

CRM SIG, Plovdiv  
September 26, 2024  
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Farallon Geographics

# Arches

A Data Management, Discovery, Integration  
and Visualization Platform for Cultural Heritage

Photo: Richard Mortel, Rock Inscription [https://www.flickr.com/photos/prof\\_richard/](https://www.flickr.com/photos/prof_richard/)

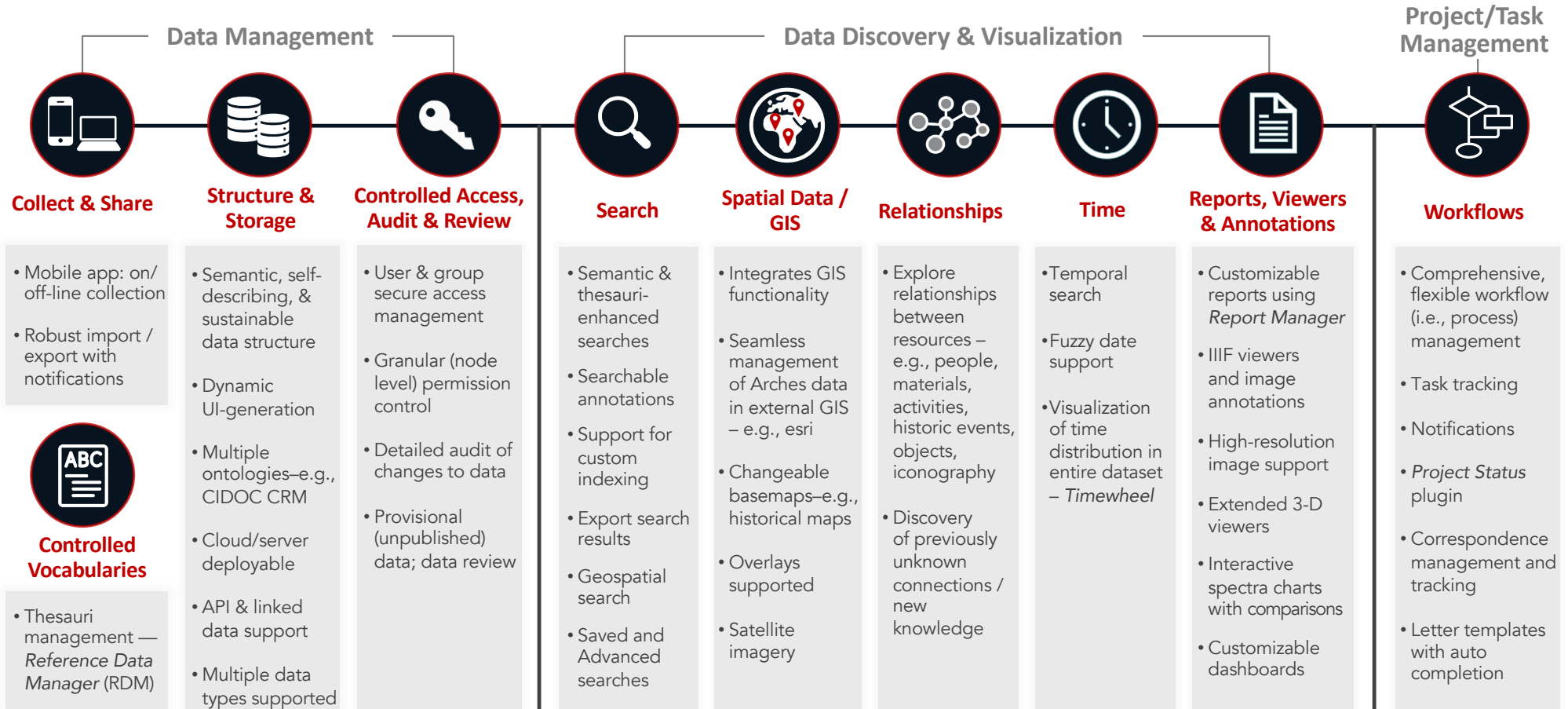
# Why Arches?

**Arches is for data management**

**Arches is for data discovery**

**Arches is for data visualization**

**Arches is for data integration**



### Data Management



#### Collect & Share

- Mobile app: on/off-line collection
- Robust import / export with notifications



#### Controlled Vocabularies

- Thesauri management — *Reference Data Manager* (RDM)



#### Structure & Storage

- Semantic, self-describing, & sustainable data structure
- Dynamic UI-generation
- Multiple ontologies—e.g., CIDOC CRM
- Cloud/server deployable
- API & linked data support
- Multiple data types supported



#### Controlled Access, Audit & Review

- User & group secure access management
- Granular (node level) permission control
- Detailed audit of changes to data
- Provisional (unpublished) data; data review

### Data Discovery & Visualization



#### Search

- Semantic & thesauri-enhanced searches
- Searchable annotations
- Support for custom indexing
- Export search results
- Geospatial search
- Saved and Advanced searches



#### Spatial Data / GIS

- Integrates GIS functionality
- Seamless management of Arches data in external GIS — e.g., esri
- Changeable basemaps—e.g., historical maps
- Overlays supported
- Satellite imagery



#### Relationships

- Explore relationships between resources — e.g., people, materials, activities, historic events, objects, iconography
- Discovery of previously unknown connections / new knowledge



#### Time

- Temporal search
- Fuzzy date support
- Visualization of time distribution in entire dataset — *Timewheel*



#### Reports, Viewers & Annotations

- Customizable reports using *Report Manager*
- IIIF viewers and image annotations
- High-resolution image support
- Extended 3-D viewers
- Interactive spectra charts with comparisons
- Customizable dashboards

### Project/Task Management



#### Workflows

- Comprehensive, flexible workflow (i.e., process) management
- Task tracking
- Notifications
- *Project Status* plugin
- Correspondence management and tracking
- Letter templates with auto completion



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Data Management

Data Discovery & Visualization

Project/Task Management



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# **Arches Semantic Data Management**

Arches Designer: semantic data models  
using <CIDOC-CRM>

demo

Browser address bar: [afs.test.fargeo.com/graph\\_designer/9519cb4f-b25b-11e9-8c7b-a4d18cec433a](https://afs.test.fargeo.com/graph_designer/9519cb4f-b25b-11e9-8c7b-a4d18cec433a)

Page title: Physical Thing (Resource Model)

Search: Find a Resource Model/Branch...

Buttons: Unpublish Graph, Quit Designer

Left sidebar: Manage, Graph, Cards, Permissions

Find a node, datatype, card...

Physical Thing (E22)

- Part Identifier Assignment (E13)
- Destruction (E6)
- part of (E22)
- depicts (E1)
- Production (E12)
- material (E57)
- Name (E33)**
- \_label (xsd:string)
- Textual Reference (PC67)
- Removal from Object (E80)
- current owner (E39)
- Removal from Set (la:terms/Remova
- current location (E53)
- type (E55)
- Digital Reference (PC67)
- member of (la:terms/Set)
- Addition to Collection (la:terms/Add
- ExactMatch (E55)
- carries (E33)
- Identifier (E42)
- Statement (E33)
- Dimension (E54)

Name ( E33\_E41\_Linguistic\_Appellation - semantic )

Node Identifiers

Node Name

Name

Node Name Alias

name

Use a custom node alias

Relationship to Physical Thing (parent)

P1\_is\_identified\_by

Ontology Class

E33\_E41\_Linguistic\_Appellation

Semantics

Physical Thing (E22\_Human-Made\_Object; parent) P1\_is\_identified\_by Name (E33\_E41\_Linguistic\_Appellation)

Description

# Specific:

# General:  
It is strongly recommended that every resource that should be rendered to an end user have at least one name. Different types of name can be distinguished using classifications. See:  
<https://linked.art/model/base/#names>

Node Data Type and Configuration

# Workflows: Arches Supports Business Process

The screenshot displays a web browser window with two tabs: 'Consultations - Workflows' and 'Consultations - Search'. The address bar shows the URL 'localhost:8081/arches-her/plugins/init-workflow'. The browser's top right corner includes a search bar with 'Welcome, admin' and a notification icon. The main content area is titled 'Workflows' and features a 'Create New...' section with five workflow cards:

- Application Area**: An area that may be re-developed or newly built.
- Consultation**: Advice on the potential work related to a development area.
- Communication**: A conversation via phone, email, or other channel.
- Site Visit**: A visit to ensure that a condition has been met.
- Correspondence**: Letter or other document sent to an applicant.

demo


Import Edit Export

**Import Single CSV**




Import a Single CSV file to Arches

**Import Tile Excel**



Import a Tile Excel file to Arches

**Import Branch Excel**



Loads resource data in Branch Excel format



# Scale: data volume

1 to 18,000,000 Instances



# **Data Discovery and Visualization**

Search

Find a resource...

Resource Type | QA Type

Results: 199051 | Ascending

Logout, Dennis | Alerts | Help

BNG Filter | Time Filter | Saved

**[50801]** Bromwood Bronze Age Settlement, St. Paul's Cray, Kent

[Details](#) | [Edit](#) | [Related Resources](#)

**[50809]** 5 Paultons Square, Chelsea, London SW3 5AP: Archaeological Watching Brief  
An archaeological watching brief was undertaken by Pre-Construct Archaeology Ltd at 5 Paultons Square, Royal Borough of Kensington and Chelsea, SW3 5AP, between the 3rd of November 2009 and the 10th of May 2010. The work was commissioned by CgMs Consulting on behalf of Andrew and Caroline Fisher. 1.2 The...

[Details](#) | [Edit](#) | [Related Resources](#)

**[50810]** Article on Syon Park

[Details](#) | [Edit](#) | [Related Resources](#)

**[50811]** 1-5 Hainault Street, Ilford: Archaeological Trial Trenching

[Details](#) | [Edit](#) | [Related Resources](#)

**[50812]** The Pavilion, Hampton Court Palace, Appendix 4 - Archaeological Trench Evaluation  
An evaluation was undertaken at The Pavilion in Hampton Court Palace between the 6th-17th April 2009 by Oxford Archaeology. The site comprised eight trenches.

[Details](#) | [Edit](#) | [Related Resources](#)

Map Filter | Advanced | Related | Details

Find an address...

Filter

Basemap

Overlays

Legend

© Mapbox © OpenStreetMap Improve this map

# Visualization: Relationship Map

The screenshot displays a web application interface with a search bar at the top left containing the text "Search". Below the search bar is a filter section with "Find a resource..." and dropdown menus for "QA Type" and "Resource Type". The main content area is divided into two columns. The left column shows search results for 2043 items, sorted in ascending order. The right column displays the "Resource Details" page for a selected resource, which is currently empty, showing only an information icon and a message: "Click the 'Details' link on a search result from the list on the left to view more information about a resource." The top right corner of the interface includes a user profile "Welcome, admin", a notification bell, and a help icon. The bottom of the page features a pagination control showing page 1 of 103.

Search

Welcome, admin

Find a resource...

QA Type Resource Type

Results: 2043 Ascending

- \* Saint Mark Area 4**  
Confirmed materials: ultramarine blue, carbon; Possible or inferred materials: lead white. As determined through XRF and Raman analysis.  
[Details](#) [Edit](#) [Related Resources](#)
- \* Collegium Ducale**  
Manuscripts  
[Details](#) [Edit](#) [Related Resources](#)
- \* Doubting Thomas Area 2**  
Possible or inferred materials: iron earth pigment, trace arsenic-pigment, gold from nearby. As determined through XRF analysis.  
[Details](#) [Edit](#) [Related Resources](#)
- \* The Miracles of Saint Francis of Paola**  
Paintings  
[Details](#) [Edit](#) [Related Resources](#)
- \* Two Boys with a Bladder**  
Paintings  
[Details](#) [Edit](#) [Related Resources](#)
- \* Bestiary**  
Manuscripts  
[Details](#) [Edit](#) [Related Resources](#)

Details

Advanced Related Map Filter

Resource Details

Click the 'Details' link on a search result from the list on the left to view more information about a resource.

1 2 3 4 ... 103 »

**Arches is a Platform...**

Platform:  
Build what you  
want



# Data Types/Widgets

String

Date

Extended Date-Time

Geometry

Concept (thesauri)

File

Annotation

Number

Boolean

Related Resource

Image

Related Node

Domain

URL

# Platform Services/Components (a short list):

Data modeling services

Data management (CRUD) services

Data security services

Geospatial mapping services

Geospatial processing services

Reporting services

IIIF image services

Bulk data management services

Thesaurus management services

Notification services

Search services

Workflows

Multi-lingual Interface and data

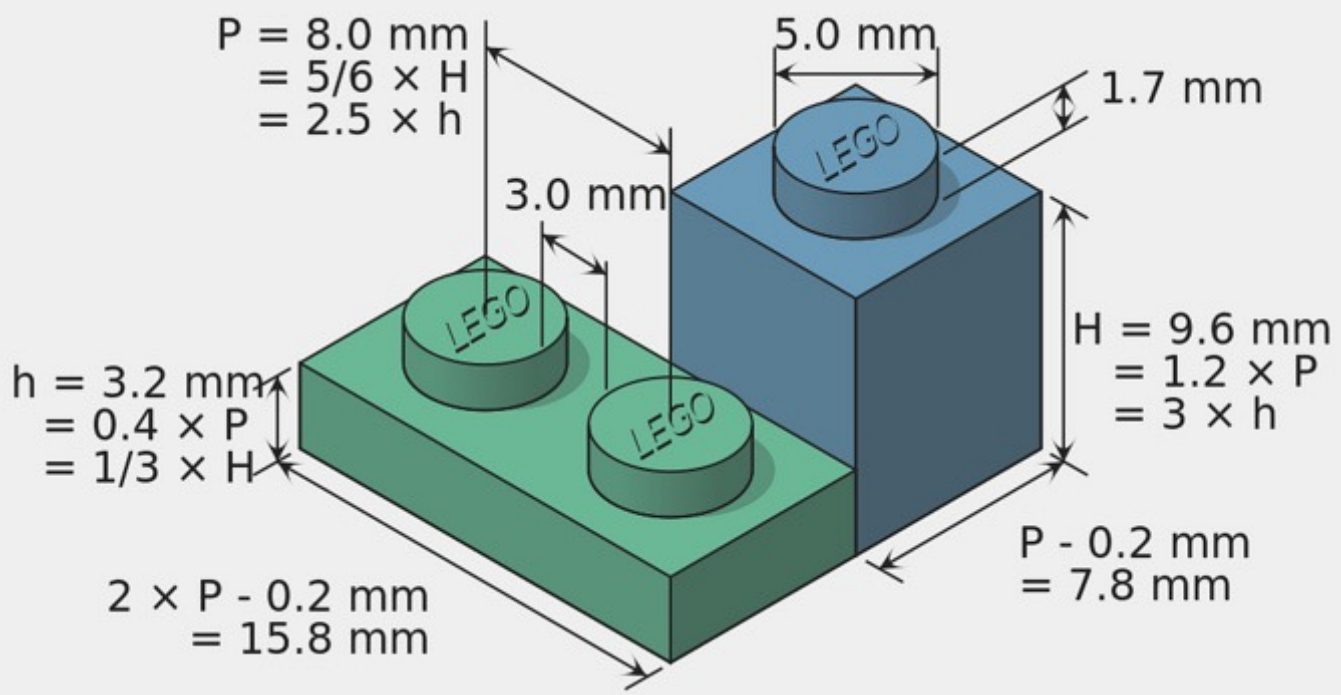
UI accessibility

User authentication services

User profile management

Developer tools

# Extend Arches as you wish







open source<sup>®</sup>  
initiative

**Developers**

**Build what you want  
with Arches platform services**

Arches is a platform that  
also offers **SOLUTIONS**

# Solution: A pre-built product



# Arches for HERs



## Greater London Historic Environment Record (GLHER)

The online heritage information and management system for London.



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### On this page

- [1. About](#)
  - [2. How to use](#)
  - [3. Volunteering with GLHER](#)
  - [4. Heritage Themes](#)
-

# Arches for Science



Arches/DISCO

[Arches Features](#)

[Search](#)

[Manage](#)

Welcome, admin

[Log off](#)

## Arches for Science

A web and mobile platform for  
managing your most important conservation information



# Arches Lingo: Authority Data Manager (coming Summer 2025)

Welcome

Why Lingo?

Explore

Login

## Lingo

An Arches application to manage authority data such as Thesauri, People, Groups, Places, and Periods

[Learn More](#)

Hey, how do  
you say...

**Archives v7.6 released  
this week**



**Some of what's  
Coming in version 8.0**

# Improved management of controlled vocabularies

**Enhanced integration with esri GIS,  
other enterprise applications**

**Initial work on QGIS support**

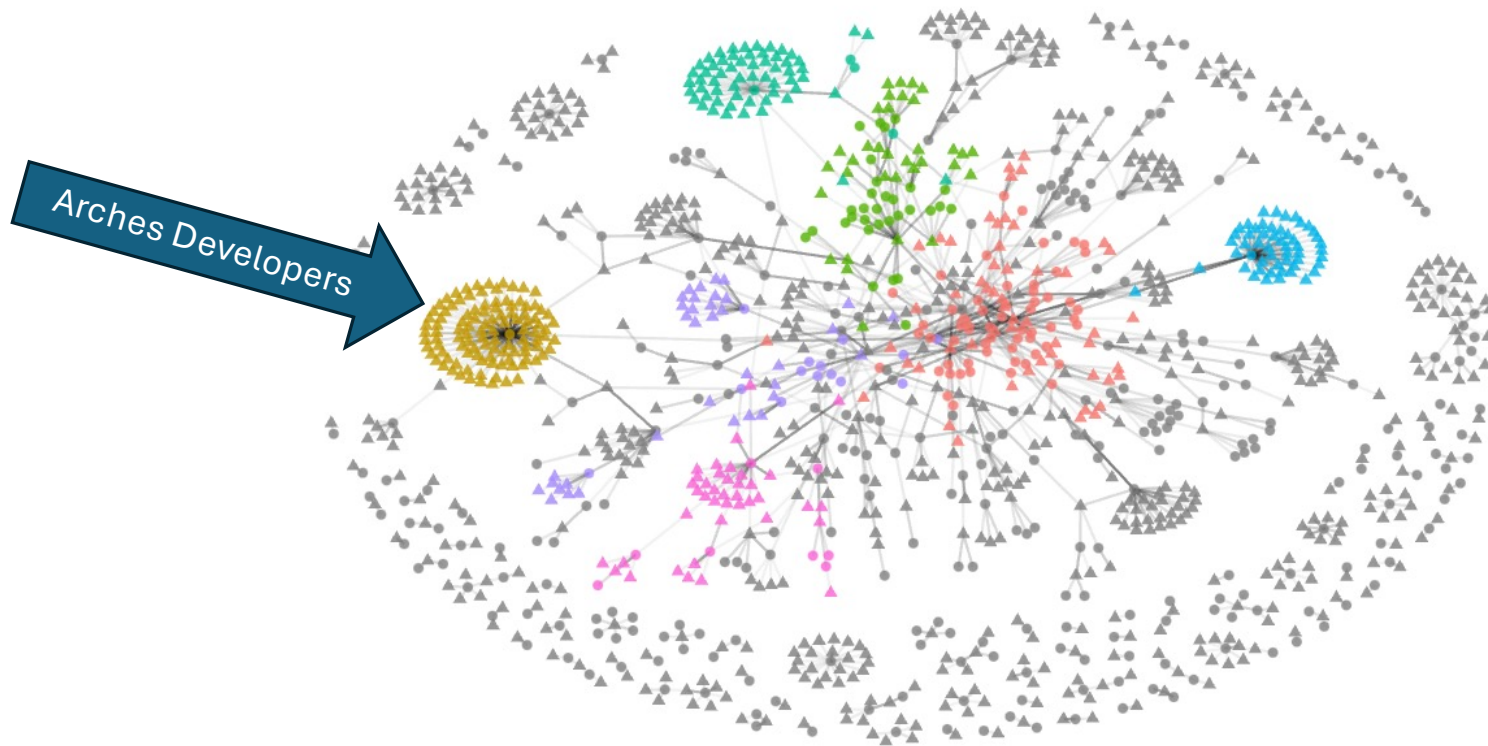
**Enhanced indexing performance, much faster API**

**Model versions,  
Instance life-cycle management**

**Community**

**Vibrant and active  
developer, user communities**





Batist, Z. and Roe, J. 2024 Open Archaeology, Open Source? Collaborative practices in an emerging community of archaeological software engineers, *Internet Archaeology* 67. <https://doi.org/10.11141/ia.67.13>

<https://intarch.ac.uk/journal/issue67/13/full-text.html>





# Isle of Man Historic Environment Record

Find historic places, archaeological sites, landscapes, shipwrecks and historic buildings on the Isle of Man





EAMENA Database v4  
Endangered Archaeology in  
The Middle East & North Africa

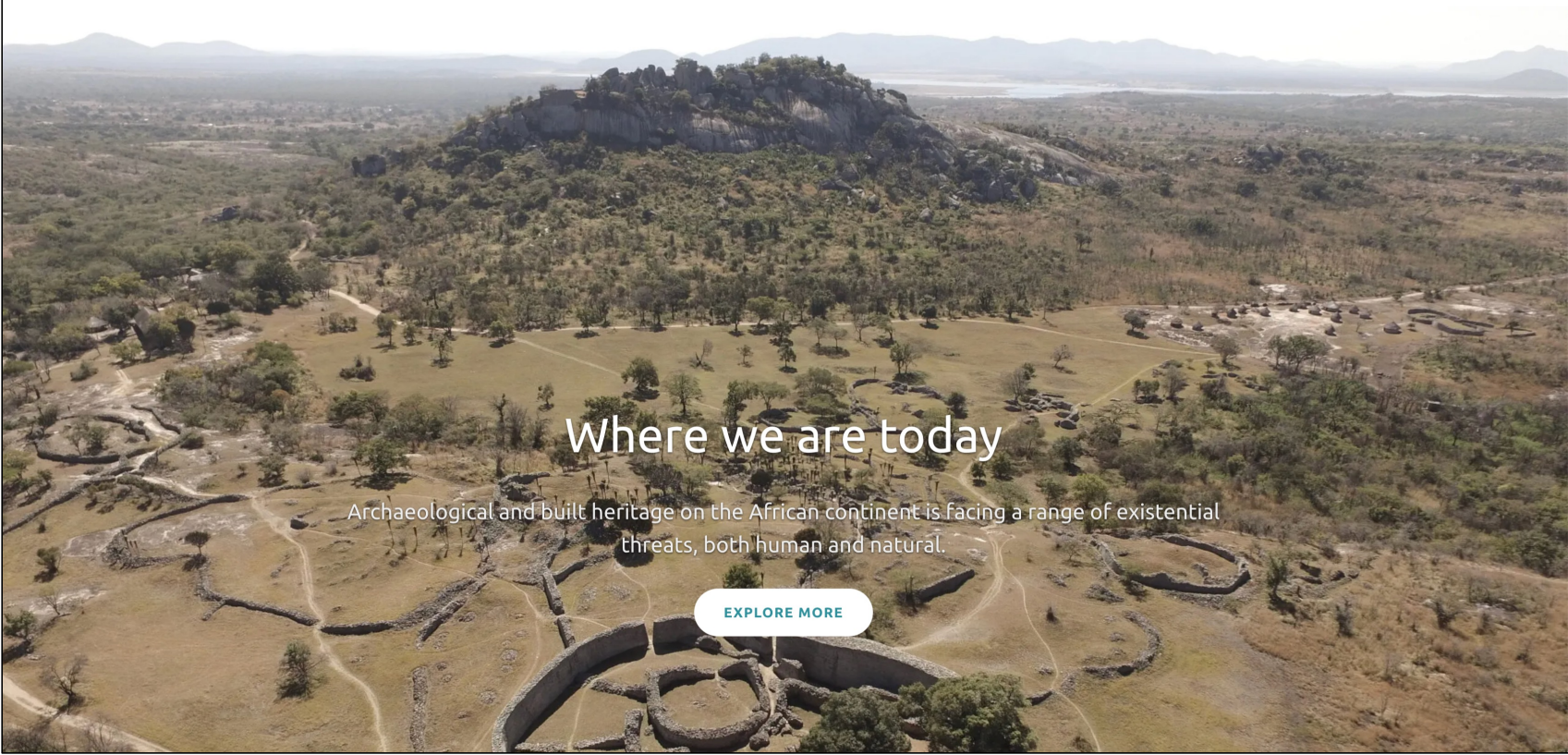


# MAPPING AFRICA'S

Endangered Archaeological Sites and Monuments



- HOME
- ABOUT ▾
- AFRICAN HERITAGE ▾
- TEAM ▾
- NEWS ▾
- DATABASE
- RESOURCES ▾
- CONTACT
- 🔍



## Where we are today

Archaeological and built heritage on the African continent is facing a range of existential threats, both human and natural.

[EXPLORE MORE](#)



Powered by  arches

[Sign In](#)

[Register for Researcher Access](#)



MAPSS Database v1.0  
Mongolian Archaeology Project:  
Surveiling the Steppes



# A HERITAGE OF CREATIVITY

Explore the sites where Jamaica's skilled builders,  
craftspeople, artists, and musicians left their mark.

SEARCH THE INVENTORY

READ ABOUT OUR SITES





# California Cultural Heritage Inventory

A web and mobile platform for managing your most important record information

Navigation controls including left and right arrows, a vertical menu of three dots on the right, a circular arrow icon at the bottom center, and a play button icon at the bottom left.





# BC Register of Historic Places

Official Register of historic places for British Columbia

BC Register of Historic Places records historic places that have been officially recognized by the provincial, federal or local / regional governments for their heritage value.

Cole Island at Colwood



Screenshot





Disclaimer language: SF Cultural Heritage is in Beta -- help us make it better! Share feedback to [CPC.Survey@sfgov.org](mailto:CPC.Survey@sfgov.org)

**SF Cultural Heritage lets you share and explore the important places, people, organizations, events, and traditions that have shaped San Francisco's diverse communities.**

SF Cultural Heritage is an online information management platform created specifically for the San Francisco Citywide Cultural Resources Survey (SF Survey). This website is a tool that highlights the interconnections of San Francisco's cultural heritage and shares SF Survey findings. Find out more [about SF Survey](#).

SF Cultural Heritage is the result of a partnership between the San Francisco Planning Department and the Getty Conservation Institute, with the assistance of Farallon Geographics. It is powered by Arches, an open-source heritage data management platform developed by the Getty Conservation Institute and the World Monuments Fund. Find out more [about Arches](#).

## Community Stories



ADMIN LOGIN

HOME ABOUT SEARCH

## HistoricPlacesLA includes Architectural Icons



HistoricPlacesLA is an online tool created specifically for the City of Los Angeles to inventory, map, and help protect significant cultural and historic resources. HistoricPlacesLA showcases the diversity of the city's historic resources, including architecturally significant buildings, places of social importance, historic districts, bridges, parks, landscapes, and more. It documents both designated and potentially eligible historic resources.

Use HistoricPlacesLA to conduct research on a site or property, discover unique places, and explore LA's rich history. To learn more about [HistoricPlacesLA](#) and [how to search the inventory](#), see the [video](#) and [user guides](#) below.



Letterenhuis  
Collection Management

**Participate at:**

**<https://community.archesproject.org/>**

# Next Steps

Information: [www.archesproject.org](http://www.archesproject.org)

Community: <https://community.archesproject.org/>

Code: [github.com/archesproject](https://github.com/archesproject)

Contact: [dwuthrich@fargeo.com](mailto:dwuthrich@fargeo.com)