

Session Track: Heritage Conservation Technology and Philosophy
Session Code: CS18a

Paper: Geographic Information Systems and the State of Databases as they Relate to Historic Resources

Presented by

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Speaker(s) Biography

Rand EPPICH is a licensed architect and a senior project manager at the Getty Conservation Institute. He currently manages the Institute's Digital Recording Lab and works with project teams in Los Angeles, China and Europe. He has lectured at UCLA, KU Leuven and at ICCROM in Rome on documentation tools such as photography, photogrammetry, GIS and GPS.

Gail OSTERGREN is a research associate with the Getty Conservation Institute. She has worked with a number of GCI projects including the Earthen Architecture Initiative, the Getty Seismic Adobe Project, the Los Angeles Historic Resource Survey, and the historic cities working group. She earned her Ph.D. in history from the University of California, Los Angeles (UCLA), specializing in urban, architectural, and cultural history.

Abstract

The sheer physical size of most American cities and the large number and great diversity of their historic resources make historic resources data management a significant challenge. Despite the challenges, management of information about a city's historic resources is both necessary and valuable for historic preservation, city planning, building maintenance, economic development, and communication of information. Developing reliable, accurate, and accessible historic resource data will allow cities to make better planning decisions, improve efficiency across agencies, foster coordinated preservation efforts, and heighten community awareness.

As part of a larger project to develop a citywide historic resource survey methodology for the City of Los Angeles, the Getty Conservation Institute (GCI) examined data systems and Geographic Information Systems (GIS) that have been implemented in a number of North America cities. This paper describes the results of GCI's research.

GIS is the primary tool used for infrastructure planning and for determining zoning designations, and it is used by the planning and building-permit departments in most medium to large cities in the United States. The authors have identified three categories of GIS systems currently in use: Parallel, Dispersed, and Centralized.

Cities using a parallel GIS develop a new GIS specifically for historic resource management, in effect creating an independent system that is parallel to and entirely separate from the city's existing GIS for infrastructure, planning, and zoning. All historic resource data collection, maintenance, and uses take place independently of the city's ongoing GIS operations. A variation on the parallel GIS approach, a dispersed GIS for historic resources is created in consultation with the city's infrastructure planning GIS personnel, but the historic resource component remains a completely separate information system, though there is usually a formalized communication and data transfer protocol between the city GIS and the historic resource GIS. With the centralized GIS approach, a city builds and maintains a single, central GIS that serves as the hub for all of its infrastructure, planning, zoning, and historic resource data. All agencies, regardless of domain, input information into this central system using a standard data protocol/specification. Of the three types, the centralized GIS approach provides the most powerful tool to meet the needs of city government, the public, and businesses, but it is also the most costly and complicated to implement.

This paper illustrates each of these three GIS system types with specific examples and analyzes the advantages and disadvantages of each. It also outlines questions essential to the implementation of a historic resource data plan.⁷

Session Track: Heritage Conservation Technology and Philosophy
Session Code: CS18b

Paper: Documentation of the Dome of St Vincent de Paul, Los Angeles

Presented by

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Speaker(s) Biography

Christopher Gray MRICS - chartered surveyor and specialist in the measurement of buildings - worked with English Heritage, Getty Conservation Institute. Currently heads GBG's West Coast Office.
Chas Branby Zachary, 10 years + experience of NDE of important historic structures including the Guggenheim Museum and Falling Water - currently heads GBG's New York Office.

Abstract

Documentation of the Dome of the Church of St Vincent de Paul Los Angeles The Integration of Measured Building Survey and NDE.

To carry out a condition survey of the dome of the Church of St Vincent de Paul in Los Angeles, project manager Peyton Hall of Historic Resources Group, designed a fully integrated strategy and survey of different cutting edge techniques of the interior and exterior of the dome. The church was measured using controlled High Definition Laser Scanning to produce 2D conventional line data and a 3D model. High resolution color images were taken and using the scan data rectified and mosaiced to form a composite single curved accurate image allowing unpeeled flattened surfaces for more effective condition reporting. This data was then provided to both Vertical Access for a surface visual report and to GBG Inc USA who using hoist access integrated their sub surface data derived from a variety of non destructive investigation (NDE) tools of both the interior and exterior of the structure to be able to provide a complete documentation of not only the visible surfaces but the interior materials and their condition.

Manipulation of the 3D Reuleaux triangle surfaces, derived from the lasers scans, to produce equal area true dimension 2D surfaces, provided the base on which the external condition data could be plotted and assessed, as well as sufficient accuracy to transfer to the interior for NDE data assessment.

Acoustic data cross correlated with both thermal imaging and pulsed radar then took the condition assessment into the full depth of the thin shell reinforced concrete dome, via the polychrome ceramic finish to analyse the integrity of the bedding layers.

The internal dome of plaster and steel required close up access and inspection to discover the stunning structural trompe l'oeil of a perforated steel base for the fresco decoration, between insitu cast plaster ribs decorated as convincing terracotta shells.

This integration of techniques and methodologies brings a robust and reliable information into a single data base to support the future Conservation Master Plan. This paper explores the future of full building documentation using all available data sources, and the use and understanding of graphics as a means of accessing digital data base data detail which would be impossible to place in drawing but is crucial for supporting any skillful conservation work, using a core example St Vincent de Paul, but drawing on wide ranging experience from as far afield as the domes of St Pauls Cathedral in London, Low Library in New York, and St Jose in Puerto Rico.

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Paper: A Study for Restoration of the First Pylon of the Ramesseum (2007-08)

Presented by

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Speaker(s) Biography

Ms. Anis, became a partner at Ferrari Moe, LLP, in January of 2001 after joining the firm at its inception in June of 1999. She has more than 20 years of experience in architecture practice in the San Francisco Bay Area doing reconstruction and restoration work. She has headed teams for large-scope investigations and evaluations of buildings, including investigations of plaza deck membranes, below grade waterproofing, window and curtain wall systems and building envelopes of historic structures. She has worked on commercial, institutional and residential buildings of all sizes. In addition, she has also conducted cost/benefit analyses and capital reserve studies; and she has assisted clients in developing maintenance programs to balance their budgetary constraints with the building needs. Ms Anis is also a member of the INSIGHT team working on the documentation of heritage sites.

Ms Anis has published several technical papers regarding the use of coating, sealant and membrane technologies in restoration work.

Ms. Anis is a member of the American Institute of Architects, The Architectural Heritage Society, The SWRI (Sealant, Waterproofing & Restoration Institute) and INSIGHT (Institute for Study and Integration of Graphical Heritage Techniques).

She obtained a Master of Architecture and Urban Design degree from Washington University in St. Louis, Missouri, and a Bachelor of Science in Architectural Engineering from Cairo University, in Egypt.

Abstract

This paper discusses the use of digitally scanned data as a new approach in providing analysis for the benefit of architectural restoration studies. The scanning data involved in this project, started with scans of fragments of the granite colossus of Ramses the Great placed in the first court of his mortuary temple in western Thebes known as the Ramesseum. The scans were to be used in computer reconstruction of the original colossus, the upper parts of which have been blocking access between the first and second courts for hundreds of years. This led to a much larger project involving scanning the entire temple and site to use in generating a virtual reconstruction of the Ramesseum into which the reconstructed colossus could be placed for reference. The scanning data and the reconstruction models developed for archeological research was used in an architectural study into the restoration of the first pylon of the Temple aimed at reopening the portal of the pylon to the first court, which has been closed with mud bricks for tens of years, to reestablish entry on temple and site axis. The study was prepared by the Institute for Study and Integration of Graphical Heritage Techniques (INSIGHT) in cooperation with the Mission Archeologique Francaise de Thebes Ouest (MAFTO) for Egypt's Supreme Council of Antiquities (SCA).

The paper analyzes the use of the scanning technology to examine issues relevant to the pylon restoration, including: 1) Ongoing archeological work on site in the immediate vicinity of the pylon; 2) preservation and restoration alternatives including evaluation of stability of different sections of the structure and its foundations; 3) site drainage and its ties to regional drainage proposals; 4) site access and its impact on agricultural land; 5) project phasing; and 6) the long term regional conservation plan for western Thebes.

The final work product in the form of an animated movie will be viewed and discussed. The movie, generated from the scanning data, graphically presents the architectural study as sequential work proceeding from the

partial demolition of unstable sections of the pylon, through temporary shoring and component assembly during restoration of the structure, through the site modifications required effecting road access and facilities for each of the three proposed phases, to the completed restoration.

The author will review how this approach facilitates communication and discussion regarding conservation policies to be employed for the project of the pylon restoration between the Supreme Council of Antiquities (as the client), the archeologists (as the site custodians) and the consulting team from INSIGHT.7