Unscrambling the OPPIDA

The spatial analysis of the late La Tène farmstead

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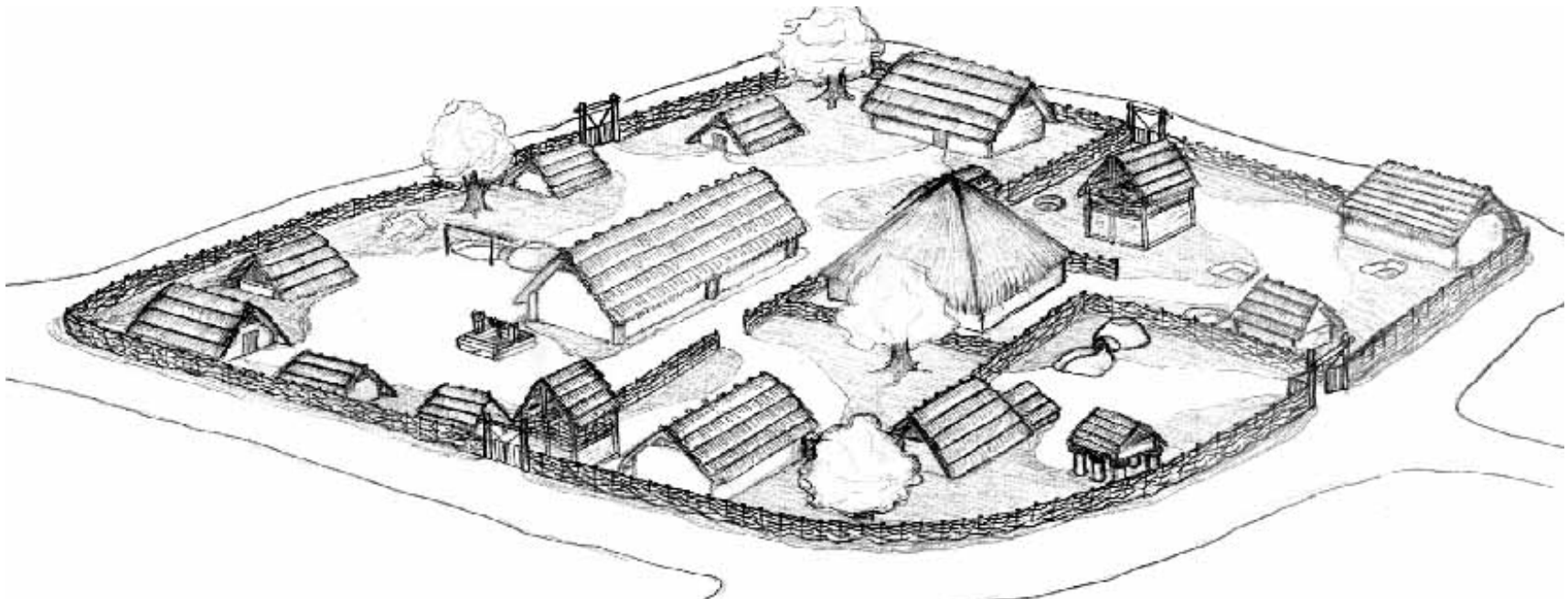


Unscrambling the oppida. The spatial analysis of the late La Tène farmstead

This paper deals with the analysis of outer and inner structure of one quite illustrative example of a farmstead at the *oppidum* of Staré Hradisko (central Moravia, Czech Republic). The presented study is based on extensive study of primary documentation and finds, and these non-graphical data are completed with their spatial context by using the GIS methods. Functional analysis performed, is aimed mainly on the spatial concentrations of significant features, artefacts and other important facts contributing to the recognition of this late La Tène spatial unit. Beside of this way defined areas of atctivities or refuse, several workshops and surface structures interpreted as dwelling houses, ground plans of smaller constructions and other farm-belonging buildings were also recognized.

Thesis:

Case:

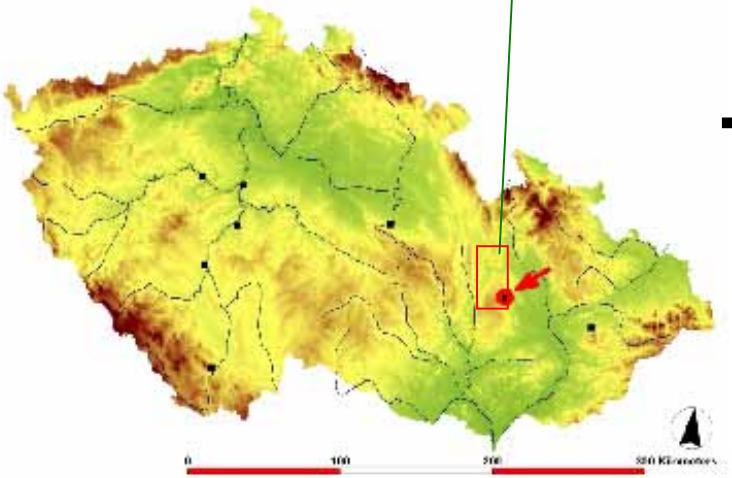
- one fully excavated farmstead at the oppidum
- large scale excavation in the past
- settlement pattern unresolved
- functional determination unresolved

Aim:

- spatial analysis of the farmstead
- layouts reconstruction
- functional analysis of the features
- chronology a social reflections
- estimate the population size
  - a) within the farmstead
  - b) within the oppidum
- basement for the further investigations

Locality -

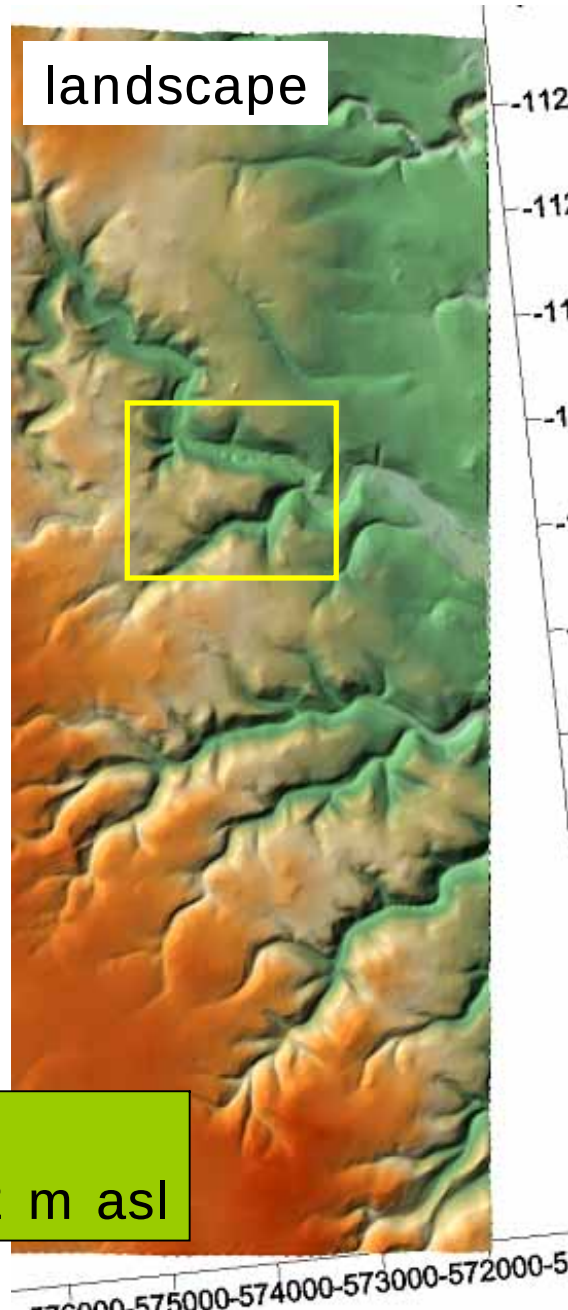
Czech rep.



Staré Hradisko

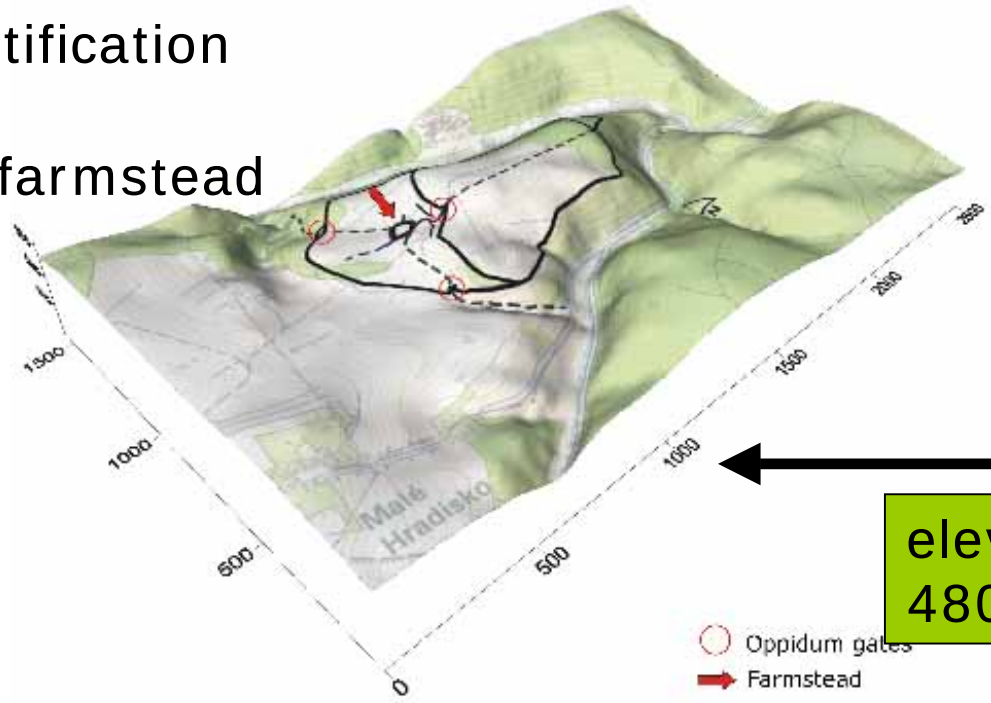
area:
central 24.5 ha
bailey 13.5 ha
total 38.76 ha

landscape



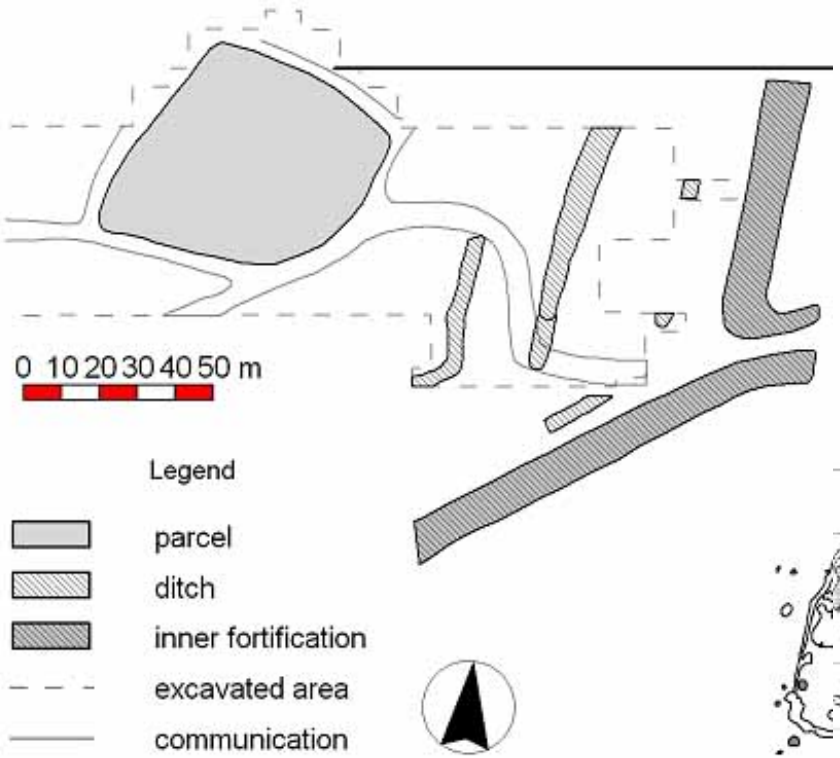
fortification

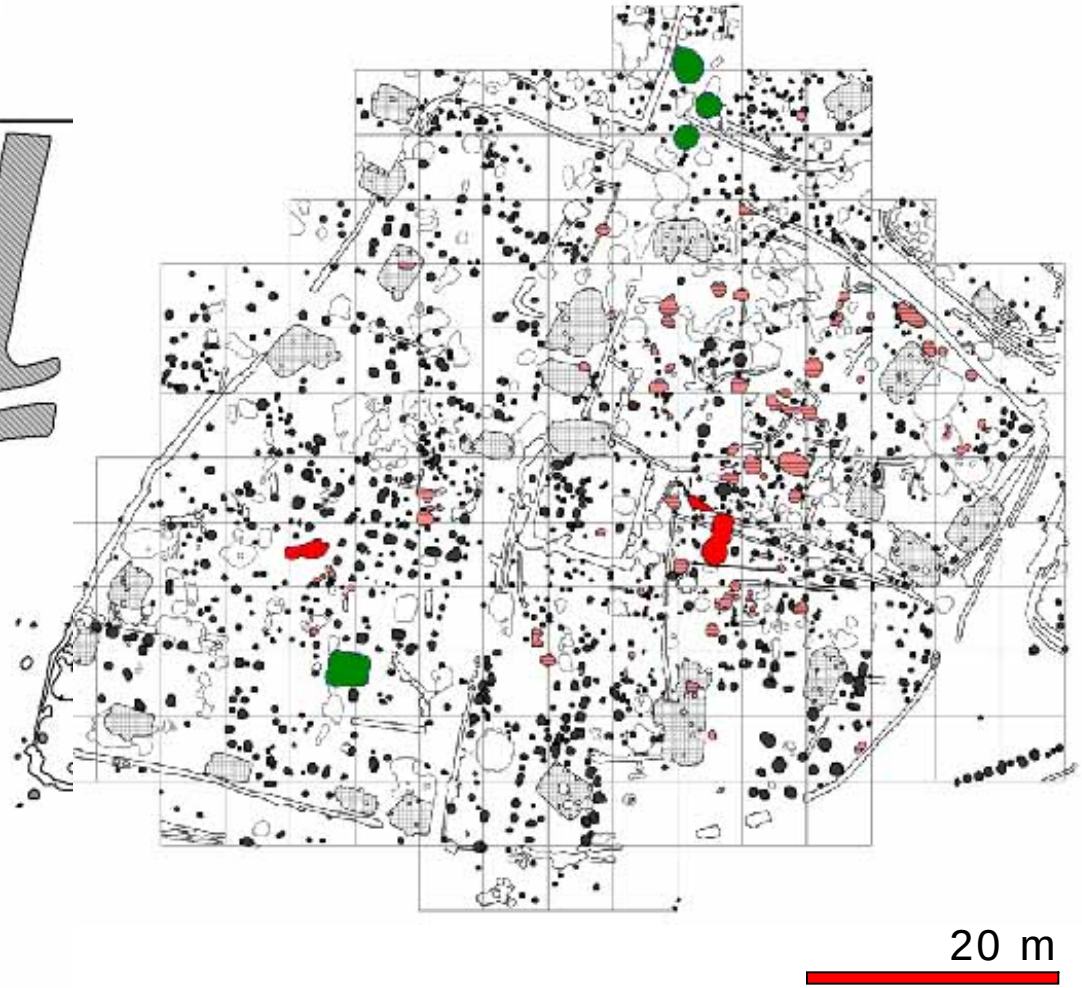
farmstead



elevation:
480 – 542 m asl

Parcel -





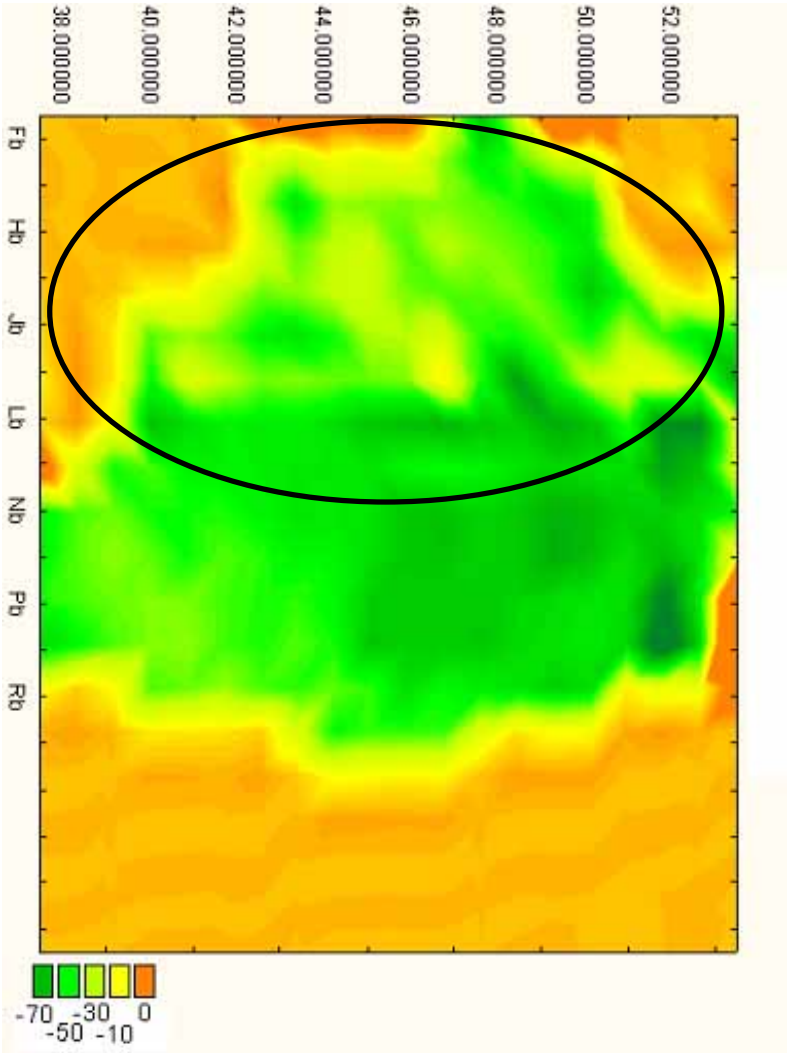
Parcel extent:
0.41 ha
excavation: 1965-1987

sunken houses
surface buildings

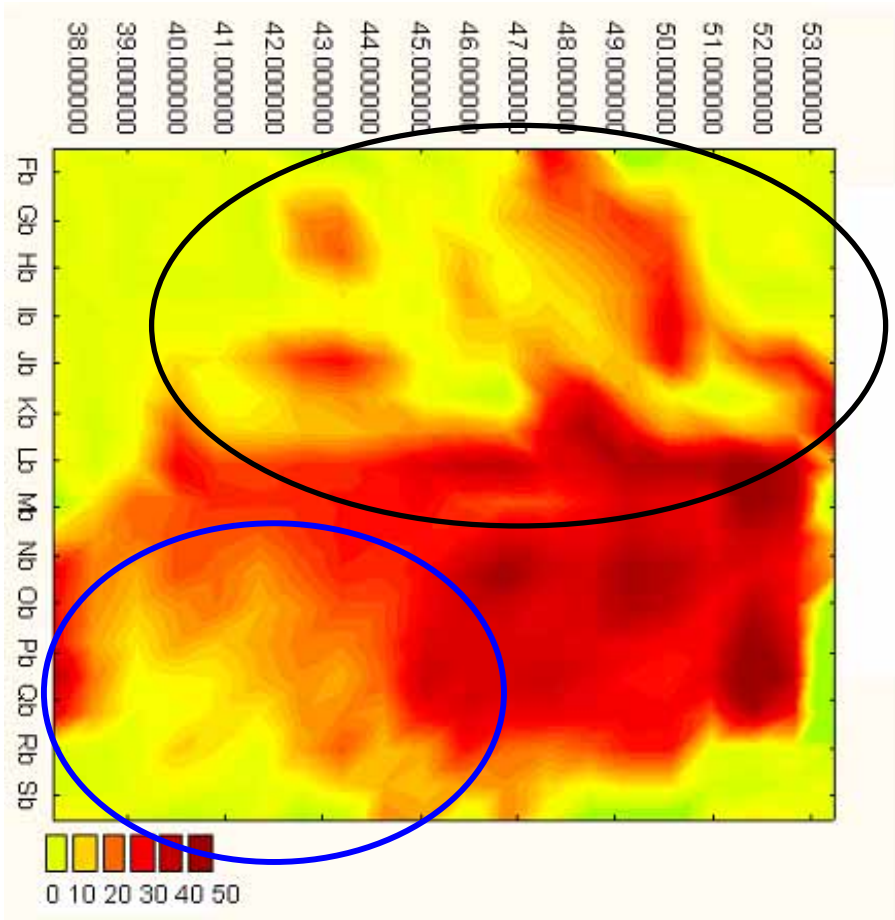
Spatial dependance of the thickness of the cultural layer

reconstruction from the elevation (topography) data

subsoil level -

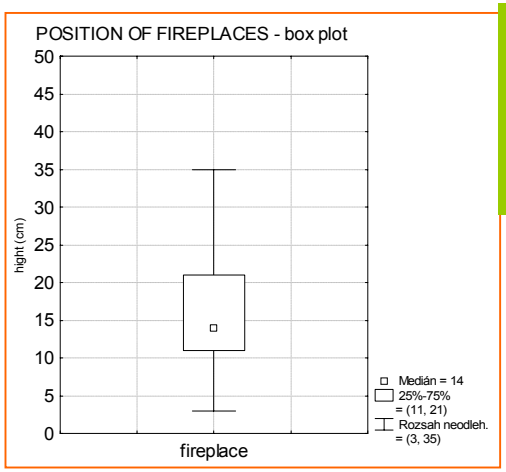


cultural layer thickness –



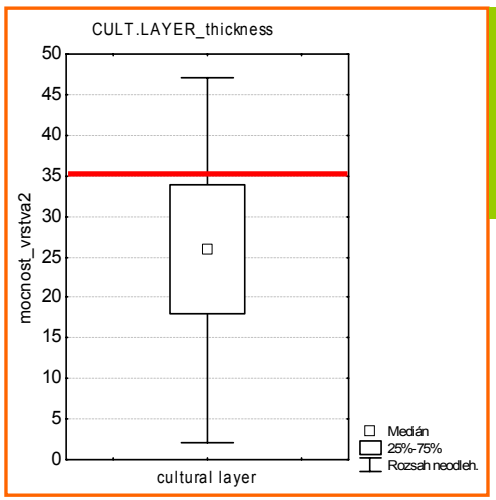
Situation and preservation -

of structures in the culture layer (CL) within the parcel



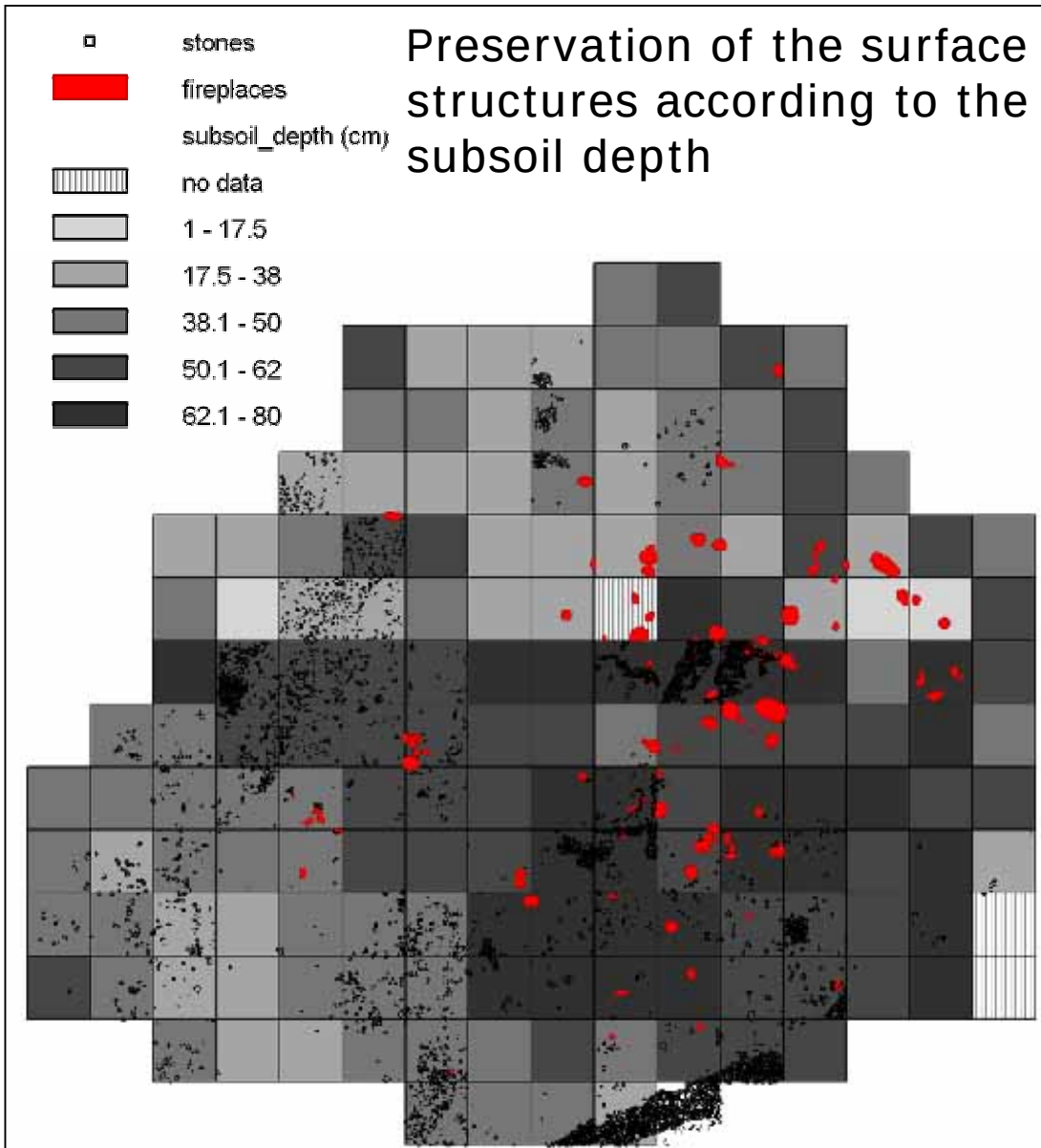
max 35
min 3
med 14

fireplaces



max 47
min 2
med 26

cultural layer



Preservation of the surface structures according to the subsoil depth

Layouts reconstruction -

PROBLEMS

historical

- The settlement structure wasn´t usualy one-generational but contained many building activities closed within the fenced area
- extent depended on the spatial lay out of the whole area of the *oppidum*.
- The traces of building structures within farmsteads suffer from many superpositions and frequent distortion of the structures

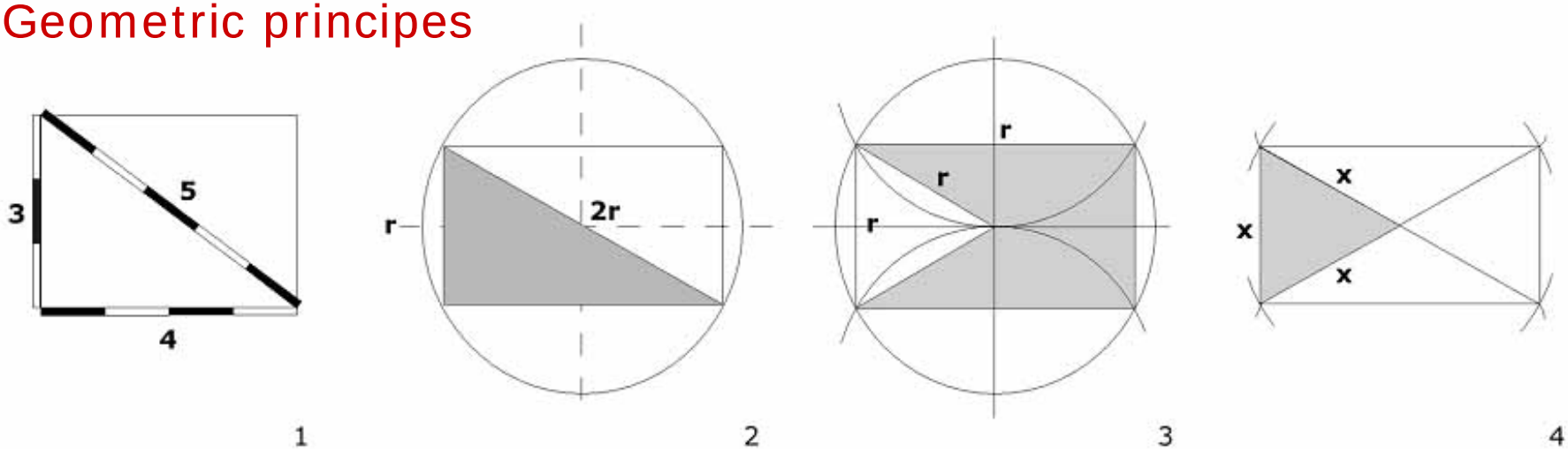
methodical

- Missing data of parametres (profoundation) and fill of sunken features
- Drawings of the sections of the features weren´t practised.
- Basing only on the general published plans – inexact intepretations

Approaches -

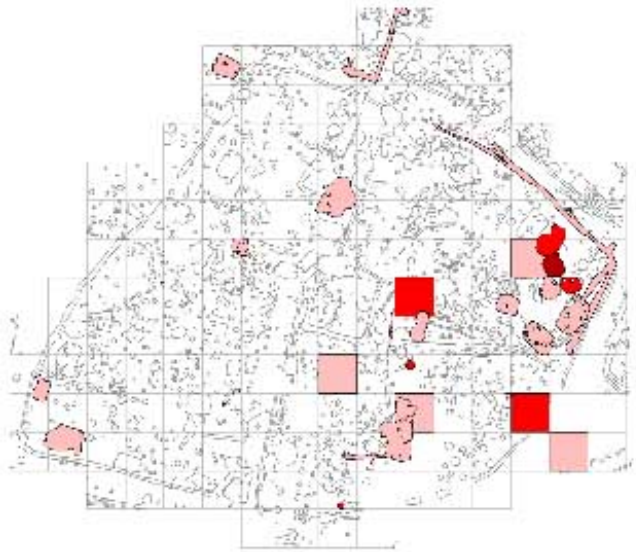
- ⟶ situation of the culture layer – preservation of the surface structures (fireplaces, stone structures)
- ⟶ dislocation of the building material - daub, lock mount
- ⟶ determinating significant post holes
- ⟶ considering the building principes, surveying on geometry
- ⟶ surveying on the major building places

Geometric principes



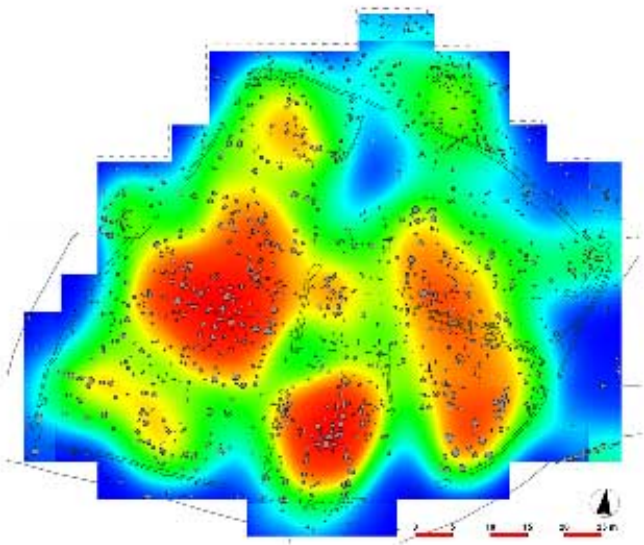
1 2 3 4

Steps of reconstruction

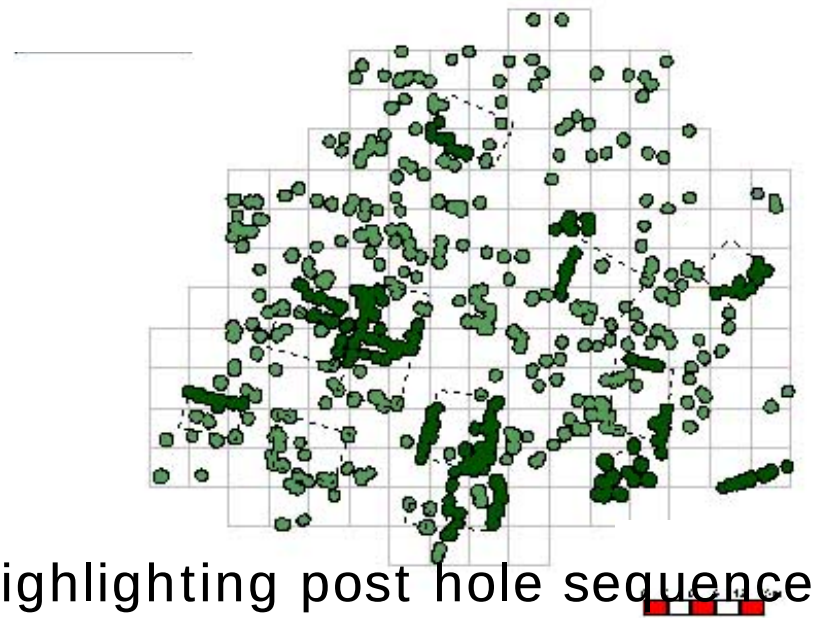


distribution of the daub

surveying on geometry

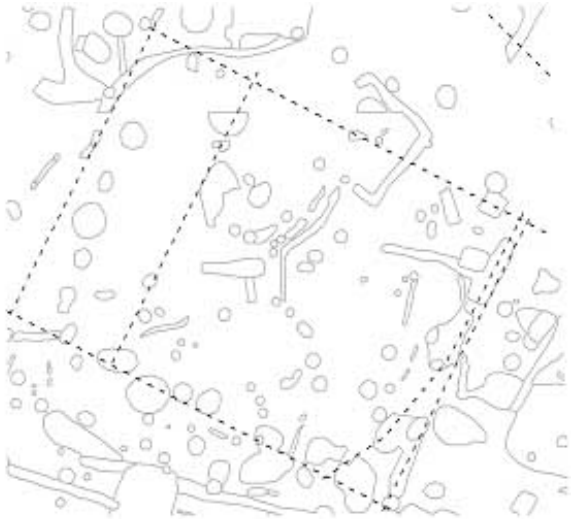


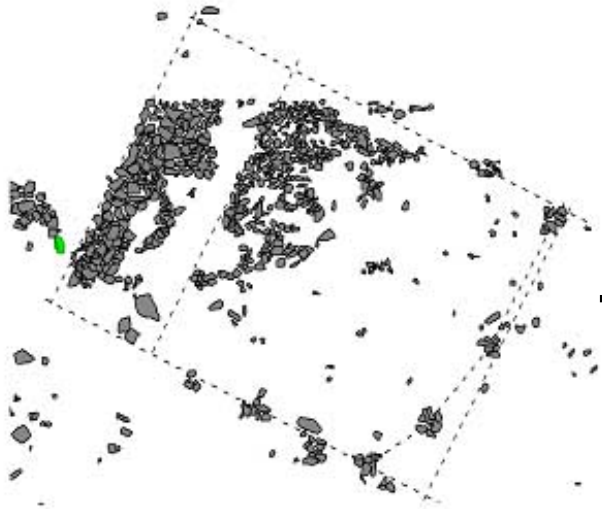
major building places



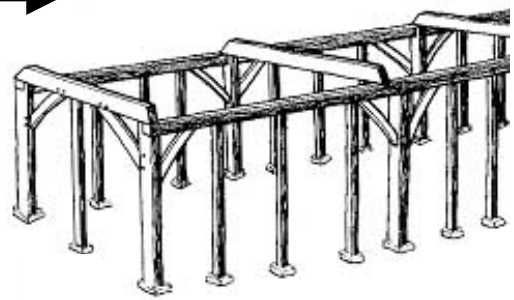
highlighting post hole sequences

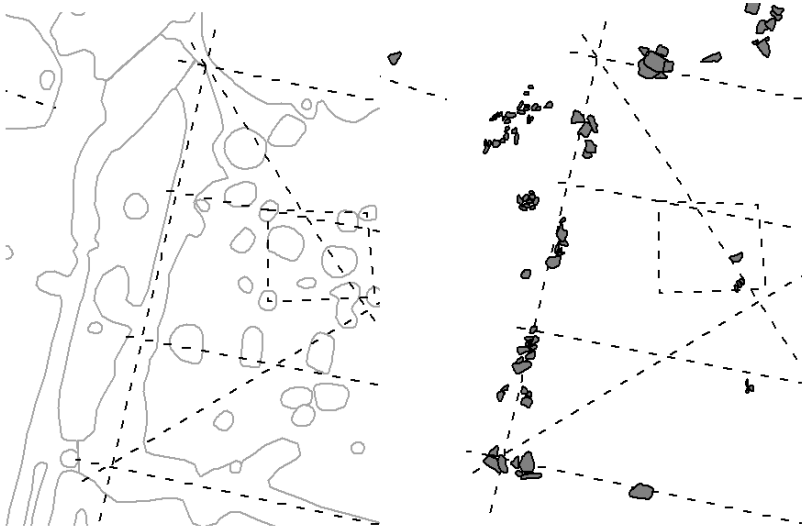
Steps of reconstruction

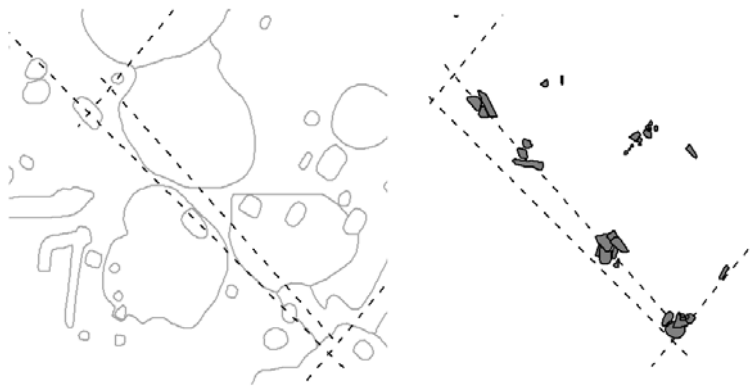




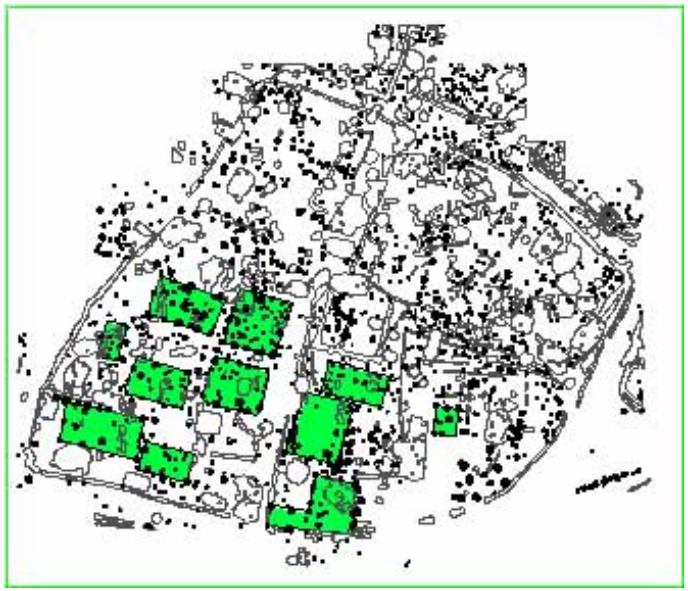
post holes
stone fastening







Layouts reconstruction - RESULTS



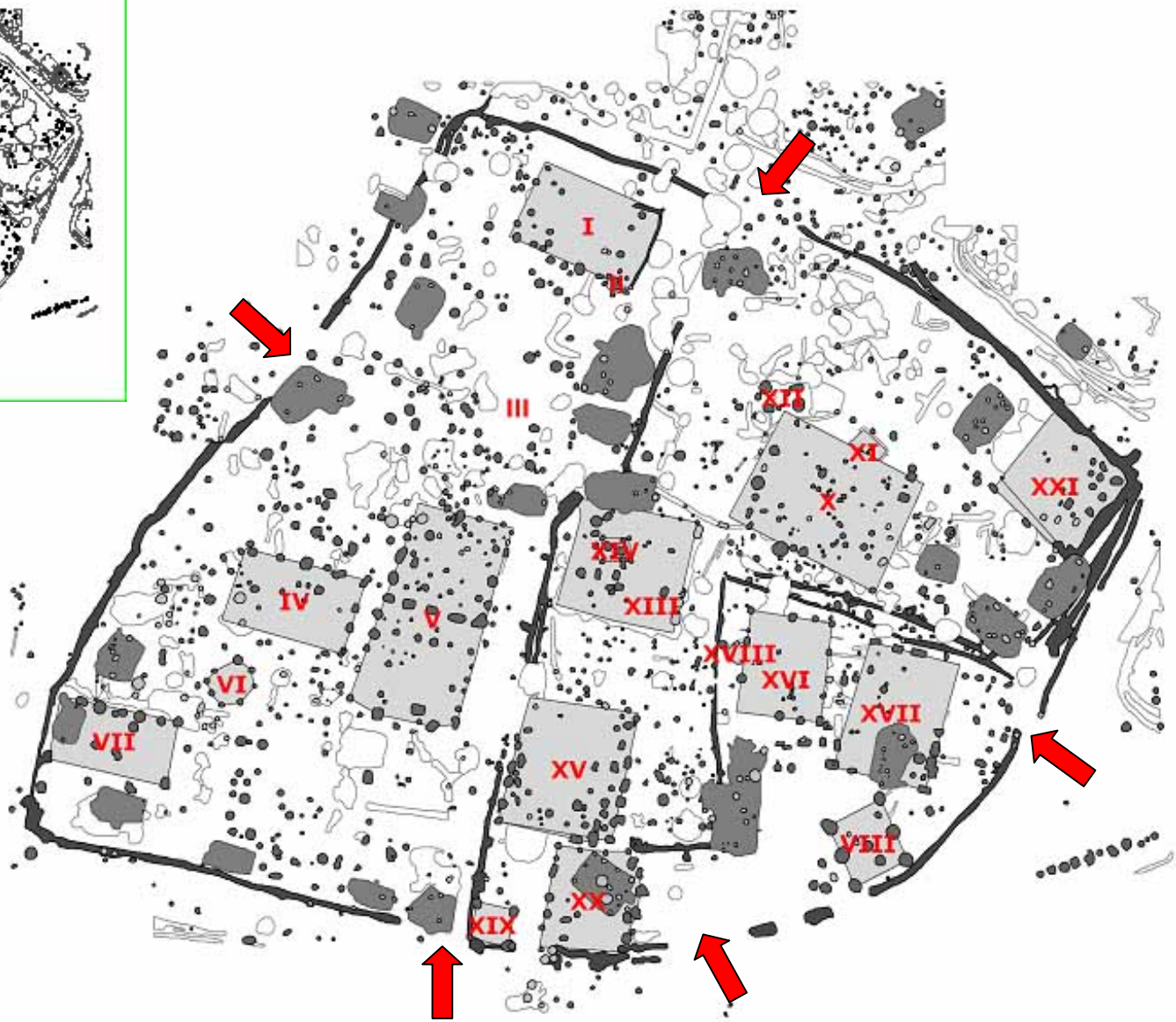
G. Jacobi 1979

21 ground plans
reconstructed
3 discarded = 18

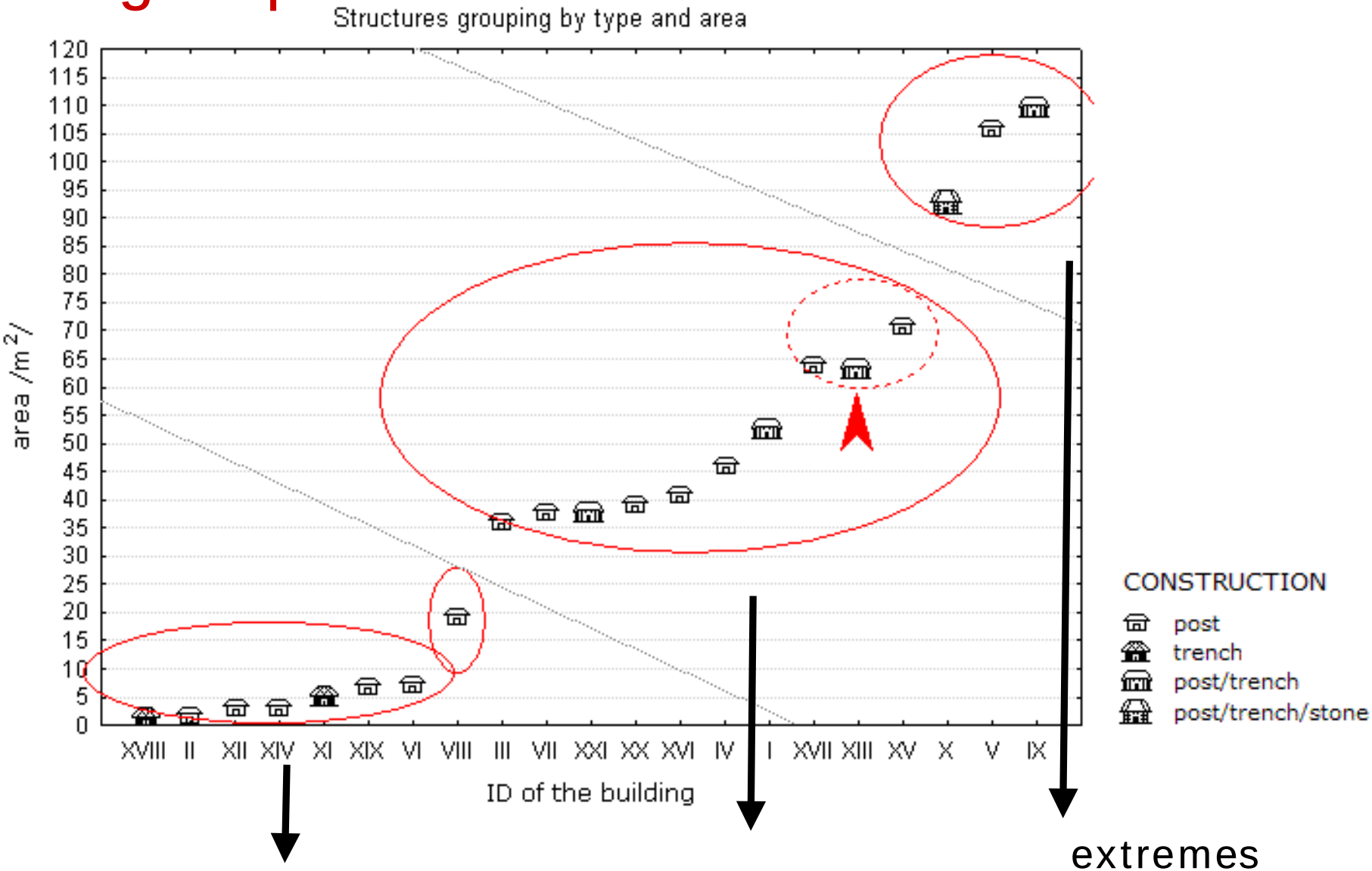
construction:

post
trench
stone

combination



3 groups of surface structures

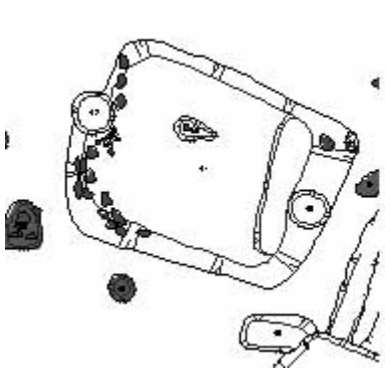


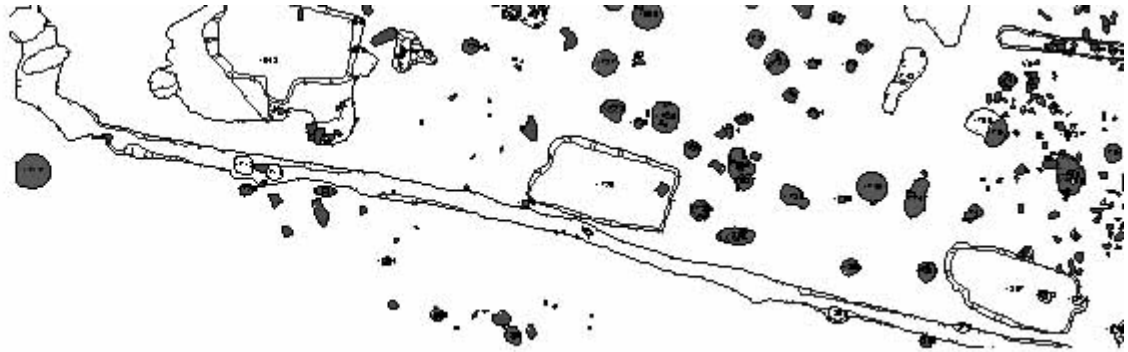
smaller husbandry buildings

husbandry or residential

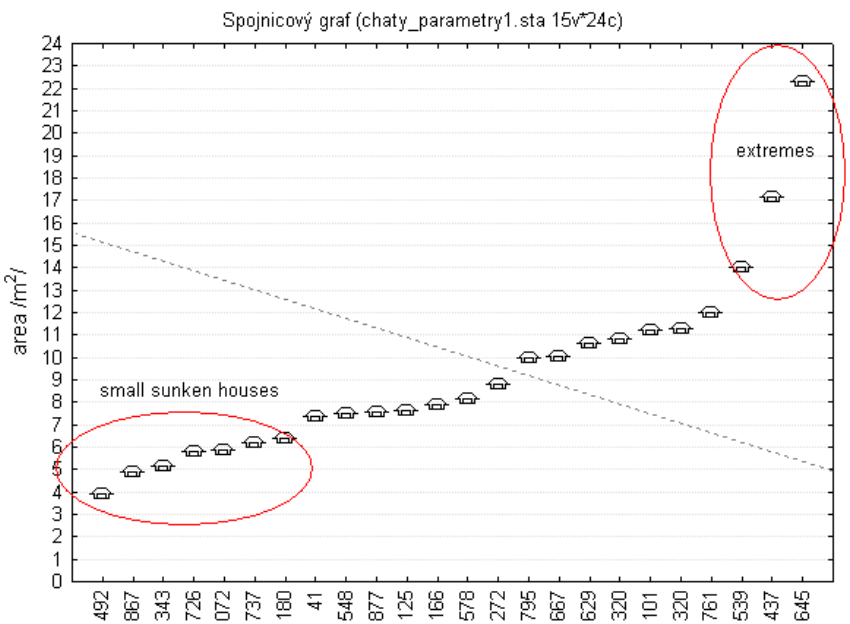
extremes husbandry or residential

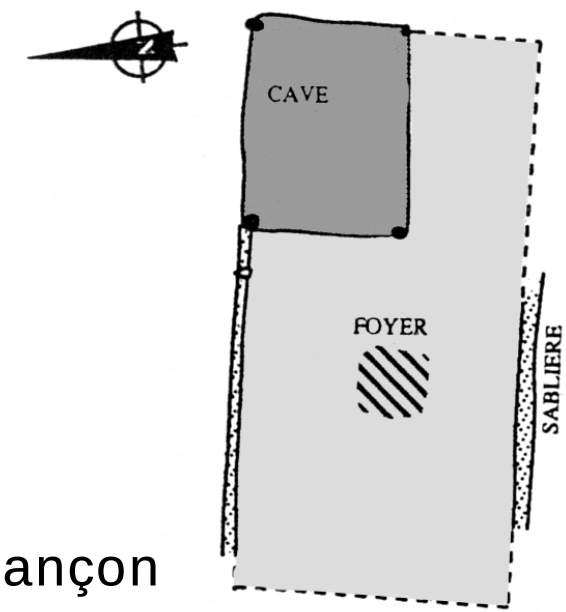
Sunken houses





husbandry x residential?
productional x for storage ?
individual x part of the upper construction ?

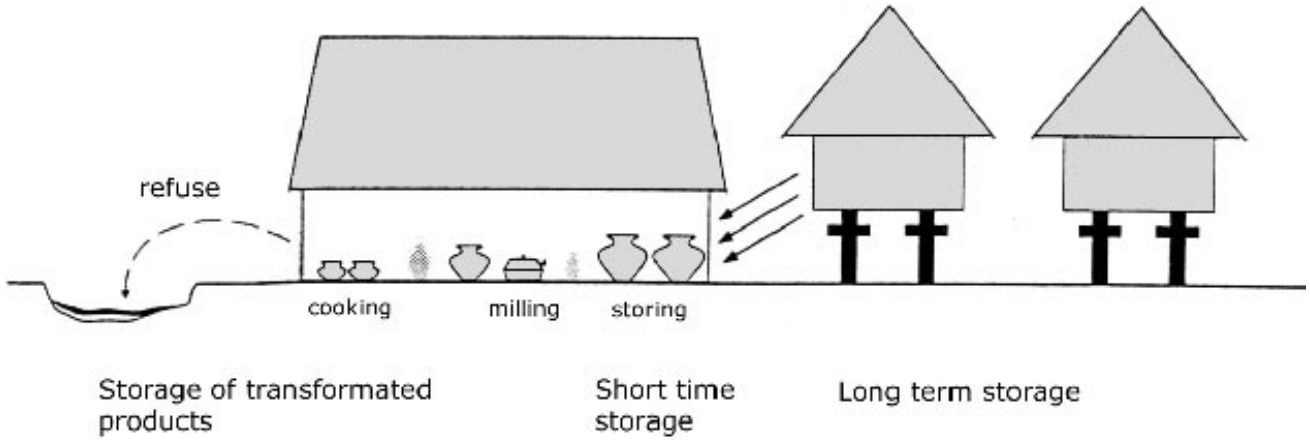




Besançon

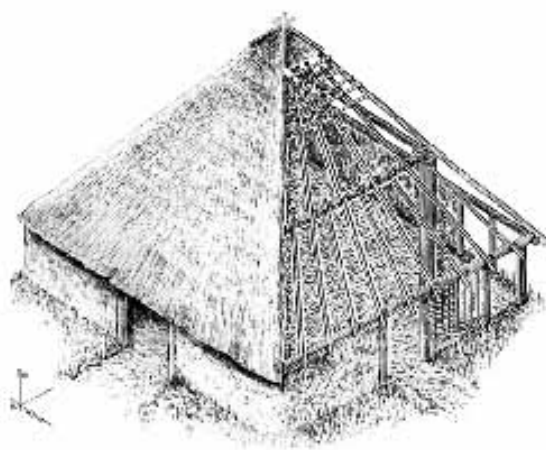
Activities within the farm

STORING



PRODUCING

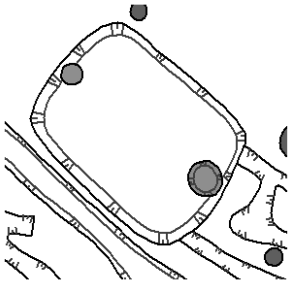
HOUSING

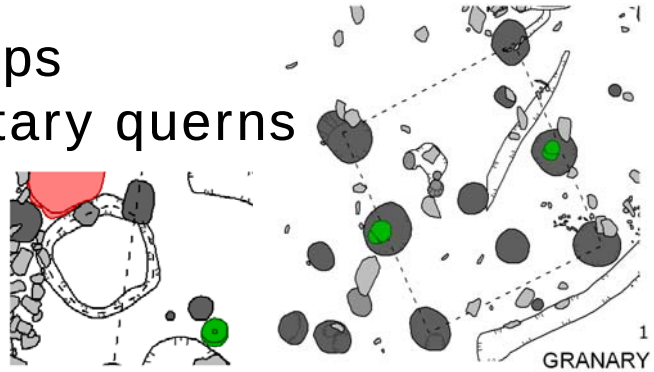


Architecture and function....?

Storing

presence of crops
proximity of rotary querns
(questionable)



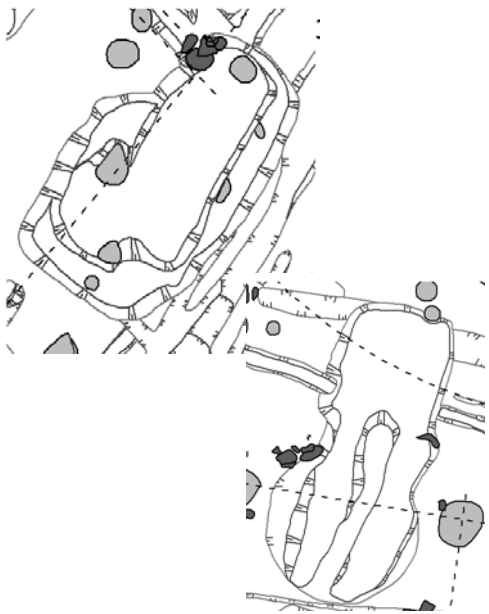


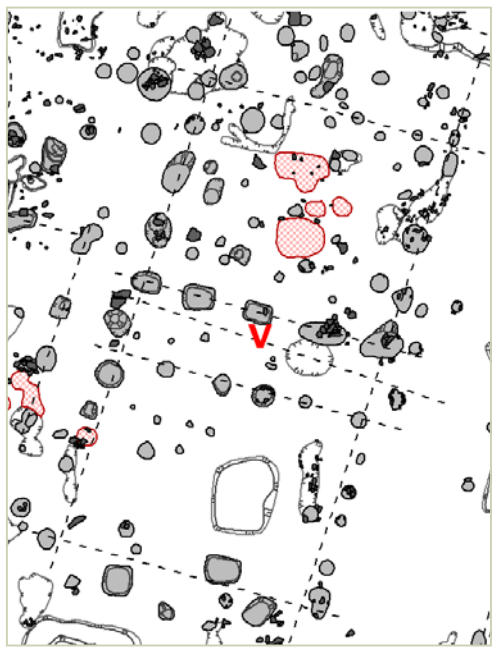
Housing

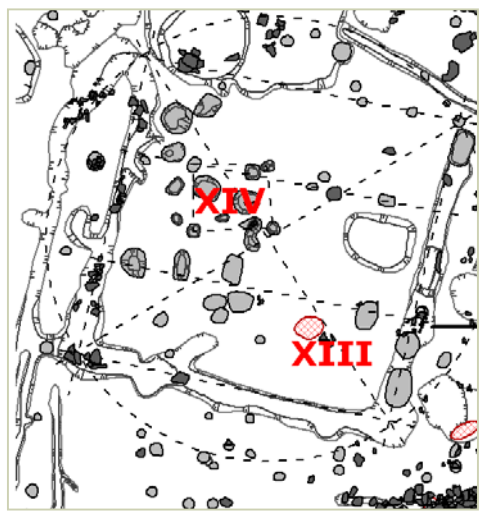
domestic activities (textile production, food preparation....)
heating device *complicated*

Producing

heating devices, structure
significant finds – tools, waste products





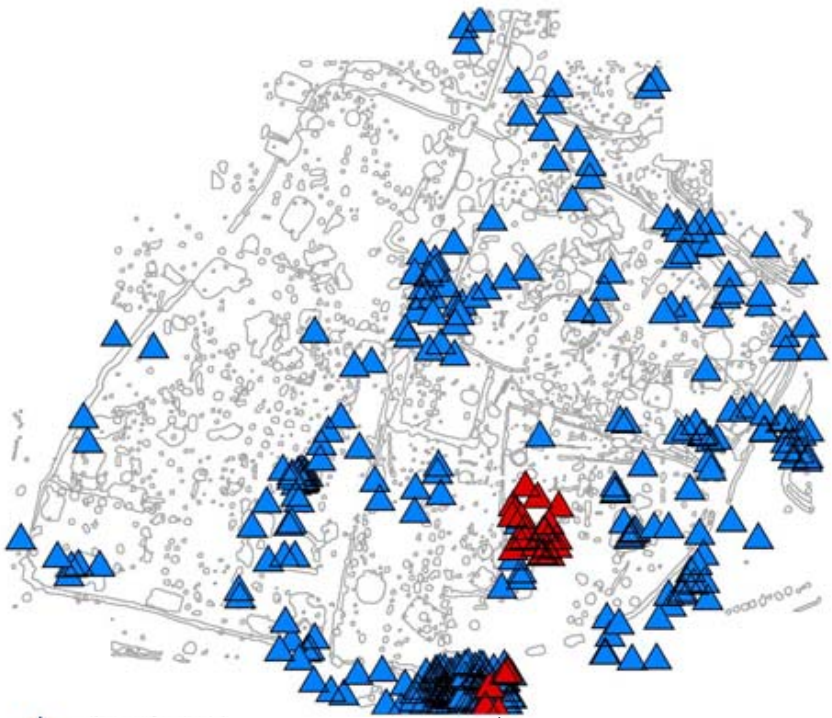


Functional analysis

Producion waste

IRON SLAG

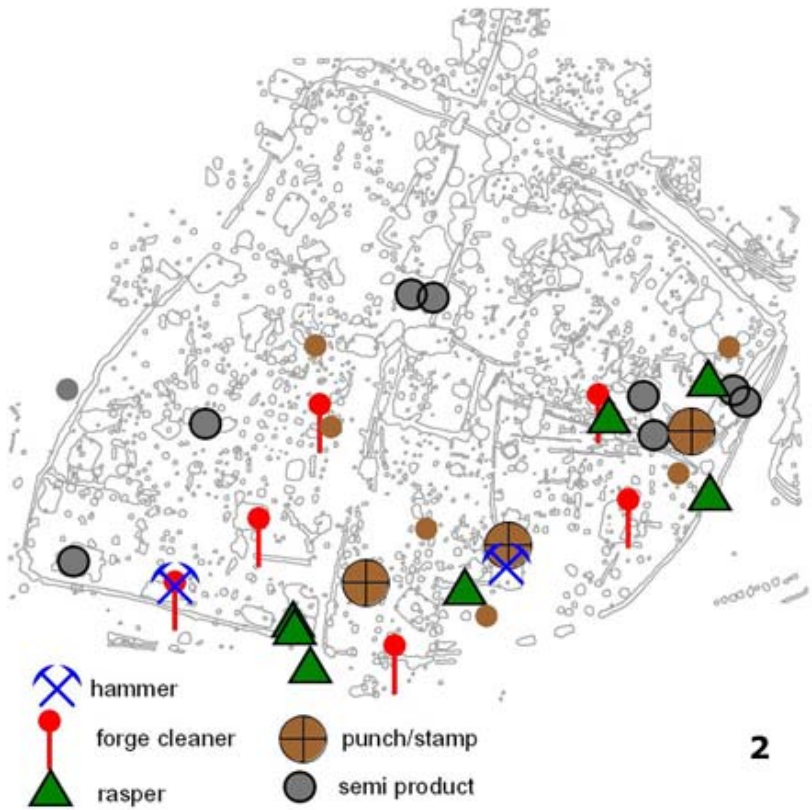
△ = 100g



communication

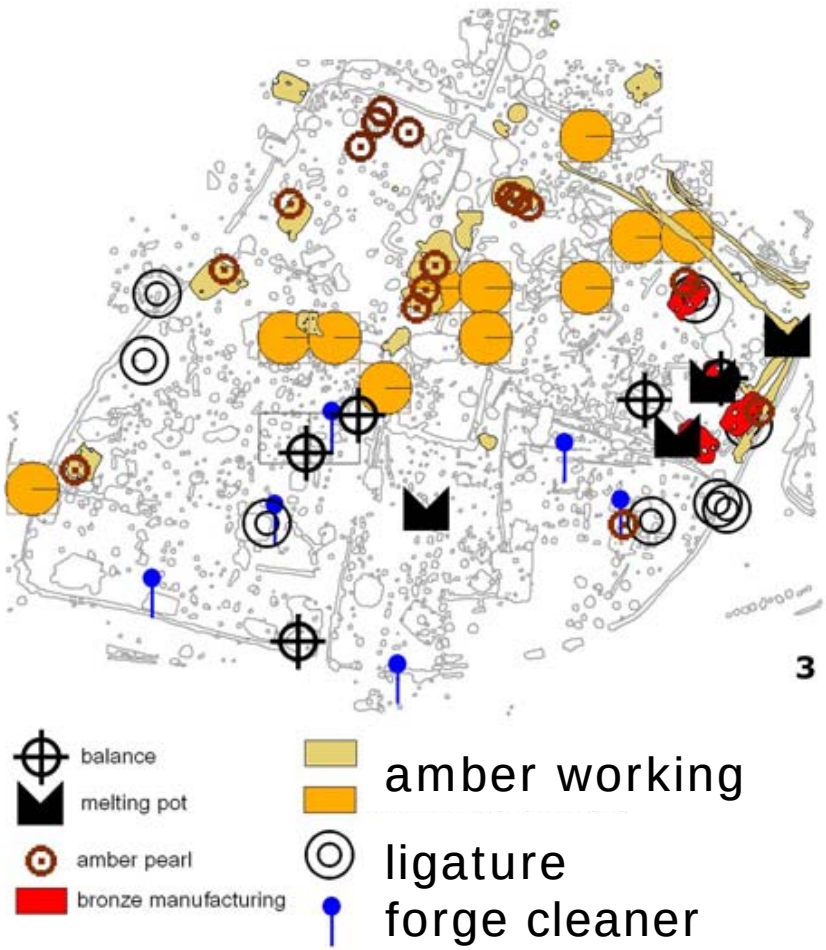
Smith tools

hammer, forge cleaner, rasper, punch, semi product

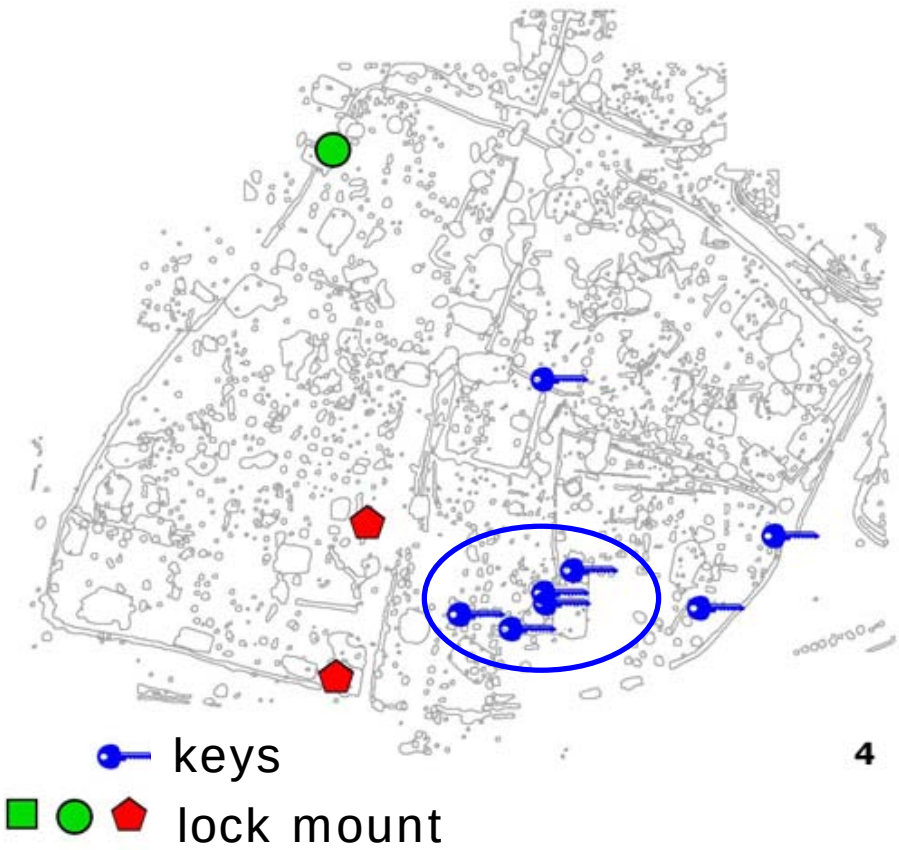


Functional analysis

Amber manufacturing
Bronze manufacturing



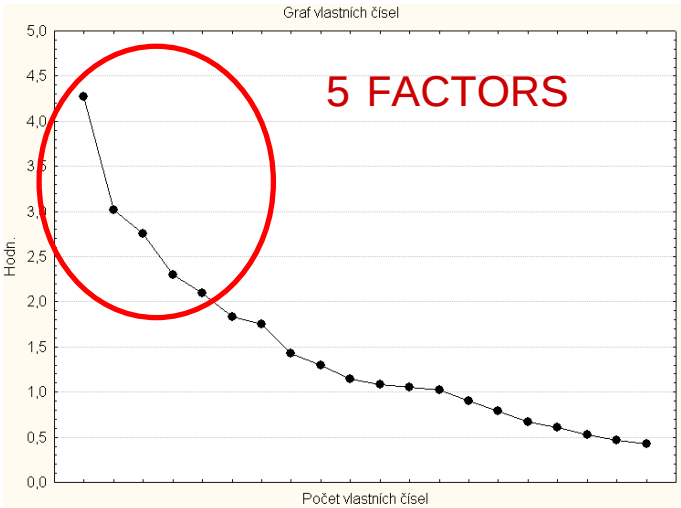
Keys and lock mount



Functional analysis – FACTOR analysis

PCA analysis – searching for the significant spatial patterns of finds

variables –
non ceramic artefacts



Hodn.	Vl. čísla (List1 v Importován z D:\STARE_HRADISKO\SH Extrakce: Hlavní komponenty			
	vl. číslo	% celk. rozptylu	Kumulativ. vlast. číslo	Kumulativ. %
1	4,268704	13,33970	4,26870	13,33970
2	3,014840	9,42137	7,28354	22,76107
3	2,755134	8,60979	10,03868	31,37087
4	2,302391	7,19497	12,34107	38,56584
5	2,093211	6,54128	14,43428	45,10712
6	1,828903	5,71532	16,26318	50,82244
7	1,746773	5,45866	18,00995	56,28111
8	1,427407	4,46065	19,43736	60,74175
9	1,294707	4,04596	20,73207	64,78771
10	1,143977	3,57493	21,87605	68,36264

FACTOR 1 –
hammer, rasper,
punch, key, whetstone, tweezers
-smithery

FACTOR 2 –
amber pearl, amber raw,
semi product
-amber manufacturing

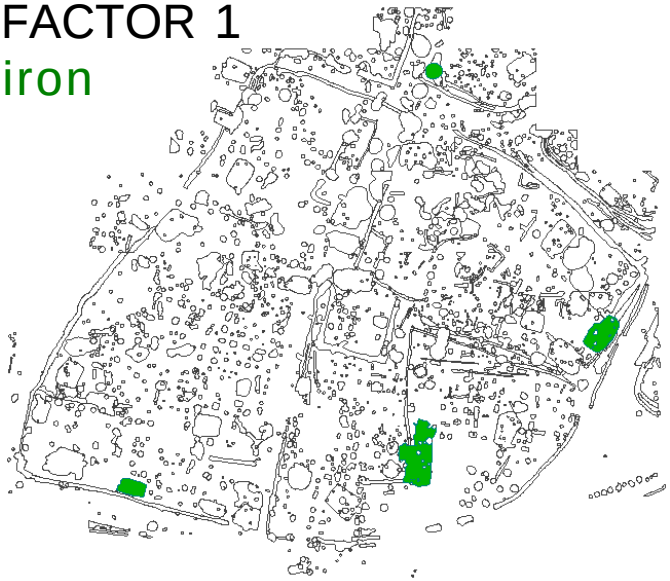
FACTOR 3 –
rasper, balance, melting pot,
whetstone
-metal production

FACTOR 4 –
punch, melting pot, mirror
-metal production

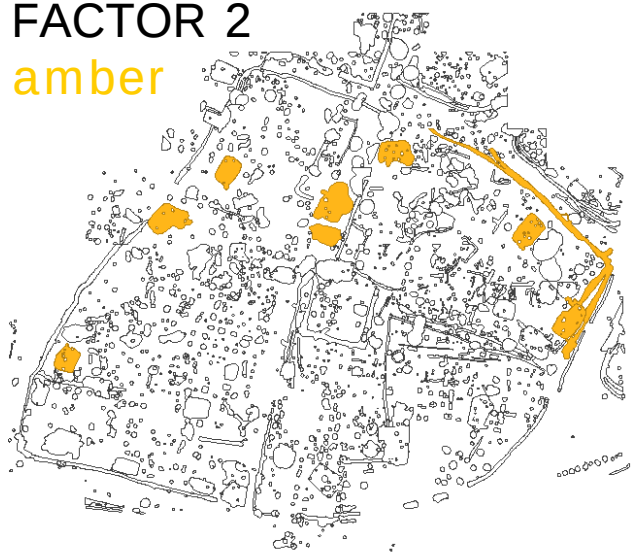
FACTOR 5 –
sword, spur, painted pottery
-prestige, housing

Functional analysis – FACTOR analysis

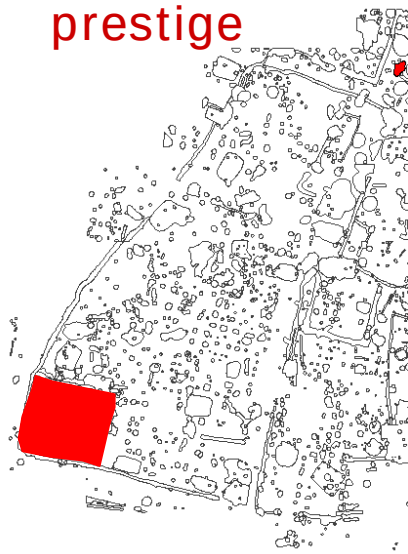
FACTOR 1
iron



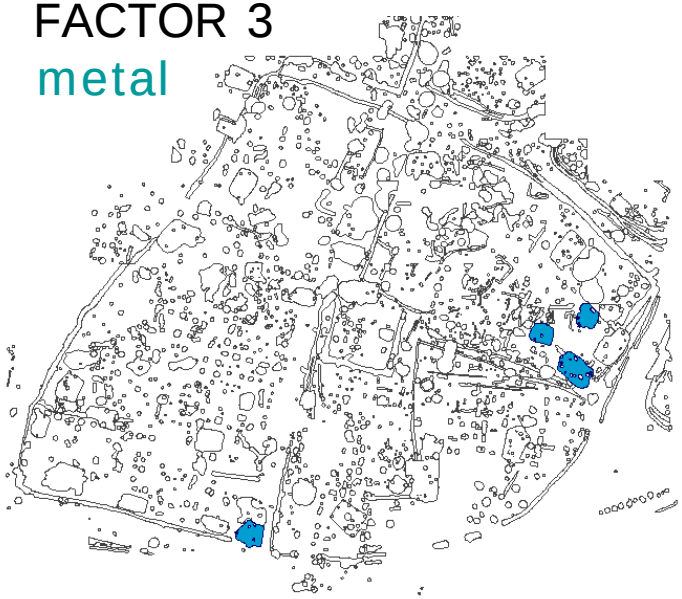
FACTOR 2
amber



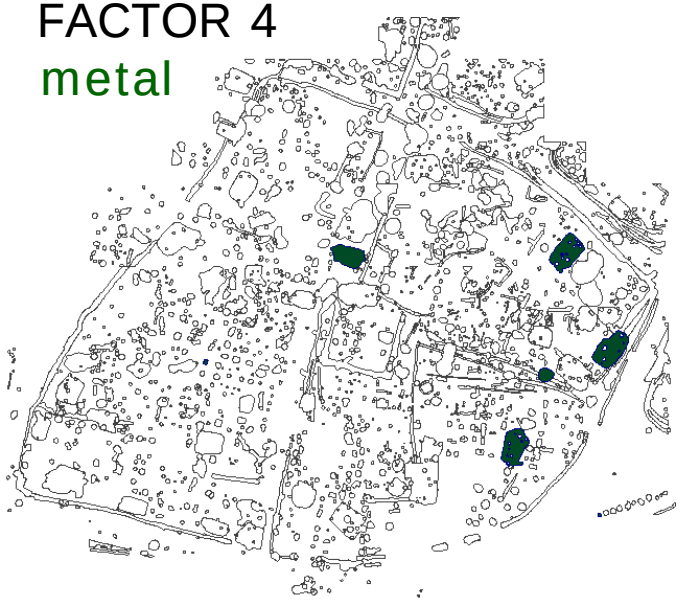
FACTOR 5
prestige



FACTOR 3
metal

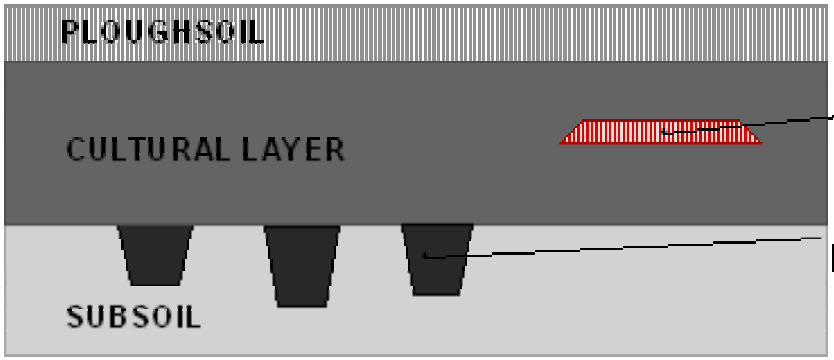


FACTOR 4
metal



Chronology - dealing with stratigraphy...

The case

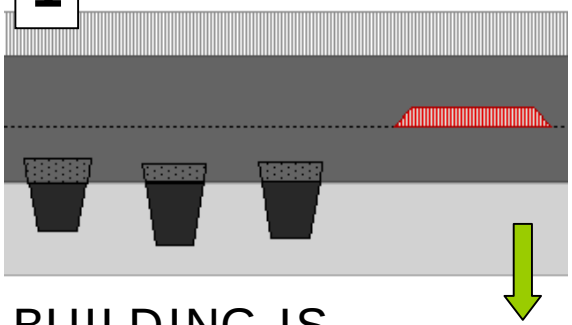


→ **heating device**

→ **building**

Possible interpretations

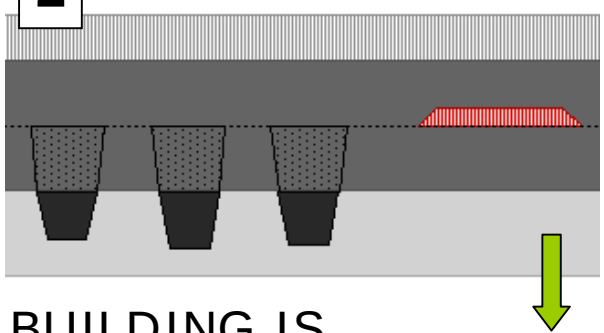
1



BUILDING IS OLDER THAN HEARTH

hearth in the upper layer

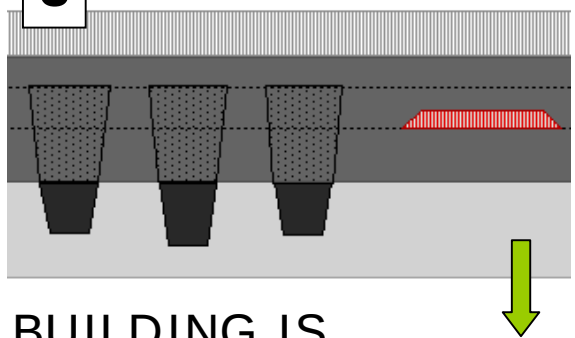
2



BUILDING IS CONTEMPORARY WITH HEARTH

hearth indicates the floor

3



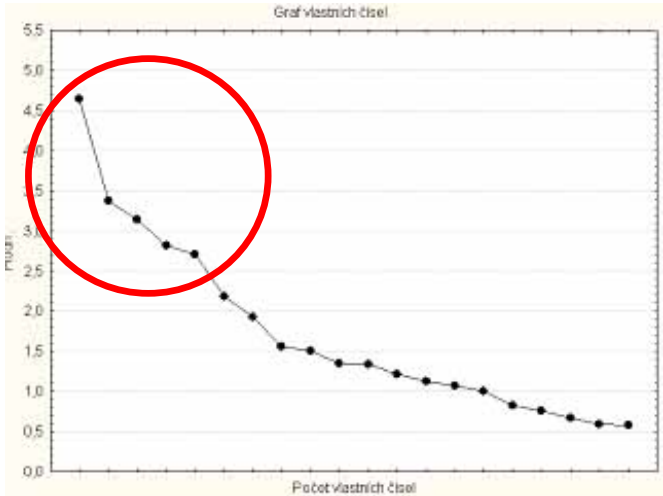
BUILDING IS YOUNGER THAN HEARTH

missing upper parts of the post hole fill

Chronology …

PCA analysis

chronologicaly significant artefacts - fibules



-Kostr. C
-Nauheim
-middle La Tène schema
-Kostr. D/E
-Almgren 65

Factor 2 – middle La Tène schema

Factor 1 – nauheim

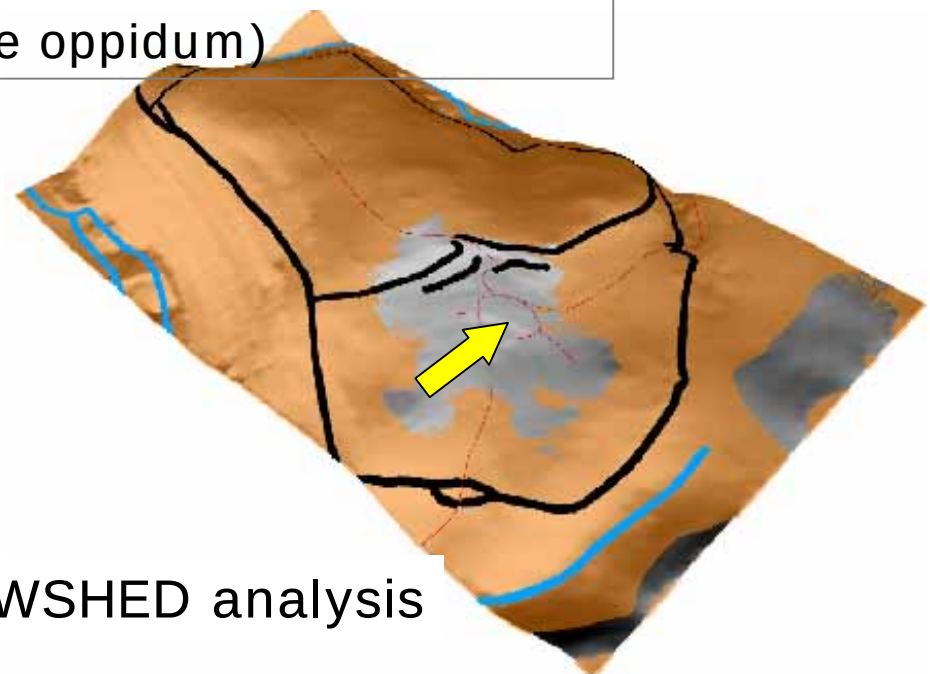
Factor 5 - both

Factor 4 – Almgren65

Peopling the farm

Population estimate: 20 persons (
Farm area: 0.41 ha
Demographic estimate: oppidum
maximal and minimal demographic figures for the oppidum
900 – 1500 inhabitants
94 households maximum

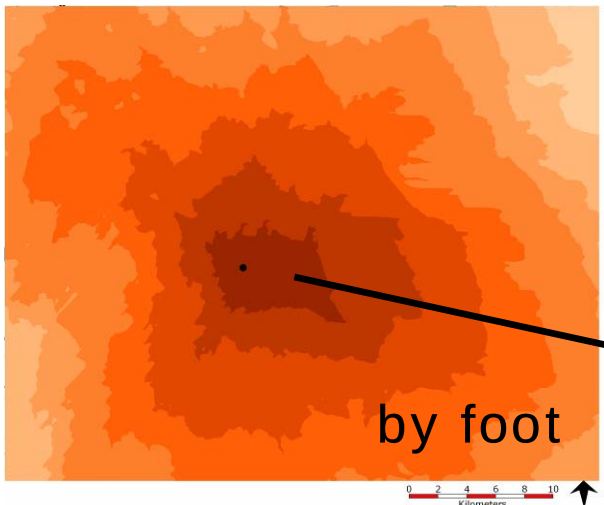
Social reflections –
- presence of prestige finds -(militaria, coins, imports)
- local and sistance trade - (amber, iron objects, ceramic)
- favorable location
  (proximity of the main axis of the oppidum)

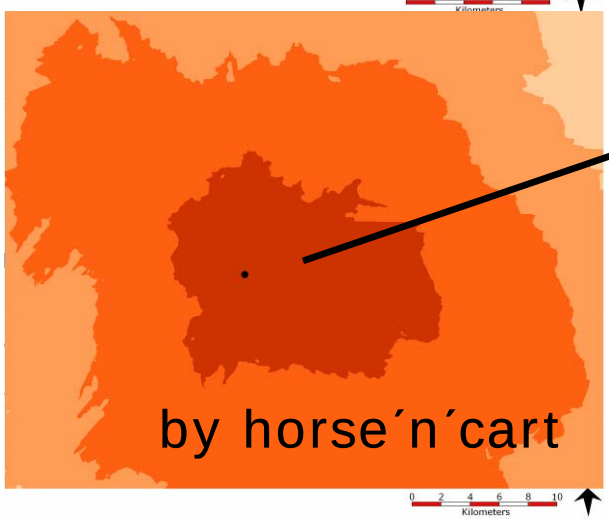


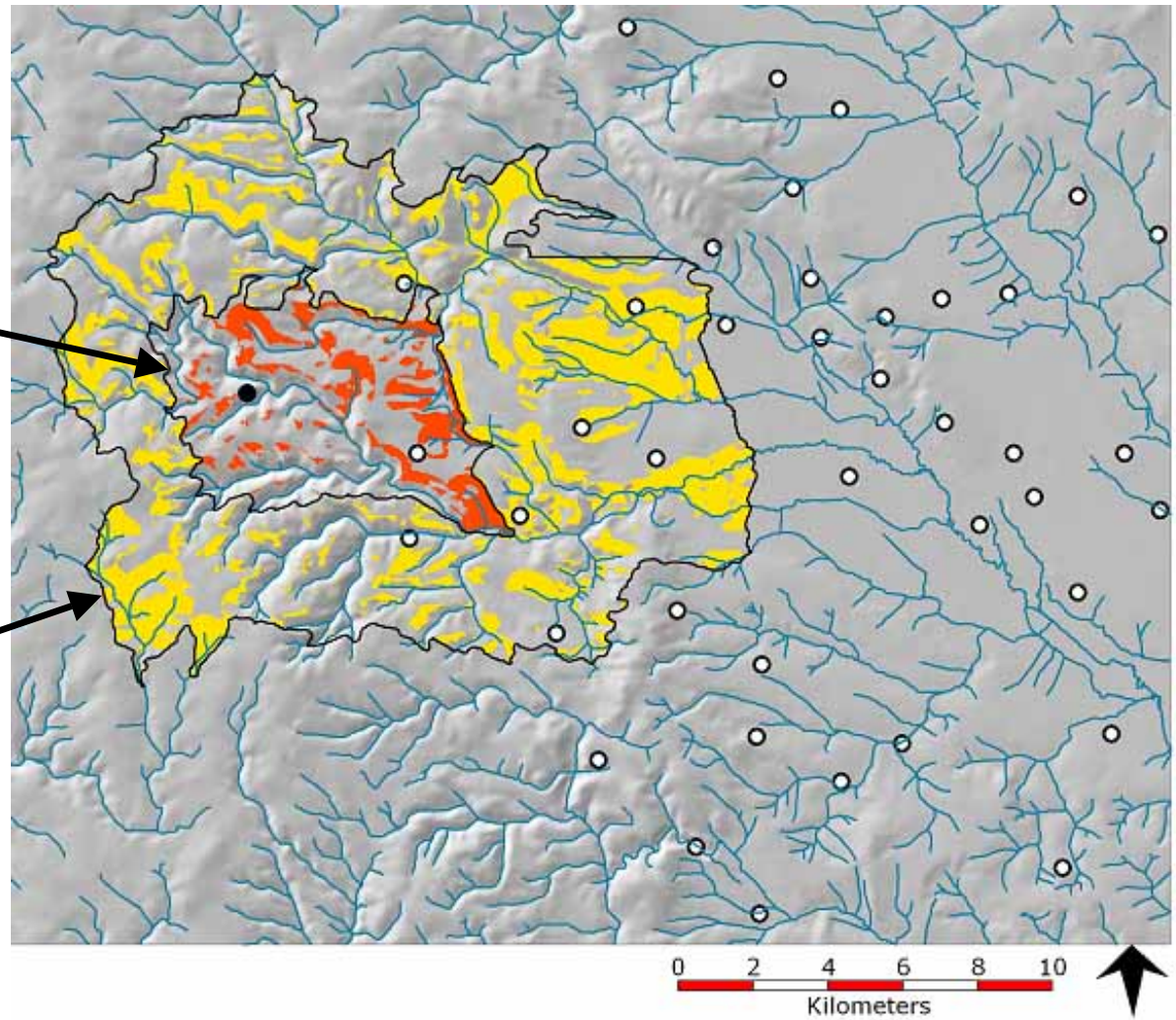
VIEWSHED analysis

From the intra site analysis to the surroundings

ACCESIBILITY OF FIELDS - MODEL







... carrying capacity model of the region