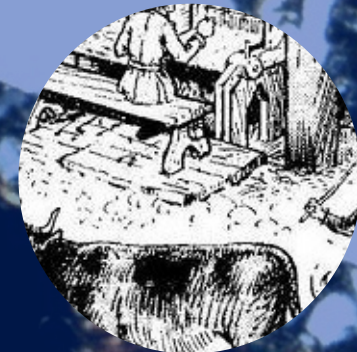


Urban geoarchaeology

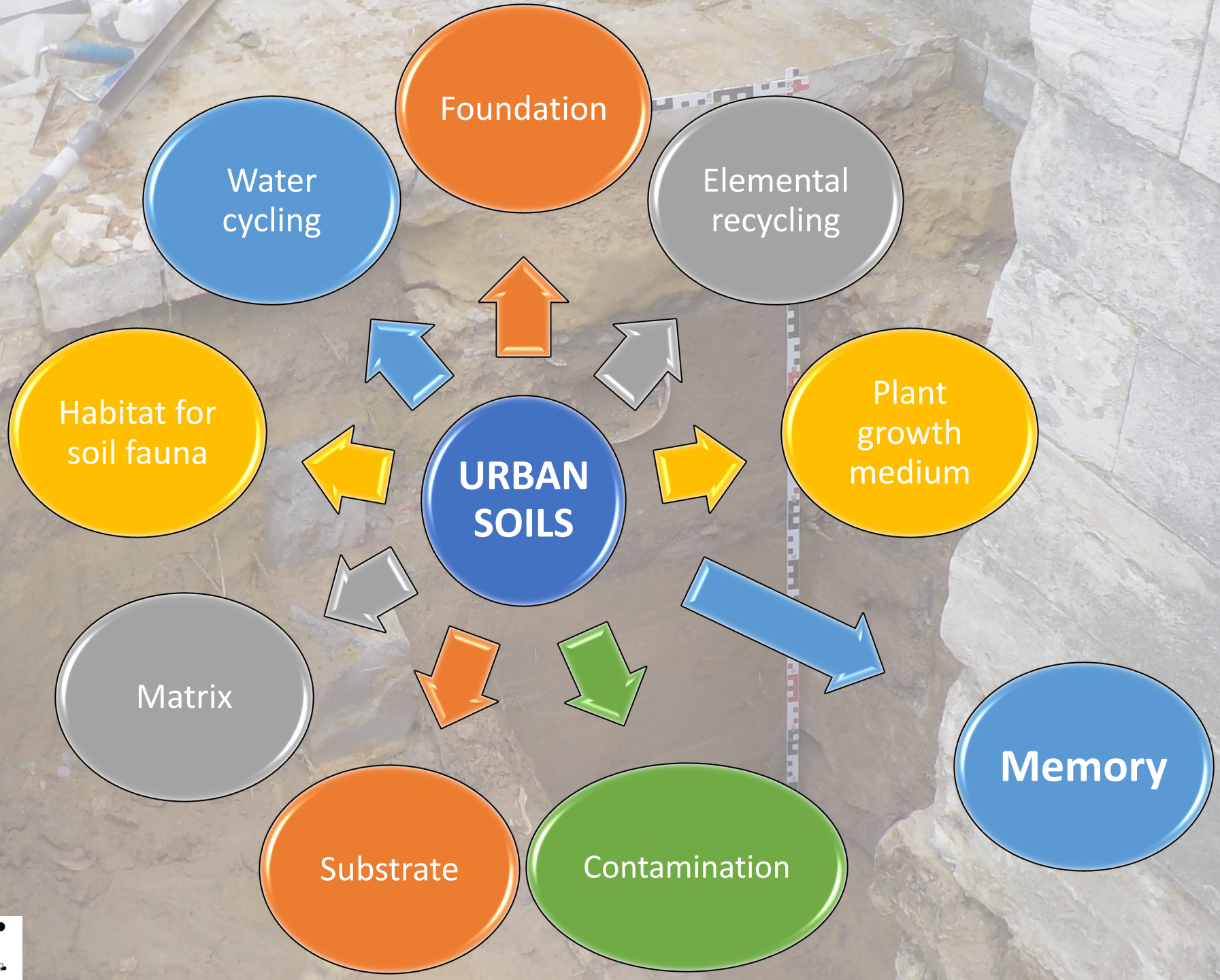
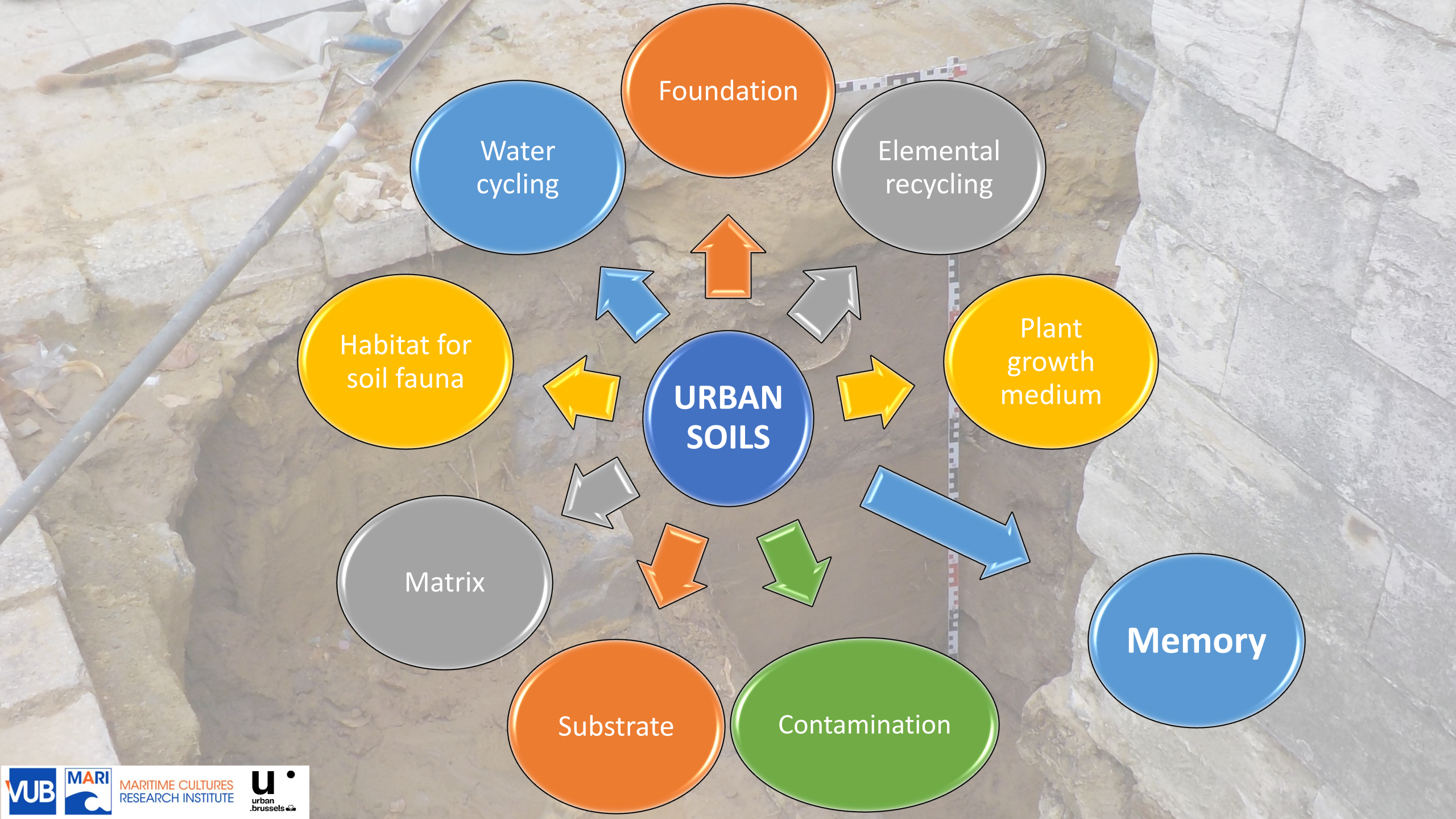


Discovering the legacy of urban soils

Examples from Brussels & Flanders (Belgium)

Yannick Devos







Why are urban soils so important for archaeologists?

Soils & Sediments = matrix where artefacts are found



Soils & Sediments =
witness of ancient activities

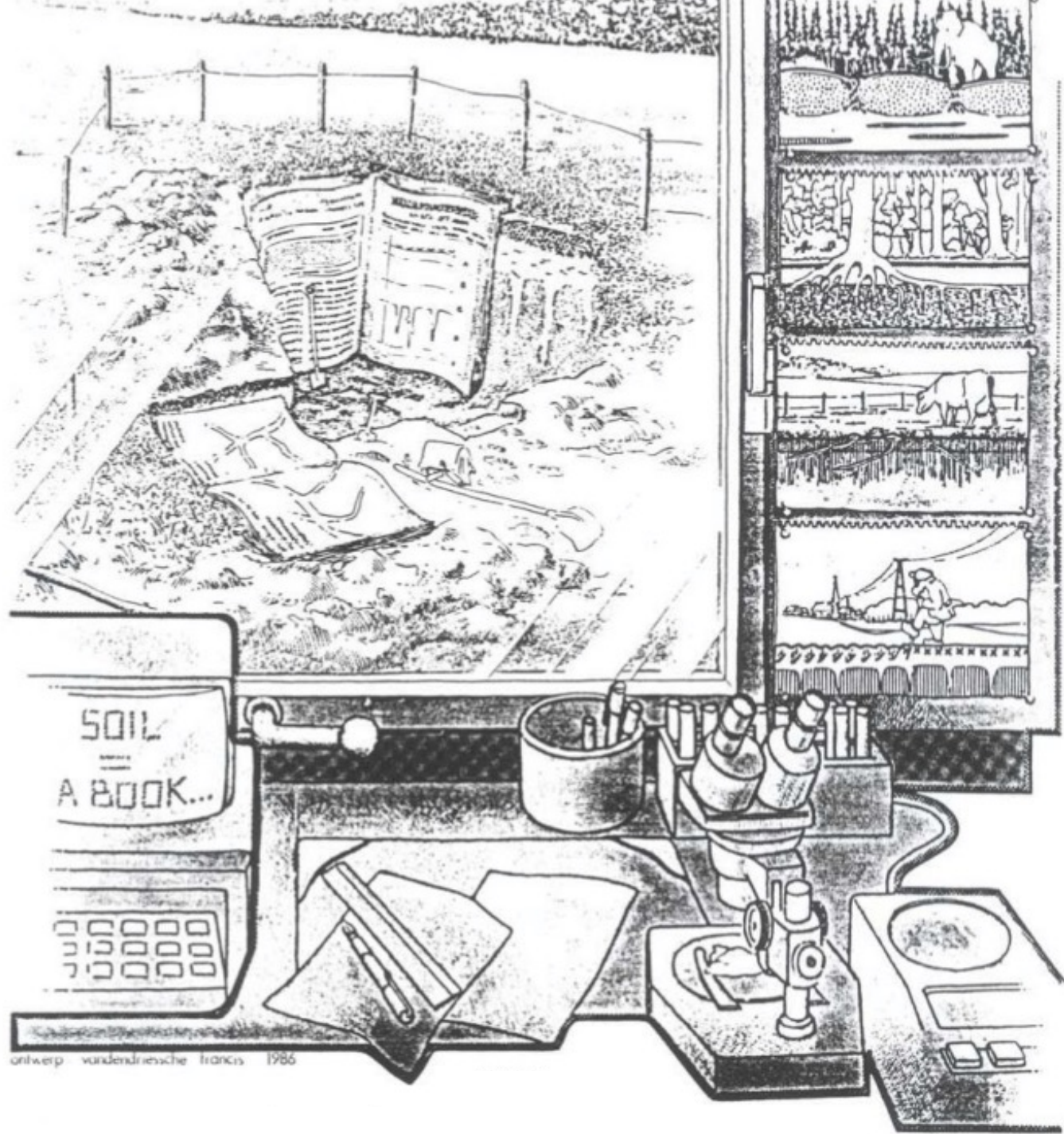


Soil & Sediments = witness of landscape evolution



Soils & Sediments = resource





ontwerp: vandendriessche francis 1986

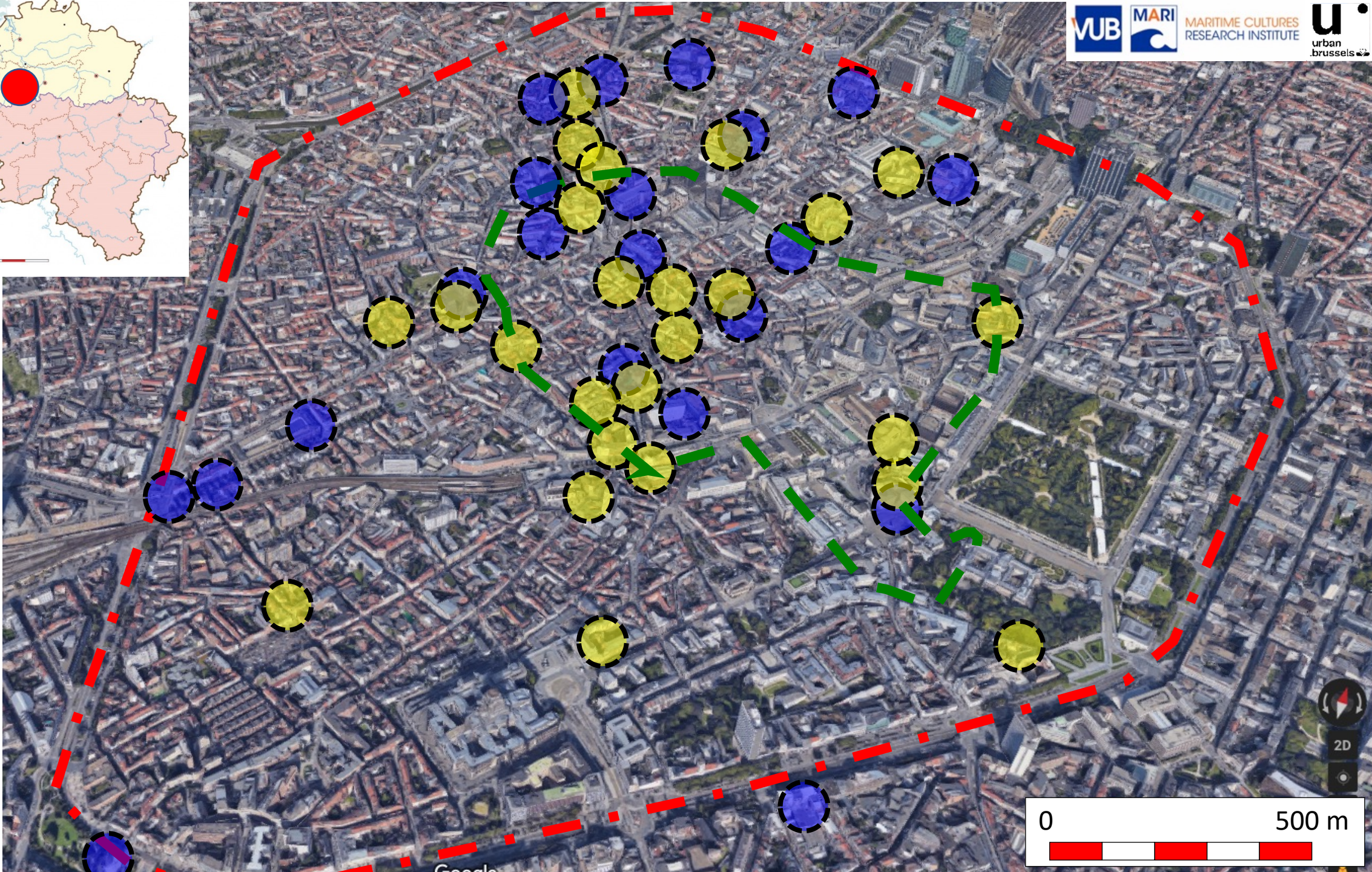
Drawing and Design: F. Vandendriessche & R. Langohr



Legend

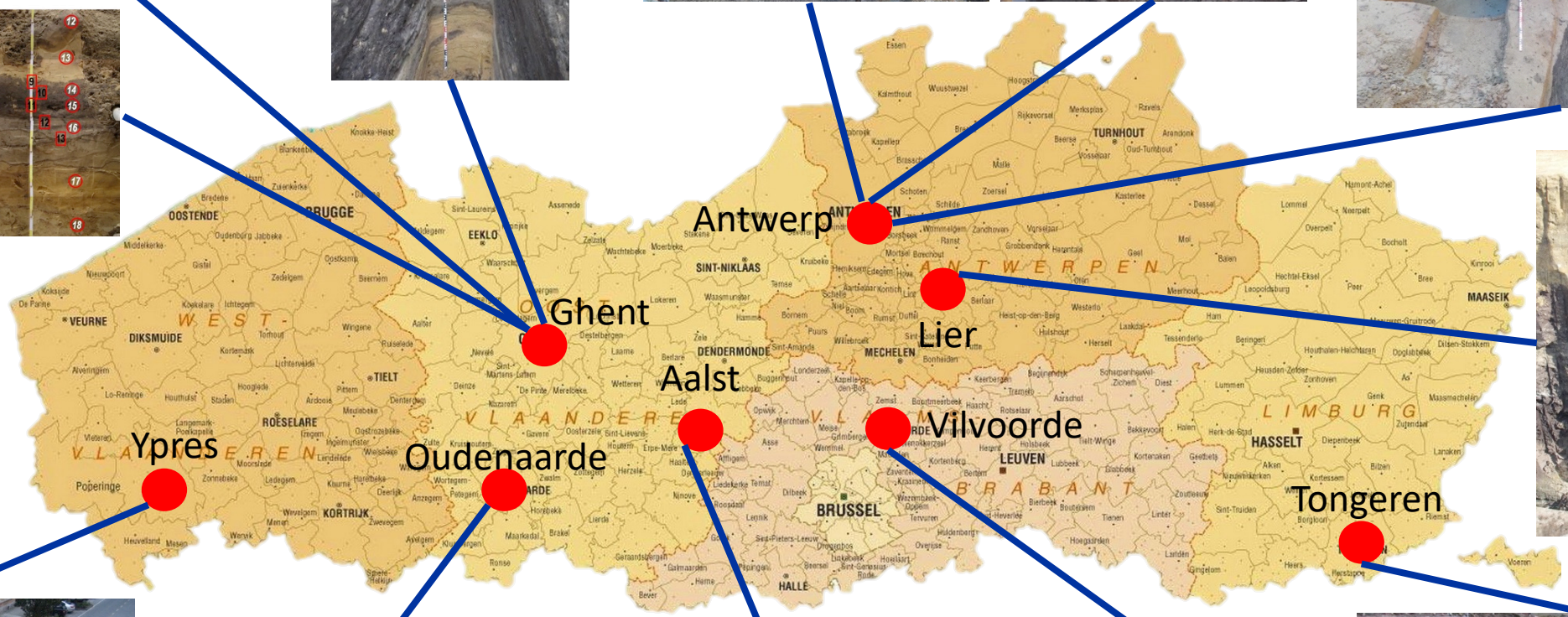
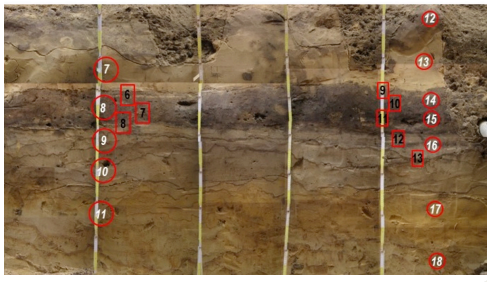
1st city wall

2nd city wall









Types of Headaches

Migraine



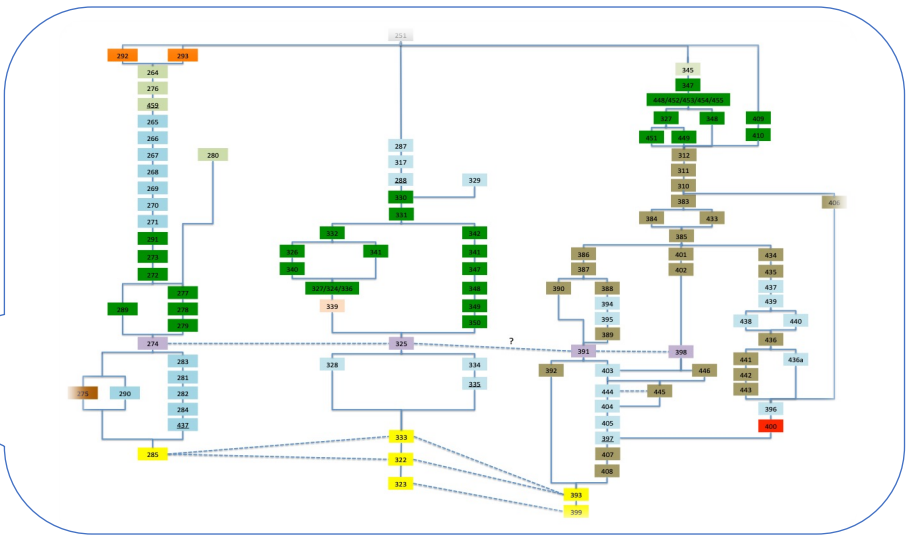
Hypertension



Stress



Urban Stratigraphy

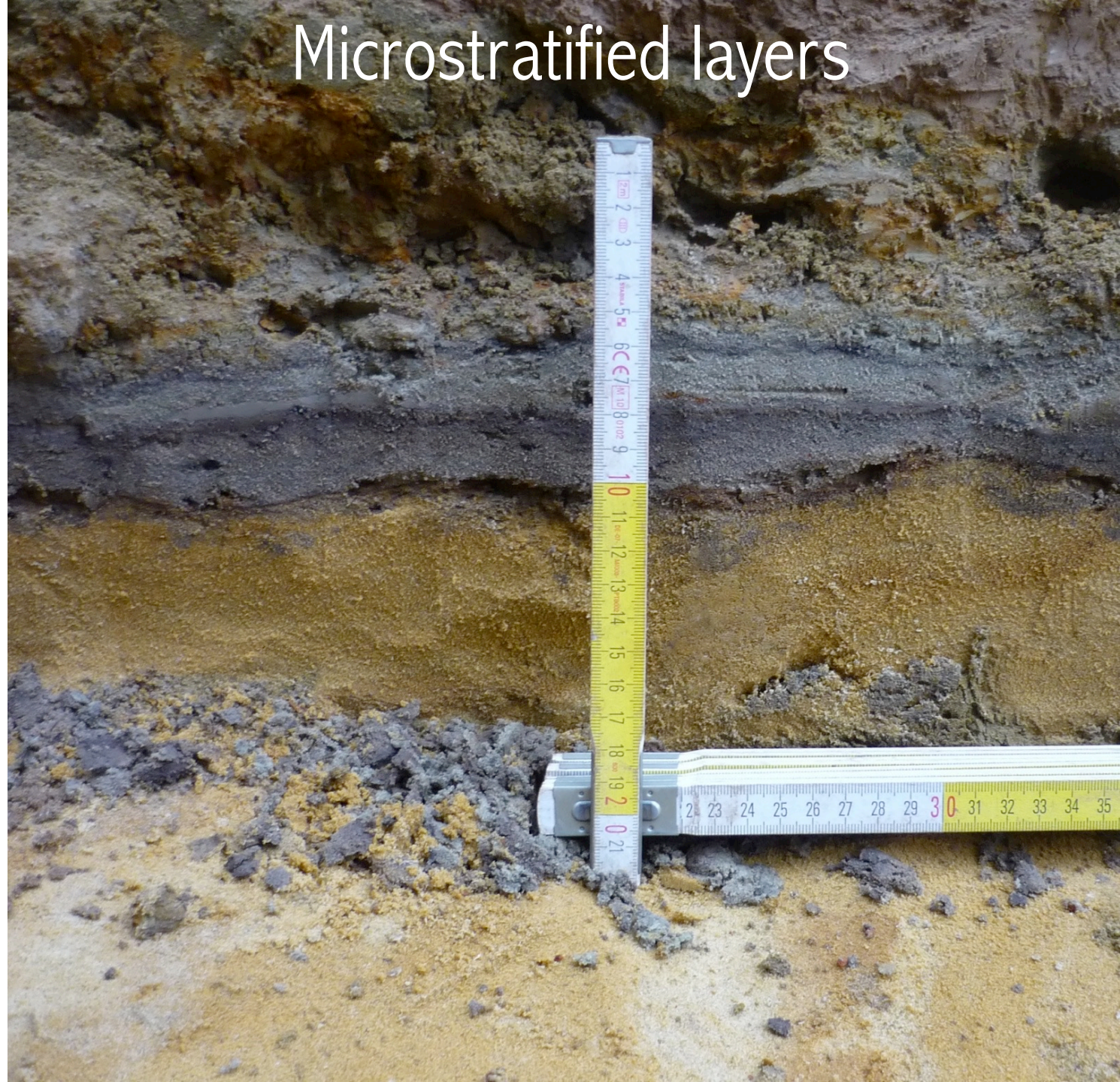


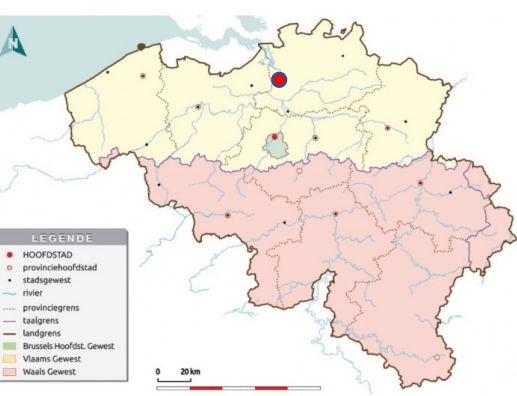
Dark Earth



vs.

Microstratified layers





earthen rampart

dwelling(s)

wattle (s413)

well/pit

trackway





s391 = 920-1040 AD

s411 = 915-980 AD
s413 = 900-970 AD

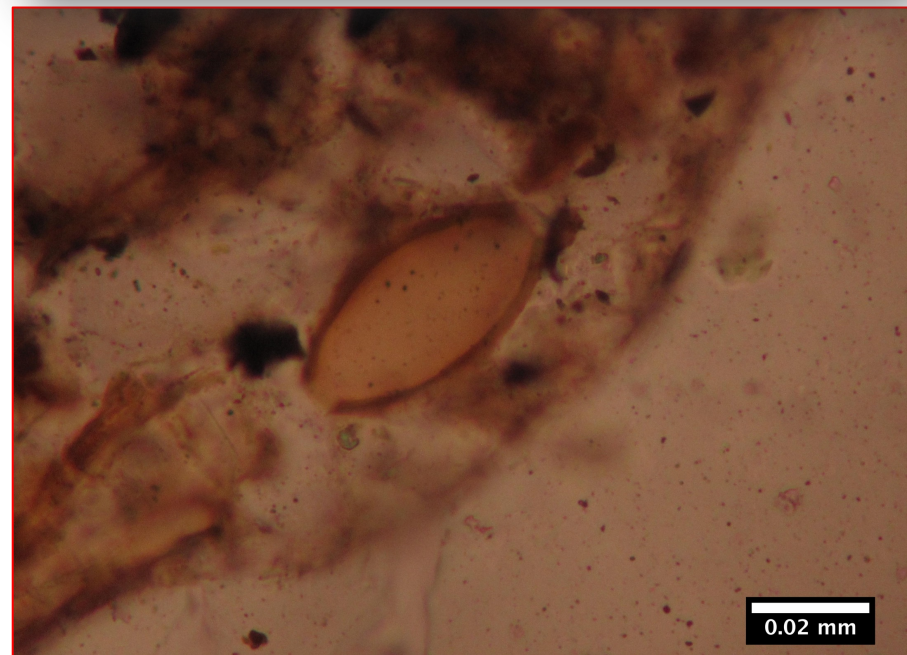
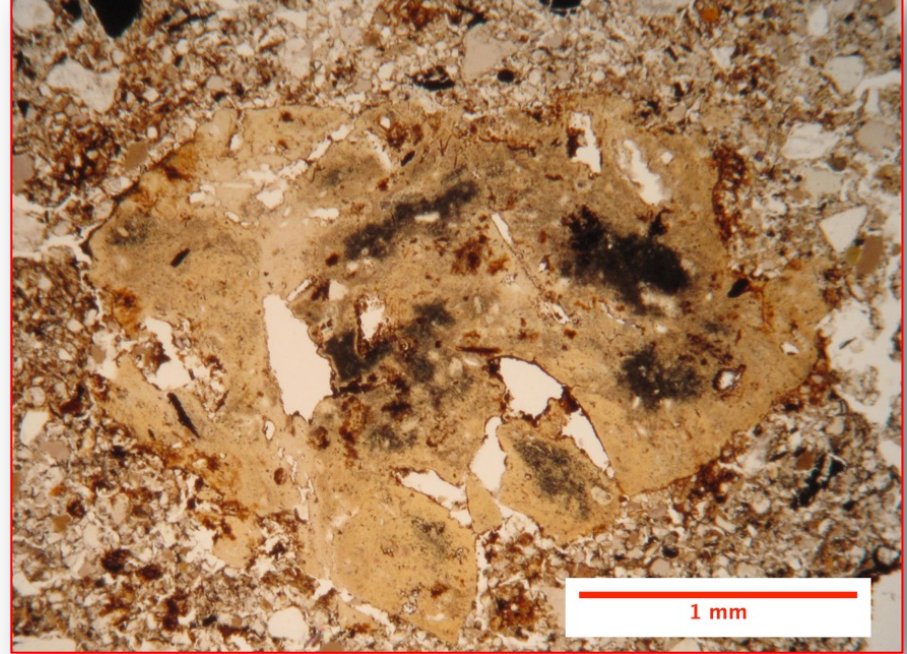
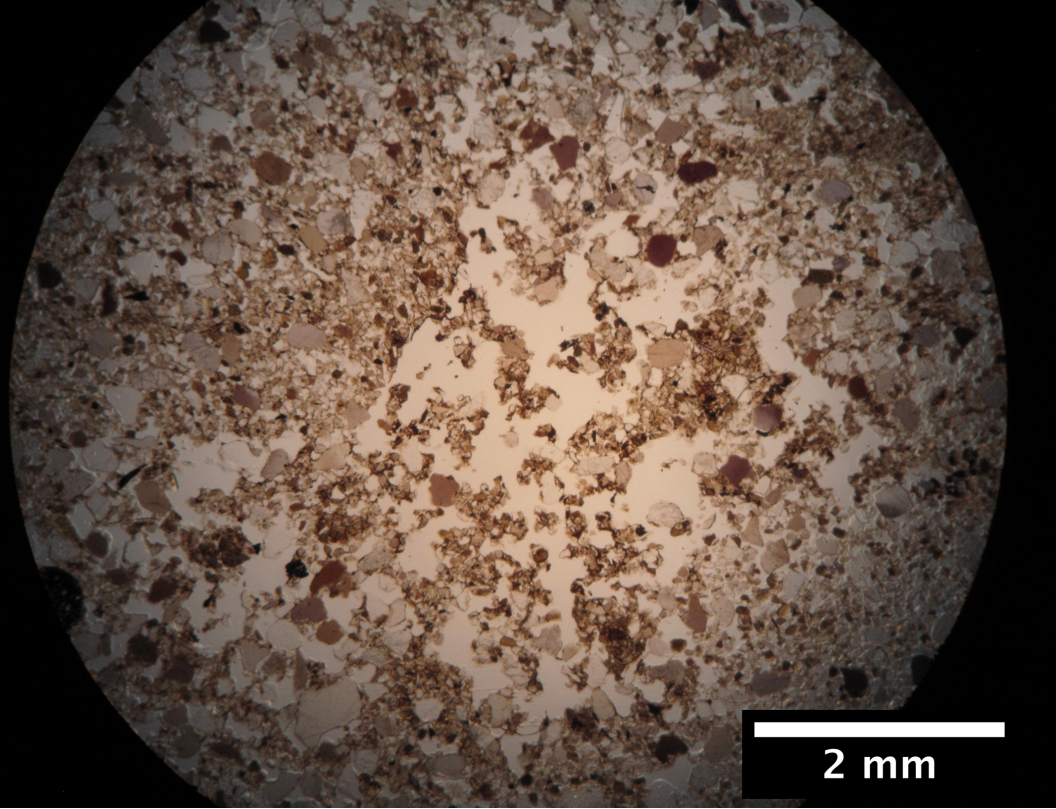
s1066 = 885-950 AD
s987 = 890-955 AD

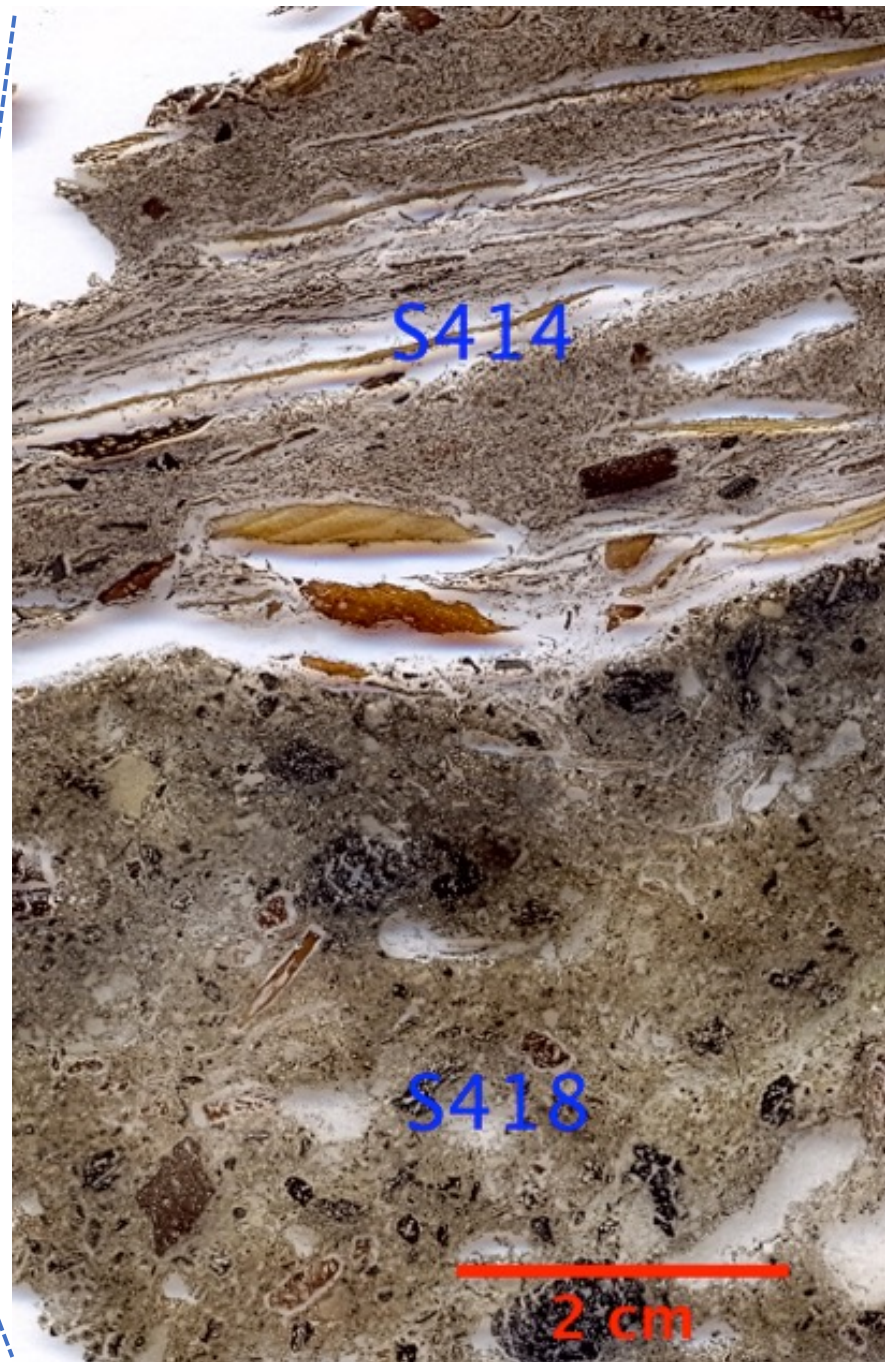
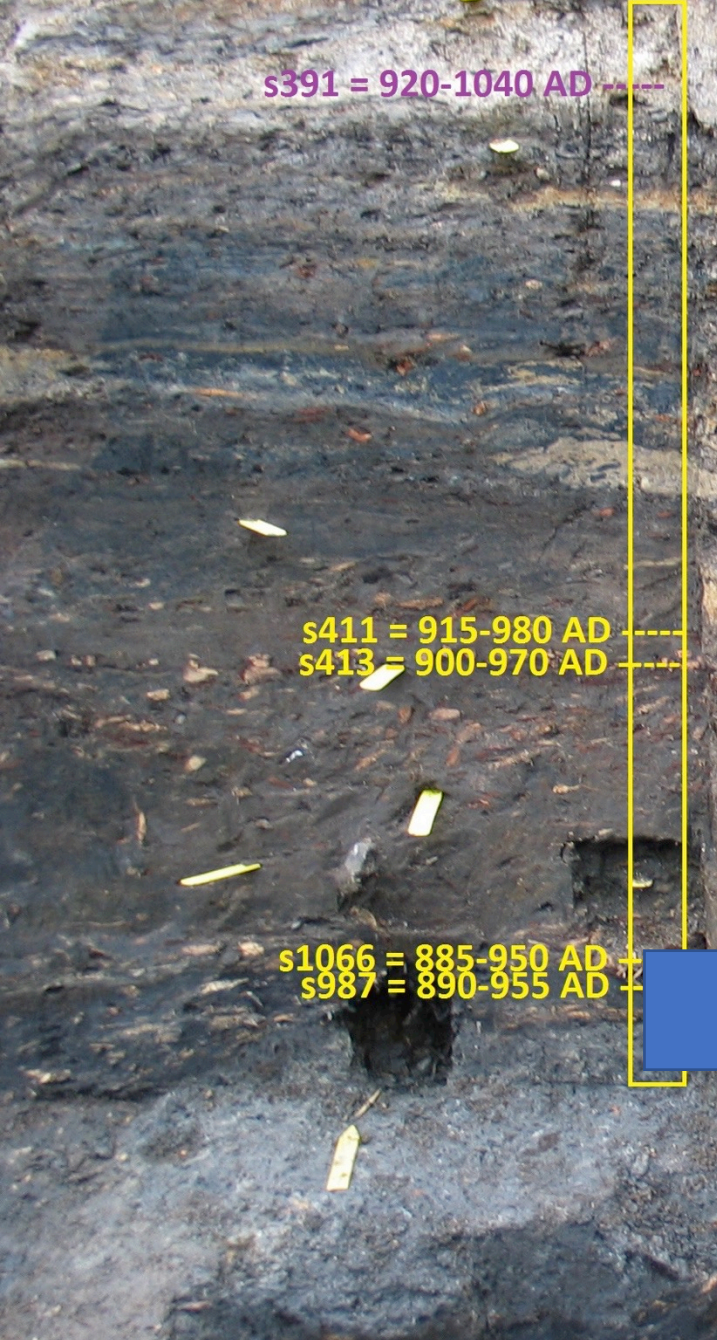


Micromorphology

- Micromorphology is the study of soils and sediments in their **undisturbed state** at the microscopic level.







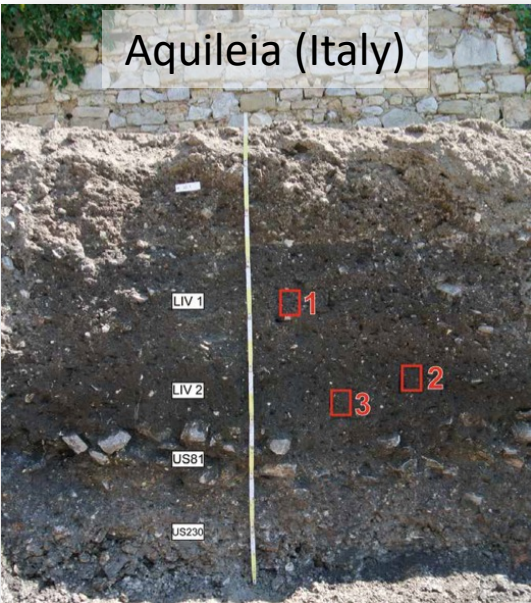


What is Urban Dark Earth ?

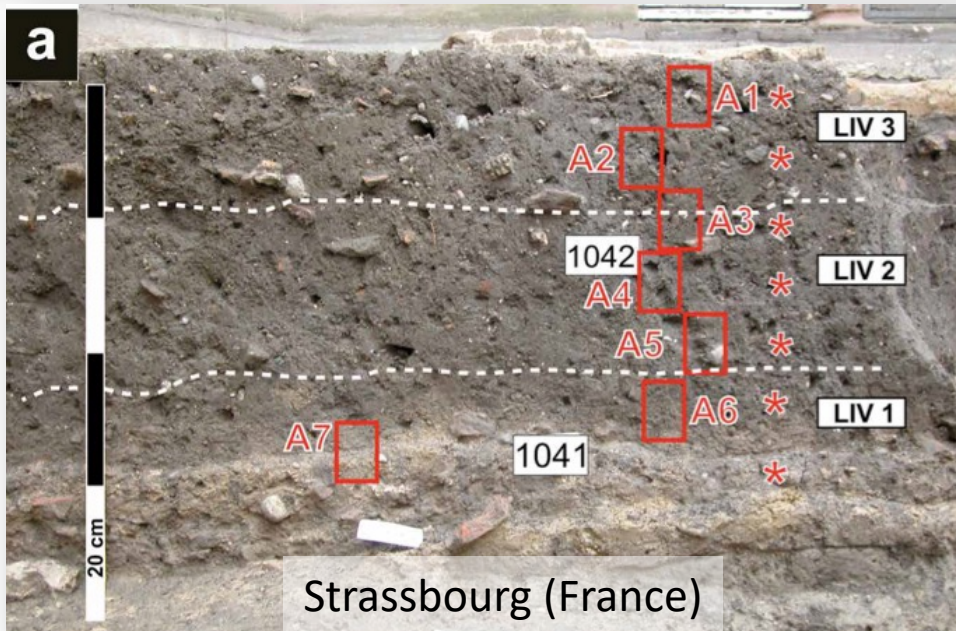
- an expression used in urban archaeology to designate homogeneous thick dark coloured units that are often rich in human materials and that cover large surfaces



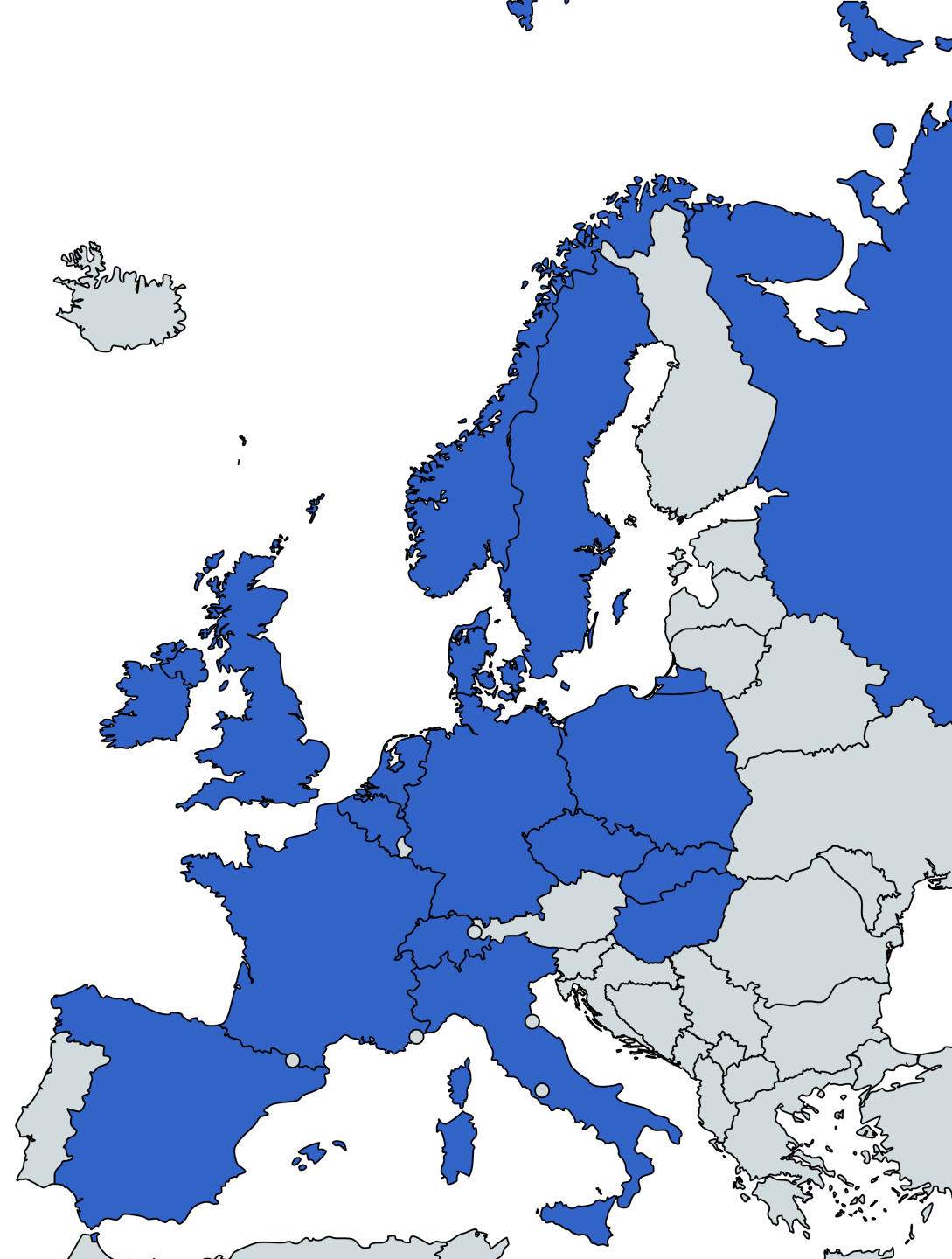
Aquileia (Italy)

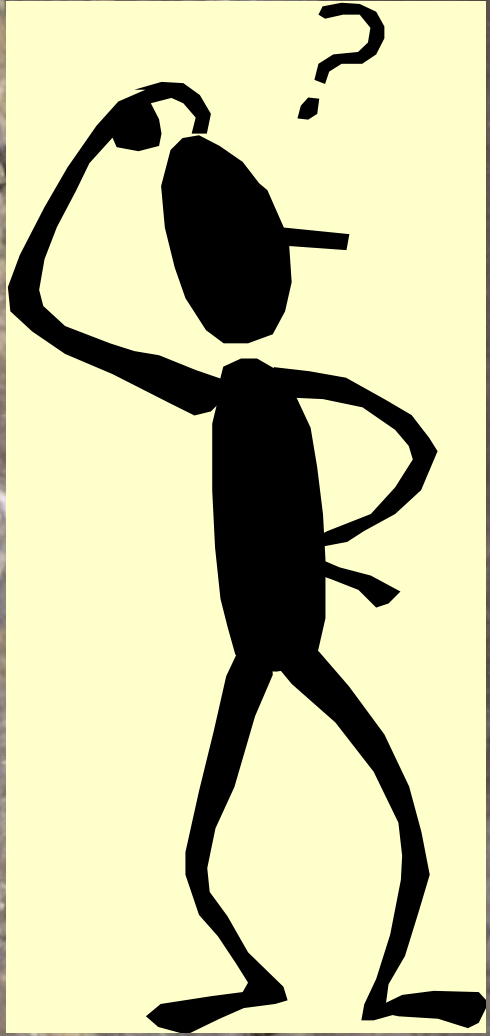


London (UK)



Strassbourg (France)







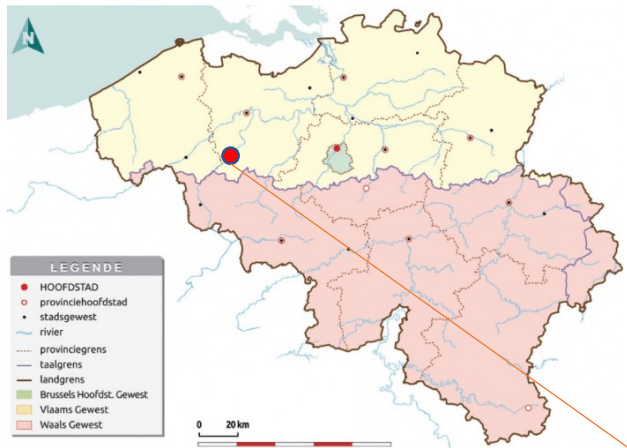


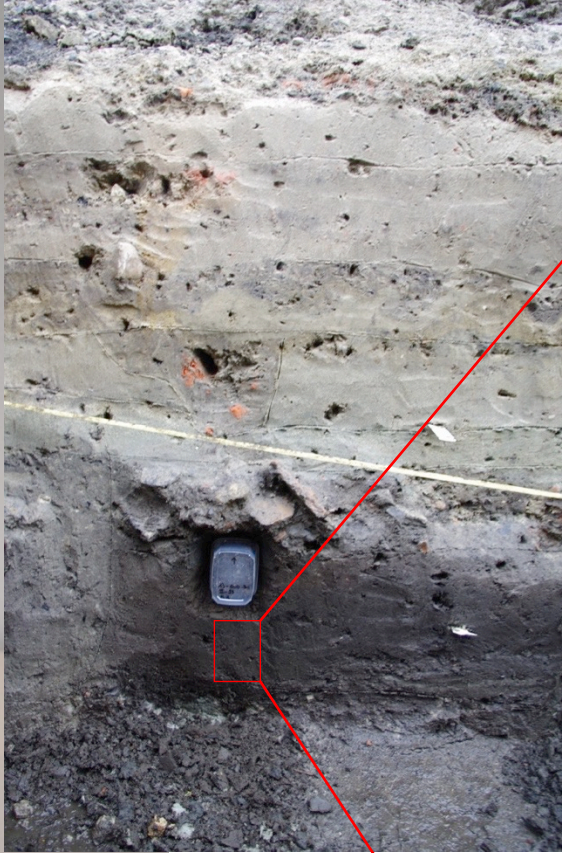
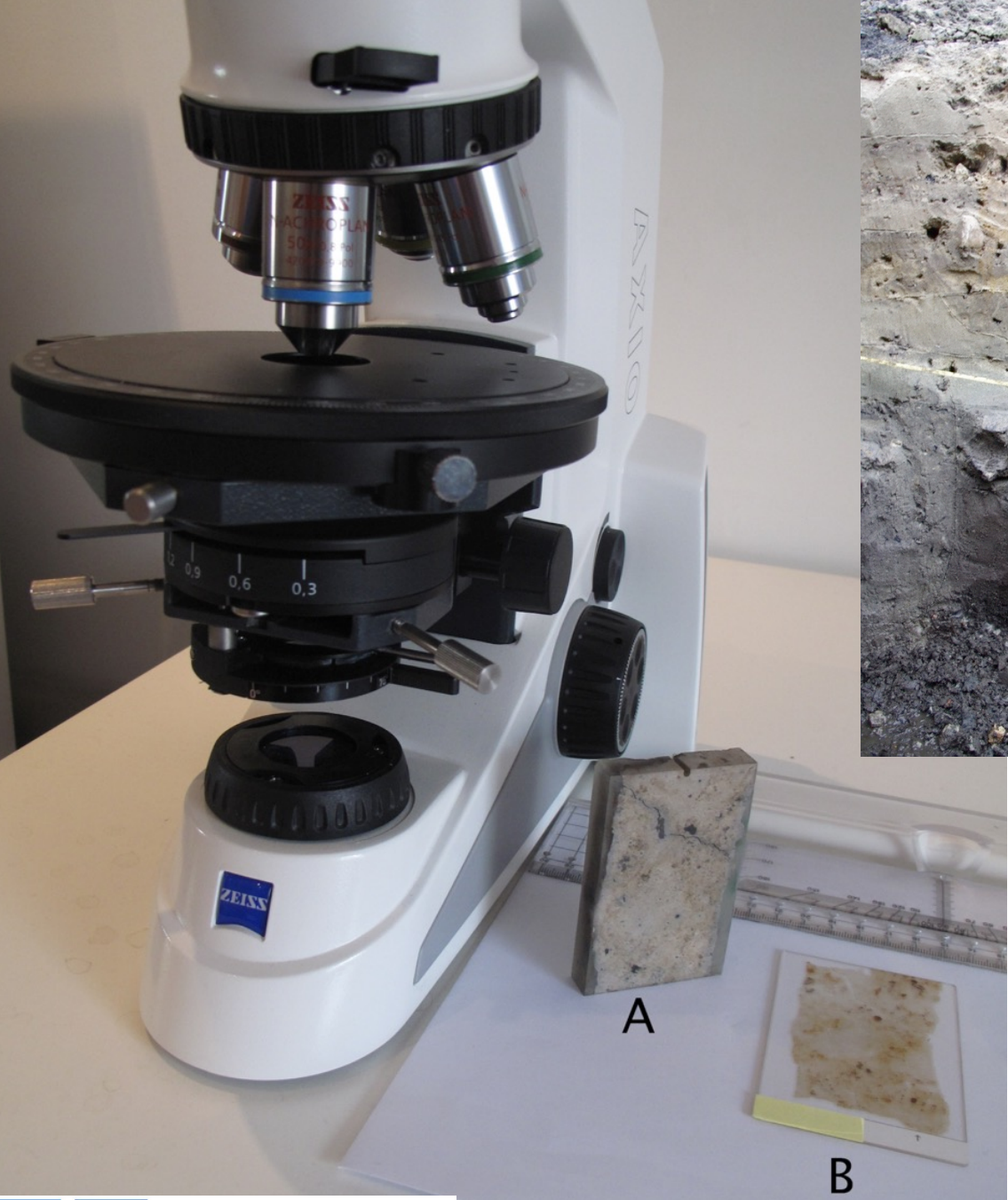


CRIME SCENE INV

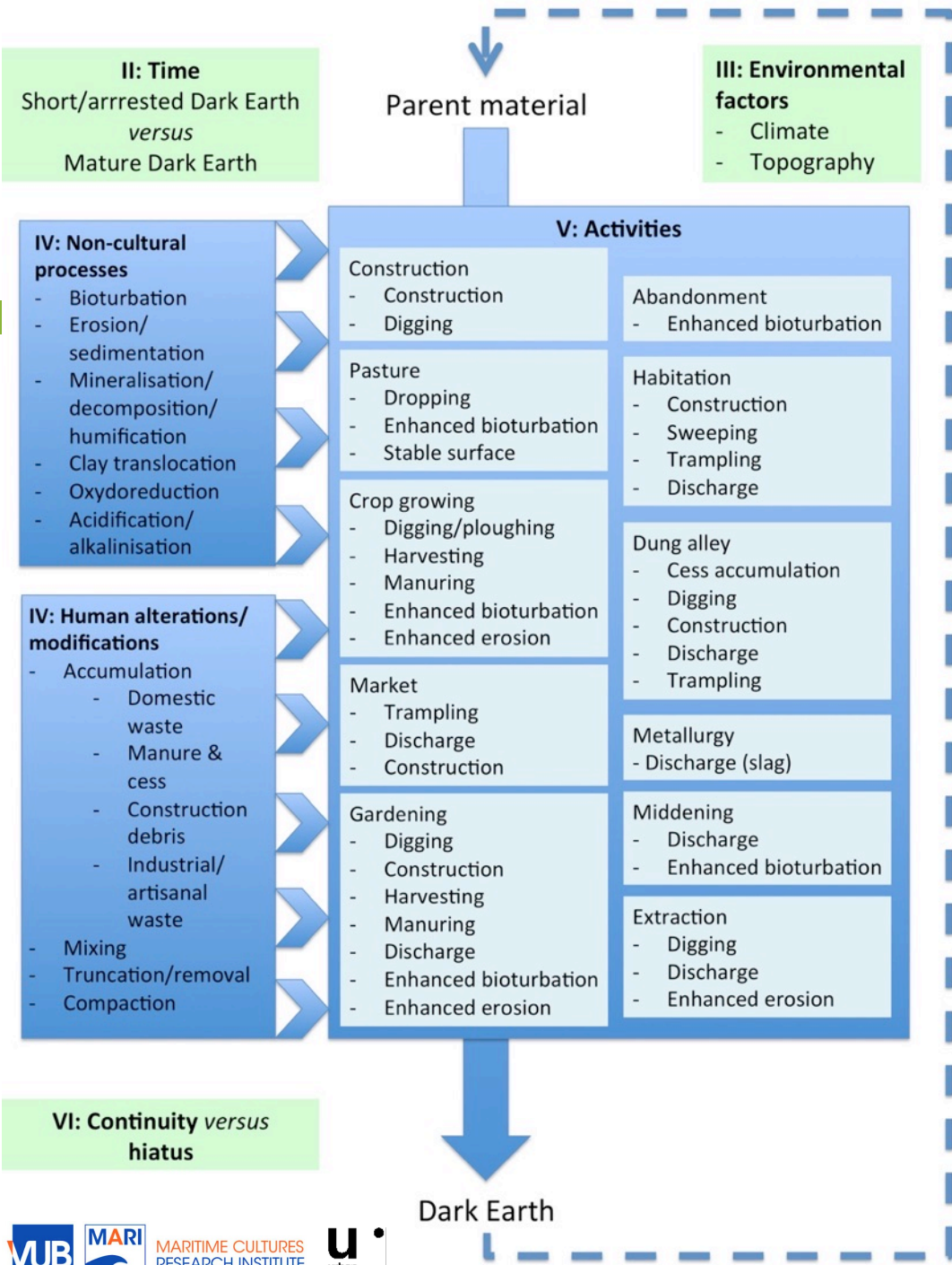


Oudenaarde

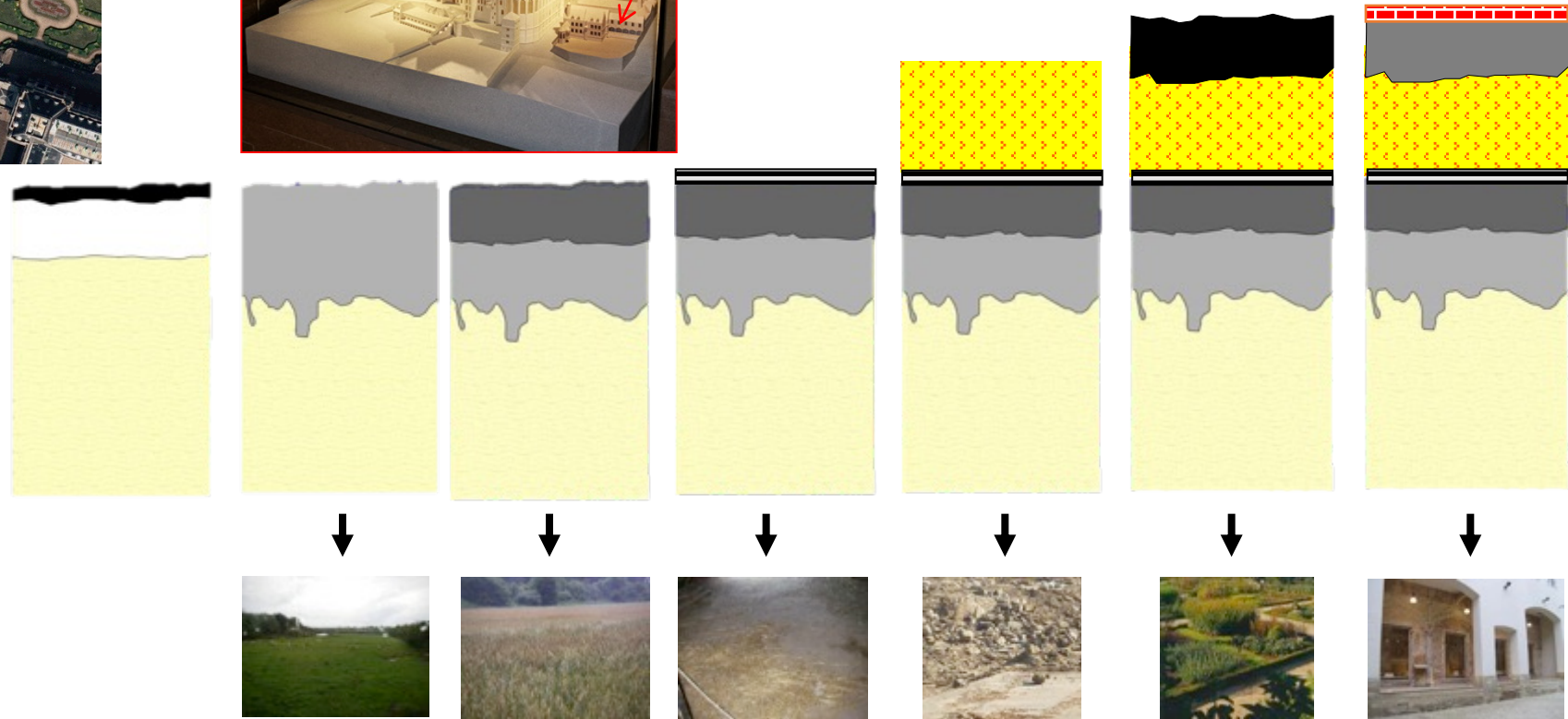
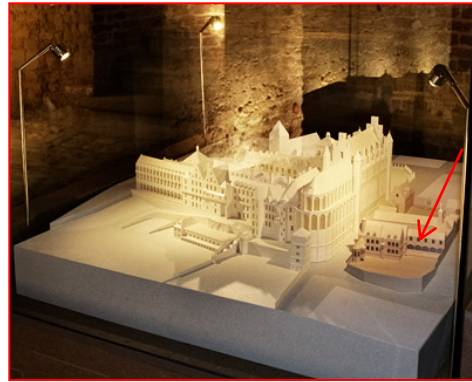
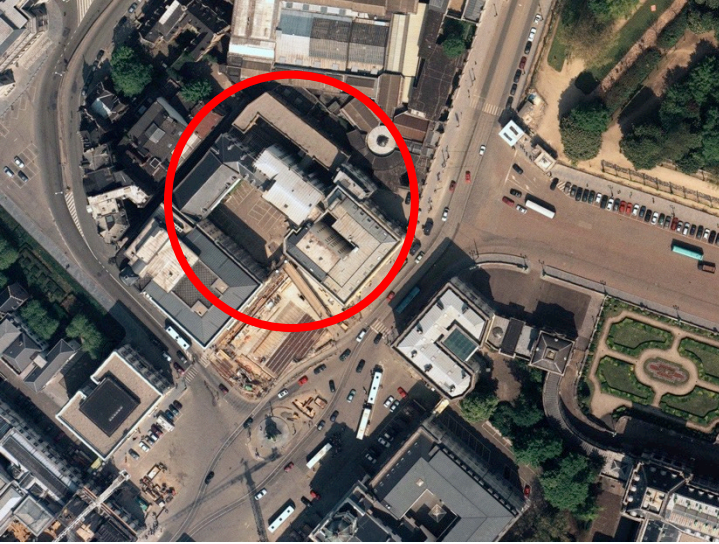


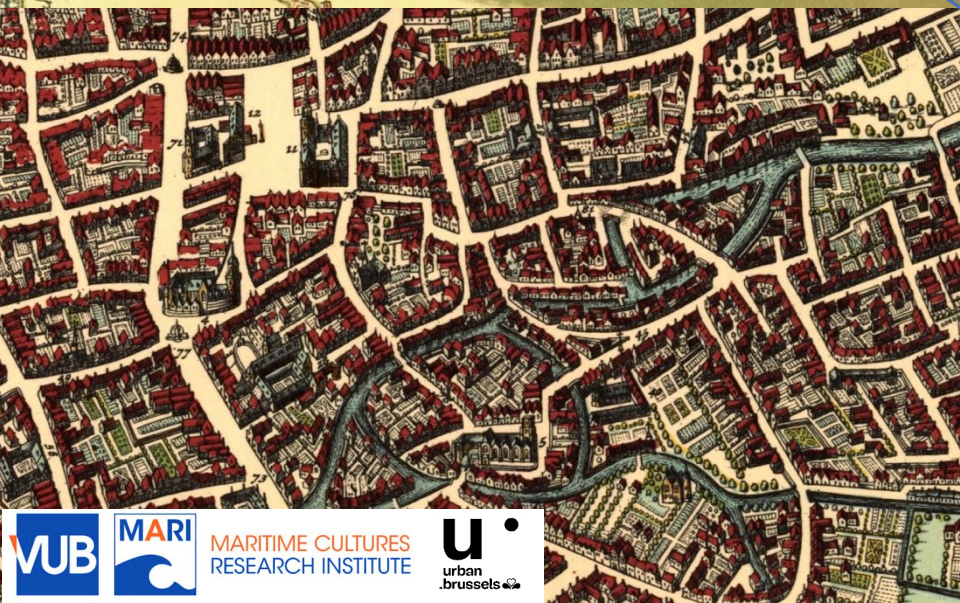
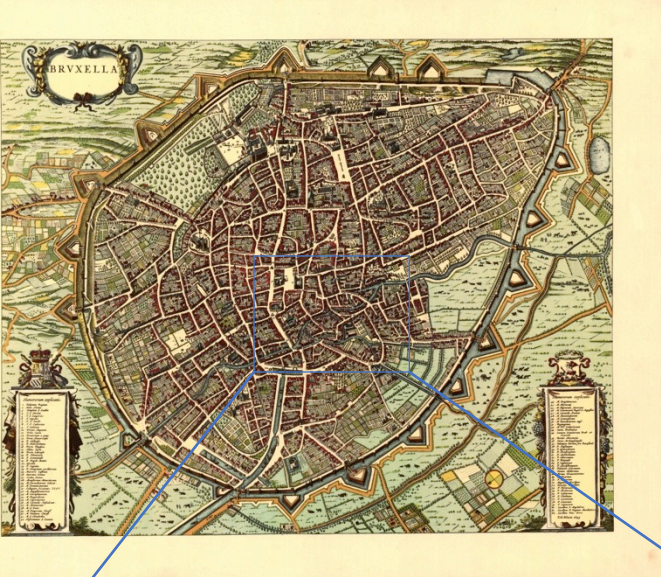
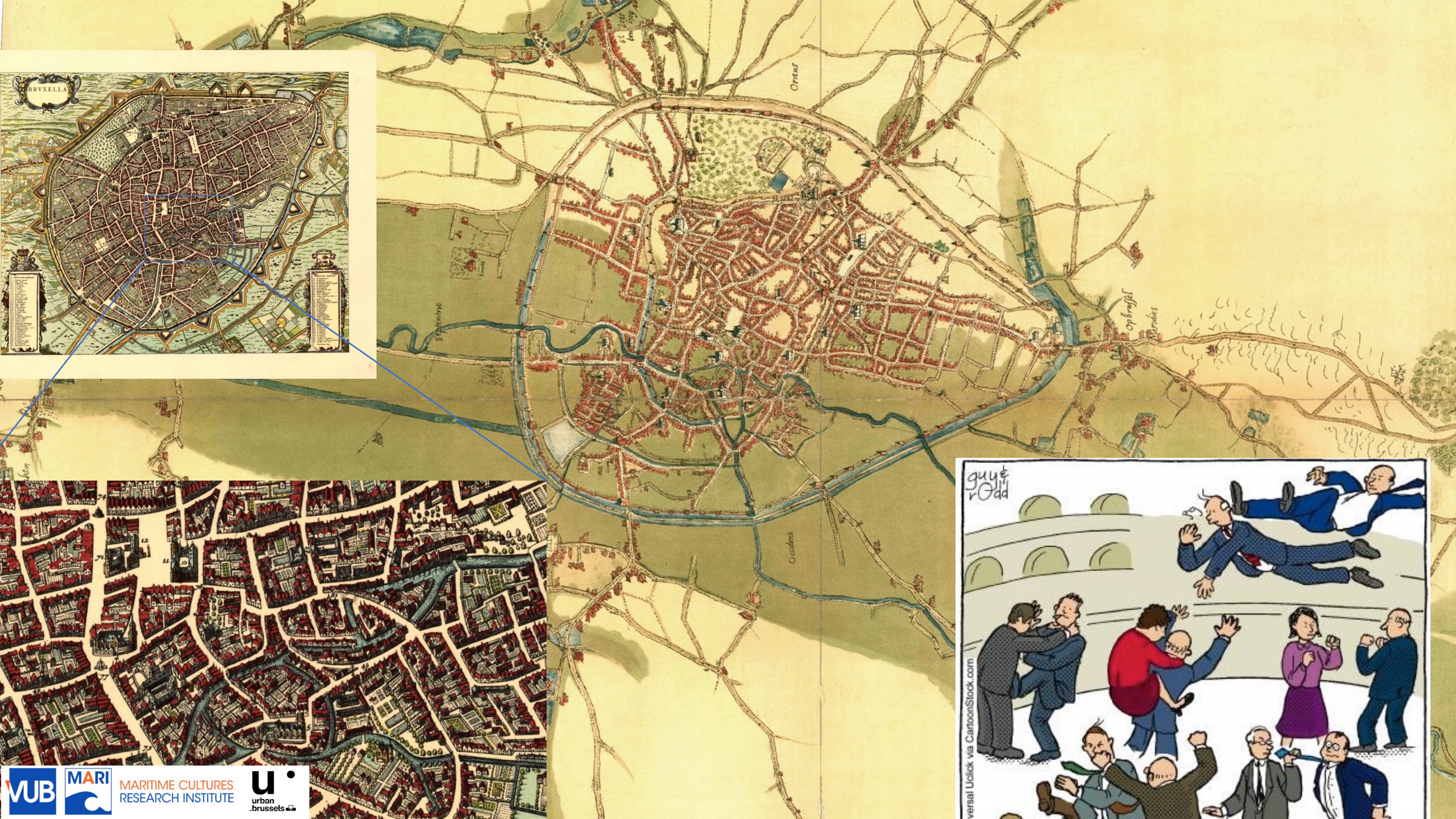




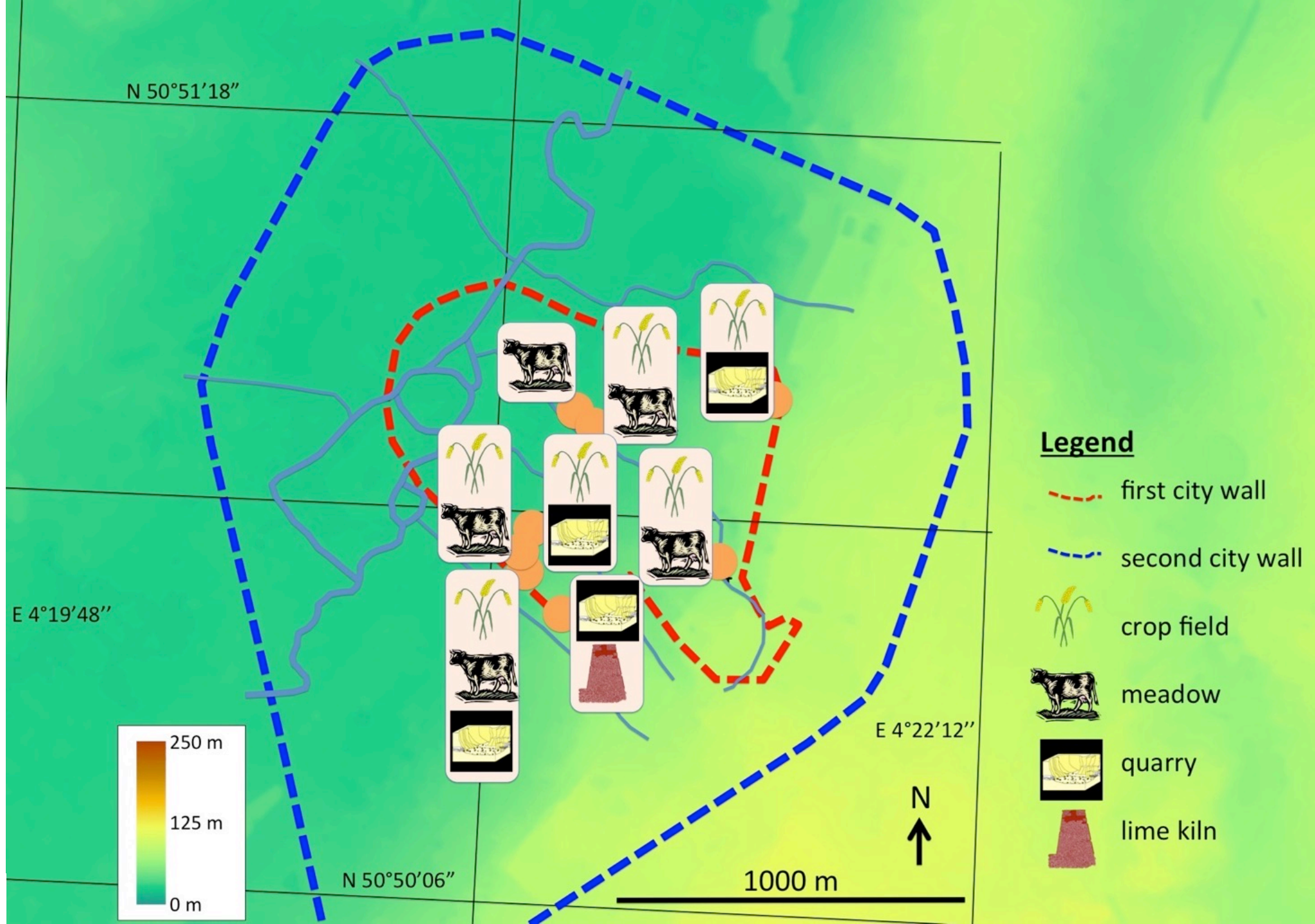


Site biographies: Court of Hoogstraeten





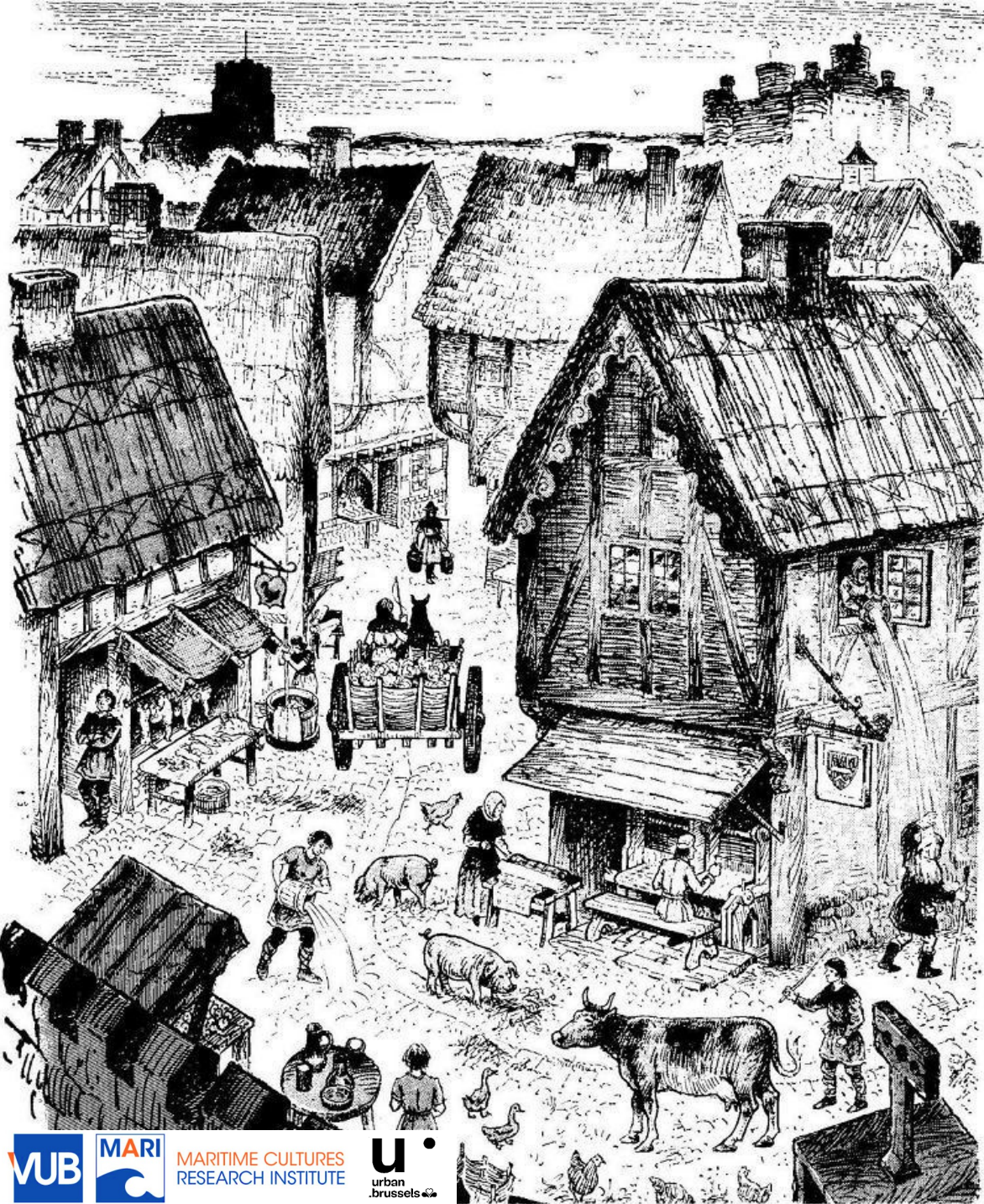
10th-12th
century
AD



- Legend**
- first city wall
 - second city wall
 - crop field
 - meadow
 - quarry
 - lime kiln

14th-16th
century
AD

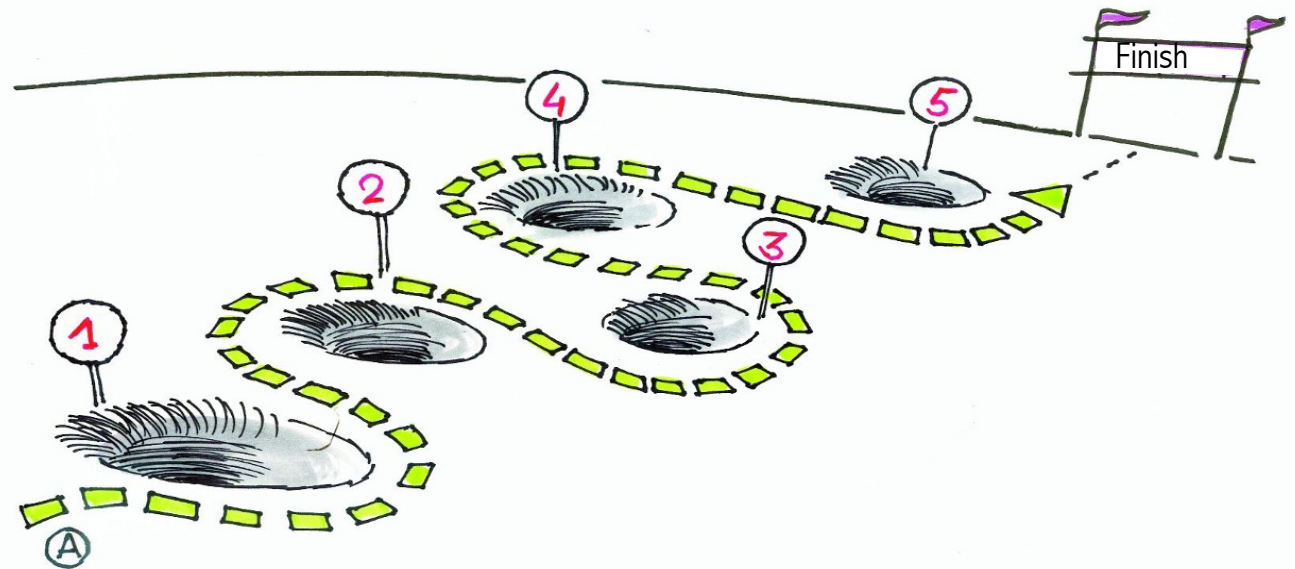




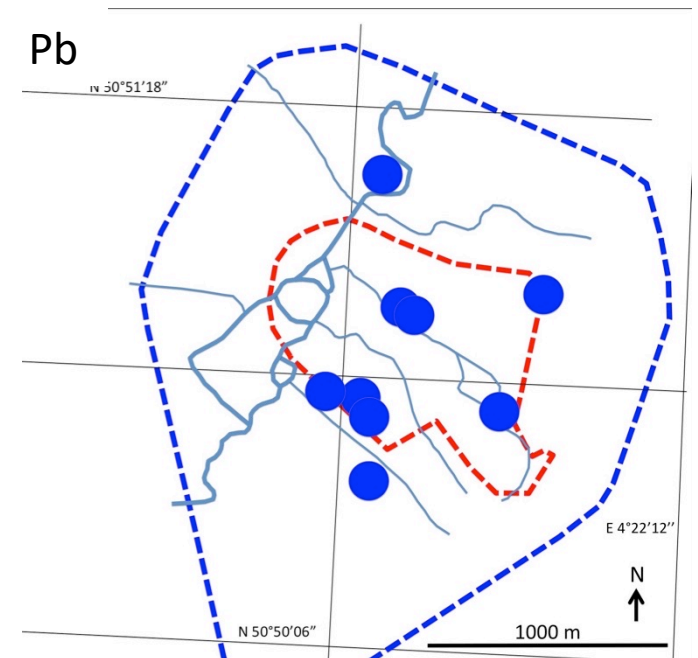
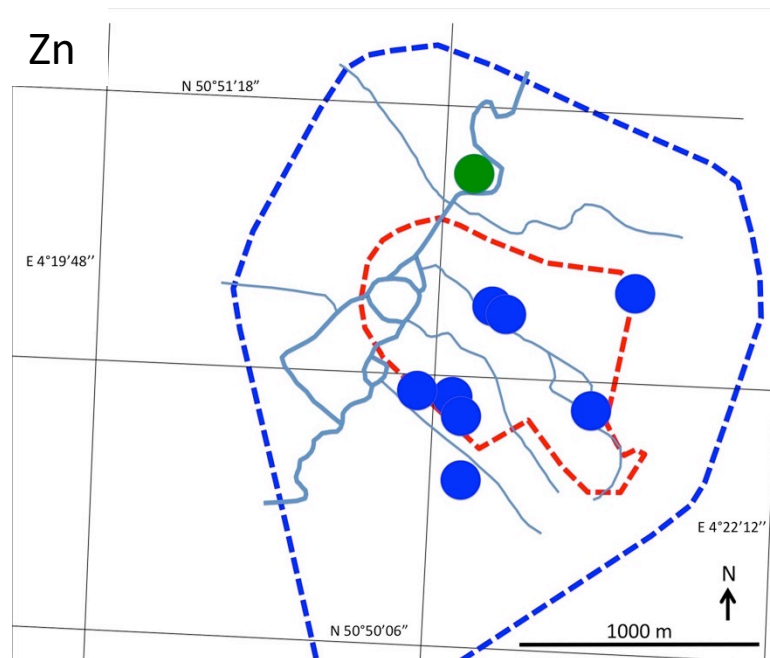
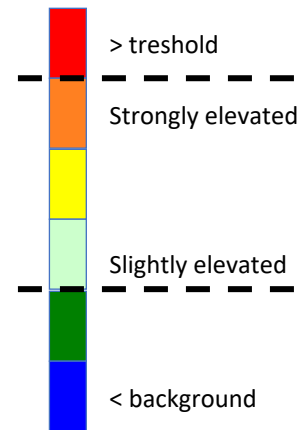
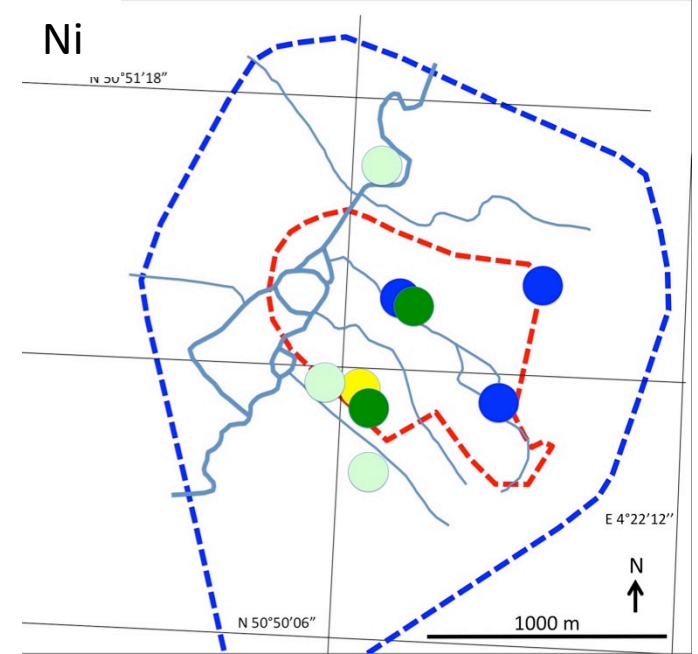
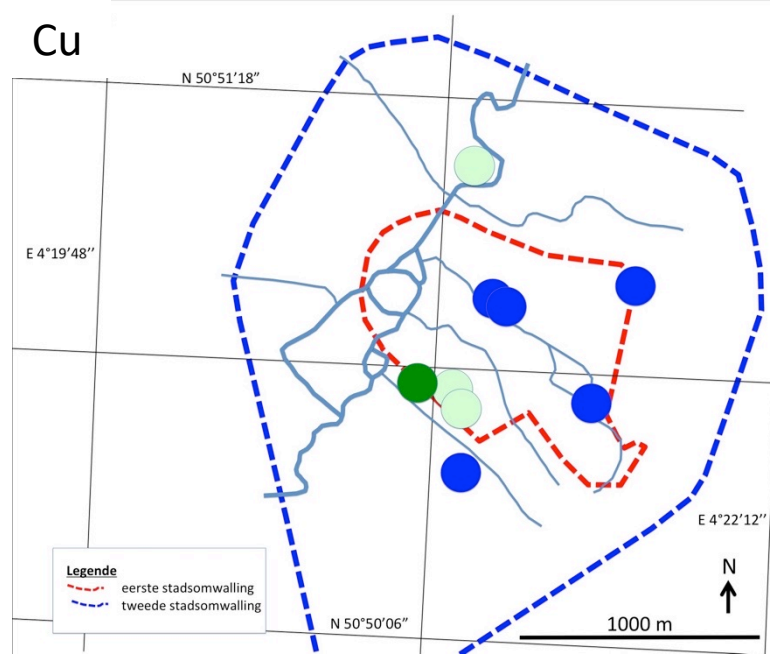
Ancient (soil) pollution

How to quantify?

- Background noise
- Taphonomical study

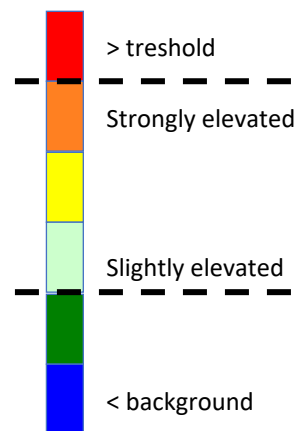
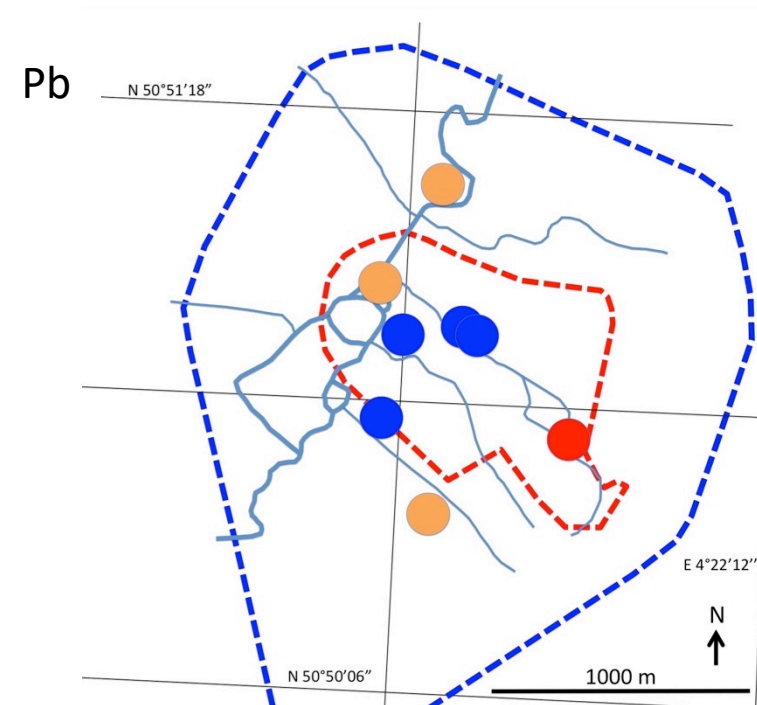
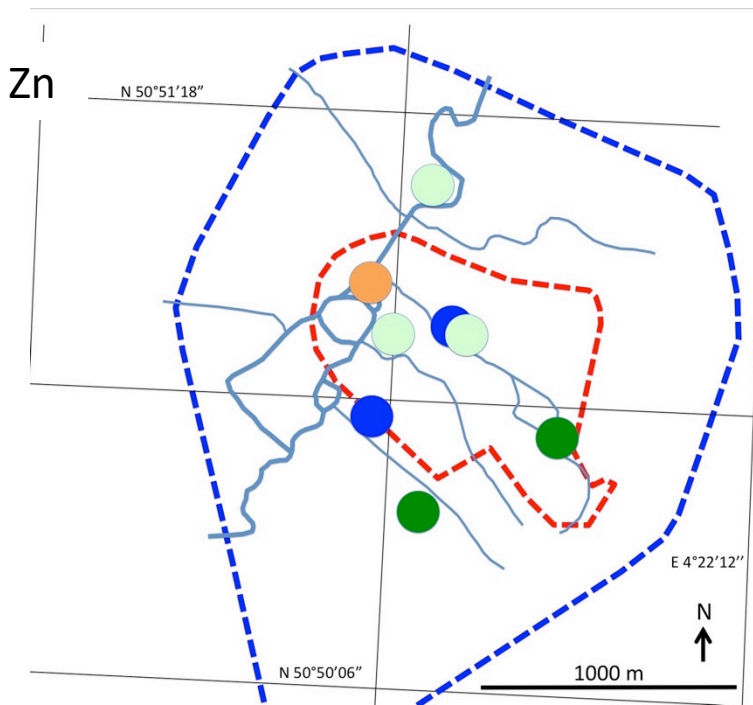
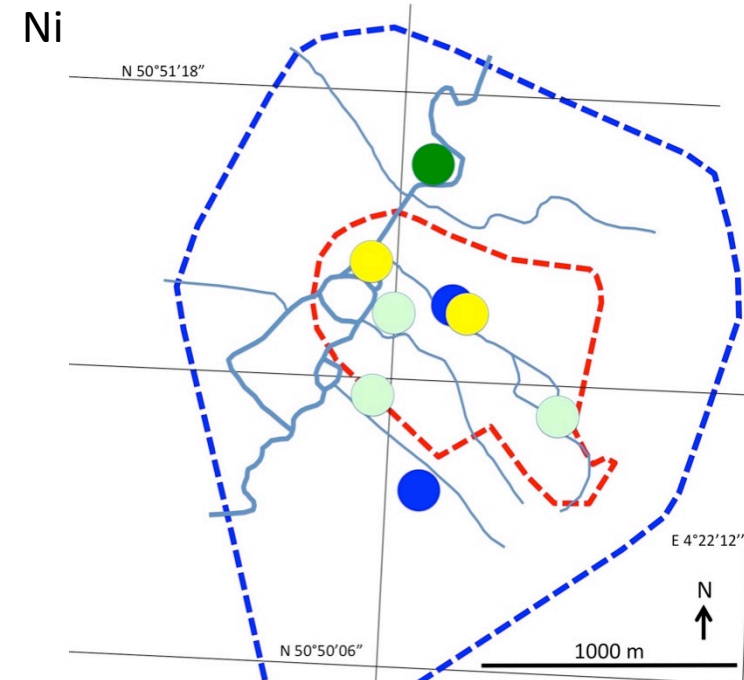
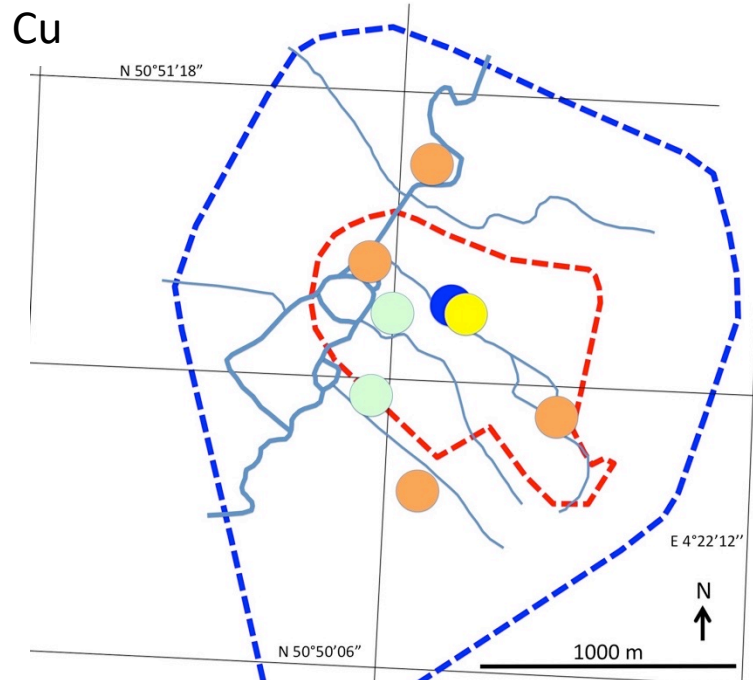


Heavy metal pollution 10th-13th century AD



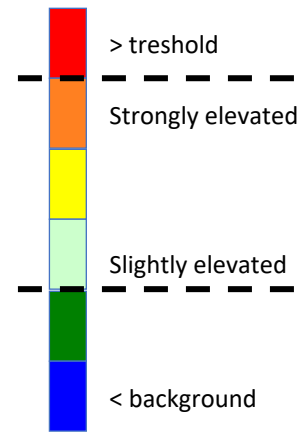
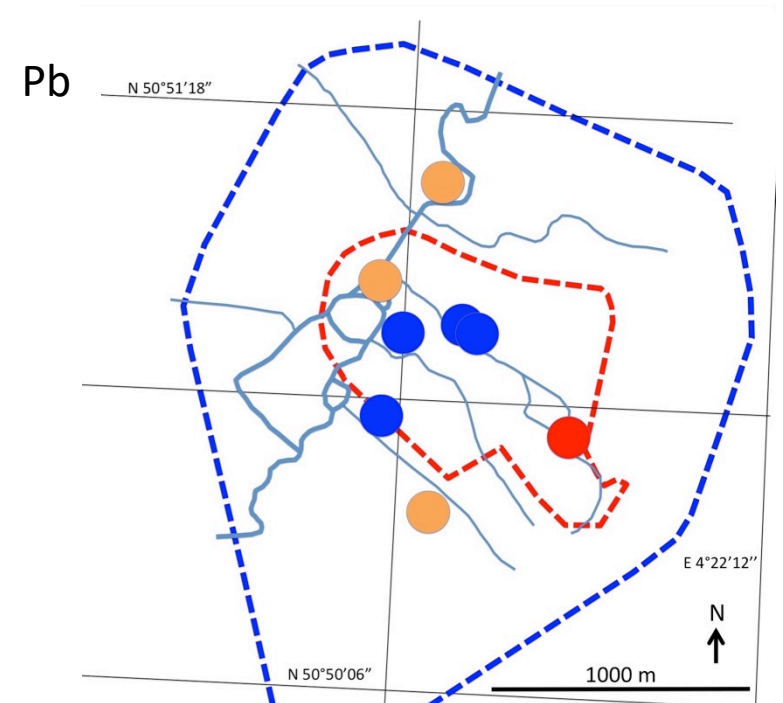
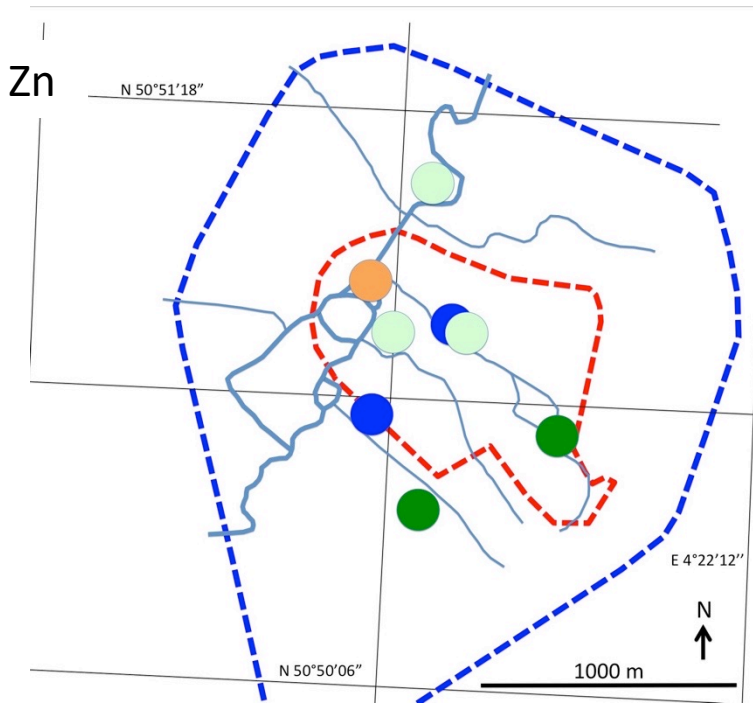
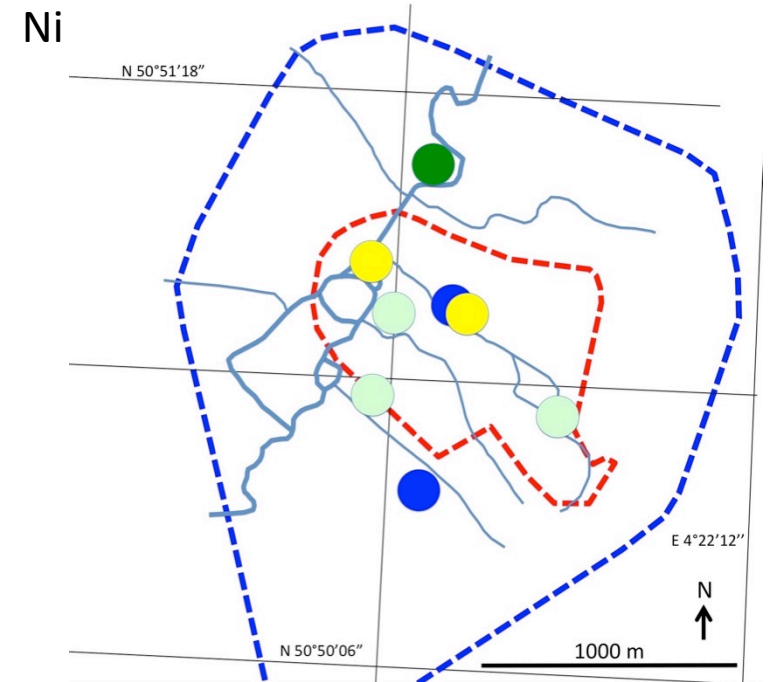
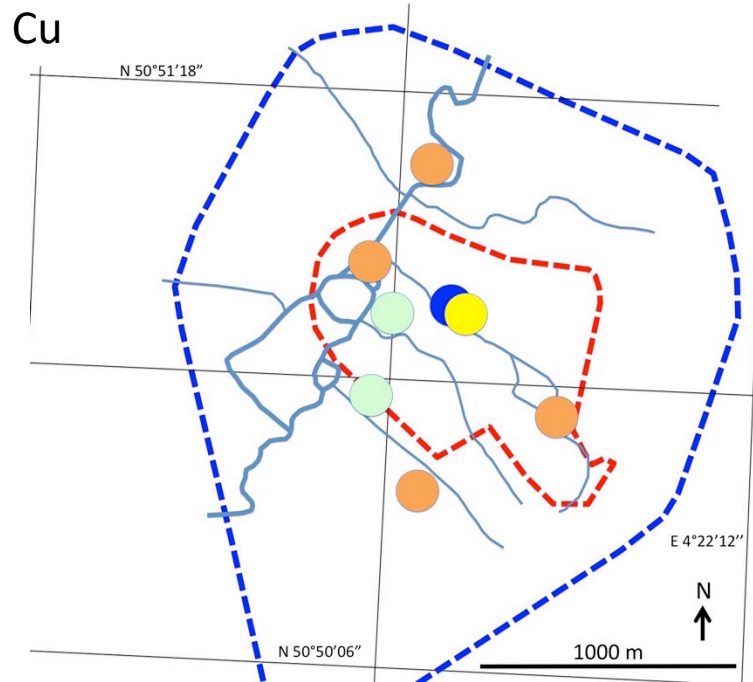


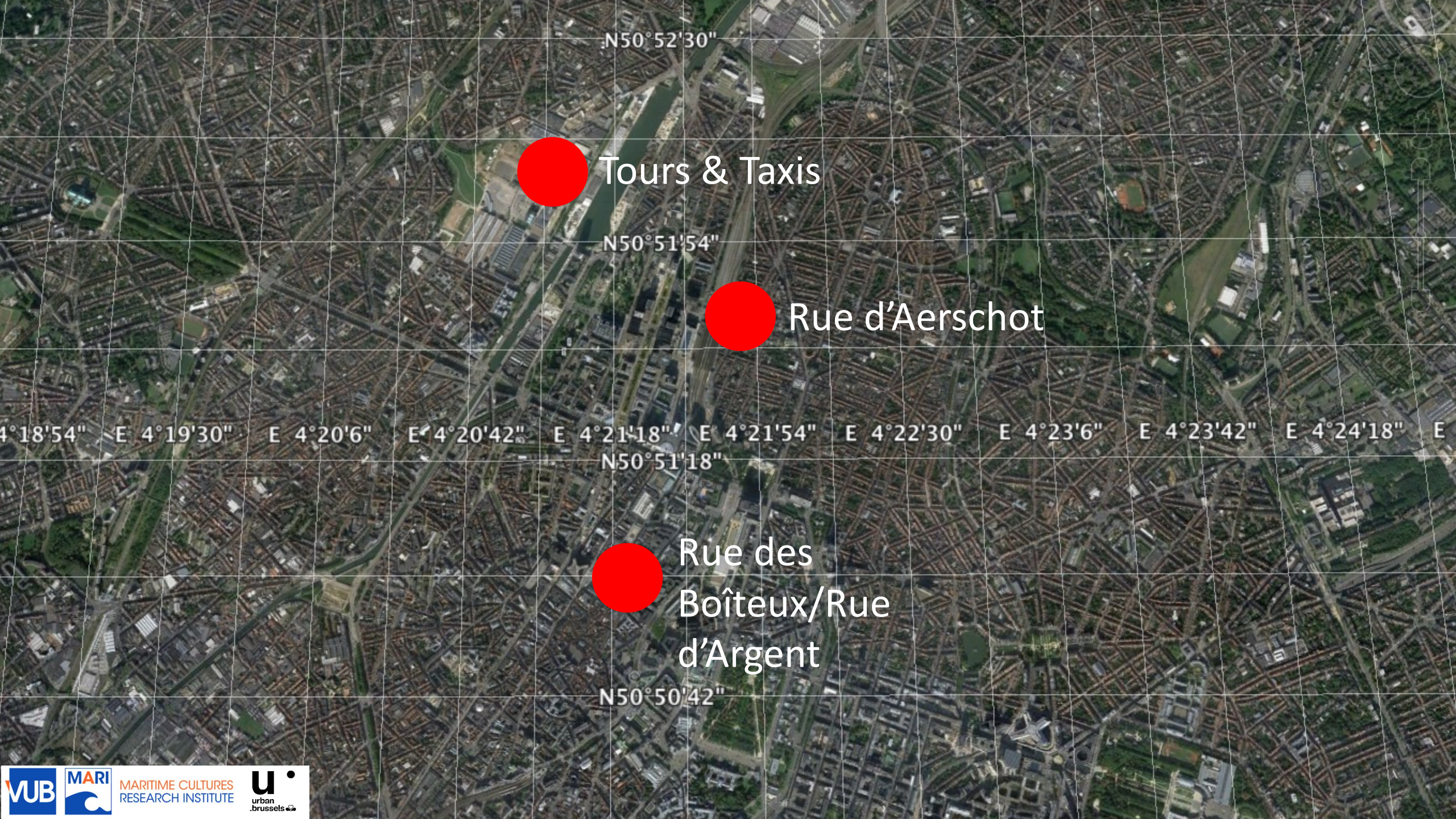
Heavy metal pollution 14th-16th century AD





Heavy metal pollution 14th-16th century AD





N50°52'30"



Tours & Taxis

N50°51'54"



Rue d'Aerschot

E 4°18'54" E 4°19'30" E 4°20'6" E 4°20'42" E 4°21'18" E 4°21'54" E 4°22'30" E 4°23'6" E 4°23'42" E 4°24'18" E

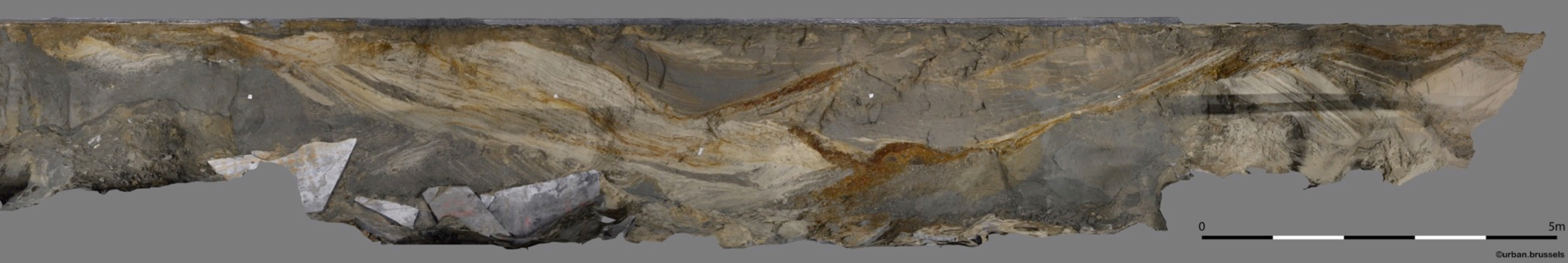
N50°51'18"



Rue des
Boîteux/Rue
d'Argent

N50°50'42"

Rue d'Aerschot



The Senne river in glacial times: a braided river





LES ROMAINS DE ROMEINEN

DE TOUR & TAXIS - VAN THURN & TAXIS

9/12/2016 - 28/02/2017

HALLES SAINT-GÉRY - SINT-GORIKSHALLEN

be roman
be heritage
be.brussels

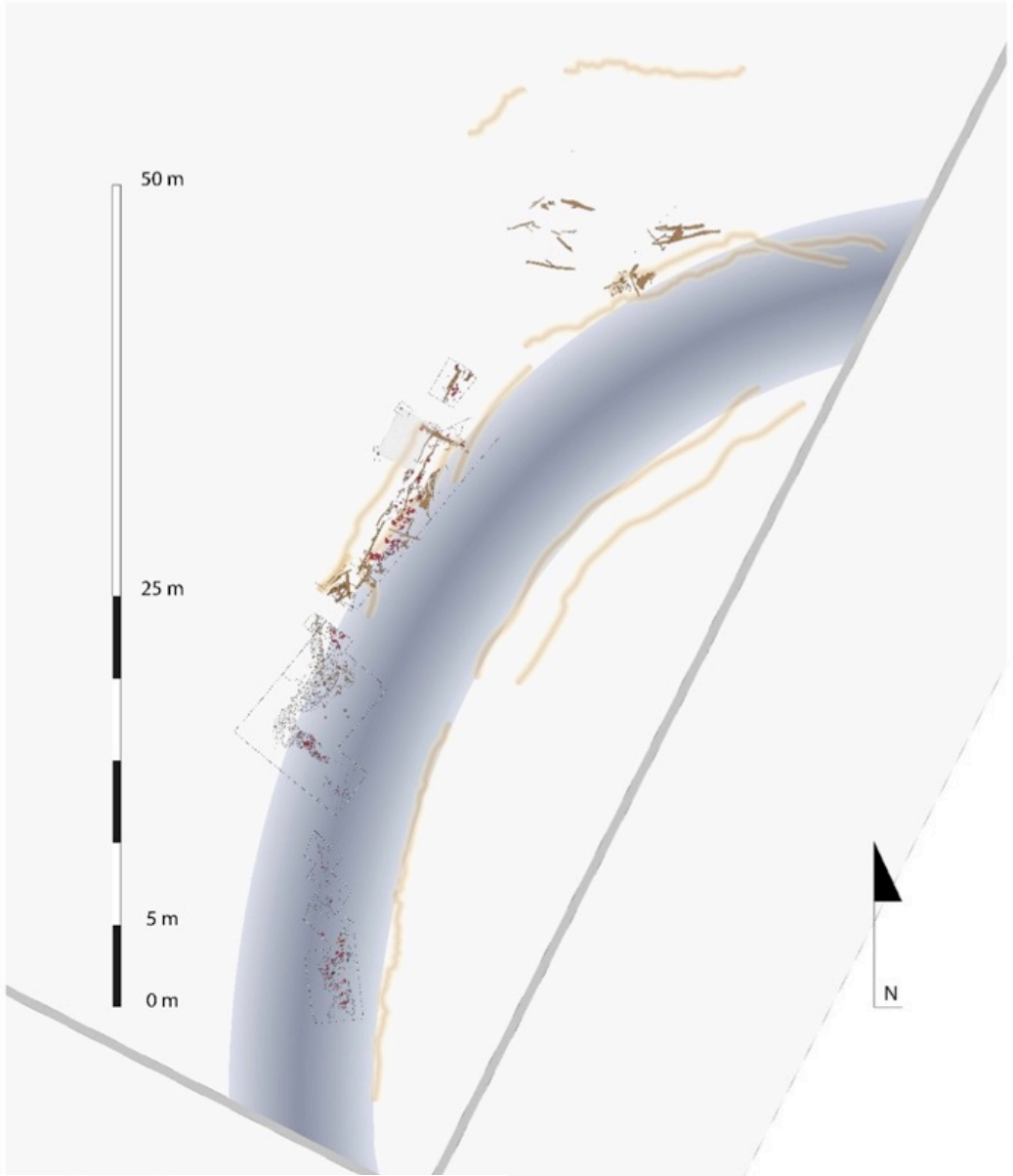
PLAQUE DE DÉLIMITATION URBAIN
BRUSSEL - SINT-GORIKSHALLEN

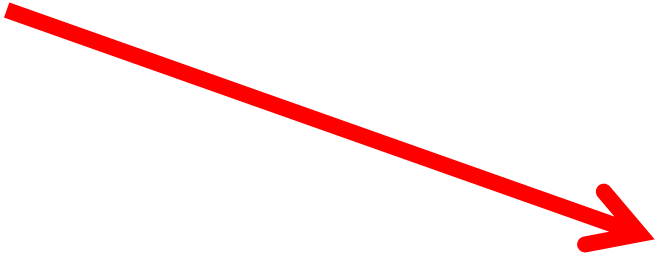
PLAQUE SAINT-GÉRY À 1000 BRUXELLES - SINT-GORIKSPLEIN TE 1000 BRUSSEL
ACCESSIBLE GRATUITEMENT TOUS LES JOURS - GRATIS TOEGANGELIJK ALLE DAGEN

ITM DLA ECHO museum



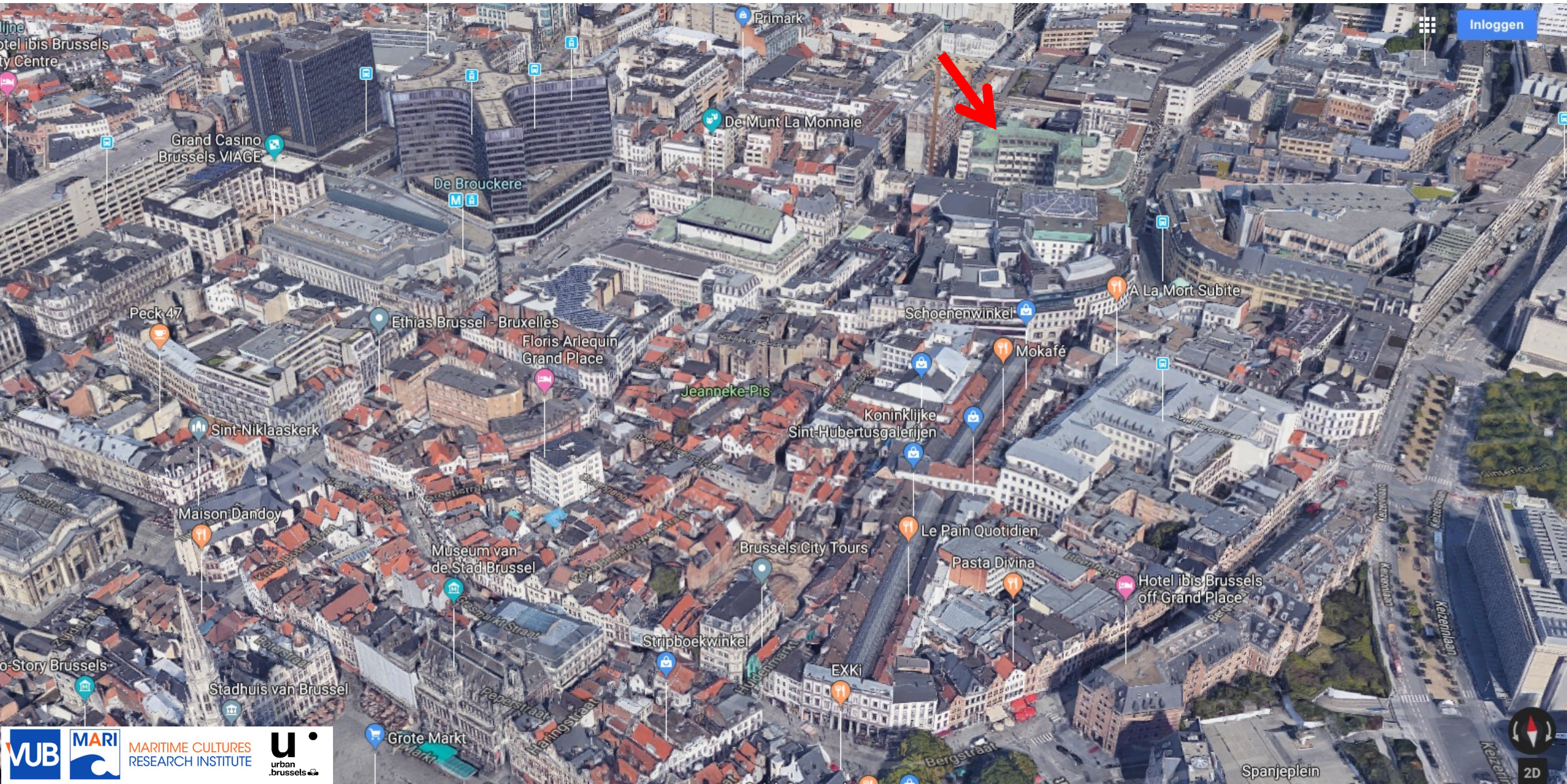
The Senne river in Roman times: a meandering river



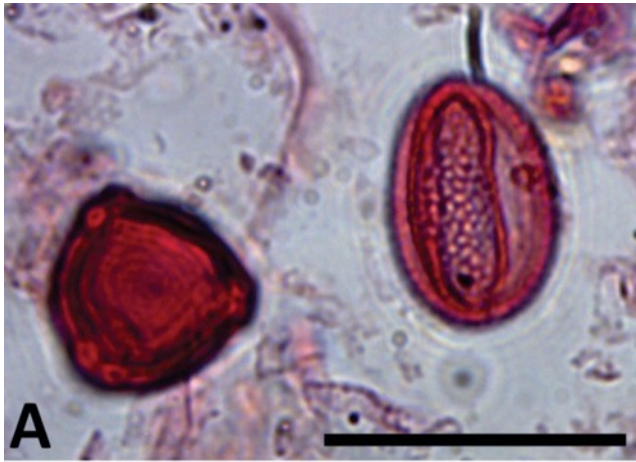




Site of Rue des Boîteux/Rue d'Argent

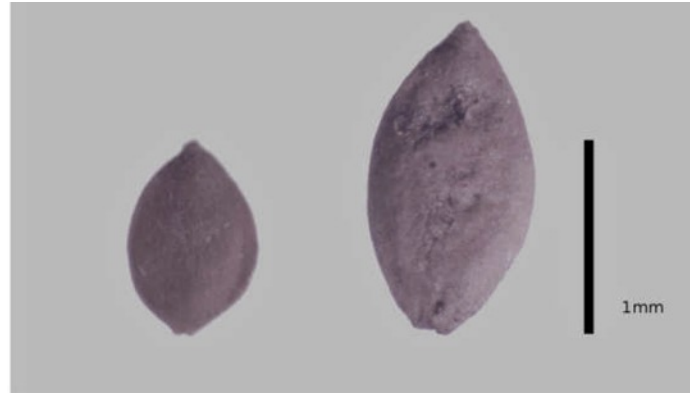




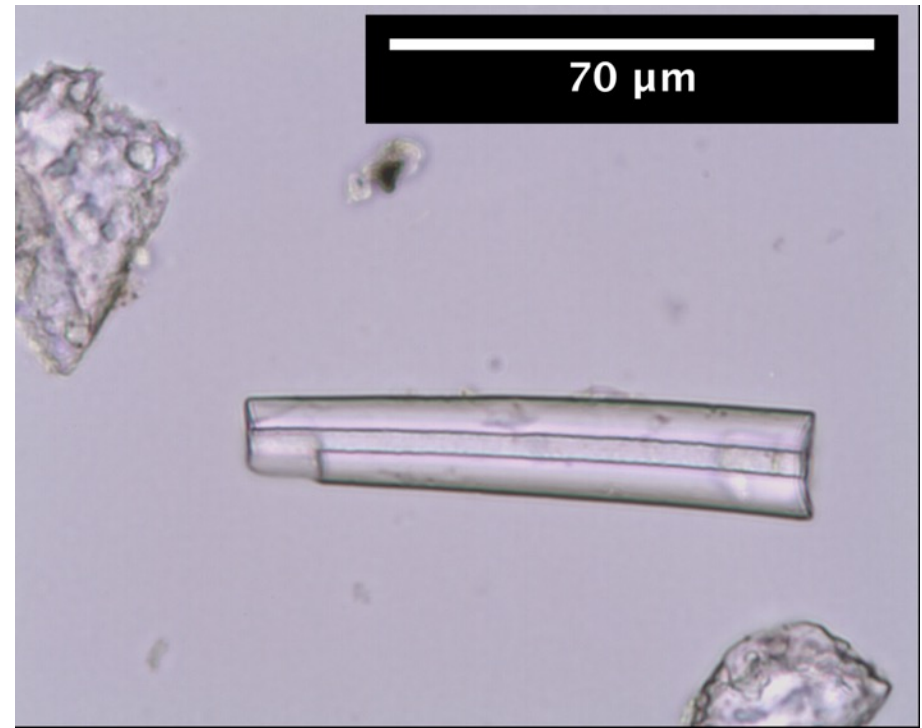


A

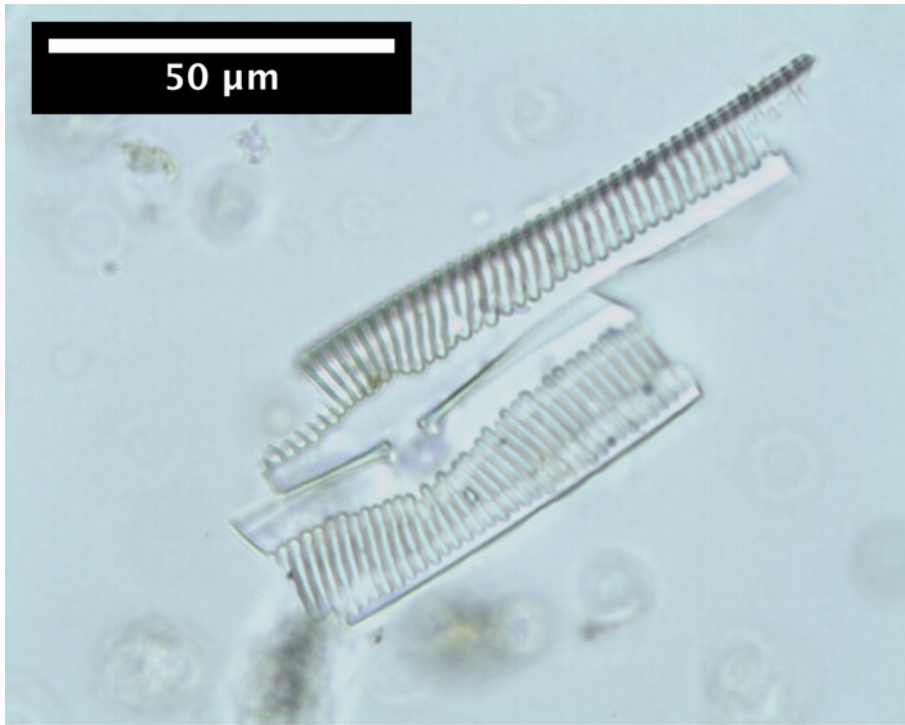
Pollen



Seeds



Sponge spicules



Diatoms



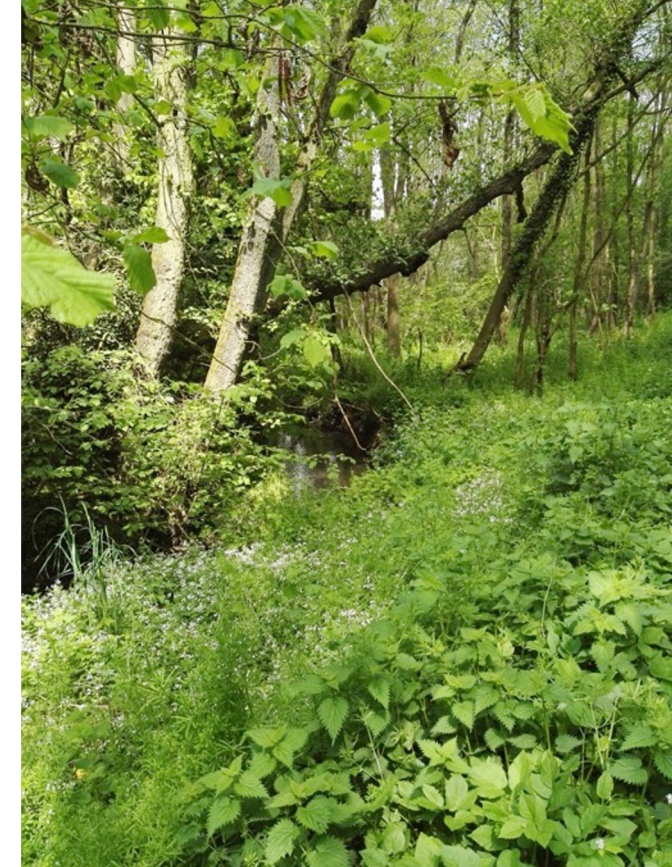
Phytoliths



10900-9700 BP



9700-7800 BP



7800-3200 BP



3200-1050 BP



Conclusions

- Urban soils have a memory
 - Detect spatial organisation patterns and their evolution through time
 - Understand interaction between nature and the urban population
 - Obtain objective data on the evolution of pollution in towns
 - Understand changes in the landscape (relief, river beds, vegetation, etc.)

ACKNOWLEDGEMENTS

Urban.Brussels for financing part of this research

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Wouter De Maeyer (SOLVA)

International Soil Micromorphology Group

Roger Langohr (ASDIS/Universiteit Gent)