

ICOA1868: AN INTERDISCIPLINARY METHODOLOGY FOR THE ANALYSIS AND VISUALIZATION OF THE HERITAGE OF MODERN ROAD CORRIDORS

Subtheme 03: Protecting and Interpreting Cultural Heritage in the Age of Digital Empowerment

Session 1: Relevance of Digital Tools & Technology in Documentation, Conservation and Safeguarding of Heritage & Community Engagement

Location: Silver Oak 2, India Habitat Centre

Time: December 13, 2017, 15:00 – 15:15

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Abstract: Roads, particularly since the advent of motorized traffic, have hugely impacted contemporary landscapes. Although their significance was noted in the 1980s, specific roadway heritage studies are scarce. Research in different disciplines has identified certain features of roads, but an integrated approach to roadway heritage or a consensus on what this constitutes are lacking.

This article proposes an interdisciplinary methodology that addresses roadway heritage assessment. Roadways are interpreted within the framework of the semantic openness that currently characterizes heritage studies, territory being the basic element of interpretation. Rather than a fragmented approach to conservation, the research defines integrated heritage configurations where natural, cultural and historical features combine to produce a cohesive form of heritage.

GIS technology is used with an online database to assess the complexity of roadway heritage. ICT strategies to raise public awareness are outlined. The methodology is applied to assess the historical N-340 Mediterranean roadway corridor in Spain.

Key words: Road heritage dissemination, roadway assessment methodology, online heritage databases and GIS technology

Introduction

Roads built from the 18th century and for first automobiles, constitute an essential element in the shaping of landscapes as these substantially influence the occupation and organization of their surroundings.

Throughout the 20th century, the "everyday" landscapes associated with roads have evolved dramatically, up to the point where the increasingly high level of transformation may no longer be considered as worthy of heritage appraisal.

However, the corridors incorporating these roads frequently contain highly valuable heritage assets. This heritage may be considered in terms of the technical heritage of built roads or those modified to suit the first automobiles, as well as that of its surroundings and, more specifically, the natural and rural heritage of the area incorporating the road or the architectural and urban heritage structured or given access by the road.

From a European focus, the fact that many of the main roads and highways were built within historic corridors, has ensured that, together with the heritage elements corresponding to the period of construction and the greater transformation of the road, we may still encounter pre-existing elements that form part of its heritage.

In spite of the heritage value of these infrastructures, very little has been written on the subject to date and most of the studies that do exist provide only a partial study of some of the heritage elements outlined above.

In this context, the present article aims, firstly, to assess the main contributions made to date regarding the heritage dimension of modern roads and, secondly, to define an interdisciplinary method to identify and assess the heritage of roads. This methodology should allow the scaled breakdown and integration of heritage assets that, while of different nature and with different relations to the infrastructure, form part of the heritage of landscapes formed and shaped by roads from the start of the 20th century to the present day. To this end, the research combines GIS technology with a system of permanently updated online databases accessible to researchers and the public alike.

The methodology has been applied to the case of the N-340 corridor, a historic route of connection between Europe and Africa and custodian of a highly valuable historic and cultural stratigraphy. The corridor runs through an area that was very much transformed over the latter half of the 20th century as a result of its coastal and tourist location and one that has been subject to a very aggressive process of speculation and occupation that has obscured its heritage.

Context: The consideration of the heritage dimension of modern roads

From a conceptual and methodological perspective, the historical and heritage analysis of linear public works built after the mid-18th century has been focused on canals and railways, and some of them also included in the UNESCO World Heritage List (Ruiz et al. 2017). However, the heritage dimension of

modern roads has only just started to receive attention in the last few years (probably due to the lack of suitable accommodation within any of the established categories).

Theoretical reflection on the heritage of modern roads may be found in the works of Marriott (1998), Lay (2006), Guigueno (2008), Hubbard (2008) or Blair (2013). Likewise, some monographic studies have insisted on the heritage appreciation of a number of specific roads. This is the case of publications such as those by Quatermaine, Trinder and Turner on the Holyhead Road (2003) in the United Kingdom; Witzel (2003), Krim (2014) on Highway 66 and Raitz and O'Malley (2012) on the Maysville Road, both in the United States; or Cushing (2007), Altenburg and James (2013) and Kerr (2013) on the Pacific Highway and the Stuart Highway in Australia. The heritage value of these roads has also been the subject of international meetings such as the biannual conferences "Preserving the Historic Road", organised by Paul Daniel Marriott+Associates in collaboration with other institutions, or the national conference "Corrugations, the Romance and Reality of Historic Roads", organised by Australia ICOMOS in 2005 and partially incorporated two years later in the *Historic Environment Journal*.

Scant attention has been given to the rehabilitation and conservation of modern roads. In this respect, the main initiatives have been developed in United States. Among these initiatives, it can be mentioned the project aimed at recovering and enhancing the heritage of certain roads, such as the US Highway 66, within the framework of the Route 66 Corridor Preservation Program (Barthuli and Taylor 2015).

Methodology

The proposed methodology is divided into five stages. GIS technology is used (specifically: GVSIG, QGIS and ArcGis) and a database to provide essential links between spatial GIS data and detailed descriptions of heritage assets is also developed (Loren et al. 2016).

1. Location of the original road for motorized traffic and its corridor

In this first phase of the study, the path of the original motorized road is traced and the boundaries of its corridor are marked out in order to define the overall heritage area of the road, which contains examples of natural, architectural, urban and rural assets.

In order to accurately pinpoint the original road and to assess its current state, cartography and historical photogrammetric aerial photography are used. After crosschecking and comparing this data with recent orthophotos, the road is divided into different sections that take into account formal and functional characteristics. Many sections, be they stretches of highway or conventional road, which have undergone different degrees of transformation, are still in use. Other stretches of the original road are located in cities or have become local roads, while others have been abandoned or no longer exist.

Apart from specific, commonly protected structures such as bridges, other technical aspects of heritage assets are examined and classified as follows: alignment of the original road, transverse sections (width, surface treatment, and earth movements), bridges, drainage structures, retention walls, road signs, and traffic signalling (Fig.1).



Fig.1- Examples of heritage assets related to roads



Fig.2- Location and current condition of the historic road. Sectioning and stages.

Sections no longer in use or passing through areas less affected by human activity evidently show greater traces of the original road. Nevertheless, it is important to note that both the least and the most transformed stretches of road are worthy of study. The latter can provide evidence of the alignment of the original road as well as changes in construction methods and materials.

In this particular case, it is possible to ascertain the current state of the old route and to sub-divide the road

ICOA1868: UNE METHODOLOGIE INTERDISCIPLINAIRE POUR L'ANALYSE ET LA VISUALISATION DU PATRIMOINE DES CORRIDORS ROUTIERS MODERNES

Sous-thème 03: Protéger et interpréter le patrimoine culturel à l'ère de l'autonomisation numérique

Session 1: Pertinence des outils numériques et de la technologie dans la documentation, la conservation et la sauvegarde du patrimoine et l'engagement communautaire

Lieu: Silver Oak 2, India Habitat Centre

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Résumé: Les routes, notamment depuis l'avènement du trafic motorisé, ont eu un énorme impact sur les paysages contemporains. Bien que leur importance ait été perçue dès les années 1980, les études spécifiques sur le patrimoine routier sont rares. La recherche dans différentes disciplines a identifié certaines caractéristiques des routes, mais une approche intégrée du patrimoine routier ou un consensus sur ce que cela constitue font défaut.

Cet article propose une méthodologie interdisciplinaire qui traite de l'évaluation du patrimoine routier. Les routes sont interprétées dans le cadre de l'élargissement sémantique qui caractérise actuellement les études sur le patrimoine, le territoire constituant l'élément fondamental de l'interprétation. Plutôt qu'une approche fragmentée de la conservation, la recherche définit des configurations patrimoniales intégrées où les caractéristiques naturelles, culturelles et historiques se combinent pour produire un système cohérent de patrimoine.

La technologie SIG3 est utilisée avec une base de données en ligne pour évaluer la complexité du patrimoine routier. Les stratégies TIC4 pour sensibiliser le public sont décrites. La méthodologie est appliquée pour évaluer le couloir historique de la route méditerranéenne N-340 en Espagne.

Mots Clés: diffusion du patrimoine routier, méthodologie d'évaluation des routes, bases de données sur le patrimoine en ligne et technologie SIG

3 Système d'Information Géographique (recueil et gestion des données spatiales et géographiques) NDT

4 Technologies de l'information et de la communication (couvrant tout le domaine de la télématique) NDT

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