Article: Dealing with post-excavation data: the Omeka S TiMMA web-database

Review 1:

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ARTICLE SUMMARY:
This article provides a comprehensive review of the TiMMA project's web database and all its functionalities and tools in order to deal with data (and metadata) created from post- excavations and CH sites, while promoting the user-friendliness of the web interface. The project's ultimate goal is to explore the timber in Minoan and Mycenaean architecture, which led to the need to introduce a way of presenting and dealing with data through a web interface.

STRENGTHS:
- The author presents a compelling argument about the exploitation of the Omeka S web publishing platform and its functionalities.
- The tools that were incorporated into the web database are thoroughly presented and analyzed through the different sub-sections of the paper.
- It is clear that the final users are always at the center of the development process, something that all developers should take into account.
- The vocabulary and syntax of the article are suitable for a scientific publication.
- There aren't any sentences that state an opinion without having a reference to support the statement.
- The sub-sections detailing the technologies employed in the project, specifically those in "*The perspective of the supervisor: data management and opening / linking data"*, and those in "*The perspective of the user: accessibility, security, use and publication*" demonstrate thorough research and clarity in presentation. These segments effectively convey all the necessary information for readers to comprehend the arguments and discussions put forth in the article.
- You provide constructive criticism of all the functionalities of Omeka S, and you always explain how you adopted them in an effective way for the project needs.
- The "*Conclusion"* part provides the next steps to the research of the field through a general discussion of the limitations you faced.

WEAKNESSES:

In the "*Introduction"* section, I have a few minor concerns. Here are some pieces of information that I think were missing:

- It is not clear to the reader what the rationale is and why did you propose this particular project in the first place (before funding)

- Why did you choose the Minoan and Mycenaean architectures?

I attempted to place greater emphasis on both these aspects by contextualizing the TiMMA project within the research landscape of the Aegean in the introduction (lines 34-53):

"The Aegean world in the 3rd and 2nd millennia B.C. is notably characterized by the emergence of two intertwined civilizations: the Minoan and the Mycenaean. Since the first archaeological research that led to their discovery in the second half of the 19th century, architectural studies have proposed numerous reconstructions of buildings, with the most intensively investigated being the monumental structures known as palaces. Within this context, stone, and to a lesser extent, mudbrick, are the most extensively studied architectural materials. Conversely, due to the challenging preservation conditions of wood, timber has been largely overlooked. One of the primary reasons for this oversight was the apparent lack of evidence for its use in architecture. However, recent studies, building on earlier research, have revealed that timber was extensively used—from the smallest houses to massive palaces—and could play a crucial structural role, in addition to its anti-seismic properties (notably Devolder 2019; Pomadère and Hilbert 2019; Rougier-Blanc 2019; Tsakanika-Theohari 2006; Tsakanika-Theohari 2009).

Launched in 2022 for a duration of four years, the TiMMA project aims to investigate the role of timber in Minoan and Mycenaean architecture (3200-1100 BC). Through an interdisciplinary and integrated approach, the project's goal is to reconstruct the Minoan and Mycenaean's exploitation of wood, from tree felling to the use of timber in architecture. One of its specificities is to bring together over twenty specialists, from five different countries, including architects, archaeologists, historians of techniques, civil engineers, and archaeobotanists. Therefore, it also deals with a compilation of archaeological, architectural, archival and archaeobotanical sources. Data is collected from sites already or currently excavated (fig. 1), namely the Bronze Age settlements of Malia, Ayia Triada, Phaistos and Zakros (Crete), Pylos, Mycenae (Greek mainland) and Akrotiri (Thera)."

- How did all this lead to the development of the web database?

I endeavored to address this point by placing more emphasis on the importance of incorporating a web database into the project in the introduction (lines 54-69). The main arguments include the diversity and volume of data and metadata, the varied specialties and localities of the researchers involved in the project, as well as the commitment to participating in open science dynamics:

"The evidence collected is predominantly architectural, encompassing imprints, holes, chases, traces of door leaves on thresholds, cavities on walls, stone bases, mortises, curved bedding on ashlar walls, and socket-pivot holes (fig. 2). Charcoals associated with architectural remains may also be present: preserved mineralized wood and imprints in the ash can be found in Akrotiri, where the exceptionally good preservation of remains is owed to the volcano eruption. Indeed, this site is often referred to as

the "Pompeii of the Aegean." In addition to the archaeological finds, the project also involves a vast collection of metadata resulting from fieldwork and research in archives. This includes thousands of photographs, plans, and other illustrations, as well as an extensive bibliography related to the excavations and, finally, timber elements and architectural reconstructions sometimes identified in excavation notebooks from the first excavators of the studied sites.

To address this variety and volume of data and metadata, there was a necessity to build a web-based database that is both user-friendly and multilingual, facilitating the work of multiple specialists involved in the project. This database needs to serve as an analytical tool for processing queries, requiring the creation of complex links between different tabs. Additionally, it should function as a heuristic tool, aiding in the conceptualization and understanding of data. Finally, it must align with the Findable, Accessible, Interoperable, Reusable (F.A.I.R) principles to promote open science (Wilkinson et al. 2016)."

- Why didn't you exploit any other already existing tool that does the same thing (e.g., the Heurist, or AIR as you mentioned) and upload your data into this tool?

I attempted to make it clearer in the paragraph below (lines 72-97):

"AIR and Heurist are two open source web database systems that also meet our expectations and are specifically designed for archaeological purposes (e.g., Derudas, Nurra, and Svensson, 2023). In the early stages, when considering which solution should be retained, we explored the use of these tools as well ; these also notably allow input from multiple users with controlled access in different languages. These systems are also linked to a web-publishing platform. However, our final decision was to work with Omeka S , a Content Management System (CMS) designed to assist organizations and institutions in creating and managing digital collections. Funded by The Andrew W. Mellon Foundation and the Institute of Museum and Library Services , Omeka S shares the same goals and principles as Omeka Classic . Unlike AIR and Heurist, it was not specifically designed for archaeological fieldwork projects but rather for heritage purposes and online exhibitions. Projects using Omeka S in History, Anthropology and Literacy are numerous in various fields, ranging from prosopography repositories to musical instrument collections . A distinctive feature is the emphasis on the web-editorialized platform, designed with simplicity in mind, featuring entry by caption. This is why Omeka S is said to be more suitable for managing heritage, textual, and museum collections, rather than archaeological finds (Bérard et al., 2020; Lombardo et al., 2020). However, behind the editorialized platform, Omeka S relies on PHP and uses MySQL as a database storage system. It can thus be used as a proper database with interconnected tabs and has the ability to process requests through an advanced request engine module. Yet, it has rarely been used for archaeological projects. One of the few exceptions, however, applied to the site of Tobiotsuka Kofun in Japan, demonstrates well its efficiency to link together archaeological finds and stratigraphic units . One of the reasons we chose this solution is its distinctive feature: Omeka S operates on downloadable modules, allowing for adaptation and personalization for any project. Moreover, as TiMMA is not an excavation project but deals with post-excavation data, the diverse functionalities offered by AIR and Heurist would not be fully used in this context. Additionally, Omeka S offers a highly useful mobile version, facilitating convenient access to data from mobile phones. Last but not least, the multilingual version of Heurist is still under preparation. Given the variety of languages spoken by the different specialists involved in the project, it has not been able to provide a suitable solution."

- Why didn't you create a smaller-scale web publishing tool or even an app for the needs of the project? (I know many projects that did this.) Wasn't this a main aspect of the project? Why not?

While it is indeed a great idea, it was not one of the project's goals. Omeka S boasts a highly useful mobile version, facilitating convenient access to data from one's mobile phone. Our intention was to avoid dispersing the data and, instead, centralize everything on the same platform. This is why the website also features project news, presentations by team members, and information about side projects. Unfortunately, the requested funds for web development were not obtained, and as a result, we were unable to afford having a developer on our team.

Some of the answers to these questions are partially given and assumed in the paper (like the sentences comparing Omeka S with Heurist and AIR – lines 79, 156), but they are not clearly stated and thoroughly explained. For example, in lines 62–63, there is a small explanation of the need for a web database, but I find it crucial to elaborate on this and focus on any existing projects that have done the same thing for their own needs. I know that this is not the main point of this paper, but if someone reads only this article (and not any other introductory papers of the TiMMA project), he should have a clear view of all those things. At last, I would like to see how you differentiate yourselves from any existing projects and shift the focus to the innovation you bring to the field.

- I would suggest having a "*Related Work*" section after the "*Introduction*" to gather the answers to these questions and to highlight the synergies (if any) or similarities with other projects.

I created a dedicated section to justify the use of Omeka S, titled "The Choice for Omeka S: Related Works and Advantages." This section provides a more detailed overview of our considerations before selecting Omeka S and outlines the reasons behind our choice. It includes references to various projects through quotes. However, emphasizing synergies and similarities proved challenging, given that the use of Omeka S in archaeological projects remains relatively rare. Nonetheless, I used the case study of the Tobiotsuka Kofun in Japan (lines 89-90) to underscore the relevance of Omeka S for archaeological projects.

- The references could be enhanced with some papers from journals with a high impact factor.

I conducted a review of the existing literature on the subject but could only identify a limited number of references related to web-database resources. I would sincerely appreciate any additional recommendations you could provide.

Bérard, A, Davoigneau, J, Jeanson, L and Laroche, F (2020) Donner toute sa place au cercle méridien de Toulouse-Jolimont à l'aide d'outils numériques : l'exemple des travaux du projet ReSeed. Patrimoines du Sud, 12. https://doi.org/10.4000/pds.4568

Derudas, P, Nurra, F and Svensson, A (2023) New AIR for the Archaeological Process? The use of 3D web Semantic for Publishing Archaeological Reports. Journal on Computing and Cultural Heritage https://doi.org/10.1145/3594722

Lombardo, V, Karatas, T, Damiano, R, Mattutino, C and Sasakura, M (2020) Bringing Digital Curation to Archaeological Projects: Evidence from the BeArchaeo Project. 2020 AVI2CH Workshop on Advanced Visual Interfaces and Interactions in Cultural Heritage, 2687

Toscano, M, Cobo, MJ and Herrera-Viedma, E (2022) Software solutions for web information systems in digital humanities: review, analysis and comparative study. Profesional de la información 31, 2. https://doi.org/10.3145/epi.2022.mar.11

- In line 82 it is stated "as demonstrated in other projects". I would expect this sentence to have a few references and further explanation.

I ultimately removed this sentence, but the argument developed in lines 72-97 of the "related work" section demonstrates the potential use of Omeka S as an archaeological database.

l. 72-97: "AIR and Heurist are two open source web database systems that also meet our expectations and are specifically designed for archaeological purposes (e.g., Derudas, Nurra, and Svensson, 2023). In the early stages, when considering which solution should be retained, we explored the use of these tools as well ; these also notably allow input from multiple users with controlled access in different languages. These systems are also linked to a web-publishing platform. However, our final decision was to work with Omeka S , a Content Management System (CMS) designed to assist organizations and institutions in creating and managing digital collections. Funded by The Andrew W. Mellon Foundation and the Institute of Museum and Library Services , Omeka S shares the same goals and principles as Omeka Classic . Unlike AIR and Heurist, it was not specifically designed for archaeological fieldwork projects but rather for heritage purposes and online exhibitions. Projects using Omeka S in History, Anthropology and Literacy are numerous in various fields, ranging from prosopography repositories to musical instrument collections . A distinctive feature is the emphasis on the web-editorialized platform, designed with simplicity in mind, featuring entry by caption. This is why Omeka S is said to be more suitable for managing heritage, textual, and museum collections, rather than archaeological finds (Bérard et al., 2020; Lombardo et al., 2020). However, behind the editorialized platform, Omeka S relies on PHP and uses MySQL as a database storage system. It can thus be used as a proper database with interconnected tabs and has the ability to process requests through an advanced request engine module. Yet, it has rarely been used for archaeological projects. One of the few exceptions, however, applied to the site of Tobiotsuka Kofun in Japan, demonstrates well its efficiency to link together archaeological finds and stratigraphic units . One of the reasons we chose this solution is its distinctive feature: Omeka S operates on downloadable modules, allowing for adaptation and personalization for any project. Moreover, as TiMMA is not an excavation project but deals with post-excavation data, the diverse functionalities offered by AIR and Heurist would not be fully used in this context. Additionally, Omeka S offers a highly useful mobile version, facilitating convenient access to data from mobile phones. Last but not least, the multilingual version of Heurist is still under preparation. Given the variety of languages spoken by the different specialists involved in the project, it has not been able to provide a suitable solution."

- Overall, I would like to see the innovation and the outcome of this fascinating project of yours, as well as the added value to the field, rather than the incorporation and presentation of an existing tool.

This point was challenging to address as this project did not involve the development of new tools. However, I believe that the added value is now clearer through the case studies that were included. These case studies were intended to establish a stronger connection

between Omeka S and the TiMMA project. If the reviewer has suggestions to further enhance this aspect at this stage, I would be pleased to consider them.

l. 119-123: “The creation of these tabs implied a significant amount of work in a preliminary phase. This was accomplished by gathering several specialists, members of the project, who had already worked on case studies at Ayia Triada, Malia, and Knossos (Pomadère and Hilbert 2019; Tsakanika-Theohari 2006). Regarding the "Structural unit" and "Timber evidence," this step proved to be essential since, collectively, we were able to anticipate all possible situations one may face in the field.”

l. 134: Table 1: list of fields in common between the sub-tabs “Colonnade with timber columns” and “Door frame”.

l. 205: Table 2: list of sub-tabs personalized according to the architectural characteristics of their content

l. 151-154: “Figure 4 – The "Value Suggest" module, linked to external vocabularies, avoids creating new lists of values and provides multiple choices by simply typing the first letters of the value to be inserted. In this example, it is used in connection with the Getty Museum’s Thesaurus Art & Architecture. Typing the "Quercus" species provides a wide range of taxa.”

l.173-176 : “This turned out to be extremely convenient for the Malia site, excavated under the auspices of the French School at Athens, as some of the archives have already been digitized. For instance, we could copy and paste the digitized images of the North Portico of the Palace at Malia from the TiMMA database using their iiiF link (fig. 5)”

l.177: Figure 5 – Importing a iiiF image from the Archimage database to the TiMMA database: The case of Spa27 (North Portico of the Palace at Malia).

l. 193: “Figure 6 – Linking a space item to a reference imported through the Zotero module: the case of Spa360.”

l. 248-254: “For example, in the case of TiMMA, we initially applied a theme developed by the Omeka team (fig. 8, A). However, we encountered a limitation due to our lack of skills in graphic design—specifically, only the first picture could be displayed for each item. As a solution, we installed a theme created by Federico Nurra and the Service Numérique de la Recherche of the French History of Art National Institute. This theme, inspired by the Roy Rosenzweig Centerrow and under Creative Commons license 4.0 (fig. 8, B) , not only possesses aesthetic qualities but also allows for the display of images in the form of a carousel, a very convenient tool for data consultation.”

l. 258-261: “Figure 8 – A) Theme originally adopted. In this theme, only the first picture of each item could be displayed. B) This theme offers the ability to display pictures in a carousel; it also features an aesthetically pleasing design that enhances the appreciation of data during consultation.”

l. 266: “Thanks to this tool, references are imported and described using the terms available in the "Bibliographic ontology." Their metadata can be consulted just like any other item (fig. 6). In the example below, the space item 360 (Palace at Pylos) is linked to the publication of this site through the Zotero module.”

SMALLER OR SPECIFIC REMARKS:

- Line 43 “Data was collected”. I would like to see in just one word or two what kind of data you are referring to before proceeding to the next section.

I provided clearer specifications in the introduction (lines 51-63):

“Data is collected from sites already or currently excavated (fig. 1), namely the Bronze Age settlements of Malia, Ayia Triada, Phaistos and Zakros (Crete), Pylos, Mycenae (Greek mainland) and Akrotiri (Thera). The evidence collected is predominantly architectural, encompassing imprints, holes, chases, traces of door leaves on thresholds, cavities on walls, stone bases, mortises, curved bedding on ashlar walls, and socket-pivot holes (fig. 2). Charcoals associated with architectural remains may also be present: preserved mineralized wood and imprints in the ash can be found in Akrotiri, where the exceptionally good preservation of remains is owed to the volcano eruption. Indeed, this site is often referred to as the "Pompeii of the Aegean." In addition to the archaeological finds, the project also involves a vast collection of metadata resulting from fieldwork and research in archives. This includes thousands of photographs, plans, and other illustrations, as well as an extensive bibliography related to the excavations and, finally, timber elements and architectural reconstructions sometimes identified in excavation notebooks from the first excavators of the studied sites.”

- Line 122 “(what??)”. I assume this is a comment you made to yourself when writing the paper (happens to all of us).

Thank you for bringing it to my attention. It has been deleted now.

All in all, this is a great project, and I believe the paper will be a valuable contribution to the CAA proceedings. There are only a few minor adjustments that will help the reader clarify certain questions regarding the very nature of the project and the choices you made for its development.

Review 2

The paper aims to report an exploration of the CMS Omeka S in the context of a post-excavation project. However, some aspects could benefit from revision to better highlight its connection with the project and provide a more consolidated perspective.

In the abstract, while the paper's goal is introduced as an analysis of Omeka S's relevance within the project, it predominantly focuses on describing the CMS's advantages and benefits. Adding a brief description of the project, employed

methods, and synthesized conclusions in the abstract would help readers anticipate the findings more effectively.

I completely rewrote the abstract to incorporate this suggestion (lines 11-28).

"While other web databases are preferred to record archaeological data on the field and to treat them in post-excavation processes (eg. Heurist, AIR, etc.), Omeka S is usually used for heritage-related projects. However, its modularity and flexibility makes Omeka S a convenient and relevant tool for international archaeological projects dedicated to post-excavation research. The goal of this paper is to demonstrate its efficiency in the recording and treatment of archaeological data, not at the level of excavations but during post-excavation processes. To this end, we base our demonstration on the TiMMA project, a project dedicated to the study of timber in Minoan and Mycenean architecture. By gathering a wide range of specialists, from architects to archaeobotanists, working in five different countries, this project raises issues as the accessibility to the database, the language of recording, the data publication, and their consultation. Moreover, it aims to contribute more broadly in the open-science dynamics, by using open-source solution, in agreement with the F.A.I.R principles. While our goal is not to promote Omeka S more than other tools, we shall argue that Omeka S is an efficient solution to achieve these goals and that it can be effectively used in parallel with other complementary solutions. This aims to enlarge the choices for open-source web database and web-publishing platforms in the future, since, to our knowledge, Omeka S remains rarely used in archaeological projects."

The introduction does well in presenting the motivations for the study but lacks a clear formulation of research questions. Properly defining the research questions would bolster the justification for choosing Omeka S as the preferred technical solution, enriching the introduction with more references to relevant research would also be beneficial.

While I acknowledge the relevance of your suggestion, the decision was made not to formulate a question but instead to illustrate the requirements for a database and the rationale for selecting Omeka S. I rephrased and addressed these aspects in lines 64-69 and in the new "Related Work" section (lines 72-97):

l. 64-69: "To address this variety and volume of data and metadata, there was a necessity to build a web-based database that is both user-friendly and multilingual, facilitating the work of multiple specialists involved in the project. This database needs to serve as an analytical tool for processing queries, requiring the creation of complex links between different tabs. Additionally, it should function as a heuristic tool, aiding in the conceptualization and understanding of data. Finally, it must align with the Findable, Accessible, Interoperable, Reusable (F.A.I.R) principles to promote open science (Wilkinson et al. 2016)."

l.72-97: "AIR and Heurist are two open source web database systems that also meet our expectations and are specifically designed for archaeological purposes (e.g., Derudas, Nurra, and Svensson, 2023). In the early stages, when considering which solution should be retained, we explored the use of these tools as well ; these also notably allow input from multiple users with controlled access in different languages. These systems are also linked to a web-publishing platform. However, our final decision was to work with Omeka S [1], a Content Management System (CMS) designed to assist organizations and

[1] https://omeka.org/s/

institutions in creating and managing digital collections. Funded by The Andrew W. Mellon Foundation [2] and the Institute of Museum and Library Services [3], Omeka S shares the same goals and principles as Omeka Classic [4]. Unlike AIR and Heurist, it was not specifically designed for archaeological fieldwork projects but rather for heritage purposes and online exhibitions. Projects using Omeka S in History, Anthropology and Literacy are numerous in various fields, ranging from prosopography repositories [5] to musical instrument collections[6]. A distinctive feature is the emphasis on the web-editorialized platform, designed with simplicity in mind, featuring entry by caption. This is why Omeka S is said to be more suitable for managing heritage, textual, and museum collections, rather than archaeological finds (Bérard et al., 2020; Lombardo et al., 2020). However, behind the editorialized platform, Omeka S relies on PHP and uses MySQL as a database storage system. It can thus be used as a proper database with interconnected tabs and has the ability to process requests through an advanced request engine module. Yet, it has rarely been used for archaeological projects. One of the few exceptions, however, applied to the site of Tobiotsuka Kofun in Japan, demonstrates well its efficiency to link together archaeological finds and stratigraphic units [7]. One of the reasons we chose this solution is its distinctive feature: Omeka S operates on downloadable modules, allowing for adaptation and personalization for any project. Moreover, as TiMMA is not an excavation project but deals with post-excavation data, the diverse functionalities offered by AIR and Heurist would not be fully used in this context. Additionally, Omeka S offers a highly useful mobile version, facilitating convenient access to data from mobile phones. Last but not least, the multilingual version of Heurist is still under preparation. Given the variety of languages spoken by the different specialists involved in the project, it has not been able to provide a suitable solution."

Moving on to the Materials and Methods section, the paper could benefit from a more comprehensive description of the database structure and logical model designed specifically for the Timma project. Additionally, Figure 3, illustrating the database architecture, would be more impactful with a thorough explanation.

This section was expanded upon (lines 114-129) by elucidating the process of creating tabs and detailing our efforts to reflect on situations one may encounter in the field. Additionally, I included two tables to better illustrate the architecture of the database (table 1 and table 2).

"The TiMMA database currently comprises five main tabs, two of which have multiple sub-tabs (fig. 3). A tab, or resource template, refers to a thematic grouping of items or entries. These tabs aim to describe locations, such as sites and buildings, as well as spaces where evidence of timber and structural units have been found. There are also tabs dedicated to describing the structural units themselves and

[2] https://www.mellon.org/

[3] https://imls.gov/

[4] https://omeka.org/classic/

[5] https://exhibits.lib.utah.edu/s/century-of-black-mormons/page/welcome

[6] https://omeka-s.grinnell.edu/s/MusicalInstruments/page/welcome

[7] https://bearchaeo.unito.it/omeka-s/s/bearchaeo-resources-site/page/welcome

the evidence of timber, in addition to the charcoals and preserved wood identified through archaeobotanical analysis.

The creation of these tabs implied a significant amount of work in a preliminary phase. This was accomplished by gathering several specialists, members of the project, who had already worked on case studies at Ayia Triada, Malia, and Knossos (Pomadère and Hilbert 2019; Tsakanika-Theohari 2006). Regarding the "Structural unit" and "Timber evidence," this step proved to be essential since, collectively, we were able to anticipate all possible situations one may face in the field.

Let us consider the example of two different structural units expected in the Aegean architecture: colonnades with timber columns and door frames. These structural units share 21 fields, mainly dedicated to the description of the structure, dimensions, as well as connections with other tabs (Space tab, Location tab). However, the former has an additional 18 fields specifically intended for its precise description (table 1). Following this logic, we personalized every sub-tab according to the architectural characteristics to be described (table 2)."

Colonnades with timber columns and door frames: fields in common	**Fields only found in the sub-tab "Door frame"**
• Code name (Unique Key) • Type of structural unit • List of related timber evidence • Location code • Space code • Chronological phase • Position in the space • General dimensions of the structural units • General dimensions of the saved part of the door frame • Preserved diameter • Preserved height • Preserved length • Preserved width • Description of the connection of the structural unit with other structural units • State of preservation when excavated • Current state of preservation • Type of destruction • Method of documentation • Description • Media legend and metadata • Bibliography	• Type of door (structural) • Number of door leafs • Type of door jamb bases • Shape of the door jamb bases • Presence of threshold • Type of threshold (architectural) • Shape of the threshold • Type of door (architectural) • Distance between bases and the horizontal timbers of the lintel • Presence of transversal horizontal timber on the stone base • Presence of transversal horizontal timber at other position of the timber frame of the door (intermediate) • Number of transversal horizontal timber at other position of the timber frame of the door (intermediate, lintel levels) • Position of vertical timbers at each jamb pier of the timber frame of the door • Number of vertical timbers at each jamb pier of the timber frame of the door • Number of horizontal timbers of the lintel • Type of lintel • Type of infill between vertical timbers • Plaster on the door

Table 1 : list of fields in common between the sub-tabs "Colonnade with timber columns" and "Door frame".

3a. Floor
3b. Flat roof
3c. Inclined roof
3d. Staircases
3e. Free-standing column
3f. Free-standing pier
3g. Pier inside or at the free end of a wall
3h. Colonnade with timber columns
3i. Colonnade with timber piers
3j. Colonnade with timber columns and piers
3k. Vertical timber reinforcement system of masonry
3l. Horizontal timber reinforcement system of masonry
3m. Polythyron, pier-and-door partition / cupboard partition
3n. Door frame
3o. Pier and window partition
3p. Window frame
3q. Partition wall with timber frame
3r. Parapet
3s. Unknown structural unit
4a. Imprint on mudbrick / mortar / plaster / ash
4b. Hole
4c. Chase / cavity on a wall
4d. Stone base without mortises or bedding
4e. Stone base with mortises and/or curved bedding
4f. Ashlar course with mortises and/or curved bedding
4g. Ashlar wall with mortises and/or curved bedding
4h. USUse-wear traces (door leaf / window leaf on floor / threshold / door sill / other)
4i. Socket-pivot hole
4j. Other timber element
4l. Reconstructed timber element

Table 2: list of sub-tabs personalized according to the architectural characteristics of their content

Integrating information on the kind of data collected and connected within the database would be valuable. Furthermore, including information about the implementation of the database, who was involved in it, and the researchers' experiences in its use would provide more context and insights for readers.

I am not sure I understand what is meant here. I attempted to address this by consolidating the sections on 'data security and accessibility' and 'data recording,' with

a focus on the user perspective (line 276). If the reviewer has suggestions to further enhance this aspect at this stage, I would be happy to consider them.

The authors should be mindful that not all readers may be familiar with technical concepts like ontology and semantics. Therefore, briefly explaining these concepts and providing references to relevant literature would make the paper more accessible and user-friendly.

I attempted to clarify this point by providing clearer definitions for the technical terms used in the article:

l. 138-139: “The significant accomplishment of Omeka S is its use of a set of design principles for sharing machine-readable interlinked data on the web, known as linked data standards for item description”

l. 139-142: “To ensure the longevity of data, each recorded item in the TiMMA database is described in Dublin Core format , including the title and textual description, within a set of concepts and categories referred to as an ontology and provided by default in Omeka S”

l. 167-170: “Notably, Omeka S also supports images in the iiiF format , a way to standardize audio and visual files from servers to different environments on the Web where they can then be viewed and interacted with in many ways. Therefore, it is possible to import images by copy-pasting their Uniform Resource Identifier (URI)”

l.215-216: “Data recording in Omeka S can be achieved in two ways. First, it is possible to import a Comma Separated Value(s) (.csv) file using the "CSV Import" module”

l. 229-230: “One major constraint of Omeka S, however, is that Primary Keys, intended to attribute a single identifier to each item, cannot be automatically incremented”

l. 245-247: “Omeka S provides the ability to download themes and modify them directly in the Cascading Style Sheets (CSS) file or using the "CSS editor" module”

While the results of using Omeka S within the Timma Project are presented, it would be beneficial to include specific examples or case studies to illustrate the outcomes more vividly, like, for exampleStructure 115 mentioned in the previous section.

Throughout the paper, reinforcing the connection between the project and the chosen tool, Omeka S, would provide a more cohesive and coherent narrative. Strengthening this relationship will underscore the significance of the study's findings and its relevance to the post-excavation project.

I took this suggestion into account and increased the number of case studies from the database. This was achieved by adding more images to better illustrate the discourse.

l. 119-123: “The creation of these tabs implied a significant amount of work in a preliminary phase. This was accomplished by gathering several specialists, members of the project, who had already worked on case studies at Ayia Triada, Malia, and Knossos (Pomadère and Hilbert 2019; Tsakanika-Theohari 2006). Regarding the "Structural unit" and "Timber evidence," this step proved to be essential since, collectively, we were able to anticipate all possible situations one may face in the field.”

l. 134: Table 1: list of fields in common between the sub-tabs “Colonnade with timber columns” and “Door frame”.

l. 205: Table 2: list of sub-tabs personalized according to the architectural characteristics of their content

l. 151-154: “Figure 4 – The "Value Suggest" module, linked to external vocabularies, avoids creating new lists of values and provides multiple choices by simply typing the first letters of the value to be inserted. In this example, it is used in connection with the Getty Museum’s Thesaurus Art & Architecture. Typing the "Quercus" species provides a wide range of taxa.”

l.173-176 : “This turned out to be extremely convenient for the Malia site, excavated under the auspices of the French School at Athens, as some of the archives have already been digitized. For instance, we could copy and paste the digitized images of the North Portico of the Palace at Malia from the TiMMA database using their iiiF link (fig. 5)”

l.177: Figure 5 – Importing a iiiF image from the Archimage database to the TiMMA database: The case of Spa27 (North Portico of the Palace at Malia).

l. 193: “Figure 6 – Linking a space item to a reference imported through the Zotero module: the case of Spa360.”

l. 248-254: “For example, in the case of TiMMA, we initially applied a theme developed by the Omeka team (fig. 8, A). However, we encountered a limitation due to our lack of skills in graphic design—specifically, only the first picture could be displayed for each item. As a solution, we installed a theme created by Federico Nurra and the Service Numérique de la Recherche of the French History of Art National Institute. This theme, inspired by the Roy Rosenzweig Centerrow and under Creative Commons license 4.0 (fig. 8, B) , not only possesses aesthetic qualities but also allows for the display of images in the form of a carousel, a very convenient tool for data consultation.”

l. 258-261: “Figure 8 – A) Theme originally adopted. In this theme, only the first picture of each item could be displayed. B) This theme offers the ability to display pictures in

a carousel; it also features an aesthetically pleasing design that enhances the appreciation of data during consultation."

l. 266: "Thanks to this tool, references are imported and described using the terms available in the "Bibliographic ontology." Their metadata can be consulted just like any other item (fig. 6). In the example below, the space item 360 (Palace at Pylos) is linked to the publication of this site through the Zotero module."

The paper would be more comprehensive with a discussion section that considers the results and their implications for the people involved in the study and potential users. Addressing the broader implications of the findings in general terms would enhance the paper's value.

While I completely agree with the importance of emphasizing the outcomes of the projects, as I attempted to do through the case studies further developed in the revised version, it was decided not to incorporate a discussion. This decision stems from the fact that we are not developing any new tools but rather leveraging existing functionalities. Regarding the individuals involved in the study and potential users, I sought to underscore this aspect in the section titled "Data Treatment: The Perspective of the User." However, should the reviewer have suggestions to further improve this aspect at this stage, I would be more than happy to consider them.

In the conclusions, it would be helpful to summarize and connect the main elements covered in the paper, along with comments on the findings. Additionally, offering insights into potential improvements and future directions related to the project and the use of Omeka S would be valuable.

I rephrased the conclusion, attempting to address the points suggested by the reviewer.

l.280-283: "To conclude, this case study demonstrates that Omeka S is indeed a suitable tool for managing post-excavation data. The TiMMA project encounters various challenges, including the participation of numerous individuals, the use of multiple languages, and, most significantly, the processing of diverse and voluminous data. Just like other web databases such as Heurist or AIR, Omeka S enables each user to work from their own laptop, in their preferred language, providing secure access and a user-friendly graphical interface designed for simplicity.

What sets Omeka S apart as a distinctive tool and particularly suitable for the TiMMA project is its modularity and adaptability to project needs. The community of volunteer contributors and developers dedicated to enhancing modules, themes, and Omeka S in general facilitates the tool's use in projects dealing with post-excavation datasets.

Building on TiMMA's experience, we would like to emphasize two aspects mentioned earlier. Firstly, the ease with which this tool allows for the use of Linked Open Data and open vocabularies described in standardized formats, such as the Art & Architecture Getty Museum, Cidoc-CRM, and others, along with open data tools like Zotero or the iiiF API. Secondly, the graphic interface can be changed by simply downloading pre-defined sets of themes, reducing the effort required for web graphic development. In the TiMMA project, it took some time to agree on the final theme, but changing the overall appearance was always straightforward, without encountering bugs.

The TiMMA project also encountered limitations in the software, suggesting the need for collaborations with other tools like Heurist and AIR, seen here as complementary tools. This was exemplified by the challenges faced in processing requests and the use of Heurist as a solution. We believe this serves as a meaningful lesson, demonstrating that rather than being in competition, various open web-based databases benefit from synergies, working together and fostering collaborations. In this sense, the TiMMA project is indebted to all the communities that made these tools available, bringing a thorough renewal to the field of research.”