Excellence. This initiative has its origins in the Scottish Ten digital documentation project (www.scottishten.org), which involved the recording of UNESCO World Heritage Sites in five different countries using cutting-edge 3D laser-scanning technologies.

In 2013, the experience gained allowed the team to assess if it would be possible to record the Forth Bridge to help support its nomination for inclusion on UNESCO's World Heritage List. Having demonstrated that a 3D survey was possible, the recording of all three Forth Bridges commenced in 2015 with funding from the Scottish Government.

With digital models for all three Bridges complete, work commenced on developing learning resources designed to inspire school pupils, the aim being to generate an interest in the Bridges themselves, and to stimulate an enhanced take-up in associated science and technology subjects. Working with the assistance of technical teaching expertise from Dundee City Council, a suite of digital learning resources were developed which were launched in late 2018 and are now freely available to all educators through the Glow Scotland network.

Round Table Discussion: Digital Heritage: Anticipating an Integrated Way Forward

Ingval Maxwell OBE, COTAC

The following issues were raised to encourage discussion:

What new professions might be anticipated in the future that will sit alongside the heritage sector. What will they be called; how will they be qualified and by what mechanism:
- Algorithm engineer
- Machine learning expert
- Analytical insight consultant

How might the heritage sector integrate with them and the related abilities of the:
- Data scientists and analysts
- IT Project manager

Estimates for the above IT needs suggest a requirement for 12,500 people/year with only 5,000 currently emerging. Does this suggest a considerable digital skill shortage and how might this affect or influence the heritage sectors' training and educational needs?

How will the heritage sector be impacted upon by the growth in:
- Predictive analysis
- Data exchange
- Improved machine learning and AI

How might the heritage sector client's value and benefit from the intangible benefits of:
- Gathering/validating/certifying/storing/archiving digital data
- Using/updating/interpreting digital data
- Setting private needs against commercial pressures

What will the future interdisciplinary mix of heritage professionals look like?
- How to integrate data scientists/technologists/innovators along with understanding/analysing/rationalising heritage construction decay mechanisms and needs?
- How to integrate the key processes requiring accessibility to knowledge, skills and materials?
- What additional support training and supply needs are required to be developed to make the new approach work?

Will such an approach require to be guided by new innovative conservation charters, conventions and legislation that might need to be recrafted with a digital emphasis?

How will GDPR, AI, IPR and © matters be addressed alongside future proofing the heritage archival needs. Might digital information be added to a personal data bank of digital interests/capabilities held by individual and/or professions - but how to monitor and integrate these demands with heritage requirements?

Brainstorming Report

TOWARDS AN INTEGRATED APPROACH TO CULTURAL HERITAGE FOR EUROPE- PROSPECTUS ON "SKILLS, TRAINING AND KNOWLEDGE TRANSFER FOR TRADITIONAL AND EMERGING HERITAGE PROFESSIONS"
(October 2017)

FRAMING

This report is the result of a Brainstorming Session organised through the *Voices of Culture* process, a Structured Dialogue between the European Commission and the cultural sector represented by more than 30 people affiliated to cultural associations, NGOs, and other bodies. This process provides a framework for discussions between EU civil society stakeholders and the European Commission with regard to culture. Its main objective is to provide a channel for the voice of the cultural sector in Europe to be heard by EU policy-makers. In addition, it aims to strengthen the advocacy capacity of the cultural sector in policy debates on culture at a European level, while encouraging it to work in a more collaborative way.

The session on "Skills, Training and Knowledge Transfer: traditional and emerging heritage", held on 15-16 June 2017 in Brussels, has provided a space for exchange and discussion between 34 participants representing the cultural sectors from the EU Member States.

The present report is the result of the discussion and has been presented to the European Commission at a Dialogue Meeting on the 25th September 2017 in Brussels.

This document has been drafted and edited principally by nine of the participants (listed below), coordinated via online digital means and in close consultation with all participants who provided support and feedback (see list of participants in annex):

- **Victoria Ateca Amestoy**, Spanish Association of Cultural Heritage Managers
- **David Aguilella Cueco**, FFCR-Fédération Française des professionnels de la Conservation-restauration
- **Wolfgang Baatz**, Encore - European Network of Conservation-Restoration
- **Mina Karatza**, PostScriptum
- **Kostas Konstantinidis**, PostScriptum
- **Elis Marçal**, E.C.C.O. European Confederation of Conservator-Restorers' Organisations
- **Ailsa Macfarlane**, Resourcing Scotland's Heritage/ Built Environment Forum Scotland
- **Sarah McKeon**, The Heritage Consortium
- **Jermina Stanojev**, Politecnico di Milano

VOICES OF CULTURE
Structured Dialogue between the European Commission and the cultural sector

"Not integrating cultural heritage into other fields and not applying participatory approach are currently two biggest challenges in the transmission of traditional knowledge."[1]

EXECUTIVE SUMMARY

- Heritage professionals require **broad skillsets, in depth expertise** and a **strong foundation in ethics**.

- The "traditional" sectoral skills need to be updated and made **more relevant to the new integrated approach**.

- Those with **professional expertise** need their existing **profiles** defined in relation to necessary: **education, competences, access, practical application of skills, and responsibilities towards cultural heritage**

- Education and training should be broader, go beyond the "traditional" competences and skills involved in cultural heritage professions. The new subjects that need to receive increased attention are:
  - **transversal skills** (management, communication, fundraising, sustainability…)
  - **ethics** that should inform all practice
  - **expertise for new forms of heritage** such as digital heritage
  - **transversal approach** and multidisciplinary work.

- The **two-way influence between principle and practice** needs to be fostered, in academia, in vocational education and in cooperation with professionals in the field.

- It is necessary to **identify/map professions;** demonstrate their position in the European Qualification Framework realistically; locate needs to improve capacity building and recognise professions where they are acting responsibly, and where they could beneficially develop.

- **Ensure the core competencies are considered within the scope of recruitment, training and policy making**. It will enable increased resilience and innovation for cultural heritage.

Annex B: Erasmus+ Programme Guide

This is a highly-detailed 329 page document.

See:
https://ec.europa.eu/programmes/erasmus-plus/sites/erasmusplus2/files/erasmus-plus-programme-guide-2020_en.pdf

Part A, Page 7 Extract:

WHAT ARE THE OBJECTIVES AND IMPORTANT FEATURES OF THE ERASMUS+ PROGRAMME?

GENERAL OBJECTIVE

- The Erasmus+ Programme shall contribute to the achievement of:

    - the objectives of the Europe 2020 Strategy, including the headline education target[2];
    - the objectives of the strategic framework for European cooperation in education and training (ET 2020), including the corresponding benchmarks;
    - the sustainable development of Partner Countries in the field of higher education;
    - the overall objectives of the EU Youth Strategy (framework for European cooperation in the youth field);
    - the objective of developing the European dimension in sport, in particular grassroots sport, in line with the EU work plan for sport;
    - the promotion of European values in accordance with Article 2 of the Treaty on the European Union[3].

IMPORTANT FEATURES OF THE ERASMUS+ PROGRAMME

The following features of the Programme deserve special attention. Some of them are presented in more detail on the Commission website.

RECOGNITION AND VALIDATION OF SKILLS AND QUALIFICATIONS

Erasmus+ supports EU transparency and recognition tools for skills and qualifications – in particular Europass, Youthpass, the European Qualifications Framework (EQF), the European Credit Transfer and Accumulation System (ECTS), the European Credit System for Vocational Education and Training (ECVET), the European Quality Assurance Reference Framework (EQAVET), the European Quality Assurance Register (EQAR), the European Association for Quality Assurance in Higher Education (ENQA) – as well as EU-wide networks in the field of education and training supporting these tools, in particular the National Academic Recognition Information Centre (NARIC), Euroguidance networks, the National Europass Centres and the EQF National Coordination Points.

A common purpose of these tools is to ensure that skills and qualifications can be more easily recognised and are better understood, within and across national borders, in all sub-systems of education and training as well as in the labour market, no matter whether these were acquired through formal education and training or through other learning experiences (e.g. work experience; volunteering, online learning). The tools also aim to ensure that education, training and youth policies further contribute to achieve the Europe 2020 objectives of smart, sustainable and inclusive growth and its education and employment headline targets through better labour market integration and mobility.

In order to fulfil these objectives, the tools available should be able to cater for new phenomena such as internationalisation of education and growing use of digital learning, and support the creation of flexible learning pathways in line with learners' needs and objectives. The tools may also need to evolve in the future, leading to enhanced coherence and simplification that allow learners and workers to move freely for learning or working.

More information available at: https://ec.europa.eu/education/policy/strategic-framework/skills-qualifications_en

Part B, Page 26 Extract:

SPECIFIC OBJECTIVES

The specific objectives pursued by the Erasmus+ Programme in the field of education and training are to:

- improve the level of key competences and skills, with particular regard to their relevance for the labour market and their contribution to a cohesive society, in particular through increased opportunities for learning mobility and through strengthened cooperation between the world of education and training and the world of work;

- foster quality improvements, innovation excellence and internationalisation at the level of education and training institutions, in particular through enhanced transnational cooperation between education and training providers and other stakeholders;

- promote the emergence and raise awareness of a European lifelong learning area designed to complement policy reforms at national level and to support the modernisation of education and training systems, in particular through enhanced policy cooperation, better use of EU transparency and recognition tools and the dissemination of good practices;

- enhance the international dimension of education and training, in particular through cooperation between Programme and Partner-Country institutions in the field of VET and in higher education, by increasing the attractiveness of European higher education institutions and supporting the EU's external action, including its development objectives, through the promotion of mobility and cooperation between Programme and Partner-Country higher education institutions and targeted capacity building in Partner Countries;

- improve the teaching and learning of languages and promote the EU's broad linguistic diversity and intercultural awareness.

(Important) Footnote 10, Page 22:

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[10] **FOR BRITISH APPLICANTS**: Please be aware that eligibility criteria must be complied with for the entire duration of the grant. If the United Kingdom withdraws from the European Union during the grant period without concluding an agreement with the European Union ensuring in particular that British applicants continue to be eligible, you will cease to receive EU funding (while continuing, where possible, to participate) or be required to leave the project on the basis of the relevant provisions of the grant agreement on termination.