

Arches is an open source web-based geospatial software platform freely available for cultural heritage organizations to help inventory and manage their heritage places.

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Developed jointly by the Getty Conservation Institute (GCI) and World Monuments Fund (WMF) for independent deployment by any cultural heritage institution, Arches is a web-based system that combines state-of-the-art software development with the insights and perspectives of heritage professionals from around the world. Institutions that deploy Arches can create digital inventories that describe types, locations, extent, cultural periods, materials, and conditions of heritage resources and establish the numerous and complex relationships between those resources.

Arches has been designed with the following overriding principles:

Purpose built: Arches has been specifically designed for the international cultural heritage field and can be used to inventory and manage all types of heritage places.

Economical: As an open source system, Arches is available at no cost and allows adopters to share resources for software customization and maintenance.

Customizable: The software code is open, and the system is structured in modules to be easily extended. It is capable of presenting its user interface in any language or in multiple languages and configurable to any geographic location or region.

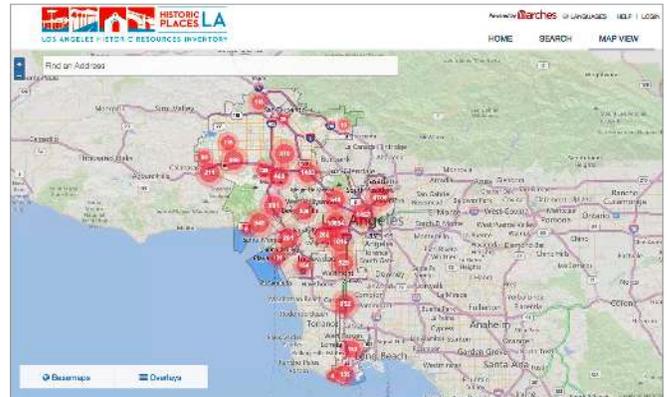
Standards based: Arches incorporates internationally adopted standards for heritage inventory, semantic modeling, and information technology, leading to better practices in the creation and management of heritage data and facilitation of data exchange and longevity in spite of advances in technology.

Broadly accessible: Web-based for the widest possible access, Arches is user friendly, requires minimal training for most users, and is freely available for download from the Internet.

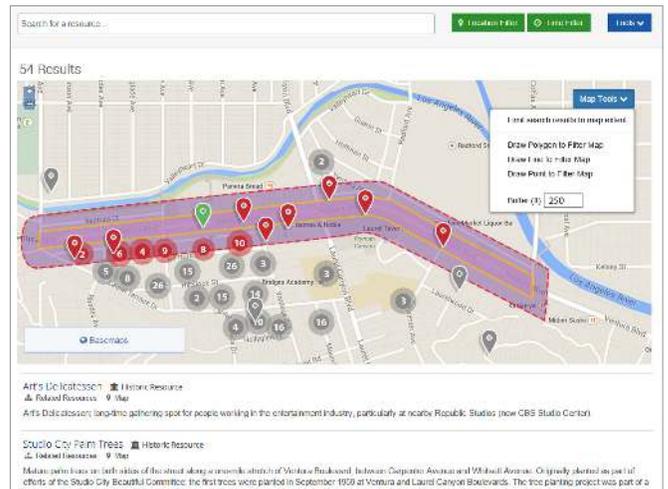
Arches has been designed to serve a number of purposes fundamental to the protection, understanding, appreciation, and management of heritage places. These include:

- identification and inventory
- research and analysis
- monitoring and risk mapping
- planning for investigation and research, conservation and management
- raising awareness among the public, governmental authorities, and decision makers

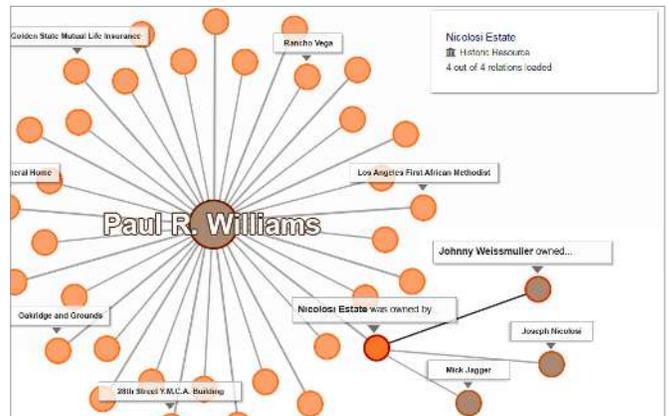
It is anticipated that the Arches open source community will add and share functionality to meet other needs of the heritage field. In addition, the Arches community provides support in the installation and use of Arches. For more information, visit the Arches project website (archesproject.org) where along with participating in the community forum, visitors can interact with an online demo, download the code, access documentation, review the project roadmap, receive project updates, and much more.



Map View of HistoricPlacesLA.org, powered by Arches v3.0, showing clusters that represent over 25,000 heritage resources identified to date by the City of Los Angeles.



Using the **Location Filter** in Search to spatially query data by drawing an area on the map and specifying a buffer size. This may be used, for example, to identify heritage resources that would be impacted by proposed development projects.



Related Resources graph, which reveals relationships between Arches resources. In this instance between an architect and heritage resources, as well as other persons related to those heritage resources (such as owners and occupants).

Visit: archesproject.org

Arches features...

...a modern, semantically-enabled, web-based system with an easy-to-use interface.

Once Arches is set up for an organization, it is designed to be as intuitive as possible so that authorized users can enter, edit, and search for data with little technical training. The system automatically processes the data to comply with the latest semantic technology.

...robust geospatial mapping and processing.

Arches features the ability to draw, import, and edit resource geometries directly within the system. It can also be used to spatially query data, by using the Location Filter.

Arches can accommodate any basemap, such as those provided by OpenStreetMap, Google, and Microsoft, as well as online satellite imagery and other imagery (such as historical maps) that are provided by other services.

Arches accesses and processes geospatial data based on the standards and specifications of the Open Geospatial Consortium (OGC). Compliance with the OGC standards will ensure that the system is compatible with desktop GIS applications (such as ESRI's ArcGIS, Google Earth, or Quantum GIS), modern web browsers, and online mapping services.

...highly customizable options for opening and limiting access to data aligned with implementation requirements.

Arches gives organizations the ability to fine-tune access to the system by providing security controls on a data field level based on individual or group permissions. For example, an implementation of Arches can specify which particular users can edit which particular data fields or what visitors (if public access is allowed) can see what types of data.

...a standards- and semantic-based data architecture to promote data exchange and to ensure data longevity.

Arches uses the CIDOC Conceptual Reference Model (CRM) to model the relationships between data fields. Use of the CRM keeps the data independent of the design of Arches. It also contributes to powerfully effective searches within, as well as across, data sets. It will facilitate data migration to newer systems and aid in the preservation of data over time.

The default Arches data fields were informed by the draft CIDOC International Core Data Standard for Archaeological and Architectural Heritage, currently being finalized through input from CIPA Heritage Documentation. Organizations that deploy Arches can customize data fields to meet their specific requirements. For more information on these data standards, visit: www.archesproject.org/standards.

...a powerful enterprise-level system.

Arches is designed primarily to be used at an organization or project level and not as a desktop application. As a result, adopters will need to identify a server to host the Arches system and as with any enterprise-level system, should expect to engage the services of a qualified database administrator or manager to maintain it.

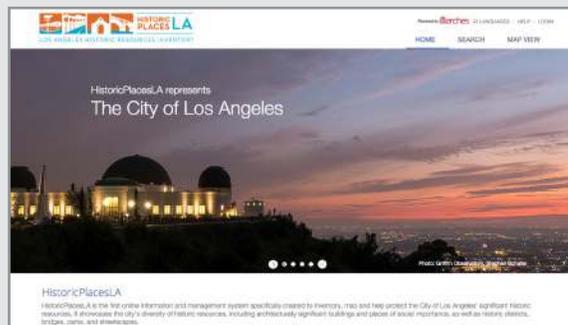
Institutions adopting Arches may need to configure and customize the software to meet their particular needs and to address specific geographic, cultural, and administrative contexts. System customization will require expertise in the open source tools that have been used to build the system and an in-depth understanding of GIS and data management. This expertise can be found within the deploying organization or supplied by an outside vendor.

In order to comply with standards and ensure consistency, the use of Arches may require that both legacy and new data be processed before being incorporated in a new implementation.

It is also recommended that institutions prepare controlled vocabularies for documentation of the cultural heritage resources found within their area of interest.

Releases and Implementations

Version 1.0 of the Arches open source code was released in October 2013, and version 2.0 in March 2014. The latest version of Arches, version 3.0, was released in April 2015.



To view an early version of a customized implementation of Arches v3.0, visit HistoricPlacesLA.org, the Los Angeles Historic Resources Inventory. The City of Los Angeles is using HistoricPlacesLA.org to manage and publish data on its diverse historic resources.

Currently, Arches is being implemented and/or evaluated by various heritage organizations worldwide to document heritage places at different scales, from individual sites to nationwide use. For example, it is being used to record endangered cultural sites in conflict zones such as Syria, to document a regional cultural landscape within the United States, and to record archaeological findspots across northwest Europe.