THE UNIBO WAY OF TEACHING

BA courses in Archaeology at the University of Bologna

WALADU

WALADU Cascade Training,

Bertinoro 11th-15th December 2018

Erasmus+

PLAN OF THE PRESENTATION

PART 1 - GENERAL INTRODUCTION AND CONCEPTS

- The Italian university system
- General framework of UNIBO degrees

PART 2 - BA COURSES IN ARCHAEOLOGY AT UNIBO

- Type of courses
- Laboratories and stages
- Mobility

PART 3 - QUALITY ASSURANCE

- Internal and national evaluation
- Stakeholders

PART 4 - JOB MARKET

- Alma Laurea

Part 1 – GENERAL INTRO AND CONCEPTS

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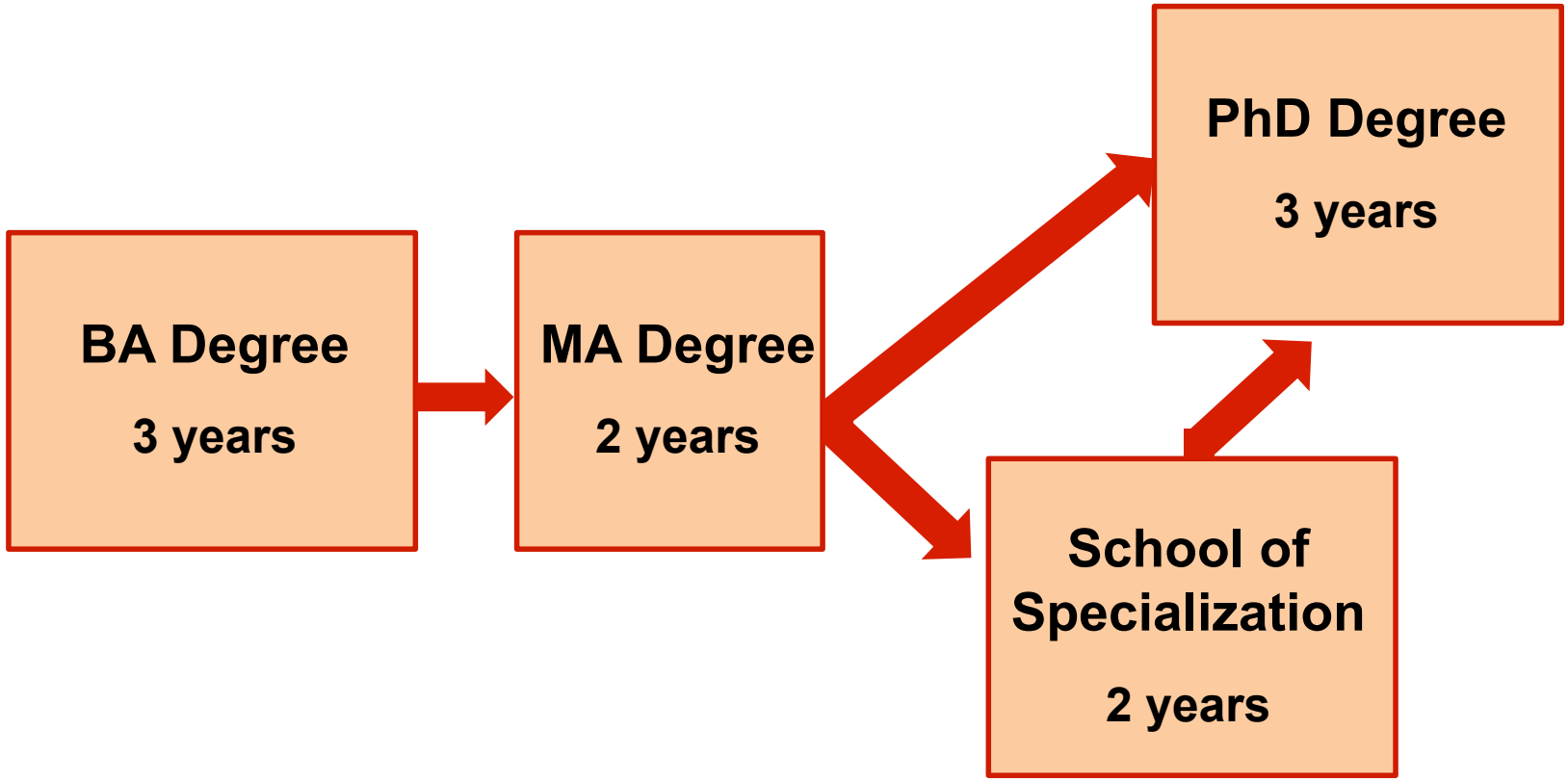
THE ITALIAN UNIVERSITY SYSTEM



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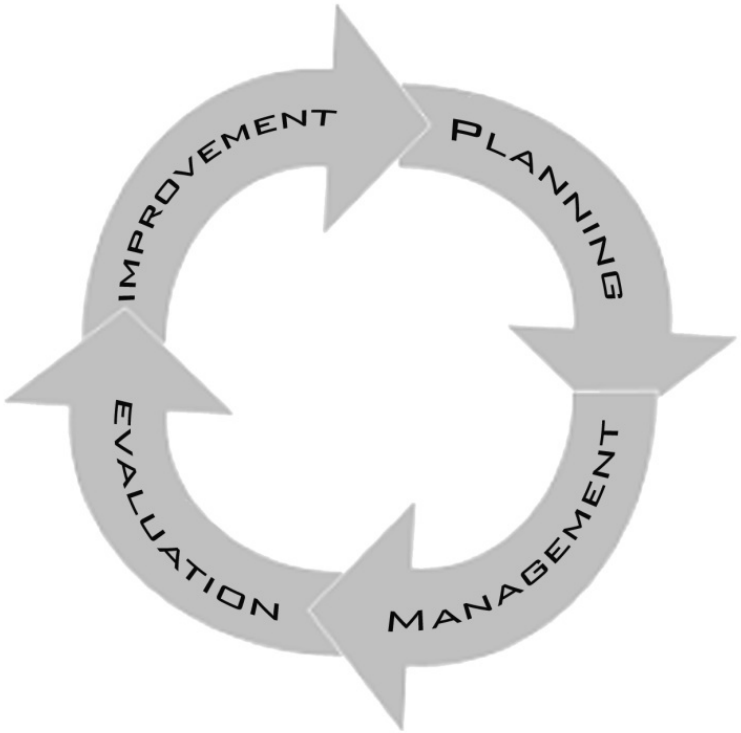
PLANNING COURSES AT UNIBO



1. **PLANNING**: Defining aims of the teaching course
2. **MANAGEMENT**: Academic and administrative staff overlook the activities to be carried out
3. **EVALUATION**: Each teaching course staff periodically evaluate the results achieved
4. **IMPROVEMENT**: Re-shape teaching strategies in order to meet job market needs

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LEARNING OUTCOMES

BOLOGNA PROCESS

One of main features is a **student centered approach** in all the matters concerning education.

Courses are designed and assessed according to: **students learning outcomes** (knowledge and **competence acquired/ and skills developed/ improved**.

ECTS

Each teaching unit corresponds to a variable number of ECTS. 1 ECTS corresponds to **25 hours** of students workload.

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Part 2 – BA COURSES IN ARCHAEOLOGY AT UNIBO

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ARCHAEOLOGY DEGREE SYSTEM AT UNIBO

Courses and places

BOLOGNA

1 BA in Arts
1 MA in Archaeology
1 Specialization School

RAVENNA

1 BA in Cultural Heritage
1 MA in Conservation

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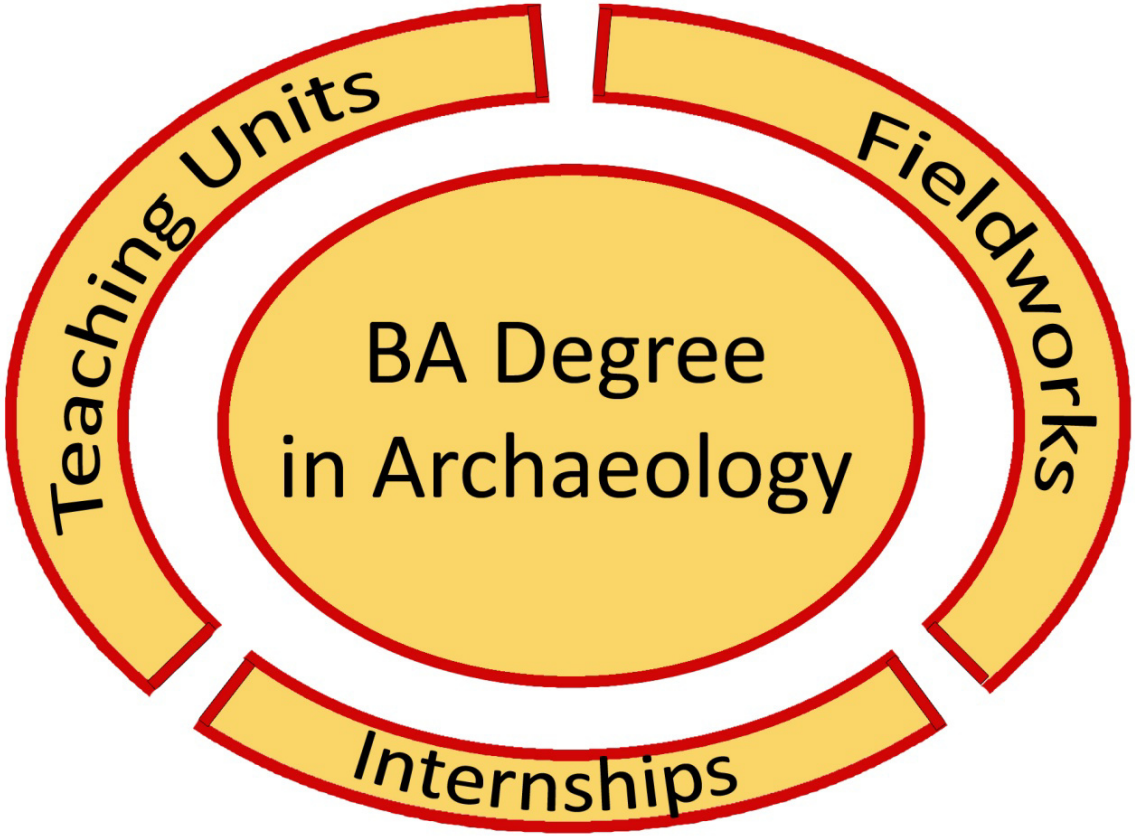
Part 2 – BA courses

ARCHAEOLOGY DEGREE SYSTEM AT UNIBO

Type of activities



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Part 2 – BA courses

ARCHAEOLOGY DEGREE SYSTEM AT UNIBO

BA course in Arts (Bologna)

3 YEARS

13 Core teaching units

4 Optional teaching units

1 Lab/ Internship

Final thesis

Professional skills

- Selected ancient languages
- Theory and analysis of visual arts
- Archaeological methods and theories
- Ancient history of Italy and Mediterran.
- Critical use of sources in different disciplines

Job opportunities

- Librarian and archivist
- Field archaeologist
- Museum employee
- Public/private foundation employee
- Publishers
- Cultural turism

Part 2 – BA courses

ARCHAEOLOGY DEGREE SYSTEM AT UNIBO

BA course in Arts (Bologna)

95 senior and junior researchers are involved in the teaching activities

684 students enrolled for 2015-2016 academic years

Part 2 – BA courses

ARCHAEOLOGY DEGREE SYSTEM AT UNIBO

BA course in Cultural Heritage (Ravenna)

3 YEARS

4 Core teaching units

12/15 Optional teaching units

1 Lab/ Internship

Final thesis

Professional skills

- Conservation, documentation and management of Cutlural Heritage
- Cultural Heritage Laws
- Archaeological methods and theories
- Anthropological methods and theories
- Critical use of sources

Job opportunities

- Librarian and archivist
- Field archaeologist
- Public/private foundation employee
- Publishers
- Cultural turism

Part 2 – BA courses

ARCHAEOLOGY DEGREE SYSTEM AT UNIBO

BA course in Cultural Heritage (Ravenna)

52 senior and junior researchers are involved in the teaching activities

178 students enrolled for 2015-2016 academic years

Part 2 – BA courses

ARCHAEOLOGY DEGREE SYSTEM AT UNIBO

Fieldworks

Part 2 – BA courses

ARCHAEOLOGY DEGREE SYSTEM AT UNIBO

Laboratories

4 Labs for BA students

- Remote sensing
- Topography
- Pottery and small finds
- Bioarchaeology

15 Labs for MA and Spec. School students

- Remote sensing (2 labs)
- Topography (2 labs)
- Pottery and small finds (7 labs)
- Bioarchaeology (3 labs)
- Experimental archaeology (1 lab)

ARCHAEOLOGY DEGREE SYSTEM AT UNIBO

Internships

Internships represent one of the most efficient ways to **allow students to interact with the job market**.

The Department of History and Culture at UNIBO offers to its students the opportunity to carry out internships in both **public institution** and **private institutions**.

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ARCHAEOLOGY DEGREE SYSTEM AT UNIBO

International mobility

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- Erasmus Programme Studio
- Erasmus Placement
- Overseas
- Erasmus Mundus Action 2

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Part 2 – BA courses

Part 3 - QUALITY ASSURANCE

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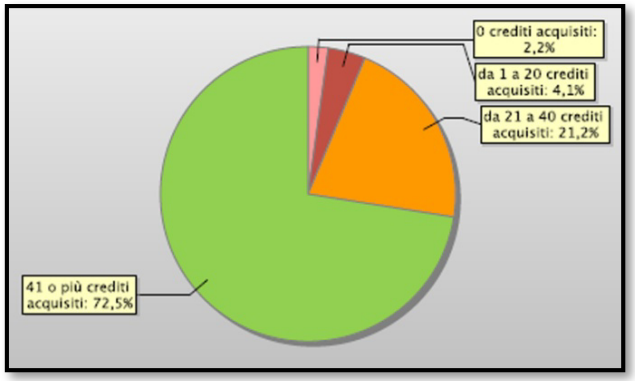
EVALUATION SYSTEM

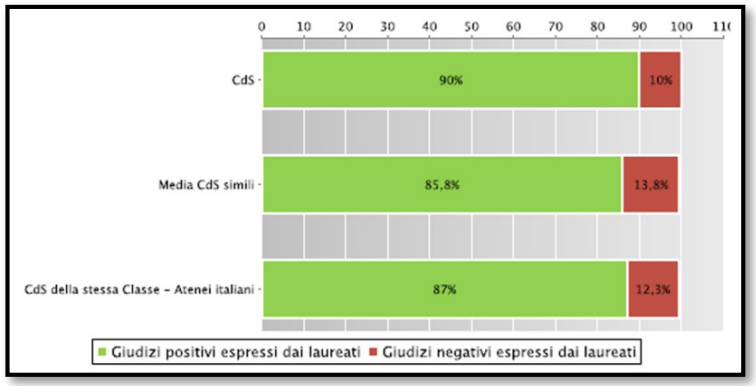
Internal and National evaluations

Internal evaluation (every year)

- Students provenience
- Students satisfaction
- Number of ECTS obtained
- Studying abandonment
- Average teaching units marks
- International mobility

		Provenienza						Sesso			Età immatricolazione		
		Studenti della coorte	Residenti nella provincia della sede didattica del CdS	Residenti in altre province sedi didattiche dell'ateneo	Residenti in altre province dell'Emilia Romagna	Residenti in altre regioni italiane (inclusa Rep. San Marino)	Residenti all'estero	Studenti con cittadinanza estera (diversa da Italiana e Rep. di San Marino)	M	F	19 o meno	20 - 24	25 o più
Coorte 2013/2014	CdS	483	17,6%	13,3%	24,0%	44,5%	0,6%	2,1%	24,8%	75,2%	77,6%	19,9%	2,5%
	Media CdS simili	260,1	21,3%	16,8%	14,7%	45,6%	1,6%	4,9%	28,8%	71,2%	62,2%	32,8%	5,0%

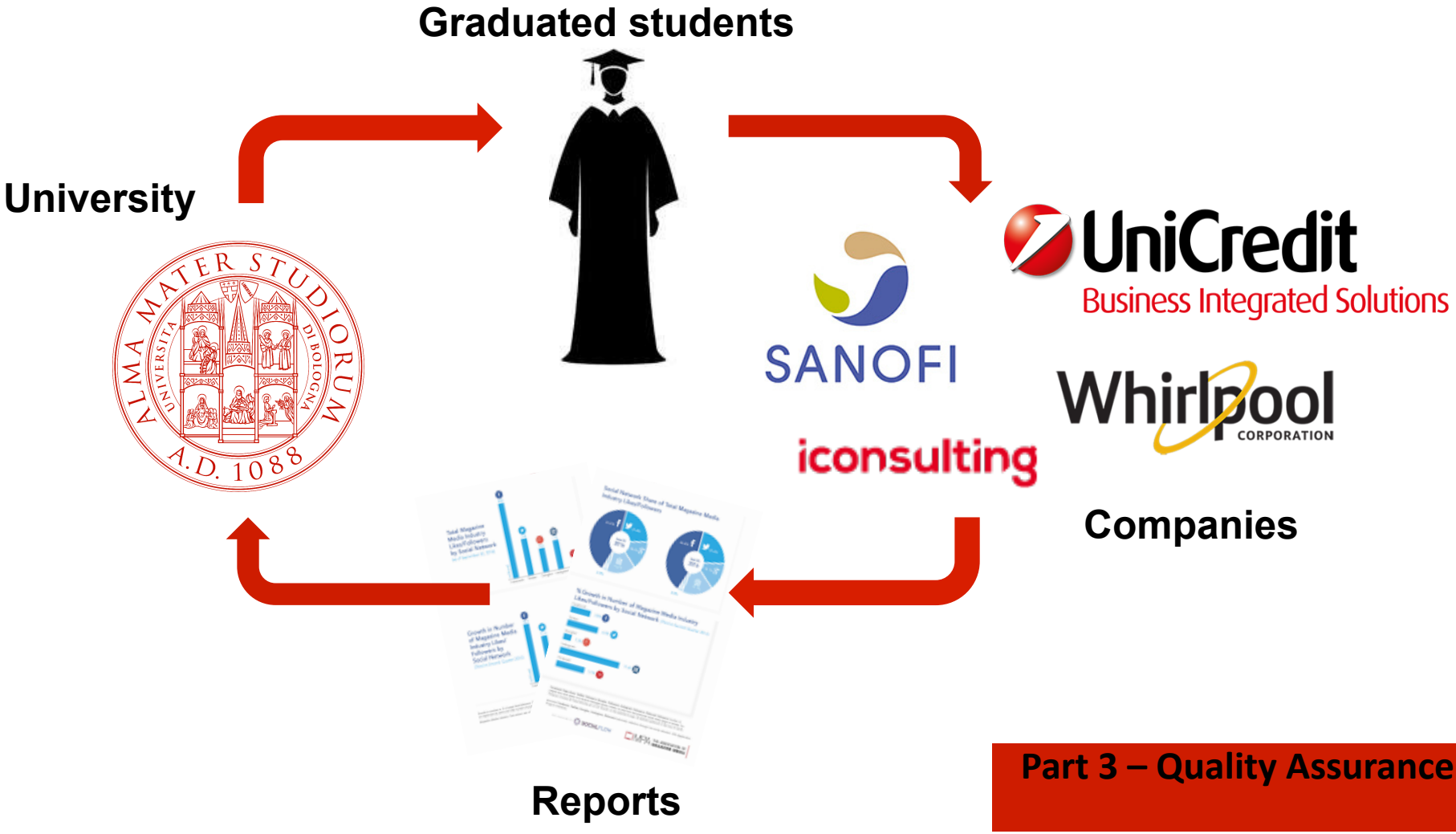




Beside internal evaluation, every **3 years**, **national evaluations** are carried out **to test the efficiency** of each course.

EVALUATION SYSTEM

The role of stakeholders



Part 3 – Quality Assurance

QUALITY INDICATORS

National and international reputation

1st UNIBO discipline

2nd Department for the study of Archaeology in Italy

36th Department for the study of Archaeology in the World

1st UNIBO Arts and Humanities in Italy for job opportunities

1st UNIBO Arts and Humanities in Italy for International relations

CENSIS

Part 4 – JOB OPPORTUNITIES

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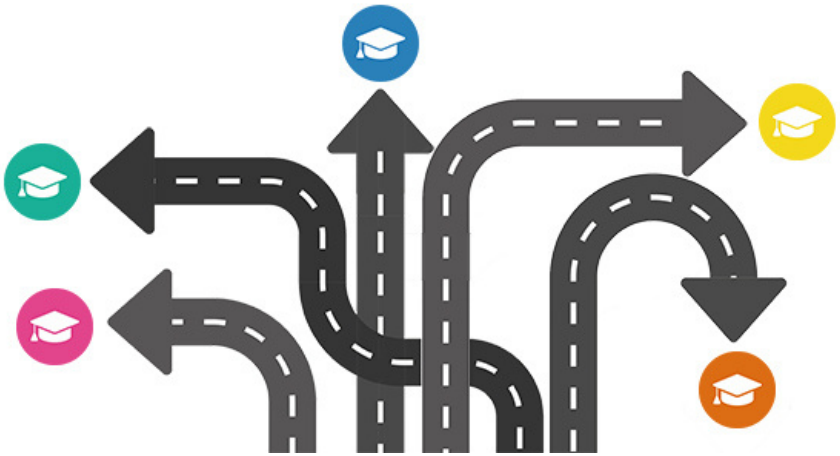
IMPROVING JOB OPPORTUNITIES

dal 1994 Consorzio Interuniversitario AL ALMALAUREA

Alma Laurea its an online platform which acts as a bridge between university and the job market.
It was created in 1994 at the University of Bologna with 3 main purposes:

1. To allow UNIs to understand academic trend of their students
2. To allow UNIs to understand students placement after 1 – 3 – 5 years.
3. To provide Italian and foreign business companies with a detailed database of newly graduated students.



Part 2 – BA courses

The Past meets the Future
Technology in archaeological research

WALADU Cascade Training

University Residential Centre of Bertinoro

10th-15th December 2018

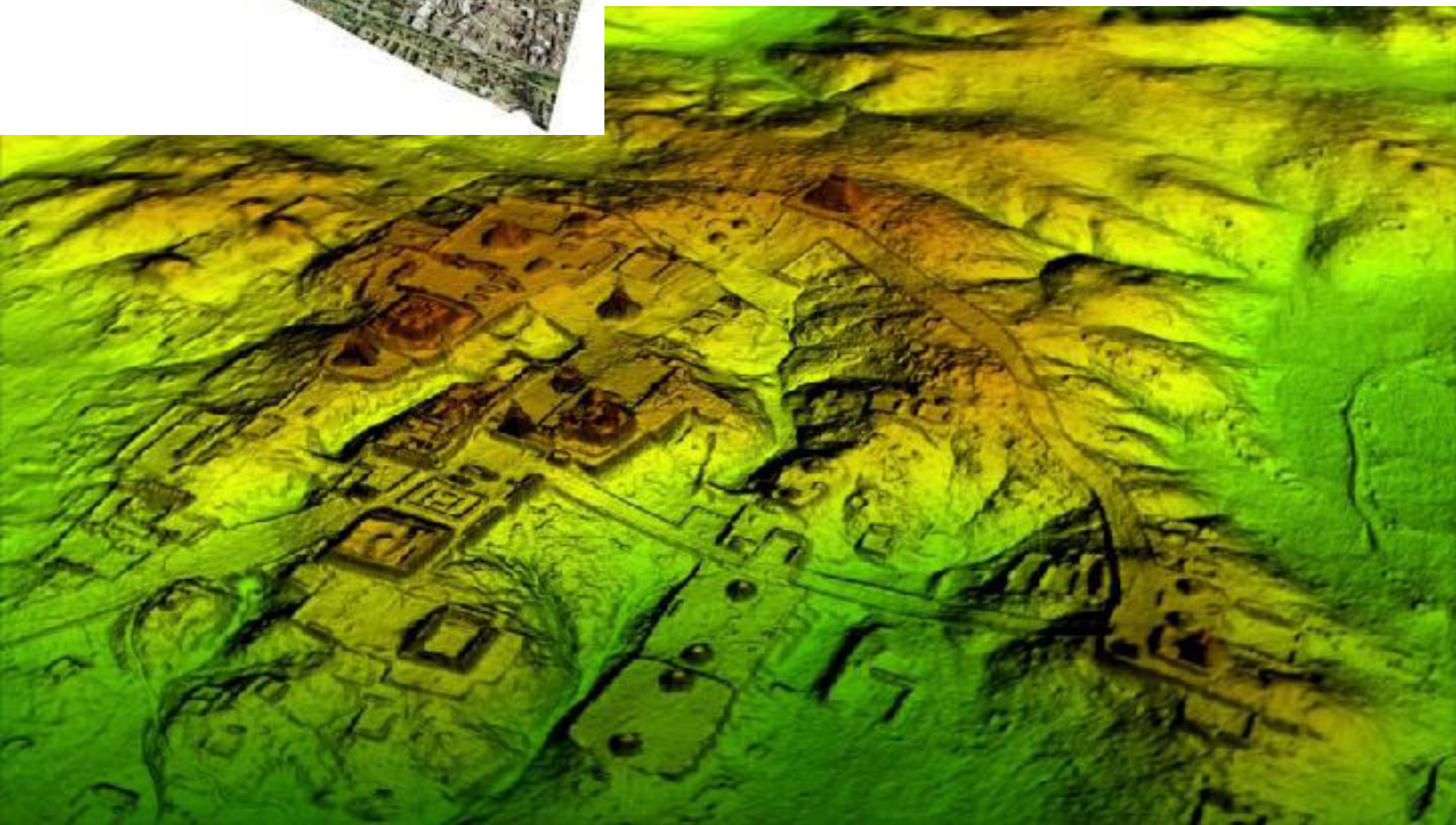
Goals

- To present “new” tools for the management of archaeological data
- To confront with all of you about the data management, comparing our expertise
- To create a “new” model of data management

High Technology in Archaeology

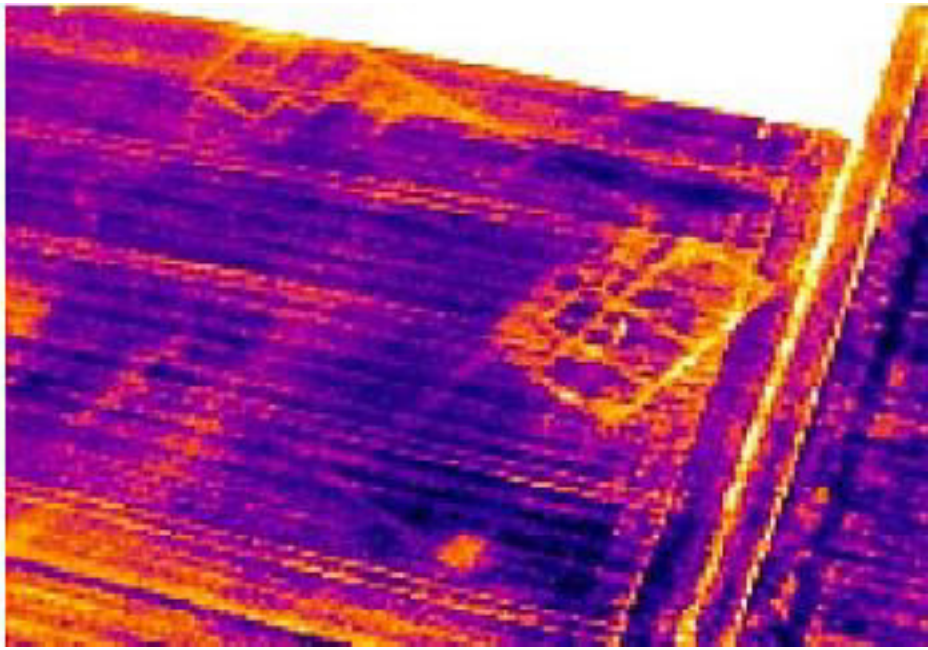
LIDAR (*LIght Detection And Ranging*)

Surveying method that measures distance to a target by illuminating the target with pulsed laser light and measuring the reflected pulses with a sensor. Differences in laser return times and wavelengths can then be used to make digital 3-D representations of the target.



High Technology in Archaeology

AERIAL THERMOGRAPHY

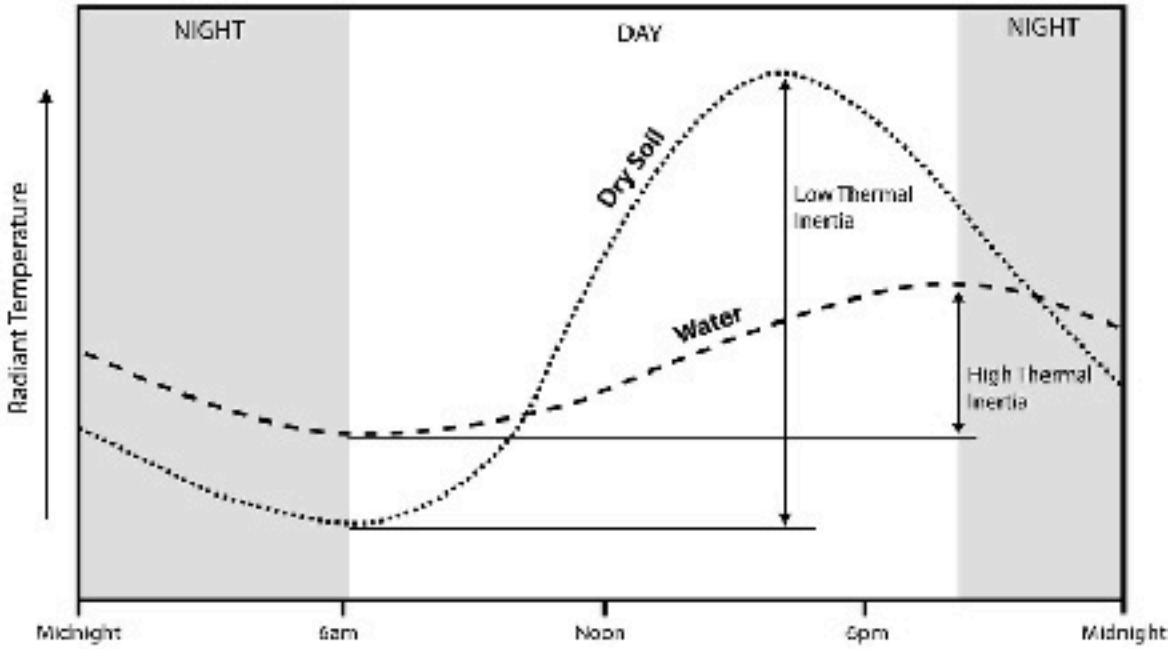


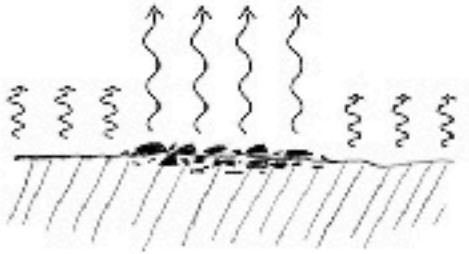
Surveying method through thermal infrared radiation.

High Technology in Archaeology

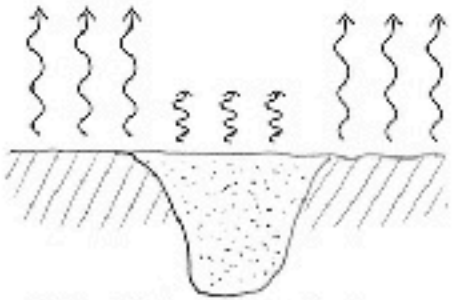
AERIAL THERMOGRAPHY

Thermal infrared radiation is absorbed and reemitted at varying rates by all objects on and within the ground depending upon their density, composition, and moisture content. If an area containing archaeological features is recorded at the moment when their thermal signatures most strongly contrast with that of the surrounding matrix, they can be visually identified in thermal images.

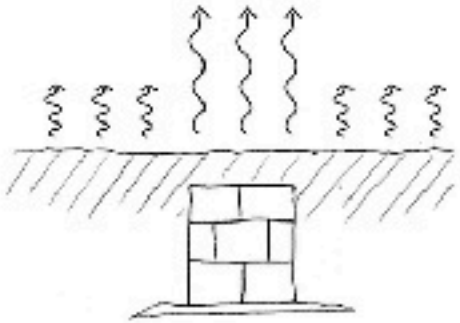




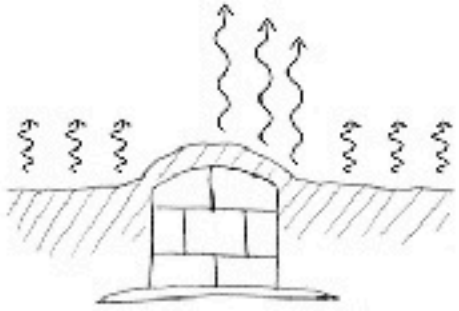
a. Concentrations of artifacts



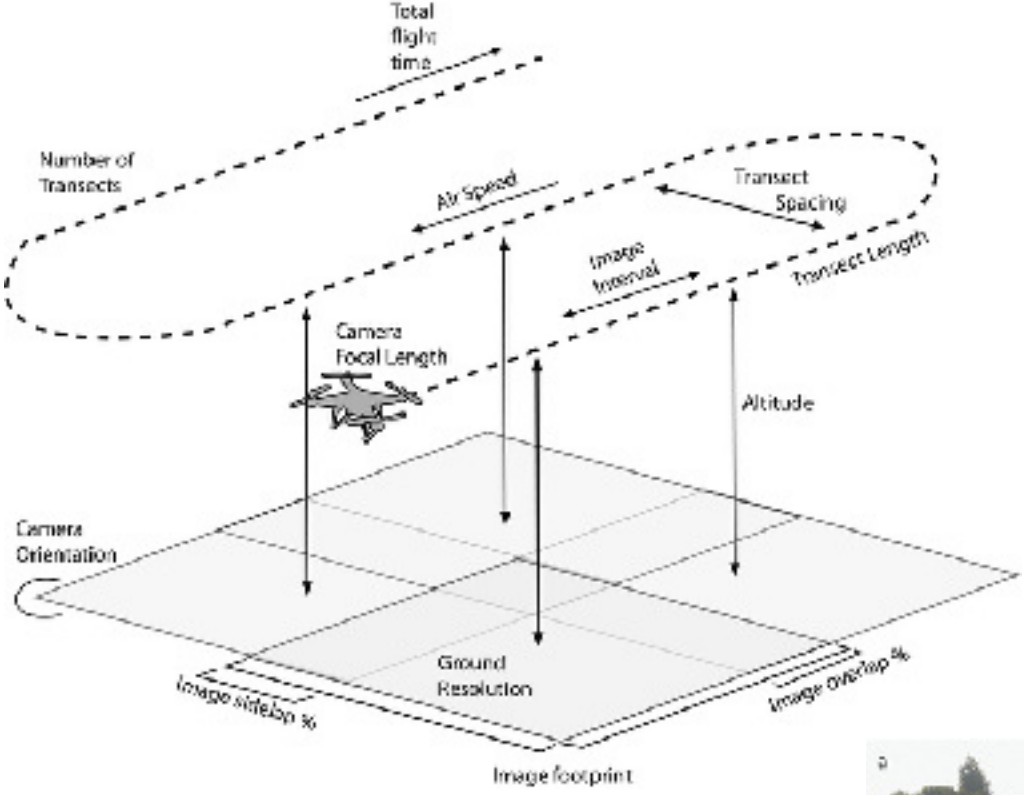
b. Pits, ditches, and earthworks

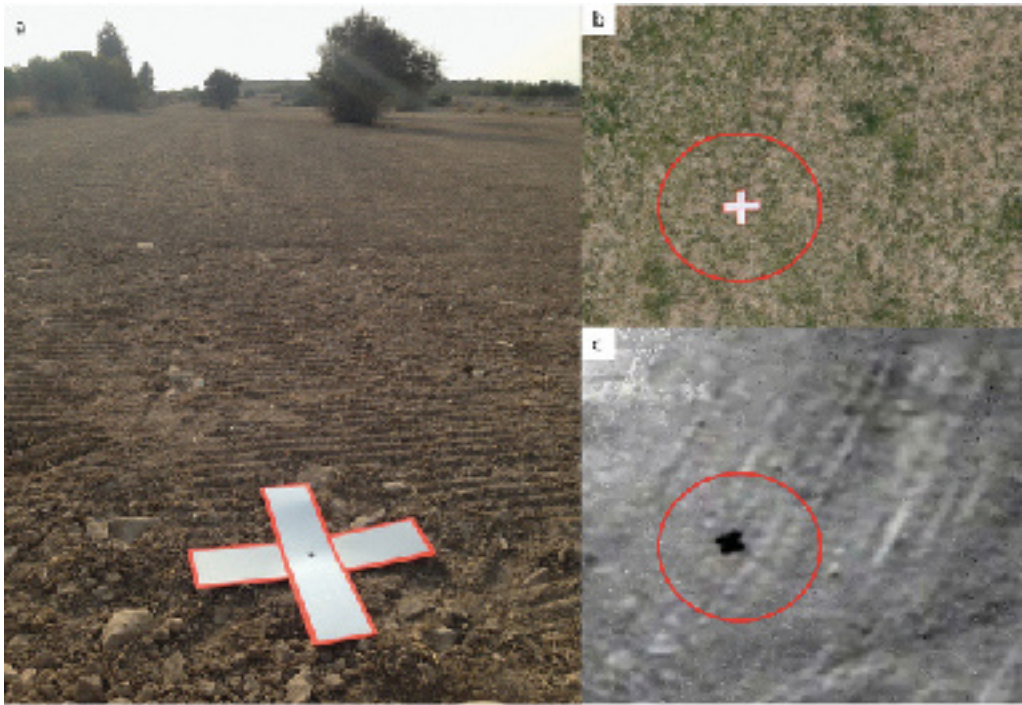


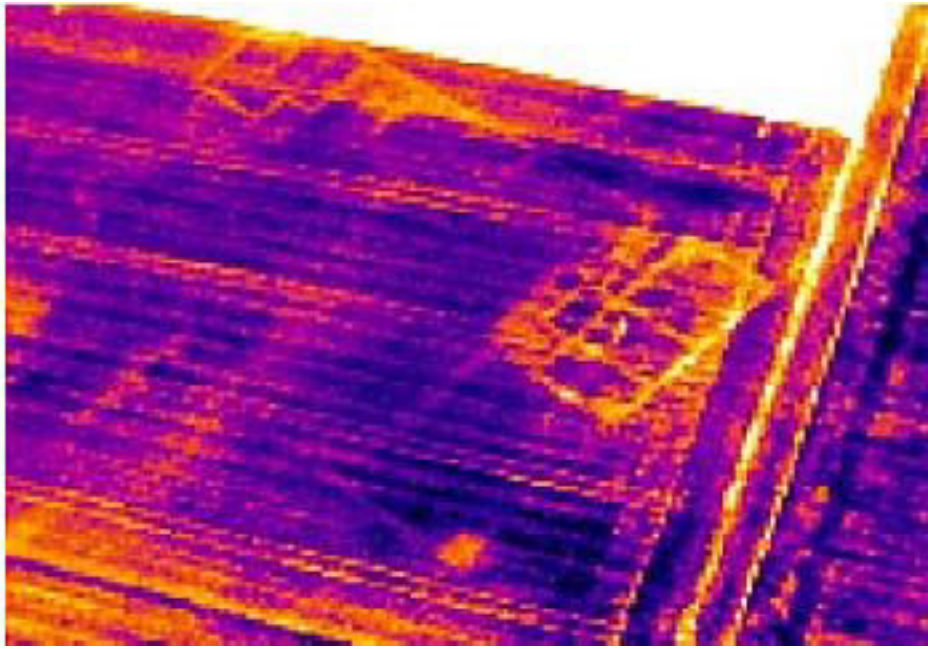
c. Subsurface architecture



d. Subtle topographic features


Total flight time
Number of Transects
Air Speed
Transect Spacing
Image Interval
Transect Length
Camera Focal Length
Altitude
Camera Orientation
Ground Resolution
Image sidelap %
Image overlap %
Image footprint


a
b
c



Capillary action of the water

Capillary action of the water

Robotics thecnology in archaeology

ROVINA Project (University of Freibourg)

Goals

- To present “new” tools for the management of archaeological data
- To confront with all of you about the data management, comparing our expertise
- To create a “new” model of data management

Topics

DATA FROM ARCHAEOLOGICAL EXCAVATION

- Stratigrafic data
- Topographic data
- Material culture (Pottery and Small Finds)

How do you manage archaeological data?

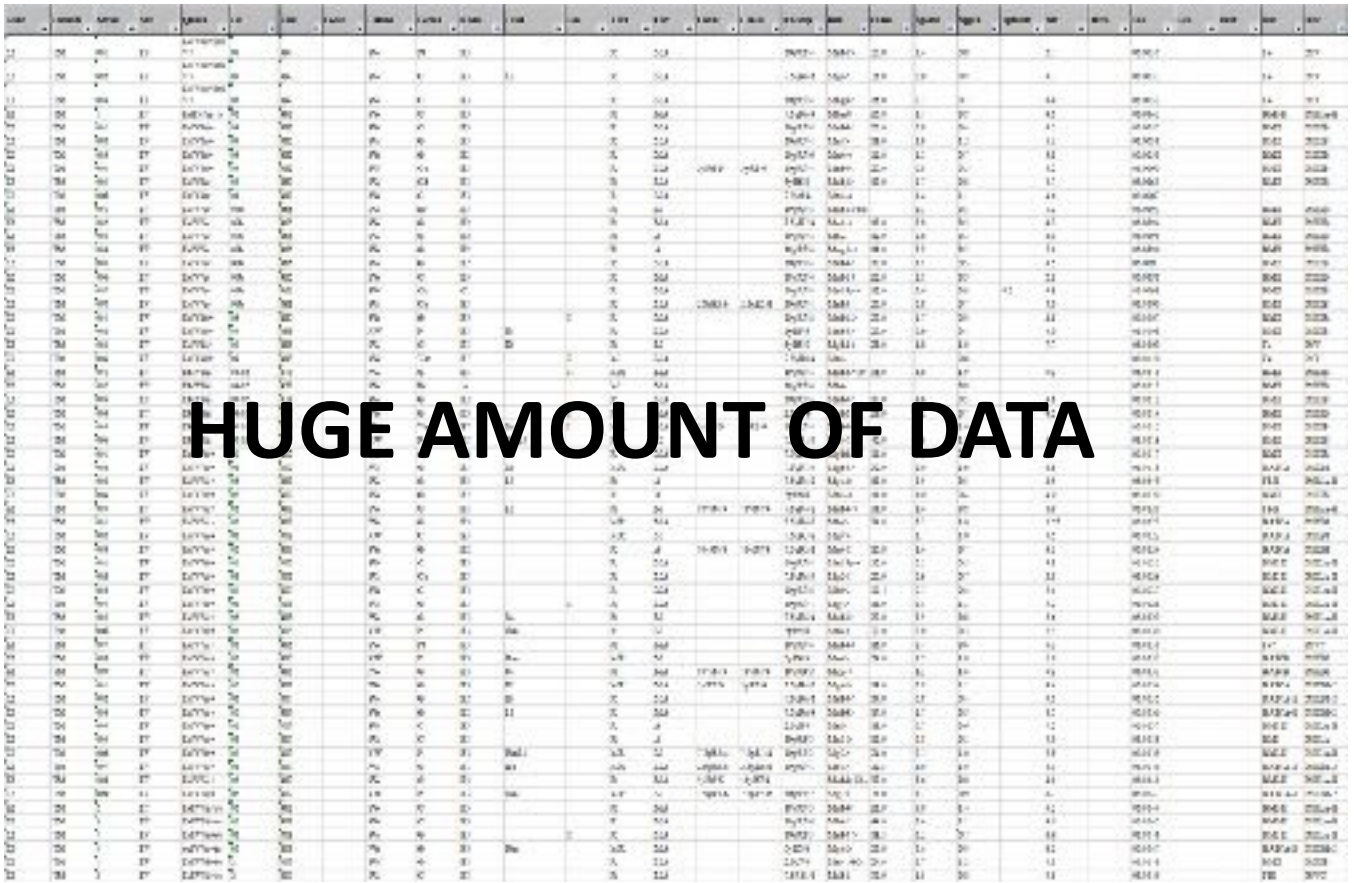
The archaeological excavation

DESTRUCTIVE PROCESS

One time activity → **Everything needs to be recorded properly**

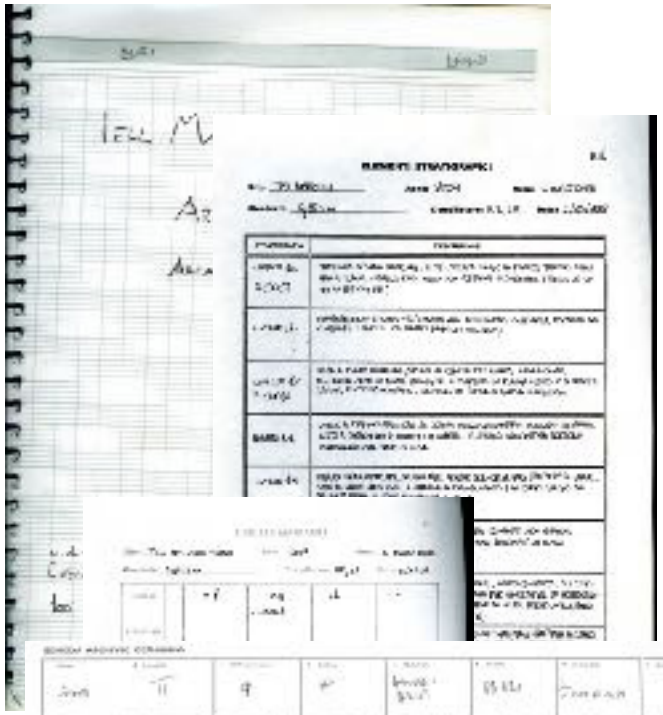
The archaeological excavation

One time activity → **Everything needs to be recorded properly**

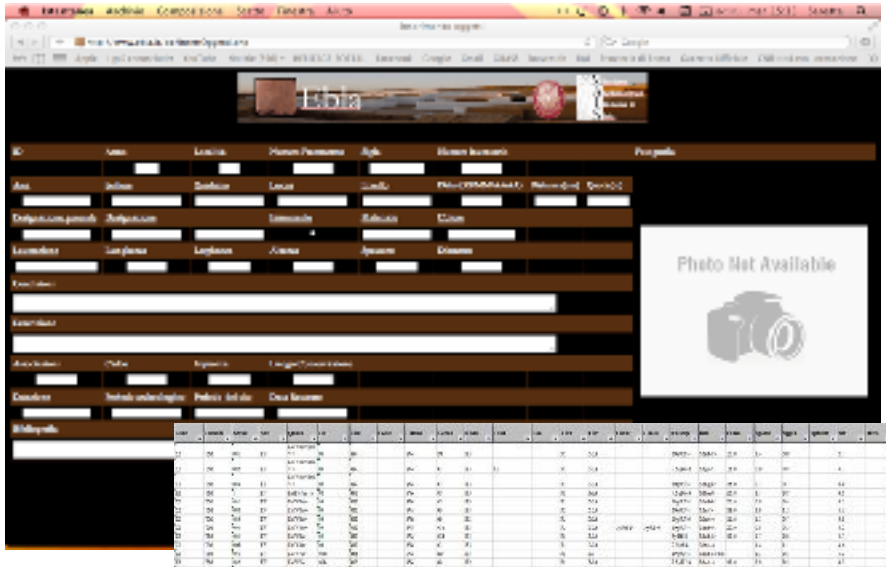


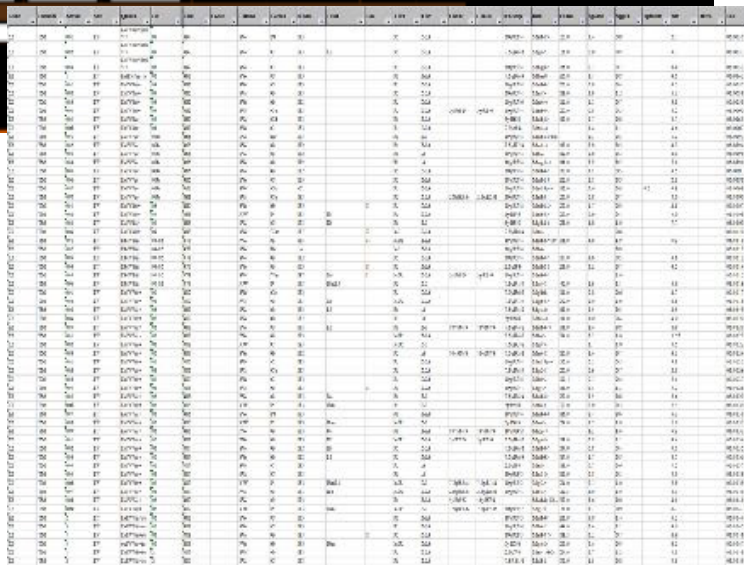
HUGE AMOUNT OF DATA

Paper VS Digital



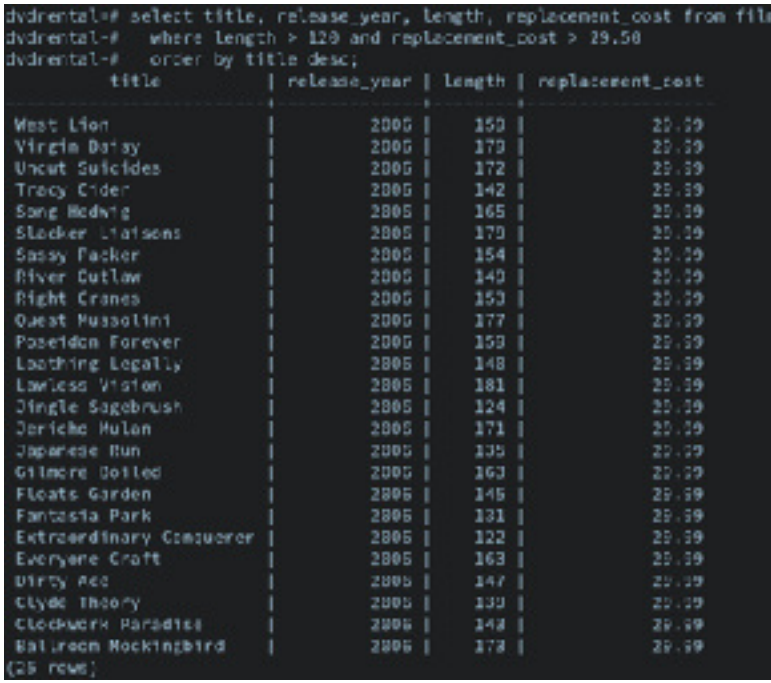
VS





Database

A DATABASE is an organized collection of data, generally stored and accessed electronically from a computer system. Where databases are more complex they are often developed using formal design and modeling techniques.



```
dvdrental=# select title, release_year, length, replacement_cost from fil
dvdrental-#   where length > 120 and replacement_cost > 29.50
dvdrental-#   order by title desc;
         title          | release_year | length | replacement_cost
------------------------+--------------+--------+------------------
West Lion               |         2006 |    150 |            29.99
Virgin Daisy            |         2006 |    179 |            29.99
Uncut Suicides          |         2006 |    172 |            29.99
Tracy Cider             |         2006 |    142 |            29.99
Song Hedwig             |         2006 |    165 |            29.99
Slacker Liaisons        |         2006 |    170 |            29.99
Sassy Packer            |         2006 |    154 |            29.99
River Outlaw            |         2006 |    140 |            29.99
Right Cranes            |         2006 |    153 |            29.99
Quest Mussolini         |         2006 |    177 |            29.99
Poseidon Forever        |         2006 |    159 |            29.99
Loathing Legally        |         2006 |    148 |            29.99
Lawless Vision          |         2006 |    181 |            29.99
Jingle Sagebrush        |         2006 |    124 |            29.99
Jericho Mulan           |         2006 |    171 |            29.99
Japanese Run            |         2006 |    135 |            29.99
Gilmore Boiled          |         2006 |    163 |            29.99
Floats Garden           |         2006 |    146 |            29.99
Fantasia Park           |         2006 |    131 |            29.99
Extraordinary Conquerer |         2006 |    122 |            29.99
Everyone Craft          |         2006 |    163 |            29.99
Dirty Ace               |         2006 |    147 |            29.99
Clyde Theory            |         2006 |    130 |            29.99
Clockwork Paradise      |         2006 |    148 |            29.99
Ballroom Mockingbird    |         2006 |    173 |            29.99
(25 rows)
```

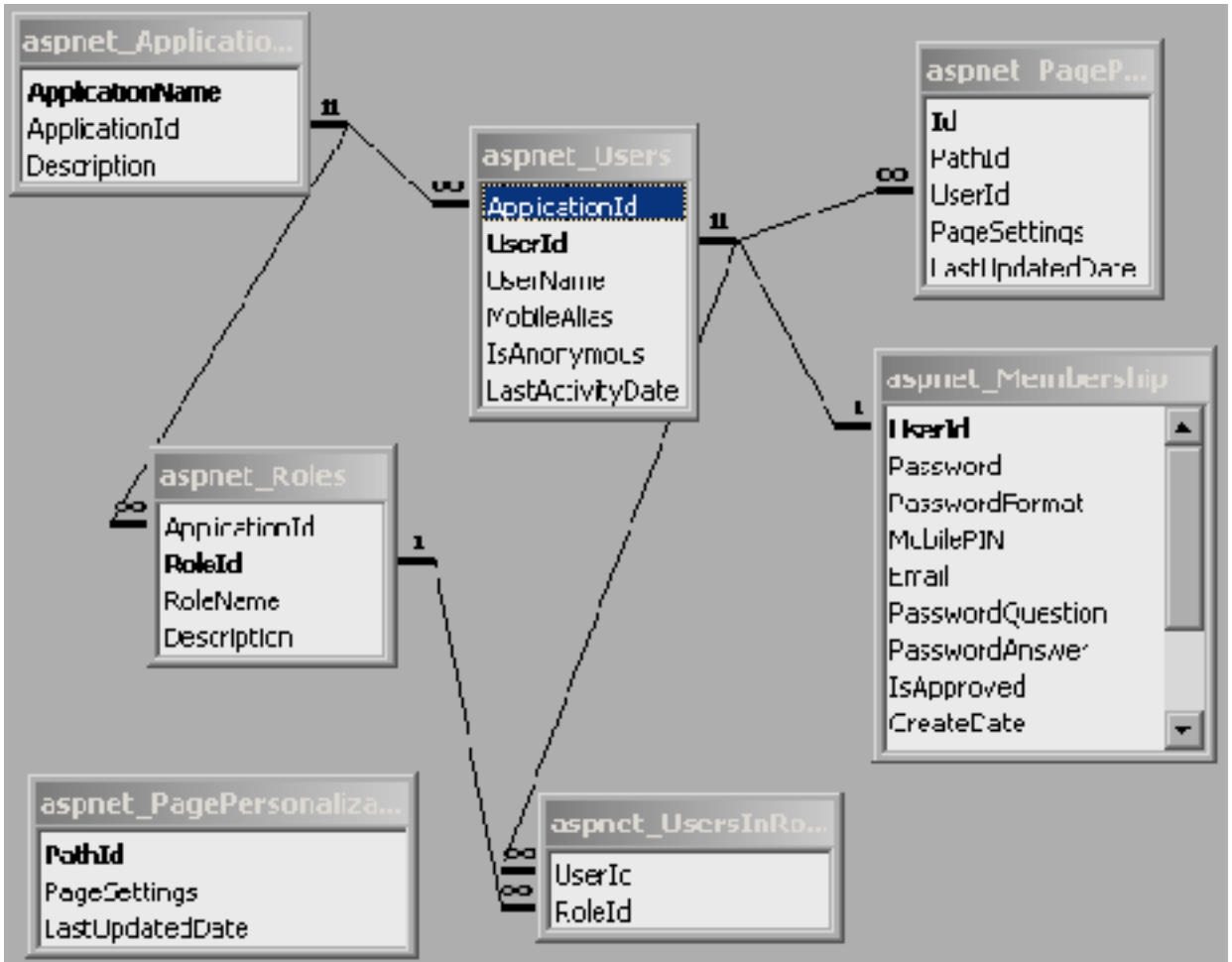
Database

All types of data can be recorded in a database, such as:

- **Stratigraphic data**
- **Topographic data**
- **Material culture data (pottery & small finds)**
- **Philologic data**
- **….**

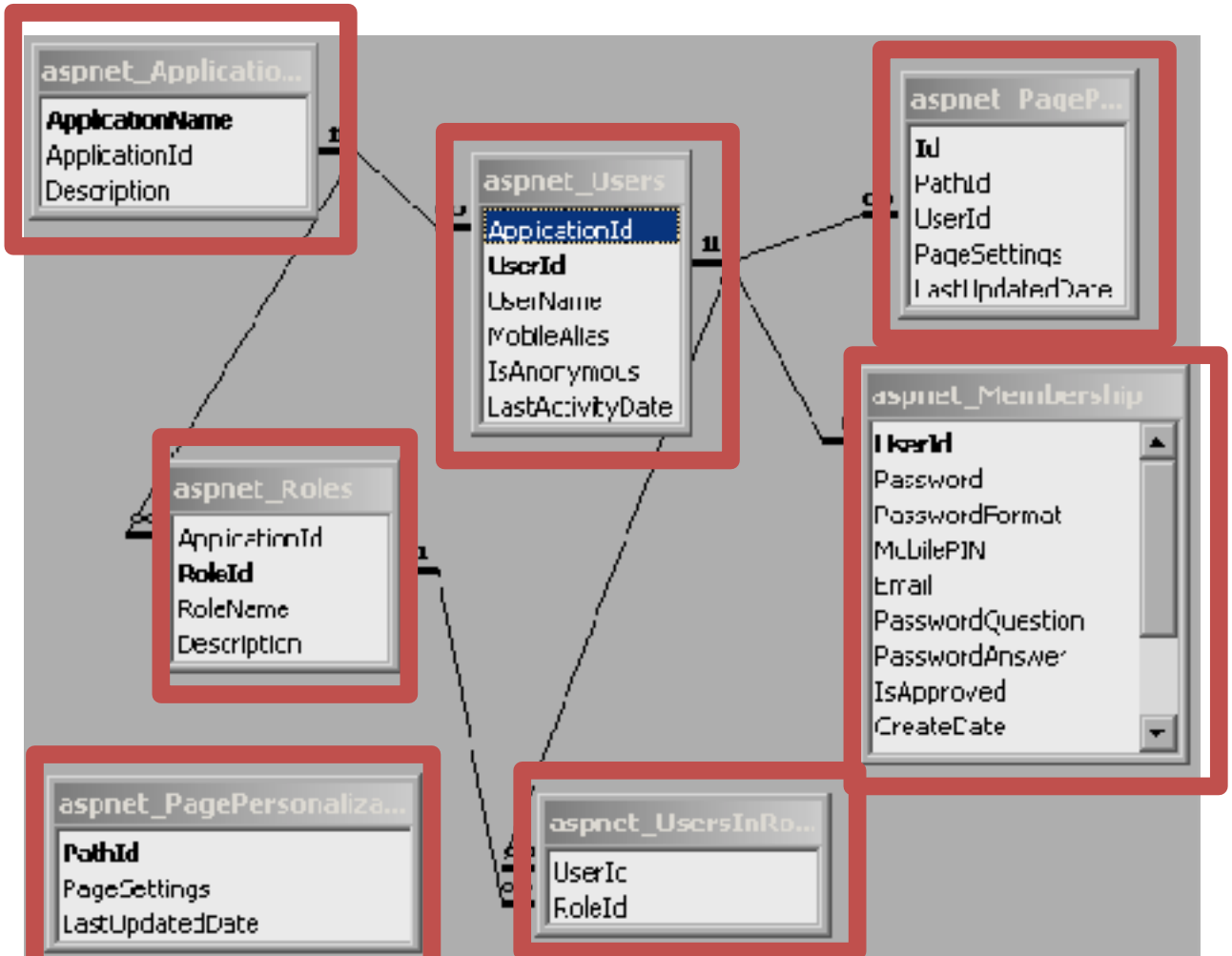
HOW TO … PROGRAM A DB

rows and columns in a series of TABLES
use SQL for writing and querying data



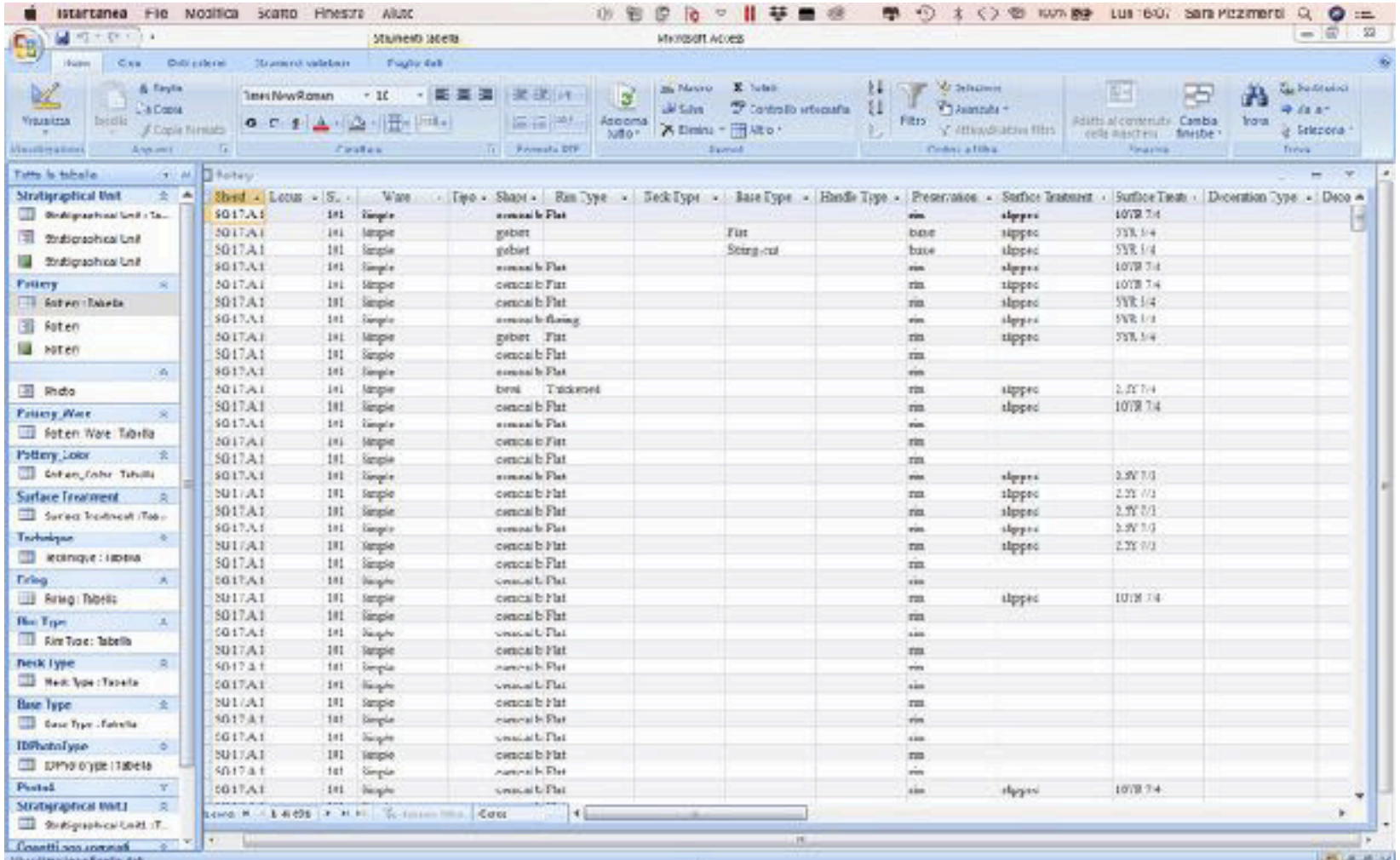
HOW TO … PROGRAM A DB

TABLES



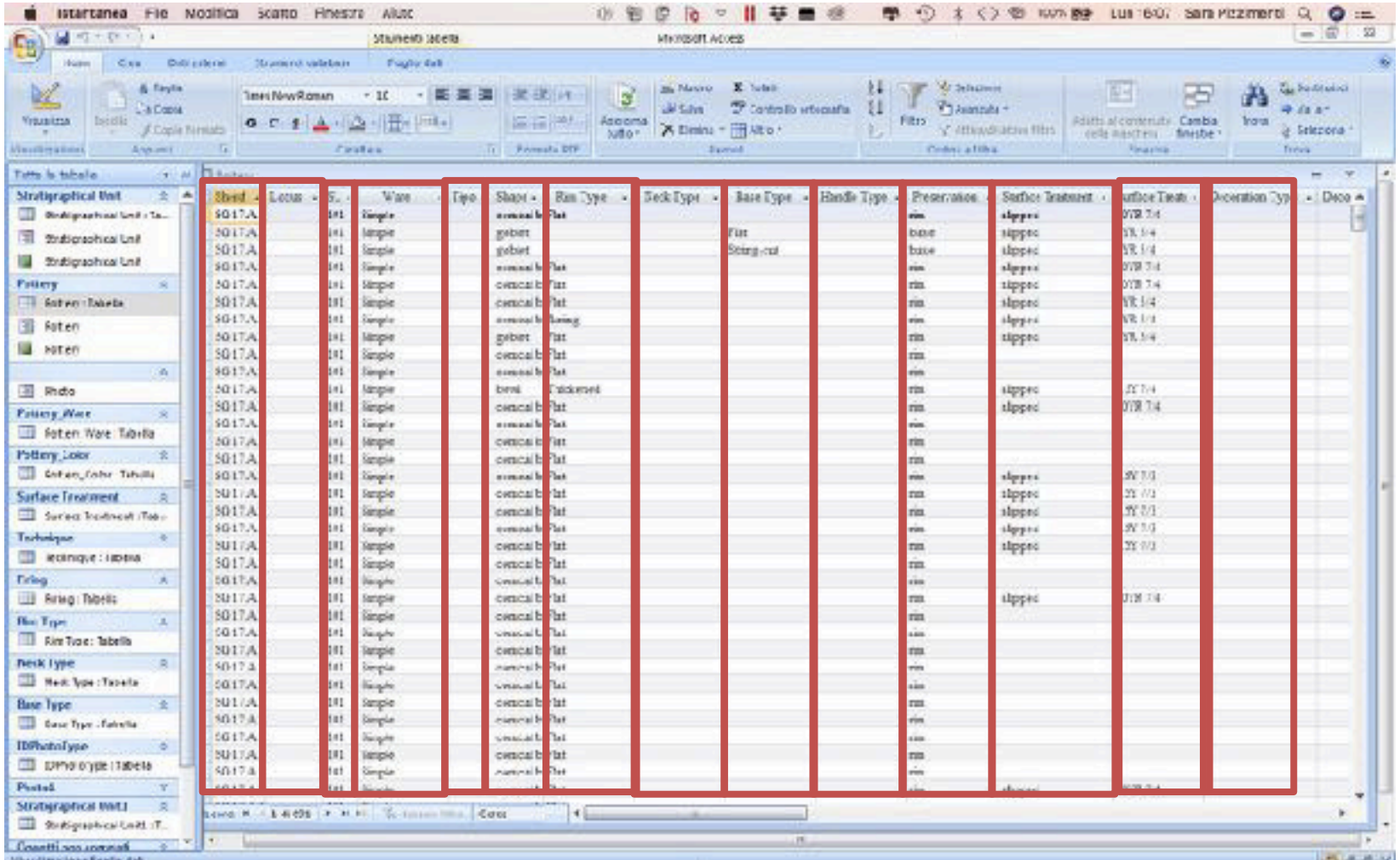
HOW TO … PROGRAM A DB

COLUMNS = FIELDS



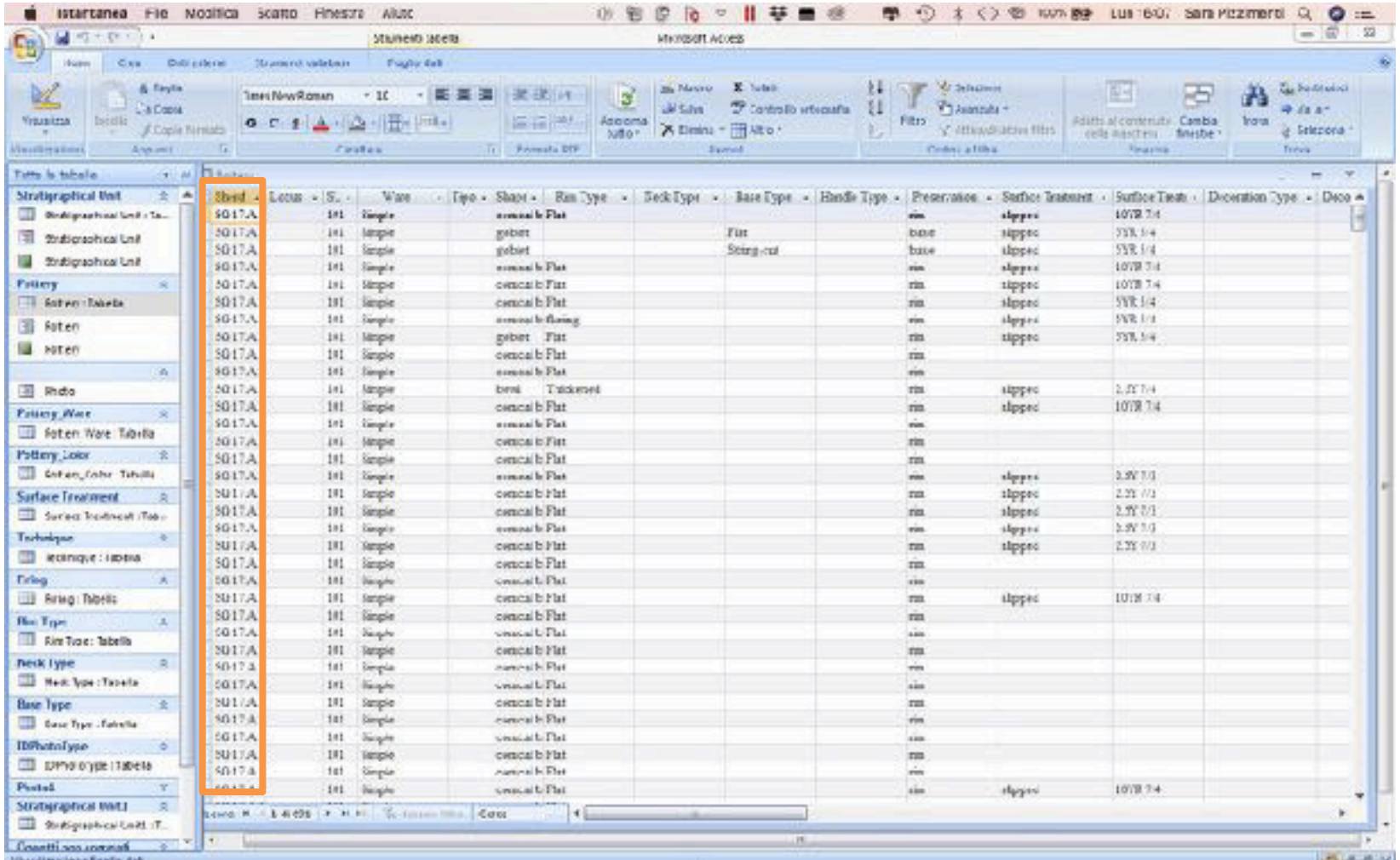
HOW TO … PROGRAM A DB

COLUMNS = FIELDS



HOW TO … PROGRAM A DB

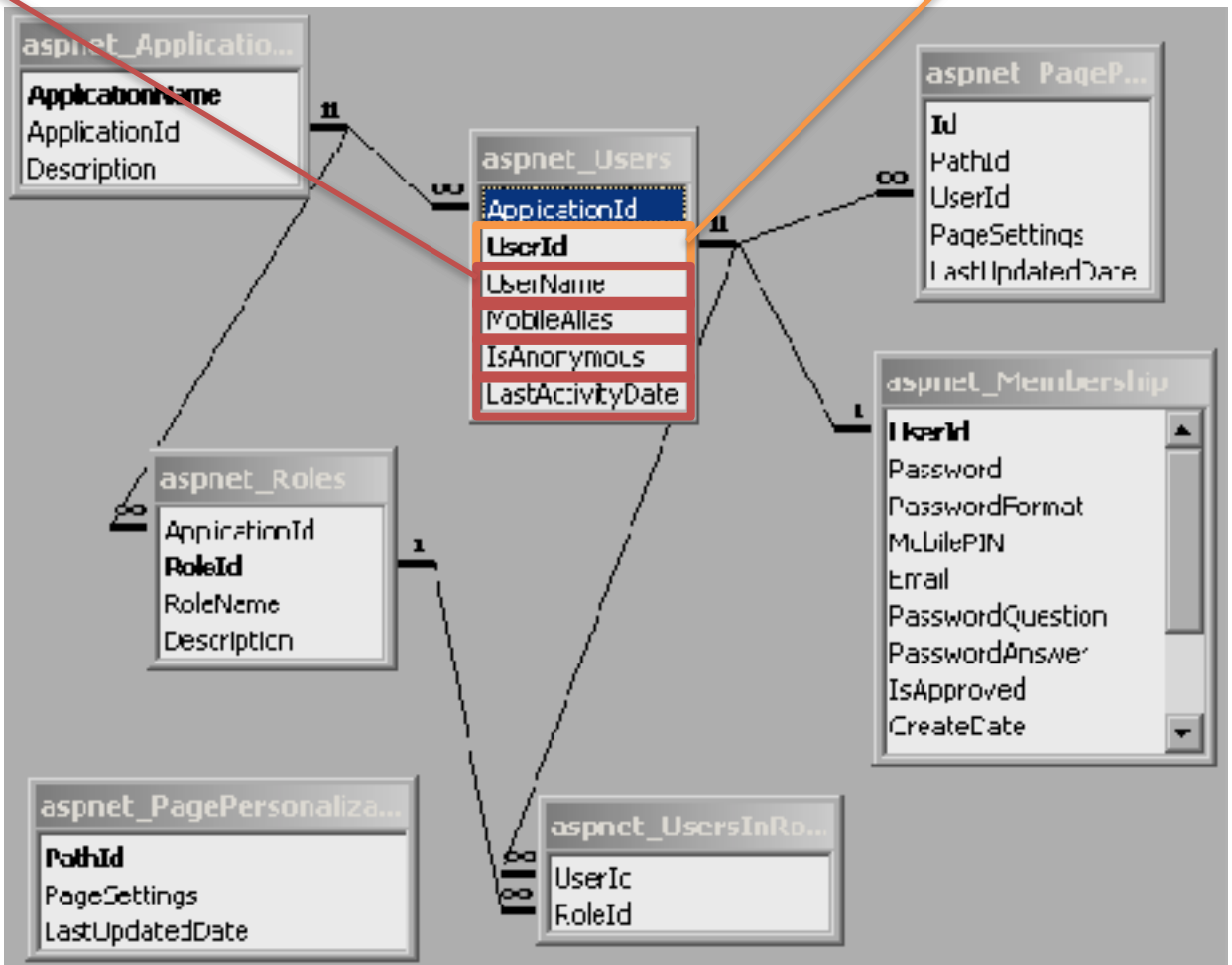
PRIMARY KEY



HOW TO … PROGRAM A DB

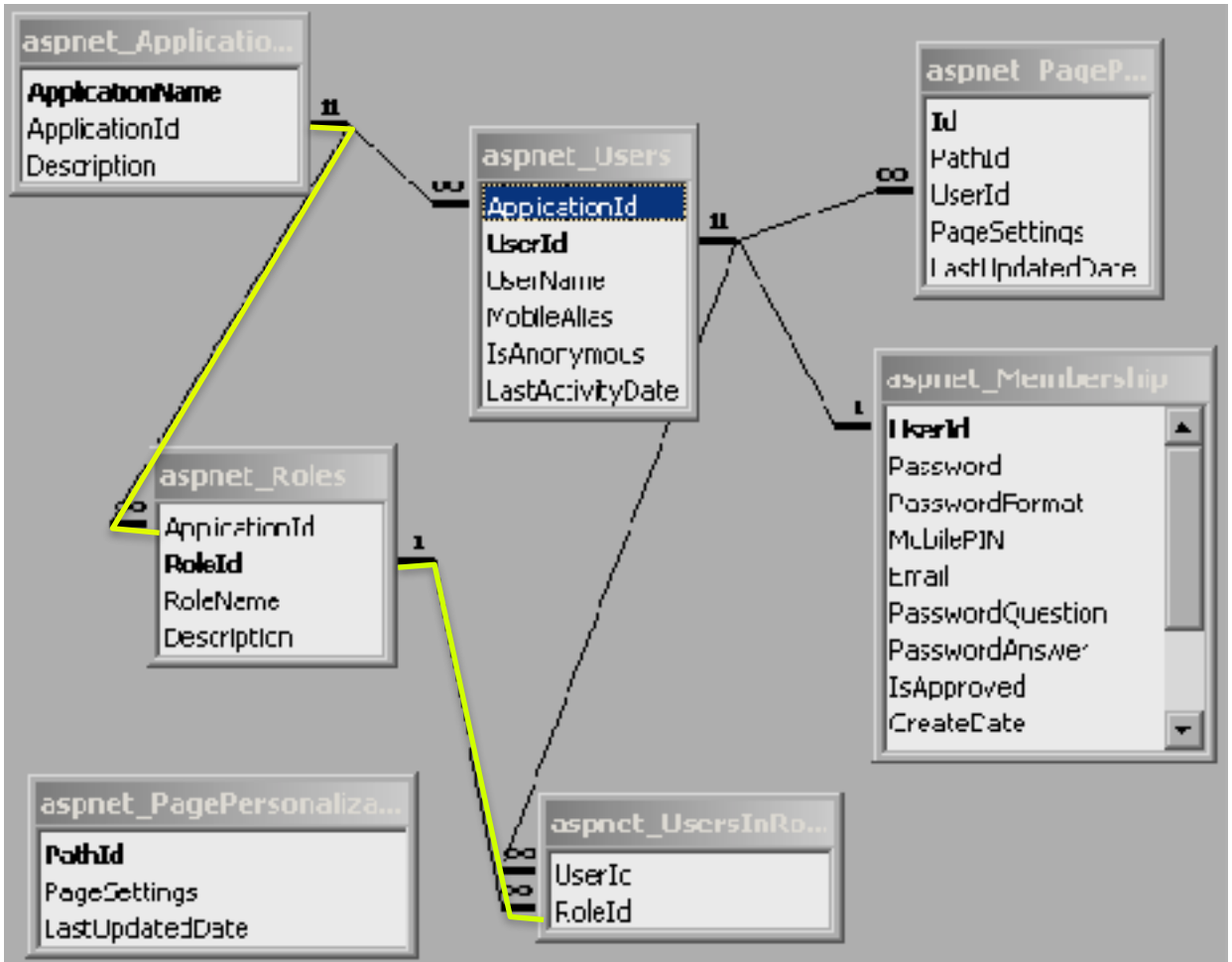
FIELDS

PRIMARY KEY



HOW TO … PROGRAM A DB

RELATIONSHIP BETWEEN TABLES



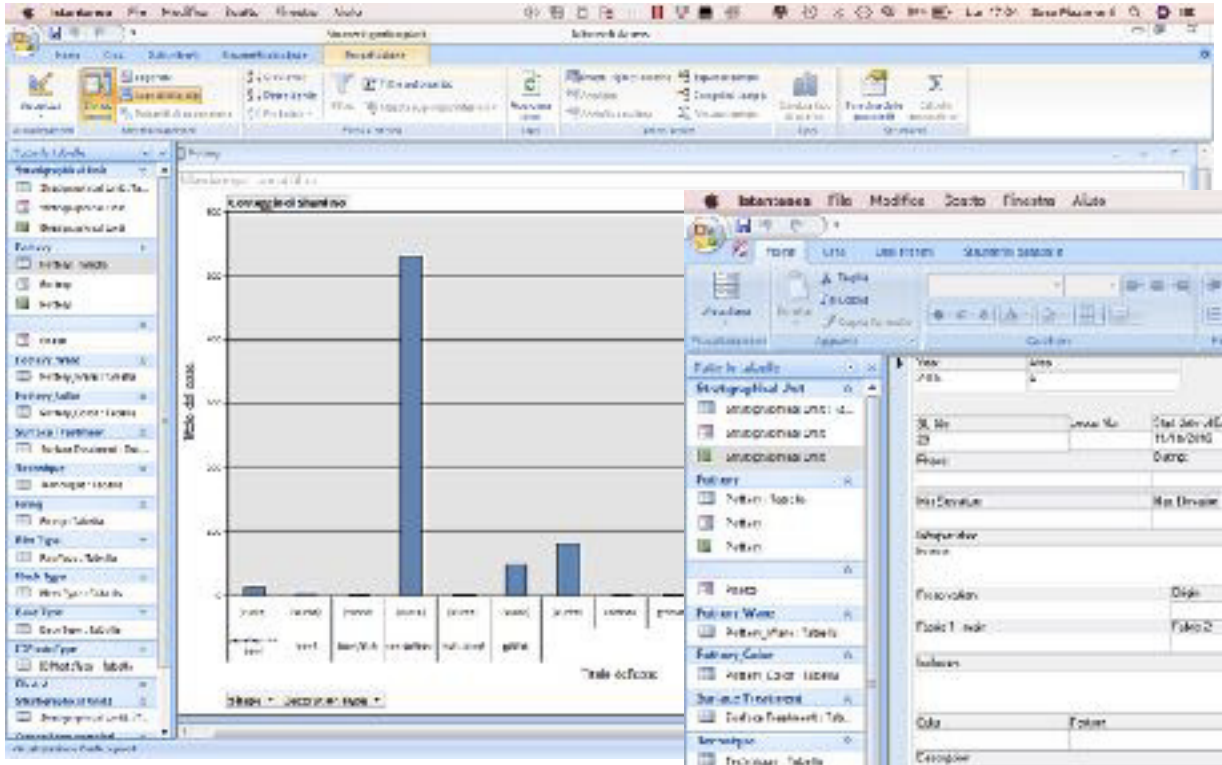
HOW TO … PROGRAM A DB

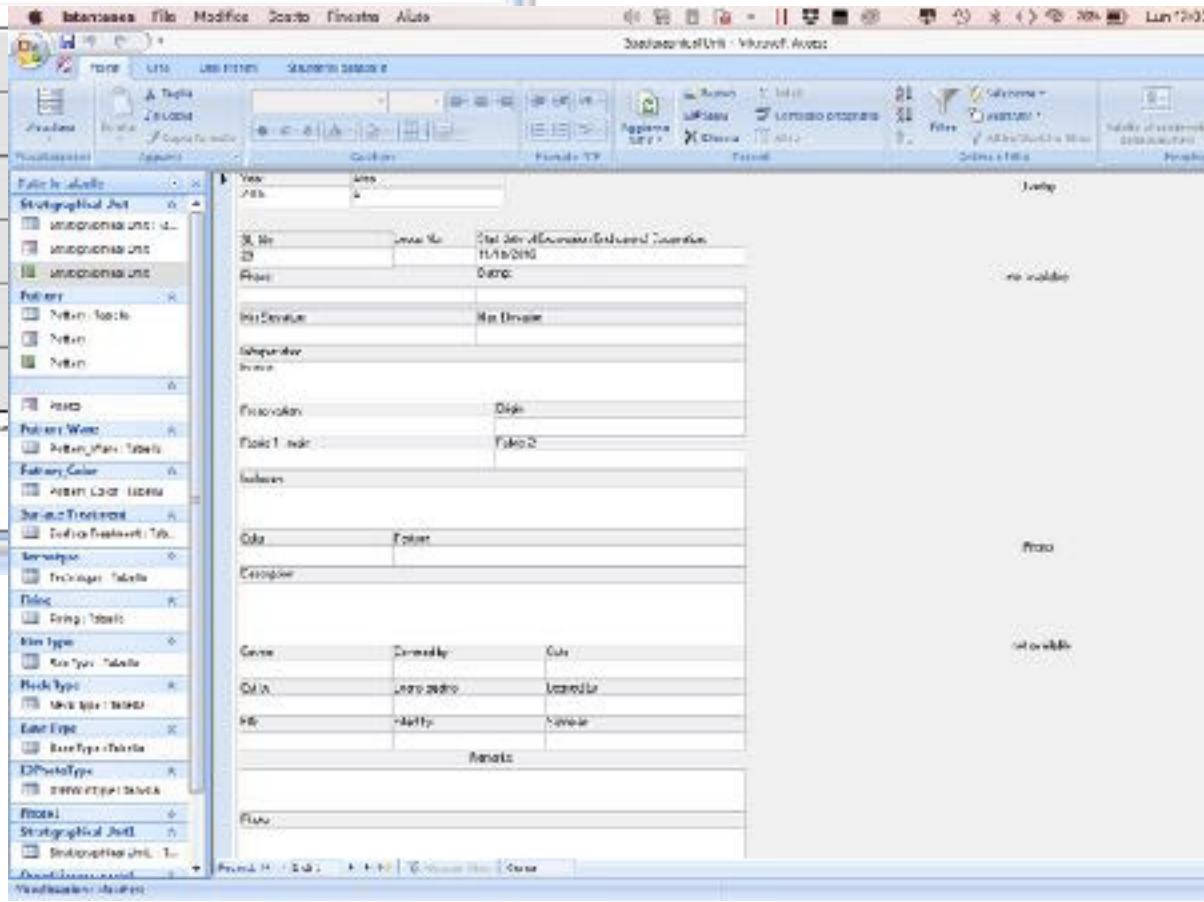
- To individuate which kind of data will be recorded in the database
- To create and organize all the tables, defining fields and primary key
- To define the relationship between the tables

AND NOW…

…IT’S UP TO YOU!

GRAPHIC AND QUERIES





DATA FROM ARCHAEOLOGICAL EXCAVATION

WALADU Cascade Training

University Residential Centre of Bertinoro

10th-15th December 2018

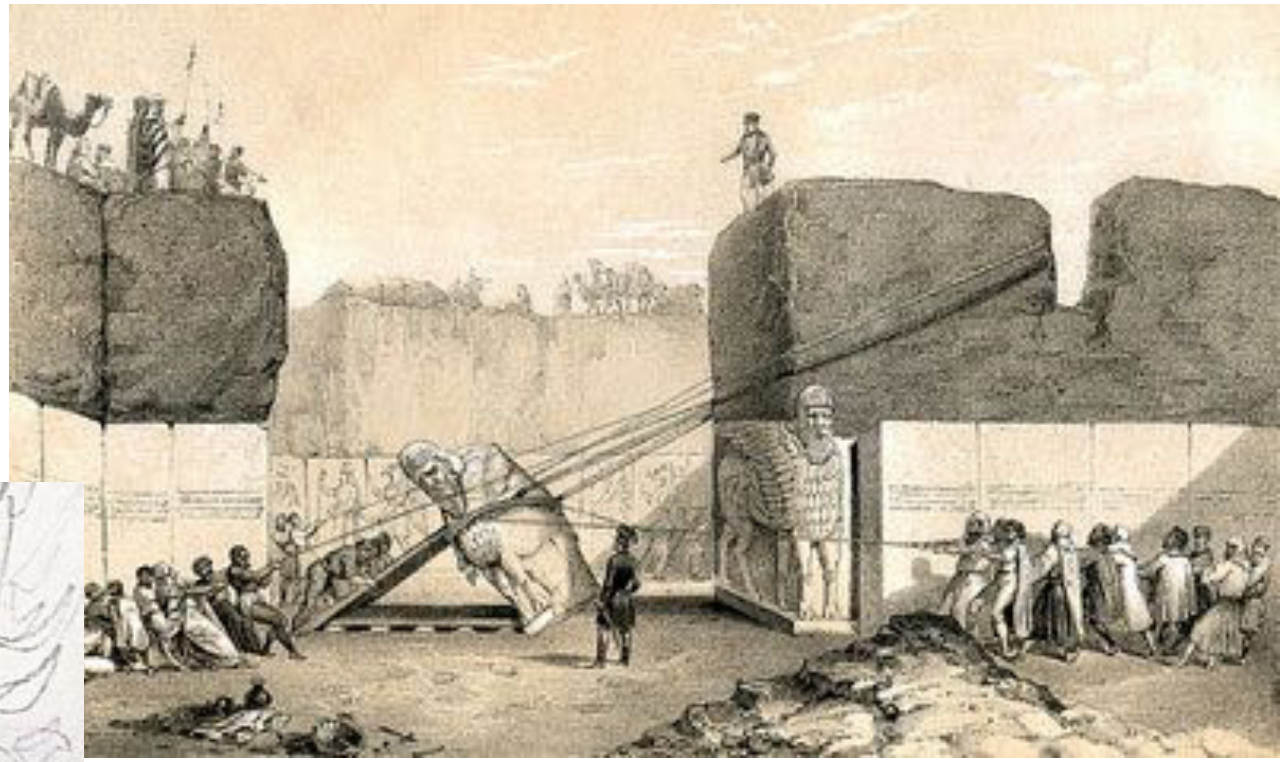
Erasmus+

DATA FROM ARCHAEOLOGICAL EXCAVATION

- Stratigraphic data
- Topographic data
- Material culture (Pottery and Small Finds)

HISTORY OF ARCHAEOLOGICAL EXCAVATION

archaeological excavation in the ‘800



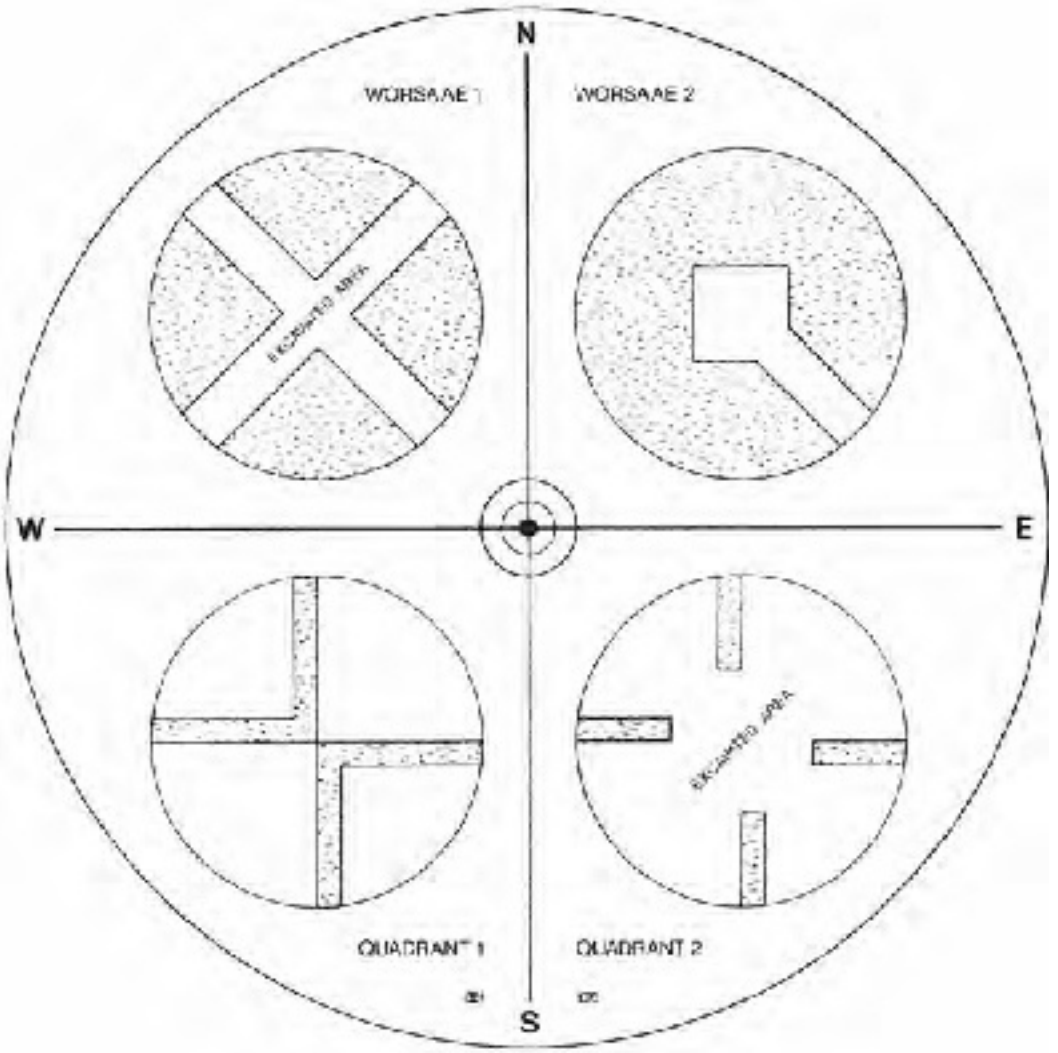
Layard

HISTORY OF ARCHAEOLOGICAL EXCAVATION

archaeological excavation in the ‘800

During the nineteenth century, burial mounds were excavated by trenches which exposed the primary burial in the centre, leaving the outer areas unexcavated.

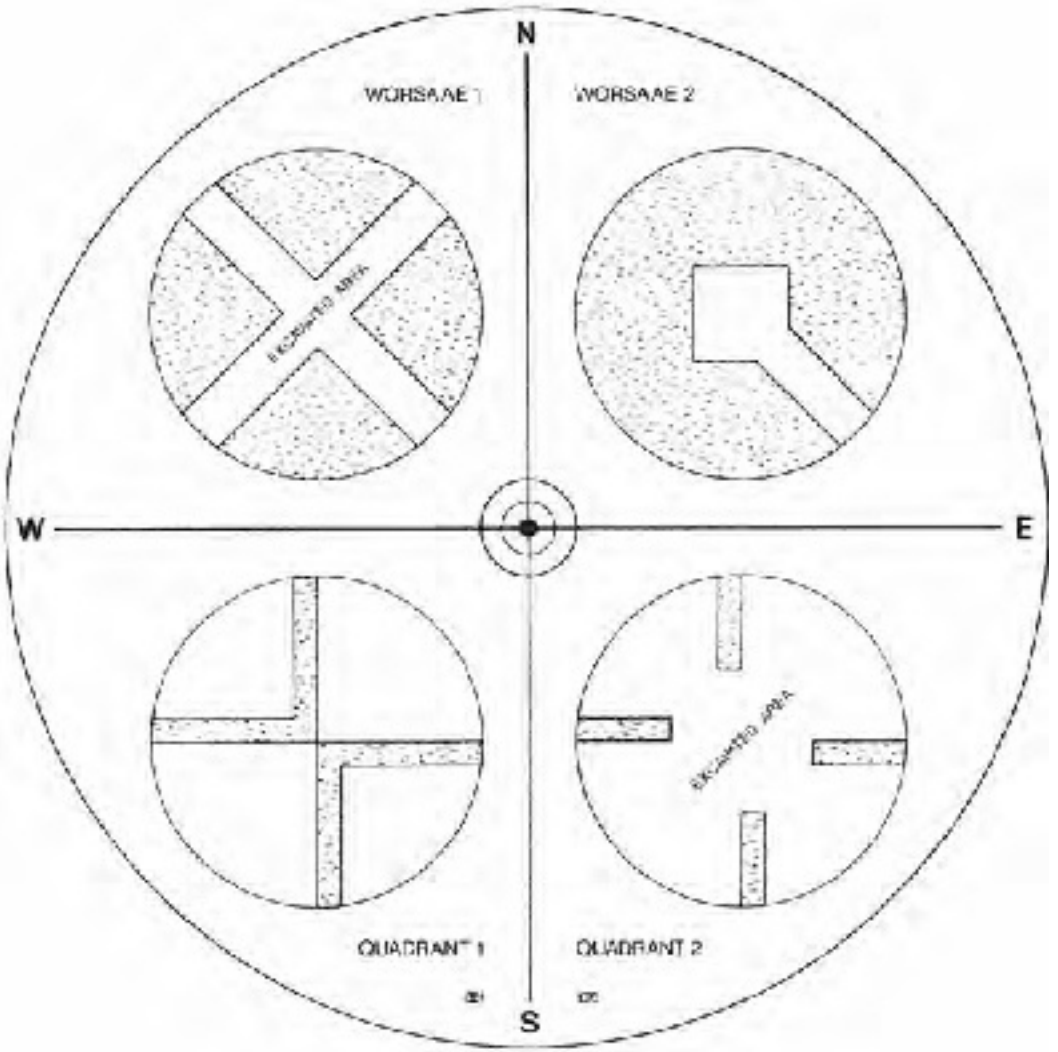
In this century, the quadrant method reversed the procedure; the trench area became baulks and the outer areas were excavated first



HISTORY OF ARCHAEOLOGICAL EXCAVATION

archaeological excavation in the ‘800

NO CONCEPT OF STRATIGRAPHY



HISTORY OF ARCHAEOLOGICAL EXCAVATION

archaeological excavation in the 1930

Sir Mortimer Weeler

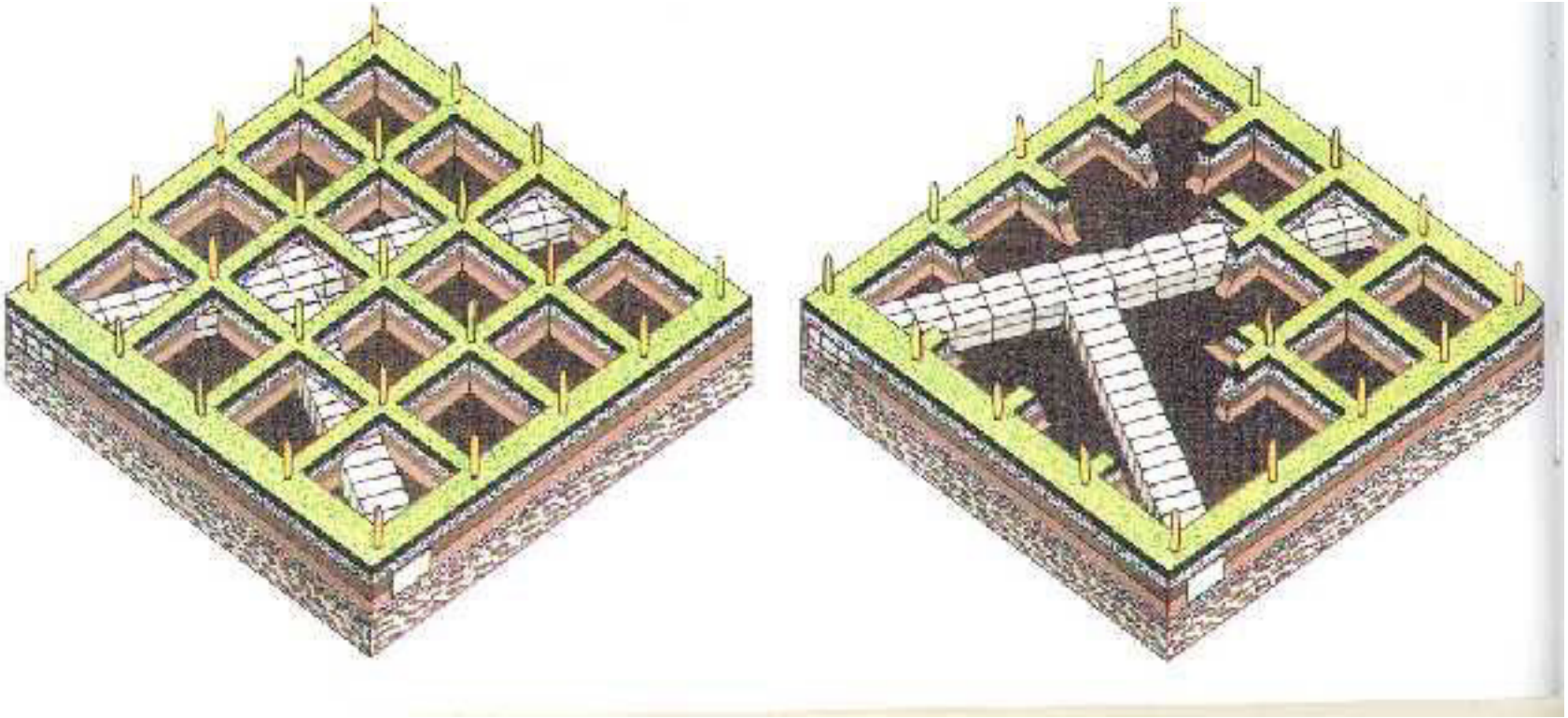
HISTORY OF ARCHAEOLOGICAL EXCAVATION

archaeological excavation in the 1930

Sir Mortimer Weeler

HISTORY OF ARCHAEOLOGICAL EXCAVATION

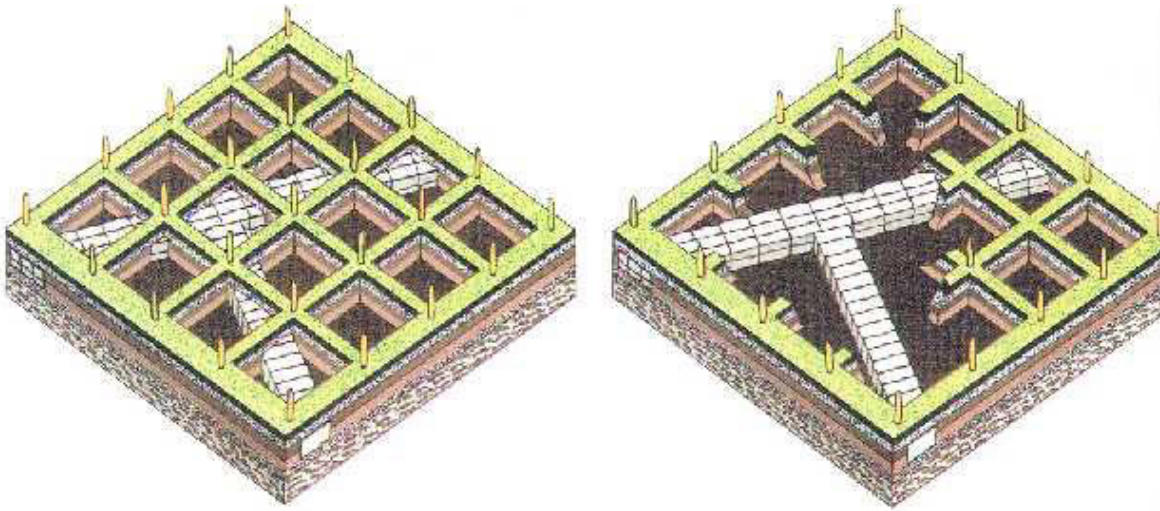
GRID EXCAVATION



HISTORY OF ARCHAEOLOGICAL EXCAVATION

Wheeler's grid method was a strategy by which a site was excavated in a series of small square holes. Between the squares were a series of baulks, the faces of which retained the stratigraphic profiles of different areas of the site. As originally conceived, the grid system was a type of area-excavation, as the baulks were eventually removed as the excavation reached the surface of a major period on a site. In addition, Wheeler saw the method as a way of controlling both excavation and recording, as each supervisor's area was clearly demarcated.

GRID EXCAVATION



HISTORY OF ARCHAEOLOGICAL EXCAVATION

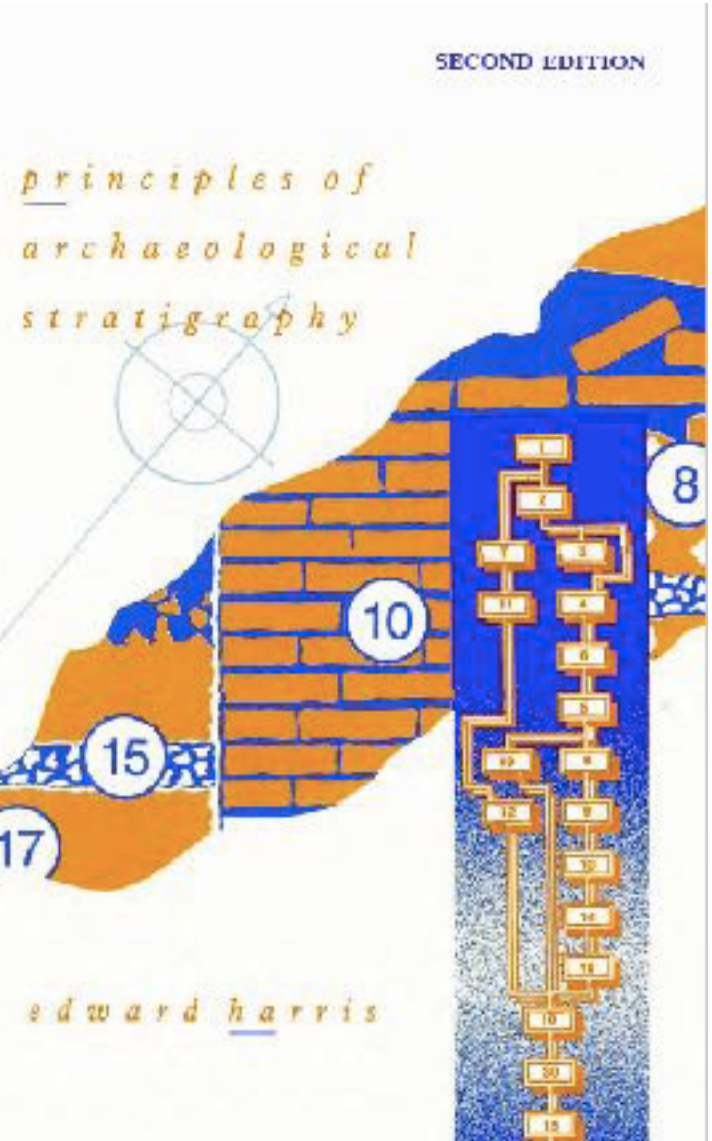
EVOLUTION OF THE GRID EXCAVATION

progression from grid excavation with large unexcavated baulks of the 1930s through to the open-area excavation method of the 1960s, which used cumulative sections instead of the standing sections of permanent baulks

HISTORY OF ARCHAEOLOGICAL EXCAVATION

OPEN AREA EXCAVATION

HISTORY OF ARCHAEOLOGICAL EXCAVATION



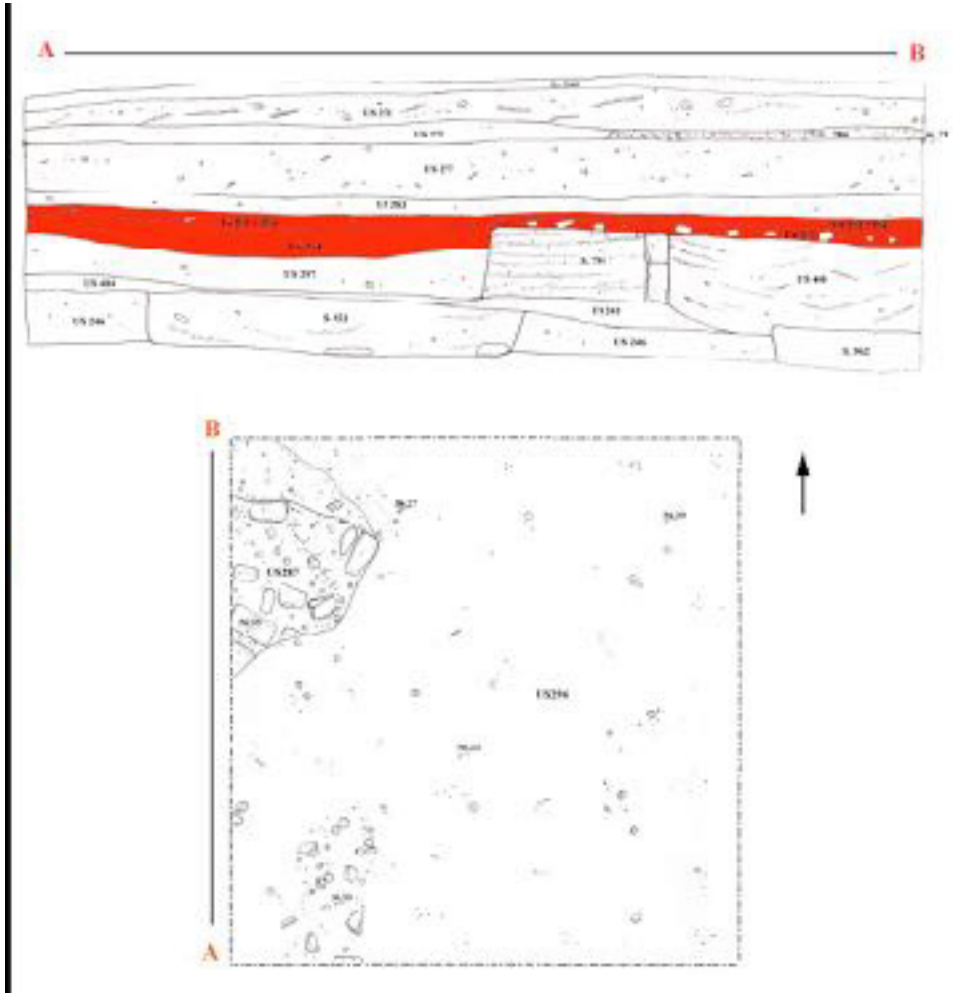
1979

Edward Harris

theorization of archaeological stratigraphy

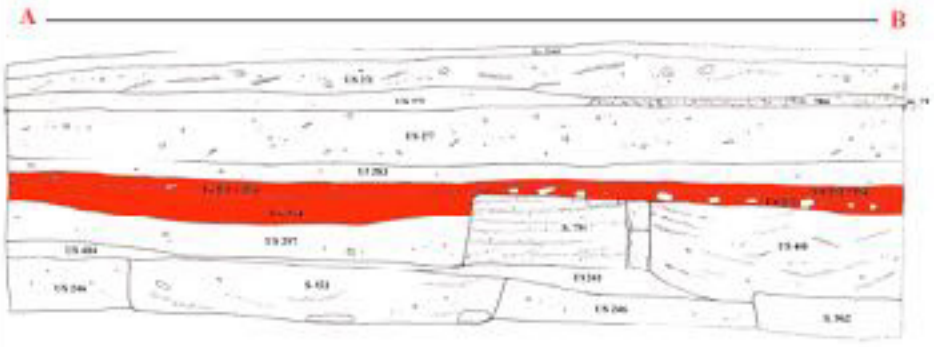
DATA FROM ARCHAEOLOGICAL EXCAVATION

Stratigraphic data



Stratigraphic data

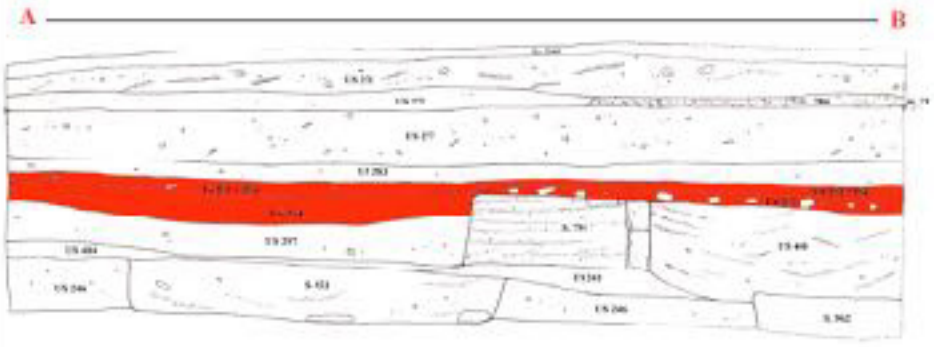
Units of stratigraphy



single events or actions that leave discrete, detectable traces in the archaeological sequence or stratigraphy

Stratigraphic data

Units of stratigraphy

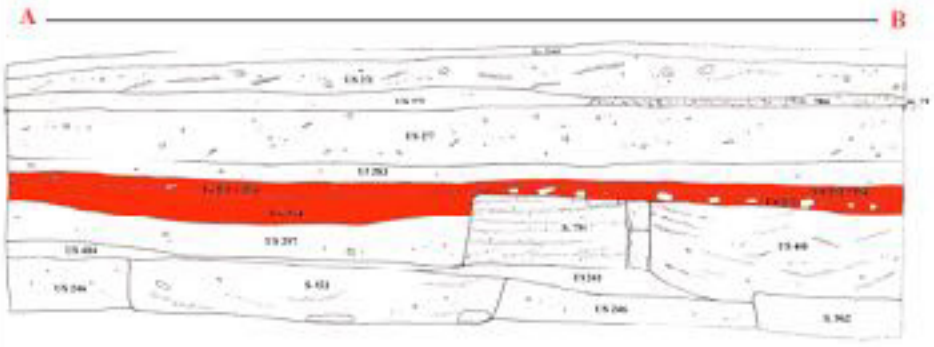


single events or actions that leave discrete, detectable traces in the archaeological sequence or stratigraphy

They can be deposits (such as the back-fill of a ditch), structures (such as walls), or "zero thickness surfaciques", better known as "cuts". Cuts represent actions that remove other solid contexts such as fills, deposits, and walls

Stratigraphic data

Units of stratigraphy

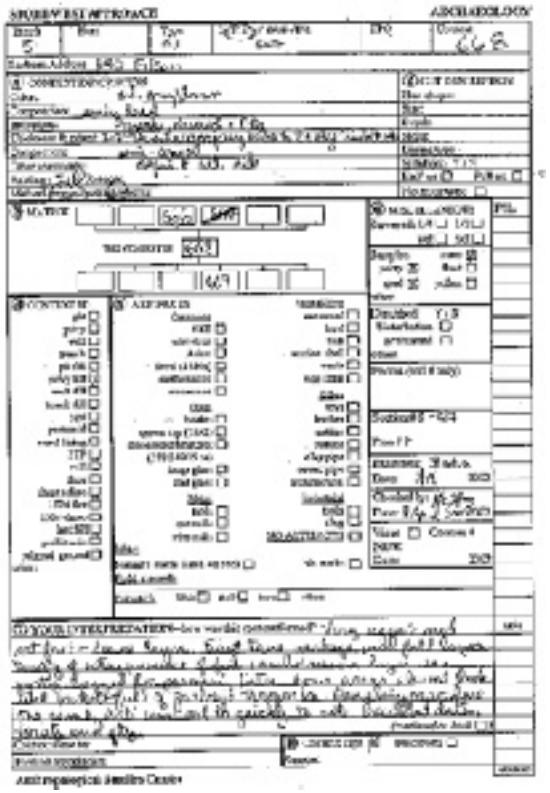


The Principle of Superposition: in a series of layers and features, the upper layers were deposited later and so are younger, and lower layers are older. In other words, "the further down you dig, the further back in time you go."

The Principle of Original Horizontality: layers were originally deposited in a horizontal position, whether or not they still appear horizontally in an excavation.

The Principle of Lateral Continuity: a layer appearing in a vertical "sliced" view means that this layer was cut into at some point in time, and part of it removed; the layer continues uninterrupted in surrounding areas.

Stratigraphic data



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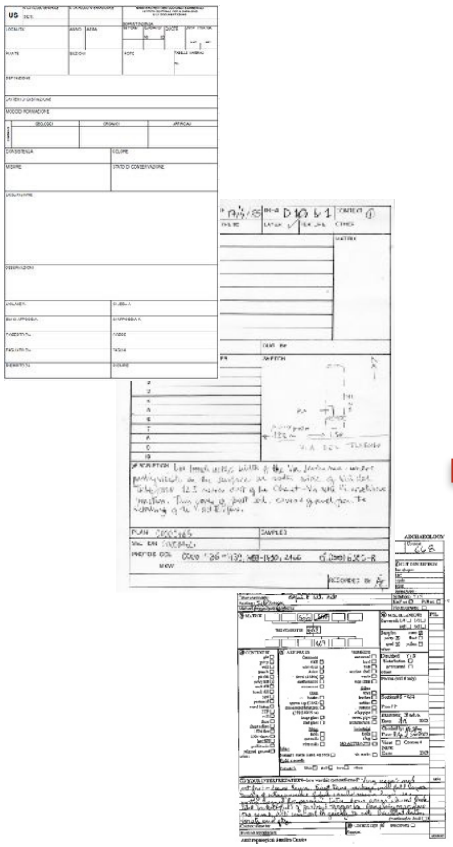

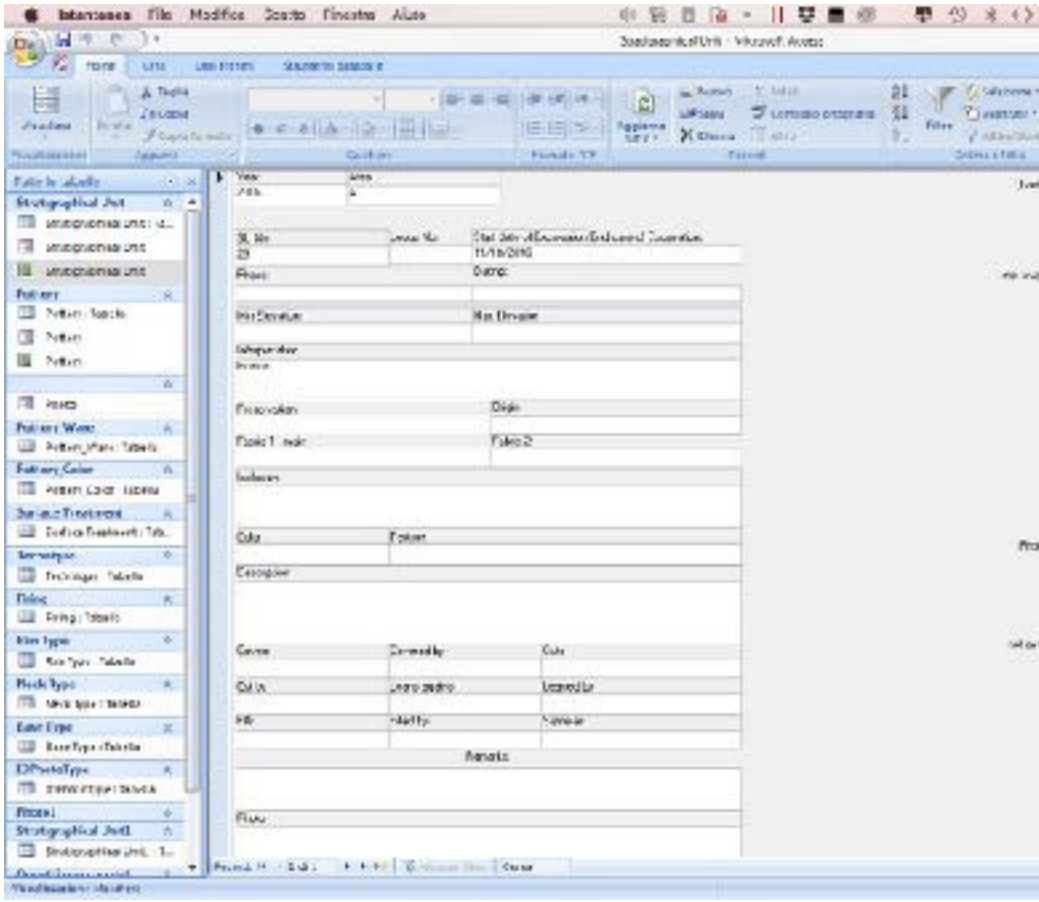

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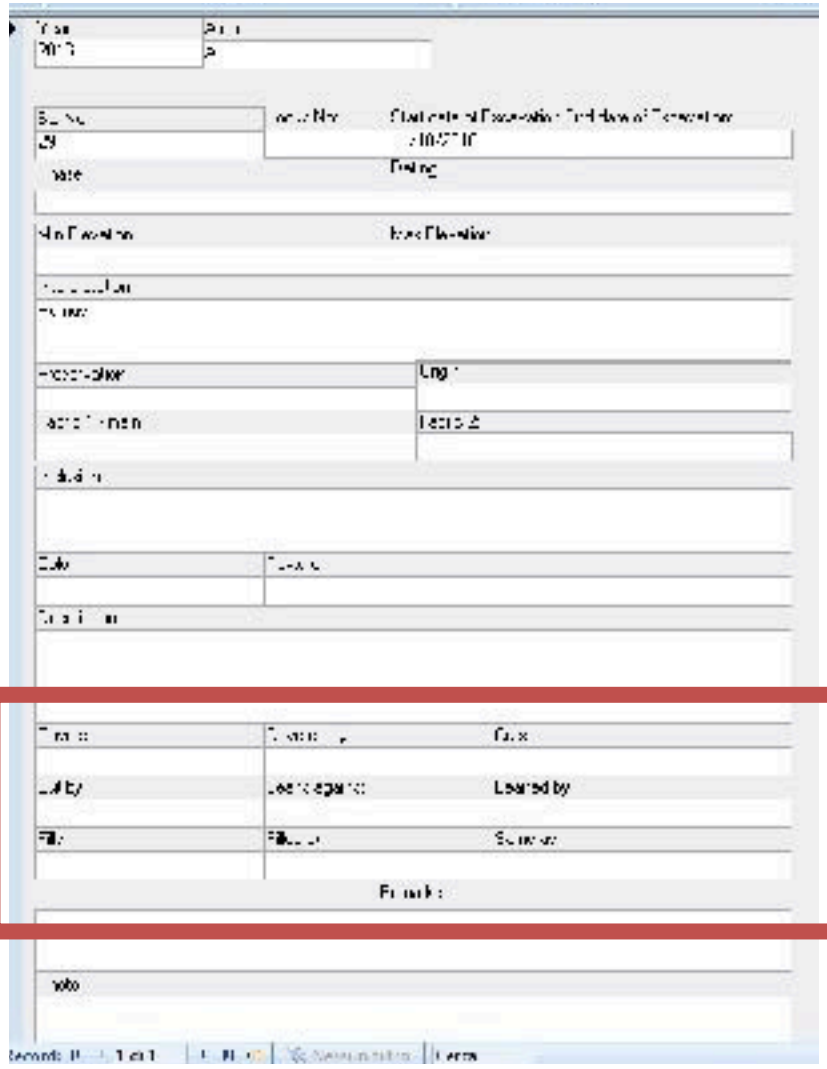
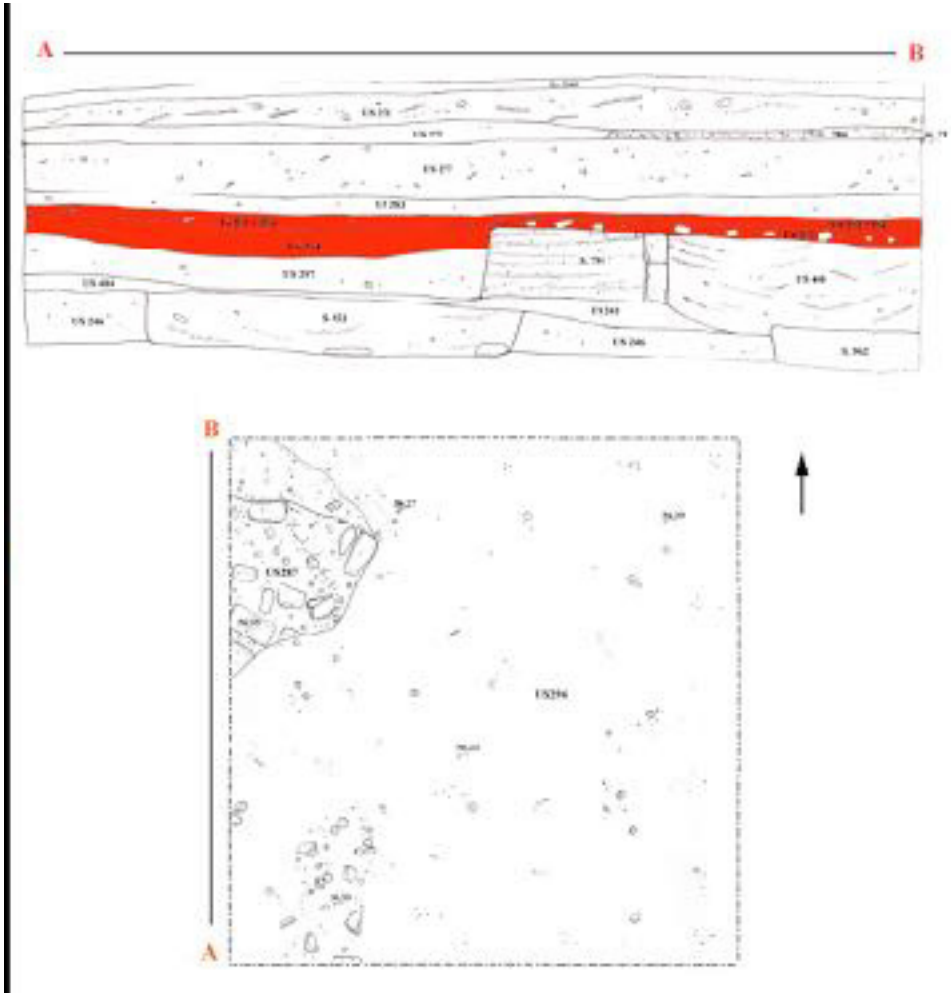




Stratigraphic data

Dating archaeological contexts: diagnostic material, residuals, infiltrations

Quintifying pottery

Figura 13.

1 è posteriore a 2, nonostante l'indicazione contraria dei reperti, in questo caso da considerarsi residui provenienti da 4 = 5 e da 6 = 7.

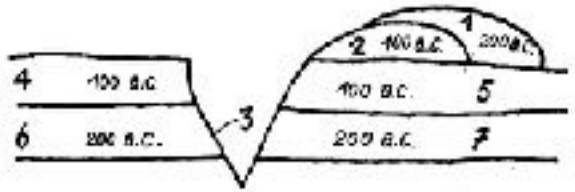


Figura 14.

a) Reperto *residuo* di altro strato più antico (triangolo); b) reperto *coevo* alla formazione dello strato (cerchio); c) reperto *intruso* proveniente da altro strato più tardo (rettangolo).

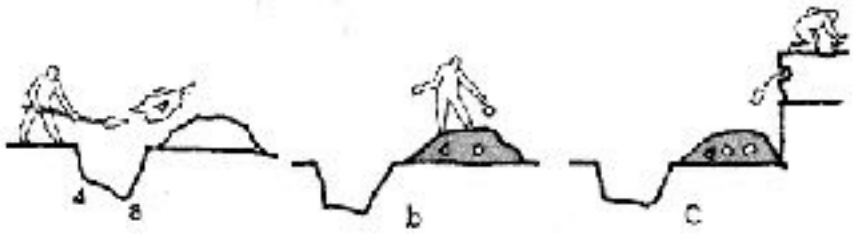


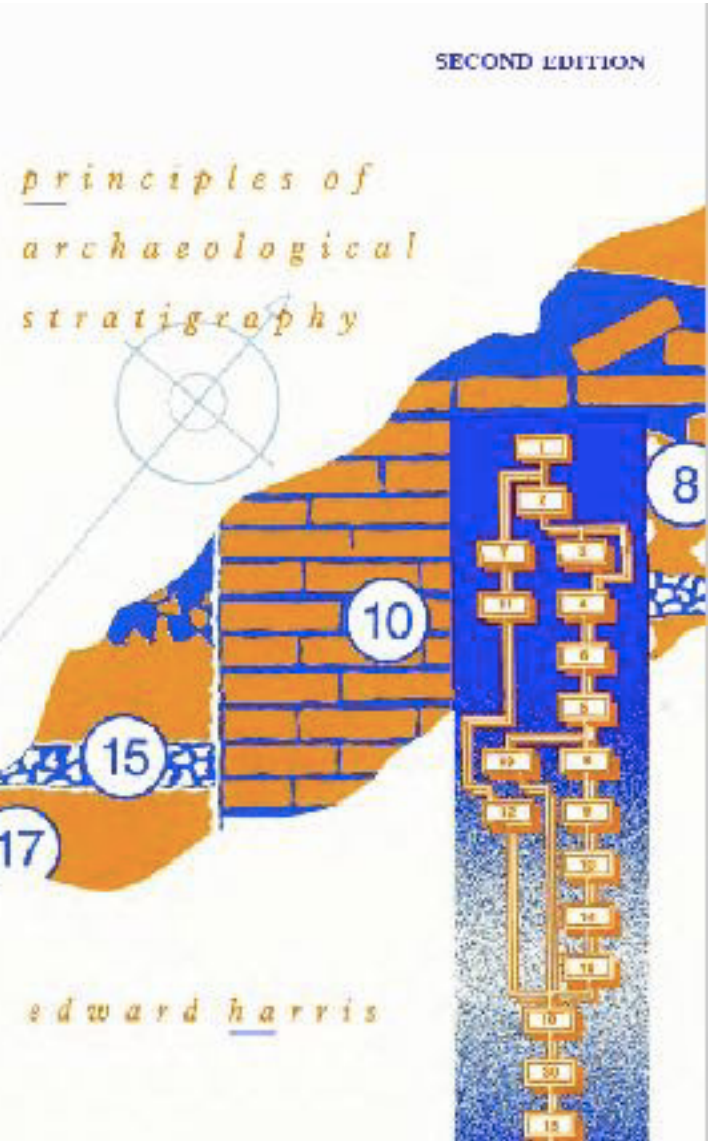
Figura 15.

Sequenza stratigrafica relativa a un muro. Se non si distingue numerandola la fossa di fondazione 7 dagli strati 4 e 5 che la riempiono, l'insieme che ne risulta può essere considerato anteriore alla fondazione 6 (il che è vero per 7 ma non per 4 e 5) o posteriore (il che è vero per 4 e 5 ma non per 7).

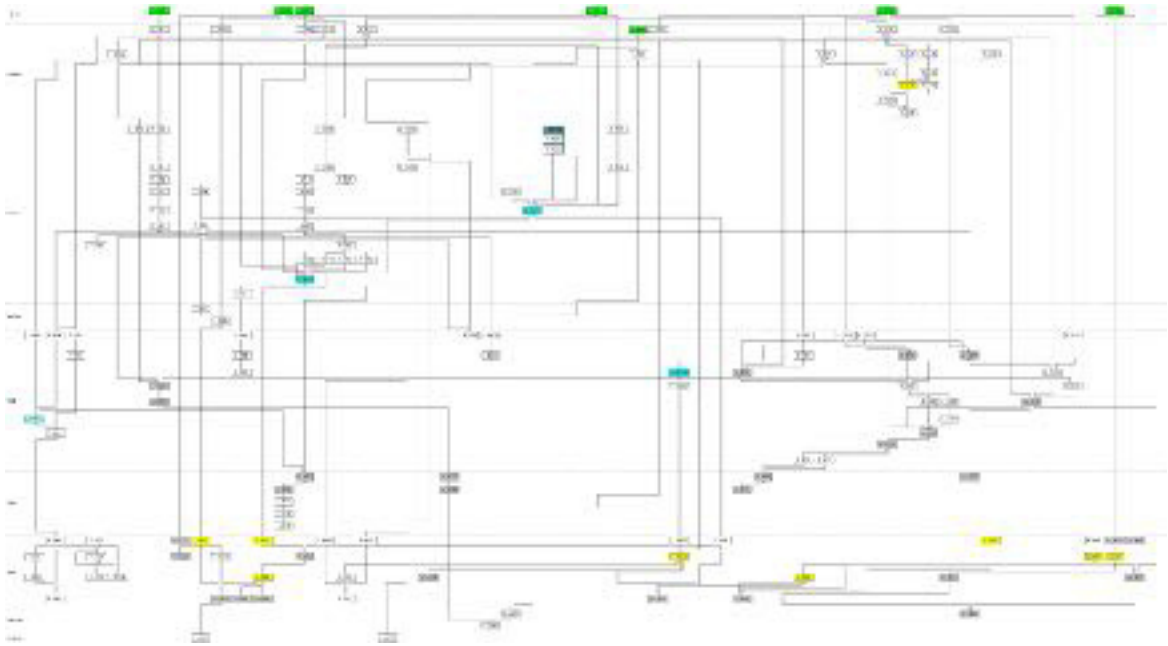
Stratigraphic data

Is the recording on the database sufficient for stratigraphic unit?

Stratigraphic data



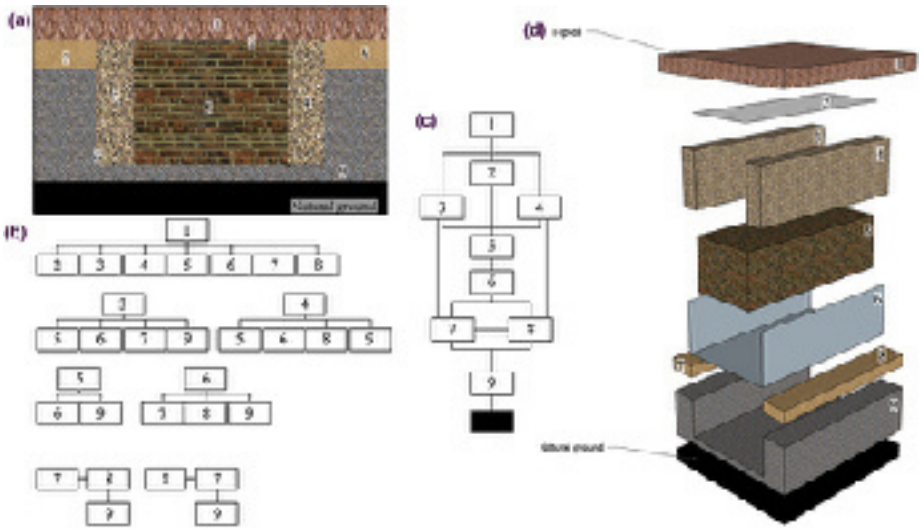
HARRIS MATRIX



Stratigraphic data

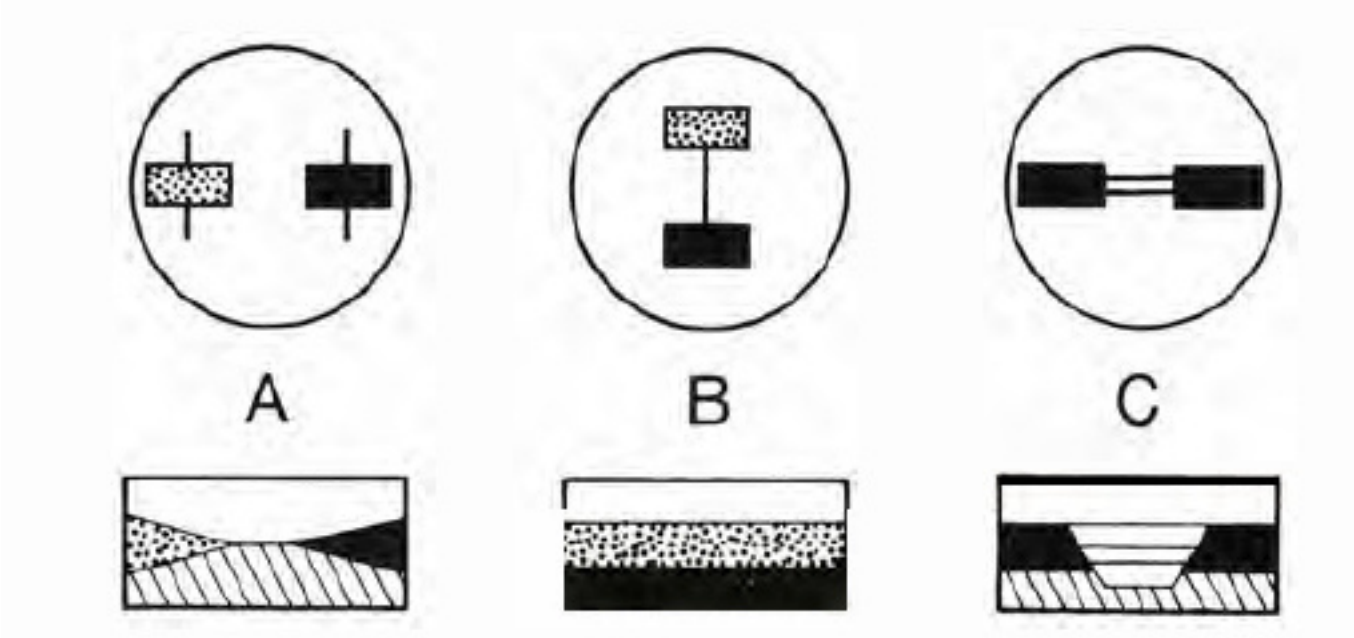
HARRIS MATRIX

A **Harris Matrix** is a tool that archaeologists use to keep track of stratigraphy and stratigraphic units. By using the laws of stratigraphy, archaeologists create these logic diagrams to record the top-down sequence of stratigraphic deposits and help make sense of the information they contain.



Stratigraphic data

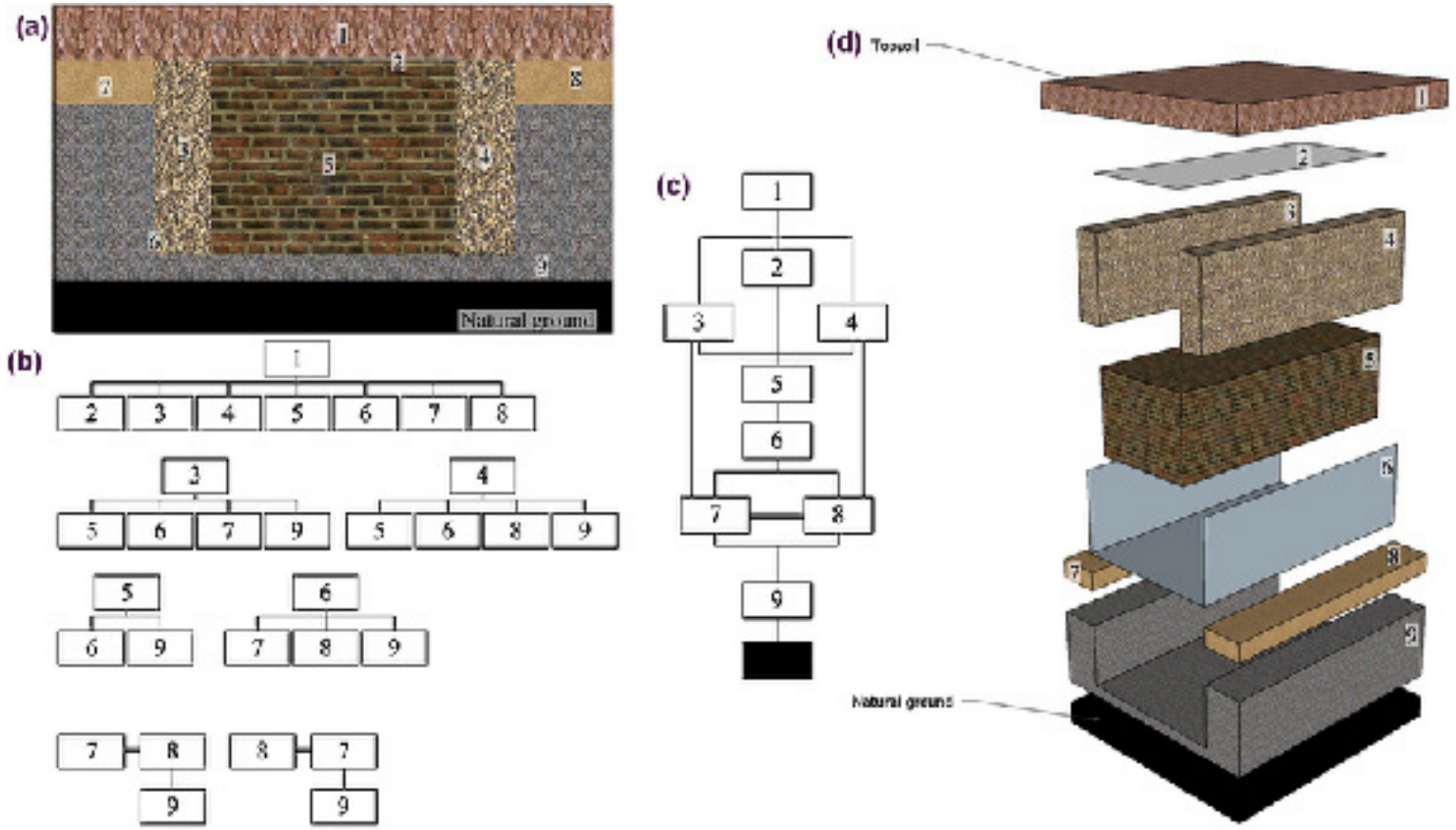
HARRIS MATRIX



The Harris Matrix system recognizes only three relationships between units of archaeological stratification. (A) The units have no direct stratigraphic connection. (B) they are in superposition; and (C) the units are correlated as parts of a once-whole deposit or feature interface.

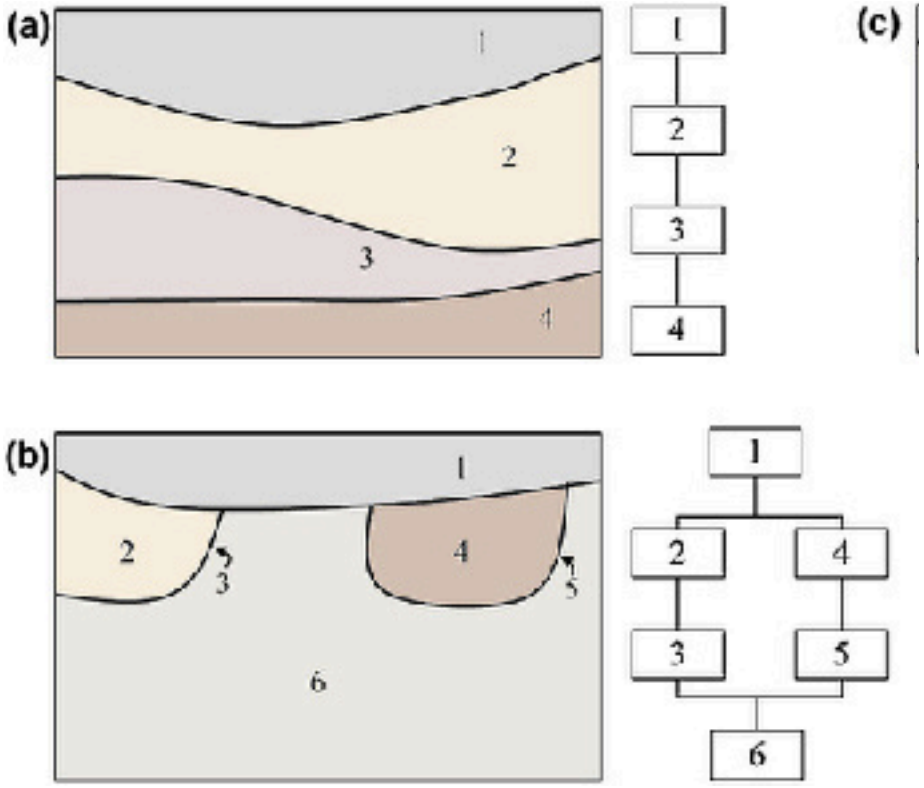
Stratigraphic data

HARRIS MATRIX



Stratigraphic data

HARRIS MATRIX



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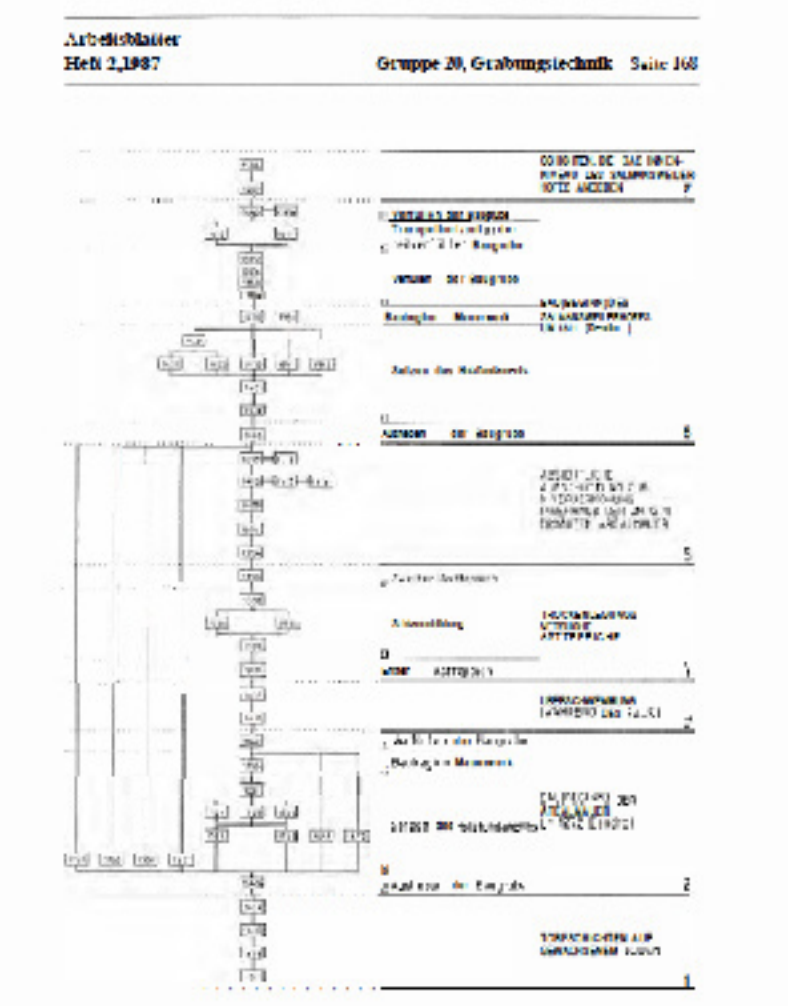
HARRIS MATRIX



AND NOW…

…IT’S UP TO YOU!

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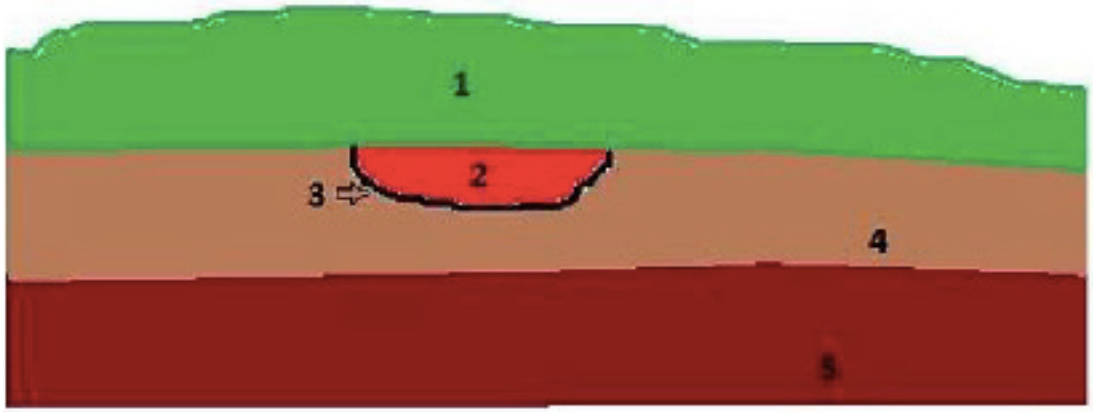

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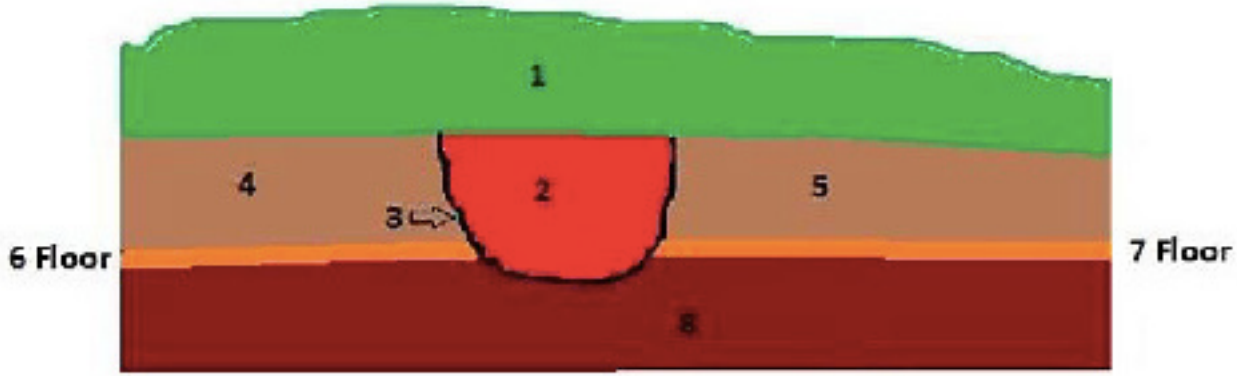

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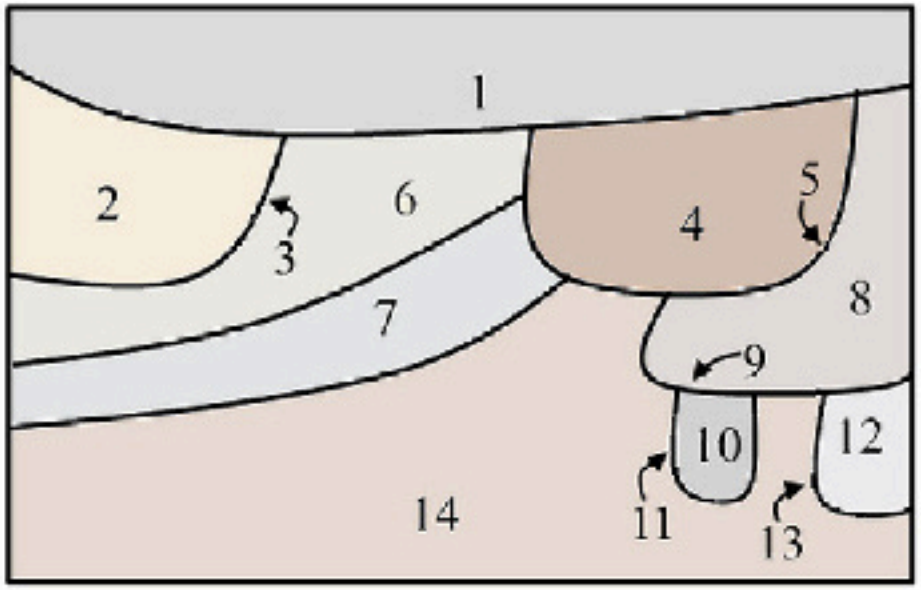

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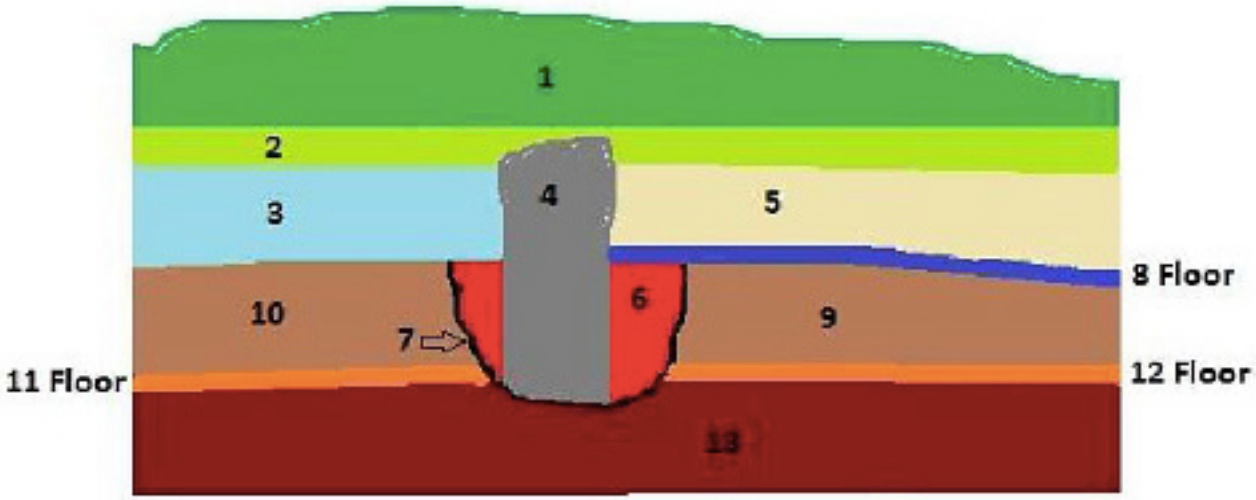

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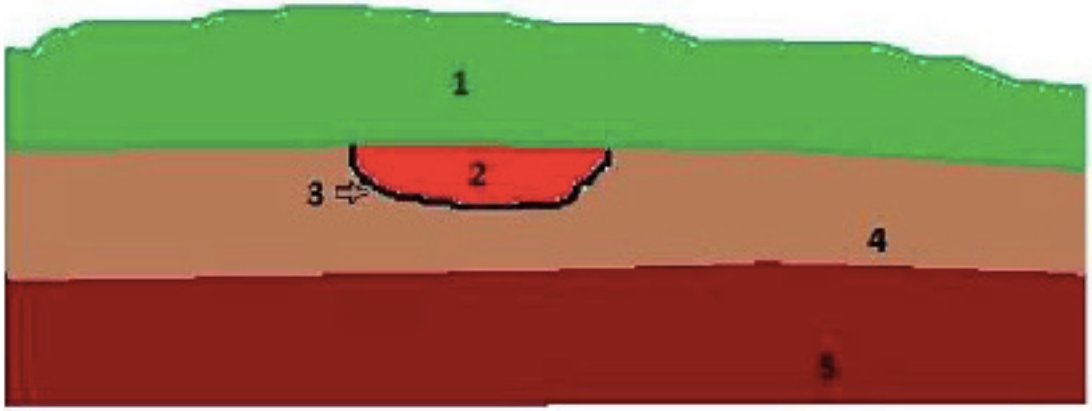

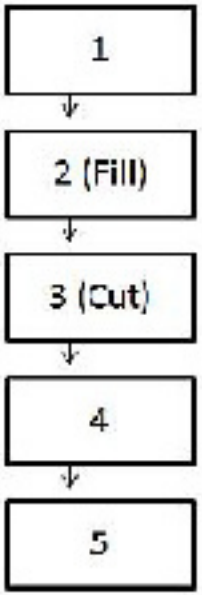

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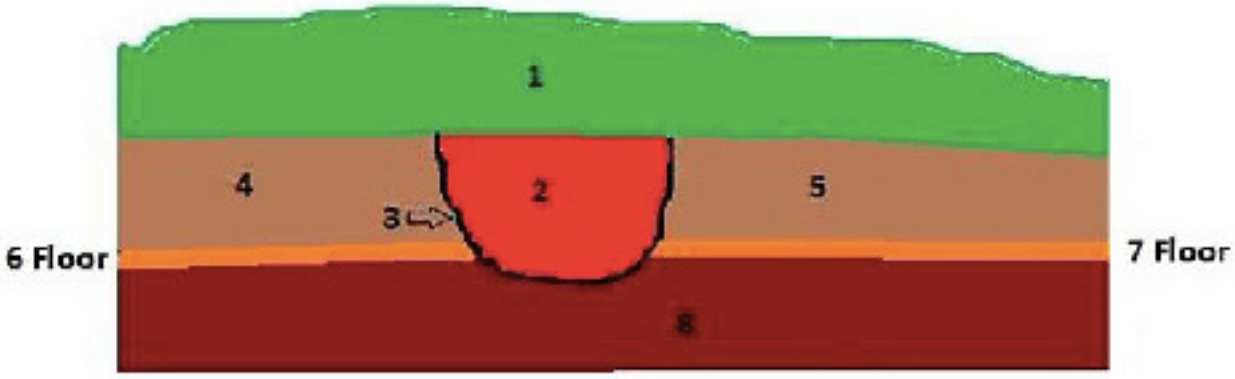

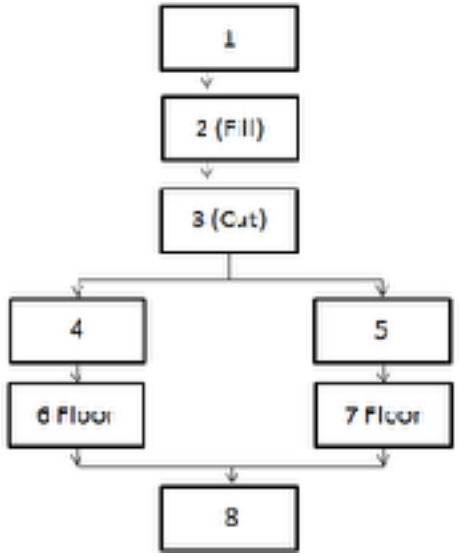

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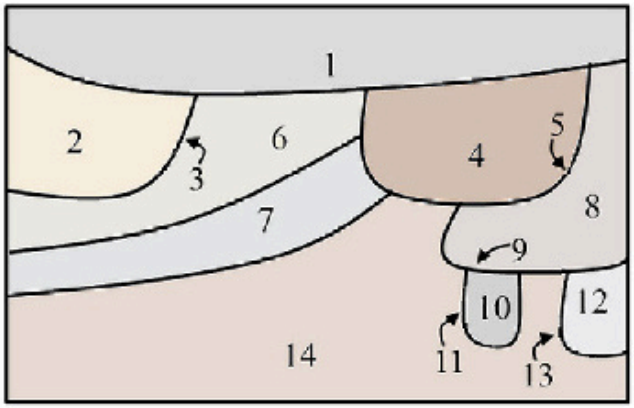

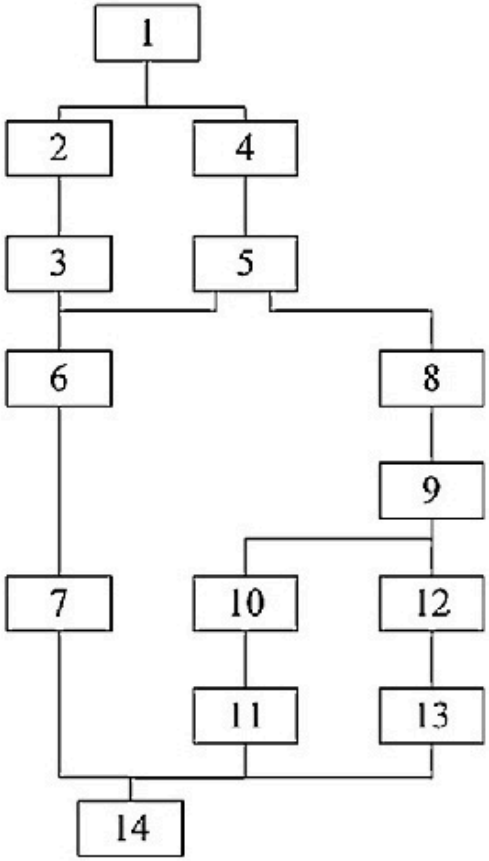

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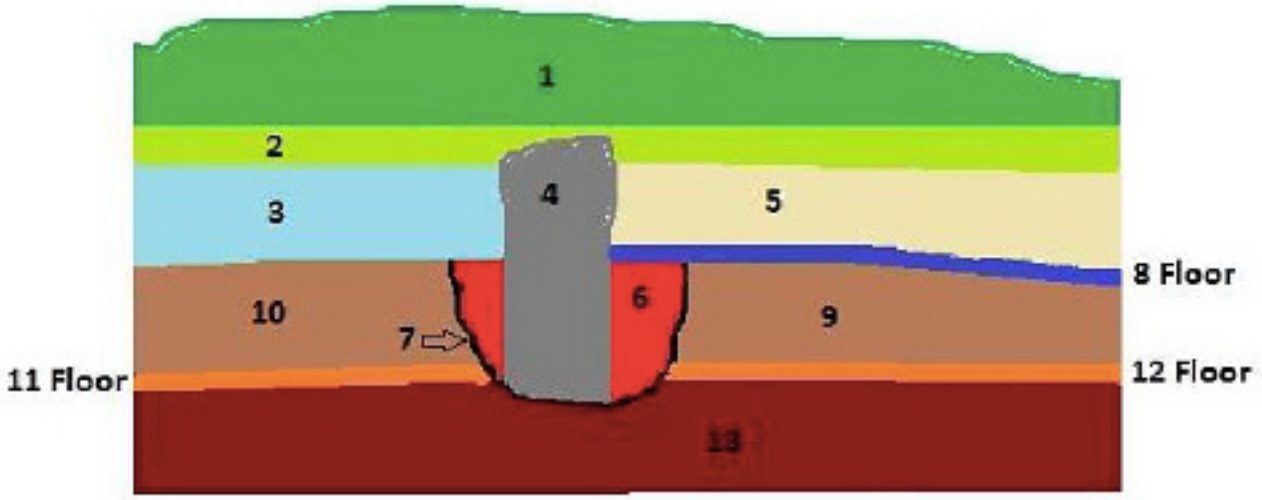
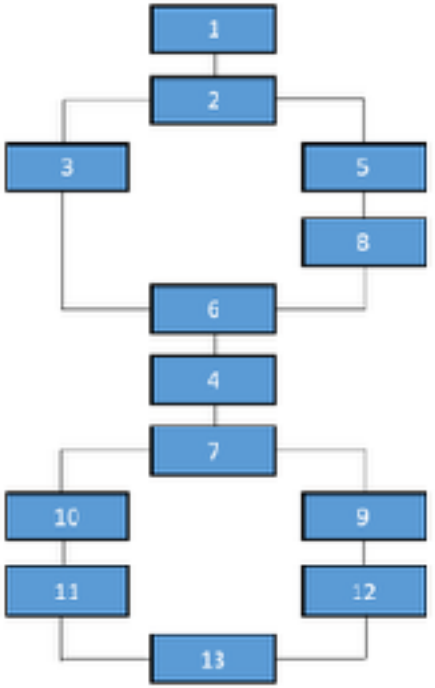
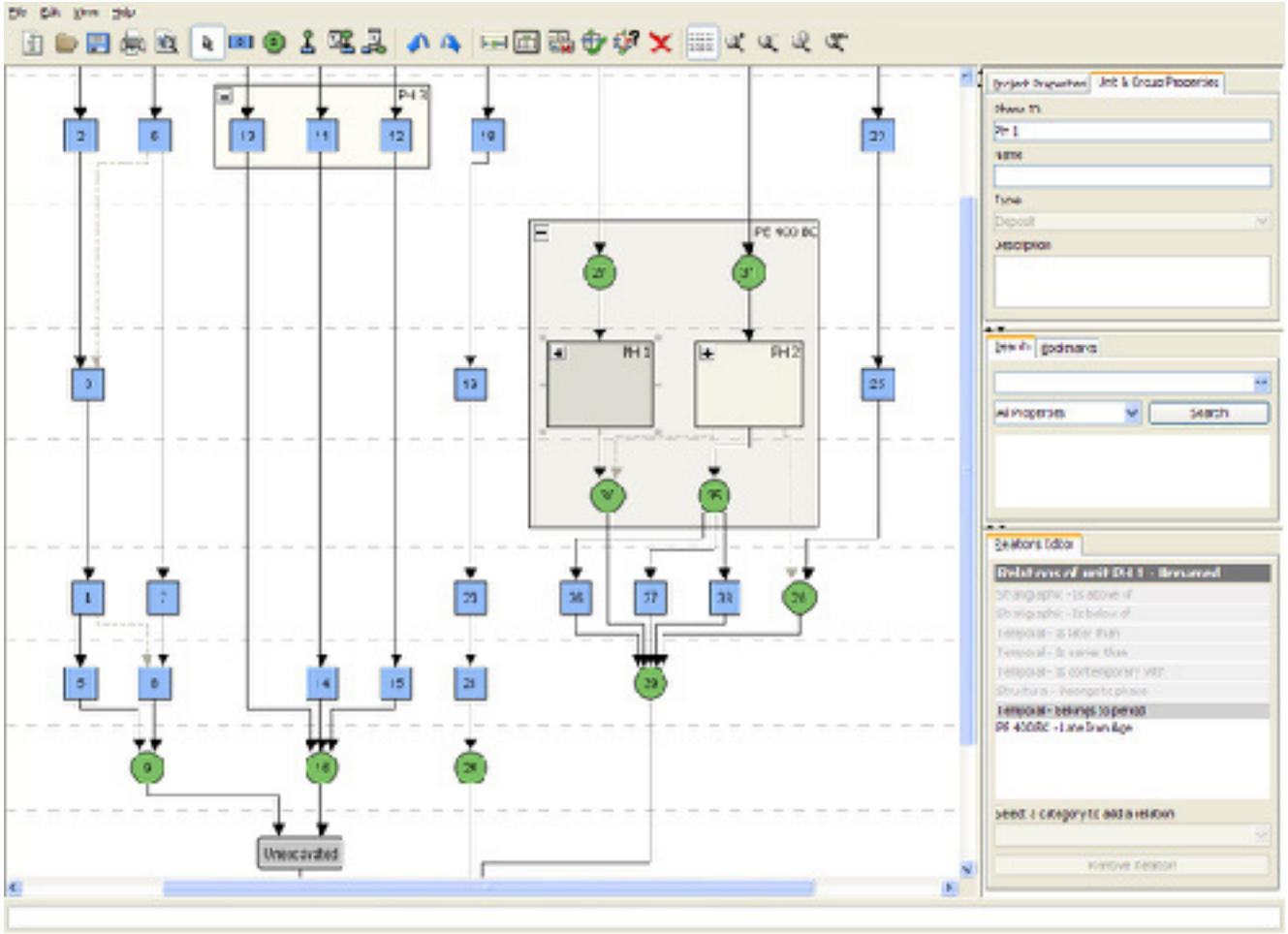




HARRIS MATRIX COMPOSER

http://harrismatrix.com/

HARRIS MATRIX COMPOSER



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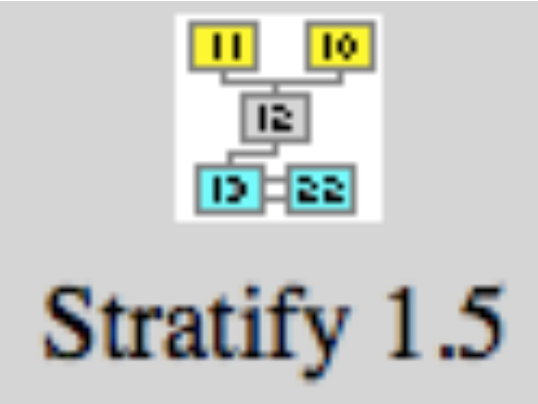

http://www.stratify.org/index.htm

open source

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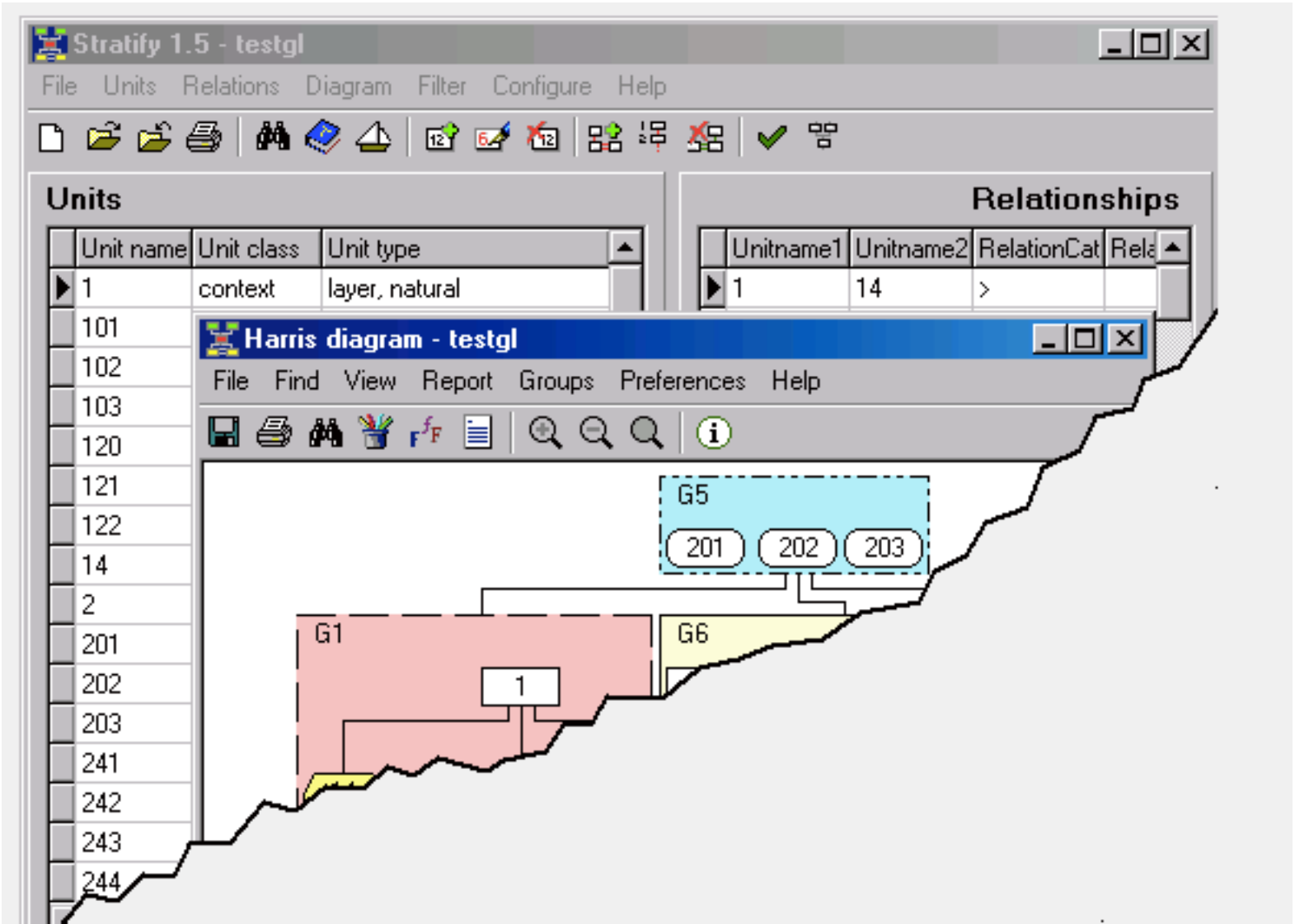
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202
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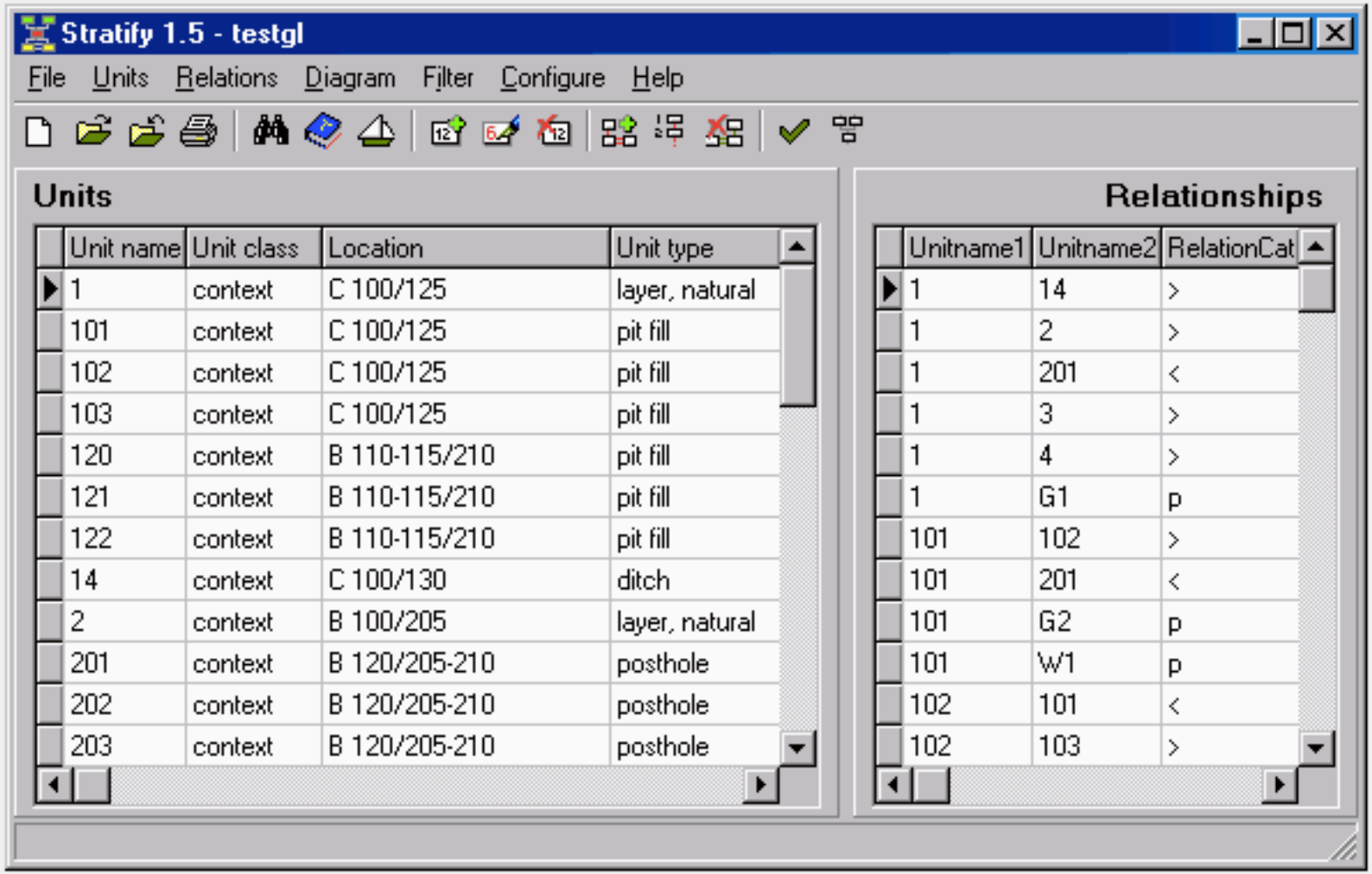
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103 | context | C 100/125 | pit fill
120 | context | B 110-115/210 | pit fill
121 | context | B 110-115/210 | pit fill
122 | context | B 110-115/210 | pit fill
14 | context | C 100/130 | ditch
2 | context | B 100/205 | layer, natural
201 | context | B 120/205-210 | posthole
202 | context | B 120/205-210 | posthole
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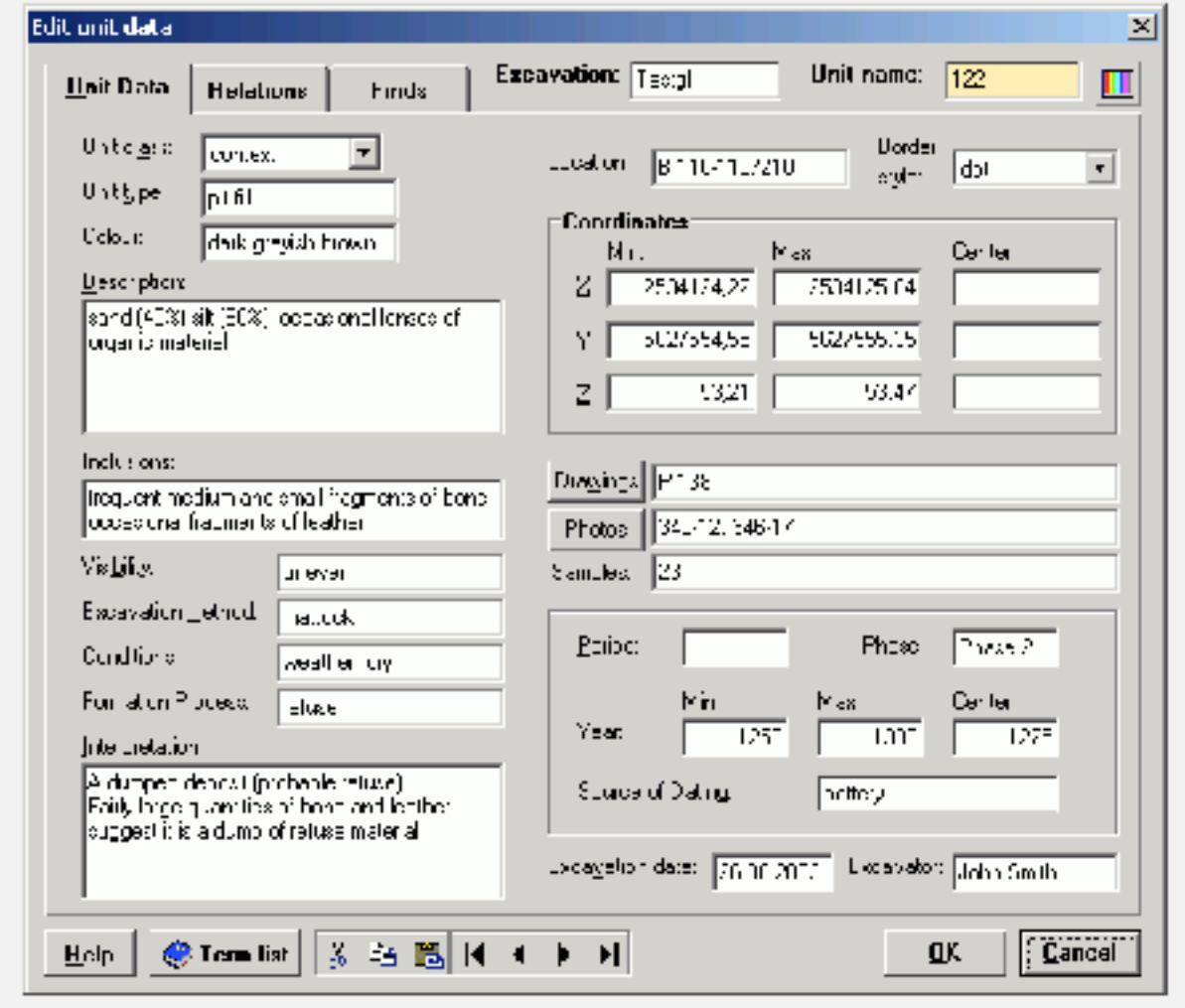
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sand (45%) silt (50%) occasional trace of organic material
Inclusions:
frequent medium and small fragments of bone occasional fragments of leather
Visibility
Excavation_method
Conditions
Formation Process
Interpretation
A dumped deposit (probably refuse)
Fairly large quantities of bone and leather suggest it is a dump of refuse material
Location
Border style
dot
Coordinates
Min
Max
Centre
X
Y
Z
Drawings
Photos
Samples
Period:
Phase:
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Excavator:
John Smith
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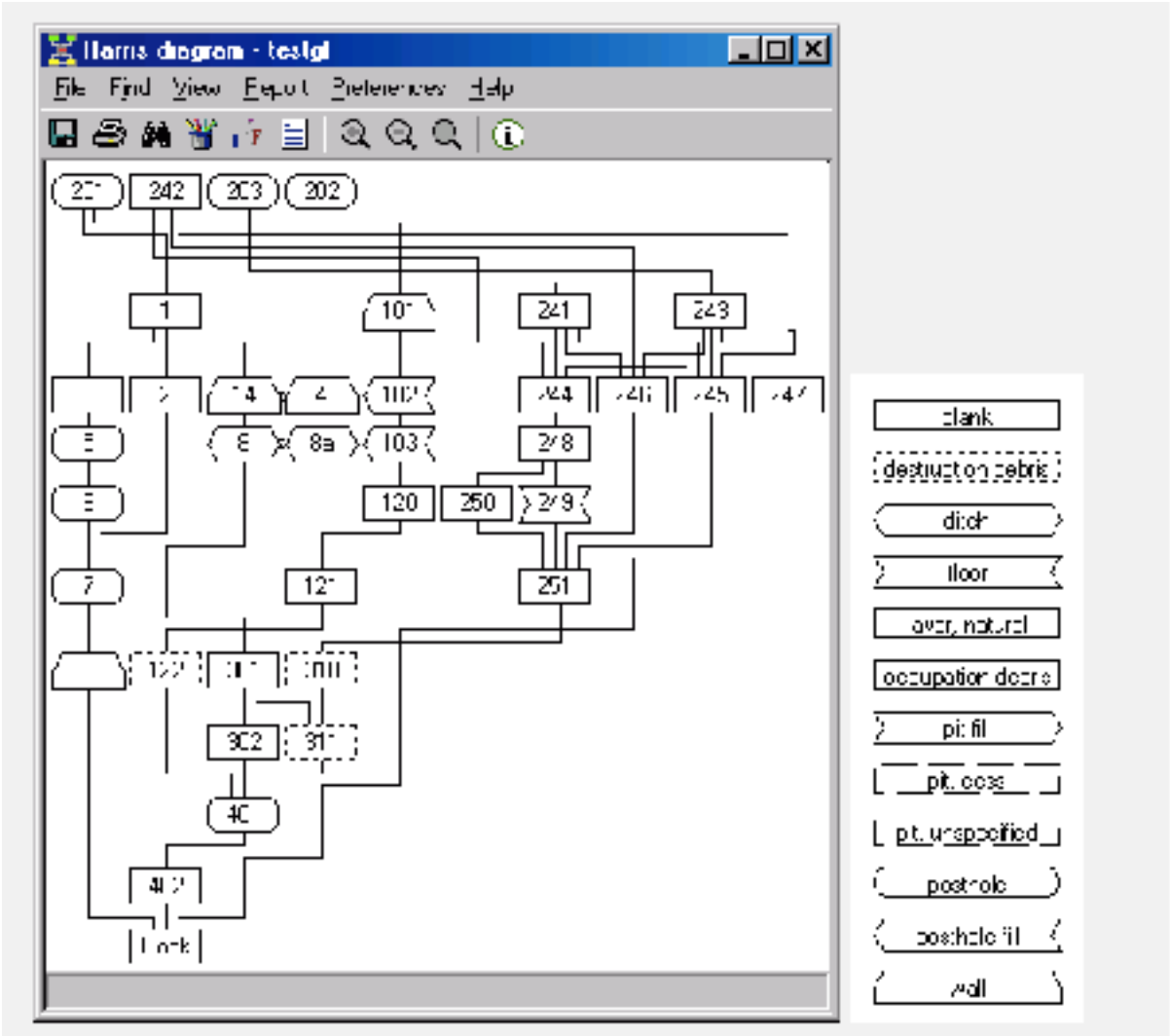
STRATIFY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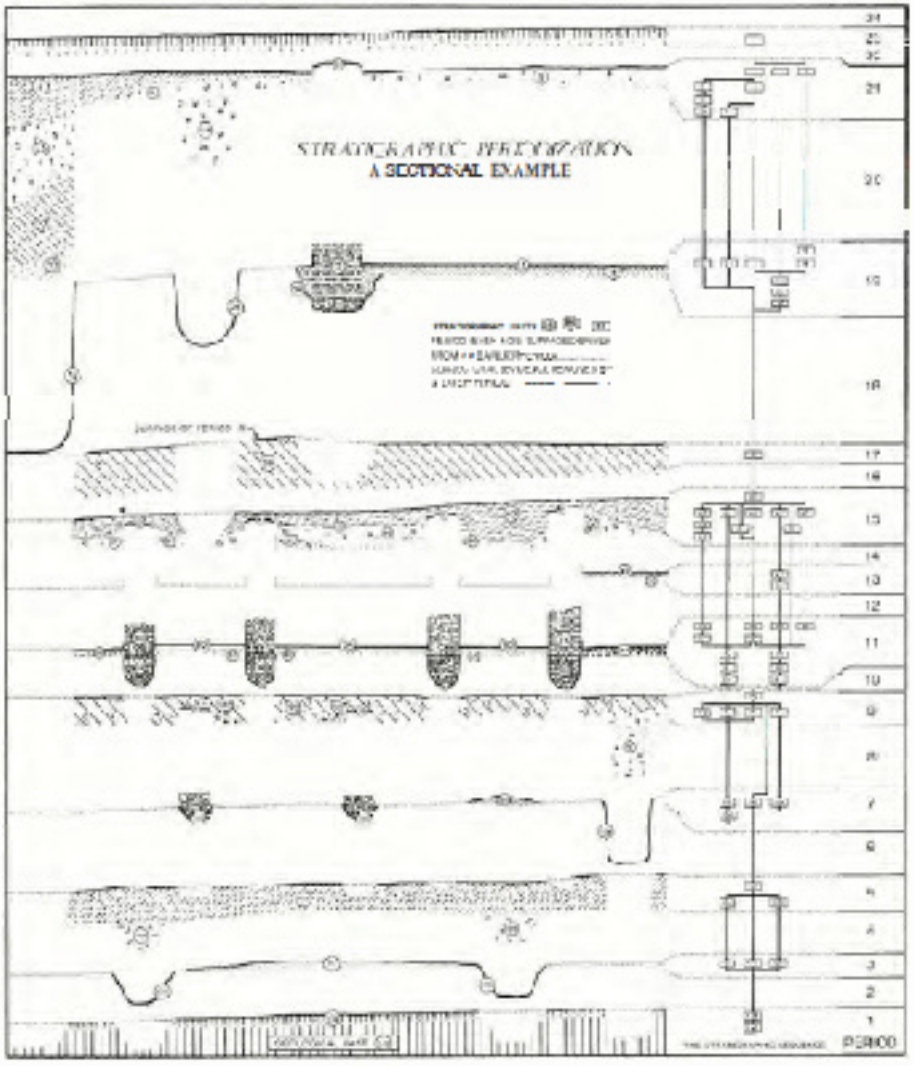
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A SECTIONAL EXAMPLE

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WALADU Cascade Training

University Residential Centre of Bertinoro

10th-15th December 2018

Erasmus+

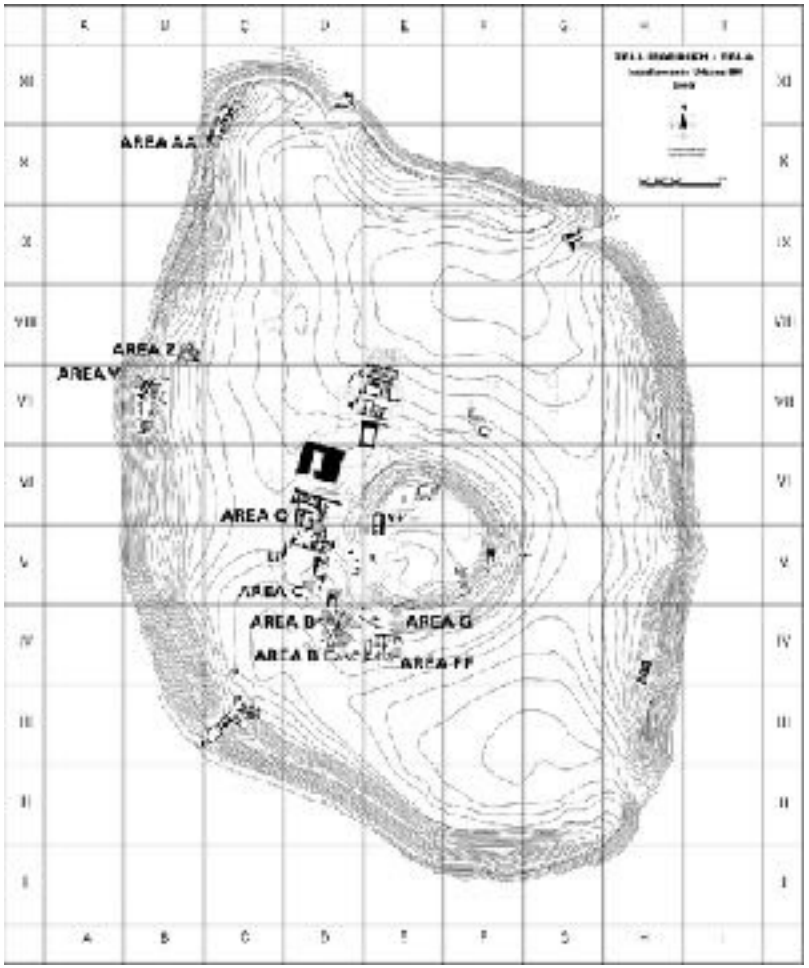
Topics

DATA FROM ARCHAEOLOGICAL EXCAVATION

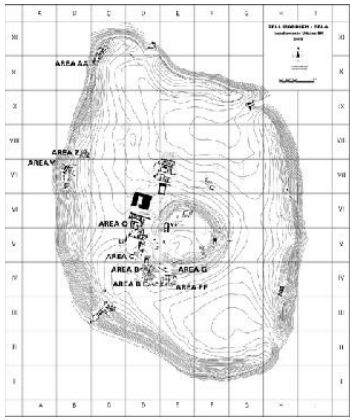
- Stratigrafic data
- Topographic data
- Material culture (Pottery and Small Finds)

Topographic data

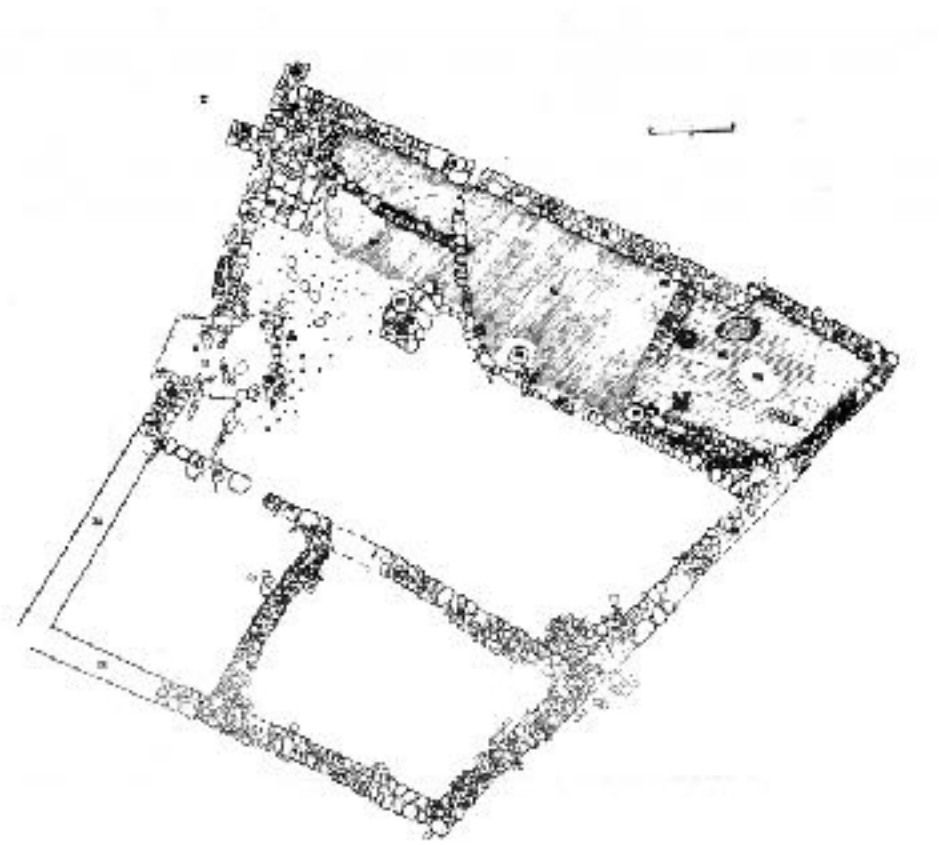
Contour map



Topographic data



Detailed planimetry



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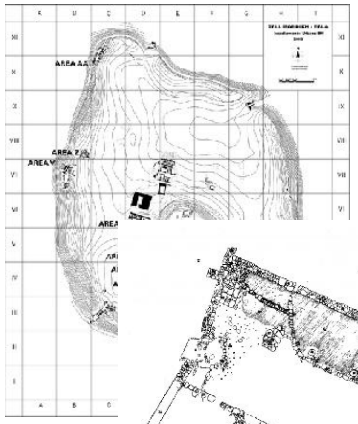
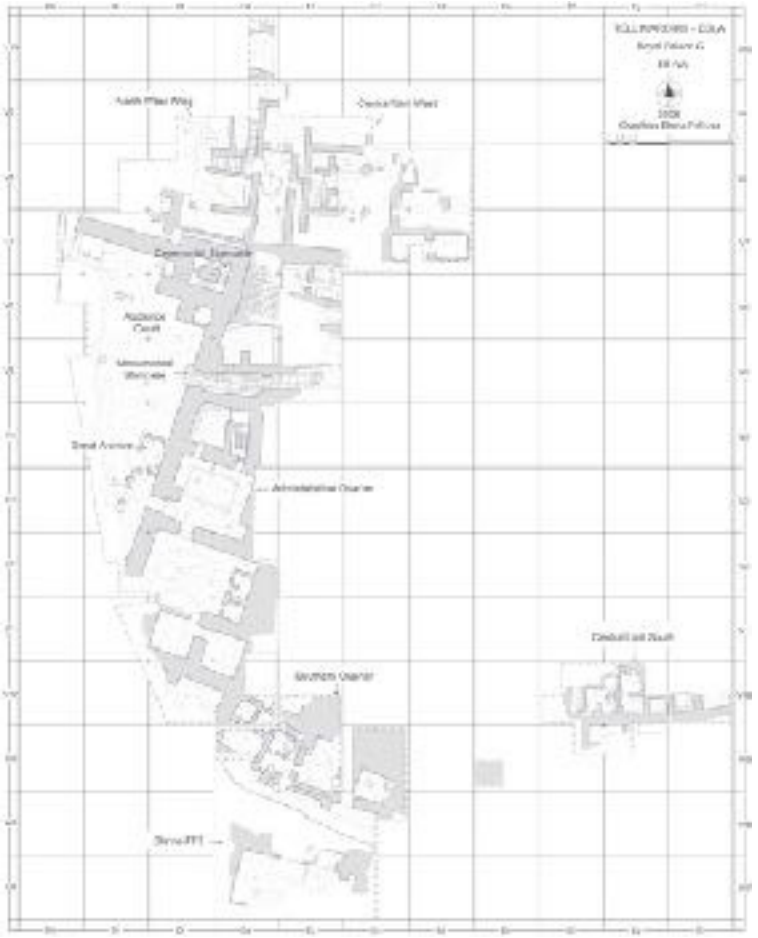


Schematic planimetry



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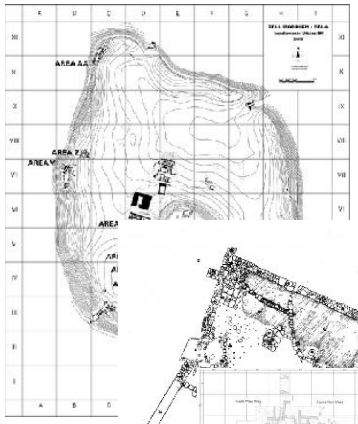
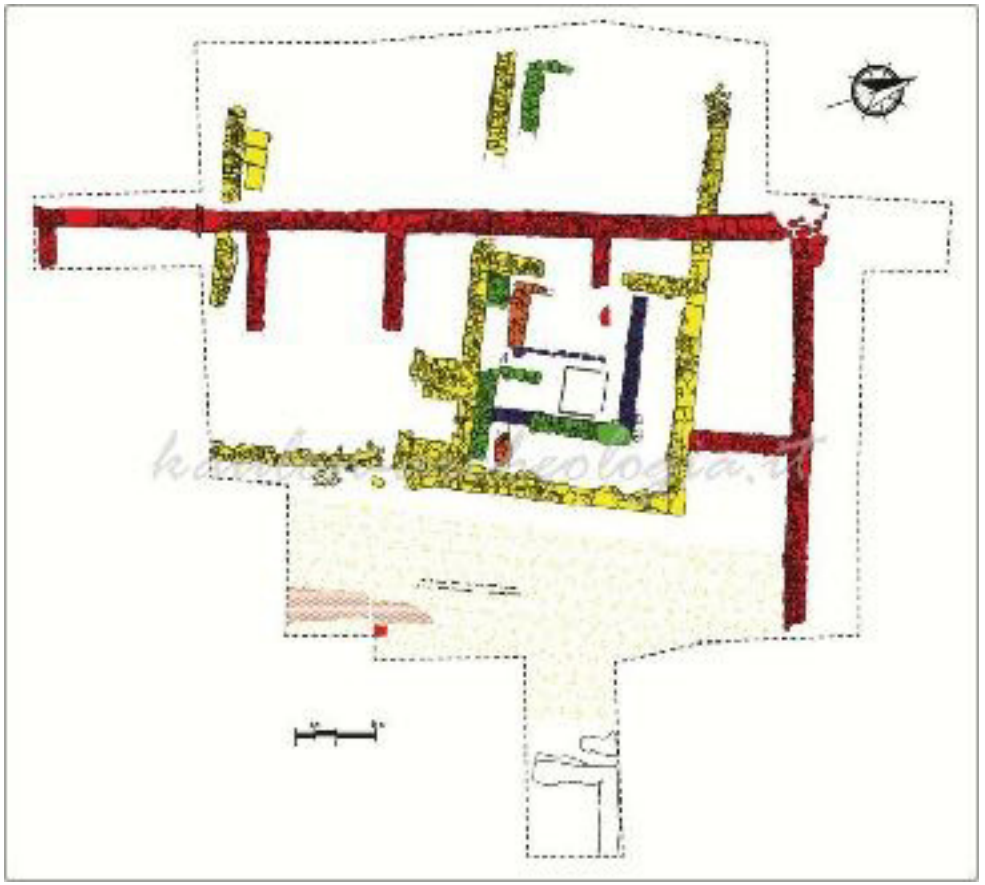


Composite planimetry



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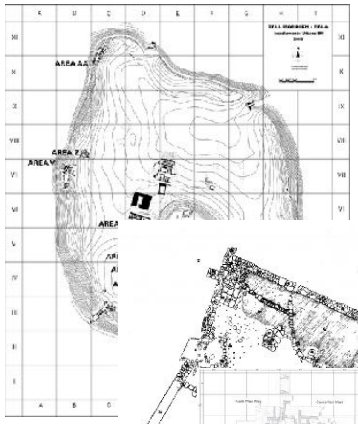
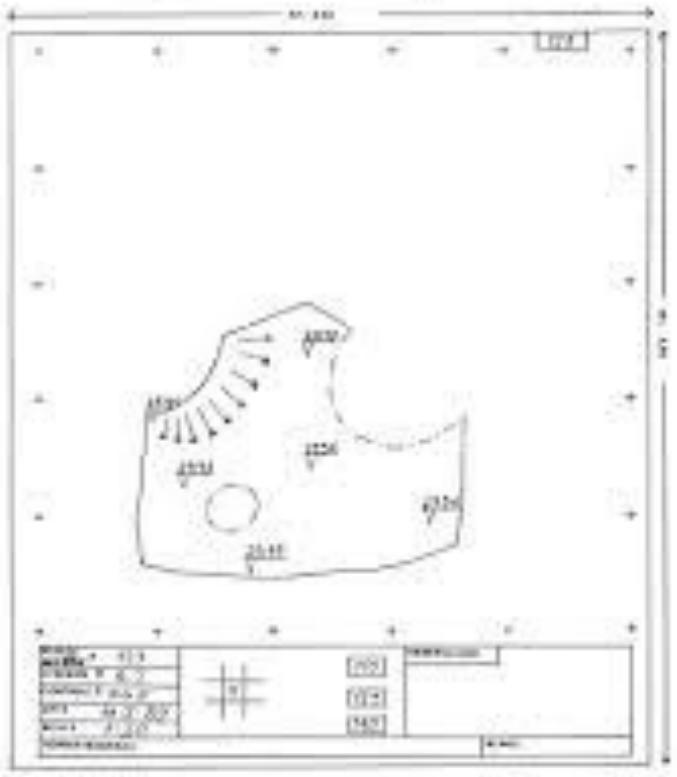
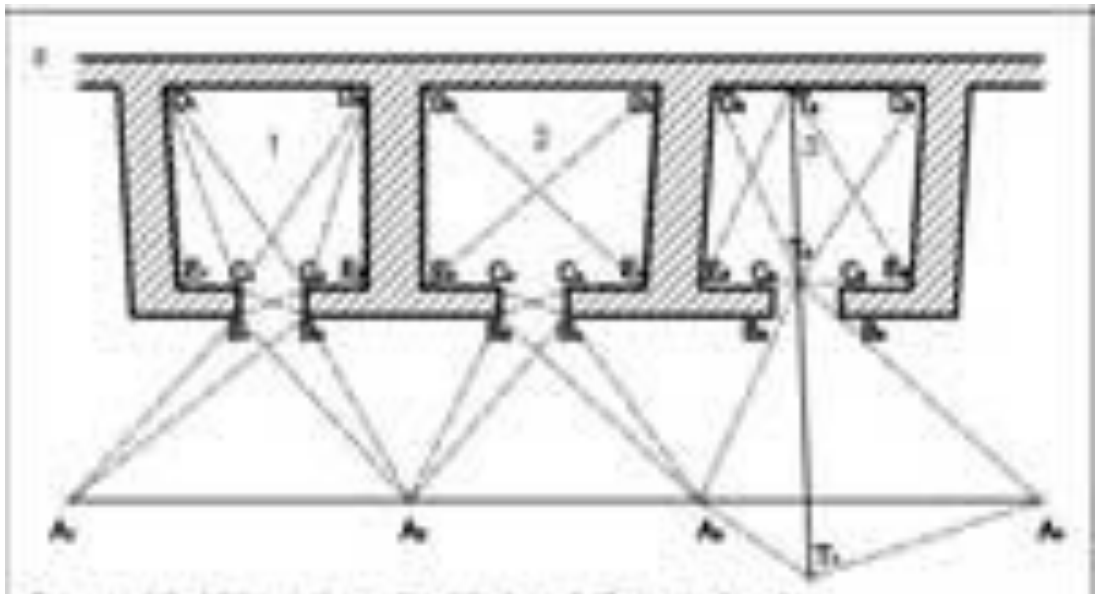


Stratigraphic Unit planimetry



Topographic data

Manual relief



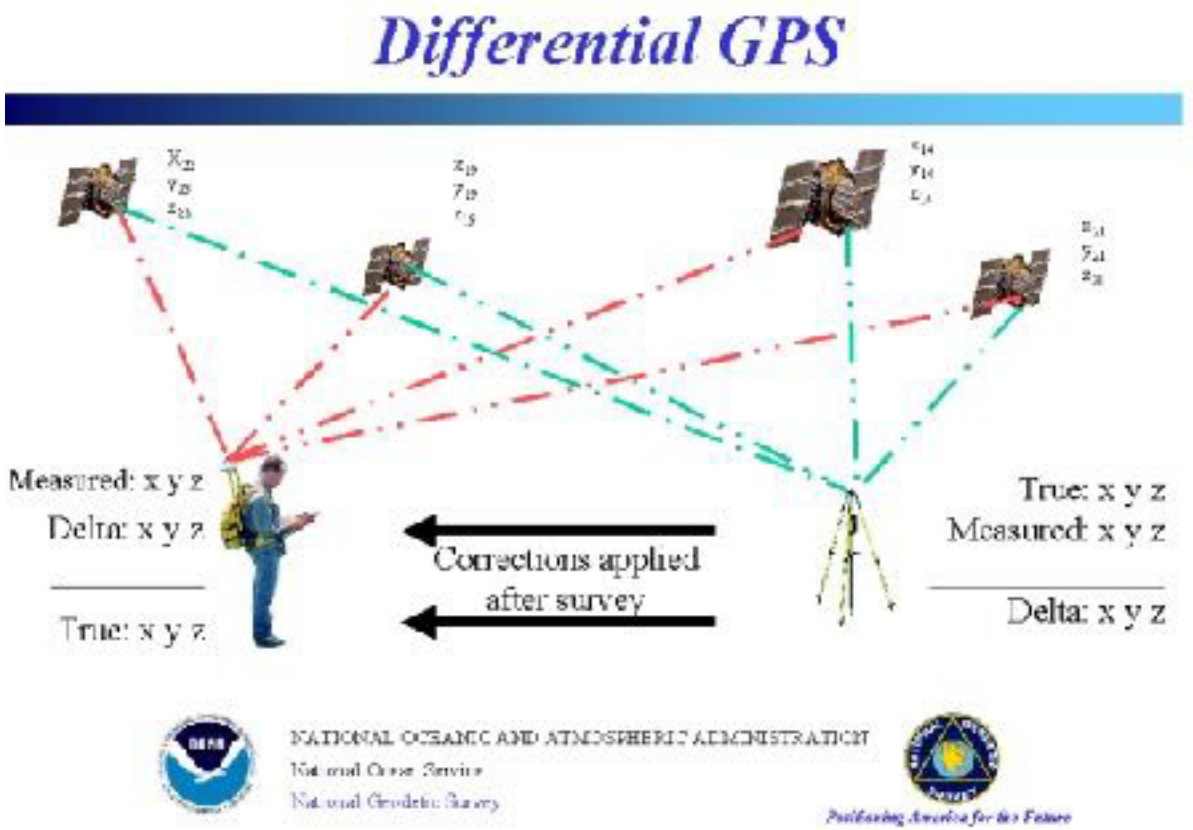
Topographic data

Total station

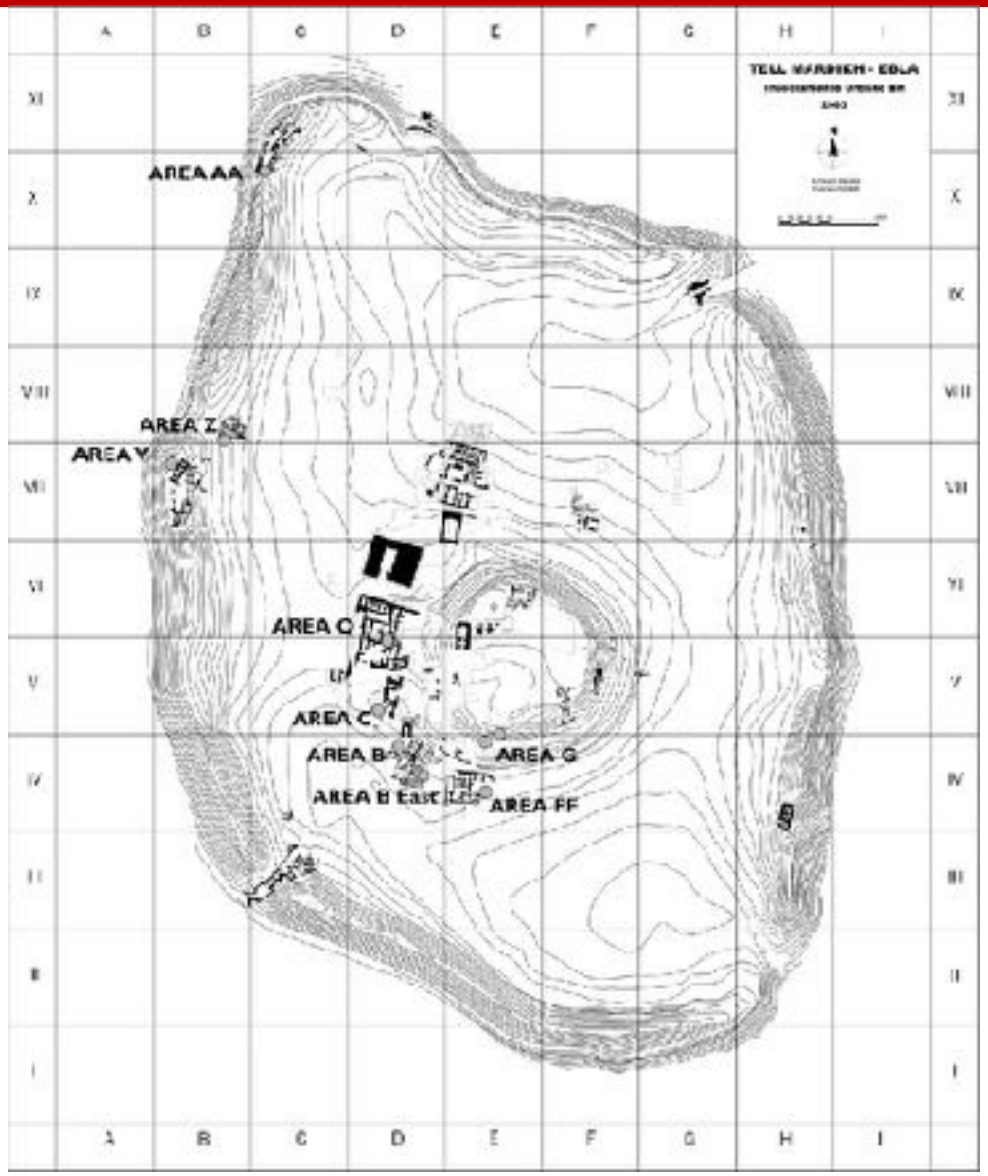
Optical Level

Topographic data

GPS



Topographic data



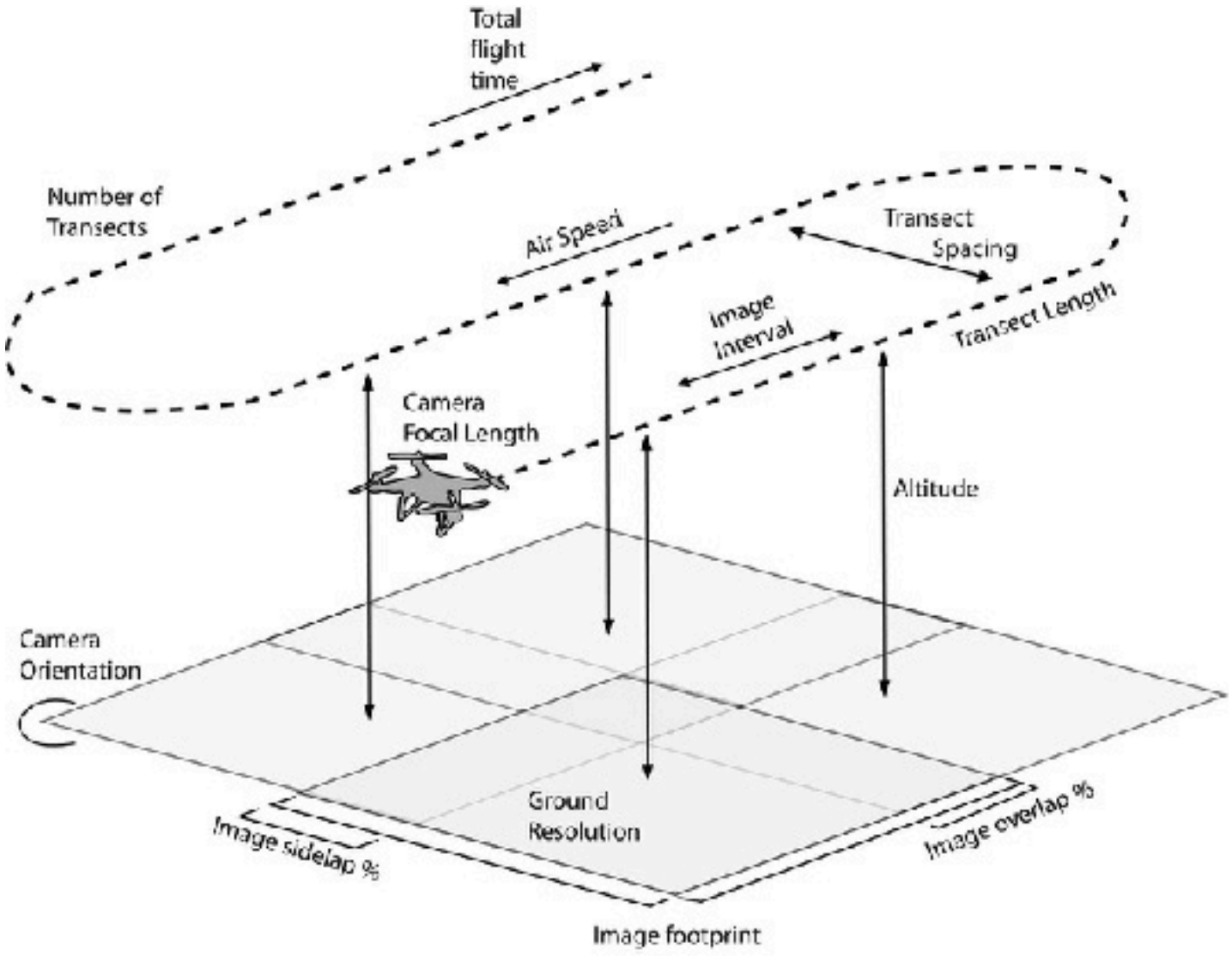
Topographic data

Digitalization of the topographic data

Photogrammetry

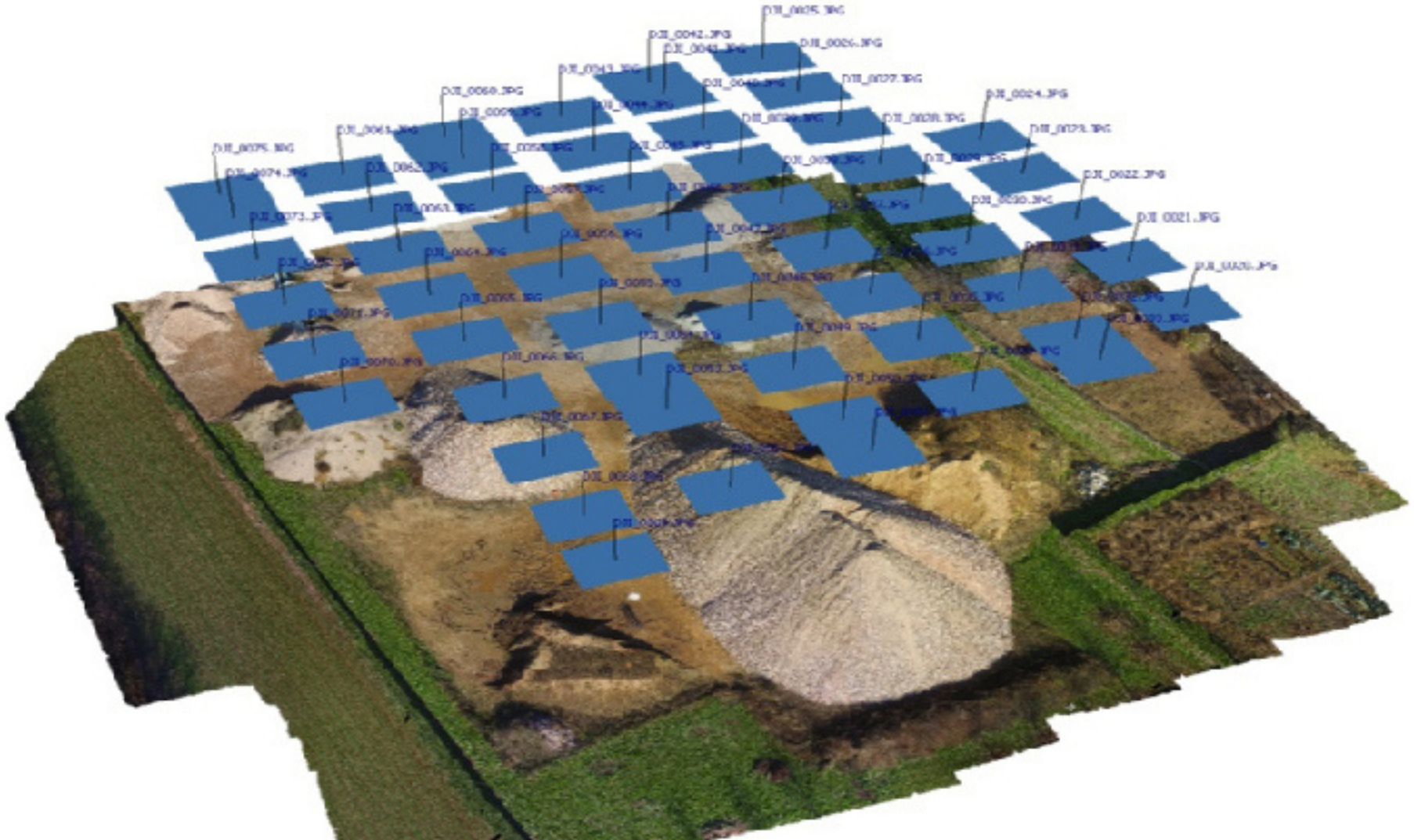
Photogrammetry is the technique of taking multiple overlapping photographs and deriving measurements from them to create 3D models of objects or scenes. Using appropriate software, images of land masses are converted into maps, 3D models or drawings. In aerial UAV photogrammetry, a drone captures overlapping images using waypoint navigation technology, which provides the precise flight path essential in this type of imaging. Specialized software integrates the overlapping images into one. Further processing converts the image into the desired map of 3D model.

Photogrammetry

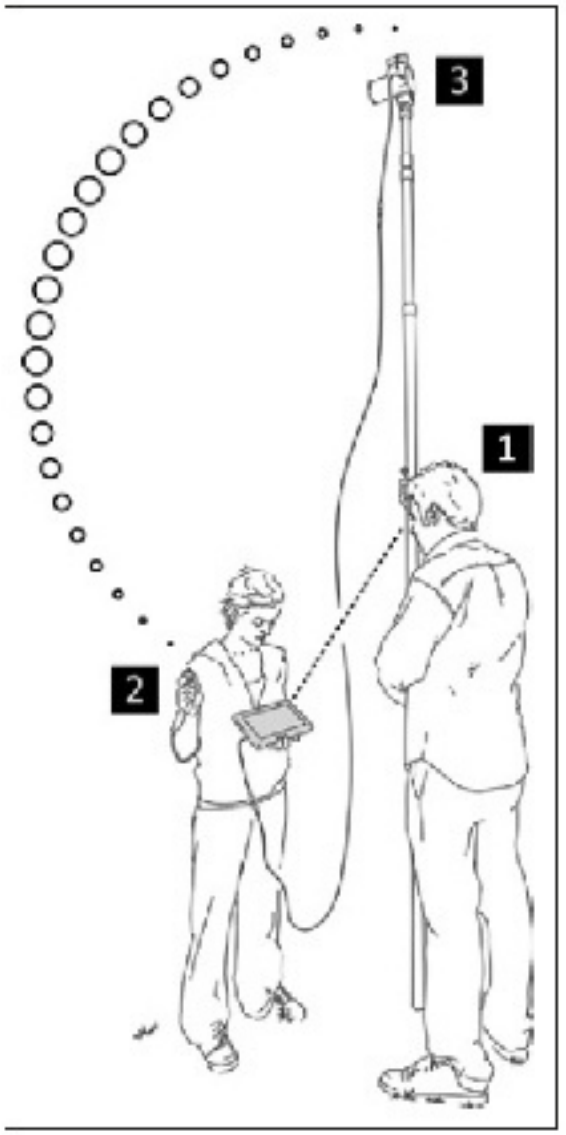


Photogrammetry

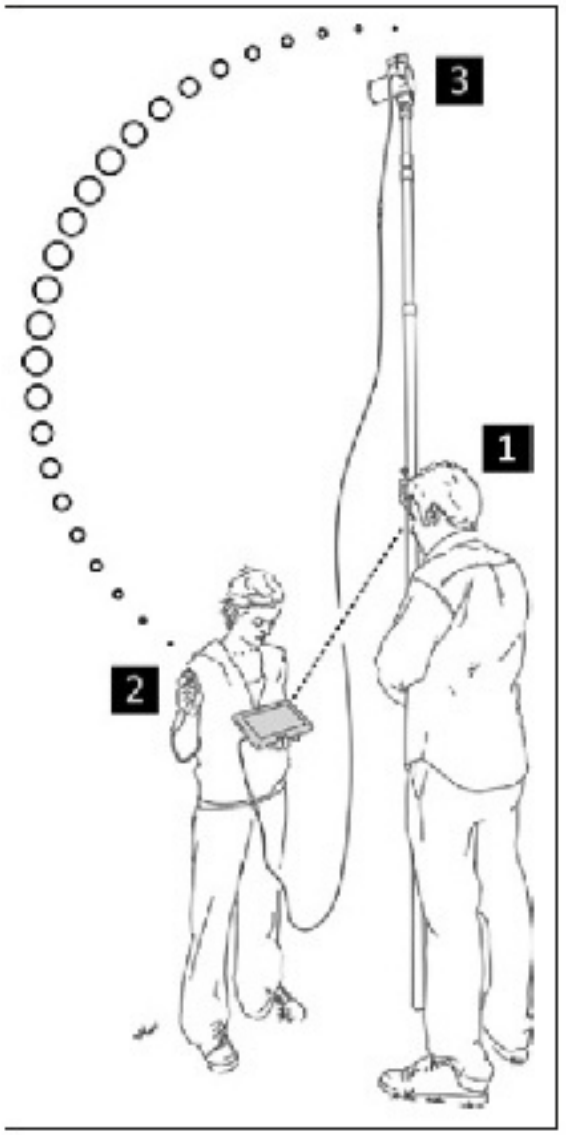
Photogrammetry



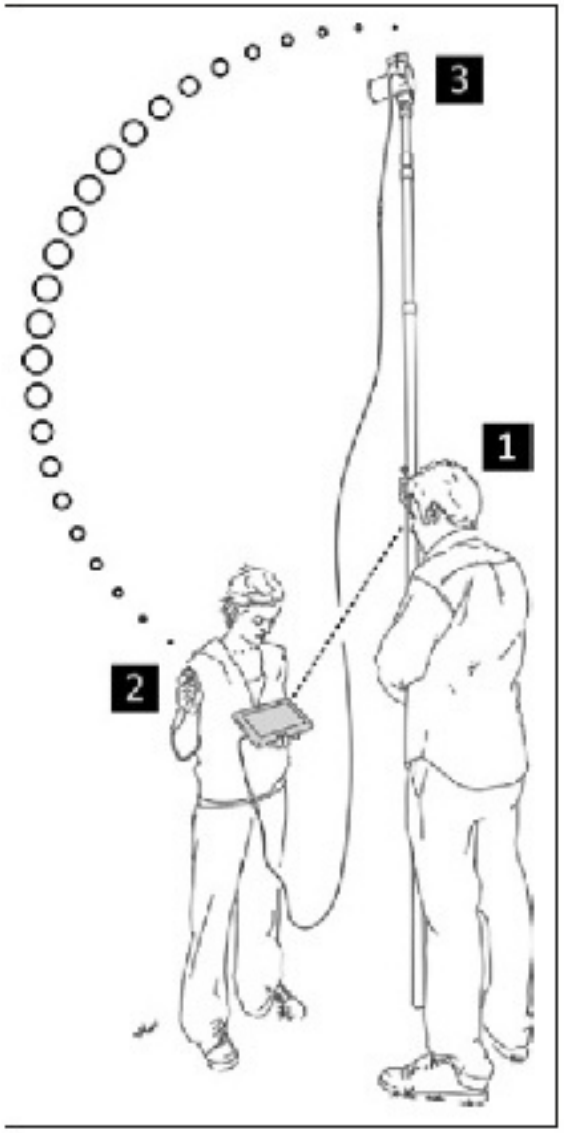
Photogrammetry



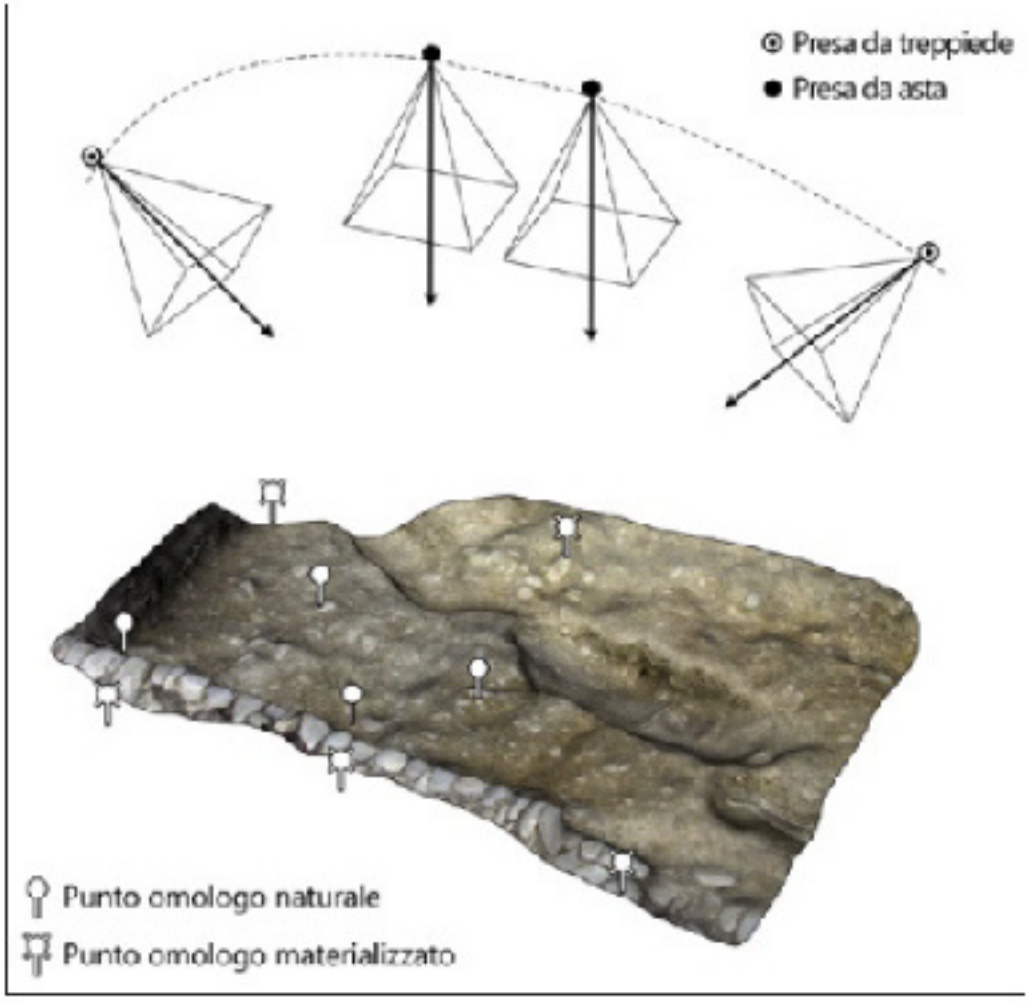
Photogrammetry



Photogrammetry



Photogrammetry



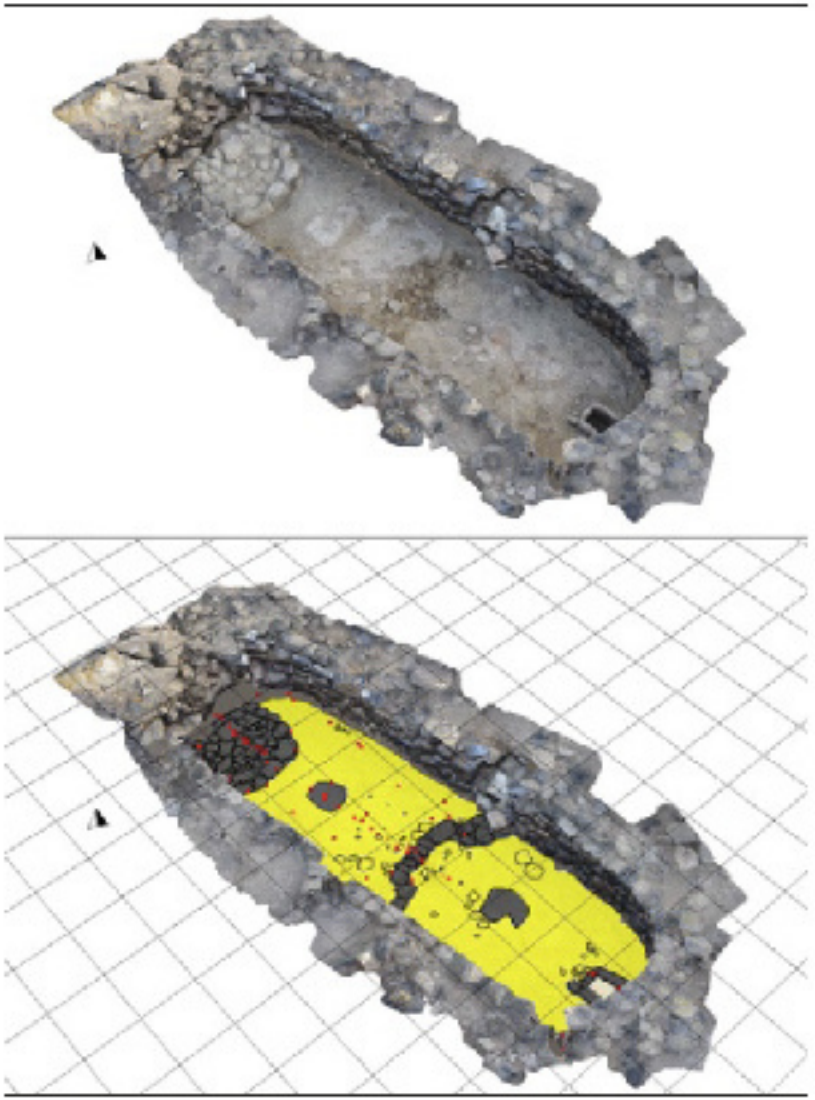
Photogrammetry

Virtual reconstruction of stratigraphy

Fig. 1

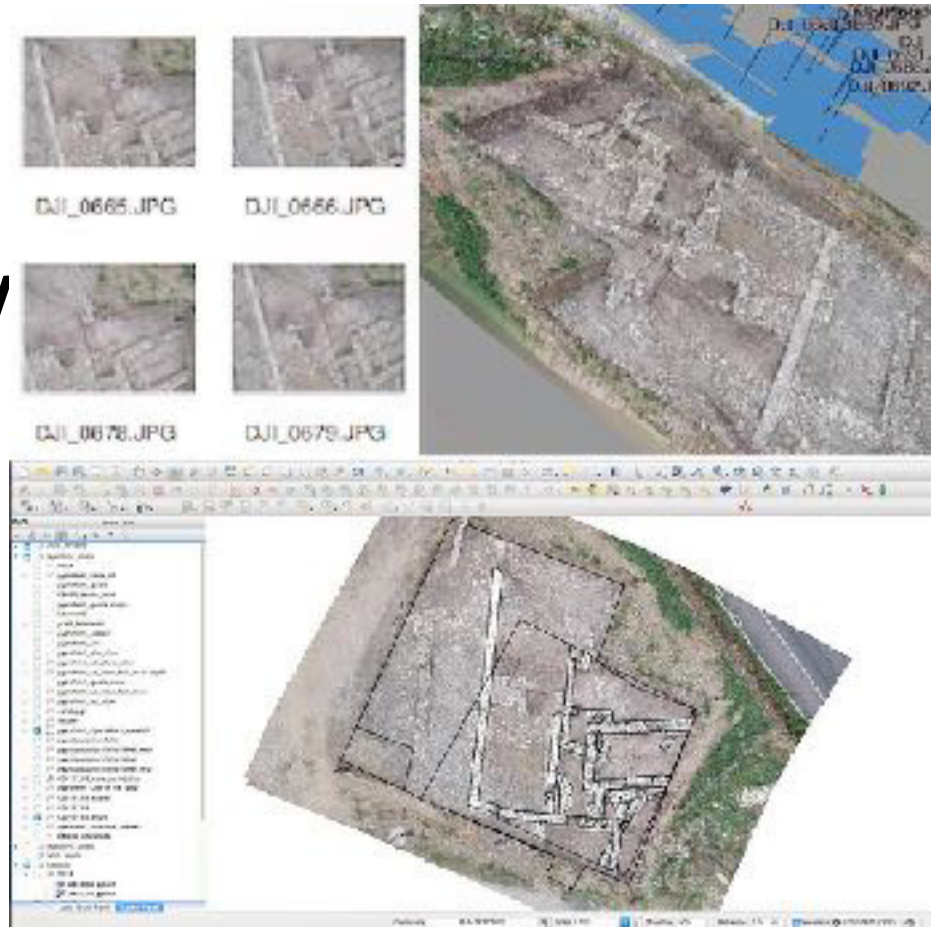
Photogrammetry

Editing of the 3D model on CAD or GIS



Photogrammetry

Production of orthophoto which can be edited to produce regular planimetry



Photogrammetry

- Add Photos (or Add Folder containing all photos from your shoot)
  - This first step loads all of your raw images into the software's interface.
- Align Photos
  - the first processing step compares the pixels in your photos to find matches and estimate camera locations and 3D geometry from them
- Build Dense Cloud
  - once satisfied with the alignment, the sparse point cloud (a mere fraction of the total data) is processed into a dense cloud in which each matchable pixel will get its own X, Y, Z location in 3D space
- Build Mesh
  - this step connects each set of three adjacent points into a triangular face, which combine seamlessly to produce a continuous mesh over the surface of your model
- Build Texture
  - In the final step, the original images are combined into a texture map and wrapped around the mesh, resulting in a photorealistic model of your original object.

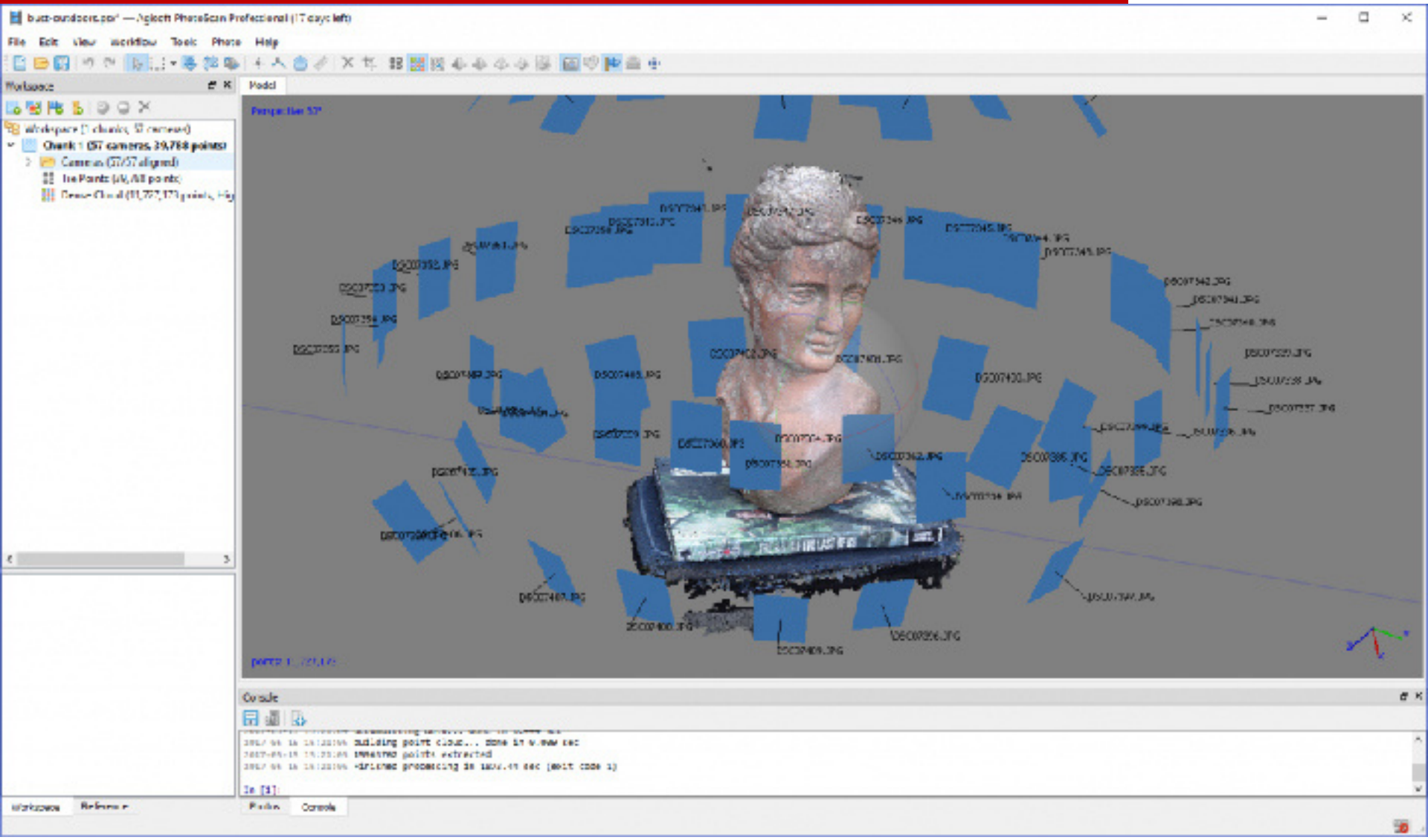
Photogrammetry of objects

WALADU Cascade Training

University Residential Centre of Bertinoro

10th-15th December 2018

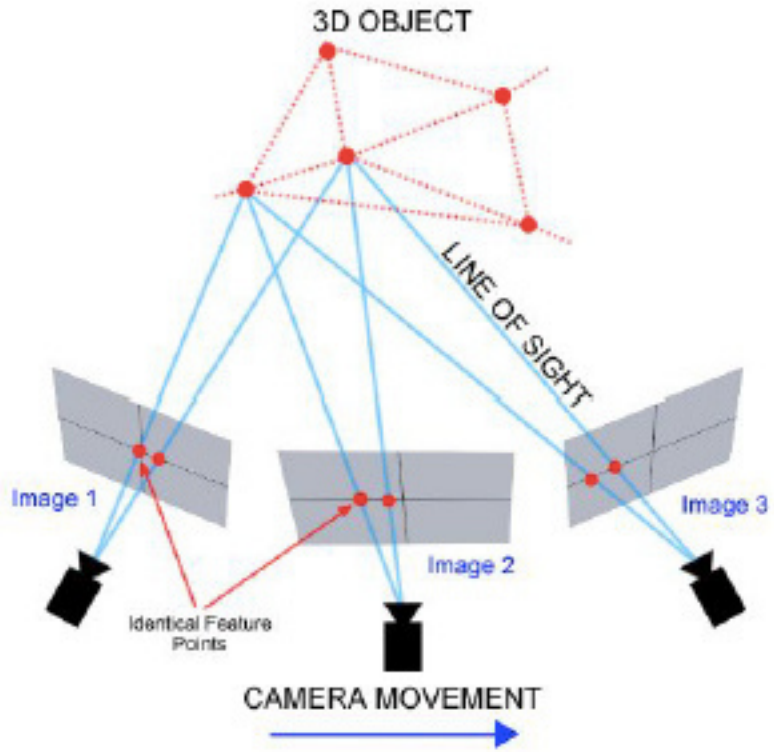
Photogrammetry of objects



Photogrammetry of objects

MARKER

Photogrammetry of objects



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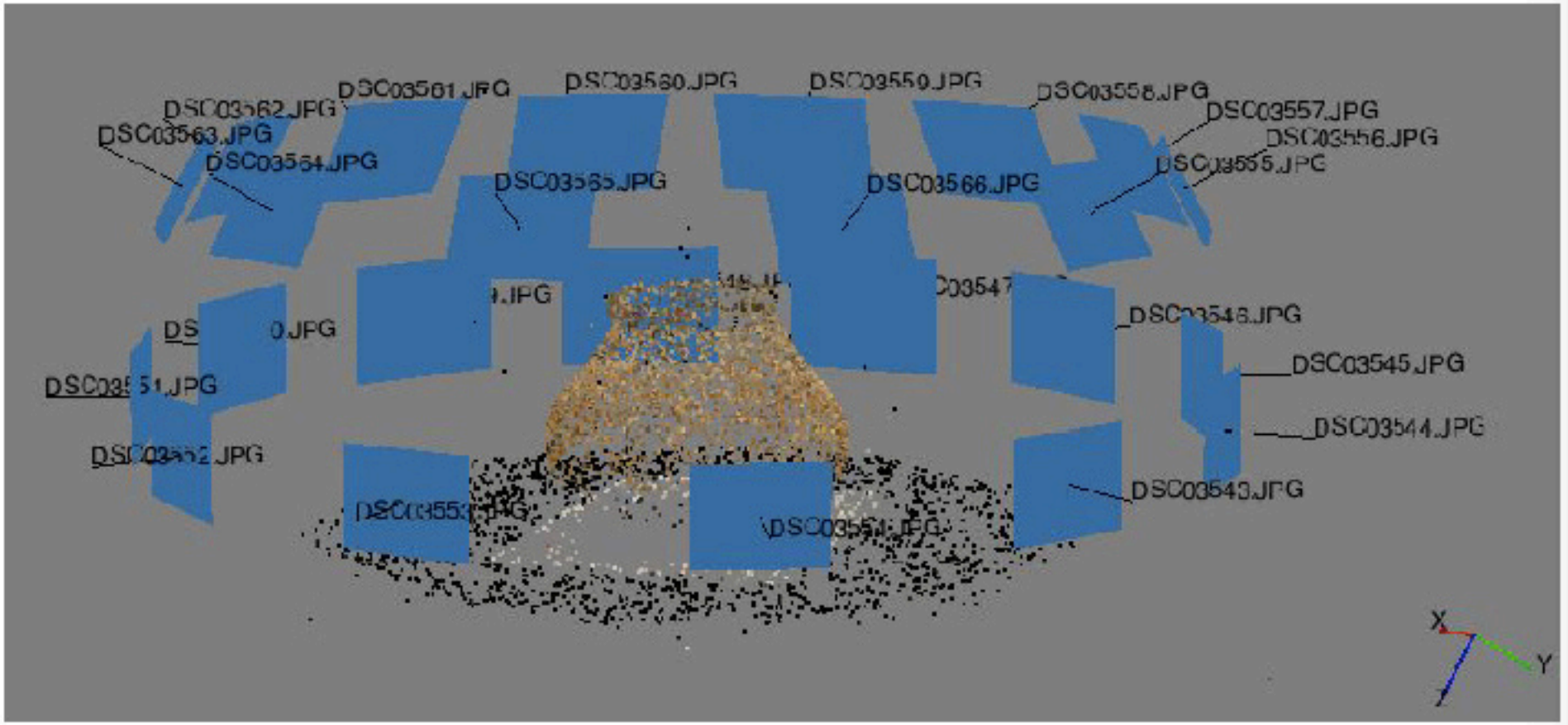

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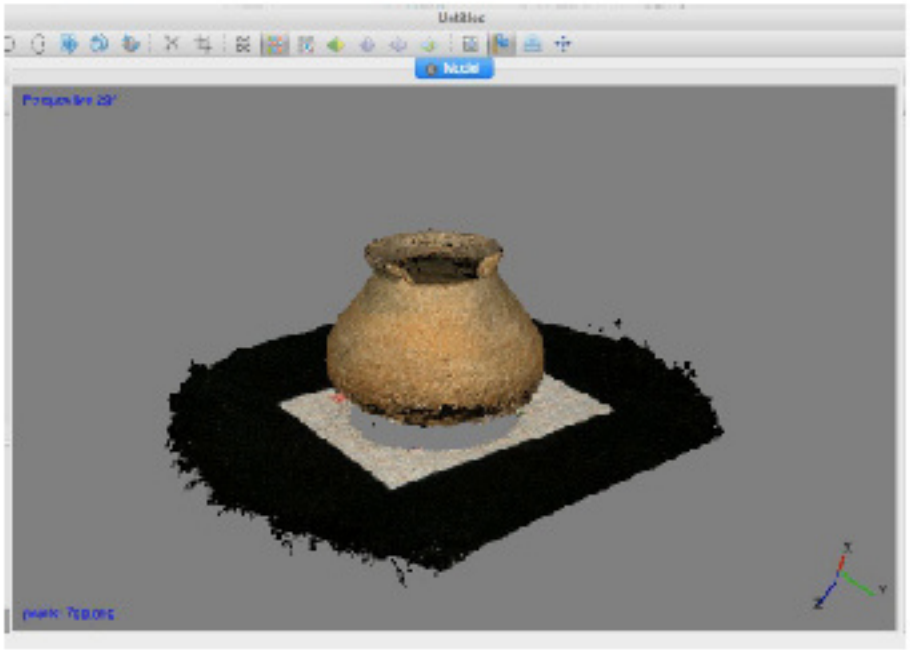

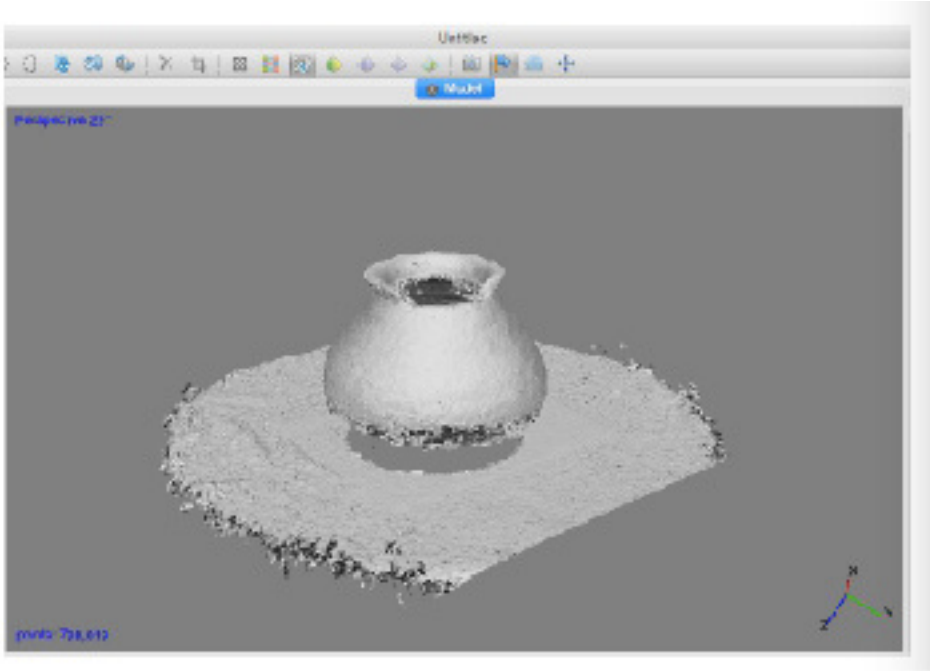

Photogrammetry of objects

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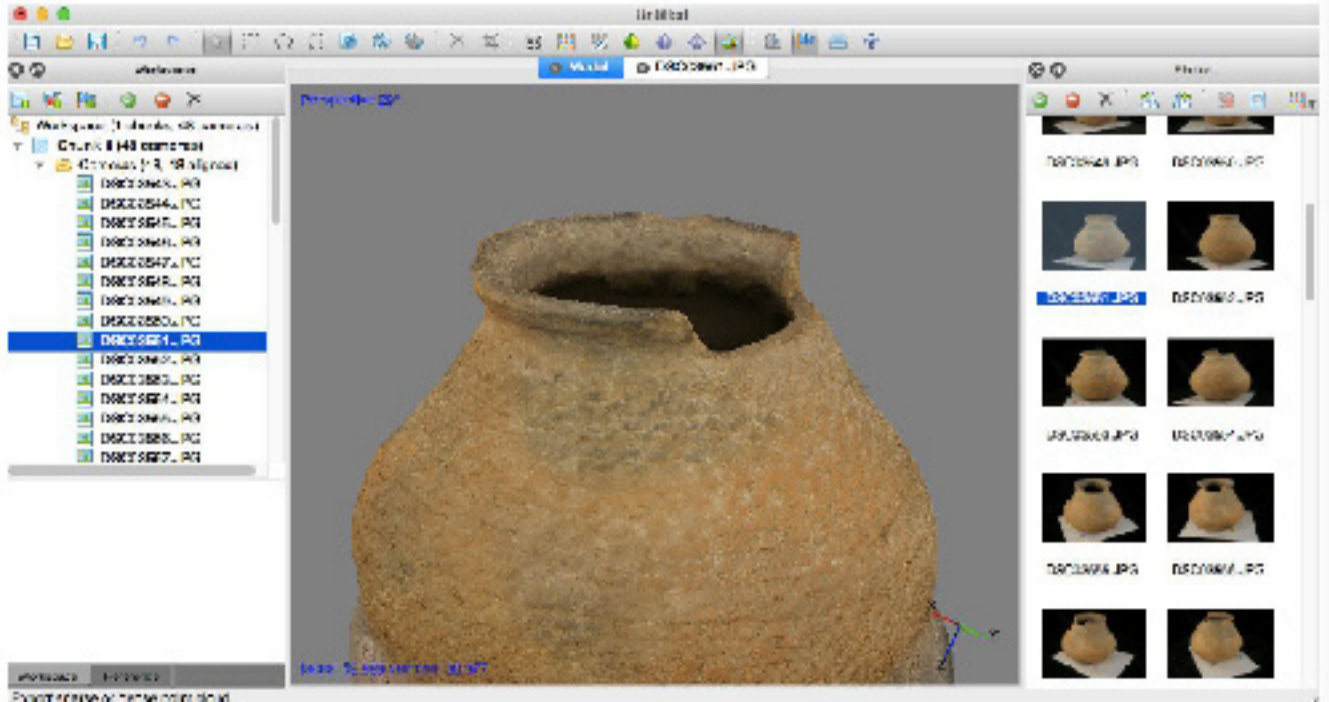

Archaeology from Dig to Lab: Post Excavation Research

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Goals

- To present “new” tools for the management of the archaeological data
- To confront with all of you about the data management, comparing our expertise
- To create a “new” model of data management

Post-Excavation research

Post-excavation Analysis constitutes processes that are used to study archaeological materials after an excavation is completed. Since the advent of "New Archaeology" in the 1960s, the use of scientific techniques in archaeology has grown in importance. This trend is directly reflected in the increasing application of the scientific method to post-excavation analysis. The first step in post-excavation analysis should be to determine what one is trying to find out and what techniques can be used to provide answers. Techniques chosen will ultimately depend on what type of artefacts one wishes to study. Here are some outlines processes for analysing different artefact classes and describes popular techniques used to analyse each class of artefact. Keep in mind that archaeologists frequently alter or add techniques in the process of analysis as observations can alter original research questions.

Topics

1- Radio Carbon Dating C14

2- Ceramic Petrographic Analysis

3- Isotopic Analysis

4- aDNA and Archaeogenetics

Topics

1- Why Radio Carbon Dating C14?

- To create absolute chronological sequence of the site
- To illustrate the typological development of certain pottery assemblage

1- Radio Carbon Dating C14

Definition:
Radiocarbon dating or C-14, is a method for determining the age of an object containing organic material by using the properties of radiocarbon, a radioactive isotope of carbon.

Datable Materials :
charcoal, wood, twigs, seeds, bones, shells, leather, peat, lake mud, soil, hair, pottery, pollen, wall paintings, corals, blood residues, fabrics, paper or parchment, resins, and water, among others.

Most commune Datable Materials from the Archaeological Excavation:

Charcoal

Bones (human/Animals)

Seeds

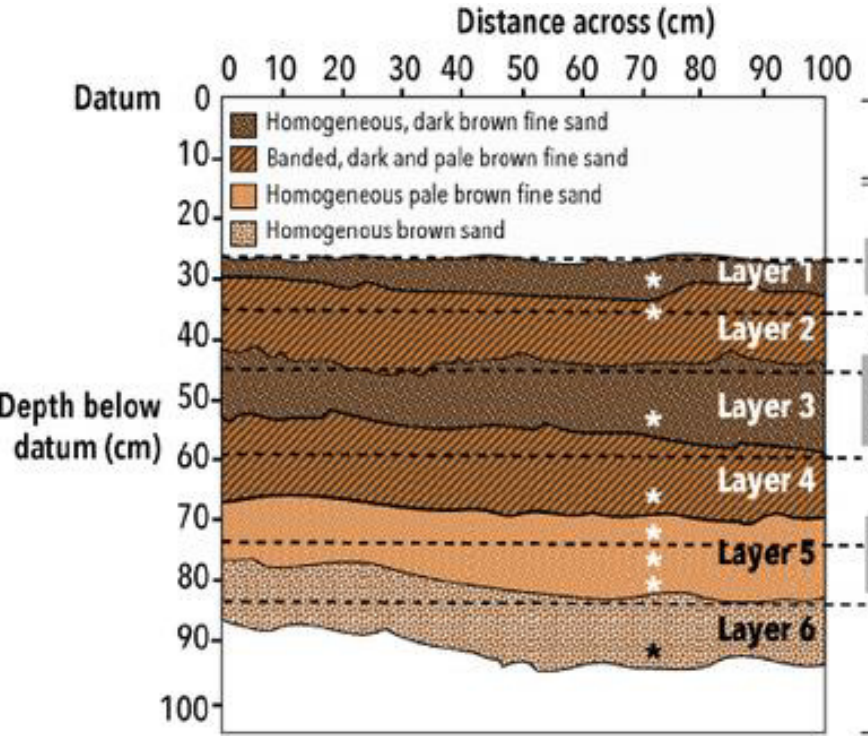
Leather

1- Radio Carbon Dating C14

In Situ Materials:
We should choose the secured archaeological context to have (the in situ vessels and their Contents. Only in from this materials we can Obtain secured chronological date

1- Radio Carbon Dating C14

Stratigraphy and C14 Dating:

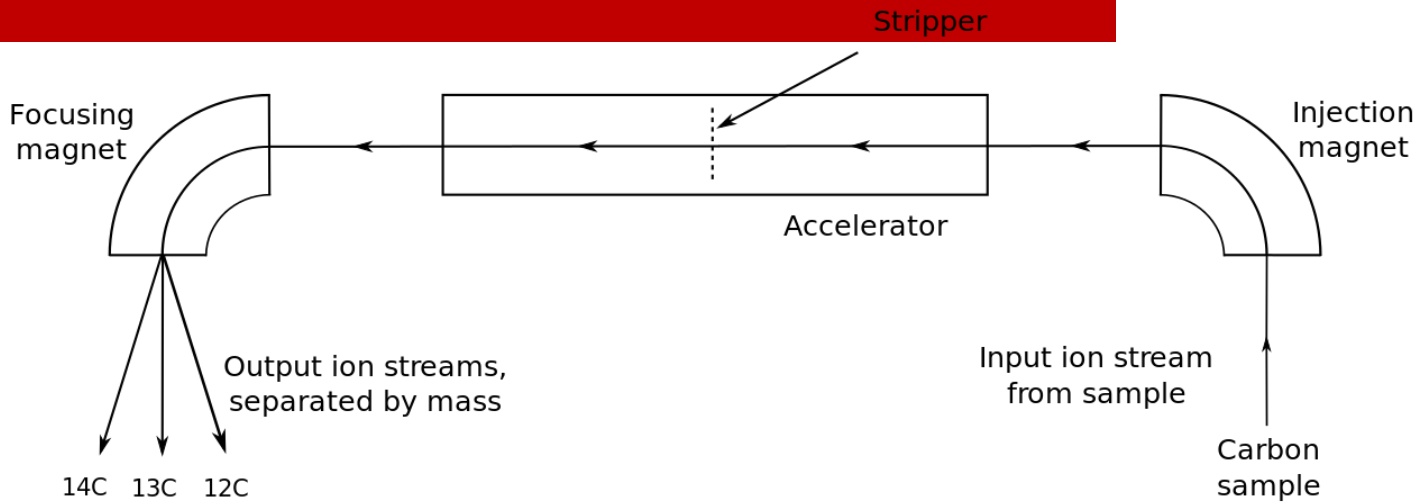


d13C	Percent Modern Carbon (pMC)	14C age (ybp)	95.4% CI (2 sigma; cal a BP)	Epoch	Sampled from	Material
-24.7432±0.608	87.373±0.214	1085±30	906-1054	Late Holocene	0-5 cm	Charcoal
-23.6277±0.383	73.332±0.177	2490±30	2358-2705	Mid-Holocene	0-5 cm	Charcoal
-22.2624±0.349	52.783±0.192	5135±40	5731-5926		0-5 cm	Bone
-24.0480±0.567	39.067±0.129	7550±35	8202-8398	Mid-Holocene	0-5 cm	Charcoal
-16.7731±0.238	64.046±0.198	3580±35	3697-3958		0-5 cm	Bone
-15.7852±0.129	63.888±0.195	3600±35	3718-3971		0-5 cm	Bone
-24.2773±0.275	32.187±0.111	9105±40	10165-10366	Early Holocene	5 to base	Charcoal
-24.3256±0.612	15.770±0.087	14840±55	17820-18200	Late Pleistocene	0-5 cm	Charcoal
-31.2762±0.447	15.004±0.081	15235±55	18294-18629	Late Pleistocene c. LGM	0-5 cm	Charcoal

1- Radio Carbon Dating C14

Methods:

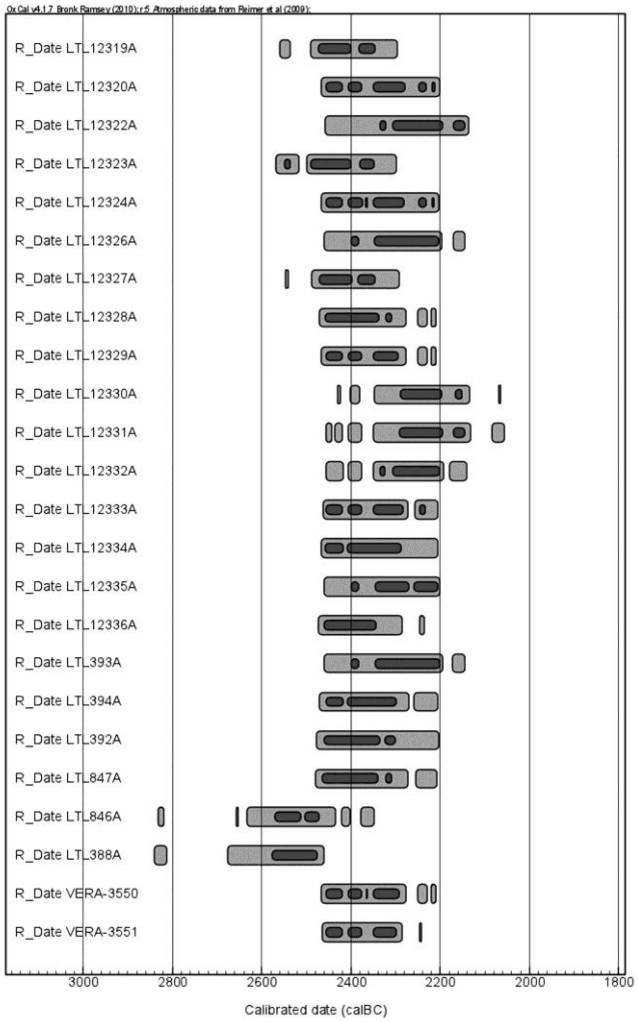
BETA Counting



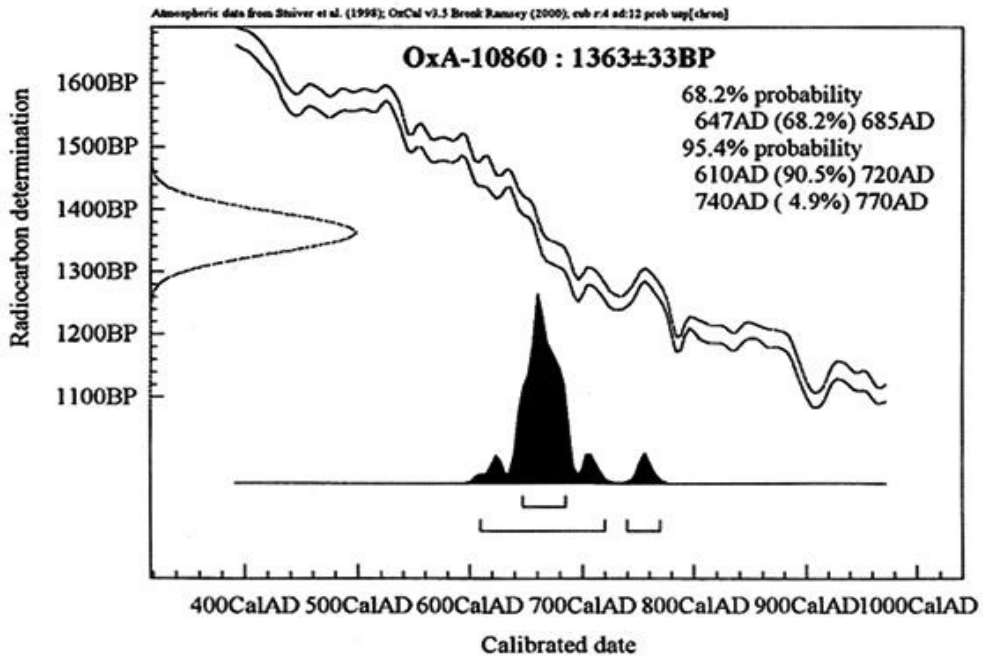
Accelerator Mas Spectrometry (AMS)

1- Radio Carbon Dating C14

Calibrated Date and the Chronological application:



A computer program that convert the value
Of the C14 in calendar ages



1- Radio Carbon Dating C14

Quiz

1-Which Materials we can't use for the C14 dating?

- ☐ Iron
- ☐ Cooper
- ☐ Plastic
- ✚ All the previous choices

2- Which one of the following materials is usually used in the C14 Dating

- ☐ Bones
- ☐ Charcoal
- ☐ Seeds
- ✚ All the previous answer

3- Why we use the C14 Dating?

- ☐ To discover the ancient human diet
- ☐ To detect the climate change
- ✚ To build up an absolute chronology for the site
- ☐ To discover the typological horizon of a certain culture

1- Radio Carbon Dating C14

Quiz

4- What is the most secured archaeological context to be used for the C14 dating?

- ☐ Materials from the pits
- ✚ In situ materials
- ☐ Surface materials
- ☐ Non-stratified materials

5- What a chronological sequence dose mean?

- ✚ An arrangement of the different occupational phases of the site
- ☐ The typological order of a pottery assemblage
- ☐ The different architectural structures in the site
- ☐ the gap between centre of the site and its and the periphery

6- What is the most commune analytical method in the C14 analysis?

- ☐ BETA counting
- ✚ AMS (Accerlator Mass Spectrometry)
- ☐ C13 Detector
- ☐ iPhone Application

1- Radio Carbon Dating C14

Quiz

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7- What is a radio carbon calibration ?

- ☐ A Radio carbon years converted in calendar ages
- ☐ A tool to convert chronological sequence to years calendar
- ☐ A Computer program to design maps
- ☐ A tool to read the stratigraphic sequence

Topics

1- Why Ceramic Petrographic Analysis?

- To create pottery groups based on the clay materials
- To illustrate the geographical provenance of the pottery of a certain culture
- To illustrate the trade and cultural interaction within a Geographical area
- To explain about the socio-economic system through the pottery distribution in the site

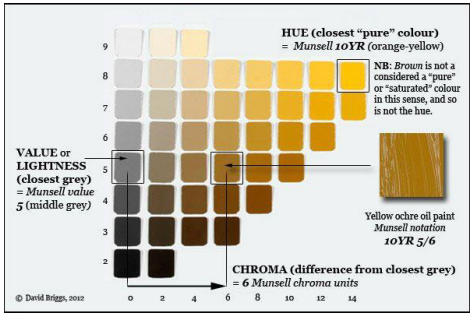
1- Petrographical Analysis

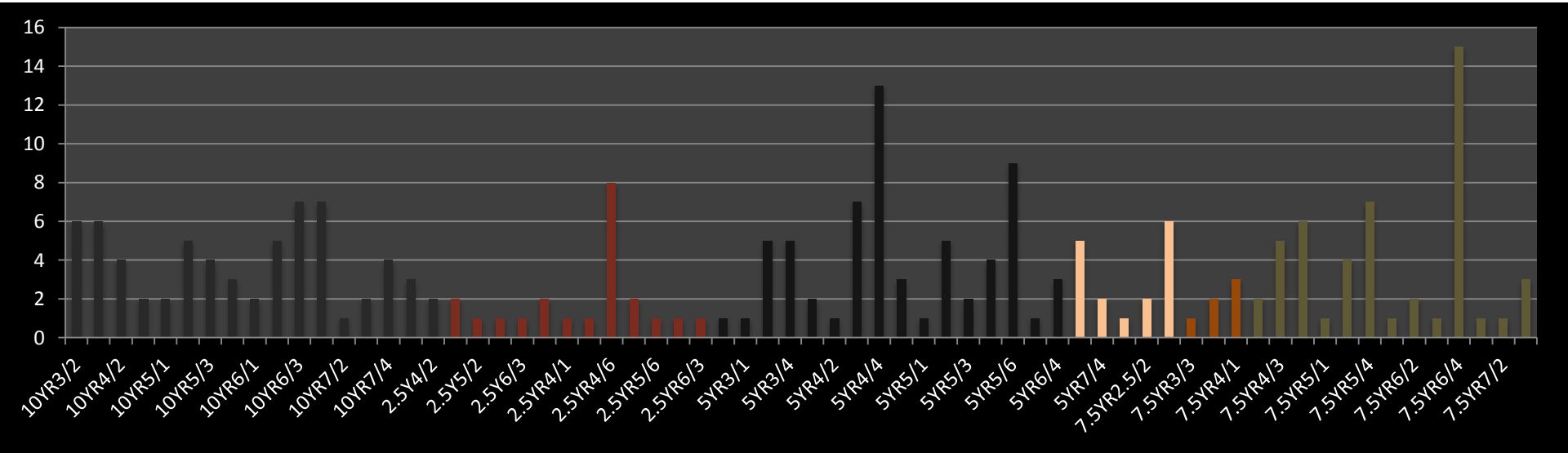
Definition:

A laboratory-based scientific archaeological technique that examines the mineralogical and microstructural composition of ceramics and other inorganic materials under the polarised light microscope in order to interpret aspects of the provenance and technology of artefacts.

Munsell color chart

In colorimetry, the Munsell color system is a color space that specifies colors based on three properties of color: hue, value (lightness), and chroma (color purity).



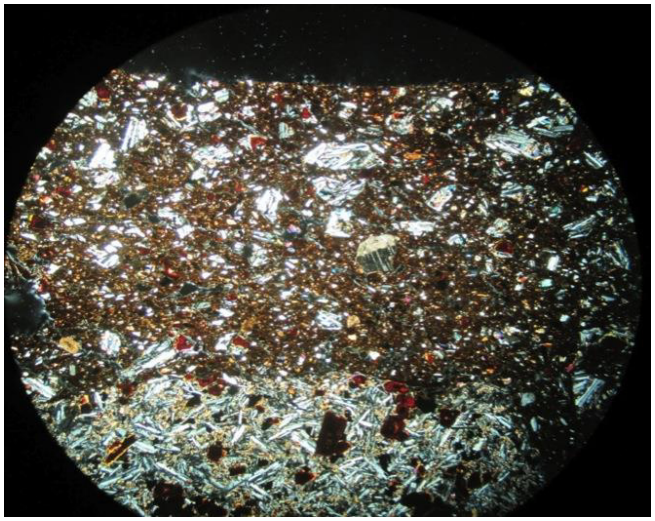


1- Petrographical Analysis

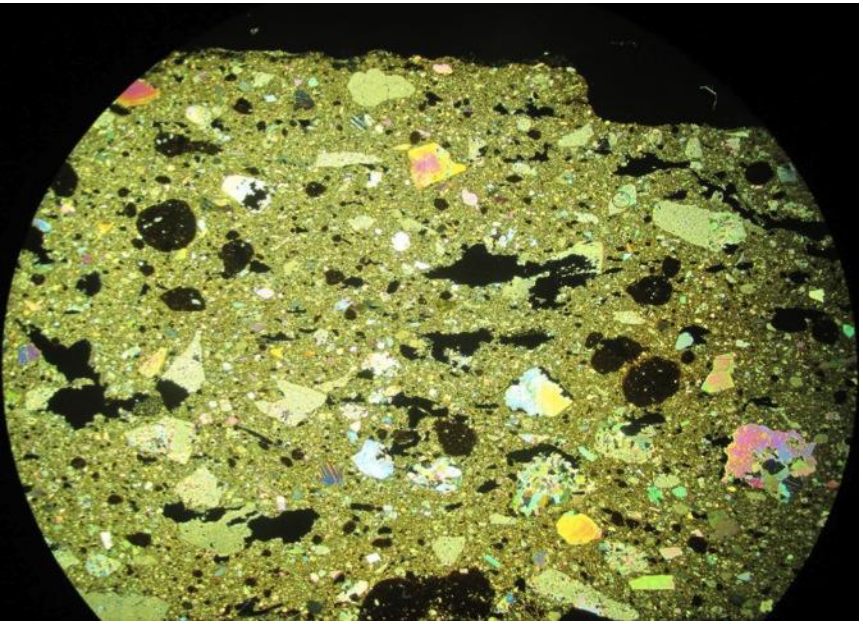
Basic Microscope images:

The images give basic information about the presence of different components of the ceramics fabrics that can be Used in creating ceramic groups of certain culture

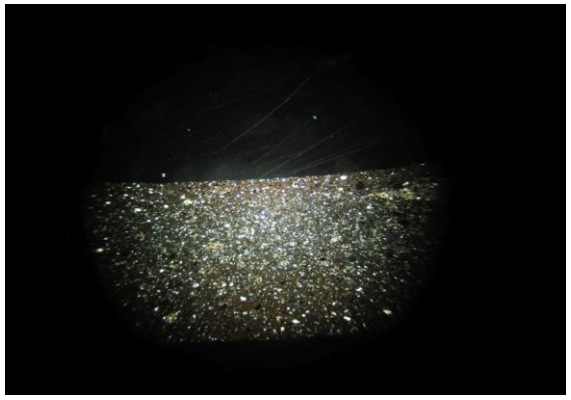
Group I Basalt-Rich



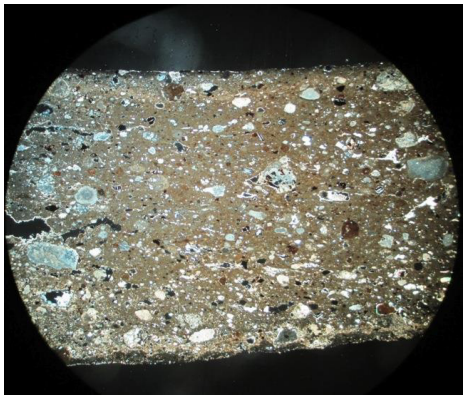
Group II Calcite-rich



Group III
Quartiz Rich

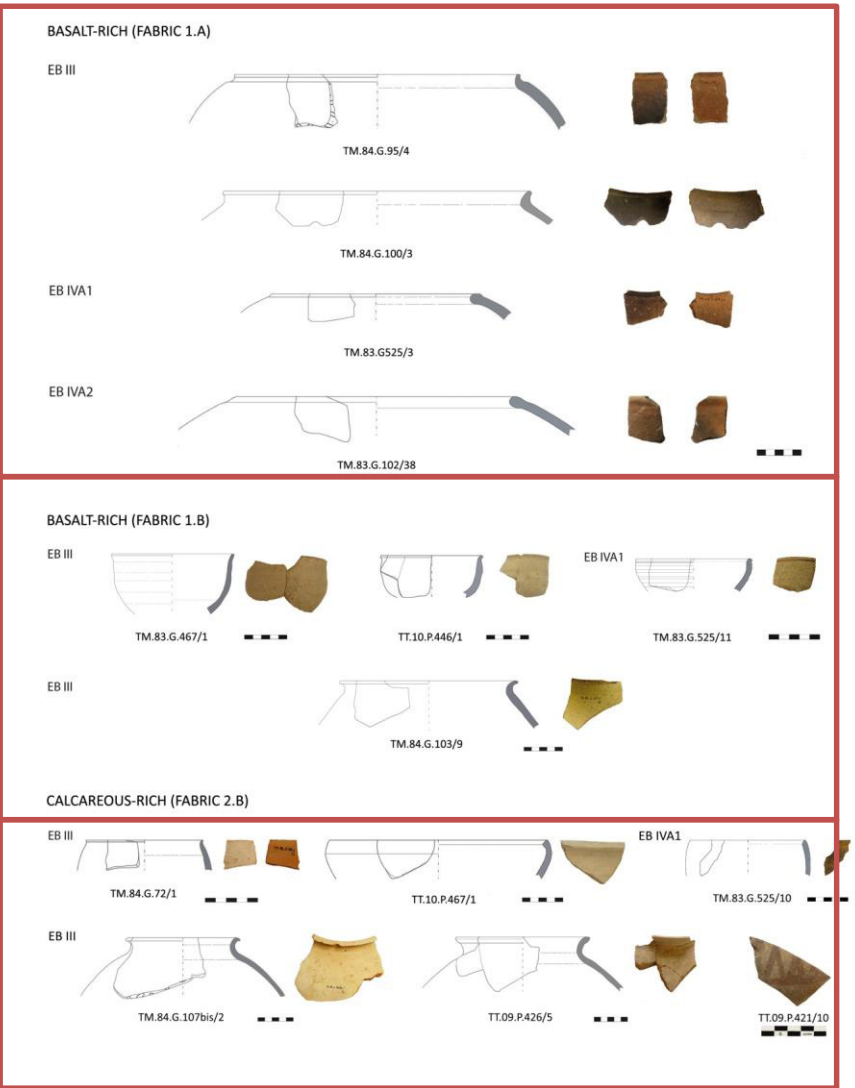


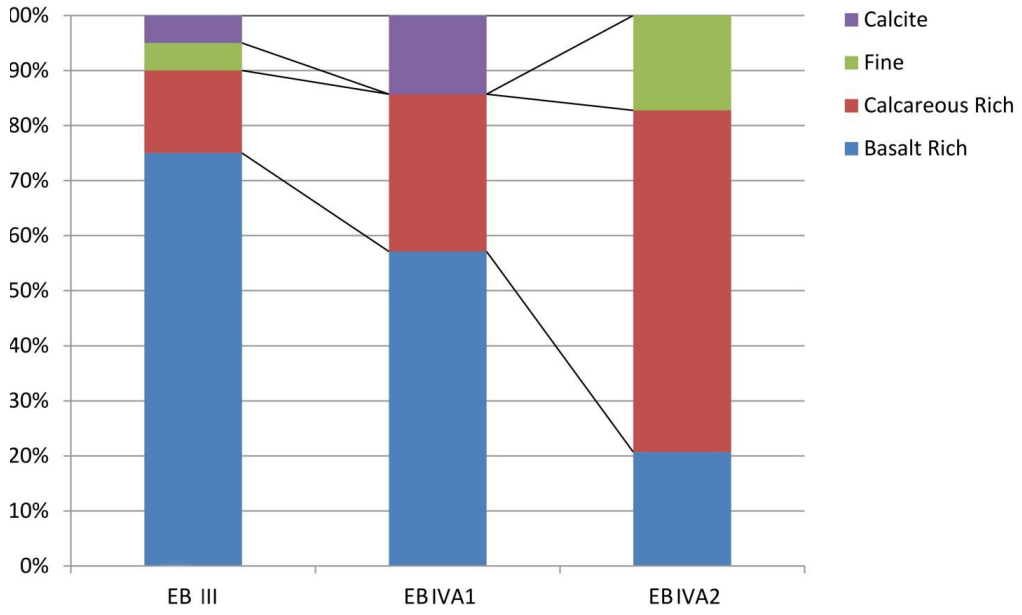
Group IV Limestone-Rich



3- Petrographical Analysis

Ceramic Grouping according to the chronological phase and clay used





3- Petrographical Analysis

How these information could contributes in the archaeological research?

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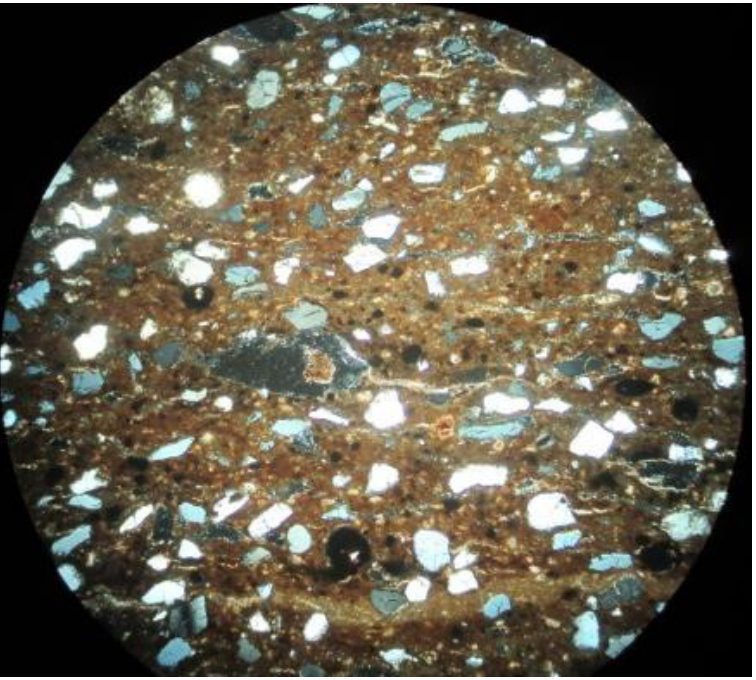


Petropgraphical Group

PREPARATION:
purification
Tempera selection → select technology

TEMPERATURE OF FIRING
<750 °C, 750-850 °C

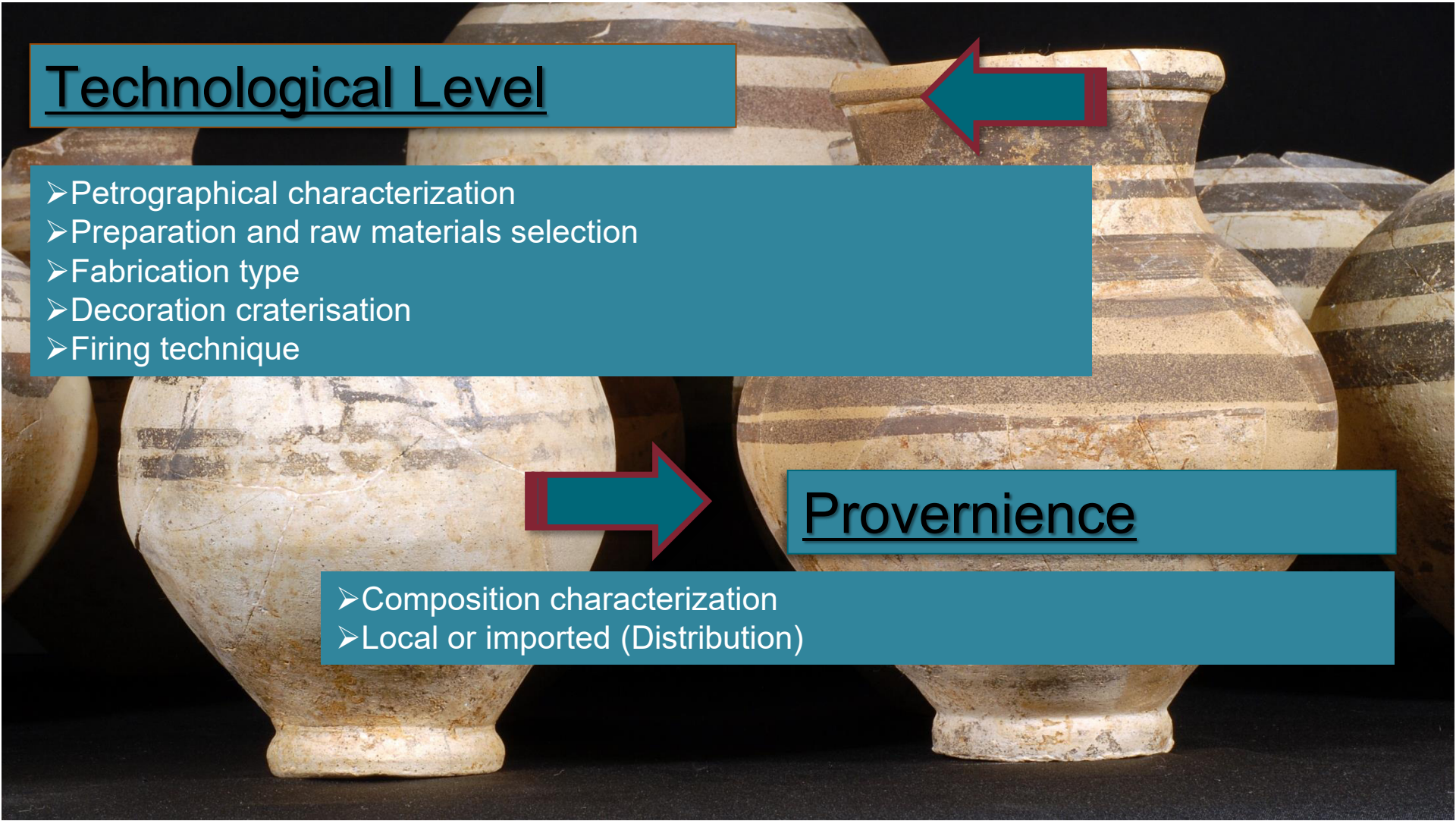
DECORATIONI:
Red → hematite
Black/Gray/blue →magnetite

Provenience

Clay Components

SUPPLYING:
The materials location is always changing

1- Petrographical Analysis



Technological Level

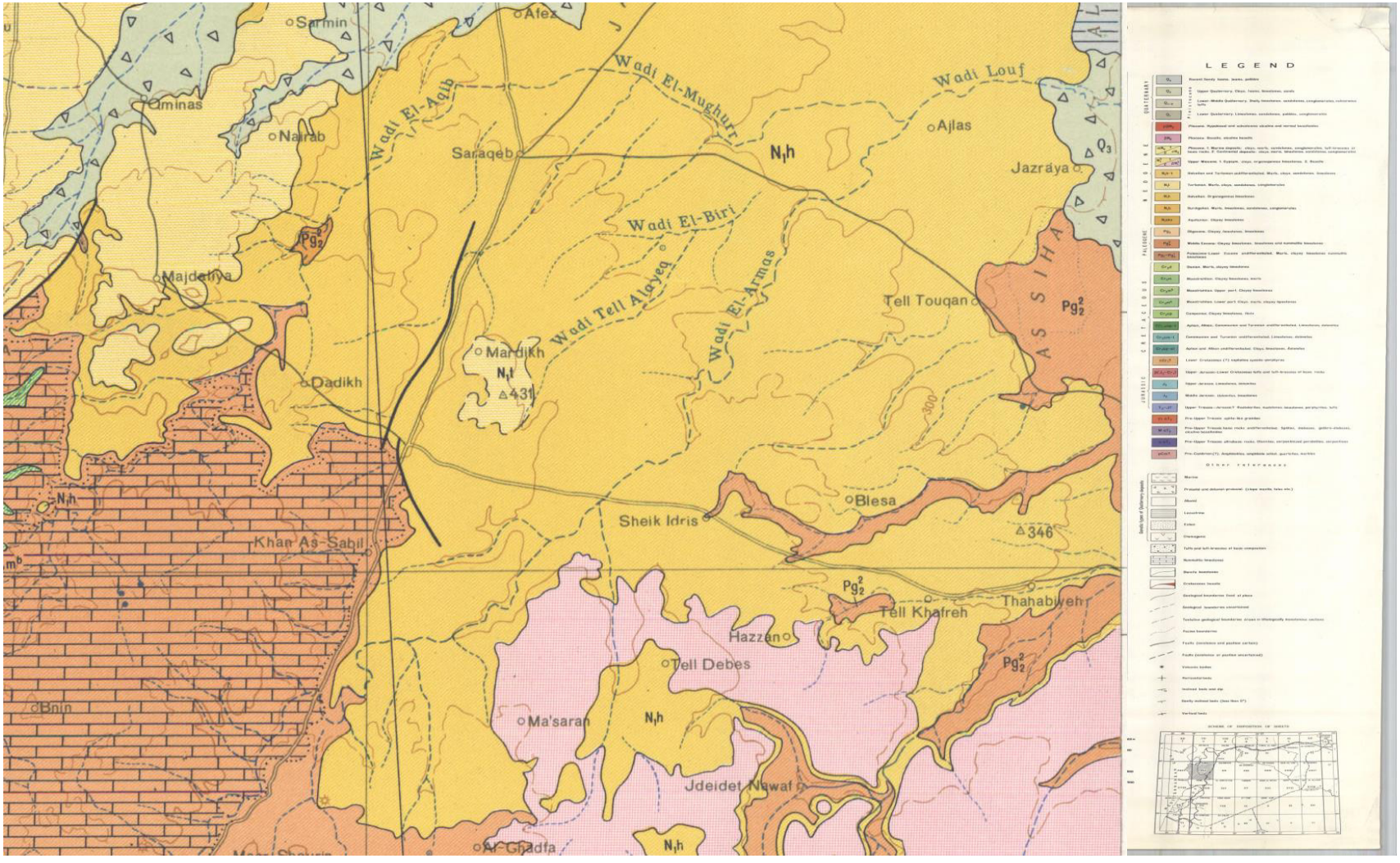
- Petrographical characterization
- Preparation and raw materials selection
- Fabrication type
- Decoration craterisation
- Firing technique

Provernience

- Composition characterization
- Local or imported (Distribution)

1- Petrographical Analysis

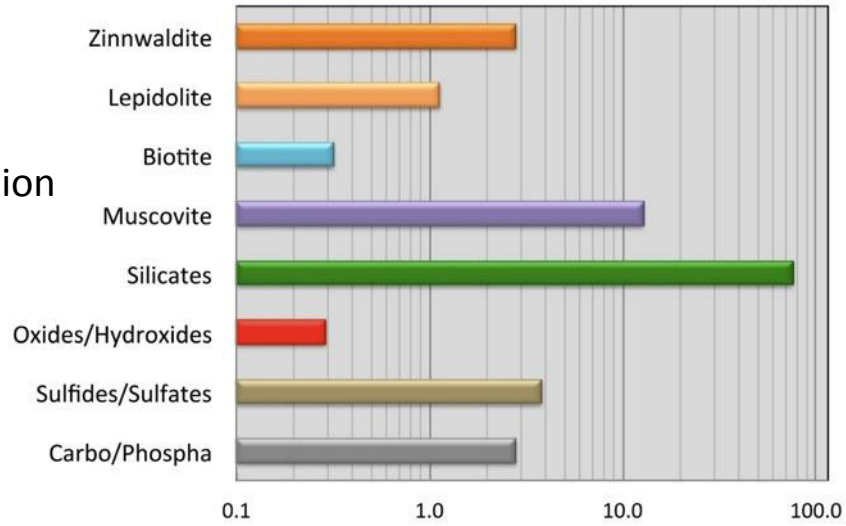
Materials provenance using the geological maps



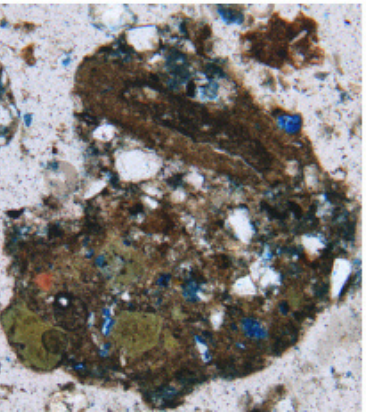
1- Petrographical Analysis

QEMSCAN®

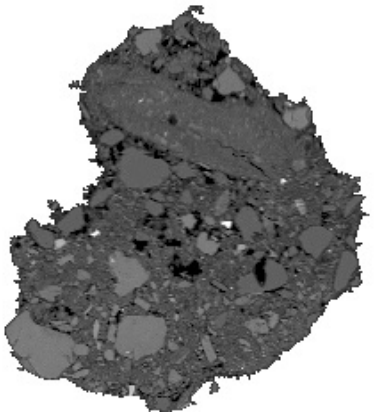
Digital high resolution images that
give quantities information to be elaborated



Optical Micropscopy

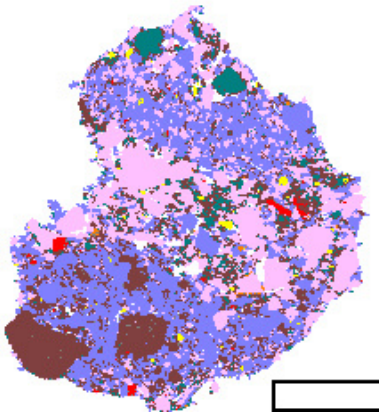


BSE Image



SIP Classification

Primary Mineral List



Legend

3- Petrographical Analysis

KILNS

- Shape and dimensions
- Mis-fired, Vitrified or mis-shaped pottery fragments and furnace wastes

POTTERY WORKSHOPS

- **Settling basins**
- **Vats**
- **Mortar or stone tools**

→ Clay purification, manipulation and beating in the preparing phase

- **Rotational devices**

→ Throwing phase

- **Pestles or stone tools**

→ Finishing
- Surfaces smoothing
- Grinding and mixing paints

- **Kilns**

→ Firing
- Different Location
- Within the workshop

3- Petrographical Analysis

Quiz 2

1- What is a Petrographic analysis?

☐ Typological studies of pottery
☐Shimical analysis of the pottery clay
☐Stratigraphical studies
☐An analysis that could carried out by using the compiuter

2- Which materials can we use to carry out the petrographic analysis

☐ Big jars made by pottery
☐Thin section pottery vessels
☐Thick section vessels made by different kind of pottery
☐ All the previous answers

3- Why we use the Munsell?

☐ To take photo of the vessels
☐To take the dimension of the objects
☐To make a secure classification of the pottery based on its colors
☐To carry our chemical analysis on the pottery

3- Petrographical Analysis

Quiz 2

4- Why we use the petrographic analysis?

- ☐ To know the provenience of certain pottery vessels
- ☐ To explain about the temperature of firing
- ☐ To illustrate the clay components
- ☐ All the previous answer

5- Which one of the following answer help us in knowing the provenance of the raw materials?

- ☐ Simple Camera photos
- ☐ Objects drowning
- ☐ Geological maps
- ☐ Simple geographical maps

6- What a QEMSCAN is?

- ☐ A lap facility that give us quantities values of the ceramic chemical components
- ☐ A drone that used the archaeological Survey
- ☐ A tool that calculate the dimension of the site
- ☐ A very modern Digital Camera

3- Petrographical Analysis

Quiz 2

7- Which one from the following analysis can be integrated with the Petrographic studies

- ☐ DNA Analysis
- ☐ Isotope analysis
- ☐ C14 dating
- ☐ Geomorphological analysis

8- Which one of the following answer is a result of the petrographic analysis?

- ☐ Better Understanding of the production technology
- ☐ Chronological sequence of the pottery assemblage
- ☐ High solution images of the excavation
- ☐ Three dimensional survey of the archaeological landscape

9-As a result of the petrographic studies we are able to:

- ☐ Understand the distribution of the various typological forms in the sites
- ☐ To understand the cultural interaction between the different civilization
- ☐ Create a ceramic classification based on its materials
- ☐ All the previous answer

Topics

1- Why Isotopic Analysis?

- To reconstruct the human dietary habits in certain chronological phase
- To explain about the human movement and cultural interaction between the
- To detect the climate change and change in human food web

3- Isotopic Analysis

Definition :
Isotope analysis is the identification of isotopic signature, the abundance of certain stable isotopes and chemical elements within organic and inorganic compounds. Isotopic analysis can be used to understand the flow of energy through a food web, to reconstruct past environmental and climatic conditions, to investigate human and animal diets in the past, for food authentication, and a variety of other physical, geological, paleontological and chemical processes.

Use in Archaeology:
Archaeological materials, such as bone, organic residues, hair, or sea shells, can serve as substrates for isotopic analysis. Carbon, nitrogen and zinc isotope ratios are used to investigate the diets of past people; These isotopic systems can be used with others, such as strontium or oxygen, to answer questions about population movements, climate change and cultural interactions, such as trade.

Materials

Bones (human and animals) Teeth and soil

3- Isotopic Analysis

There are many stable isotopes that are used by archaeologists, but the ones that are most widely analysed are:

oxygen: 18O (O-18) and 16O (O-16), with their ratio (18O/16O) referred to as δ18O (delta-18-O) values. **(for the climate change)**

nitrogen: 15N (or N-15) and 14N (or N-14). Again, the ratio between the two (15N/14N) is given as δ15N (delta-15-N) values. **(Human and Animals diet)**

carbon: 13C (or C-13) and 12C (or C-12). The ratio between the two (13C/12C) is normally referred to as δ13C (pronounced: delta-13-C) values. **(Human and animals diet)**

strontium: 87Sr (Sr-87) and 86Sr (Sr-86). Strontium isotope ratios are referred to as 87Sr/86Sr ratios. **(for the human mobility)**

3- Isotopic Analysis

Oxygen: 18O (O-18) and 16O (O-16), with their ratio (18O/16O) referred to as δ18O (delta-18-O) values. **(for the climate change)**

Human response on the climatic change:

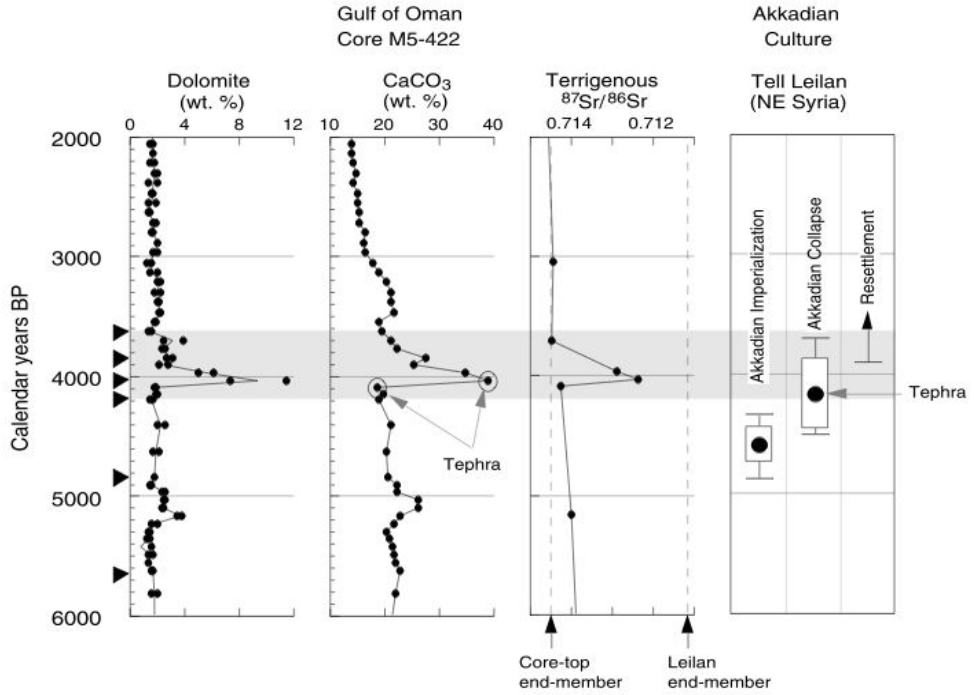
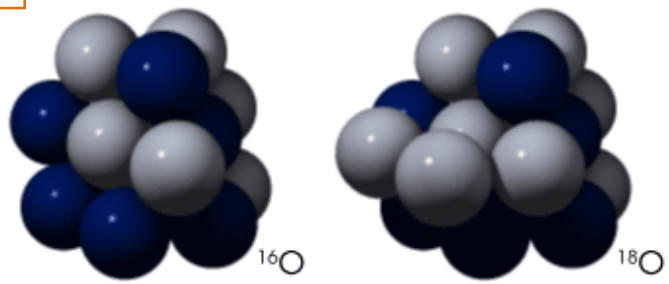


Fig. 4. Mesopotamian paleoclimate and the collapse of the Akkadian empire.

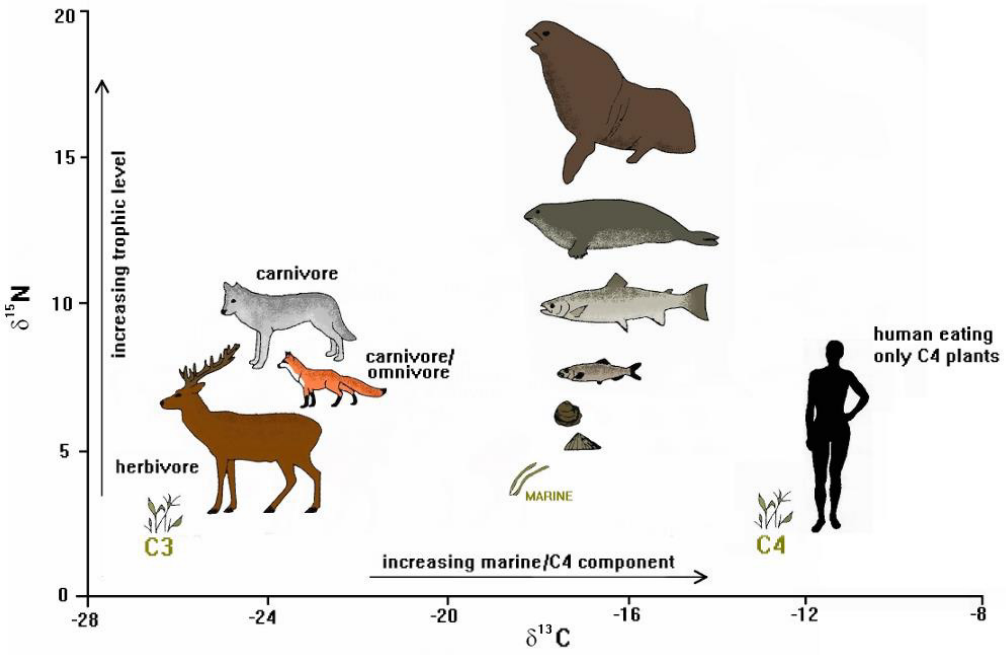


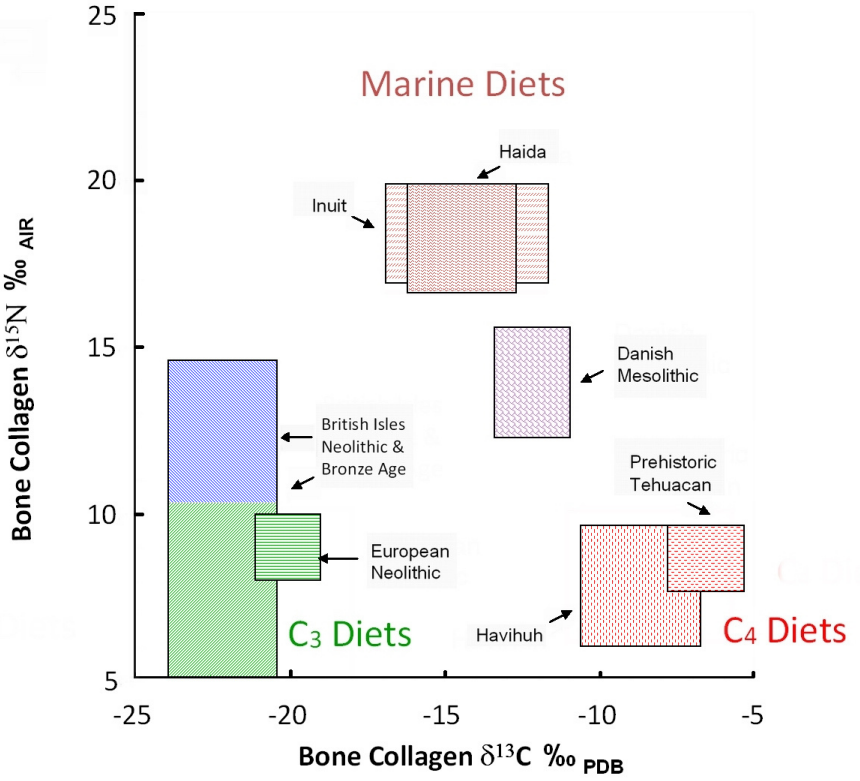
- Migration
- Cultural transformation
- Adaptation

3- Isotopic Analysis

Carbon: 13C (or C-13) and 12C (or C-12). The ratio between the two (13C/12C) is normally referred to as δ13C (pronounced: delta-13-C) values. **(Human and animals diet)**

Nitrogen: 15N (or N-15) and 14N (or N-14). The ratio between the two (15N/14N) is given as δ15N (delta-15-N) values. **(Human and Animals diet)**





3- Isotopic Analysis

strontium: 87Sr (Sr-87) and 86Sr (Sr-86). Strontium isotope ratios are referred to as 87Sr/86Sr ratios. **(for the human mobility)**

Human and Animals diet (simple overview)

Human diet

↑

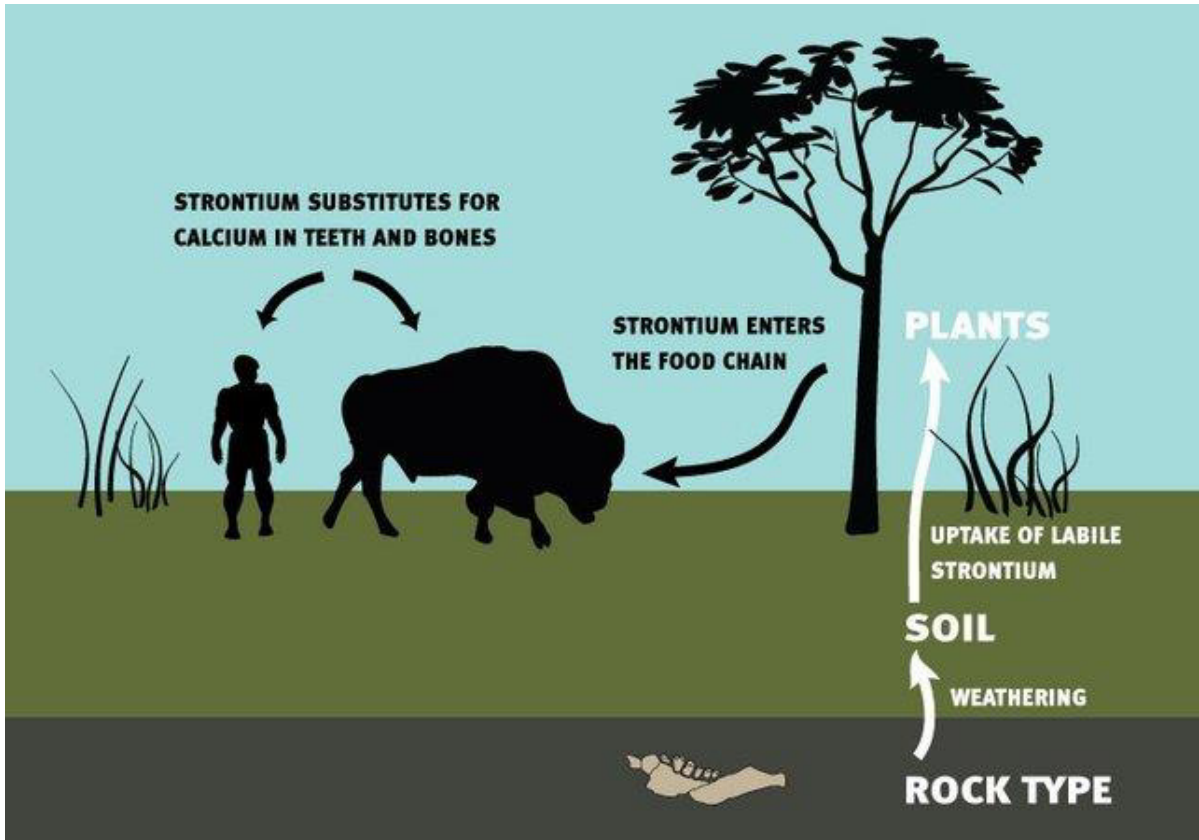
Animals diet

↑

Plants (vegetables and fruits

↑

Rock and soil



3- Isotopic Analysis

Quiz 3

1- What a stable Isotopes is?

- ☐ The chemical studies of the pottery
- ☐ The Level of water in the human bones
- ☐ Chemical elements in the human and animals bones
- ☐ The genetic code of human group

2- Why we use the Stable Isotope analysis

- ☐ To illustrate the climate change in certain period
- ☐ To explain about the human Ancient die
- ☐ To know more about the human movements
- ☐ All the previous answers

3- why we use the Stable Oxygen analysis?

- ☐ To detect about the climate change
- ☐ To illustrate the typological change in the pottery assemblage
- ☐ To discover the human ancient diet
- ☐ To construct the human ancient traditions

3- Isotopic Analysis

Quiz 3

4- Which one of the following kind of analysis can detect the human movements

- [x] Stable Nitrogen Isotope
- [ ] Stable Oxygen Isotope
- [ ] Study of the cultural horizon
- [ ] Petrographic analysis

5- Where can we find the Strontium Isotope

- [ ] In the human bones
- [ ] In the animals bones
- [ ] In the organic remains
- [x] All the previous answer

6- Where we can find the Stable Oxygen Isotope?

- [ ] From the bones
- [ ] From the ceramic
- [x] From the soil
- [ ] From the iron

3- Isotopic Analysis

Quiz 3

7- Where can we obtain the Stable Nitrogen Isotope?

- ☐ From the bone
- ☐ From the teeth
- ☐ From the Animal bones
- ☐ All the previous answer

8- **What kind of other analysis could be integrated with the Stable Isotope Analysis?**

- ☐ Radio Carbon
- ☐ Typological studies
- ☐ DNA Analysis
- ☐ Geomorphological analysis

9- What is the most important impact of the climate change

- ☐ Cultural transformation
- ☐ Human migration
- ☐ Adaptation of new life style and cultural interaction
- ☐ All the previous answers

Topics

1- Why Archaeogenetics?

- To illustrate the genetics distance between tow or more human groups
- To detect the genetics change in such site through its different phases
- To explain about the cultural interaction and transformation

4- Archaeogenetics

Definition:

Archaeogenetics is the study of ancient DNA using various molecular genetic methods and DNA resources. This form of genetic analysis can be applied to human, animal, and plant specimens. Ancient DNA can be extracted from various fossilized specimens including bones, eggshells, and artificially preserved tissues in human and animal specimens. In plants, Ancient DNA can be extracted from seeds, tissue, and in some cases, feces. Archaeogenetics provides us with genetic evidence of ancient population group migrations, domestication events, and plant and animal evolution.

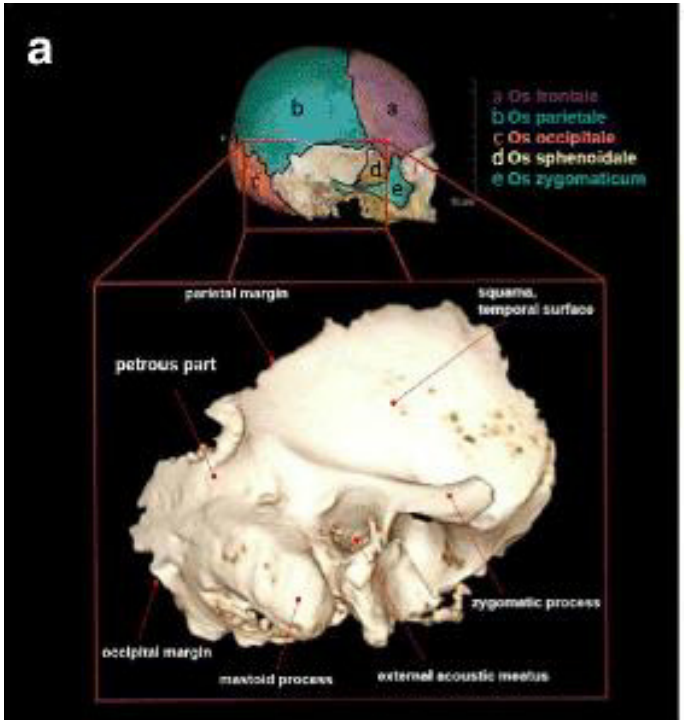
4- Archaeogenetics

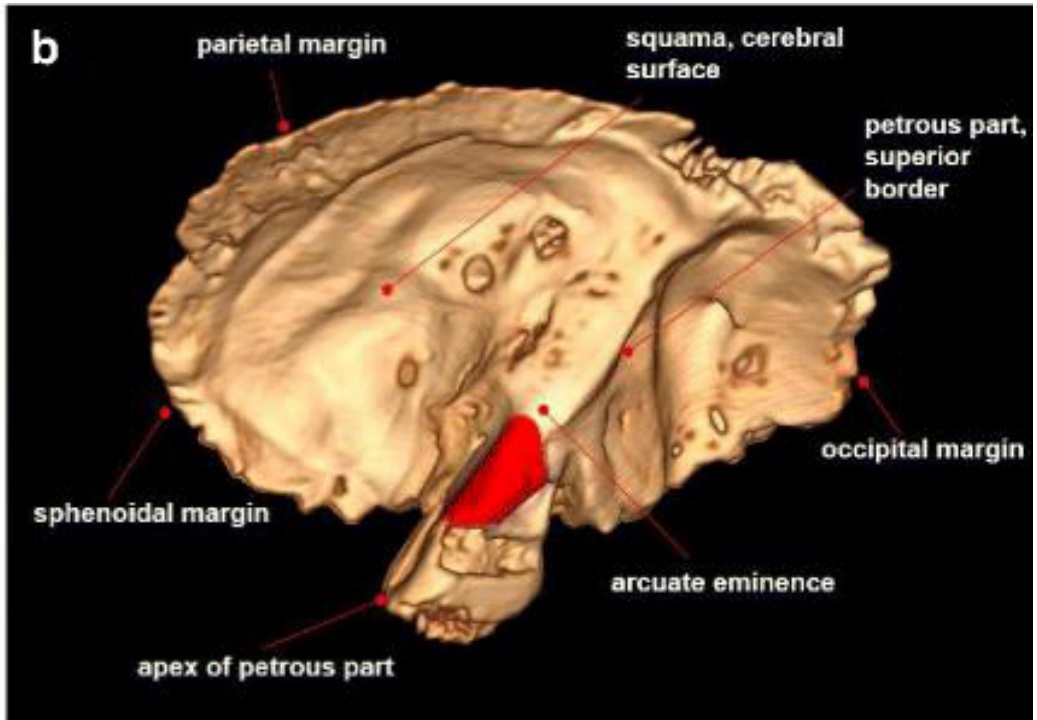
Materials to analyze for the human aDNA

Teeth

Petrosal Bone

© Can Stock Photo





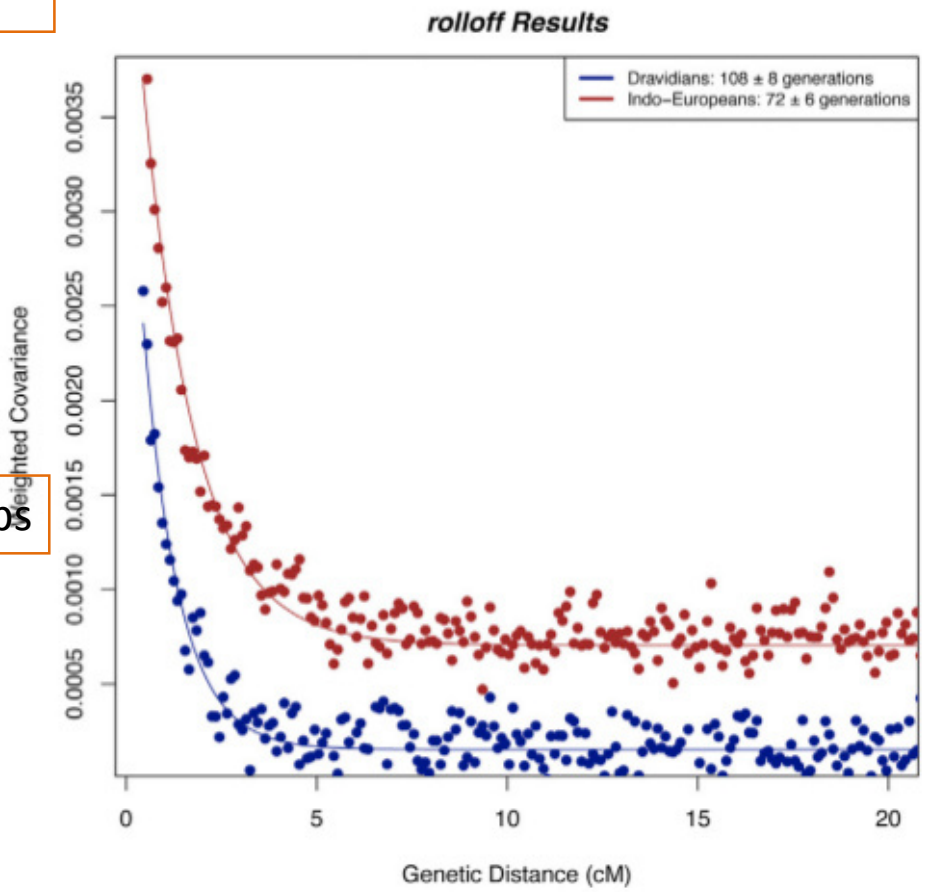
4- Archaeogenetics

Benefit in Archaeology:

The Genetic Distance between the ethnic group

The Origin of certain ethnic group

The migration and movument of human groups



3- Archaeogenetics

Quiz 3

1- What is the Archaeogenetics?

☐ The Study of human bones
☐ The study of human migration
☐ The ancient DNA analysis
☐ The Analysis of ancient diet

2- Where can we obtain the human ancient DNA ?

☐ From the plants
☐ From the water
☐ From the teeth and Bones
☐ From the soil

3- Why we should study the Ancient DNA?

☐ To illustrate the origins of certain ethnic group
☐ To illustrate the genetics distance between the different population
☐ To illustrate the genetic relation of the certain site inhabitants in its different phase of occupa
☐ All the previous answer

3- Archaeogenetics

Quiz 3

4- Why should we choose the petrosal bones to extract the aDNA?

- [x] To avoid the contamination
- [ ] Because it is big bone
- [ ] Because we don't have other bones
- [ ] Because it can't contain other chemical elements

5- Where can we carry out the aDNA analysis

- [ ] In the univrsity
- [ ] In the excavation field
- [x] In a special laboratory
- [ ] In the hospital

6- Why should we be carful when excavate the bones from the excavation?

- [ ] To avoid the contamination
- [ ] To keep the bones in the good state for the analysis
- [ ] To use them in other morphological and anthropological strudies
- [x] All the previous answer

3- Archaeogenetics

Conclusion

WHY WALADU IS IMPORTANT?

WALADU Cascade Training,

Bertinoro 11th-15th December 2018

Erasmus+

THE AIMS OF WALADU

To improve Iraq scholars teaching and research quality

To increase the students opportunities in the Iraqi labour market

To enhance EU-Iraq academic cooperation

WALADU

Erasmus+

HOW TO IMPROVE IRAQI SCHOLARS AND RESEARCH QUALITY

1

DEVELOPING NEW TEACHING AND RESEARCH METHODOLOGIES

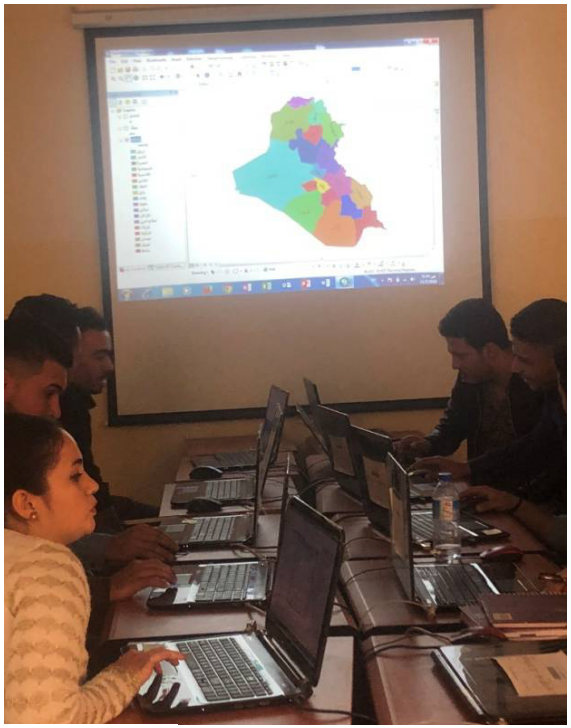
+

IMPROVING UNIVERSITY FACILITIES

2

NEW COURSES SYLLABI

WHAT WE HAVE ALREADY DONE?



BAGHDAD

1. GIS
2. Sumerian laguage
3. Archaeology of Egypt

1. Museum studies
2. Islamic pottery
3. Abbasid architecture
4. Egyptian arab architecture

KUFA

QADISIYAH

1. Akkadian language
2. Ummayad architecture
3. Islamic manuscripts

WALADU SYLLABI

10 New courses syllabi already produced during the WP2 training

20

New courses syllabi to be produced during the Cascade Training in Bertinoro

INTERNSHIPS

Internships are important to support the employability of BA students in Archaeology

WALADU

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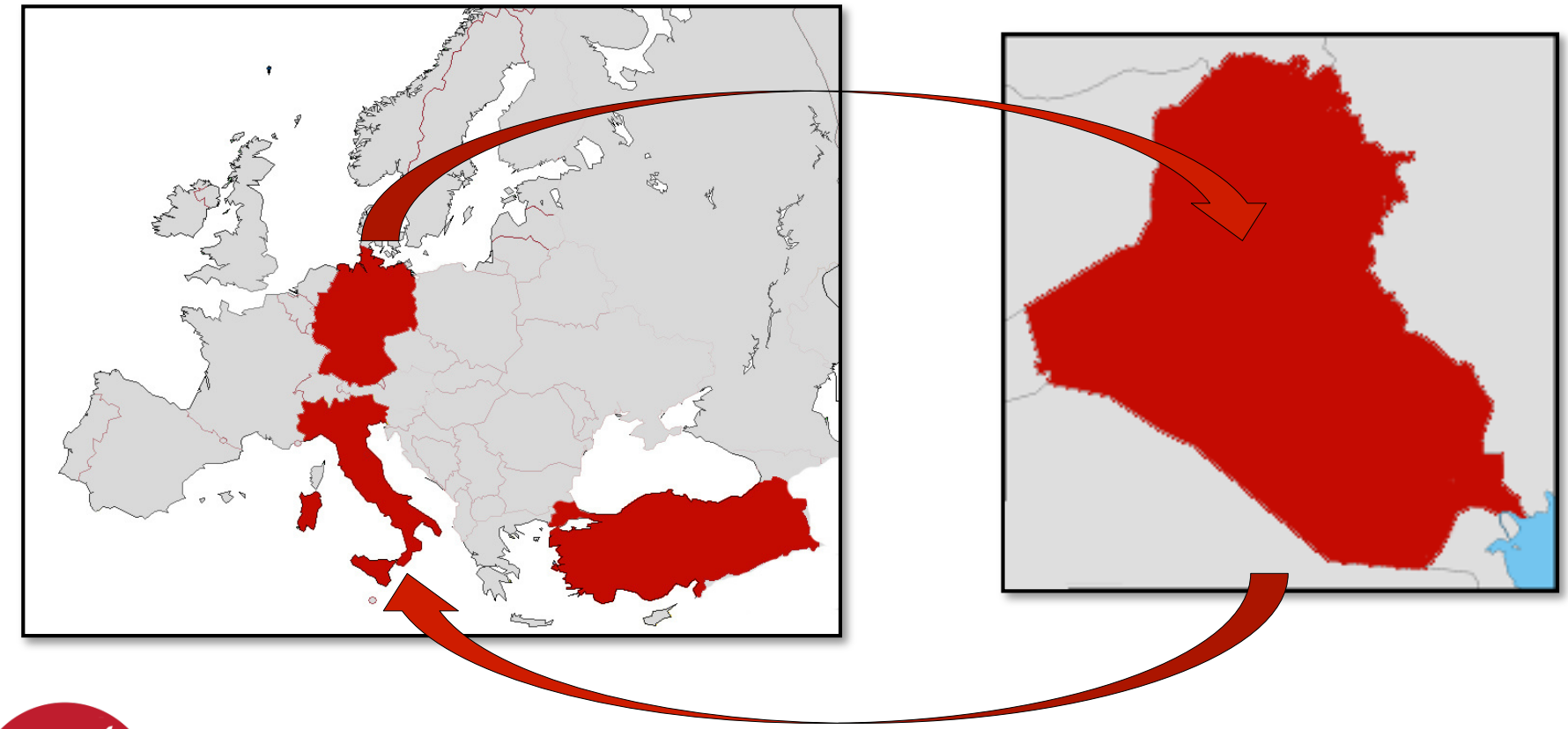
WALADU PHILOSOPHY

EU to IRAQ



IRAQ to EU

WALADU

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INTERNATIONALIZATION OF HIGHER EDUCATION

WALADU

WALADU Cascade Training,

Bertinoro 11th-15th December 2018

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INTERNATIONALIZATION IN THE WALADU PROJECT

To foster international collaborations between the EU and the Iraq higher education istitutions for the exchange of academic knowledge at any level, by framining them in a recognized and internationally regulated network.

WALADU

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WHAT IS INTERNAZIONALITAZION IN HIGHER EDUCATION?

The process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of postsecondary education [1]

Internationalization of higher education is the top stage of International relations among universities and it is no longer regarded as a goal in itself, but as a means to improve the quality of education. The knowledge translation and acquisition, mobilization of talent in support of global research and enchantment of the curriculum with international content are considered to be the benefits of internationalization of higher education. [2]

[1] Knight, Jane (2003). Updating the definition of internationalization. International Higher Education. pp. 2–3.

[2] Tahira Jibeen, Masha Asad Khan (2015). Internationalization of Higher Education: Potential Benefits and Costs

WALADU

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WHY INTERNATIONALIZATION IS SO IMPORTANT?

- Sustaining and growing science and scholarship through dynamic academic exchanges;

- Building social and economic capacity;

- Improving academic quality;

- Revenue generation and brain gain;

- Diversifying and enhancing the learning environment in your Country;

- Internalization allows us to transfer to a different environment, where we can understand the connections between the local environment in which they live, and the global environment;

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INTERNATIONALIZATION OF THE MINDS

Internazionalization engends the “international characteristics” fostered in our minds:

- International-mindedness;
- Open mindedness;
- Second language competence;
- Flexibility of thinking;
- Tolerance and respect for others;

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HOW CAN I INTERNATIONALIZE MY CURRICULUM AND COMPETENCIES?

WALADU

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HOW CAN I INTERNATIONALIZE MY UNIVERSITY?

WALADU

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ENGLISH LANGUAGES COURSES FOR ARCHAEOLOGY IN THE EDUU PROJECT

“English Language for Archaeology” course took place in the months of July, August and September 2018 at the Universities of Baghdad, Kufa and Qadisiyah. The main objective of the course was to improve the english language skills with a specific focus on Archaeology of officials from the Iraqi State Board of Antiquities and Heritage (SBAH), the Iraqi Museum (IM) and the professors, researchers and students of the Universities in order to empower them in carrying out research and fieldwork activities and seizing the opportunities deriving from internationalization and mobility.

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WALADU CASCADE TRAINING
DECEMBER 2018, BERTINORO, ITALY

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INTERNATIONAL CONFERENCIES AND WORKSHOPS

1st INTERNATIONAL CONFERENCE ON THE ENHANCEMENT OF THE ARCHAEOLOGICAL HERITAGE IN IRAQ

UNIVERSITY OF KUFA

Organized in the framework of EDUU project

This project is funded by the European Union

Saturday 20 th January morning – Sultana Royal Hall, Al-Qadisyah district, Al-Najaf, h 10 am

Opening

H.E. Prof. Abdul Razzaq Abdul Jaleel Al- Essa, Minister of Higher Education and Scientific Research of Iraq
Prof. Mohsin Abdulhussein Al-Dhalmi, President of Kufa University
Prof. Francesco Ubertini, Rector of Alma Mater Studiorum – University of Bologna

INSTITUTIONAL WELCOME ADDRESS:

H.E. Qais H. Rasheed (Viceminister of Culture and Tourism, Chairman of the State Board of Antiquities and Heritage, Baghdad),
H.E. Ramon Blecua (Ambassador of the European Union),
H.E. Bruno Pasquino (Ambassador of Italy),
Prof. Alaa Abdulrasool Alkashwan (President of Baghdad University),
Prof. Ferdous Abbas (President of Qadisiyah University)

Lectures:

Bologna University EDUU project coordinator – Nicolò Marchetti (lecture): "Archaeological surveys, rural and student communities, museums for the public. EDUU and alternative means for social cohesion in Iraq"
Bologna University Deputy Rector for International Affairs – Alessandra Scagliarini (lecture): "Internationalization and international cooperation: The study case of the University of Bologna"

LUNCH, h. 12.30

Saturday 20 th January afternoon – Sultana Royal Hall, Al-Qadisyah district, Al-Najaf, h 2 pm

Tim Harrison ____ University of Toronto
Computational Research on the Ancient NearEast (CRANE): Large-Scale Data Integration and Analysis in Near Eastern Archaeology
Carlo Lippolis ____ University of Turin
Iraqi-Italian cooperation in the Iraq Museum of Baghdad
Augusta McMahon ____ Cambridge University
Herd Animal Management Strategies in Early Dynastic Sumer
Munther Ali ____ University of Baghdad
The Natural Resources of Marshlands and how to Exploit Them for Tourism
Jacob Jawdat ____ State Board of Antiquities and Heritage, Baghdad
A Brief History of Pi-kasi (Tell Abu Intik): New Remarks and Viewpoints

COFFEE BREAK 4.15 – 4 pm

Fawaz H.H. Al-Naish ____ Mosul University
The Relationship Between Geomorphology and Archaeological Heritage in Iraq
Nawala al-Mutawalli ____ University of Baghdad
Agricultural Society of Umma Province in the Light of Ur III Cuneiform Texts
Saad Bashir Eskander ____ University College London
Resorting to International Conventions and Instruments in Recovering Illicitly Seized Archaeological Objects: Iraqs Experience since2003
Carrie Hritz ____ Oriental Institute, University of Chicago
Reading Relict Landscapes: Cities, Marshes and remote sensing
Abbas al-Hussainy ____ Qadisiyah University
Results of the 2016-2017 Survey of Dagharah-Sumer Area (North-East of Dewaniyah)

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ONLINE TRAINING COURSES

WALADU

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APPLYING FOR INTERNATIONAL PROJECTS AS PARTNER UNIVERSITY

- Erasmus plus – Capacity building in Higher Education;

- EuropAid – Civil Society Organization;

- Horizon 2020;

WALADU

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Syllabus

WALADU Cascade Training

University Residential Centre of Bertinoro

10th-15th December 2018

Syllabus

EARLY AND UMAYYAD ARCHITECTURE IN IRAQ

Lecturer Rayyan al-Nayali
University of Al-Qadisiyah
Email: rayyanalnayali@gmail.com
MOD: 7904 /8199/3022
Office hours: Monday 11 - 12 and Tuesday 16-17 and Wednesday 9-10 or by appointment
Room and time to be defined

Course description and objectives

Islamic architecture in the Al-Rashidi and Umayyad period contains many materials of the archaeological remains left by the Islamic state, which begins from the period of the prophet Muhammad in the year 1 A.H. and the Al-Rashidi caliphs and then the Umayyad period and to the last fall in the year 132 A.H., where we study in this article all types of architecture that emerged early such as mosques, Schools, Palaces, Caravanserai, Castles. In this class, we are students the effect of pre - Islamic architecture, such as Sassanian architecture on the architecture of Iraq at that time. The architecture of the first century A.H in Iraq has become the basis for the development of Islamic architecture in Iraq and Persia in later times, in the first Abbasid and the second and the Mongolian until the ottoman era.

Methods

In order to obtain optimal results in increasing the students' knowledge of early Islamic and Umayyad architecture, this study depends on the student's vision of samples of Islamic buildings in that period. This requires a trips and field visits to archaeological sites.

Required Readings and materials

The readings are listed in the syllabus as required materials. Since the class will have Power Point presentation, some of which are not covered by the reading and use the new technic like YOUTUBE, education movies and education visiting to museum and archaeological sites. Therefore, it is its students' advantage not to miss the class sessions since they will appear on the midterm and finals.

Students are required to read the following book before attending the class

Thiweni, A. (2005). *Dictionary of people of islamic architecture*. Baghdad: Alnahal Aljadeed.
Samen, Kamal al-Din, 1985. *Early Islamic Architecture*. Baghdad
Rajab, Mohammad. 1989. *The Islamic of Arabic architecture in Iraq*. Baghdad. Iraq
K. A. C. Creswell, 1940. *Early Muslim Architecture, Part one*, Oxford, Clarendon Press

Grade

The grade for the Manuscripts and Islamic paintings material will be divided as follow:

The first exam	Architecture elements and the Architecture city of Basra and Kufa.	10%
The second exam	Building the city of Mosul and Wasit.	10%
The Final exam	For all year's lecture	30%
Paper and Presentation		10%
Attendance and class participation		10%
Quizzes		10%

The grade scale will be as follows:

Excellence	90-95
Very good	80-89
Good	70-79
Average	60-69
Acceptable	60-64

Attendance

There are three classes per week (Monday, Tuesday, Wednesday) at a rate of ninety minutes. The course is based on a set of requirements, including lectures, exams, daily preparation and discussions, attendance and research. In addition to what has been mentioned, students must take into account other things that affect the assessment of the level of the student, including the absence of noise inside the classroom through spaces or preoccupation with the mobile phone, so it must be silent so not affect the course of the lesson.

Calendar

Basic and support material to be covered according to the homework/reports and their due dates:

Week	Subject
Week 1	Introduction Types of buildings and elements of Architecture. Rajab Mohammad. 1989. *The Islamic of Arabic architecture in Iraq*. Baghdad. Iraq. p. 12-18
Week 2	City Basra (mosques) Hadia, Jawan, 2011. *Planning the city of Basra in the first century A.H.*, p. 22-29
Week 3	City Basra, palace of prince (Dar Al-Amara). Hadia, Jawan, 2011. *Planning the city of Basra in the first century A.H.*, p. 34-42
Week 4	City Basra (Houses) Al-Ameid, Taher Muzaffar, 1986. *Planning of Arab and Islamic Cities*. Baghdad, p. 348
Week 5	City Kufa (mosques) Petter, Andrew, (1986). *Dictionary of Islamic architecture*. London. p. 154-157
Week 6	City Kufa, palace of prince (Dar Al-Amara) Kaddom, Al. Janaqy (1987). *Planning the city of Kufa in the first century A.H.* Baghdad. p. 40-57.
Week 7	City Kufa, (Houses) Rajab, Mohammad. 1989. *The Islamic of Arabic architecture in Iraq*. Baghdad. Iraq. p. 78-99. **First Exam.**
Week 8	City Mosul. (mosques). K. A. C. Creswell. 1940. *Early Muslim Architecture, Part one*. Oxford, Clarendon Press, p. 21-34.
Week 9	City Mosul, palace of prince (Dar Al-Amara) Al-Ameid, Taher Muzaffar, 1986. *Planning of Arab and Islamic Cities*. Baghdad, p. 390-398
Week 10	City Mosul, (Houses) Rajab, Mohammad. 1989. *The Islamic of Arabic architecture in Iraq*. Baghdad. Iraq. p. 100-110.
Week 11	City Wasit (mosques) K. A. C. Creswell, 1940, *Early Muslim Architecture, Part one*. Oxford, Clarendon Press, p. 80-95
Week 12	City Wasit, (palaces). Thiweni, A. (2005). *Dictionary of people of islamic architecture*.

Syllabus

EARLY AND UMAYYAD ARCHITECTURE IN IRAQ

Lecturer Rajwan al-Mayali
University of Al-Qadisiyah
Email: rajwanalmayali@gmail.com
Mob. +964 7819570262
Office hours: Monday 11 -12 and Tuesday 10-11 and Wednesday 9-10 or by appointment
Room and date: to be defined

Course description and objectives.

Islamic architecture in the AL-Rashidi and Umayyad period contains many materials of the archaeological remains left by the Islamic state, which begins from the period of the prophet Muhammad in the year 1 A.H and the AL-Rashidi caliphs and then the Umayyad period and to the her fall in the year 132 A.H, where we study in this article all types of architectural that emerged early such as mosques, Schools, Palaces, Caravanserai, Castles. In this class, we are studying the effect of pre – islamic architecture, such as Sassanian architecture on the architecture of Iraq at that time. The architecture of the first century A.H in Iraq has become the basis for the development of Islamic architecture in Iraq and Persia in later times, in the first Abbasid and the second and the Mongol era until the ottoman era .

Methods

Description of the course

Syllabus

EARLY AND UMAYYAD ARCHITECTURE IN IRAQ

Lecturer Rajwan al-Mayali
University of Al-Qadisiyah
Email: rajwanalmayali@gmail.com
Mob: +964 7819570262
Office hours: Monday 11 -12 and Tuesday 10-11 and Wednesday 9-10 or by appointment
Room and date: to be defined

About the professor

Course description and objectives.

Islamic architecture in the AL-Rashidi and Umayyad period contains many materials of the archaeological remains left by the Islamic state, which begins from the period of the prophet Muhammad in the year 1 A.H and the AL-Rashidi caliphs and then the Umayyad period and to the her fall in the year 132 A.H, where we study in this article all types of architectural that emerged early such as mosques, Schools, Palaces, Caravanserai, Castles. In this class, we are studying the effect of pre – islamic architecture, such as Sassanian architecture on the architecture of Iraq at that time. The architecture of the first century A.H in Iraq has become the basis for the development of Islamic architecture in Iraq and Persia in later times, in the first Abbasid and the second and the Mongol era until the ottoman era .

Methods

Syllabus

Method of teaching

In order to obtain optimal results in increasing the students' knowledge of early Islamic and Umayyad architecture, this study depends on the student's vision of samples of Islamic buildings in that period. This requires a trips and field visits to archeological sites.

Required Readings and materials

The readings are listed in the syllabus as required materials. Note the class will have Power Point presentation, some of which are not covered by the reading and use the new technic, like YouTube, education movies and education visiting to museum and archeological sites. Therefore, it is to students' advantage not to miss the class sessions since they will appear on the midterm and finals.

Students are required to read the following book before attending the class:

Thiwani, A. (2005). *Dictionary of people of Islamic architecture*. Baghdad: Alnahar Aljadeed.
Samch, Kamal al-Din, 1985, *Early Islamic Architecture* , Baghdad .
Bajab, Mohammad, 1959. *The Islamic of Arabic architecture in Iraq*. Baghdad. Iraq .
K. A. C. Creswell, 1940 , *Early Muslim Architecture, Part one* , Oxford, Clarendon Press.

Grade

The grade for the Manuscripts and Islamic paintings material will be divided as follow:

The first exam	Architectural elements and the Architecture city of Basra and Kufa .	10%
The second exam	Building the city of Mosul and Wasit .	10%
The First exam	For all curriculum	50%
Paper and Presentation		10%
Attendance and class participation		10%
Quizzes		10%

The grade scale will be as follows:

Excellence	90-95
Very good	80-89
Good	70-79
Average	65-69
Acceptable	60-64

Attendance

There are three classes per week (Monday , Tuesday , Wednesday) at a rate of ninety minutes. The course is based on a set of requirements, including lectures, exams, daily preparation and discussions, attendance and research. In addition to what has been mentioned, students must take into account other things that affect the assessment of the level of the student, including the absence of noise inside the classroom through speech or preoccupation with the mobile phone, so it must be silent to not affect the course of the lesson.

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University of Qadisiyah 2

Required readings and materials

Syllabus

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Rajab, Mohammad, 1959, *The Islamic of Arabic architecture in Iraq*. Baghdad, Iraq .
K. A. C. Creswell, 1940 , *Early Muslim Architecture, Part one* , Oxford, Clarendon Press.

Grade

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Grade

Syllabus

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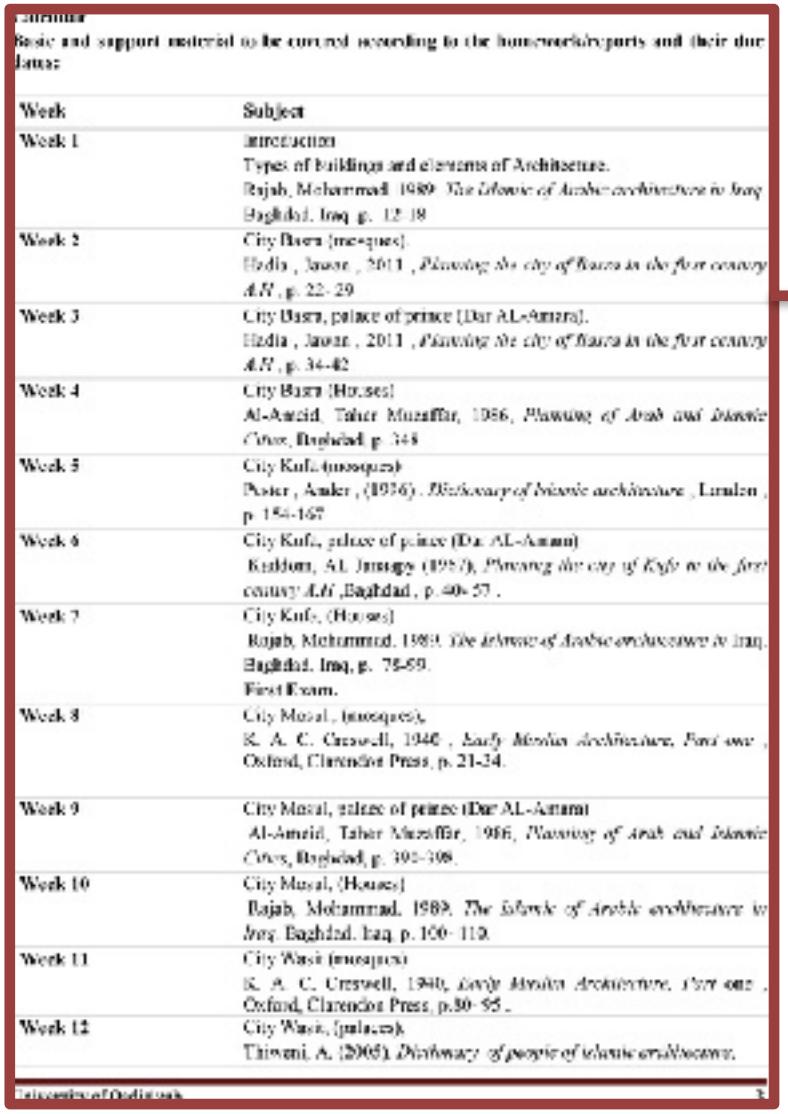
University of Qadisiyah 2

Attendance

Syllabus

Calendar



Basic and support material to be covered according to the homework/reports and their due dates:

Week	Subject
Week 1	Introduction Types of buildings and elements of Architecture. Rajab, Mohammad. 1989. *The Islamic of Arabic architecture in Iraq*. Baghdad. Iraq. p. 12-18
Week 2	City Basra (mosques). Hadia , Jawan , 2011 , *Planning the city of Basra in the first century A.H* , p. 22-29
Week 3	City Basra, palace of prince (Dar AL-Amara). Hadia , Jawan , 2011 , *Planning the city of Basra in the first century A.H* , p. 34-42
Week 4	City Basra (Houses) Al-Amaid, Taher Muzaffar, 1986, *Planning of Arab and Islamic Cities*, Baghdad, p. 348
Week 5	City Kufa (mosques) Poster , Amler , (1936) . *Dictionary of Islamic architecture* , London , p. 154-167
Week 6	City Kufa, palace of prince (Dar AL-Amara) Kuddom, AL Jassagy (1987), *Planning the city of Kufa in the first century A.H* ,Baghdad , p. 40-57 .
Week 7	City Kufa, (Houses) Rajab, Mohammad. 1989. *The Islamic of Arabic architecture in Iraq*. Baghdad. Iraq, p. 78-99. First Exam.
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Week 10	City Mosul, (Houses) Rajab, Mohammad. 1989. *The Islamic of Arabic architecture in Iraq*. Baghdad. Iraq. p. 100-110.
Week 11	City Wasit (mosques) K. A. C. Creswell, 1940, *Early Muslim Architecture, Part one* , Oxford, Clarendon Press, p.80-95 .
Week 12	City Wasit, (palaces). Thiwani, A. (2005). *Dictionary of people of islamic architecture.*

University of Qadisiyah 3

Calendar of lessons and subjects

Syllabus Template

COURSE TITLE _____

Name Surname_____
University of _____
Email: _____
Mob. _____
Office hours: _____
Room and date: _____

Course description and objectives

Methods

Knowledge and skills to be achieved

Required Readings and materials

Reference 1: _____
Reference 2:
Reference 3: _____
Reference 4: _____
Reference 5: _____

Grade

The grade for the Museum Studies and Archaeology will be divided as follow:

%	DESCRIPTION	TYPE OF EXAM
___%		The first exam
___%		The second exam
___%		The Final exam
___%		Paper and Presentation
___%		Attendance and class participation
___%		Quizzes

The grade scale will be as follows:

90-93	Excellence
80-89	Very good
70-79	Good
65-69	Average
60-64	Acceptable

Attendance:

Calendar

Basic and support material to be covered according to the homework/papers and their due date:

Week	Subject
Week 1	Title bibliography
Week 2	Title

Week	Subject
	bibliography
Week 3	Title bibliography
Week 4	Title bibliography
Week 5	Title bibliography
Week 6	Title bibliography
Week 7	Title bibliography
Week 8	Title bibliography
Week 9	Title bibliography
Week 10	Title bibliography
Week 11	Title bibliography
Week 12	Title bibliography
Week 13	Title bibliography
Week 14	Title bibliography
Week 15	Title bibliography

Syllabus Template

COURSE TITLE _____

Name Surname_____
University of _____
Email: _____
Mob. _____
Office hours: _____
Room and date: _____

About the professor

Course description and objectives

Methods

Knowledge and skills to be achieved

Required Readings and materials

Reference 1: _____
Reference 2:
Reference 3: _____
Reference 4:
Reference 5:

Grade

The grade for the Museum Studies and Archaeology will be divided as follow:

%	DESCRIPTION	TYPE OF EXAM
___%		The first exam
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___%		Quizzes

The grade scale will be as follows:

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65-69	Average
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Attendance:

Calendar

Basic and support material to be covered according to the homework/papers and their due date:

Week	Subject
Week 1	Title bibliography
Week 2	Title

Week	Subject
	bibliography
Week 3	Title bibliography
	Title bibliography
Week 5	Title bibliography
Week 6	Title bibliography
Week 7	Title bibliography
Week 8	Title bibliography
Week 9	Title bibliography
Week 10	Title bibliography
Week 11	Title bibliography
Week 12	Title bibliography
Week 13	Title bibliography
Week 14	Title bibliography
Week 15	Title bibliography

Syllabus Template

COURSE TITLE _____

Name Surname _____
University of _____
Email: _____
Mob. _____
Office hours: _____
Room and date: _____

Course description and objectives

Methods

Knowledge and skills to be achieved

Required Readings and materials

Reference 1: _____
Reference 2: _____
Reference 3: _____
Reference 4: _____
Reference 5: _____

Grade
The grade for the Museum Studies and Archaeology will be divided as follows:

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80-89	Very good
70-79	Good
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60-64	Acceptable

Attendance

Calendar
Basic and support material to be covered according to the homework/reports and their due date:

Week	Subject
Week 1	Title bibliography
Week 2	Title
	bibliography
Week 3	Title bibliography
Week 4	Title bibliography
Week 5	Title bibliography
Week 6	Title bibliography
Week 7	Title bibliography
Week 8	Title bibliography
Week 9	Title bibliography
Week 10	Title bibliography
Week 11	Title bibliography
Week 12	Title bibliography
Week 13	Title bibliography
Week 14	Title bibliography
Week 15	Title bibliography

Knowledge and skills to be achieved

Syllabus Template

COURSE TITLE _____

Name Surname_____
University of _____
Email: _____
Mob. _____
Office hours: _____
Room and date: _____

Course description and objectives

Methods

Knowledge and skills to be achieved

Required Readings and materials

Reference 1: _____
Reference 2:
Reference 3: _____
Reference 4: _____
Reference 5: _____

Grade

The grade for the Museum Studies and Archaeology will be divided as follow:

%	DESCRIPTION	TYPE OF EXAM
___%		The first exam
___%		The second exam
___%		The Final exam
___%		Paper and Presentation
___%		Attendance and class participation
___%		Quizzes

20-74	Good
65-69	Average
60-64	Acceptable

Attendance

Calendar

Basic and support material to be covered according to the homework/papers and their due date:

Week	Subject
Week 1	Title bibliography
Week 2	Title

Week	Subject
	bibliography
Week 3	Title bibliography
Week 4	Title bibliography
Week 5	Title bibliography
Week 6	Title bibliography
Week 7	Title bibliography
Week 8	Title bibliography
Week 9	Title bibliography
Week 10	Title bibliography
Week 11	Title bibliography
Week 12	Title bibliography
Week 13	Title bibliography
Week 14	Title bibliography
Week 15	Title bibliography

Required readings and materials

Syllabus Template

COURSE TITLE _____

Name Surname_____
University of _____
Email: _____
Mob. _____
Office hours: _____
Room and date: _____

Course description and objectives

Methods

Knowledge and skills to be achieved

Required Readings and materials

Reference 1: _____
Reference 2:
Reference 3: _____
Reference 4: _____
Reference 5:

%	DESCRIPTION	TYPE OF EXAM
___%		The first exam
___%		The second exam
___%		The Final exam
___%		Paper and Presentation
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___%		Quizzes

The grade scale will be as follows:

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60-64	Acceptable

Attendance:

Calendar

Basic and support material to be covered according to the homework/papers and their due date:

Week	Subject
Week 1	Title bibliography
Week 2	Title

Calendar of lessons

Week	Subject
	bibliography
Week 3	Title bibliography
Week 4	Title bibliography
Week 5	Title bibliography
Week 6	Title bibliography
Week 7	Title bibliography
Week 8	Title bibliography
Week 9	Title bibliography
Week 10	Title bibliography
Week 11	Title bibliography
Week 12	Title bibliography
Week 13	Title bibliography
Week 14	Title bibliography
Week 15	Title bibliography

WALADU PRESENTATION

Objectives and expected outcomes

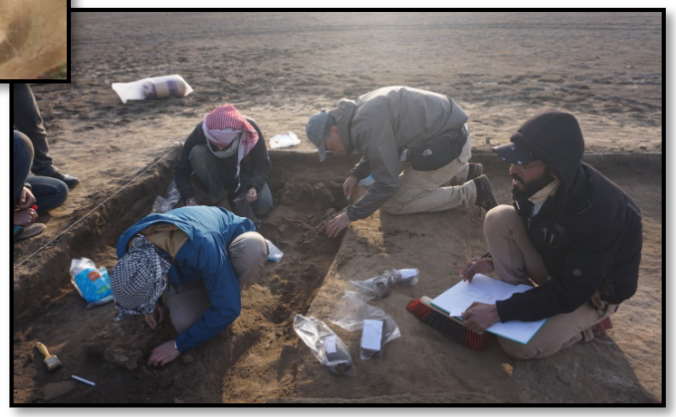
WALADU Cascade Training,

Bertinoro 11th-15th December 2018

Erasmus+

SHAPING WALADU COOPERATION

The WALADU project is rooted in a **long tradition of research, cooperation and training** in several countries of the **Near East** including Syria, Turkey and Iraq.



Fieldworks

Erasmus+

SHAPING WALADU COOPERATION

Students training

International Projects

CULTURAL HERITAGE
A CHALLENGE FOR EUROPE

EblaChora.

ARCHAIA

Erasmus+

THE WALADU TEAM

Programme countries

UNIBO - BOLOGNA

UoB - BAGHDAD

QU - QADISIYAH

LMU - MUNICH

KOÇ - ISTANBUL

UoK - KUFA

Partner countries

Erasmus+

THE WALADU TEAM

Programme countries have been carefully selected in order to provide the **highest educational standards of excellence** in research and teaching. UNIBO, LMU and Koç offer a wide spectrum of of disciplines and are **leading universities** in the fields of archaeology and ancient history.

All of them have a **broad network of international connections**, including thousands of exchange students, visiting scholars and other staff members.

Partner coutries include some of the best Iraqi universities all deeply involved in the field of archaeology and ancient history. Their **awareness of the issue an the necessity to improve** the Iraqi university system made them the **perfect candidates** to participate to the WALADU project.

Erasmus+

PROJECT OBJECTIVES

WALADU Wider Objectives

To improve Higher Education in Archaeology in Iraq

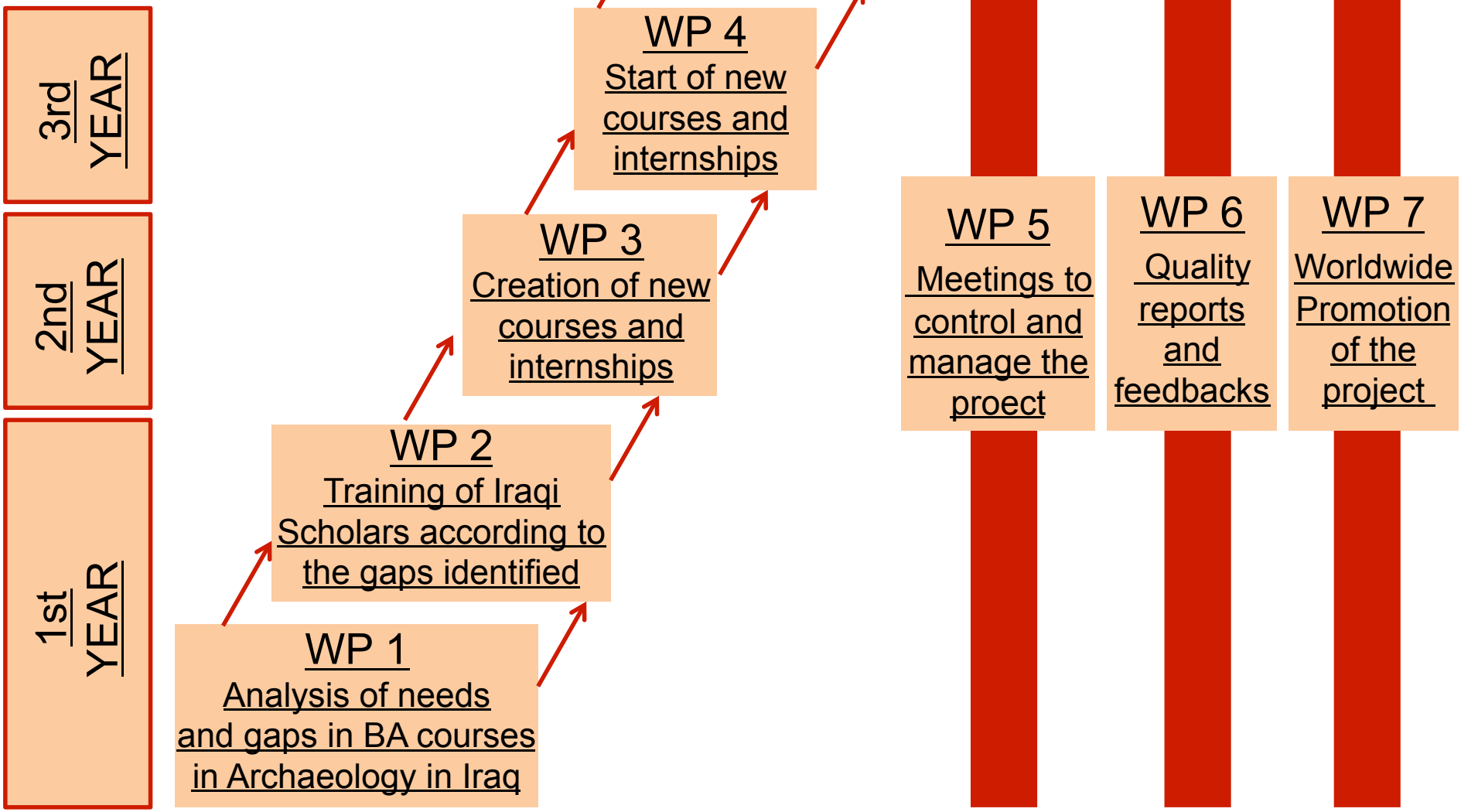
To increase the students opportunities in the Iraqi labour market

To enhance EU-Iraq academic cooperation

WALADU

Erasmus+

THE PROJECT


3rd YEAR
2nd YEAR
1st YEAR
WP 1
Analysis of needs and gaps in BA courses in Archaeology in Iraq
WP 2
Training of Iraqi Scholars according to the gaps identified
WP 3
Creation of new courses and internships
WP 4
Start of new courses and internships
WP 8
Project replication In other BA courses
WP 5
Meetings to control and manage the proect
WP 6
Quality reports and feedbacks
WP 7
Worldwide Promotion of the project

SPECIFIC PROJECT MILESTONES

Modernization of BA courses in Archaeology, Ancient History and Philology

New teaching unit
New internships
New quality system
New libraries and laboratories

Enhanced quality of teaching and learing in Iraq

WALADU

Erasmus+

SPECIFIC PROJECT OBJECTIVES

Reinforced capacity to design courses, teach, and produce innovative knowledge by local teaching staff

- Selection and 2 weeks training at LMU of 12 Iraqi senior teachers
- Selection and 2 months training at LMU, Koç and UNIBO of 12 Iraqi junior researchers
- Selection and training of 30 Iraqi administrative staff members

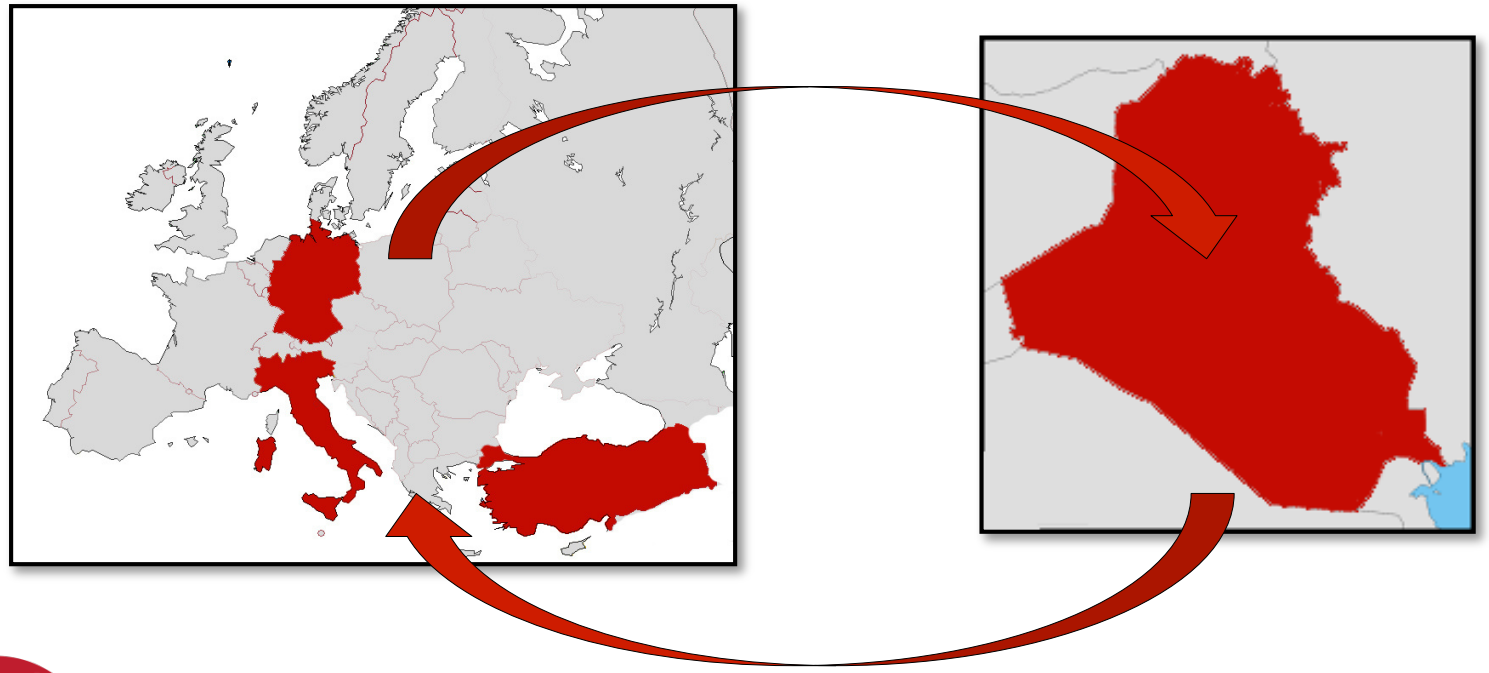
WALADU

Erasmus+

EXPECTED OUTCOMES

International connections

To foster international collaborations between EU and Iraq framing them in an internationally regulated scheme



WaLink international network

WALADU

Erasmus+

AN OVERVIEW

Improvements in the university system

New teaching units

New teaching facilities

WaLib

WaLab

New internships

Erasmus+