

# Evolving from Castle to Virtual Space: The Case of Kyrenia Shipwreck Museum

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The past twenty years have seen a progressive innovation in the approach to the museum pedagogy, an increasing use of digital solution has more and more influenced the way the items, the history and the knowledge are transmitted. The architectural design aspect of such interventions is influenced by these new approaches increasing the need of knowledge about technology solutions owned by architects and cultural heritage experts. These rules are applied in many cases of new museum constructions, but often they must also be applied in existing museum exhibitions. In the case presented here, the Museum sector of the Kyrenia castle, located in the northern part of Cyprus, place of the exhibition of one of the first underwater archaeological finding, will be taken with all its specific issues and will be analyzed and presented as an exploring experience of new multimedia/traditional solutions, cataloguing some interesting and well promising solutions for media integration and online/site specific integration, together with contemporary materials/exhibition solutions in the aim of a renewal proposal capable of bringing in the digital age and enhancing the quality of the visiting experience of this interesting museum/castle. The case under scrutiny gives us the opportunity to reveal the layers of different phases of the castle as well as an antique shipwreck with the use of 3D digital survey of the architectural space, which concomitantly leads the way for the museum design solutions to cooperate with the digital technologies.

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## Key words:

Museum Design, Site Specific Museum, Digital Museum, Kyrenia Castle, Museum Pedagogy.

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## INTRODUCTION

This paper aims to shed light upon the contemporary museum design tendencies in historical sites and digital technologies used within while focusing on the design proposal of a shipwreck museum. Museology and museum design had been a hot debate since the late twentieth century. The changes in the ways of perception and progressing information technologies paved the way for the contemporary museum design to be more involved in digital platforms using “information and communication technologies” (ICT), where the main aim is to provide a better connection between the visitor and the collection of the museum. Not only affecting the tangible-material existence of the museum, digital platforms also alter the whole idea of the museum itself; the meaning of the museum along with its pedagogical purposes is under revision. On the other hand, when the museum is already in a given historical context, such as when it is built in historical heritage site, it becomes an obligation to provide the visitors to observe the existing building as a part of the collection. The case study in this paper is an example to this kind of museums; Kyrenia Castle Museum is located inside the medieval castle that has been used and went through different phases by different occupiers [Camiz et al. 2016; 2017].

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Not only the exhibition techniques of the collection matters in the design process, but the media used to work on and to represent the design idea also affects the process as well as the end-product. Through the international one-week-workshop held in May 2018 on the site, a thorough study was conducted by several study groups on understanding the current condition of the castle and proposing ways of documenting, restoring, and redesigning. The fundamental outcome of the workshop was the collaboration of the groups examining the castle with different means of expertise and interweaving the whole study groups to finalize the documenting, restoring, and redesigning of the castle. One of the common issues shared by the groups was the use of new technologies; the design groups as well included the current technological advances in their proposals, while obtaining their preliminary design materials regarding the existing condition of the castle from the lasergrammetry team, converting the cloud-base information into CAD format. After giving a brief overview on the existing literature about the contemporary museum studies and overall information about the formation of the workshop, one of the design proposals will be discussed in this paper, revealing the design approach, the materials and technological means used in the museum.

## AN OVERVIEW

Debates on the formation of museums and their role in the society has been continuing for the past decades [Paddon 2014; McCall and Gray 2013; Hooper-Greenhill 2007; 2004]. Recently, with the rapid advances in ICT, the museums became a suitable venue to apply new versions of presenting the collection and thus communicating with the audience. Yet in addition, it is even more favored to use new technologies in the cultural and historical heritage sites to promote and make the information more accessible [Empler 2018; Li and Liew 2015]. The new means of digital interaction technologies such as smart screens, “Virtual Reality” (VR) and “Augmented Reality” (AR) enhance the museum experience and improve the personalized experience of the museum space and the collection. The relation between the content of the exhibition and the context where it is constructed into is also a matter of issue, since the museums bear a certain meaning in their own existence. The architectural and exhibition design of the museum, thus, play an important role in this meaning, simultaneously affecting the communication between the collection, the (hi)story and the visitor. With reference to Papastergiadis’ perception of spatial practices on art and politics, McCulloch and Williams-Wynn state that

*“meaning is generated, in part, through the relationship between the physical layout of the exhibition space and the historical, political and social associations of the exhibition site.”*

[McCulloch and Williams-Wynn 2015, 284]

A worldwide acclaimed organization, ICOMOS (International Council on Monuments and Sites), was established to focus on the topics such as future of cultural landscapes, sites of memory, strengthening capacities of world heritage sites in different landscapes, cultures, sites and monuments. Regarding the fact that the museum in concern of this paper is located in a historical heritage site, it was equally important to look at the museum examples worldwide which are already built in existing cultural and historical heritage sites:

- Castelvecchio Museum in Verona, northern Italy, is also located in a medieval castle. Intervention by the architect Carlo Scarpa between 1959 and 1973 has enhanced the appearance of the building and the exhibited artefacts. Scarpa's language is visible in the details for doorways, staircases, furnishings, and even fixtures designed to hold a specific piece of artwork or emphasize the spatial details of the castle [Goffi 2016].
- Kolumba Museum is situated in Cologne, Germany, a city that was almost completely destroyed in World War II; the museum houses the Roman Catholic Archdiocese's collection of art which spans more than a thousand years. Peter Zumthor's design derives from the ruins of a Late-Gothic church by understanding and revealing the site's history, reflecting the meaning of the site on the architectural space [Norton et al. 2008].
- Museum of Science and Industry in Manchester, England, was designed by Walker Simpson Architects and it reserves a significant place in the city's history since the building is the world's first inter-city railway station. The architects' approach to the whole complex is formed around creating frames to view the scenes from the heritage site, including the power hall and the warehouse [Harvey 2004].

## THE WORKSHOP

Reading and Designing the Kyrenia Castle International Design and Seminar-Workshop that hosted by Girne American University in Kyrenia in the island of Cyprus, took place between 6 and 13 May 2018 with the participation of tutors and students from Özyegin University, University of Florence, Rome La Sapienza University, and Karadeniz Technical University. The main purpose of the workshop is to analyze Kyrenia Castle which has an ancient history and to come up with a design proposal for the shipwreck currently exhibiting inside of the castle in order to enhance heritage in the historical landscape. The workshop was formed by the distribution of participating teams around the main topics as design and survey at the beginning of the process. Design teams' processes are intended to be based on the data obtained from the survey team, thus increasing the applicability of the design interventions.

Tutors and students of the design team were divided into three different groups to work on their own proposals during the workshop. In addition to their groupings, the survey team has been consisted of several sub-teams of those who will work with drone, to learn photogrammetry and lasergrammetry techniques from tutors and to apply into the castle, those who will contribute to the analysis of documentation of the castle walls and the material analysis, and 3d laser digital survey techniques with the special equipment.

Following the identification of the groups, the series of seminars, which consisted of the methods and techniques to be used later, displayed successively. These seminars were supported by presentations of various researchers and professionals in from different countries, universities and industries using similar methods and documentation.

Cooperation and time schedule in this sense posed a significant role to achieve this kind of collaborative work. Some data needed to be completed, such as cross-sectional, visual, and aerial photography, by the survey team initially and to be transferred the work done for better processing of the design team with them. Although this seems to be a difficulty at first glance, the team members were able to complete the job within the defined time, and this could be overcome by smart planning at the beginning of the workshop.

## THE MUSEUM DESIGN

### Current state

The museum is currently located on the northeastern side of the castle and consists of five cells where the previously demolished sixth cell's plan is still visible for the visitor's eyes. The fifth cell is currently hosting one of the oldest trades shipwreck of the world; the Kyrenia Shipwreck. According to the museum's present organization, the visitors are starting their tour from the first and second cell which are interconnected and hosting Vrysi settlement and artefacts exhibition. Later they have to exit out and again enter the third cell for the excavation exhibition and fourth (interconnected to third) for shipwreck findings. Finally, after seeing the findings such as amphoras, curse tablet, grain mills; visitors climb up to the fifth cell for seeing the shipwreck (only entrance for the visitors).

### Problems defined

According to the main observations made by the design team, after thoroughly investigating the current state of the museum and the visitor behaviors; this circulation flow was detaching visitors from the exhibitions because there was no clear path to follow. The visitors were roving around (disorienting, interrupted and not regulated movements; exiting and re-entering, going up and down) without proper narrative flow for catching and holding their attention; without knowing which content they will see next in the following cell. Finally, when they reach the shipwreck cell, through a narrow prosaic and imperceptible staircase, a catwalk makes the visitors walk around to investigate the shipwreck from above. Museum officials explained that the biggest problem of the museum is actually the current state of this cell, where the design proposal accentuates the significance of this cell by extruding the casing towards the main courtyard of the castle.

The current open exhibition of the fragile ship makes it vulnerable for the dust that old castle ceiling create, human factors and all the possible natural occurrences. Another issue was the lack of space for exhibiting shipwreck findings. Later, the museum officials mentioned that there are many more amphoras sitting in the ill-conditioned storage waiting to be exhibited. Moreover, even the artefacts on exhibitions are not preserved properly like the shipwreck. The third concern was the visitor's experience; exhibition techniques are dated and not efficient enough

to tell the story of the exhibitions. As mentioned before, the visitors seem to leave the Kyrenia shipwreck castle without having the information that the museum tried to provide.

## Design proposal

The design team, consisted of two architecture students and two tutors, firstly focused on easing the circulation flow in order to excel in the narrative. (Fig. 1) Every two cell is connected to each other from the first floor but also all cells are connected with window-passages to each other. Therefore, all the existing openings in the museum are used in order to provide uninterrupted circulation (keeping the visitors always inside the museum). The second entrance is also used to provide a direct passage to the temporary exhibition that the museum administration demanded. Moreover, elevated glass floor is designed by the team for creating additional exhibition surface to display the original artefacts in a more controlled area. In the fifth cell, the projected video of the reconstructed ship helps the visitors to imagine the ship sailing in the Mediterranean Sea and for more hands on experience the smart screens with remote touchpads provided in order to give more elaborate information and stories of the shipwreck (Figs. 2 and 3) Although the preliminary aim was to introduce VR headsets and a smartphone application to provide virtual experience through AR and QR code, the time limitation of the workshop withheld the design team to propose such interventions. Meanwhile, the sixth cell is erected again to serve the needs of providing better storage for amphoras which will be also used as a surface for exhibiting them. Moreover, a museum shop is suggested here, which will be one of the major sources of income to keep a museum running. Also, wet areas are located in this part with using already existing toilets infrastructure systems.

The sixth cell's material choice is perforated sheet covering, in order to catch visitors' attention from the outside of the museum. (Fig. 4) This material is used because of its affordable, weather resistant, sustainable characteristics, therewithal its humble features such as color choice and its pattern, blend in with the porous stone walls of the castle without getting ahead of the castle itself. In order to give more space for shipwreck exhibition, the wooden partition is removed and an extension is suggested for circulation. The perforated sheet is again used for this pop out extension, letting the intervention made by the design team to be read from the outside. With this extension, the visitors are starting their shipwreck experience from the beginning of the catwalk in the upper floor at the fourth and fifth cells' connection door and going down at the Z plane (pop out extension), finishing their journey at the zero level; entering to the museum shop with another portion of amphoras exhibited (the sixth cell).

## REMARKS

This study looked at the current debates on the museum design in a heritage site and worked on the design proposal of the shipwreck museum inside the Kyrenia castle. (Fig. 5) Designing a museum in a heritage site, regarding the existing structure, the collection with varying scales, and the creation of a narrative for the visitors, is a challenge for the architects and exhibition designers. However, documenting, restoring, redesigning, and storytelling of the museum improves with the usage of digital technologies, also it heightens the communication between the visitor and the exhibited artefacts while bettering the architectural space as an end product.

The design intervention was a key element of the whole process due to the fact that its entire teams were dedicated to making workshop reach a conclusion on the way through the reasonable and respectful design proposal in the special historic environment and trying to process the data in the best way. Particularly the significant point in this workshop was data sharing among teams, hence between 'design' and 'digital survey'. Otherwise, it would reduce the efficiency by prolonging the process if the labor sharing would not happen during the workshop among teams. Another noteworthy point was the quality of the surveys and the use of digitally based techniques. This also facilitates the accuracy, transferability and storage of data while providing benefit in terms of both time and labor.

For prospective researches, this study is regarded as a basic exemplary model in approaching the design process by all the aspects of the design tools, on-site data, conceptual configuration, and digital representation.

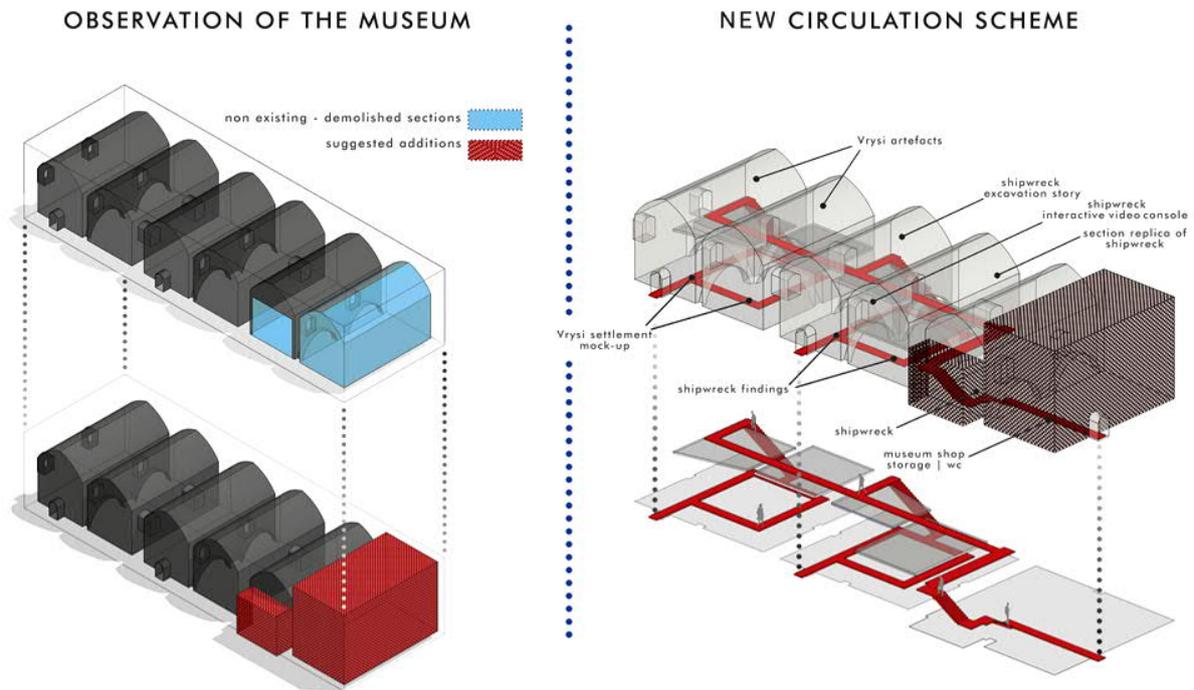


Fig. 1. Observation of the current state of the museum and the new circulation proposal

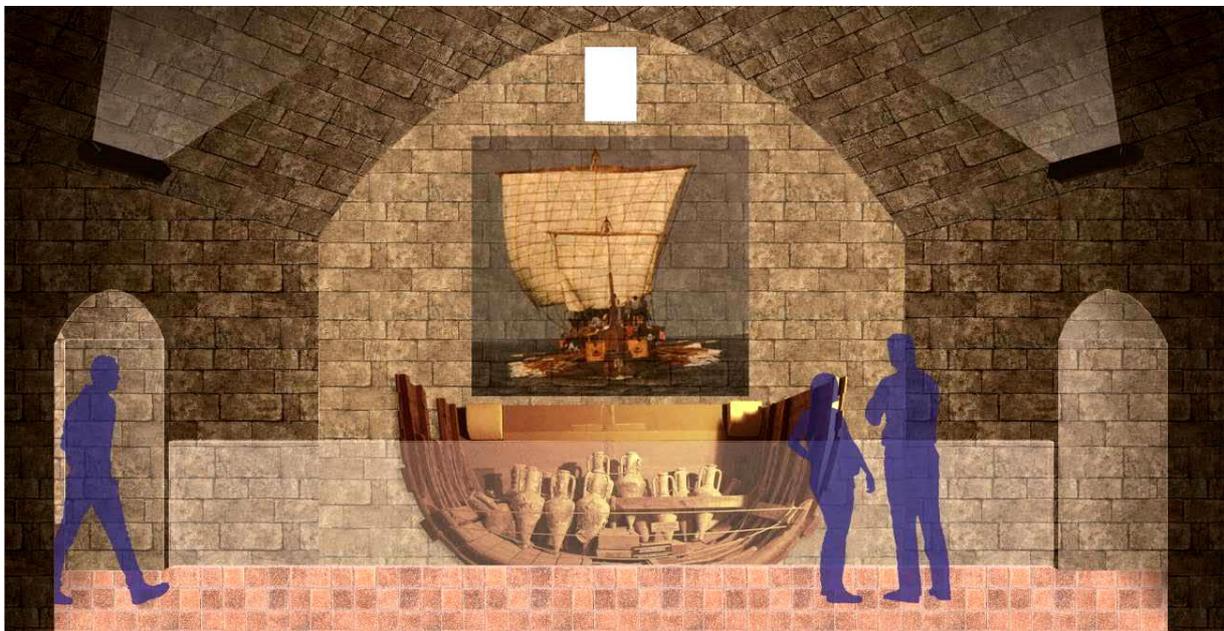
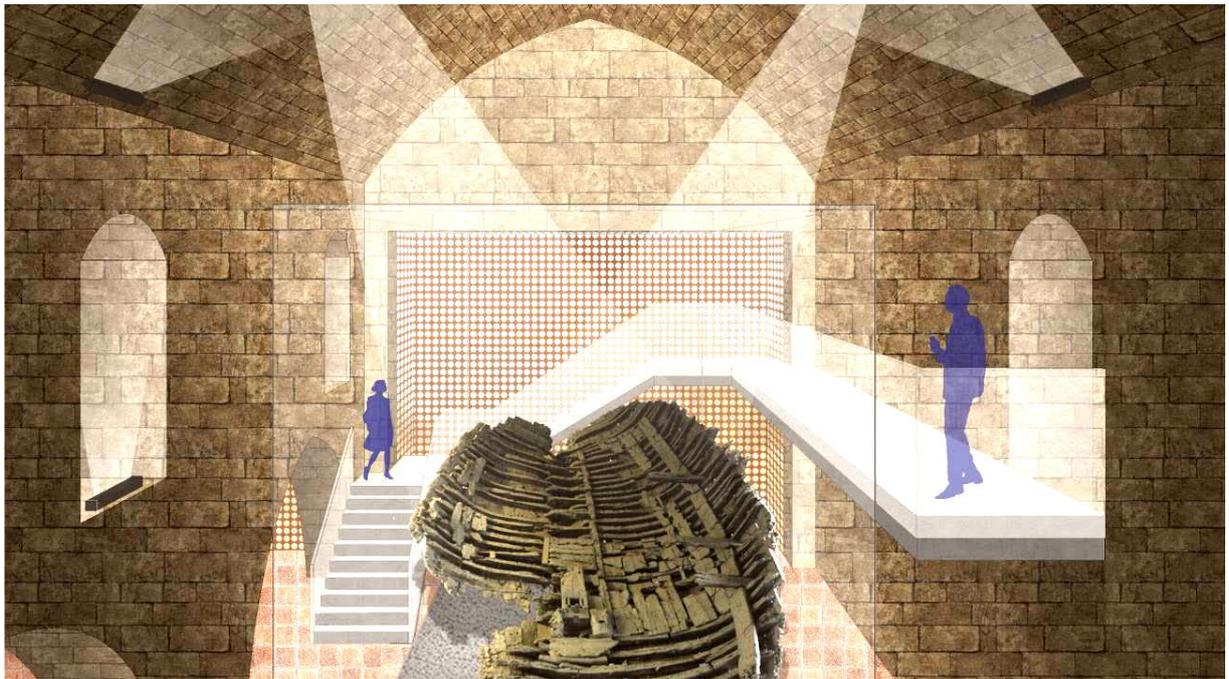


Fig. 2. Mock-up ship section and genuine amphorae, with a 3-minute-video projected above



*Fig. 3. Smart screen with remote touchpads presenting the interactive storyline*



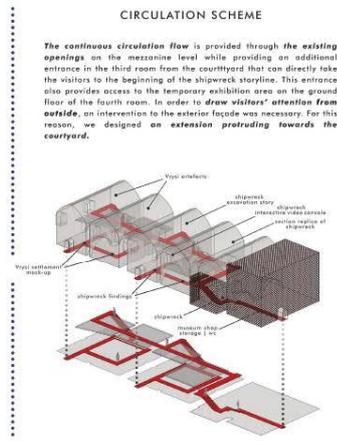
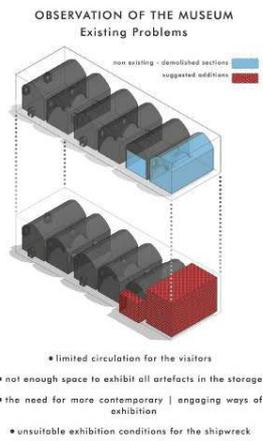
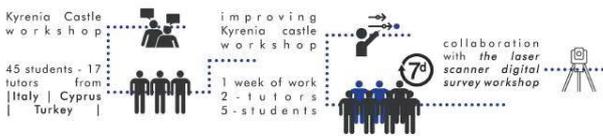
*Fig. 4. Kyrenia shipwreck in its glass casing – perforated metal sheet extrusion is seen behind*

# EVOLVING FROM CASTLE TO VIRTUAL SPACE: THE CASE OF KYRENIA SHIPWRECK MUSEUM

## Designing The Museum in Kyrenia Castle

The Museum section of the Kyrenia castle, in the town nowadays named Girne, North Cyprus, is the place of the exhibition of one of the first underwater archaeological finding. This museum is taken with all its specific issues and it is analyzed, presented as an exploring experience of new multimedia/traditional solutions, cataloguing some interesting and well promising solutions for media integration and online/site specific integration, together with contemporary materials/exhibition solutions in the aim of a renewal proposal capable of bringing in the digital age and enhancing the quality of the visitors' experience of this interesting museum/castle. The case under scrutiny gives us the opportunity to reveal the layers of different phases of the castle as well as an antique shipwreck with the use of 3D digital survey of the architectural space, which concomitantly

leads the way for the museum design solutions to cooperate with the digital technologies. For the shipwreck exhibition, two main display units were designed for object and poster display. Also, smart screens with remote touchpads provide visitors hands-on experience while giving information about the segments. In order to provide monitored areas for displaying the original artefacts, we created elevated glass floors so that an additional surface becomes available to the visitor's experience. The continuous circulation flow is provided through the existing openings on the mezzanine level while providing an additional entrance in the third block from the courtyard that can directly take the visitors to the beginning of the shipwreck storyline. This entrance also provides access to the temporary exhibition area on the ground floor of the fourth block.



shipwreck in glass casing - perforated metal sheet extrusion



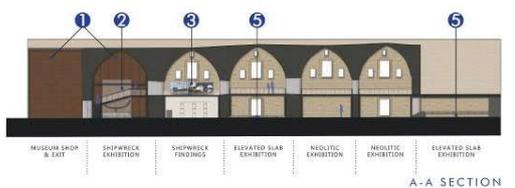
smart screen with remote touch pads - interactive storyline



mock-up section & genuine amphoras - with 3 min. video fiction



shipwreck findings - looking from below



- 1 perforated metal sheet cladding to protect sensitive shipwreck and have controlled climate with a 3-layer glass surface leads providing a porous effect where the western sun weakly leads through in a controlled way
- 2 glass ship casing to protect the fragile shipwreck from visitors and possible seismic pollution
- 3 smart screens with remote touchpads to provide visitors hands-on experience while getting information about the segments of the museum, using the data of 3D survey
- 4 animated video projection to explain the technology of the ancient ship
- 5 elevated glass floors to provide additional controlled areas for the display of the original artefacts
- 6 display units & airtight casings to protect the exhibited objects and provide more efficient display units

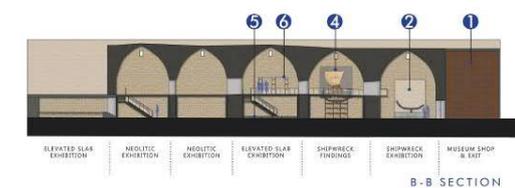


Fig. 5. The poster (original in UNI A0 format) as presented in occasion of the Cultural Heritage and New Technology / Visual Heritage Conference, Vienna, 2018

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The recent digitally reconstructed model of Kyrenia Shipwreck can be viewed and interactively navigated in the following link: <https://sketchfab.com/3d-models/the-kyrenia-shipwreck-d573f1c02483453bab78d166c49070eb> (survey and 3D modeling by Giorgio Verdiani and Francesco Capparelli from the workshop’s survey team)

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