



Knowledge and Big Data: New Approaches to the Anamnesis and Diagnosis of the Architectural Heritage's Conservation Status. State of Art and Future Perspectives

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Abstract. Italy holds the international record for Cultural Heritage and Unesco sites' number but, in the face of this wealth, a number of criticalities emerge as it cannot be a mere passive location; Cultural Heritage needs protection, conservation and valorization through direct interventions such as restoration and maintenance, and indirect interventions such as the deepening and dissemination of knowledge. Strengthening the knowledge chain means, in fact, increasing the possibility of preserving Historical Buildings by developing a culture of protection and conservation.

The study, systematization, digitization and the possibility of making the totality of information on the Architectural Heritage accessible online is a fundamental means of disseminating knowledge about them.

Direct access to the information system can significantly increase the quality of the design and execution of conservation work on historic buildings.

Digital systematization therefore represents an urgent priority not only for the dissemination of cultural contents but, especially, for the executive guarantee of correct interventions on the Heritage in accordance with the provisions dictated by the national protection system according to which every action must be aimed at the conservation of the Heritage.

This contribution constitutes an overview of the digital tools related to the Architectural Heritage existing today in Italy. The peculiarities and gaps of each one are identified, in order to achieve the methodological definition of a new and improved approach based on the awareness that the digitization and dissemination of these contents are, to all intents and purposes, processes for the enhancement of Cultural Heritage.

Keywords: Architectural Heritage · Big data · Digital knowledge

1 Introduction

In a historical period when access to places of culture, such as archives and libraries, is subject to severe restrictions, it is necessary to ask ourselves about the different ways of dealing with Cultural Heritage, without precluding the possibility of conducting studies, research and projects remotely.

The current pandemic situation has highlighted the need to deal with the digital world and its countless potentialities, which is also well suited to the collection and dissemination of cultural content.

With respect to historical studies of architectural heritage, the main documentary sources are not, in most cases, easily available because they are not published or are stored in diverse archives of different institutions and are not always quickly and easily accessible.

Systematizing and making all this historical and technical information directly available for study and consultation is, therefore, a useful tool both for scientific research and for cultural dissemination. It is also a training and planning/decision-making support for professionals in the Cultural Heritage sector, since direct access to this body of information will facilitate and qualitatively improve the conservation and enhancement work carried out by architects, engineers and technicians.

Often, in the case of historical buildings and monuments, it is not possible to reconstruct their construction history due to the lack of sources and knowledge of archivals. To make the work of the architectural historian even more difficult is the fact that the documentation is often not inventoried, in many cases dismembered, and stored in various cultural sites.

Rethinking this system, by channeling all the data into a single reference tool, can therefore allow for a complete knowledge and anamnesis of the Heritage, avoiding the risk of making incorrect planning choices because they lack an adequate knowledge base of the Heritage on which we are going to intervene.

The availability of this information is, therefore, a fundamental aid to research and to the definition of restoration and maintenance interventions, as it would guarantee the easy retrieval of general and specific information on the building under study or intervention.

The structuring of online Information Technology (IT) platforms that can be implemented with continuously updated data (such as works in progress or monitoring campaigns) represents an extraordinary tool for the knowledge and dissemination of the Heritage, for the restoration works to be planned and, to avoid the dispersion of known and unknown data.

2 State of Art

2.1 The Italian Context

The critical and cognitive examination of the Architectural Heritage and the necessary comparison with the digital in terms of applications for the management, conservation and use of the Heritage, has animated several national and regional initiatives [1].

As regards the definition of specific platforms generally related to the Architectural Heritage, we can distinguish between national digital tools and additional tools developed autonomously by the regions. At national level, the following platforms are included:

- General Catalogue of Cultural Heritage [2]

Database of catalogued Cultural Heritage in Italy. Each file contains photos, typological and cultural definition, qualification, denomination, geographical-administrative location, historical information, plan, structural and material information, state of conservation, uses, legal status and constraints, sources and reference documents.

- MiC, Online Constraints [3]

National Protection System for Cultural Heritage. A file on an Architectural Heritage contains general information, constraints, photos, documentation, location, competent Institution and recorder, historical period, cadastral data, geographical information, state of conservation and seismic risk.

- The Churches of the Italian Dioceses [4]

Data bank with in-depth and census sheets containing: typology and qualification, names, historical information, description, Diocese, photos, geographical and ecclesiastical location, map of buildings belonging to the same ecclesiastical Institution.

- Beweb [5]

Census' platform of Historical and Artistic, Architectural, Archival and Book Heritage conducted by Italian Dioceses and ecclesiastical cultural Institutes.

A typical file of an Architectural Heritage contains photo, historical-architectural description, map, Diocese, address, plan, sources, liturgical adaptation, and devotions.

- The spaces of madness' Portal [6]

Atlas of asylum Heritage between the nineteenth and twentieth centuries with five sections: identification, history and architecture, iconography, bibliography and sources.

- MiC, National census of Architecture of the second half of 20th century [7]

Census of the most recent Architectural Heritage. For each building, there are four main sections (work, details, sources/annexes, and map) and in-depth sections.

- MiC, Information System for Restoration worksites (SICaR) [8]

System dedicated to restoration that geo-references graphic, photographic and alphanumeric documentation. The data are grouped in general and external data, scientific project/consultation, diagnostics, interventions, architectural archaeology, photos [9].

- Ecole Française de Rome, Census of Christian Sanctuaries in Italy [10]

Census of all existing and disappeared Christian sanctuaries in Italy. A typical sheet contains name, geographical location, Diocese and parish, dedication, objects of worship, life cycle of the sanctuary, type of worship, building, foundation legend, traditions, events and chronological data, official recognition, jurisdiction, patronage, architectural type, information on the structure, ex-votos, pilgrimages, miracles, rituals, bibliography.

As far as the individual regions are concerned, it should be noted, first of all, that the regions of Umbria, Abruzzo and Molise do not have any online platform and that the only information about their Cultural Heritage can be found by consulting the above-mentioned national tools.

Below are the digital initiatives undertaken by the remaining Italian regions.

- Valle D’Aosta - Cultural Heritage Catalogue System [11]

Integrated and geo-referenced relational database accessible only upon request.

- Piedmont - Digital Ecosystem of Cultural Heritage [12]

The system is divided into three sections: Mèmora, Librinlinea, and Journals of Piedmont. The Mèmora platform is available only to property owners and operators.

- Piedmont - Metropolitan City of Turin [13]

Collection of municipal files describing the Cultural Heritage catalogued to date.

- Valle D’Aosta, Piedmont - Cities and Cathedrals [14]

Digital portal of restoration and valorisation projects carried out in cooperation between Dioceses, Regions and Superintendencies.

- Lombardy - Lombardy Cultural Heritage [15]

Portal of Lombardy’s Cultural Heritage with four main sections: Cultural Heritage, History and Documents, Places of Culture and Special Projects.

The Architectures sub-section contains synthetic and complete files.

- Liguria - Catalogue Inventory of Liguria’s Cultural Heritage [16]

A central database that makes available files on Archaeological, Environmental and Architectural, Ethno-Anthropological, Historical and Artistic, and Natural Heritage. Now there is no file available on Architectural Heritage.

- Trentino Alto Adige - MonumentBrowser [17] and Archaeobrowser

Monumentbrowser provides an up-to-date list of all Architectural Heritage in South Tyrol. Archaeobrowser is the analogous information system by geo-referenced portal.

- Veneto - Veneto Region Cultural Heritage Catalogue [18]

Technological platform of the regional Cultural Heritage.

- Friuli Venezia Giulia - Regional Information System of Friuli Venezia Giulia's Cultural Heritage [19]

Web-based database and computerised cartography. Three sections are available for each building: file, contained Cultural Heritage, map.

- Veneto, Friuli Venezia Giulia - Regional Institute for Venetian Villas [20]

An on-line catalogue allowing consultation of the cataloguing data sheets of the Architectural and Environmental Heritage of the Veneto and Friuli Venezia Giulia regions.

- Emilia Romagna - PatER Catalogue of Cultural Heritage [21]

Portal that unites and integrates the digital resources of the regional system of Museums and Cultural Heritage.

- Emilia Romagna - Webgis Emilia-Romagna's Cultural Heritage [22]

A platform that represents the protection system in the region according to whether it is Architectural, Archaeological or Landscape Heritage, with a specific section for Architectural Heritage and the 2012 earthquake.

- Tuscany - Research System of the Cultural Heritage and Landscape [23]

A system for searching the regional territory for protection measures depending on whether they are Architectural, Archaeological or Landscape Heritage.

- Tuscany - Architecture in Tuscany from 1945 until today [24]

A platform that collects information on a selection of works of major historical and artistic interest from the 20th century.

– Tuscany - Places of Faith [25]

Platform of historical-religious buildings surveyed during the project for the enhancement of Cultural Heritage carried out by the Region between 1995 and 2000.

The data sheets are brief; only for some buildings considered to be of particular importance are there more detailed descriptions.

– Tuscany - Directory of Civil Architecture in Florence [26]

Census project of the civil buildings in the UNESCO site area.

– Marche - Marche Cultural Heritage [27]

Regional information portal on Cultural Heritage.

– Lazio - Geographical Information System [28]

Collection of georeferenced cards for the Cultural and Environmental Heritage of Lazio. The site is open but searches do not produce any results. However, there is a list of fact sheets compiled for the Architectural Heritage up to 2014.

– Campania - Campania Region, Digital ecosystem for culture [29]

A project not yet complete, the publication of the platform was anticipated to provide online cultural content during the health emergency by Covid-19.

In particular, the platform provides information, cataloguing sheets and other multimedia services related to the Activities and Cultural Heritage in the area.

– Puglia - CartApulia [30]

Territorial information system for research, valorisation and monitoring of regional Cultural Heritage.

– Basilicata - Digital Atlas of Basilicata's Castles - Basilicastle

WebGis of the Basilicata's fortified Heritage on an app for the smartphone.

– Basilicata - Webgis Basilicata Regional Landscape Plan [31]

This platform represents the protection system in the Region, depending on whether the Heritage is Architectural or Landscape.

– Basilicata - Homepage SABAP Basilicata [32]

Information site about the Architectural Heritage of Potenza and Matera.

- Basilicata - Smart cities and Communities and Social Innovation “Product and process innovation for sustainable and planned maintenance, conservation and restoration of Cultural Heritage” [33–36]

He Ma In (Heritage Maintenance Innovation) technological platform for the programming of maintenance interventions.

- Calabria - Atlas of Calabria’s Cultural Heritage [37]

Atlas collecting data from the census of Cultural Heritage. The database is freely accessible and allows for interaction with other sites or studies and publications [38].

- Sicily - ICCD, Cultural Itineraries of the Sicilian Middle Ages [39]

Portal divided into three themes: Religious and Civil Architecture, Paintings and Mosaics, Rock sites. The number of files present is small.

- Sardinia - Region of Sardinia, Catalogue of Cultural Heritage [40]

A regional catalogue containing the results of the cataloguing of the island’s cultural and identity Heritage carried out by the Region since 1996.

Table 1 gives a summary overview about the contents of each platform described.

2.1.1 Italian Associations Active in the Protection and Conservation of Cultural Heritage

There is also a very active sector of associations in Italy, through foundations or private organizations, with artistic, research and cultural Heritage conservation objectives.

Among the most established experiences, which have created their own digital database of the Architectural Heritage or a census, we can mention:

- DOCOMOMO Italy ONLUS [41]

A continuously updated catalogue of the most relevant architecture of the modern movement in order to preserve and document it. The online inventory of Italy currently contains 50 files containing photos, names, location, classification, legal status, historical information, designers, interventions, use, general and technical description, bibliographic and archival references.

- FAI - Italian Environmental Fund [42]

Individual files of historical-artistic or landscape Heritage owned by FAI or received in concession from a public body or on loan from a private individual or through a sponsorship agreement aimed at protection and enhancement.

For each built there is an extensive description and individual thematic details, photos, events, news and links to the corresponding social pages.

Table 1. Data contained in Italian cultural heritage platforms

	Identification	Unused Historical Sites	Localization	Historical I information	Description	Previous interventions	State of conservation	Legal status and constraints	2d/3d drawings	Photos	Attached documents	Georeferenced map	In-depth information	Cadastral and cartography	Type and technology	Quantitative data and indicators	Sources and bibliography	External links (national, regional websites)
Cultural Heritage Catalogue System	•				•	•	•	•			•	•						
Digital Ecosystem of Cultural Heritage								•			•		•			•		
Metropolitan City of Turin	•	•	•		•			•	•				•	•				
Cities and Cathedrals				•	•								•		•			
Lombardy Cultural Heritage		•	•	•	•			•	•						•	•	•	•
Catalogue Inventory of Liguria’s Cultural Heritage																		
MonumentBrowser and Archaeobrowser	•	•			•				•		•		•					
Veneto Region Cultural Heritage Catalogue		•	•	•			•	•			•	•	•	•	•	•	•	•
Regional Information System of Friuli Venezia Giulia’s Cultural Heritage	•	•	•		•							•	•					•
Regional Institute for Venetian Villas	•	•	•	•	•		•			•			•					•
PatER Catalogue of Cultural Heritage	•		•	•						•					•			•
Webgis Emilia-Romagna’s Cultural Heritage	•	•	•		•			•		•					•	•	•	•
Research System of the Cultural Heritage and Landscape of the Region of Tuscany	•	•	•		•			•					•					•
Architecture in Tuscany from 1945 until today	•		•		•					•	•	•						•
Tuscany - Places of Faith	•		•	•	•					•								
Tuscany - Directory of Civil Architecture in Florence	•		•	•	•		•	•					•					•
Marche - Marche Cultural Heritage	•	•	•		•					•			•					
Lazio - Geographical Information System																		
Campania Region, Digital ecosystem for culture	•	•	•		•					•	•							
Puglia - CartApulia	•	•	•	•	•	•	•	•			•				•	•	•	•
Basilicata - Digital Atlas of Basilicata’s Castles	•	•	•	•	•					•	•	•			•			
Webgis Basilicata Regional Landscape Plan	•	•	•		•			•										•
Homepage SABAP Basilicata	•		•		•			•		•		•	•					
Basilicata - He Ma In	•		•	•	•	•	•	•			•	•	•	•	•	•	•	•
Atlas of Calabria’s Cultural Heritage	•	•	•	•	•						•	•			•			•
Sicily - Cultural Itineraries of the Sicilian Middle Ages	•		•	•	•	•	•			•	•							•
Region of Sardinia, Catalogue of Cultural Heritage	•	•	•	•	•			•				•	•	•		•	•	•

– Italia Nostra ONLUS [43]

This is one of the oldest Italian associations for the protection of Cultural Heritage.

Among the various activities undertaken over the years, of great importance for the subject matter is the national “Red List” campaign, a tool for collecting, by means of a

report, all architectural, archeological and landscape assets in a state of abandonment or in need of protection, historic site, castles and individual monuments in danger.

The list is available on an online map and for each listed built there is a photographic and descriptive file highlighting the reasons for its inclusion on the list.

– ADSI - Association of Italian Historic Houses [44]

The ADSI brings together owners of historic properties throughout Italy with the aim of helping them to defend, preserve and enhance their heritage.

A list and photographic reference of all the Italian houses whose owners have joined the initiative is available online, as well as in-depth historical descriptions of some of them.

– Association Archeologiaindustriale.net [45]

Cultural Association founded with the mission of promoting and enhancing industrial culture and its material and immaterial heritage at local, national and international level.

Among its activities is the networking, which is constantly updated, of the Italian and foreign industrial Heritage. Photos, historical and technical descriptions, in-depth information on machinery and bibliographical references are available for each artefact.

2.2 International Experiences

The research focuses on the Italian situation, reserving its implementation in the future, also taking into account international experiences; in-depth analysis that is the most necessary in light of the fact that the digitization and dissemination of knowledge related to Heritage goes well with the strategies indicated by the European Community and, in particular, with the Digital Agenda for Europe.

As early as 2006, the European Community invited Member States to implement an optimization of the cultural and economic potentials linked to Cultural Heritage, indicating which were the recommendations [46] to be followed in the areas of digitization and online accessibility of documentary sources linked to the European Heritage, seeing digitization as a fundamental tool for conservation purposes.

With the strategic action plan Digital Agenda for Europe 2010–2020 [47], the European Union relaunches the potential of a sustainable digital economy that makes the most of information and communication technologies in favor of knowledge, innovation, growth and progress.

Specifically linked to the reference theme is the promotion of policies for access to online content, giving a central role, both in the field of scientific and technological research, to the use of ICT (Information and Communication Technologies) which, through targeted digital actions, would allow the cultural memory of Europe to be preserved and handed down.

It is considered important to mention at least one of the most important responses to European dictates in the field of digitization; the establishment by the French Government of the Mérimée platform; a database on French National Monuments [48].

Mérimée has put on-line all the data of the French Architectural Heritage which includes civil, religious, military, funerary, industrial architecture and historic gardens using the support of the MAP (Médiathèque de l'architecture et du patrimoine) and the General Inventory.

The platform consists of three main sections:

- Historical Monuments: technical data sheets of buildings protected under the Historical Monuments Act of 1913 with the registration and classification decrees
- Inventory: technical sheets of everything that has been inventoried by the regional General Inventory;
- Architecture: 20th century Heritage data sheets.

The data sets of Mérimée Historical Monuments are accessible and downloadable from the government platform and include photos, name, location, cadastral references, historical description, constraint measures and specific provisions, legal status, bibliographical references, year of compilation and author.

3 Critical Reflections on Contemporary Needs and Requirements

The research carried out on the digital tools that, in Italy, investigate the Architectural Heritage has highlighted that, while there are a large number of online tools, the information provided is almost always partial, dispersed as it is disseminated over several platforms (the region of Tuscany, for example, boasts a number of four digital platforms). In some cases the information are complete but, only if referred to specific areas (predominance of portals focusing on religious architectural Heritage).

These observations are accompanied by the fact that some portals are not directly accessible. The Memora platform of the Piedmont region, for example, is for the exclusive use of the owners of the building and ministerial operators, the Catalogue System of the Cultural Heritage of the Valle d'Aosta region is accessible only upon request and only in the regional offices in charge.

Some portals are not functioning or up-to-date, such as the Lazio tool; which does not produce searches and whose last update is dated 2014.

On the other hand, an accurate historical-critical survey, together with technical-constructive information and information on the state of conservation, can be found in the Veneto Region Catalogue of Cultural Heritage platform and in the CartApulia platform of the Puglia region (see Fig. 1). In both, however, there is no two- and three-dimensional comparison with the possibility of investigating the buildings by following the actual survey of the state of art.

This possibility is instead found in the Lucanian platform He Ma In - Heritage Maintenance Innovation (see Fig. 1), where it is also possible to assess the progress of maintenance work through a network of sensors and instruments for in situ and ex situ measurements (see Fig. 2).

Two- and three-dimensional data can also be found in the National Information System for Restoration Sites SICaR for use by Superintendencies.

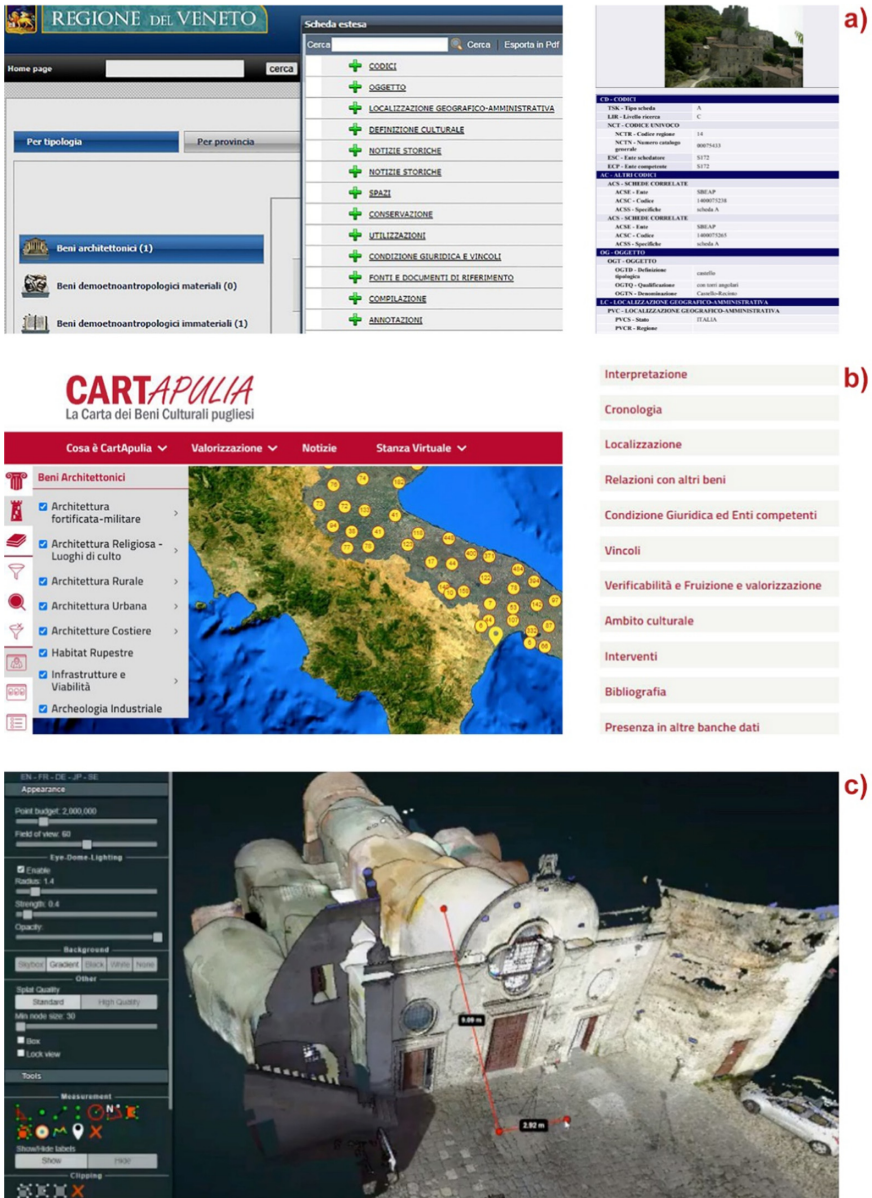


Fig. 1. Extracts of Veneto Region Catalogue of Cultural Heritage platform a), CartApulia platform b) and platform He Ma In - Heritage Maintenance Innovation c)

Both platforms, which are quite complete from the point of view of the information provided, probably because they have been in use for a relatively short time, investigate a small number of Architectural Heritage but, especially, follow an inverse principle to that which animates the research project described.

San Pietro Barisano Church

Comune: Matera
Indirizzo: Via Roma
Provincia: Matera

Informazioni Storiche: la Chiesa di **San Pietro Barisano** è un perfetto esempio della tipica struttura architettonica dei Sassi: ha una facciata costruita in tufo, ma l'interno è quasi completamente scavato. La chiesa risale all'anno mille ed era conosciuta come San Pietro in Veteribus, ma la facciata che ci presenta oggi risale al 1755, come ci mostra un'iscrizione su di essa, anno in cui la chiesa fu ristrutturata e in parte modificata. La facciata consta di tre portali architravati, di cui il centrale più grande, due finestre ovali e un insolito rosone quadrilobato, che conferiscono all'insieme un buon equilibrio compositivo. Il campanile è staccato dal corpo della chiesa e poggia su una base di roccia naturale per ergersi su due livelli divisi da un terrazzo con la balaustra impuntata da fregio bugnato, e si va assottigliando fino a terminare.

Architectural Complex

Geographical location

Historical and location data

Planned interventions

Planned maintenance operations

Period	Gennaio 2017/Marzo 2017	- Cleaning and sampling
Period	Febbraio 2017/Luglio 2017	- Renovation of south wall
Period	Agosto 2017/Ottobre 2017	- Cleaning and sampling

Data/Indicators

Graphic visualization

Parametro	Ultimo dato minuto grezzo	Ultimo dato minuto tarato	Ultimo dato minuto	Ultimo dato orario	Ultimo dato giornaliero
O2	20,50 %	20,50 %	20,50 %	0,00 %	20,50 %
Polveri	-0,04 mg/m ³	-0,04 mg/m ³	-0,04 mg/m ³	0,00 mg/m ³	0,51 mg/m ³
Polveri Corrette	Nm ³	-0,05 mg/Nm ³		In attesa	0,68 mg/Nm ³
Portata Secca	277158,03 m ³ /h	277158,03 m ³ /h	282815,00 m ³ /h	In attesa	1221630,00 m ³ /h
	238948,00 Nm ³ /h	238948,00 Nm ³ /h		In attesa	924984,00 Nm ³ /h
	282815,00 m ³ /h	282815,00 m ³ /h	282815,00 m ³ /h	0,00 m ³ /h	1236350,00 m ³ /h
	243824,00 Nm ³ /h	243824,00 Nm ³ /h		In attesa	943861,00 Nm ³ /h
Pressione ATM	945,48 mBar	945,48 mBar	945,48 mBar	0,00 mBar	946,92 mBar
Temperatura Fumi	22,56 °C	22,56 °C	22,56 °C	0,00 °C	61,36 °C
Vapor d'acqua	2,00 %	2,00 %	2,00 %	0,00 %	2,00 %
Velocità Fumi Norm.	2,19 Nm/s	2,19 Nm/s			
Velocità Fumi	2,54 m/s				

Parameters

Abnormal or exceeded value indication

Reporting of transmission anomalies or exceeded values (alarms)

Monitoring points

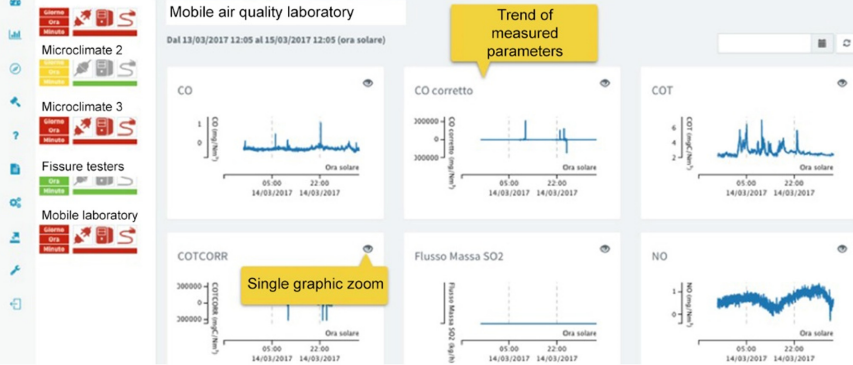


Fig. 2. Extract of platform He Ma In - IES-Integrated Environment System

They are conceived as platforms to be implemented at the time of the intervention on the buildings, therefore disseminating and catalyzing of all known information on a single reference tool, but only during the restoration or maintenance project to which the building is subjected.

Therefore, at the moment in Italy there is no synthesis product that integrates all the information needed for the drafting of a restoration or maintenance project, overcoming the difficulties related to accessibility, availability and all the limitations that, especially at this precise moment in history, compromise the study, in-depth study and, consequently, the protection of the Cultural Heritage.

4 Future Perspectives

The national state of the art has highlighted the lack of a single reference tool to act as the driving force behind a new approach based on the awareness that knowledge of the Heritage is essential to the planning dimension and can guide and direct it.

At the same time, that the complete recognition and dissemination of information is a guarantee of the conservation and enhancement of the Heritage itself.

In view of these considerations, the best step to be investigated is that of a single digital platform to support the activities of knowledge, analysis and planning of interventions based on a new approach. This new approach is based on the interoperability between the anamnesis of the building, intended as a catalyst of historical-constructive data, and the diagnosis, i.e. the set of data coming from dedicated sensors.

The result would be twofold: on the one hand, the design and prototyping of an integrated system that, starting from historical data collected in the field, makes it possible to manage and make available all the information known about the building. On the other hand, the possibility of implementing and modifying in real time with new data obtained from experimental surveys, monitoring and ongoing interventions.

The platform will therefore support the activities of acquisition, documentation, cataloguing, digitisation and dissemination of Heritage.

The aim is to catalogue and disseminate contents by exploiting the combination of new technologies, digital interactions and Cultural Heritage in order to foster the knowledge of historical and architectural Heritage through the exclusive use of open products and technologies, new immersive virtual and augmented reality systems that can involve not only professionals but also communities and visitors.

In particular, the technological platform thus conceived will make it possible to convey different types of data (see Fig. 3) and, specifically:

- The classification of the Cultural Heritage, mapped on a geographical basis, in all their components (general, historical, architectural, material, constructional, technological) and the archiving and management of the detailed information in formats that are easy to consult (documents, archive materials, photo, 2D and 3D models, plans, graphs, etc.).
- It will be advisable to develop a standardized model for data, which will always be able to be integrated and modified.
- The graphic interface should be designed to guide and facilitate this process;
- Monitoring of control parameters, acquired in real time (such as indoor and outdoor indicators of thermo-hygrometric characteristics, illuminance, exposure, and other parameters useful for analysing the state of conservation).
- The parameters deriving from the survey will be available in a special section where it will be possible to view the trend over time;

- Cataloguing and management of the activity plan of activities carried out, in progress and planned, and thus not only document and share the activities carried out, but information regarding chronology, progress, details and outcomes.

The platform will have to be designed in such a way as to allow access to different types of users through specific authorization profiles. This will make it possible to overcome the problem of finding material related to the Architectural Heritage by facilitating processes and digitizing data, which is now more essential than ever; and to encourage collaboration and the exchange of opinions, experiences and cross-sectoral learning between the various technical professions. At the same time, thanks to an online open data resource, the platform will be able to reach a large participatory community in accordance with Italian and European Commission guidelines.

A context where both research and experimentation activities could be carried out, aimed at defining prototype systems for the monitoring and conservation of Heritage,

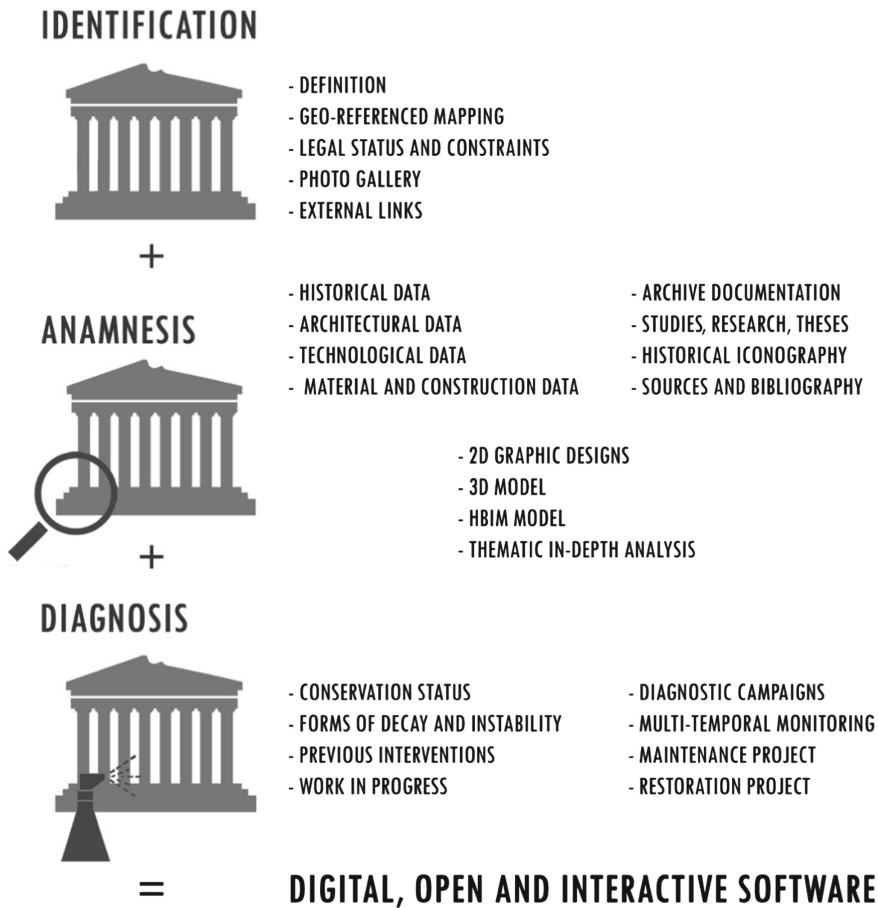


Fig. 3. The architecture of the proposed platform

and at developing digital-interactive approaches for the integrated management, sharing and communication of Heritage on a geographical basis.

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