12. Further structuring of the ArchéoDATA System

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12.1 Introduction

It has been one of the objectives of the ArchéoDATA Project[1] to provide a system which can easily accept enhancements to its structure and that it might be able to evolve and take advantage of changes in archaeological practice and methodology, and in some instances, even propose new ones.

It is important that enhancements be made to the system, that they should blend themselves into general archaeological practice, and that they should further help to efficiently structure, computerize and exploit the data recorded. These factors are essential if the final aim is to establish an integrated Archaeological Information System and that the data is to be analyzed using Geographical Information Systems, where data harmony is fundamental.

This paper presents two new enhancements, one methodological and the other organizational, which have been developed for field recording and for the management of collections and find deposits.

12.2 Archaeological recording

There are occasions, when recording an excavation, that it is necessary to have the possibility to further specify or isolate specific archaeological phenomena, more, that is, than the basic Zone/Stratigraphic Unit system has permitted. Finding a solution to this problem has been further compounded as this new data are also to be computerized and have to be structured in such a way as to make them possible for it to be managed efficiently alongside all the other traditional information.

12.2a The notion of sub-units

If the smallest unit used to record in the Metric Unit[2] system is the square meter and in the SU system the Stratigraphic Unit, it is possible that, either out of necessity or out of convenience, it may become necessary to operate manageable divisions within these units.

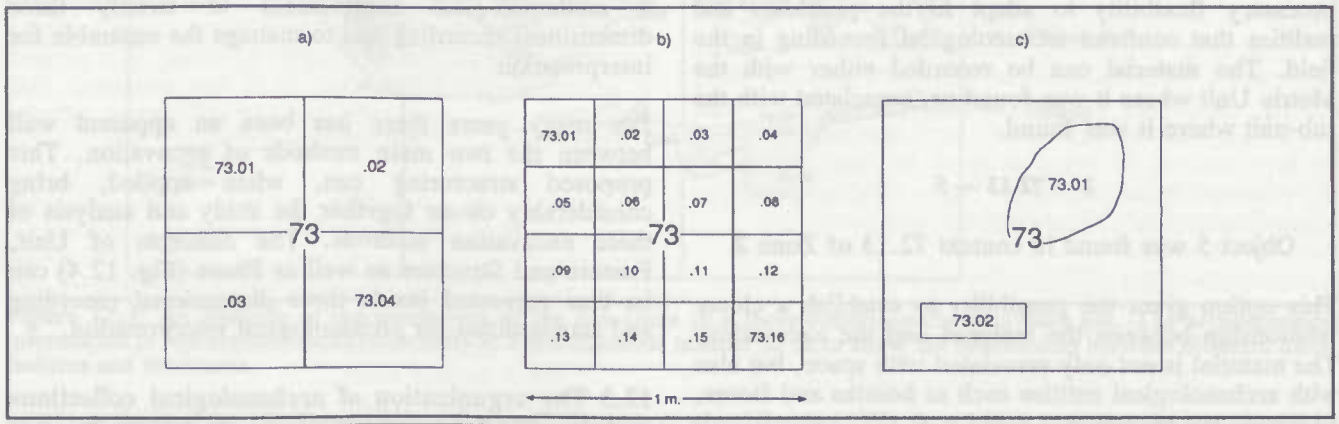
Several cases can be used to illustrate this:

- It is common during a prehistoric excavation to subdivide a square systematically into several parts, either to excavate more precisely or to take samples (Figs. 12.1a, 12.1b and 12.1c).
- In urban archaeology,[3] when layers are stripped off mechanically at the beginning by systematic passes, they are usually recorded as being one Stratigraphic Unit. It is frequently necessary to distinguish between different parts. Differences in colour, texture, type and density of material, for example, are some of the types of data that can be localized inside the SU (Fig. 12.2).

For reasons of management and efficiency it must then be possible to clearly identify these sub-units during and after the archaeological intervention. Their identification inside each Unit is done by decimalisation: 99 manageable sub-units (from .01 to .99).

System by Stratigraphic Unit:

Figure 12.1: Three different examples of how Sub-Units can be operated within a square metre.



1. The theory behind and the functional basis of the ArchéoDATA System is described in Arroyo-Bishop (1989a and 1991) and Arroyo-Bishop and Lantada Zarzosa (1991). They are indispensable for a full understanding of the System and the concepts presented in this paper.
2. The Metric Unit System is for excavations which record their data exclusively in three dimensions (x, y and z) referenced to a precise metric square. Stratigraphic Unit System recording locates data within a SU referenced within the excavation's general metric grid.
3. The method of stripping off regular layers can be used intensively in certain types of archaeological excavation.

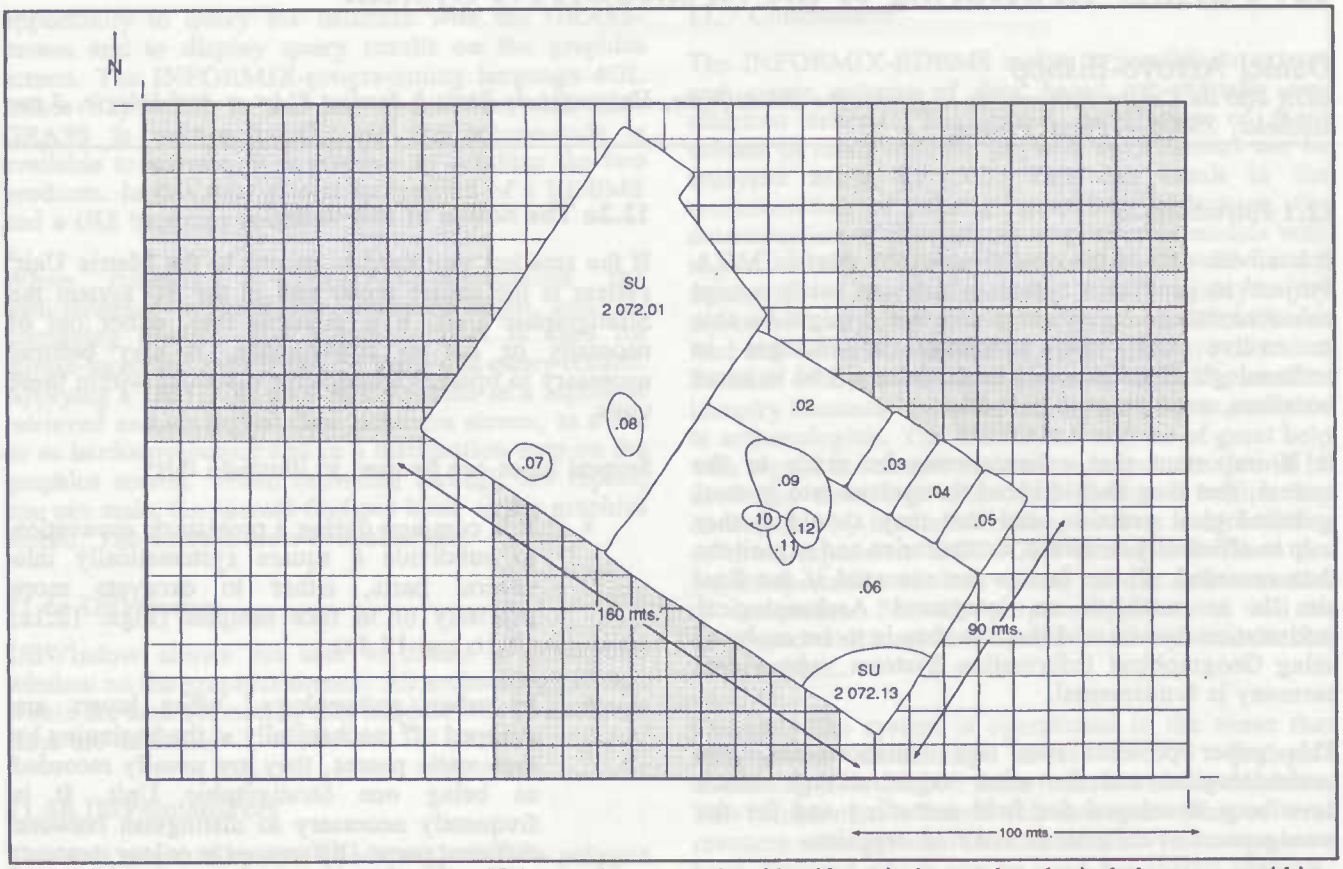


Figure 12.2: Several examples of how Sub-Units can be operated to identify or isolate archaeological phenomena within a single stratigraphic unit after a mechanically stripped-off pass.

Zone	SU	Sub-unit
2	072	.13
	or	
	2 072.13	

System by Metric Unit:

Area/Sub-area	Square	Sub-unit
231	073	.07
	or	
	231 073.07	

The possibilities derived from this approach bring the necessary flexibility to adapt to the problems and realities that confront archaeological recording in the field. The material can be recorded either with the Metric Unit where it was found or, associated with the sub-unit where it was found.

2 — 72.13 — 5

Object 5 was found in context 72.13 of Zone 2

This option gives the possibility to establish a closer relationship between the material and the excavation. The material is not only associated with space, but also with archaeological entities such as hearths and floors, and managed as such.

12.2b Adapting feature and structure to three dimensional recording

The application of a system of recording by sub-groups to an excavation by Metric Unit can give it considerable flexibility. Archaeological phenomena (Fig. 12.3) are better identified as everything that has the possibility of being isolated as a precise unit of information.

During the different phases of analysis and interpretation the relationships between different data are more easily established, and of course, managed. They can extend themselves across as many Metric Units as is necessary to represent clearly and consistently stratigraphical and chronological relationships. In this manner it is possible to maintain a methodological complement to strictly three dimensional recording and to manage the ensemble for interpretation.

For many years there has been an apparent wall between the two main methods of excavation. This proposed structuring can, when applied, bring considerably closer together the study and analysis of these excavation methods. The concepts of Unit, Feature and Structure as well as Phase (Fig. 12.4) can be thus recreated inside three dimensional recording and standardized for archaeological interpretation.

12.3 The organization of archaeological collections and deposits for consultation

One of the most acute problems, be it for an excavation or a museum, is the internal organization of the archaeological collection. The problem becomes more crucial with the increase in the number of objects accumulated. Their organization has been the subject of much debate. Some say that the deposits be organized

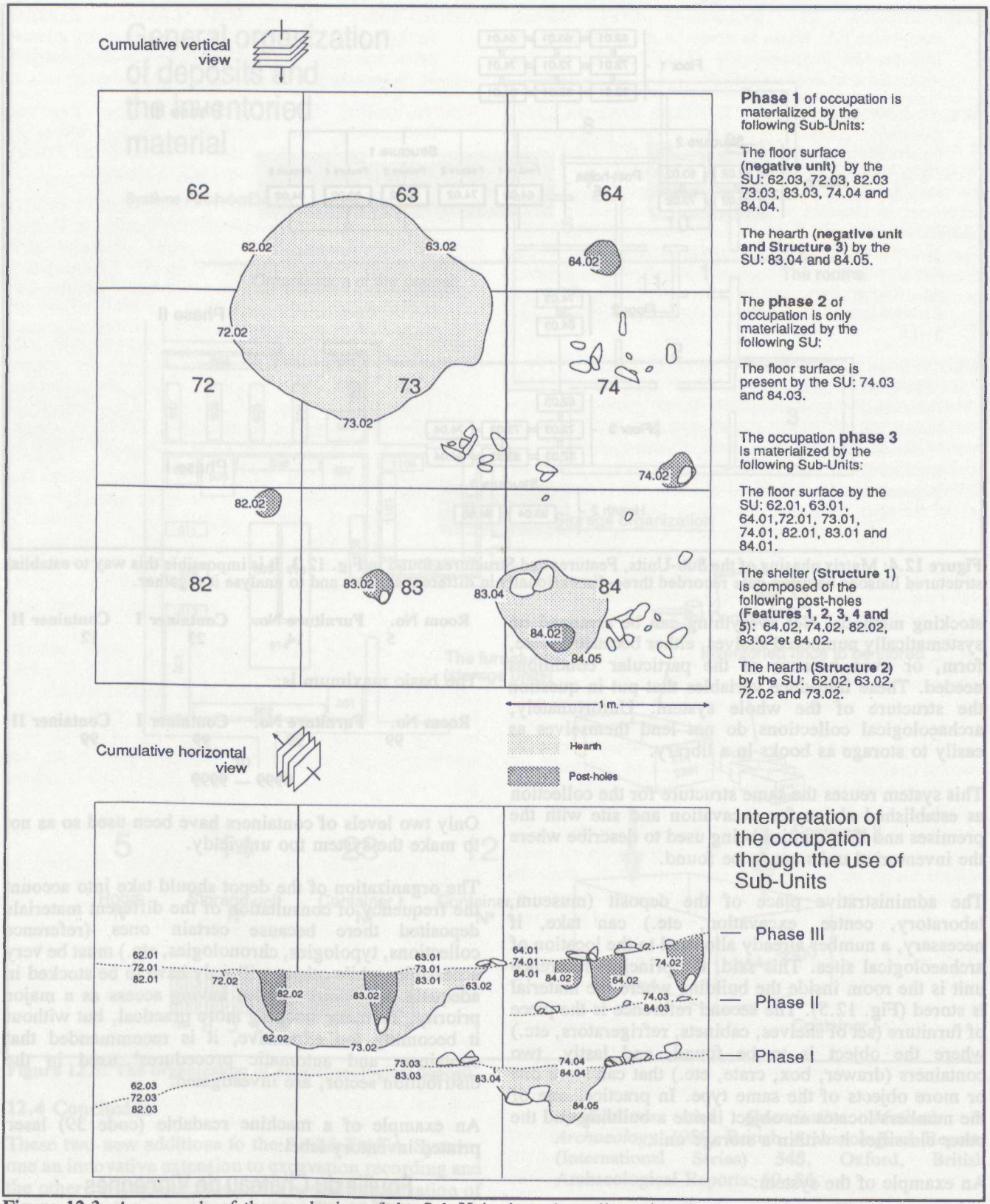


Figure 12.3: An example of the numbering of the Sub-Units in a three-dimensionally excavated site. The archaeological information is represented unconventionally in a simultaneous manner so as to show the relationship between different units, features and structures.

by chronological or cultural periods, others say that the basic module be that of the individual excavation.

The setting up of a collection in the ArchéoDATA System follows the same logic already developed for the inventory, that is to say, by material, of which a great majority of today's studies make use of this classification. We thus bring together the objects so as to facilitate their study and conservation.

12.3a The storage units used

It is necessary to take into account the harsh realities that confront our best intentions to standardize our

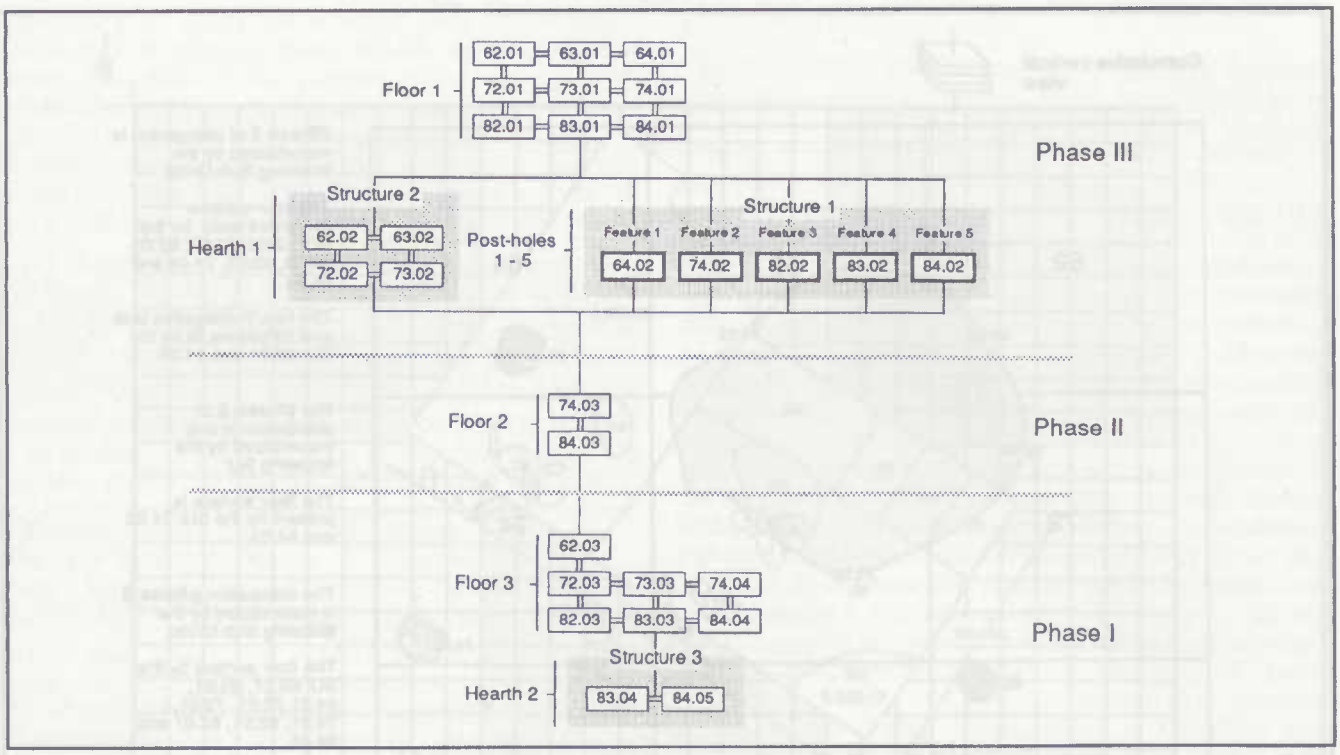


Figure 12.4: Matrix phasing of the Sub-Units, Features and Structures found in Fig. 12.3. It is impossible this way to establish structured liaisons between data recorded three-dimensionally in different squares and to analyse it together.

stocking methods. Not everything can be arranged on systematically numbered shelves, either because of size, form, or even because of the particular conditions needed. These introduce variables that put in question the structure of the whole system. Unfortunately, archaeological collections do not lend themselves as easily to storage as books in a library.

This system reuses the same structure for the collection as established above for excavation and site with the premises and then entities being used to describe where the inventoried units are to be found.

The administrative place of the deposit (museum, laboratory, centre, excavation, etc.) can take, if necessary, a number already allocated to the location of archaeological sites. This said, the principal reference unit is the room inside the building where the material is stored (Fig. 12.5). The second reference is the piece of furniture (set of shelves, cabinets, refrigerators, etc.) where the object is to be found, and lastly, two containers (drawer, box, crate, etc.) that can store one or more objects of the same type. In practice, one of the numbers locates an object inside a building and the other classifies it within a storage unit.

An example of the system:

514 - 2312

The material searched for is found in box 12 of the 23rd box of the 14th piece of furniture in room 5. The numbers are together to facilitate the numbering:

Room No.	Furniture No.	Container I	Container II
5	14	23	12

The basic maximum is:

Room No.	Furniture No.	Container I	Container II
99	99	99	99

or

9999 — 9999

Only two levels of containers have been used so as not to make the system too unwieldy.

The organization of the depot should take into account the frequency of consultation of the different materials deposited there because certain ones (reference collections, typologies, chronologies, etc.) must be very accessible, while others will only have to be stocked in adequate conditions without having access as a major priority. To make stocking more practical, but without it becoming too expensive, it is recommended that containers and automatic procedures[4] used in the distribution sector, are investigated.

An example of a machine readable (code 39) laser printed inventory label:

Fouille du Château de Vincennes
18.07.91 - JB
CER - Sableuse - Domestique
Lot de fonds et bords

4. It has been found that the use of labels that also include machine readable barcodes can be a highly efficient way of managing large archaeological collections.

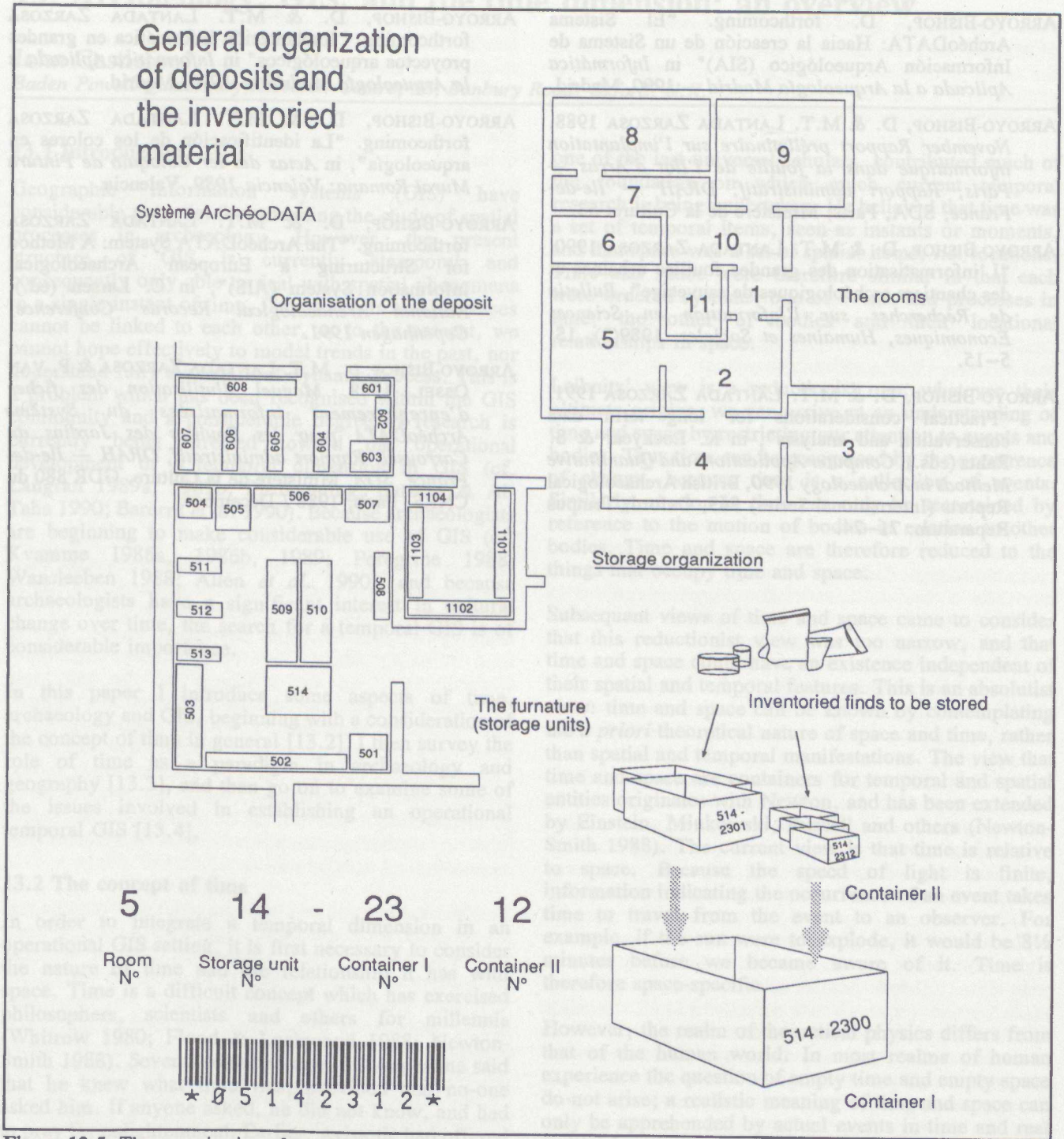


Figure 12.5: The organization of an archaeological deposit.

12.4 Conclusion

These two new additions to the ArchéoDATA System, one an innovative extension to excavation recording and the other, a systematization of a spatial organization of storage, are but two of many things that are sure to be added as further experience is gained.

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