



REGIONE AUTONOMA  
FRIULI VENEZIA GIULIA

Scuola per la conservazione e il restauro  
di Villa Manin di Passariano (Udine)

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# Plans from the “Tavolare” cadastral system in Trieste: a cultural heritage to preserve



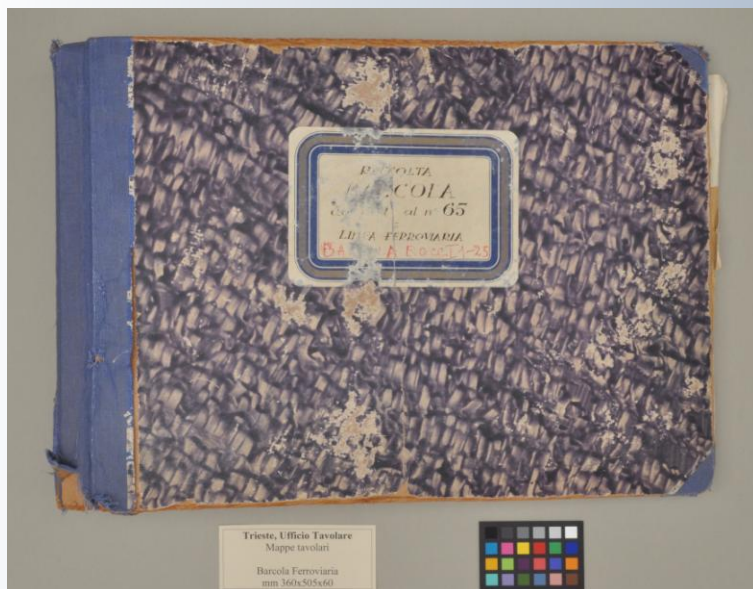
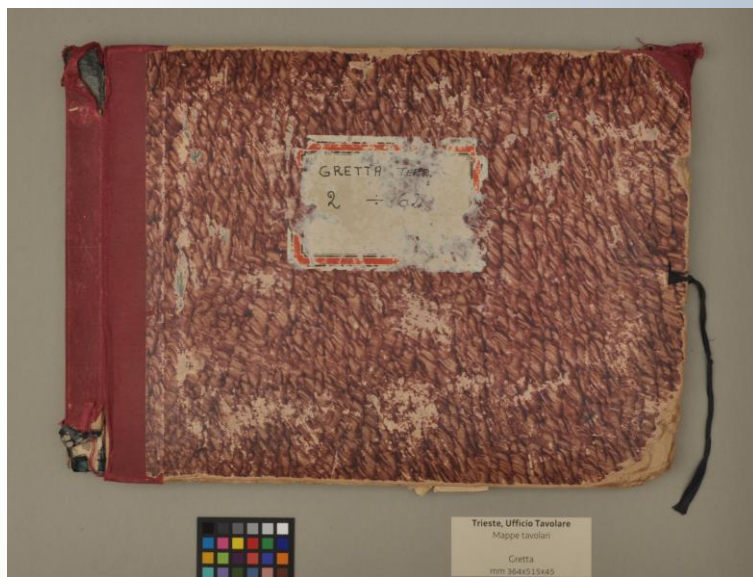




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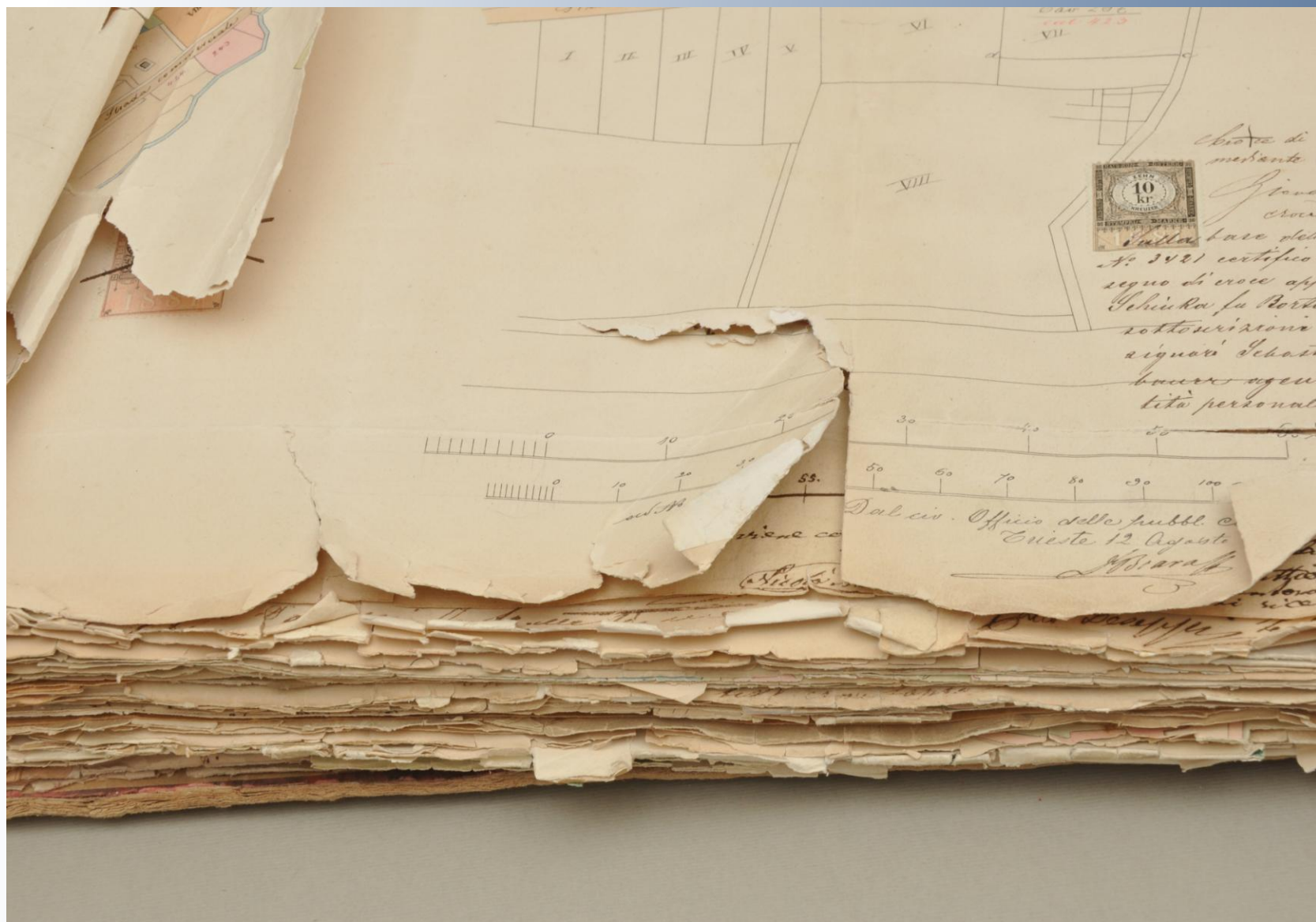
Scuola per la conservazione  
e il restauro

# Bindings





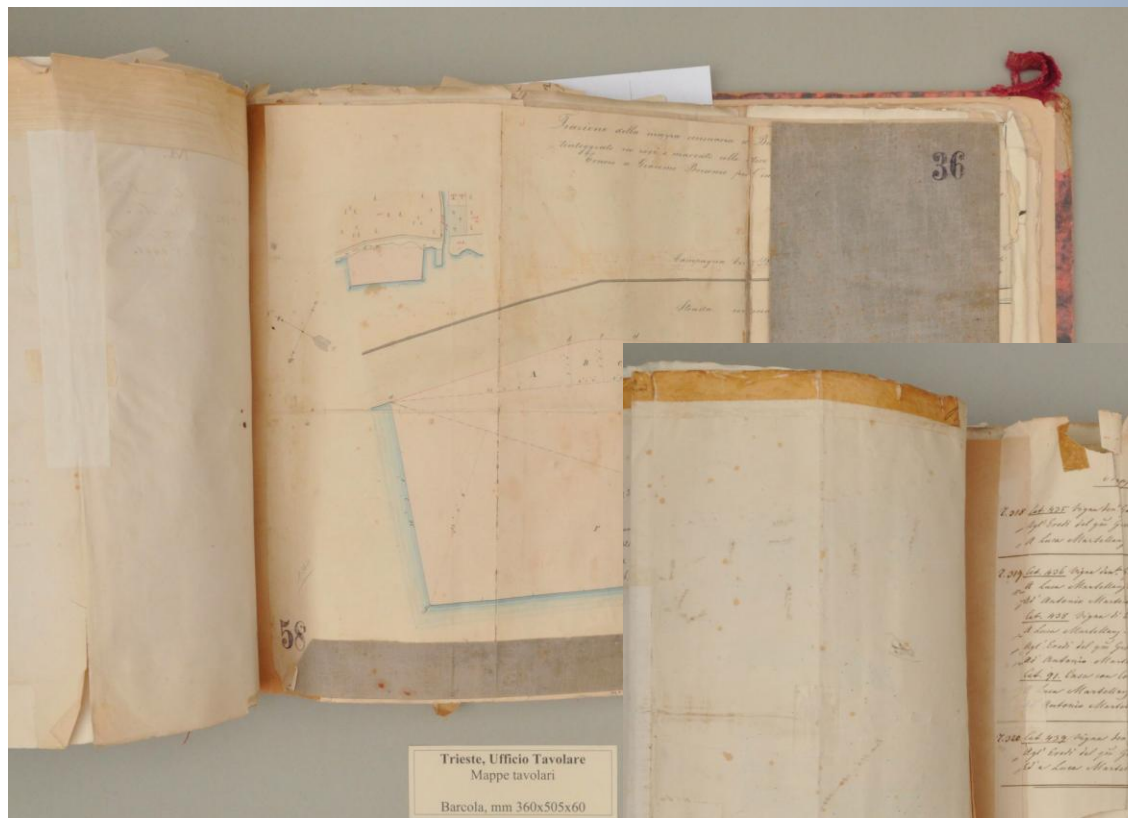
# Papers





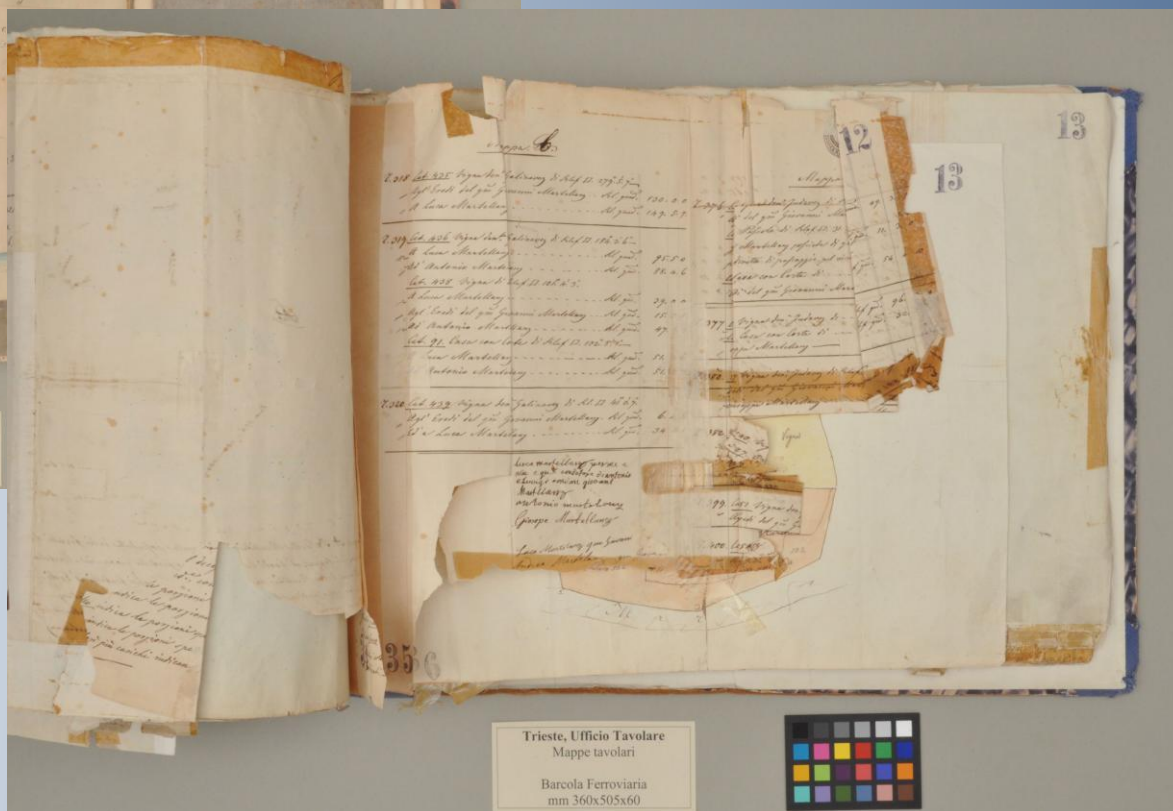


# Past rough repairs:



Trieste, Ufficio Tavolare  
Mappe tavolari  
Barcola, mm 360x505x60

papers  
overlapping



Trieste, Ufficio Tavolare  
Mappe tavolari

Barcola Ferroviaria  
mm 360x505x60



pressure sensitive  
tape



# Codice dei beni culturali e del paesaggio (art. 29)

Conservazione (preservation) involves:

- ✓ studio (study)
- ✓ prevenzione (prevention)
- ✓ manutenzione (maintenance)
- ✓ restauro (conservation treatments)

# The professional team:

- the director of the school (A. Giacomello) **supervising** the whole project
- archivists from the State Archives (G. Tatò) and from the Tavolare Office in Trieste (E. Gottardis), engaged in **historical research** and involved in the **daily problems** of storage and handling;
- the historian of administrative cartography (A. Pesaro) focusing on the **technical aspects of map making**;
- chemists from the University of Trieste (G. Adami) and Udine (A. Gorassini) **involved in the chemical/physical analysis**;
- five book and paper conservators (E. Braidot, G. Manfrè, G. Maurig, T. Pitton, V. Zanotel) recently graduated at the School in Villa Manin and carrying out **the conservation treatments**;
- a tutor (K. Angeli), book and paper conservator, responsible for **collecting and organizing the documentation** about the tavolare material and involved in conservation treatments;
- a senior book and paper conservator (M. Zanetti) responsible for **coordinating lab activities** and the different steps of the project.

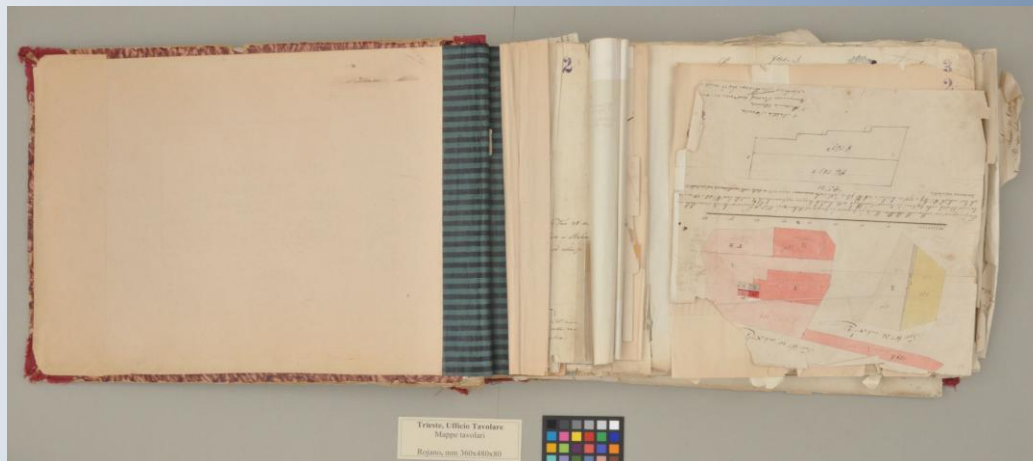
# Conservation treatment

## Preliminary operations:

- plans and fragments receive a number



- photographic documentation is carried out





# Pulling off the plans:

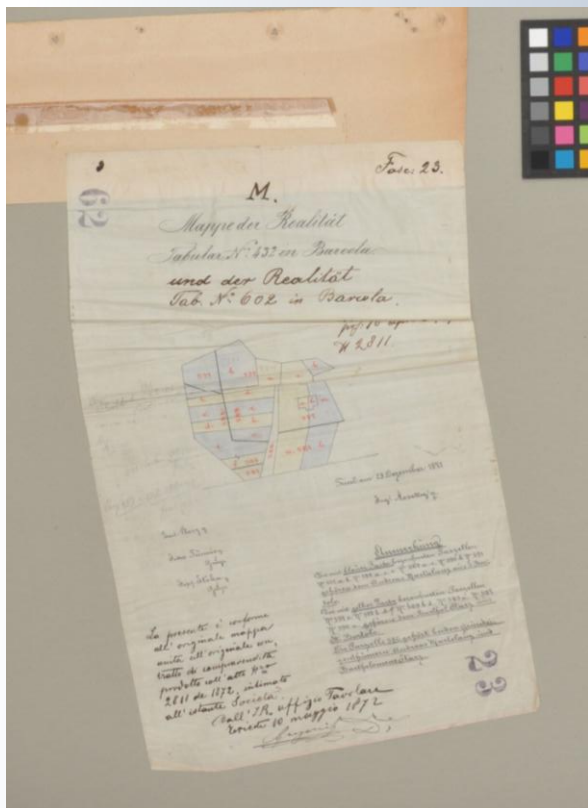
sewing stitches/nails are removed



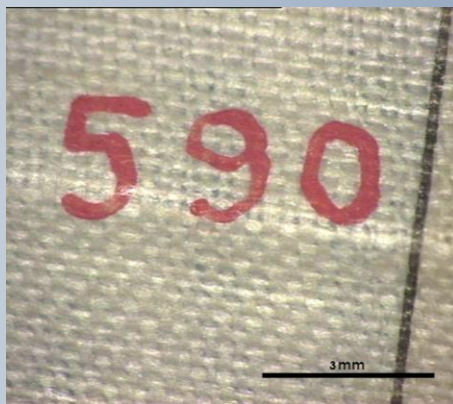


# Observation of the artifact:

## Visual examination (diffused/transmitted/raking light, magnification)



diffused light



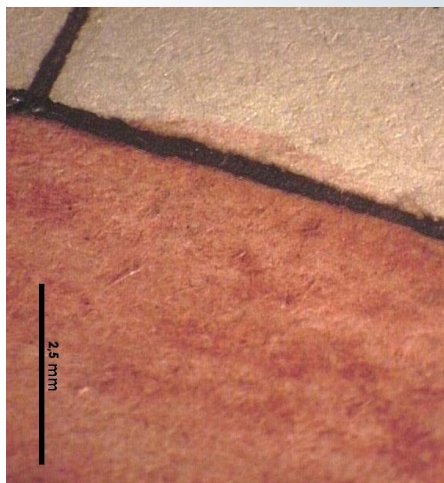
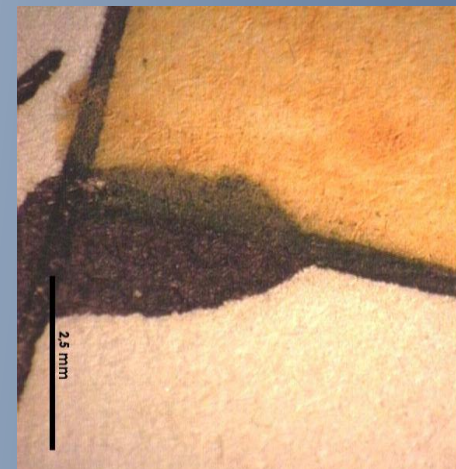
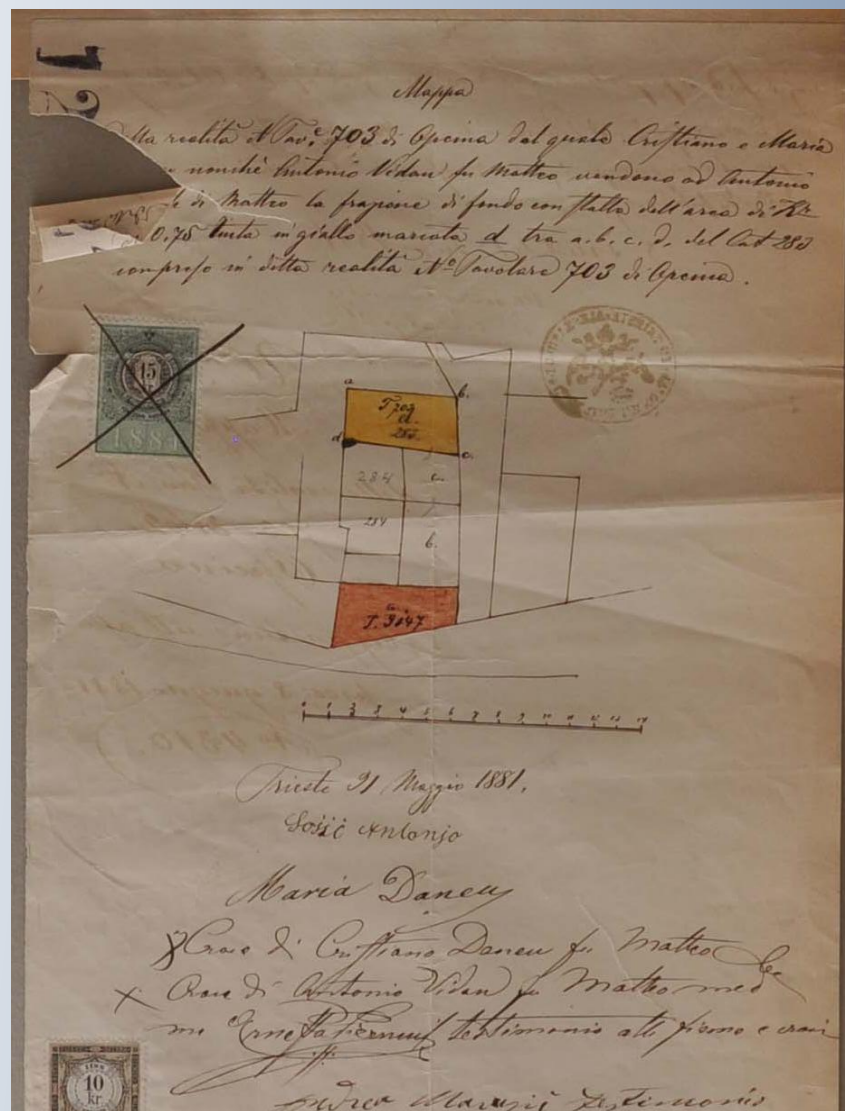
magnification



raking light



# Observation of the artifact:

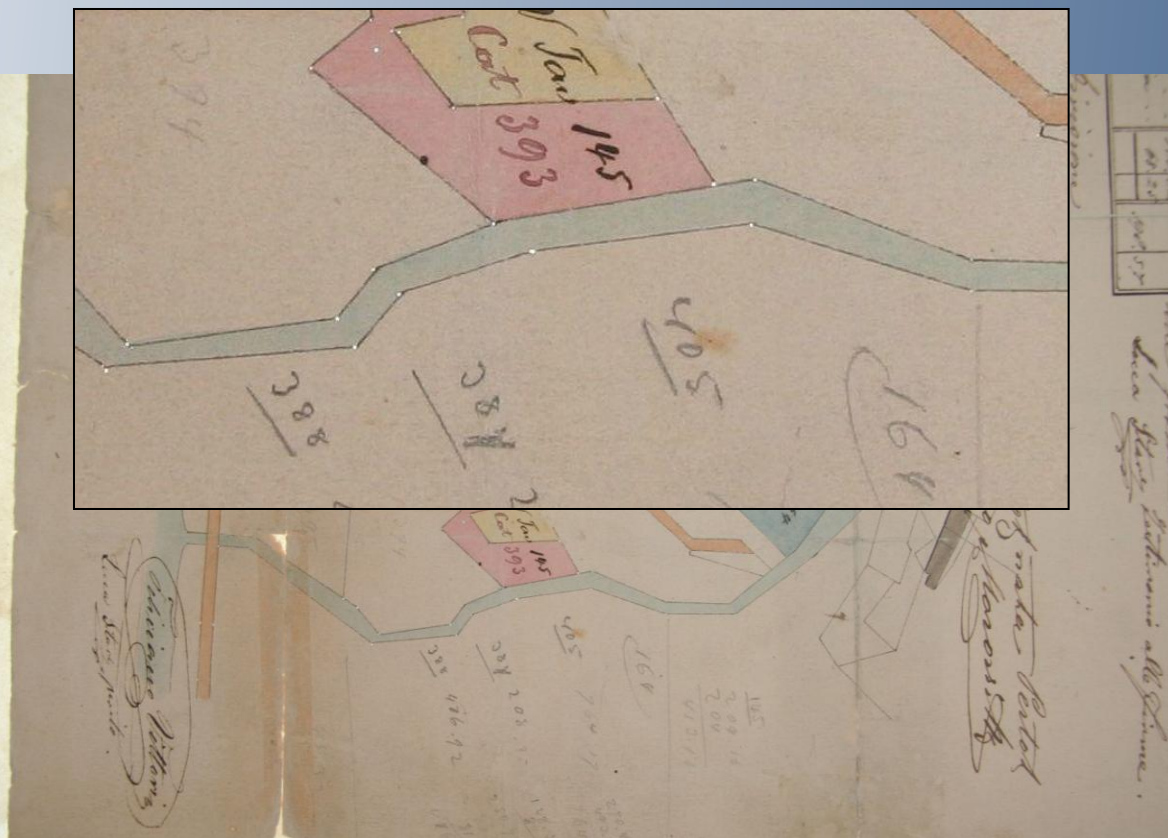
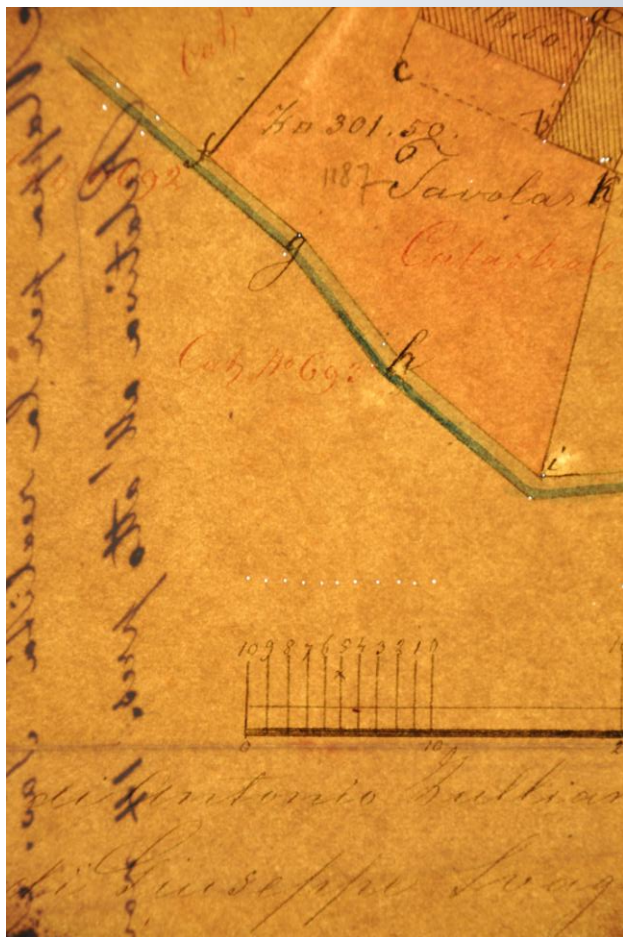


raking light/magnification





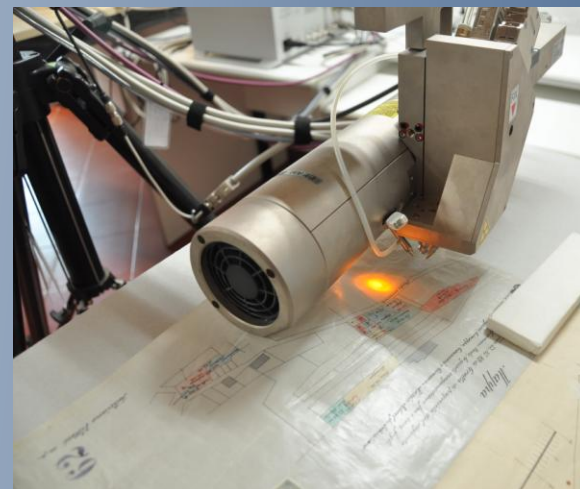
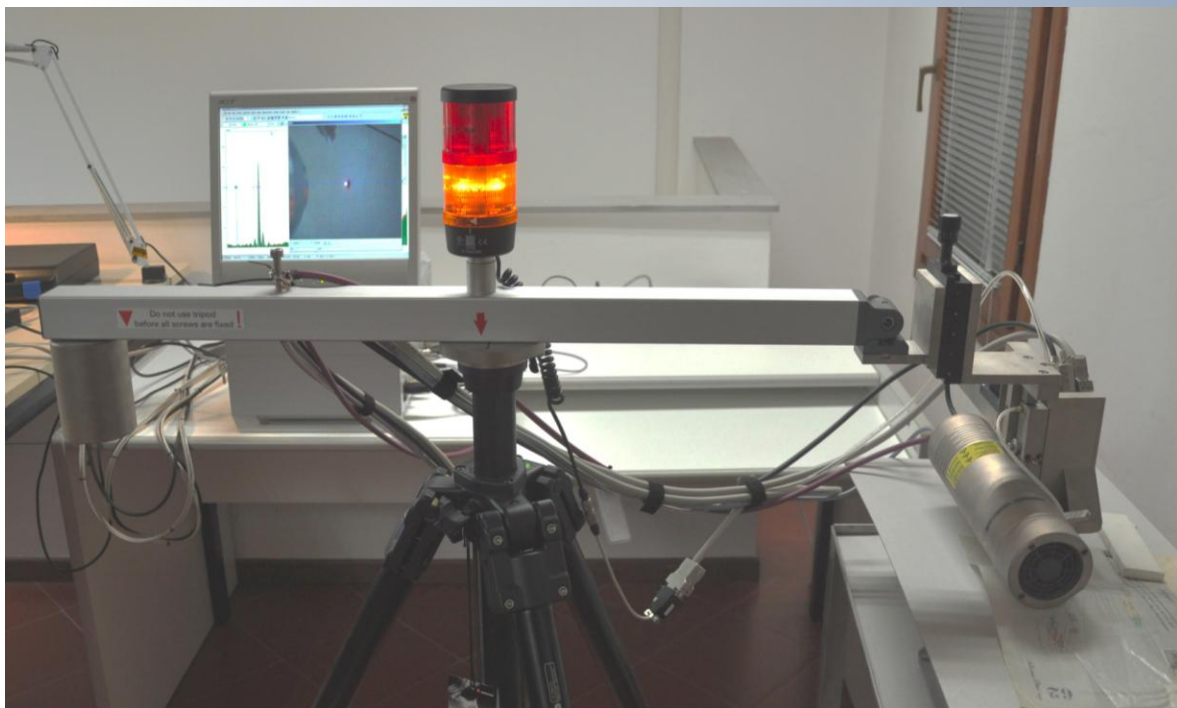
# Observation of the artifact:





# Investigation of the artifact

## XRF (X-ray fluorescence spectrometry):



elemental composition of inorganic materials  
(paper supports, inks, pigments etc.)

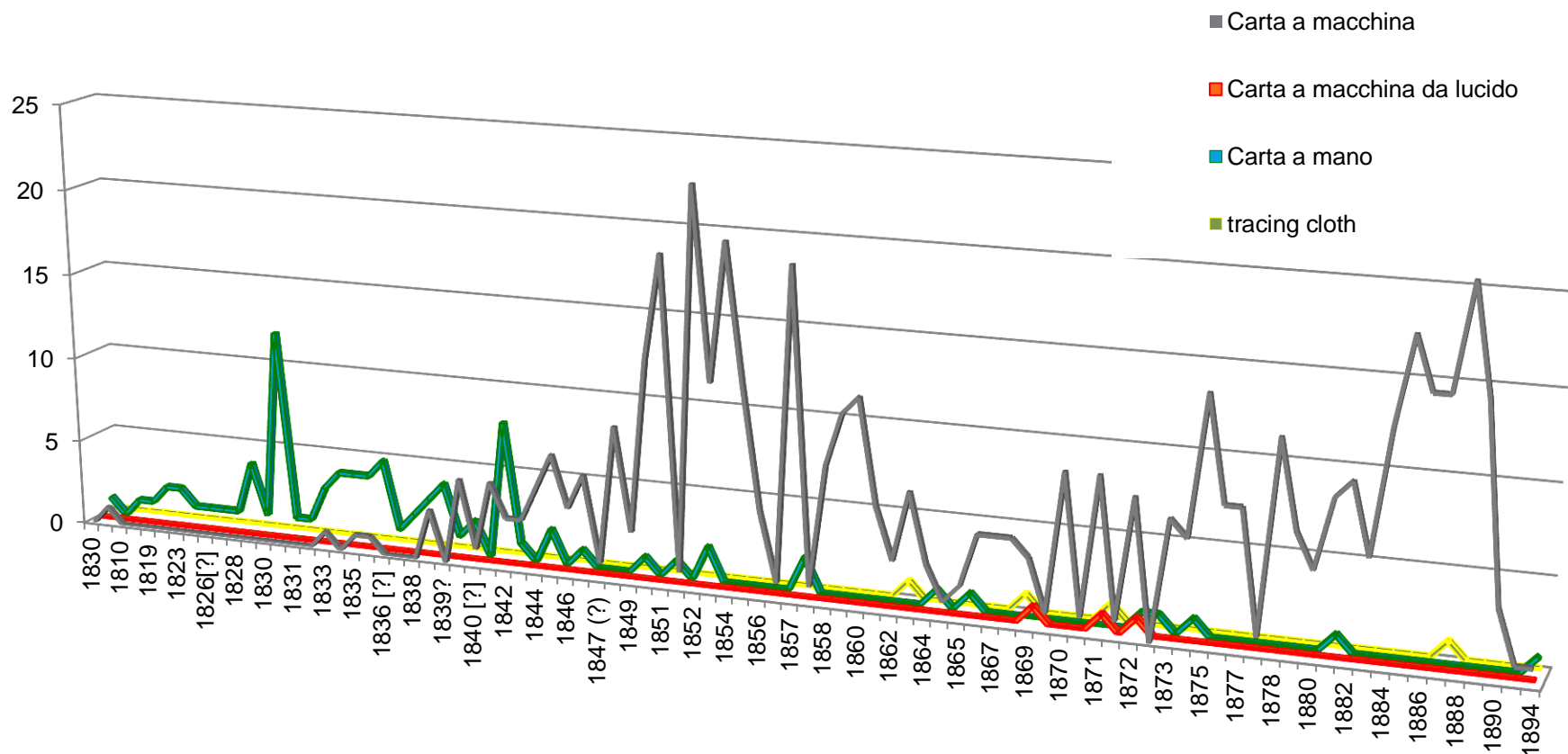
# Investigation of the artifact

## FT-IR (Fourier Transform Infrared Spectroscopy):



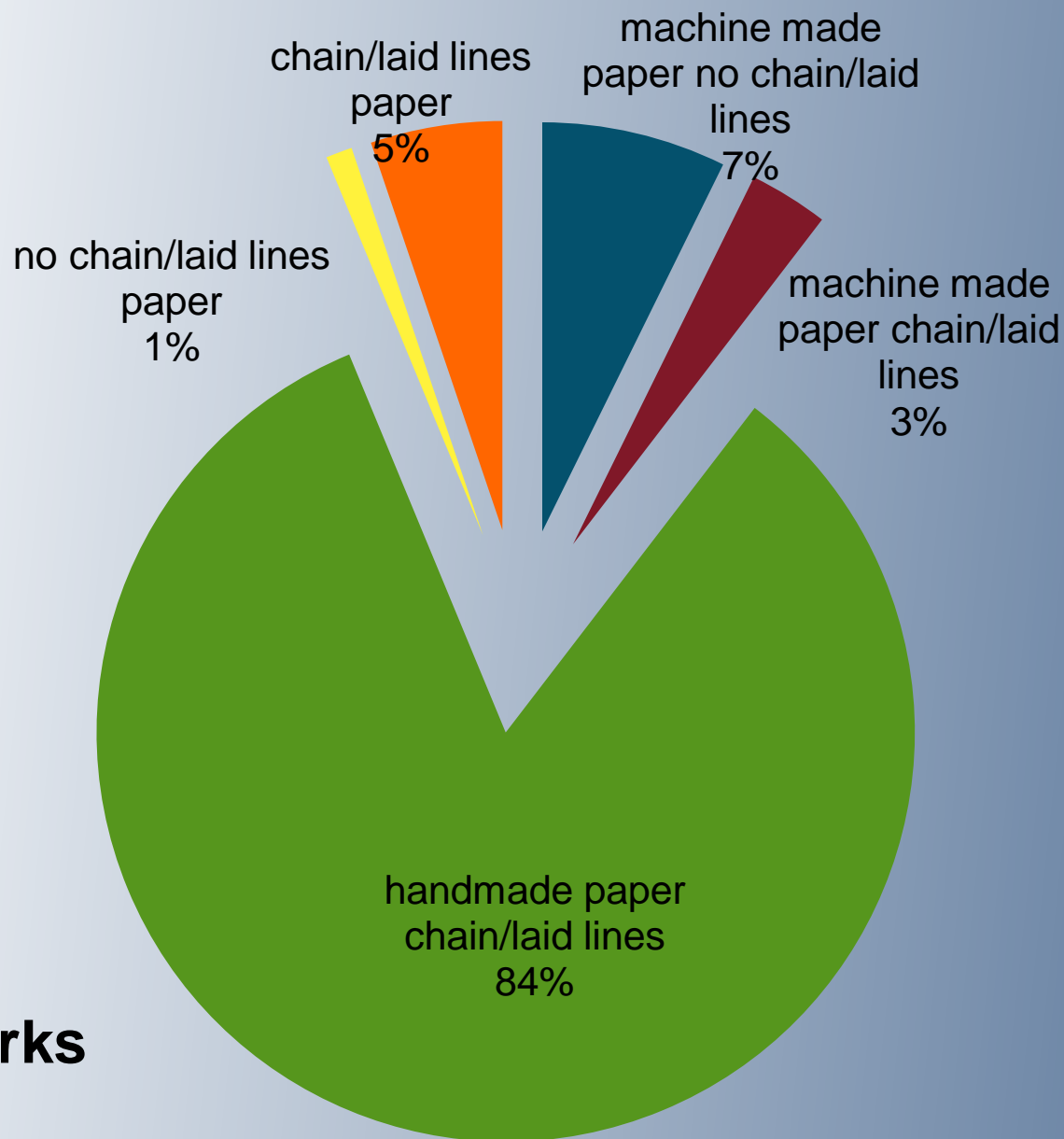
elemental composition of organic materials  
(lignin, vegetal/animal adhesive, color binders,  
natural tackifiers, etc.)

# Different supports





# Watermarks distribution



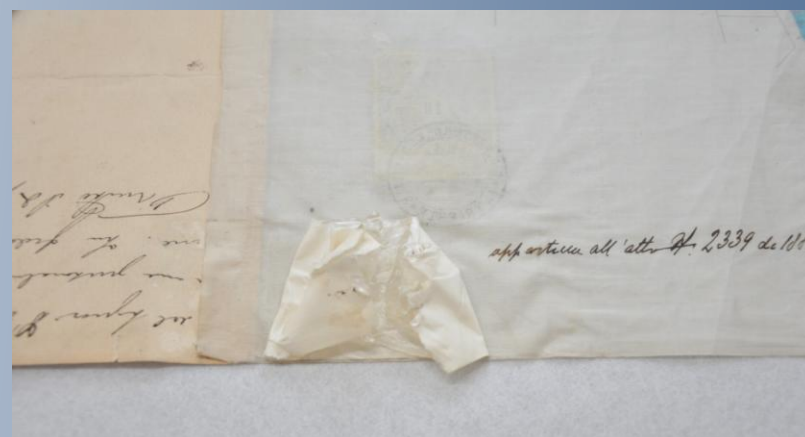
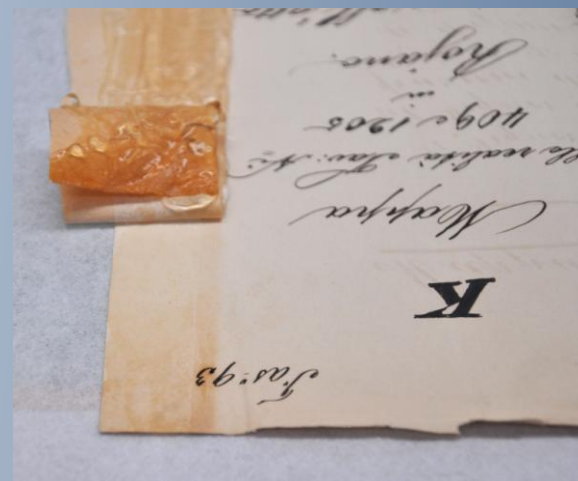
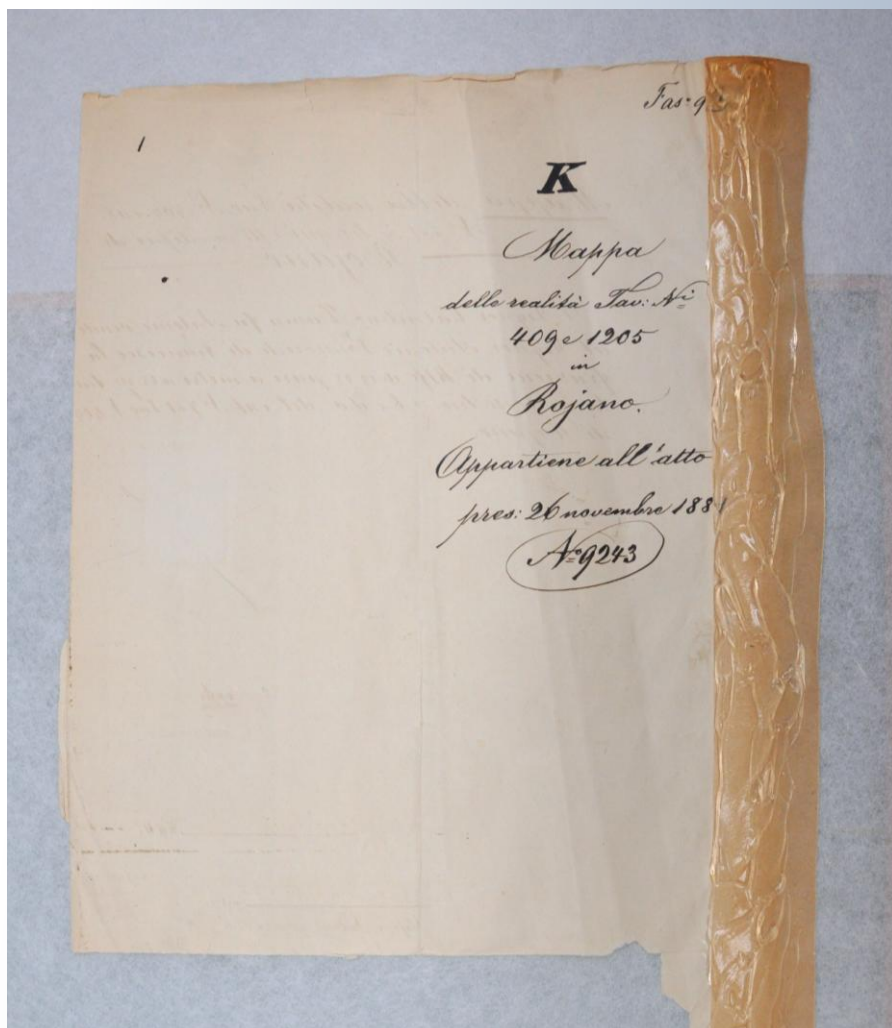
**96 watermarks**

## Spot tests

- solubility test
- pH measurements

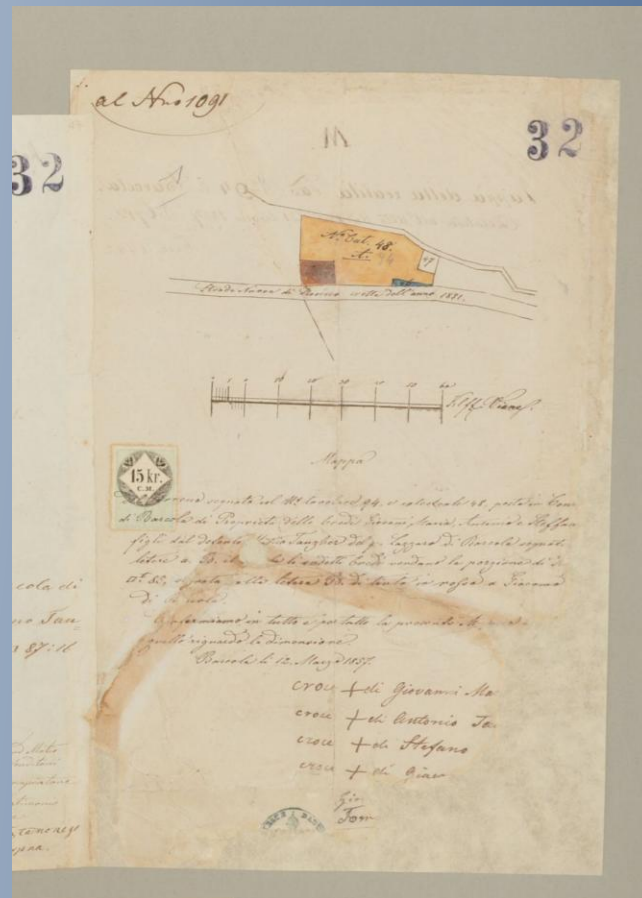
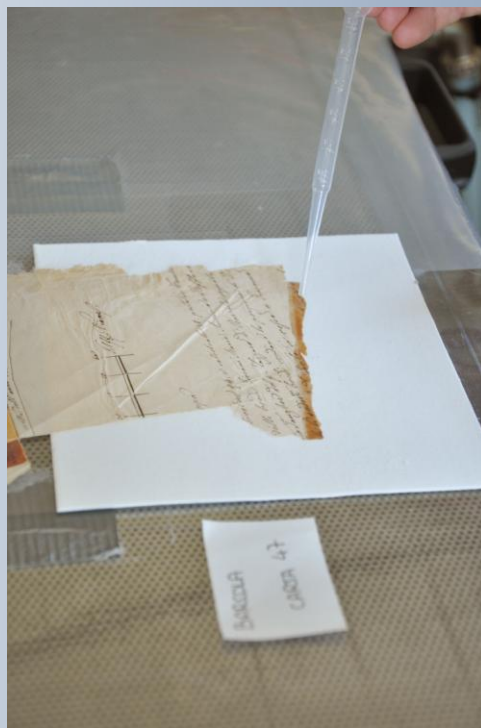


# Removing guards and past repairs: gels

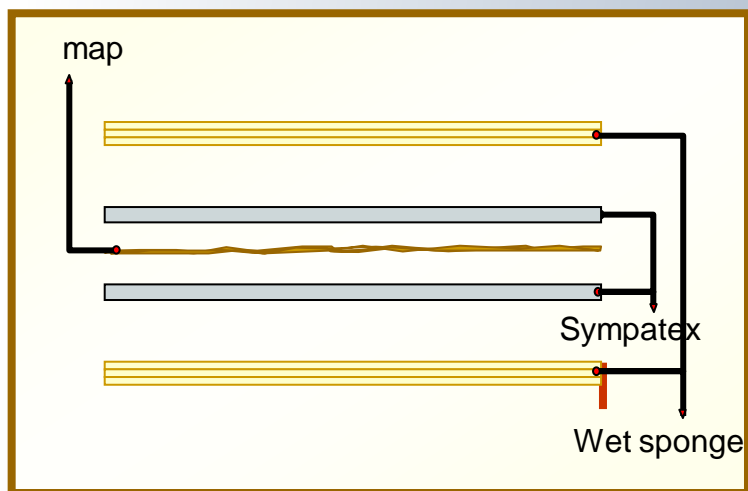
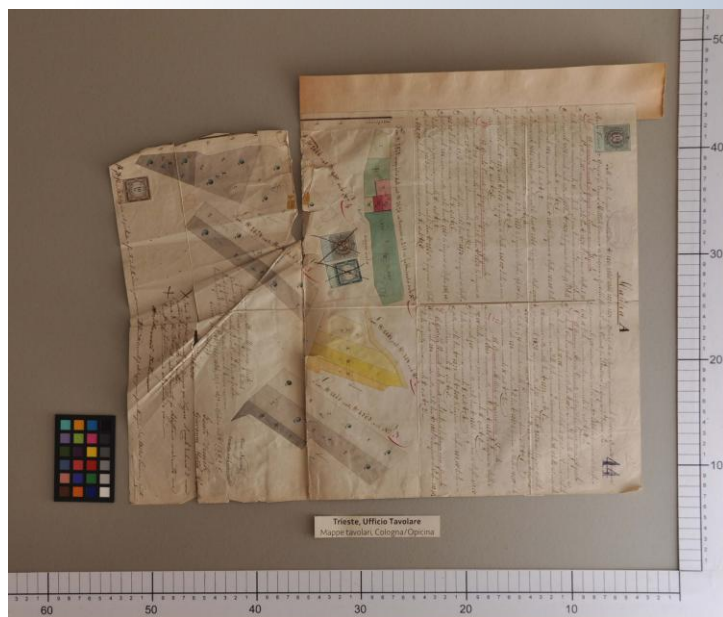




# Removing pressure sensitive tape: solvents on suction table

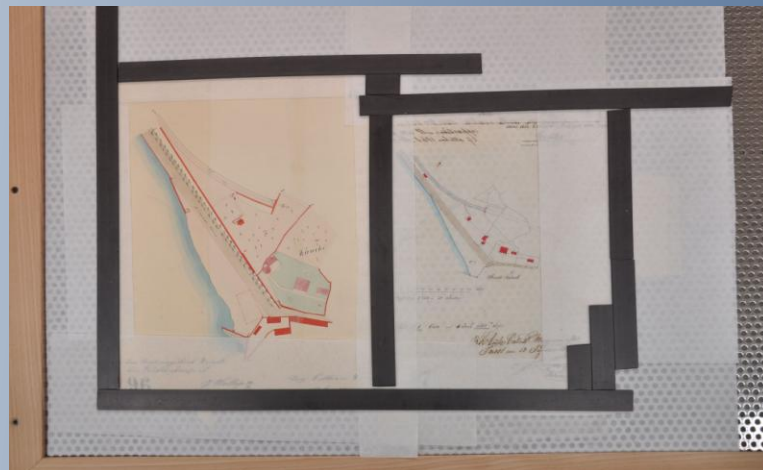
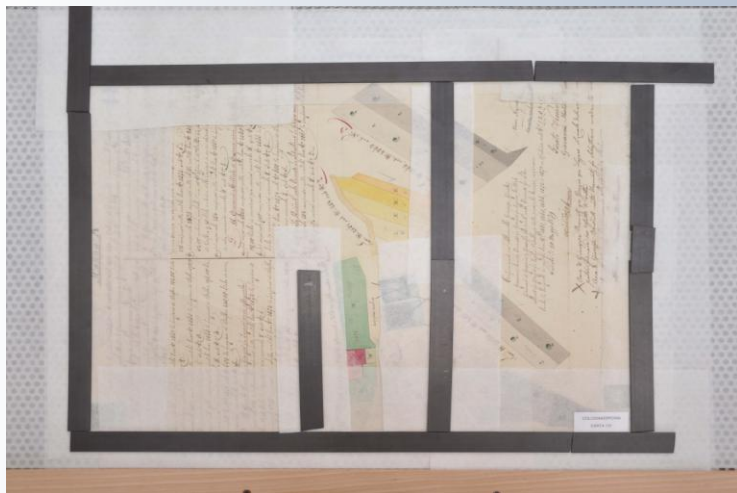


# Humidification method: sympatex

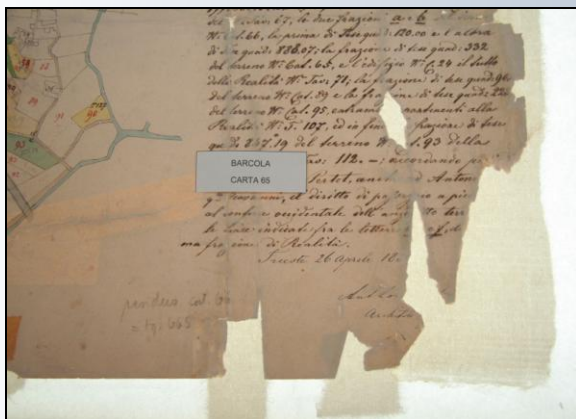




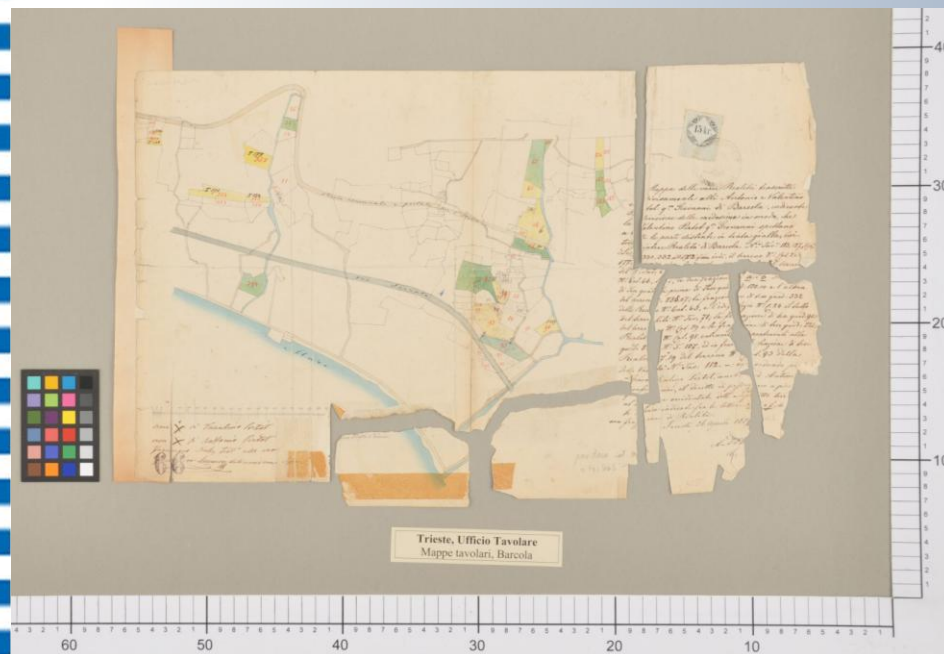
# Map flattening: steel frame and magnetic pads



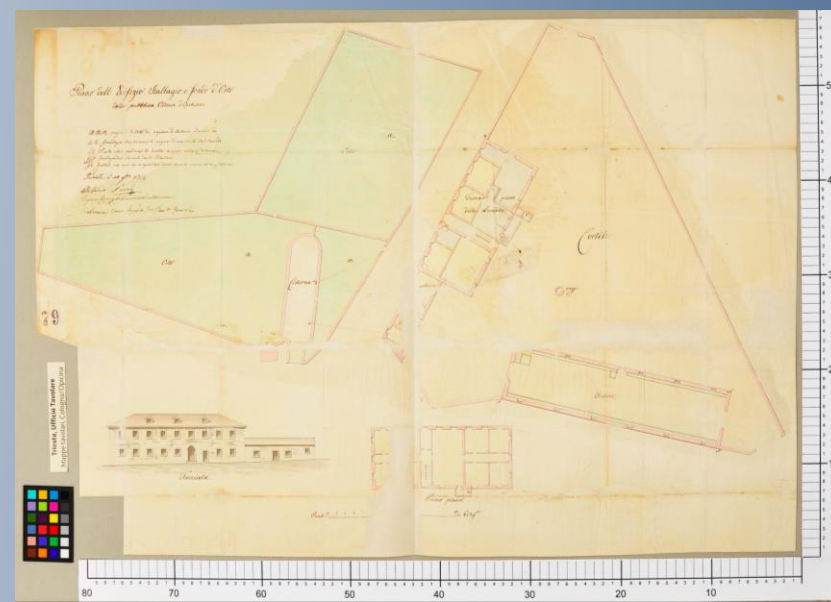
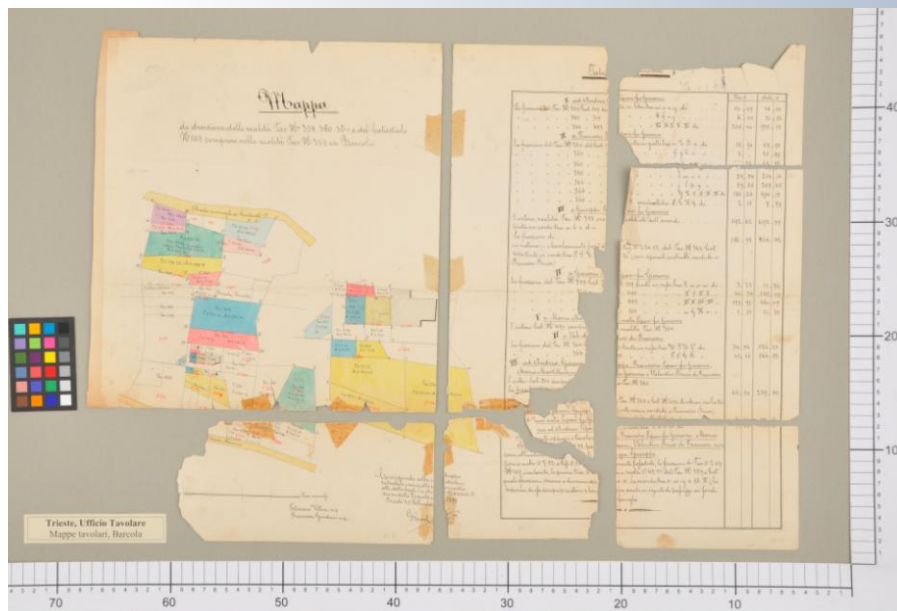




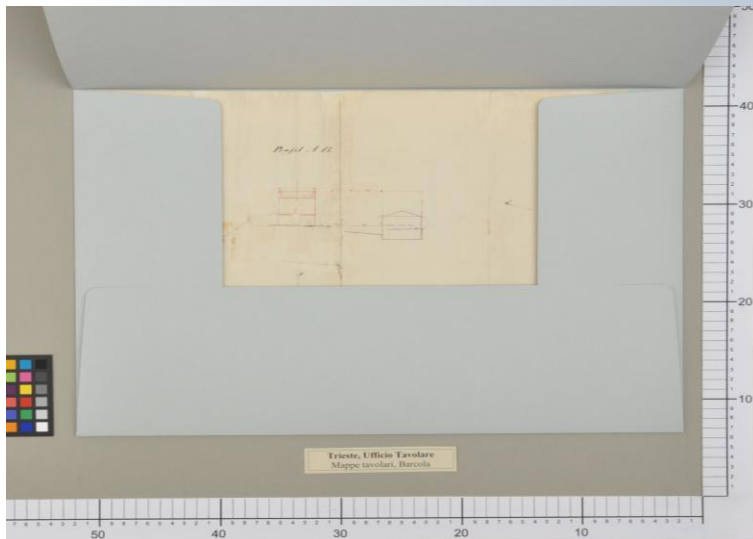
## Maps recomposition, mending, filling in of losses



# Before/after conservation treatment



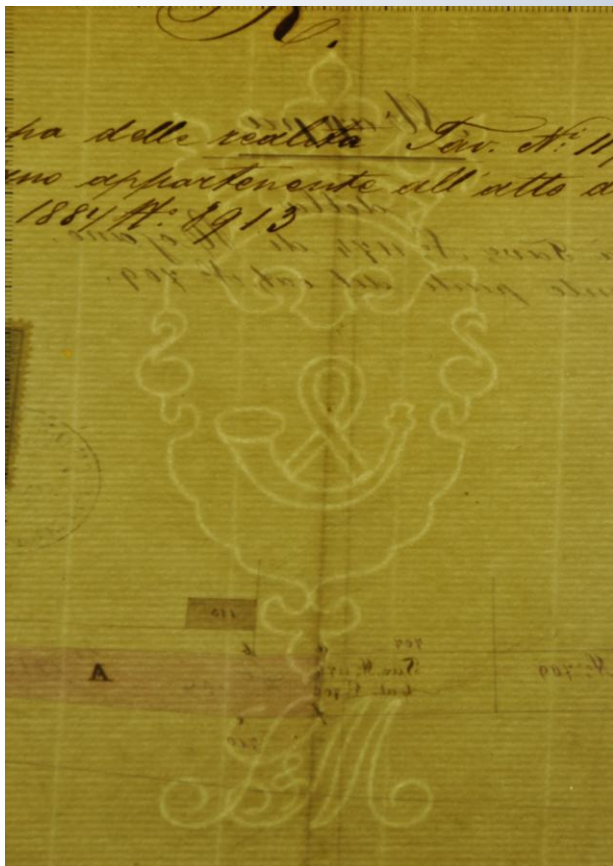
# Long time map preservation: individual folders in drop front storage boxes







# Watermark reproduction/ watermark database



Digital photograph,  
transmitted light

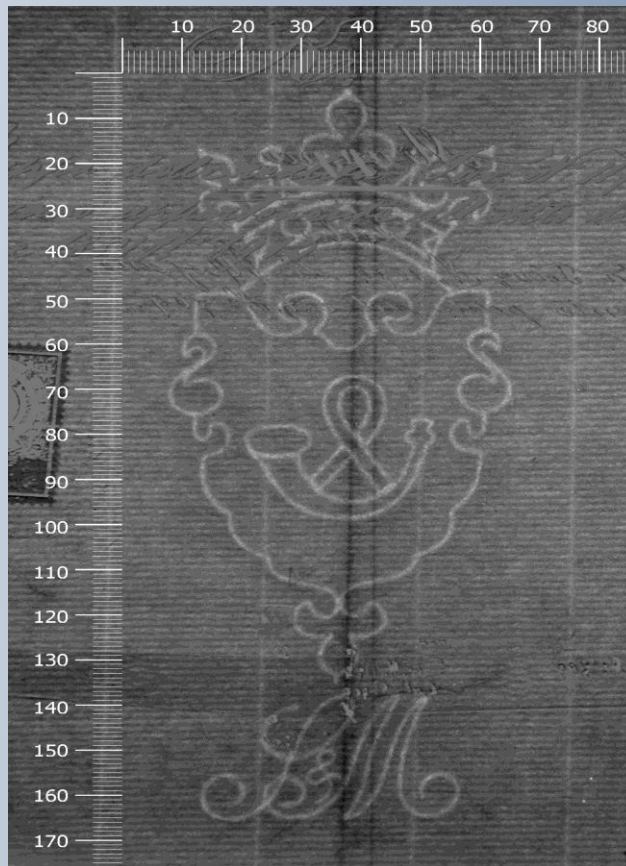


Image processed

- a) contrast balancing
- b) gamma correction
- c) suppression of ink traits r/v
- d) adding metric reference