



Un patrimoine pour l'avenir, une science pour le patrimoine

Heritage for the Future, Science for Heritage

**Une aventure européenne
de la recherche et de l'innovation**

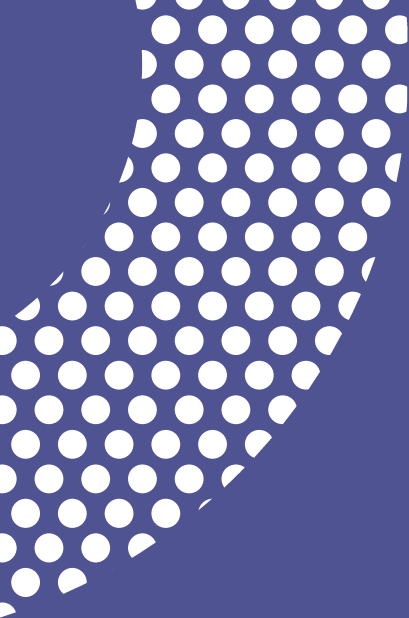
A European Adventure for Research and Innovation

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Un événement organisé dans le cadre
de la présidence française du Conseil de l'Union européenne*



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AVANT-PROPOS / FOREWORD

Cette publication est la somme d'articles rédigés par les intervenants du colloque européen « Un patrimoine pour l'avenir, une science pour le patrimoine », organisé dans le cadre de la Présidence française du Conseil de l'Union européenne les 15 et 16 mars 2022 à Paris.

Les différentes contributions se veulent le reflet des présentations qui ont été données dans le cadre des sessions plénières et des tables rondes durant deux jours. Elles présentent les travaux menés par des doctorants et des chercheurs, mais aussi les initiatives portées par différents acteurs qui contribuent à la préservation, la valorisation et la transmission du patrimoine culturel.

Ces actes comprennent également une série d'articles, plus courts, publiés sur le site internet du colloque afin d'explorer les quatre grands thèmes proposés. Ces articles, présentés dans une section distincte, n'ont cependant pas fait l'objet de présentations lors de l'événement.

Les articles sont proposés en français ou en anglais, et reflètent la diversité des sujets qui animent aujourd'hui le domaine des sciences du patrimoine en France et en Europe. L'ensemble des présentations du colloque est également disponible sur la chaîne [YouTube du Heritage Research Hub](#).

Cet événement a été financé par l'Union européenne. Les vues et opinions exprimées dans le cadre du colloque et dans les actes ne reflètent pas nécessairement celles de l'Union européenne et de la Commission européenne. L'Union européenne et la Commission européenne ne peuvent en être tenues responsables. Par ailleurs, s'il n'a pas été organisé par le Gouvernement français, il est cependant autorisé par celui-ci à utiliser l'emblème de la présidence française du Conseil de l'Union européenne.

This publication is the sum of articles written by the speakers of the European symposium 'Heritage for the Future, Science for Heritage', organised in the framework of the French Presidency of the Council of the European Union on 15 and 16 March 2022 in Paris.

The various contributions reflect the presentations that were given during the plenary sessions and round tables over two days. They present the work carried out by PhD students and researchers but also the initiatives undertaken by various actors who contribute to the preservation, valorisation, and transmission of cultural heritage.

These proceedings also include a series of shorter articles published on the symposium website to explore the four main themes proposed. These articles, presented in a separate section, were not, however, the subject of presentations at the event.

The articles are available in French or English and reflect the diversity of topics currently being discussed in the field of heritage science in France and Europe. All the presentations of the symposium are also available on the [YouTube channel of the Heritage Research Hub](#).

This event was funded by the European Union. Views and opinions expressed in the framework of this event and in the following proceedings do not necessarily reflect those of the European Union and the European Commission. The European Union nor the European Commission can be held responsible for them. Moreover, the symposium was not organised by the French Government. It was however authorised by the French Government to use the emblem of the French Presidency of the Council of the European Union.

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Towards Sustainable New 'Urban Stories': Light Archaeology as a Tool to Map Historical Transformations Across Time and Space

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Résumé

La transformation par l'histoire est une valeur que nous devons maintenir au sein des processus d'aménagement urbain. Il s'agit du concept fondamental de la Programmation Conjointe (JPI) *Deep Cities* – CURBATHERI, projet international qui, par le biais d'une recherche transversale pour l'analyse comparable en Norvège, au Royaume-Uni, en Italie et en Espagne, permet le développement d'une boîte à outils de gestion pour « faciliter la conceptualisation des valeurs patrimoniales auprès des parties prenantes et pour la priorisation de meilleures solutions de planification ». Pour modéliser les changements matériels d'une zone urbaine à travers le temps et l'espace, l'équipe de l'université de Florence propose une méthode, « l'archéologie non invasive », comme un apport pour la compréhension et la modélisation de l'histoire profonde d'une ville.

Mots-clés: villes d'histoire, transformations urbaines, archéologie non invasive, archéologie du bâtiment stratigraphique, diagramme carré du millénaire

Keywords: deep cities, urban transformation, light archaeology, stratigraphic building archaeology, millennium square diagram

The urban landscape is a multi-layered reality. Its built environment is a dynamic element, which changes across time and space. Used by different communities, it has been modified, demolished, and adapted to different needs in a long process of making and re-making. Therefore, what has been observed today, and has been defined as built heritage, is a palimpsest of stories and values. Revealing these stories, these time-space changes, thus deeply understanding the historical continuity of the place, may help drive urban strategies for the heritage preservation and the sustainable addition of new layers to answer the progress and the future demands. Then, in this respect, historical transformation becomes a value to sustain, according to the Deep Cities approach² and its most recent developments in the framework of the Joint Programming Initiative on Cultural Heritage and Global Change (JPI CH) CURBATHERI³.

Methods and Aims

The Deep Cities team of the University of Florence explored the potential of 'Light Archaeology' at the urban level, a combined application of non-destructive archaeological stratigraphic and topographic methods⁴, as an efficient tool to model the historical transformations of an urban area. To this end, two distinct Light Archaeology applications were developed, respectively devoted to mapping the material transformation of an urban environment (Millennium Square Diagram or 'MSD') and of particularly relevant buildings or architectural complexes (Stratigraphic Observatory Analysis).

The MSD is an experimental methodology born in the Deep Cities framework with the aim of elaborating a comprehensive snapshot of material transformations in a given area (San Donato neighbourhood in our case) over a millennium.

The diagram is fed by direct (material/archaeological/cartographic) and indirect (written/iconographic) sources, elaborated through a Geographic Information System (GIS) to gather metric data on land use. The percentage of land used for specific

purposes (such as residential, commercial, industrial, rural, streets, etc.) is recorded on the horizontal axis, while the duration in time of recorded land uses is represented on the vertical axis. MSD uses Allen's intervals⁵ for modelling time, and each unit refers to a detailed description in a database connected to the diagram.

On the other hand, Stratigraphic Observatories are identified through stratigraphic building archaeology⁶ as buildings or architectural complexes whose material history parallels the transformations of the urban areas they are inserted into. They can be seen as new 'monument types' within a Deep City perspective where, instead of favouring contexts representative of a single particular cultural moment (according to current architecture-historical listing practices), we chose to highlight in the urban fabric 'palimpsest-buildings' as a means to give social value to urban transformation as a cultural process in itself.

Florence/San Donato Millennium Square Diagram

The San Donato Millennium Square Diagram highlights the trigger of this settlement-formation: the Roman road Via di Novoli. In terms of land use, the area was mainly utilised for agricultural purposes up until the middle of the 20th century, as also evidenced by the sources, both written and material. However, the real urbanisation of the area occurred in 1938-1939 with the establishment of the FIAT factory, the Italian automobile manufacturer (**Figure.1a**). This transformation into an industrial area unavoidably had an enduring impact on the whole settlement, and it activated further material changes, both in the short and long term. Workers' housing, new streets, and factories were built in the following years, and more transformations were observed mainly in the last two decades, turning the site into a fast-changing and intense urban development area. The only surviving remains of FIAT's impressive plant is the thermal power station, the so-called FIAT tower (**Figure.1b**).

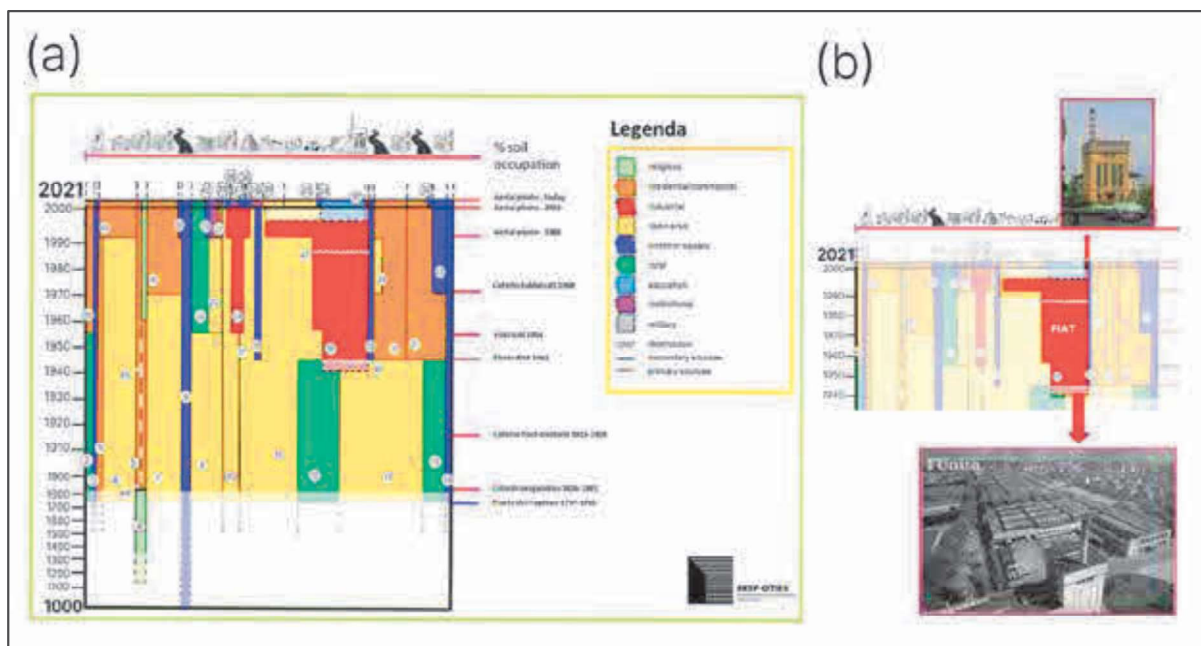


Figure 1. The MSD of San Donato in Florence. Diagram ©University of Florence, photograph © L'Unità

In this framework, MSD allowed to map, order and communicate the material changes of the urban context in time and space, showing the material temporalities embedded in today's urban environment.

San Donato in Polverosa: Stratigraphic Building Archaeology

The phases mapped in the Millennium Square for San Donato in Polverosa found a perfect match in the material traces recorded in the actual façade of the church, identified by the methodologies of stratigraphic building archaeology (Figure 2). A vertical section of a wall in the left limit of the *façade* dates back to the half of the 12th century when the complex belonged to the Augustinian order⁷. A masonry in horizontal rows of sandstone ashlar that probably divided an internal church from an external one is dated to the 13th century when the site passed to the cloistered Cistercian nuns, while the 15th and 16th centuries are materially marked by subsequently added windows and doors with brick frames. After the suppression of the convent in 1808 and its destruction in 1825-1827 by the Demidoffs, a noble Russian family, the church was converted into a library and kitchen of the newly built

neoclassical villa. In this phase, windows and doors were closed and the use of the church as a kitchen is confirmed by the trace of a chimney. In 1963, San Donato was eventually reopened for worship and was restored in 2010-2011 with the opening of the actual entrance gate. Another example of the application of Stratigraphic Building Archaeology is one of the churches of Santa Maria Maggiore in Florence, where it is possible to map a range of building phases dating between the 10th and the 17th centuries (Figure 2).

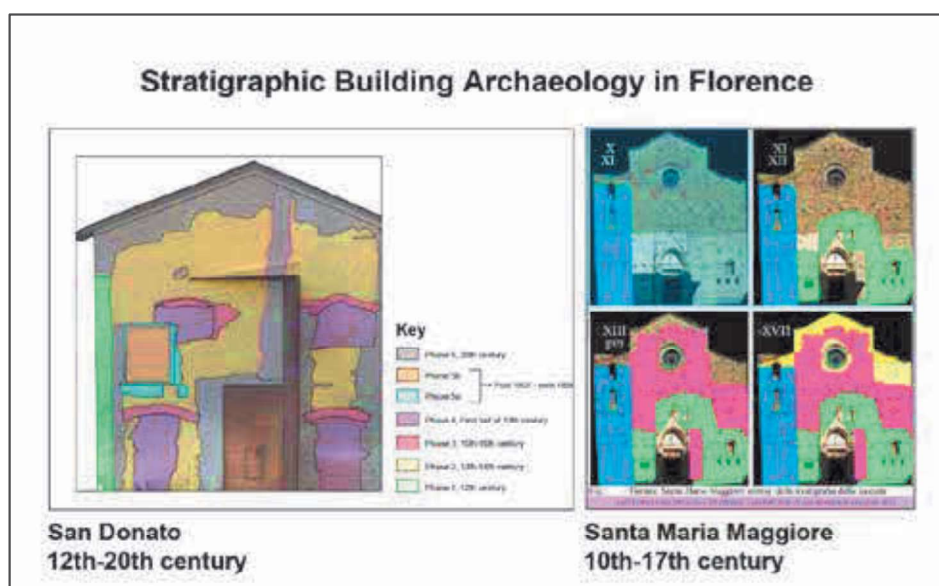


Figure 2. Stratigraphic Building Archaeology analysis in San Donato and Santa Maria Maggiore, Florence. © University of Florence

Following the experimentation of Light Archaeology as a tool to model urban transformation over time at neighbourhoods and buildings levels in Florence, Deep Cities applied the very same methods in different project contexts as London Royal Arsenal Gatehouse (Woolwich) and the Old Edinburgh Gasworks remains (Canongate), with promising and positive results. Given the tests performed so far, Light Archaeology can provide an efficient mapping strategy in order for urban planning to embed into 'new cities', the past communities' material values at large.

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¹ Quoted from JPICH Curbatheri project proposal.

² FOUSEKI, Kalliopi, GUTTORMSEN, Torgrim, SWENSEN, Grete, (eds.), *Heritage and Sustainable Urban Transformations. Deep Cities*, London (UK), Routledge, 2020.

³ See <https://www.heritageresearch-hub.eu/project/curbatheri/> and www.deepcities.eu

⁴ NUCCIOTTI, Michele, VANNINI, Guido, 'Light Archaeology and Territorial Analysis: Perspectives and Experiences of the Florentine Medievalist School'. *Archaeologia Polona*, 50, 2019, p149-169.

⁵ For an in-depth discussion see: DRAP, Pierre, NUCCIOTTI, Michele, PRUNO, Elisa, et al., 'Ontology-based photogrammetry survey for medieval archaeology: Toward a 3D geographic information system' (GIS), *Geosciences*, 7, p1-34.

⁶ BROGIOLO, Gian Pietro, CAGNANA, Aurora, *Archeologia dell'Architettura*, Florence (Italy), Insegna del Giglio, 2012.

⁷ For all the historical information of San Donato the reference is MARINI Marino, 'Il monastero di San Donato in Polverosa (FI) fra Medioevo e Rinascimento: fonti storiche ed archeologiche', *Atti e memorie dell'Accademia Toscana di Scienze e Lettere 'La Colombaria'*, 62, 1997, p85-127.

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