

3D PALIMPSEST

Preservation And Landscape Investigation through
Multiscale Photogrammetry, Survey, Evolution and Spatial Telling



International Workshop
19-23 October 2026, Pavia (Italy)

DAda-LAB_ University of Pavia, Department of Civil Engineering and Architecture

Case Study: Borgo Calvenzano – Historic Waterfront of the Naviglio Pavese

Main Objective: *Testing Fast Survey techniques and Digital Storytelling for Reading the Urban Palimpsest of the Naviglio Pavese Waterfront*

Workshop Concept

The workshop explores the potential of rapid digital documentation techniques (Fast Survey) as tools for investigating, documenting and narrating the temporal transformation of Townscape architectural heritage. Rather than considering heritage as a static collection of buildings, the workshop interprets the urban landscape as a dynamic system continuously shaped by environmental, economic, social and infrastructural changes. The selected case study is the historic waterfront of the Naviglio Pavese, with particular attention to Borgo Calvenzano, one of the historical gateways connecting the city of Pavia with the Ticino River and the canal network leading to Milan. For centuries this area represented an important node for river transport, commercial exchanges, warehouses, craft activities and urban life. Today many of these historical traces survive only partially within the contemporary urban fabric, making the site particularly suitable for investigating processes of transformation through digital documentation.

The workshop combines fast survey methodologies, historical research, spatial analysis and digital storytelling to reconstruct the different temporal layers of the waterfront and communicate their evolution through interactive visual narratives.

Participants will acquire practical experience in integrating digital acquisition, archival documentation and historical interpretation into coherent narrative products capable of communicating the multiple identities of an urban heritage landscape.

Objectives

The workshop aims to:

- introduce Fast Survey methodologies for architectural and urban heritage documentation;
- investigate the temporal evolution of urban spaces through multi-source datasets;
- develop digital workflows capable of combining geometry, images and historical information;
- produce interactive temporal storytelling capable of communicating urban transformations to both specialists and the general public;
- promote interdisciplinary collaboration between architecture, surveying, digital humanities and urban history.

Methodological Framework

The workshop adopts an integrated workflow organised into four complementary phases:

1- Understanding the landscape

Participants analyse historical maps, archival photographs, cadastral documents and written sources to reconstruct the historical development of Borgo Calvenzano and the Naviglio waterfront.

2- Fast Survey and Digital Acquisition

Rapid documentation techniques are applied on site using digital photography, terrestrial and mobile photogrammetry, laser scanning where available, GNSS positioning, mobile mapping technologies and UAV imagery where permitted. The objective is to generate reliable geometric documentation within limited acquisition time.

3- Data Integration

Historical sources and contemporary survey data are integrated into a common digital environment including orthophotos, three-dimensional models, GIS layers and temporal datasets.

4- Digital Storytelling

The collected information is organised into chronological narratives describing the evolution of the waterfront through different historical periods. Interactive maps, timelines, comparative visualisations and multimedia presentations become the principal communication tools.

Workshop Programme

Monday 19

Day 1_ Reading the Historic Waterfront with preliminary On site Survey

Lectures	<i>DAda-LAB_ Department of Civil Engineering and Architecture</i>
9.00 - 9.45	<i>Introduction to the historical evolution of the Naviglio Pavese</i>
10.15 - 11.00	<i>Urban Waterfronts as Cultural Landscapes.</i>
11.30 - 12.15	<i>Introduction to rapid digital documentation methodologies.</i>

Lunch break

Activities	<i>Borgo Calvenzano_ Pavia Historic Center</i>
14.00-17.45	<i>Guided visit to Borgo Calvenzano: On site laboratory with practical activities, such as terrestrial photogrammetry; mobile image acquisition; rapid metric survey, preliminary data quality assessment.</i>

Outputs	<i>photographic diary; sketches; historical observation notes; research questions; image datasets; survey logs; preliminary point clouds and photogrammetric models.</i>
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Tuesday 20

Day 2_ Fast Survey Techniques and Data integration

Activities	<i>Borgo Calvenzano_ Pavia Historic Center</i>
9.00-12.00	<i>On site activities at Borgo Calvenzano.</i>

Lunch break

Lectures	<i>DAda-LAB_ Department of Civil Engineering and Architecture</i>
14.00 - 14.45	<i>Postprocessing data and elaboration of digital outputs</i>

Activities	<i>DAda-LAB_ Department of Civil Engineering and Architecture</i>
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15.00-17.45 *Postproduction activities: historical cartography; archival documentation; iconographic sources; historical photographs.*

Outputs *temporal database; transformation maps; chronological matrices.*

Wednesday 21

Day 3_ Data Elaboration

Activities *DAda-LAB_ Department of Civil Engineering and Architecture*

9.00 - 12.00 *Postproduction activities*

Lunch break

Lectures *DAda-LAB_ Department of Civil Engineering and Architecture*

14.00 - 14.45 *Digital storytelling procedures for waterfront landscape*

Activities *DAda-LAB_ Department of Civil Engineering and Architecture*

15.00-17.45 *Postproduction activities: how to build a virtual tour; interactive timelines; story maps; comparative visualisations; informative contents; visualization and presentation.*

Outputs *first prototype of digital storytelling and virtual tour.*

Thursday 22

Day 4_ Building Digital Stories

Activities *DAda-LAB_ Department of Civil Engineering and Architecture*

9.00 - 12.00 *Postproduction activities*

Lunch break

Lectures *DAda-LAB_ Department of Civil Engineering and Architecture*

14.00 - 14.45 *Multimedia narratives connecting spatial evidence with historical transformations*

Activities *DAda-LAB_ Department of Civil Engineering and Architecture*

15.00-17.45 *Postproduction activities: 3D scene annotation; multimedia communication strategies; digital models; temporal narratives; interactive visualisations; final presentations.*

Outputs *Development of final proposal of digital storytelling and virtual tour.*

Friday 23

Day 5_ Final Production and Public Presentation

Activities *DAda-LAB_ Department of Civil Engineering and Architecture*

9.00 - 12.00 *Final postproduction activities*

Lunch break

Presentation *Department of Civil Engineering and Architecture*

14.00 - 16.45 *Final Presentation and public exhibition of the workshop results*

17.00 - 17.45 *Roundtable with discussion on future applications*

Learning Outcomes of 3D Palimpsest

The workshop proposes an interdisciplinary methodology that combines digital surveying, historical interpretation and visual communication to support documentation, research and dissemination of urban heritage. The integration of Fast Survey technologies with temporal storytelling contributes to new approaches for documenting minor historical landscapes and communicating complex urban transformations through accessible and scientifically grounded digital narratives.

At the end of the workshop participants will be able to understand urban heritage as a continuously evolving cultural landscape; apply rapid digital survey techniques for architectural documentation; critically integrate heterogeneous historical and digital datasets; reconstruct temporal transformations of urban environments; communicate heritage through interactive digital storytelling; design reproducible workflows applicable to different historical urban contexts.

Minimum Equipment: laptops; drawing tools, good mood!

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