

RUBIACUM

Urban Meta Mapping Transfer 13/01/2025

M. A. Carla Heym



Rubiacum – Project DFG/ANR



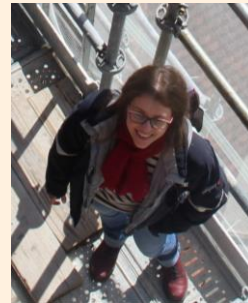
Carla Heym



Thomas Eissing



Jean-Jacques Schwien



Laura Suss

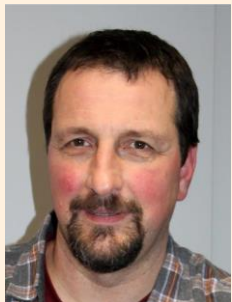


Marc Schurr

Local institutions



Freelance building archaeologists

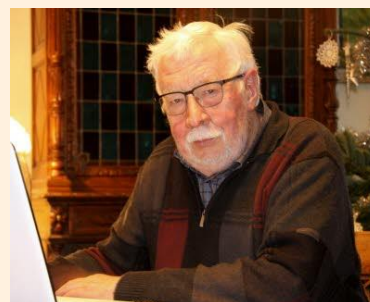


Tilmann Marstaller



Jonas Senghaas

Freelance historians



Gérard Michel

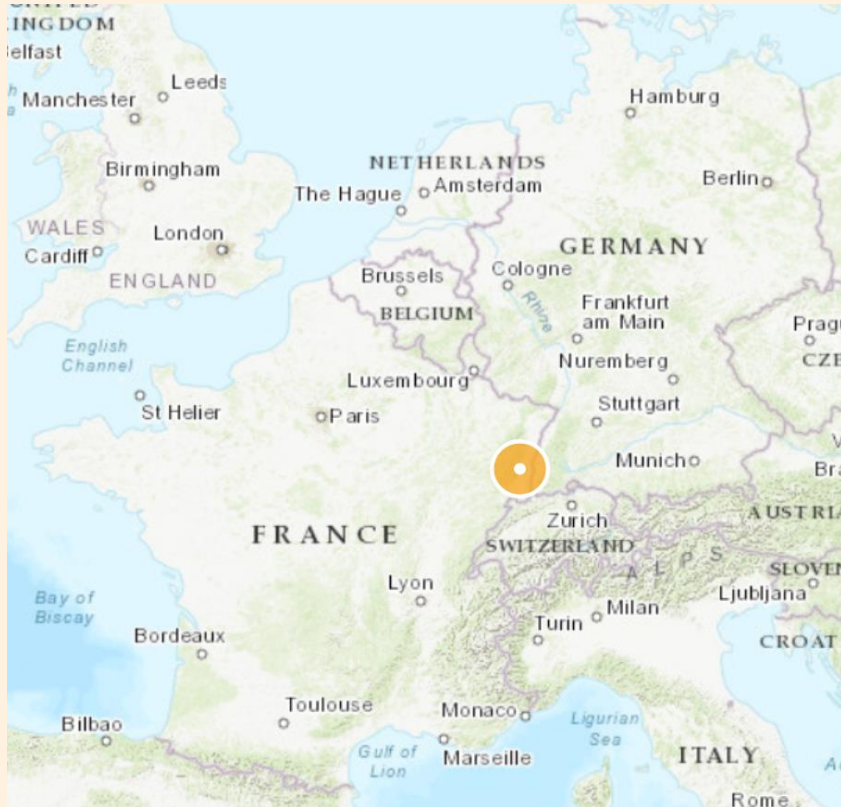


Bernhard Metz



RUBIACUM

Rouffach (Alsace, France)



About **40 ha** (inner city)
Circumference of medieval city wall **~2,4 km**
Cadastre 1824: about **1000 plots**
~4000 inhabitants (1793), **~4200 inh.** (2021)



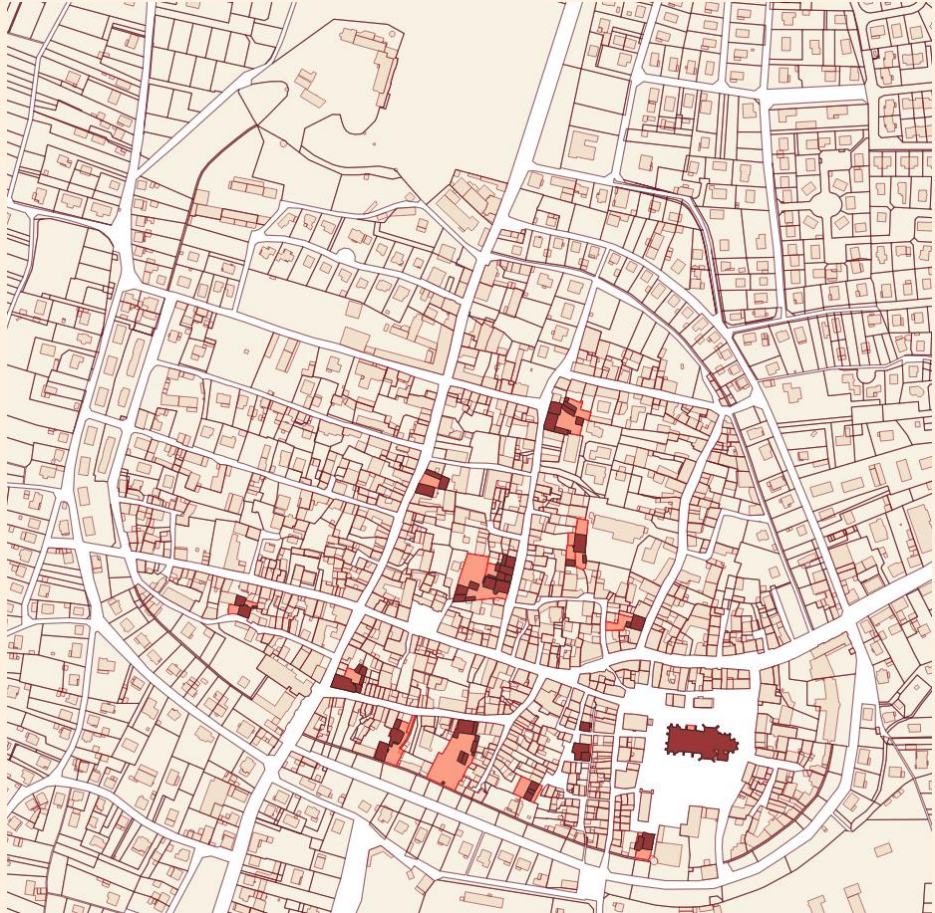
13th century houses in Rouffach



Generally: very well-preserved buildings



Fieldwork

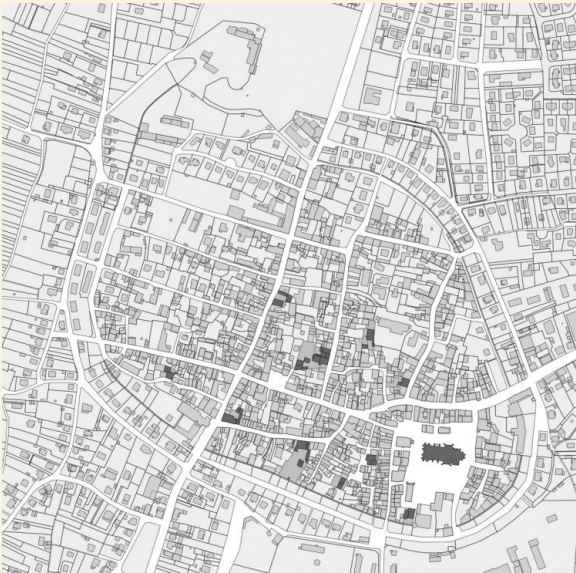


Recorded buildings as of January 2025



GIS for RUBIACUM - Uses

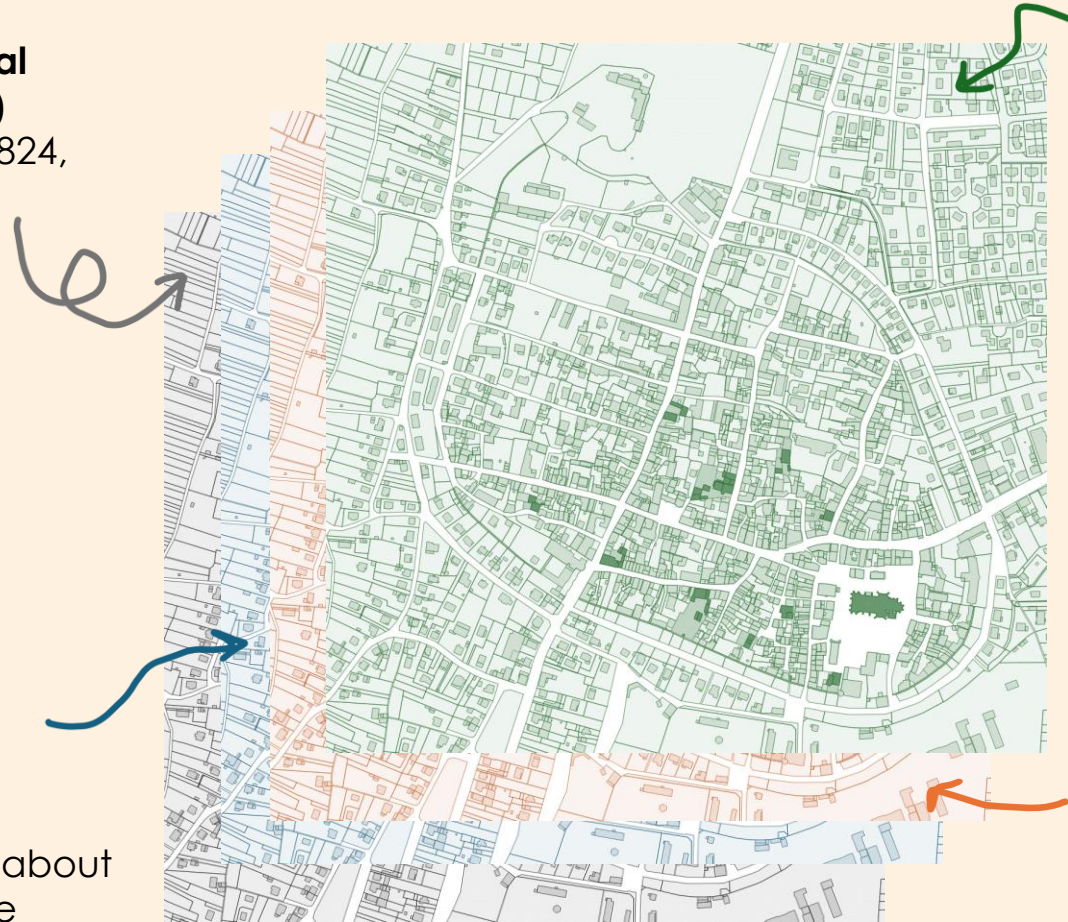
- **Historical GIS**
 - cross-reference interdisciplinary data
- **Urban morphology**
 - generate geometry-based statistics serving as foundation for theories about urban history



GIS for RUBIACUM – Historical GIS

Base Layers

- Cadastral map, topographical map, satellite imagery (2024)
- Georeferenced cadastres (1824, 1852)



Historical research/Archive

- Former street/house names
- Former house owners
- Links to archive/publications about individual objects, if available

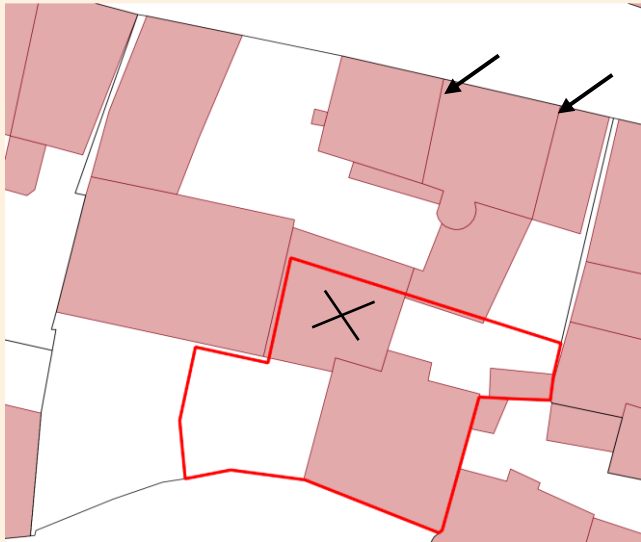
Field work and analysis

- Studied buildings:
 - Dendrochronological dating of roof structure and other phases
 - Integrated maps of ground floor and first floor
- City wall:
 - Geophysical prospections (sections)
- Morphological analysis of cadastral map(s)

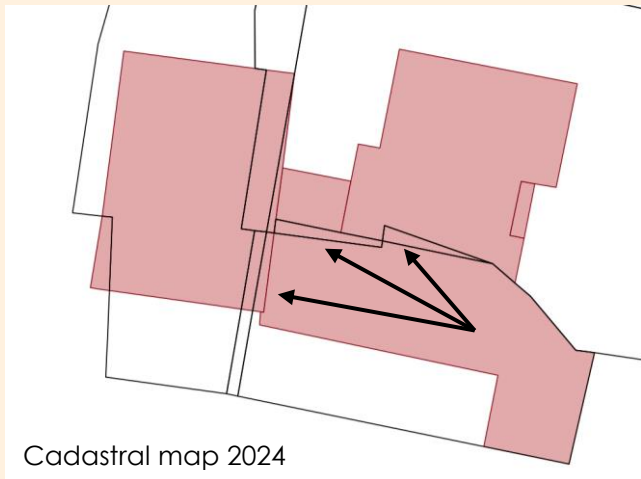
Heritage Conservation admin. data

- (Urban) archeological surveys
- Protected monuments, inventory notices

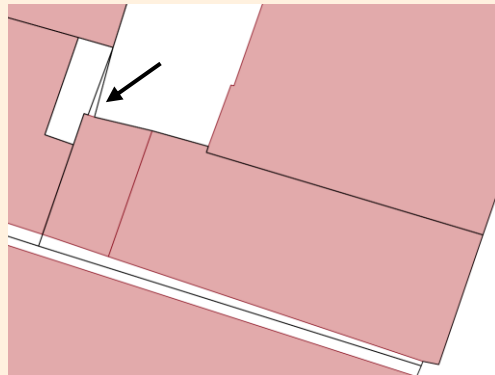
Problems with the actual cadastral map: precision of data



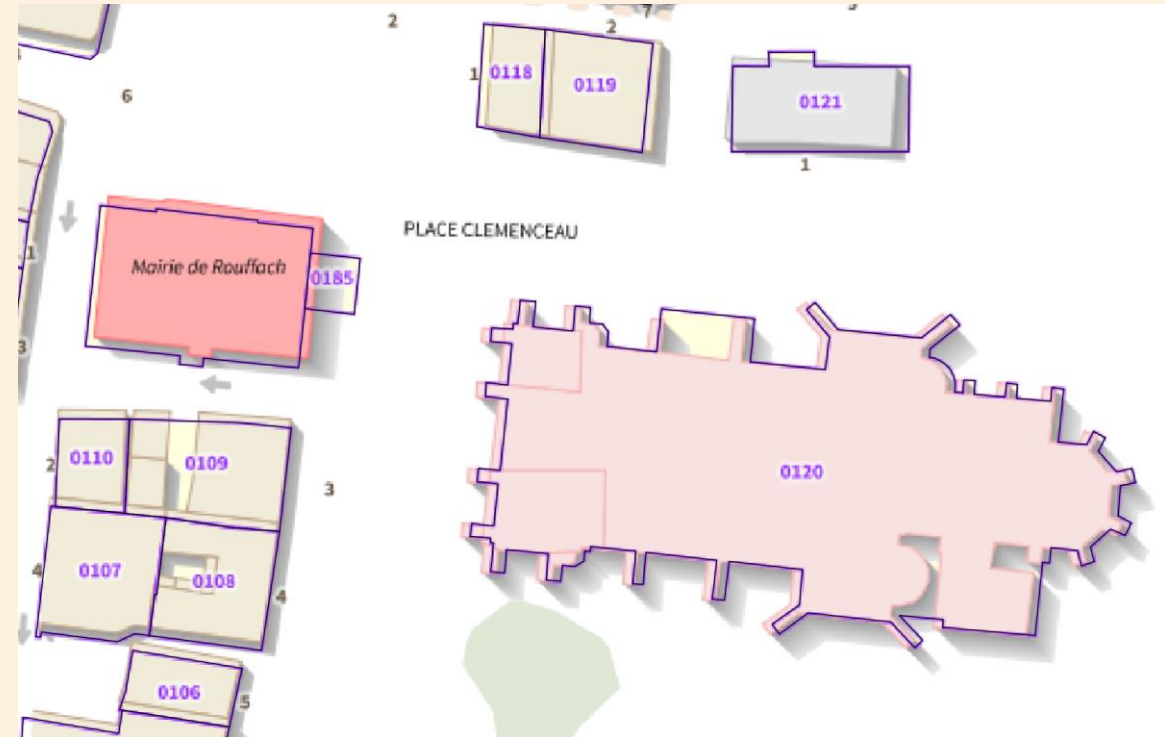
Changing parcels/buildings
Split Buildings



Cadastral map 2024



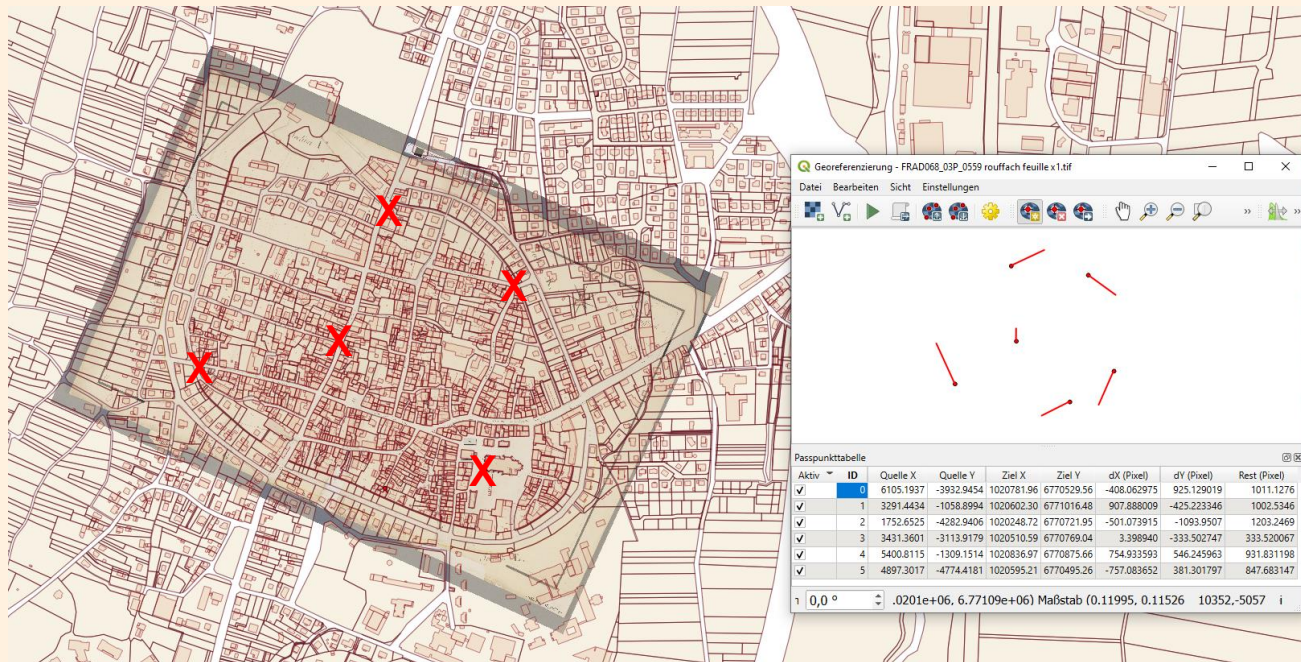
Mistakes/overlapping polygons?



IGN (national map of France): misaligned buildings and parcels

Cadastral map 1824 – “rough” georeferencing

Linear georeferencing



Layers:

Cad. map 1824 (raster)

Cad. map 2024 (vector)



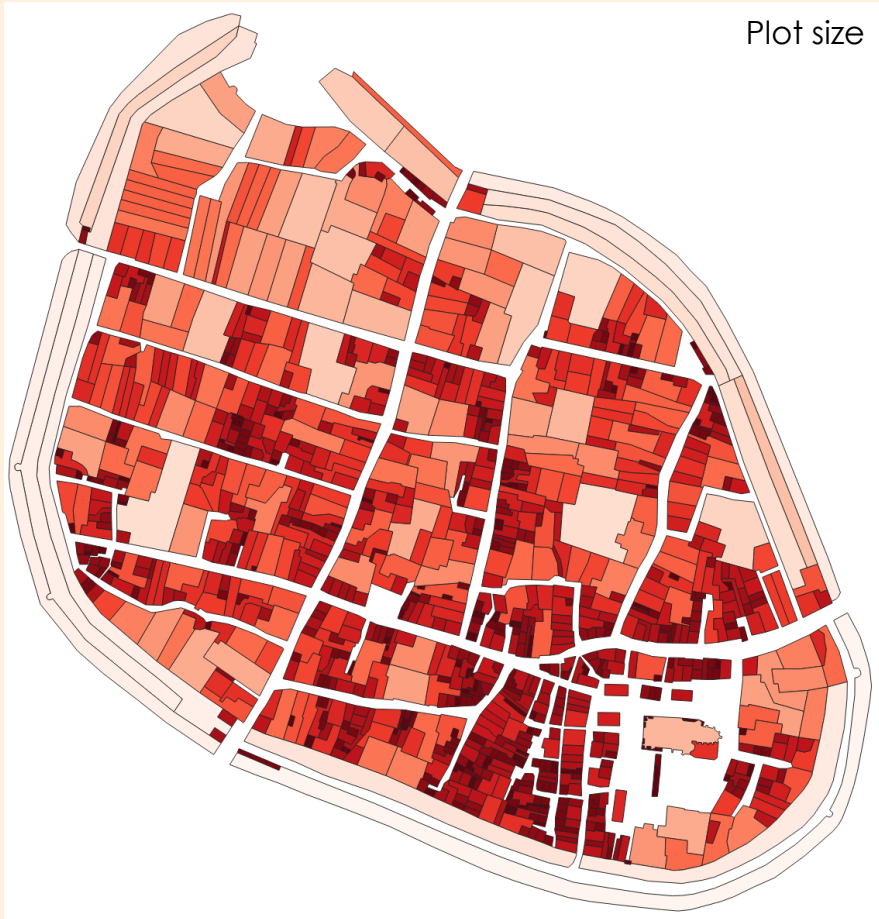
Layers:

Cad. map 1824 (vectorized Heym 2022)

Cad. map 2024

GIS for RUBIACUM – urban morphology

Plot size

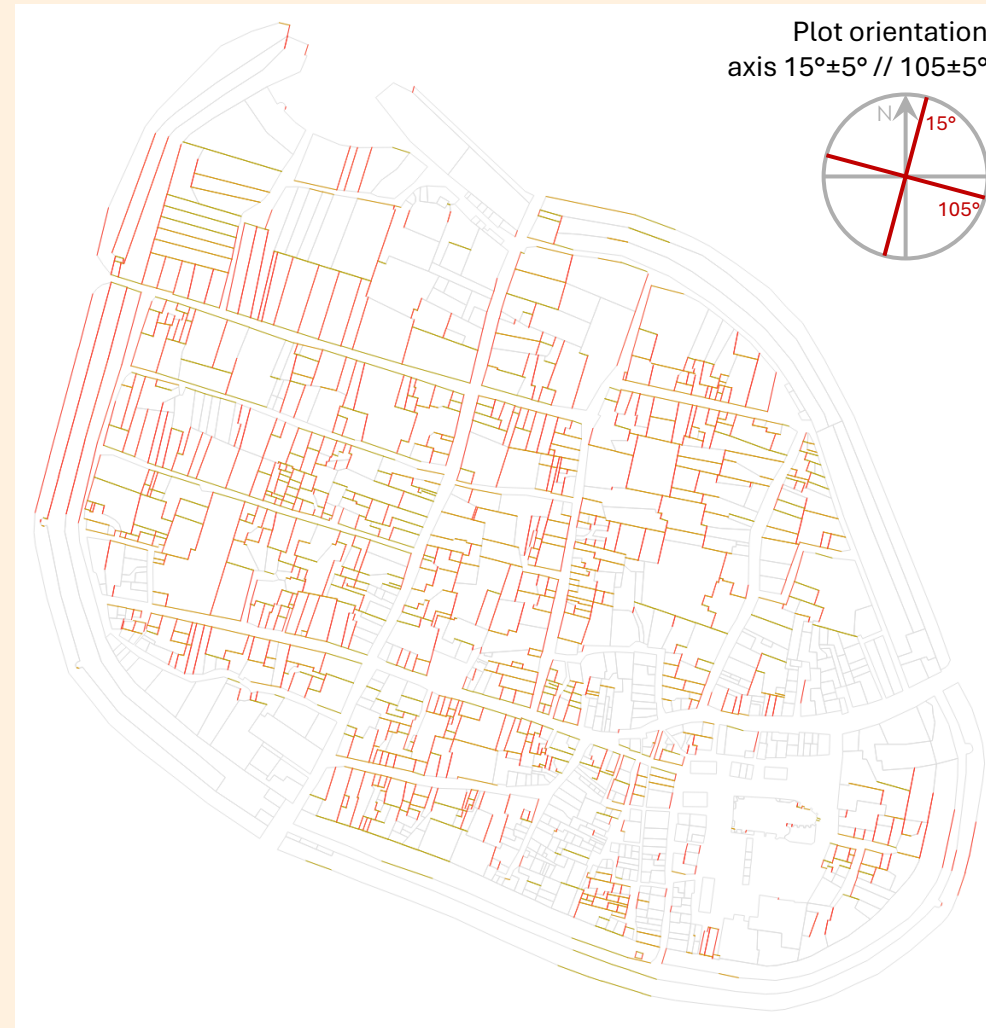


Plot regularity
(number of segments)



Base layer: Cadastral map 1824
(vectorized Heym 2022)

GIS for RUBIACUM – urban morphology



Base layer:
Cadastral map 1824
(Digitalization: Heym
2022)

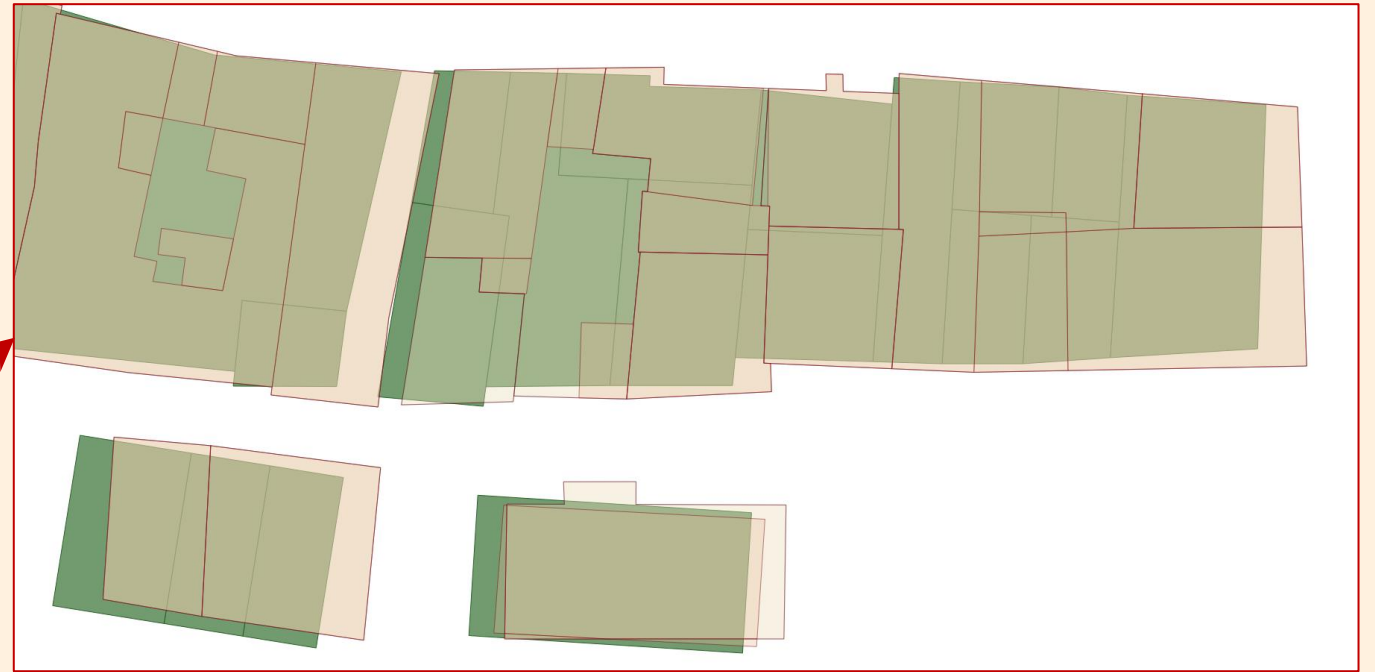
Cadastral map 1824 – “rough” georeferencing, detail



Layers:

Cad. map 1824 (vectorized Heym 2022)

Cad. map 2024

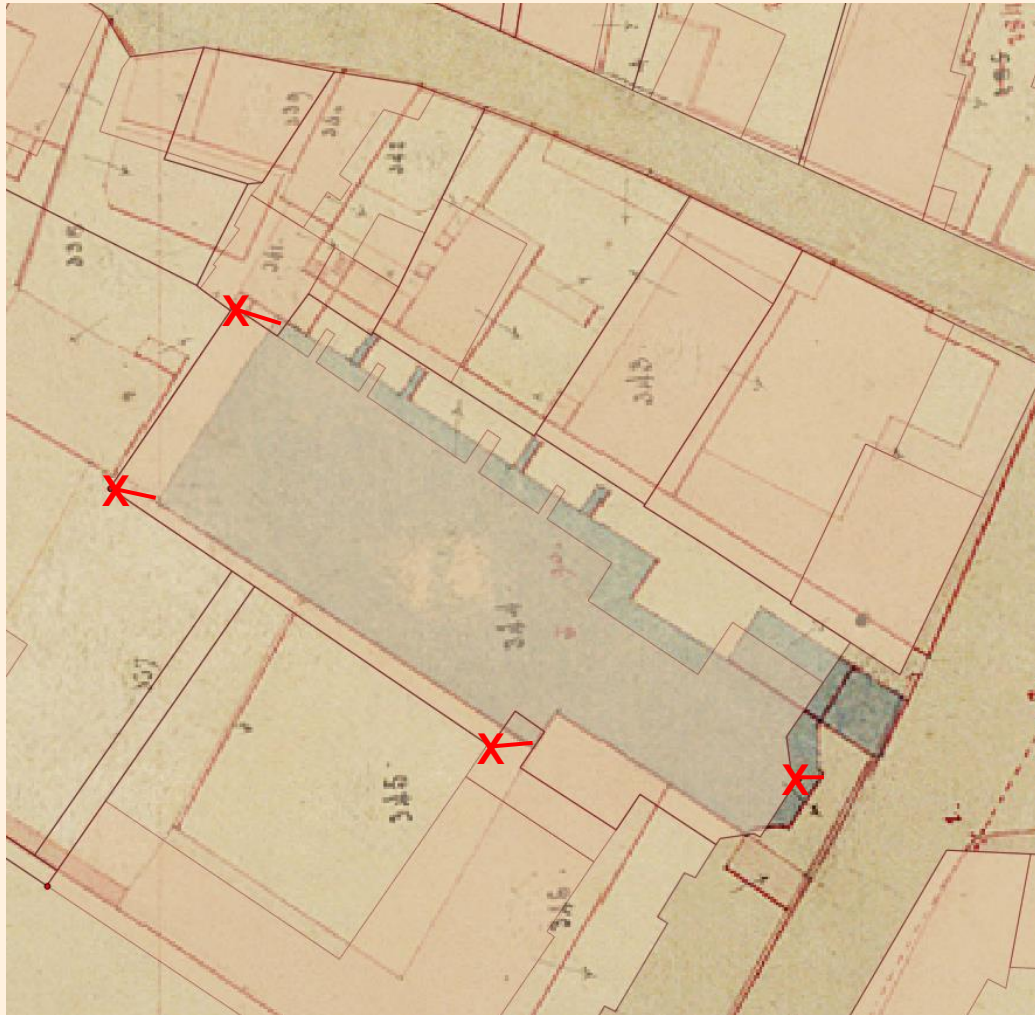


Layers:

Cad. map 1824 (vectorized Heym 2022)

Cad. map 2024

Cadastral map 1852 – georeferencing



Linear georeferencing, $e_{\max} > 4 \text{ m}$



Thin plate spline georeferencing, $e_{\max} > 1 \text{ m}$

Layers:
Cad. map 1852 (raster)
Cad. map 2024 (vector)