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From Inscription to Information

A multi-modal visualization pipeline for endangered graffiti heritage at Apostolos Andreas Monastery, Cyprus

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Documentation commissioned by UNDP within the bi-communal restoration of the monastery



1896

Camille Enlart's glass plate: walls saturated with dark pigment writing

2026

The same chapel: walls that look almost blank

Left half: © Ministère de la Culture (France), Médiathèque du patrimoine et de la photographie, diff. GrandPalaisRmn Photo



THE ARGUMENT

Here, enhancement produces the item.

At endangered sites, visualization is not a presentation layer. It is the primary research instrument.

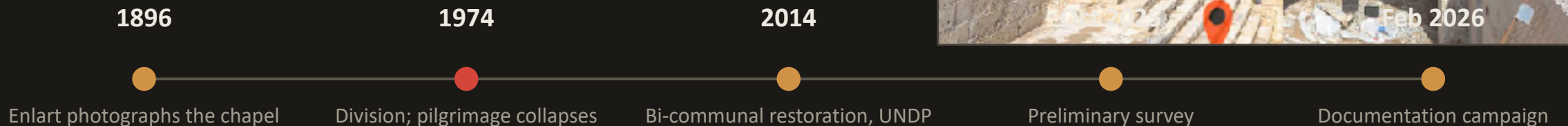
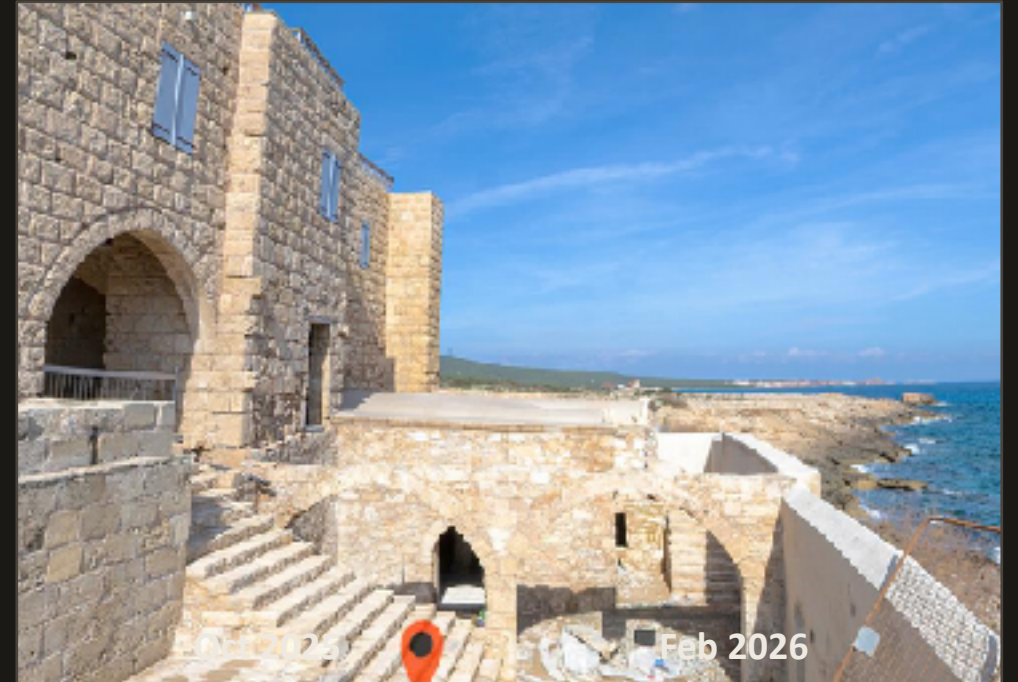
Computational surrogate

A structured, spatially anchored record that stands in for a disappearing collection, and records the practices that produced it.



A shared pilgrimage site at the edge of the island

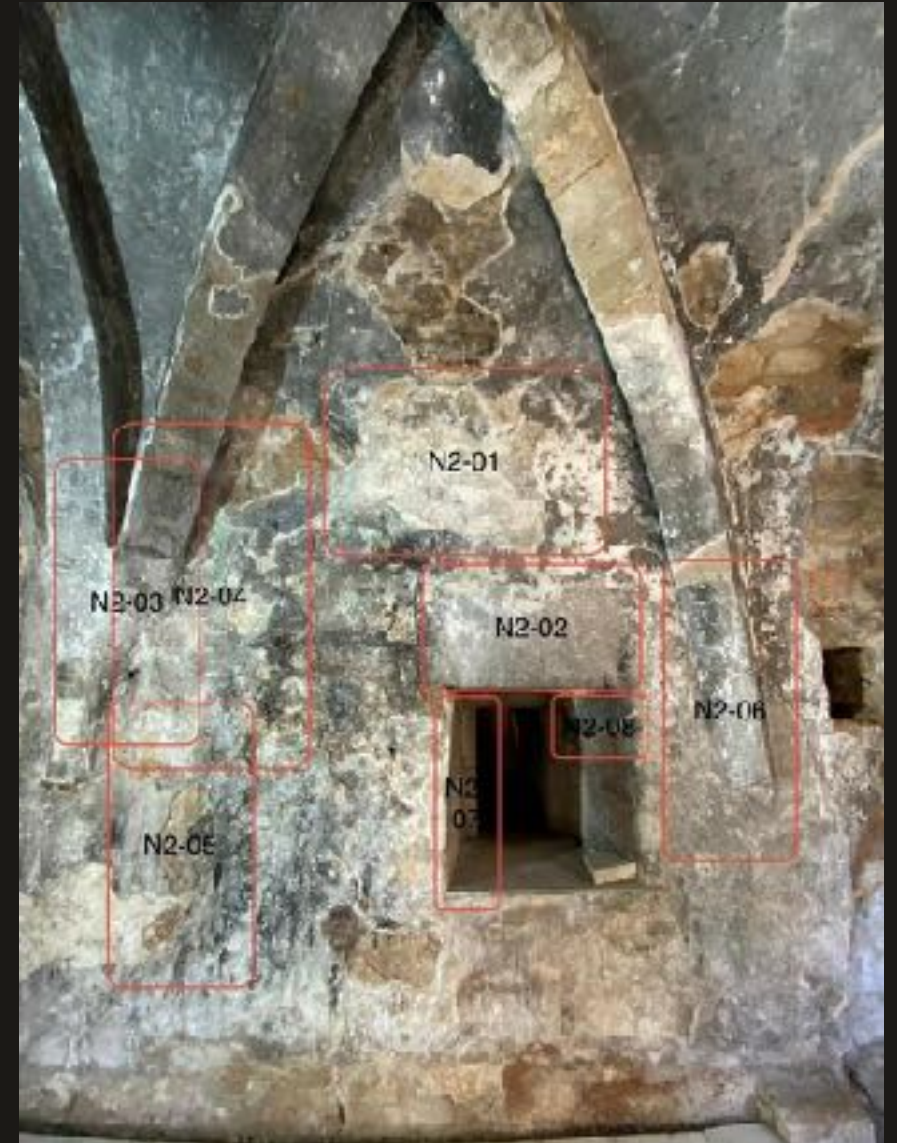
- **Holy spring**
associated with the arrival of the Apostle Andrew, at the tip of the Karpasia peninsula
- **Shared devotion**
from the mid-19th century, pilgrims from both Christian and Muslim communities
- **The chapel**
15th-century Gothic, built over the spring, a few metres from the sea



Form Content Space

Position, density and clustering carry meaning that no single inscription holds on its own. The wall works as a system.

After Trentin 2020, 2021, 2023



North wall, section N2

Why this chapel resists documentation



Three plaster layers

Each written on in different materials; the stratigraphy has to be kept



Salt from two sides

Sea air from the shore, humidity rising from the wells below



Traced, not incised

Pigment, graphite and ink; most traces invisible to the eye



A hard site

No electricity, vaults out of reach, fixed access windows

One method, three scales



MACRO

The building



MESO

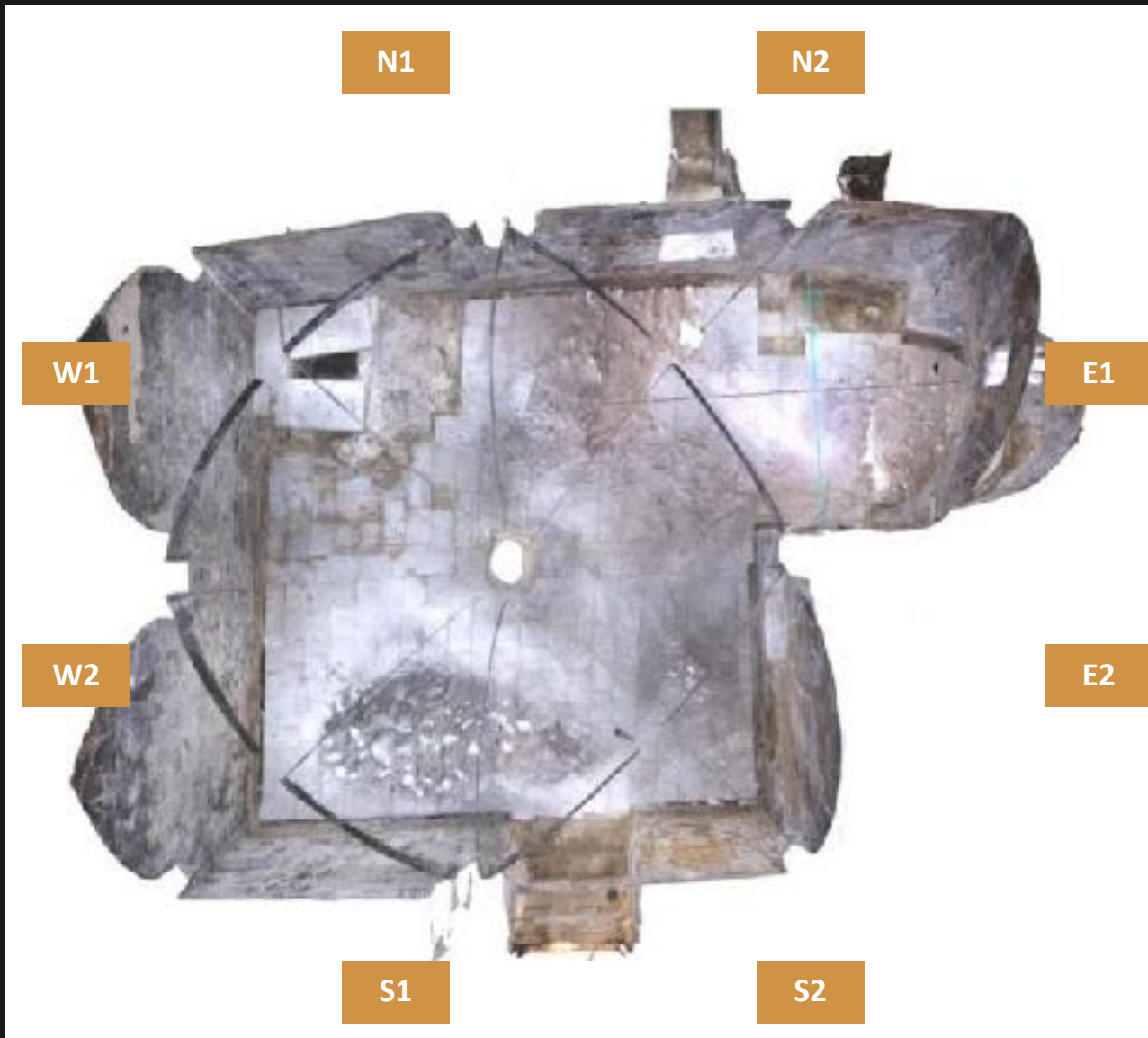
The wall surface



MICRO

The single mark

Continuous in both directions. After Trentin 2023; Trentin et al. 2023



Top-down view of the photogrammetric model

The building as classification scheme

Defined before the first photograph.

Four cross vaults and a central column divide each wall in two.

Every output is addressed to a section.

From the building model down to a single letter form.

Reconstructable on site.

It follows the building's own load-bearing logic.

The building model as spatial index

MACRO

MESO

MICRO



Camera stations over image overlap

3,692

images, mirrorless camera,
generator-powered light

1.6 M

tie points in one aligned
reconstruction

2

capture phases: vaults from the
scaffold, then walls and floor

*Streamed in the browser at full texture resolution: every wall
model and close-range record can be located on it.*

In the field: from gigapixel to wall models

MACRO

MESO

MICRO

PLANNED

Gigapixel panorama

Tested October 2025; failed at February's image volume

ADOPTED

Wall-surface photogrammetry

- Zoomable to single letter forms
- Records relief, texture and colour
- Measurable: a metric dimension

To our knowledge, no published precedent in graffiti recording



South wall, section S1: wall-surface model

Decorrelation stretch as content recovery

MACRO

MESO

MICRO

UNTREATED



DECORRELATION STRETCH



Digitization converts an item into a record. Here, enhancement produces the item.

Every enhanced image is stored beside its untreated original, so every reading stays verifiable.

Individual inscriptions

MACRO

MESO

MICRO



Pencil graffito, section S1, close range



Close-range photography

Under raking and diffuse light, for every inscription located in the wall models



Tablet LiDAR

Only for a handful of marks whose meaning depends on relief, on the final day



Selective capture, not blanket scanning.

The access layer: room, wall, inscription

REPLACE: high-res screenshots



Enter the chapel

Gaussian splat and 360° panoramas; hotspots on the walls



Open a wall model

Zoomable surface, addressed by its section code



Read one inscription

Untreated and enhanced views, side by side

apostolosandreas.altaratz.com The reference system becomes the retrieval mechanism.

Validation: the 1896 photograph as ground truth



Enlart, 1896



Same viewpoint in the virtual tour

Writing visible in 1896, still identifiable in 2026, on the same surfaces.

Qualitative, not exhaustive.
Terminus ante quem for the earliest pigment layer.

A remnant, not an archive.

1896 image: © Ministère de la Culture (France), MPP, diff. GrandPalaisRmn Photo

Reading time through layers

1974: the writing stops

LATEST

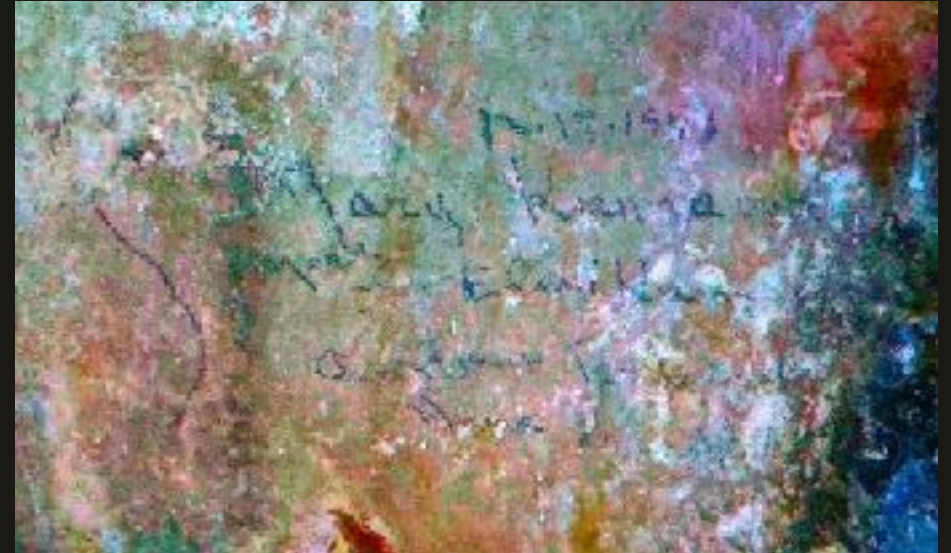
Pencil and ink Dated examples to the mid-20th century

INTERMEDIATE

Graphite The monastery's peak under British administration

EARLIEST

Dark pigment Ottoman-period pilgrimage



1946: three women's names, enhanced

Two limits

- Distribution reflects surviving plaster, not original density.
- No formal evaluation yet. Next: restoration team, epigraphers, displaced community.

Three lessons from one deployment

A case study, not a general method: what transfers is the reasoning, not the instrument list.

1

Technique selection

Instrument lists should be outputs of a preliminary survey, not inputs to a proposal.

2

Institutional frame

Access on a divided island came with one window and no return. Design for single-pass completeness.

3

Access layer

Interface and survey are one design problem. A spatial scheme cannot be added afterwards.

Visualization was not the last stage of the research.

It was its condition of possibility.

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