

D 3.3.1

ACTION PLANNING METHODOLOGY AND TRAINING MATERIAL DEVELOPED BASED ON A JOINT TOOL

DIGITAL TOOLS FOR UNDERWATER
ARCHAEOLOGICAL SITES

AGENDA

1 December 2020

14.00-17.00

Introduction to UnderwaterMuse project and the underwater archaeological heritage of the High Adriatic and presentation of the underwater sites investigated by Ca' Foscari University in the lagoon and in the sea

- R. Auriemma 14.00-15.00
 - C. Beltrame, Costa, Medas 15.00-16.30
 - Discussion
-

2 December 2020

9.30-12.30

Data acquisition and data processing of shipwrecks and underwater sites: documentation, modelling, hydrostatic.

- E. Costa, C. Beltrame 9.30-10.30
- P. Tanner 10.30-11.30
- S. Parizzi 11.30-12.30

14.00-17.00

Documentation, photogrammetry, GIS and WebGIS

- E. Costa 14.00-15.00
 - C. Balletti 15.00-16.00
 - P. Perozzo 16.00-17.00 Possible alternatives to GIS for a georeferenced web map
-

3 December 2020

9.30-12.30

Digital exhibit at the Museo Nazionale di Archeologia del Mare of Caorle.

- P. Perozzo 9.30-11.00 Digital installation at the maritime archaeology museum of Caorle
- C. Barbiani 11.00-12.30

THE PROJECT UNDERWATERMUSE AND THE UNDERWATER ARCHAEOLOGICAL HERITAGE IN ADRIATIC SEA

Rita Auriemma

UNDERWATERMUSE

The project UnderwaterMuse and the underwater archaeological heritage in Adriatic sea

*Through interpretation, understanding;
through understanding, appreciation;
through appreciation, protection*
Freeman Tilden
Interpreting our Heritage

UNDERWATERMUSE WORKSHOP
DIGITAL TOOLS FOR UNDERWATER ARCHAEOLOGICAL SITES
Rita Auriemma (LP – PP4)



Elisa Costa

Carlo Beltrame

Rita Auriemma

Dominik Žanič

Giulio Scrima

Unmute Start Video Security Participants 59 Chat Share Screen Record Reactions Leave

UNDERWATERMUSE


TORRE SANTA SABINA 2020
GALEA MAGNA



Rita Auriemma



Elisa Costa



Rita Auriemma

Davide

Dominik Žanić

Carlo Belframe

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Zoom Meeting You are viewing Rita Auriemma's screen View Options

Elisa Costa Davide Dominik Žanić Carlo Beltrame

Rita Auriemma

In situ preservation: methods of physical protection (Pešić 2011)

Various methods of physical protection safeguard sites from physical damage and to a certain degree may limit the damage caused by natural factors.

When selecting a method of protection we must take various parameters;

- 1. general characteristics of the site itself:**
 - the type of site (harbour, shipwreck, structures, buildings, artefacts and human remains, objects of prehistoric character, aircrafts and vessels),
 - the predominant type of material at the site (wood, ceramics, metal, glass)
 - the depth at which it is situated
 - the level of threat to the site
 - its state of preservation
 - its accessibility to the general population
 - the historical and archaeological value of the site
- 2. the conditions affecting the site and influencing its survival or degradation**
 - physical, biological and chemical factors
- 3. possibilities for and feasibility of in situ protection, and the financial framework**

Participants (73)

Find a participant

- EC Elisa Costa (Co-host, me)
- PP Paola PEROZZO (Host)
- RA Rita Auriemma (Co-host, guest)
- CB Carlo Beltrame (Co-host, guest)
- A Alessandra (Guest)
- AP Alessandra Picci (Guest)
- AA Alessandro Alessio Ruccho (Guest)
- AT alessandro tagliapietra (Guest)
- AC ALESSIO CALANTROPIO (Guest)
- AL Alice Lucchini (Guest)
- AF ALINA FABBRO (Guest)
- AT Anestis Tsiris (Guest)
- AV Angelica Vian (Guest)
- AZ Angeliki Zoe Kotzampourouni (Guest)

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Scrivi qui per eseguire la ricerca

14:46 01/12/2020

UNDERWATER ARCHAEOLOGICAL SITES IN THE VENICE LAGOON AND SEA

Carlo Beltrame, Stefano Medas

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Elisa Costa Carlo Beltrame Rita Auriemma Davide FRANCESCA ZU... Dominik Žanić

Underwater excavation, put in dry, documentation and protection of wrecks on site

San Marco in Boccalama, southern lagoon

The history of the site and the discovery

The existence of the medieval monastery of San Marco in Boccalma was documented by historical sources and by historical cartography.

The monastery was used for the burial of the poor people during the plague epidemic in 1348.


In the XV century the monatory was in ruins because of the erosion and subsidence and between XVI and XVII century the island was submerged, therefore definitively lost.

The site has been investigated by Ernesto Canal between Sixties and Nineties of the past century, but the wrecks was discovered during the surveys carried out in 1996 and 1997 within the activities of the Magistrato alle Acque – Consorzio Venezia Nuova with the scientific direction of the Archaeological Superintendency of Veneto.

The excavation, documentation and protection works have been carried out in 2001 and a short conservation status control campaign in 2003.

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Elisa Costa  Rita Auriemma Davide FRANCESCA ZU... Dominik Žanić

Underwater excavation, moving out of the water, dry documentation and final protection of a wreck.

The «Molo Sud» Wreck

The wreck was discovered during the MOSE works at the inlet or port-canal of Malamocco, between 3 and 6 m of depth. In 2007, with a 9 months campaign, it was excavated, moved out of the water, documented by 3D laser scanner and photogrammetry and finally protected on a different site.

Moving the wreck was necessary because it hindered the progress of the works (the construction of a pier).

The discovery of coins inside the wreck attests that the shipwreck occurred after 1861 but not later than 1870, when the construction of the new piers was completed. Actually the historical cartography shows that the site of the shipwreck is located inside the old inlet, consisting of a natural canal turned southward. The wreck can be probably identified with a brig.

Archaeological campaign was carried out contextually to the MOSE works, with careful for the water traffic of pontoons, dredgers and others working boats.



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Elisa Costa Carlo Beltrame Rita Auriemma Mónica Grosso Tea Katunaric FRANCESCA ZU... >


Underwater excavation and documentation in lagoon shallows

About the feeler / probe (by hand)

It is a 3 m long and slim T shaped steel pole («sondino» in Italian) that can be used by operators in standing position and walking in the shallows. The 1,5 m long type is used only when diving on the lagoon floor.

The most efficient way to use this tool is by walking in short steps along predefined alignments. It is possible to proceed in this way only in waters deep between 0,50 and 1,50 m. The minimum level of 0,50 m is necessary to exploit the hydrostatic buoyancy, in order not to sink too much into the mud floor; the maximum level of 1,50 m is due to the operational ability of a medium height man.

In this condition it is possible to push the feeler up to 2,5 m or more under the lagoon floor.



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DIGITAL ACQUISITION AND PROCESSING OF ARCHIVE AND LEGACY DATA ON GRADO I SHIPWRECK

Elisa Costa



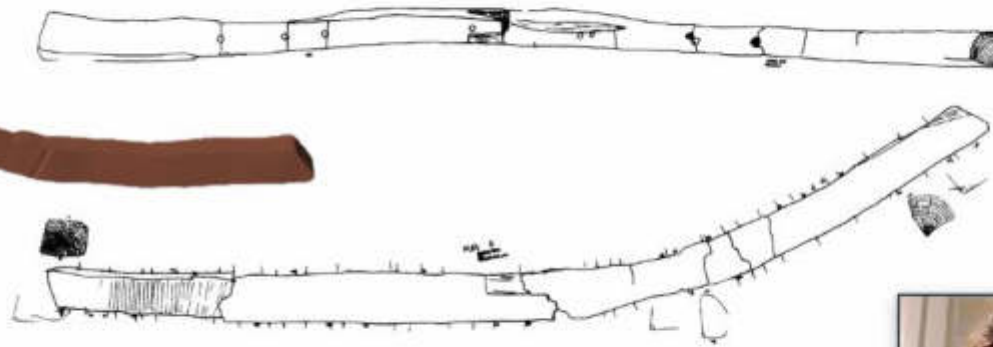
THE GRADO I SHIPWRECK



THE GRADO I SHIPWRECK



3D reconstruction scale 1:1

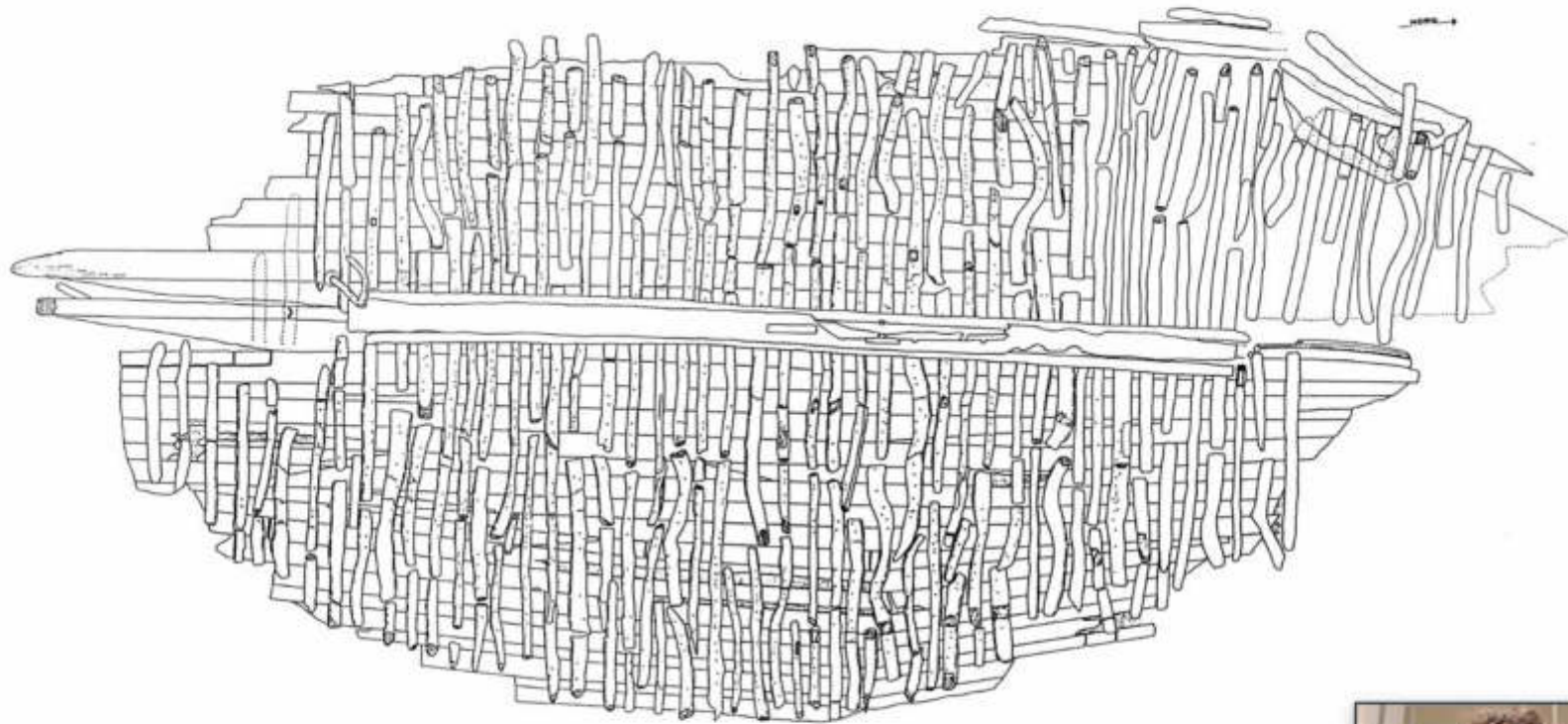


Perspective



DATA PROCESSING: *IN SITU* SHIPWRECK – THE HULL

Plan of the site *in situ* - 1999



DATA PROCESSING: *IN SITU* SHIPWRECK – THE HULL



DATA PROCESSING: *IN SITU* SHIPWRECK – THE HULL

09lugio-COO.psx* — Agisoft PhotoScan

File Edit View Workflow Tools Photo Help

Workspace (6 chunks, 350 cameras)

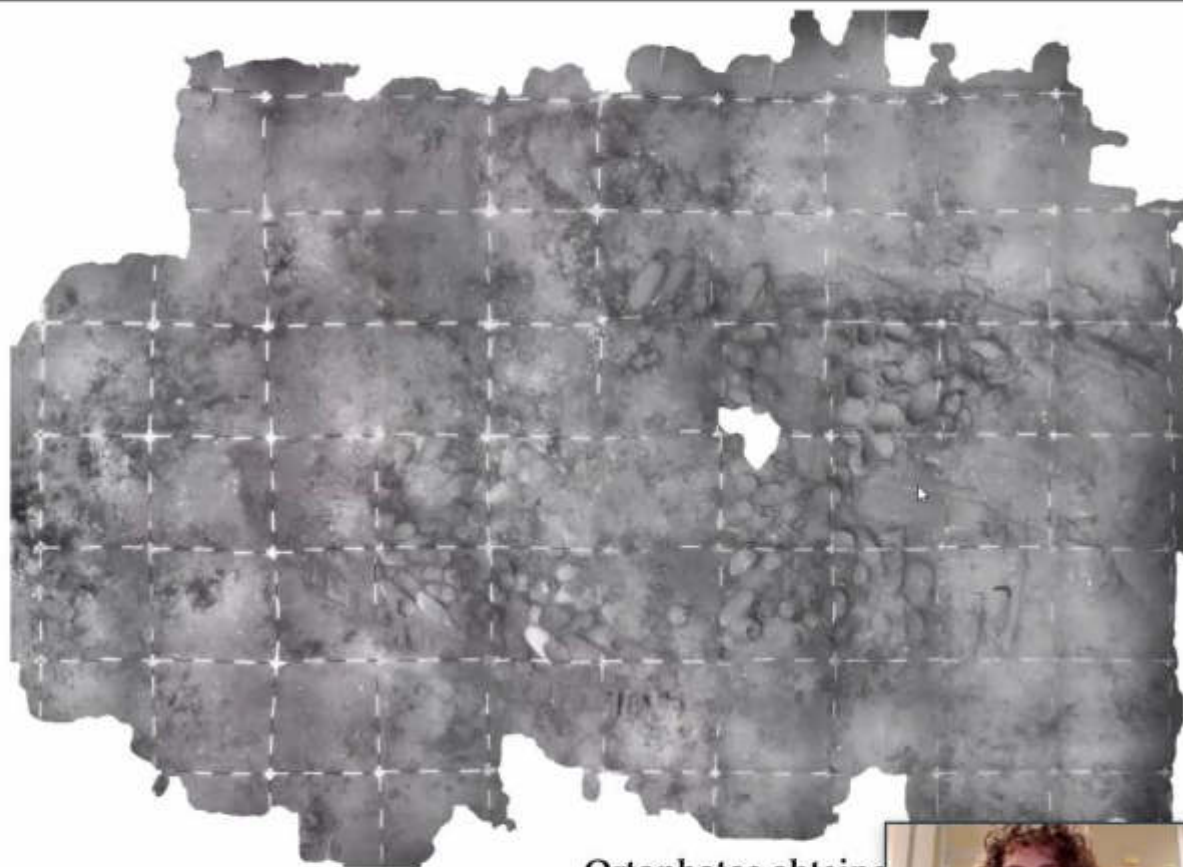
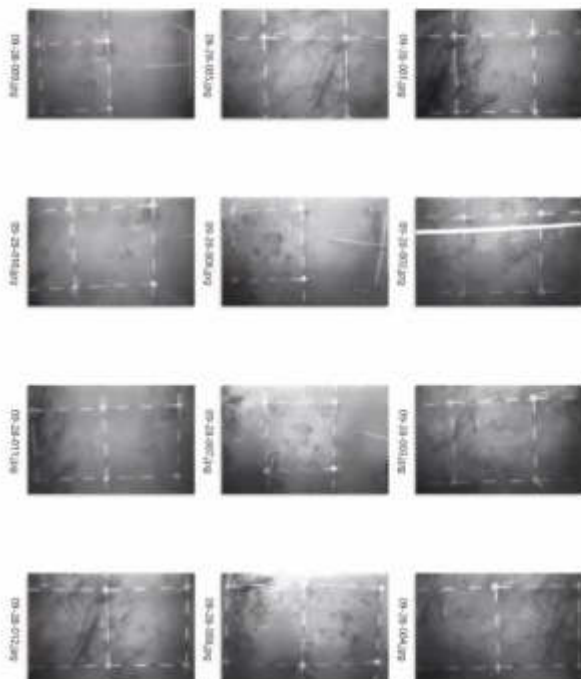
- > 26 COO (34 cameras, 70 markers, 3,016)
- > 21 COO (30 cameras, 70 markers, 4,008)
- > **24 COO (37 cameras, 70 markers, 7,116)**
- > 27 COO (38 cameras, 69 markers, 6,296)
- > 28 COO (36 cameras, 70 markers, 4,743)
- > Merged Chunk (175 cameras, 70 markers)

Model

Model: 1.37130 - version: 64280

DATA PROCESSING: *IN SITU* SHIPWRECK – THE CARGO

Some of the analogic images
09 July 1990

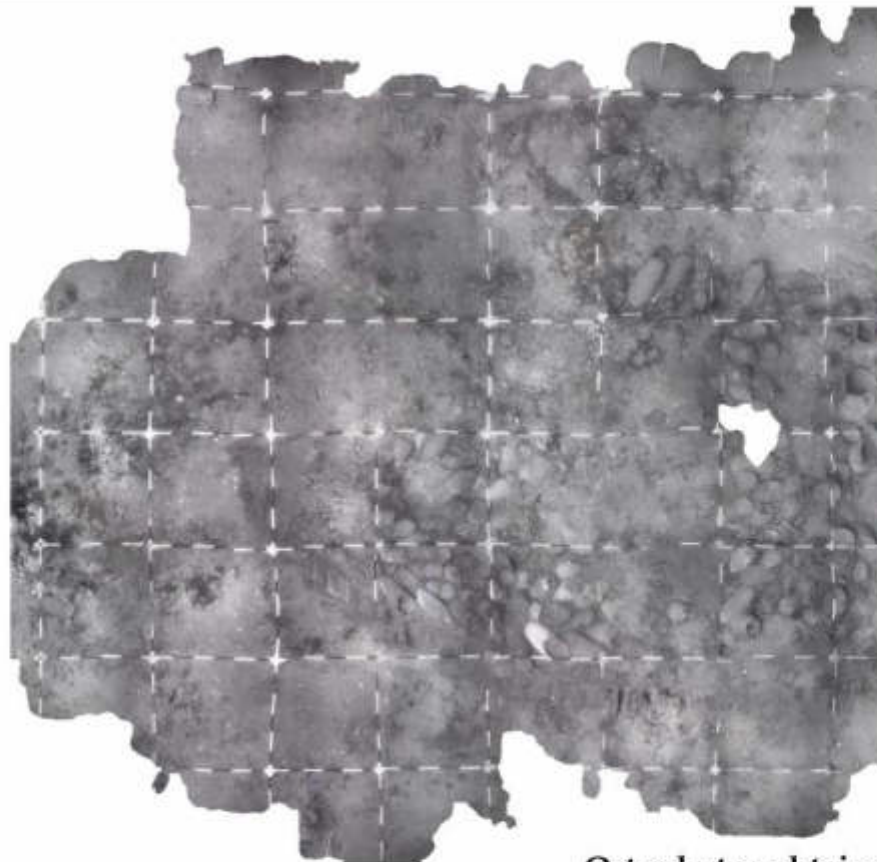
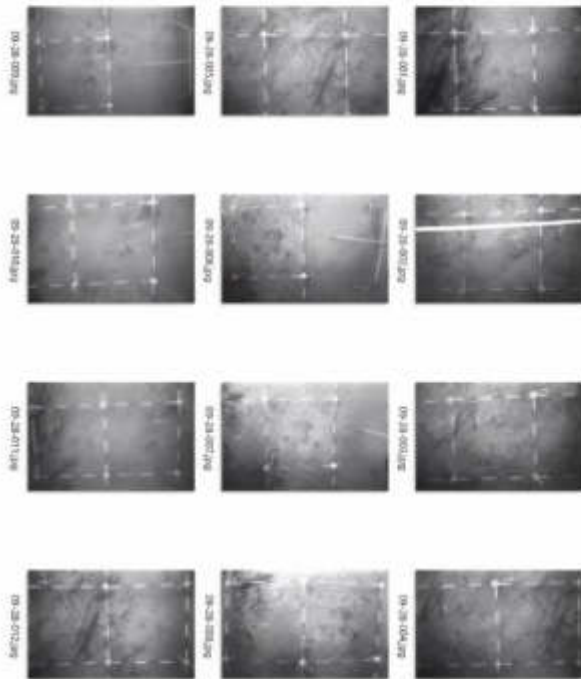


Ortophotos obtained
3D photogrammetry



DATA PROCESSING: *IN SITU* SHIPWRECK – THE CARGO

Some of the analogic images 09 July 1990



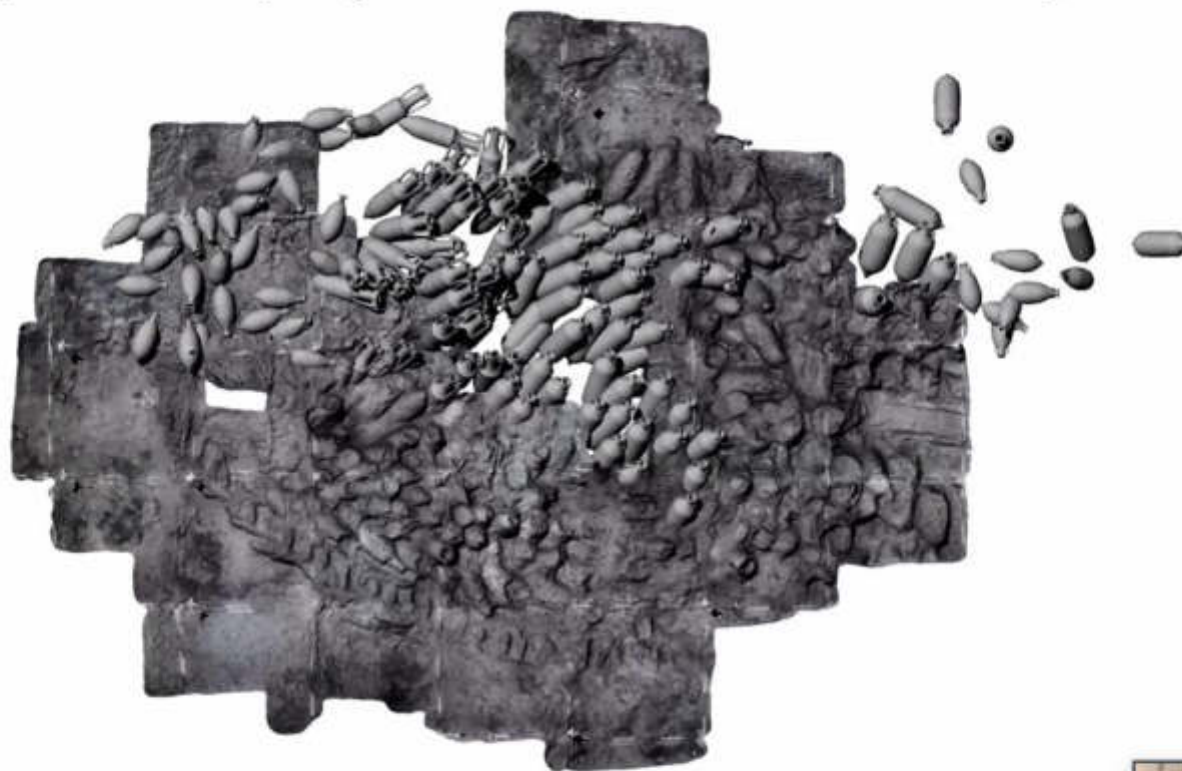
Ortophotos obtained
3D photogramme

Paola PEROZZO
Carlo Beltrame
Elisa Costa
Pat Tanner
Dominik Zanic

DATA PROCESSING: *IN SITU* SHIPWRECK – THE CARGO

Riattiva l'audio
 Avvia video
 Sicurezza
 Partecipanti 39
 Chat
 Condividi schermo
 Votazione in corso
 Registrazione
 Reazioni

Integration of the 3d photogrammetric model with the reconstructed amphoras



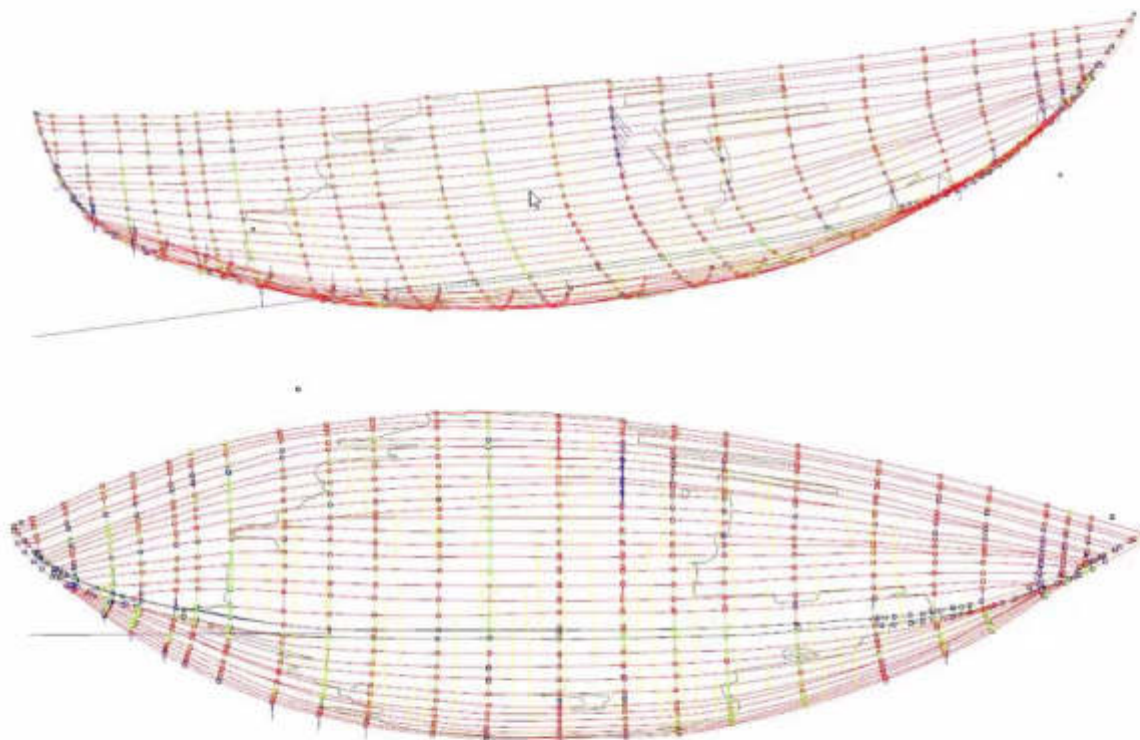
DATA PROCESSING: *IN SITU* SHIPWRECK – THE CARGO

Integration of the 3d photogrammetric model with the reconstructed amphoras



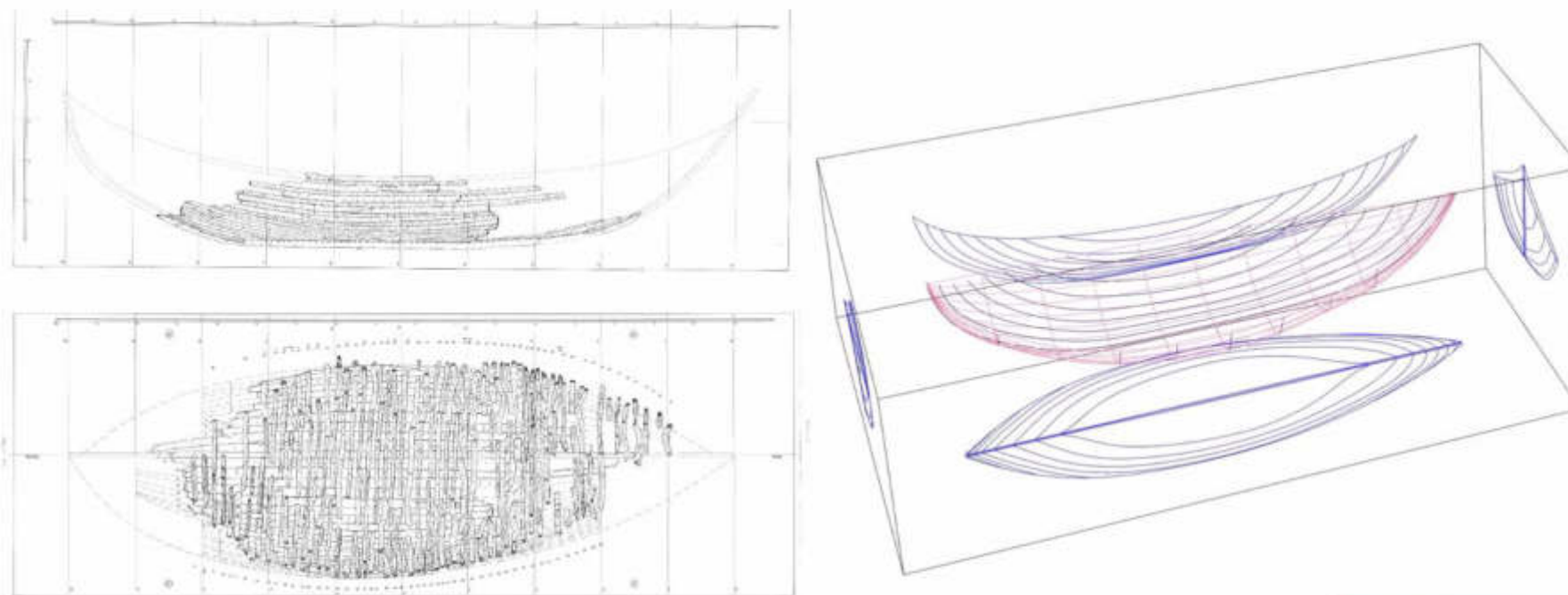
DATA PROCESSING: *IN SITU* SHIPWRECK – THE CARGO

Faro Arm survey of the cardboard study model



DATA PROCESSING: THE RECONSTRUCTED SHIPWRECK

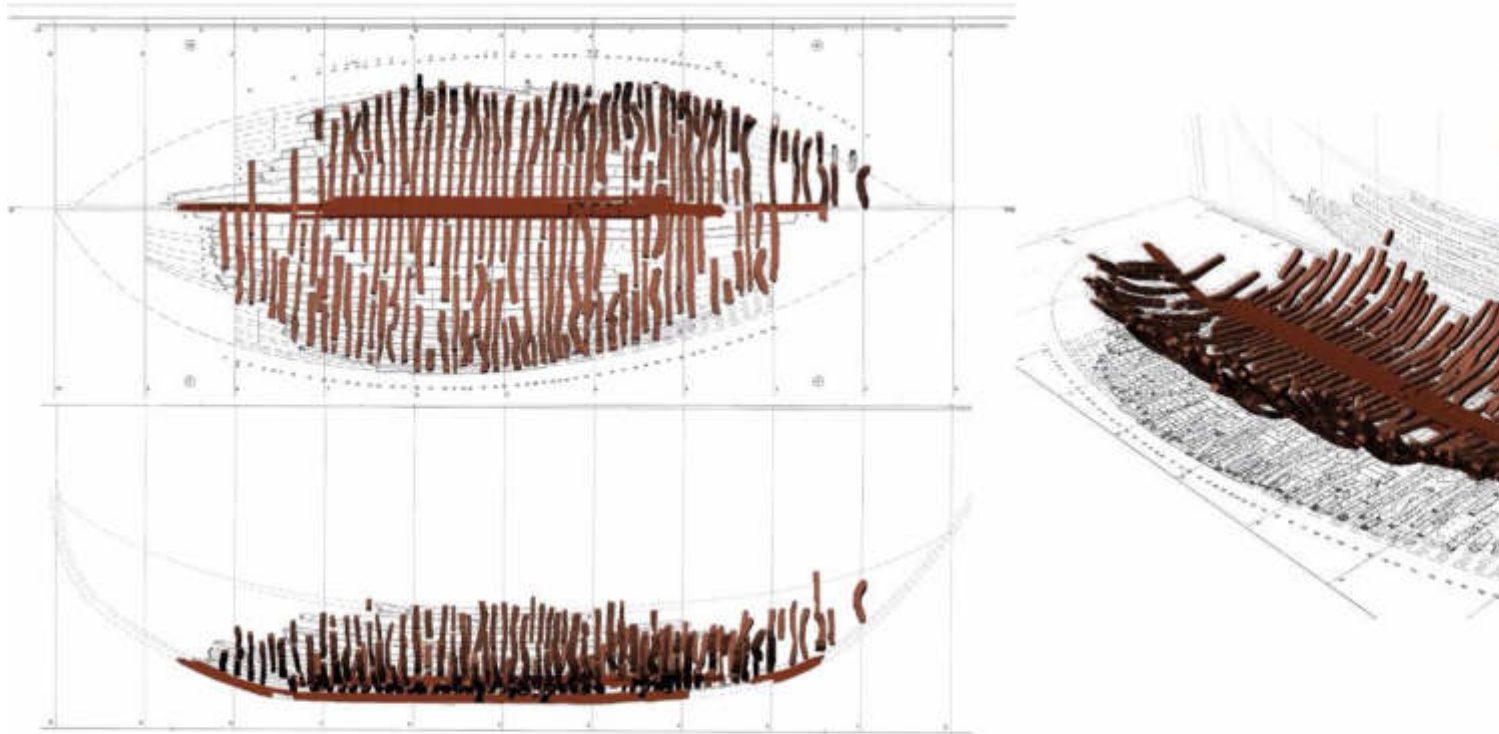
Reconstruction of the hull lines with digitalization of the 2D drawings



DATA PROCESSING: THE RECONSTRUCTED SHIPWRECK



Rototraslation of the wooden element in the reconstructed hull lines



Paola PEROZZO

Carlo Beltrame

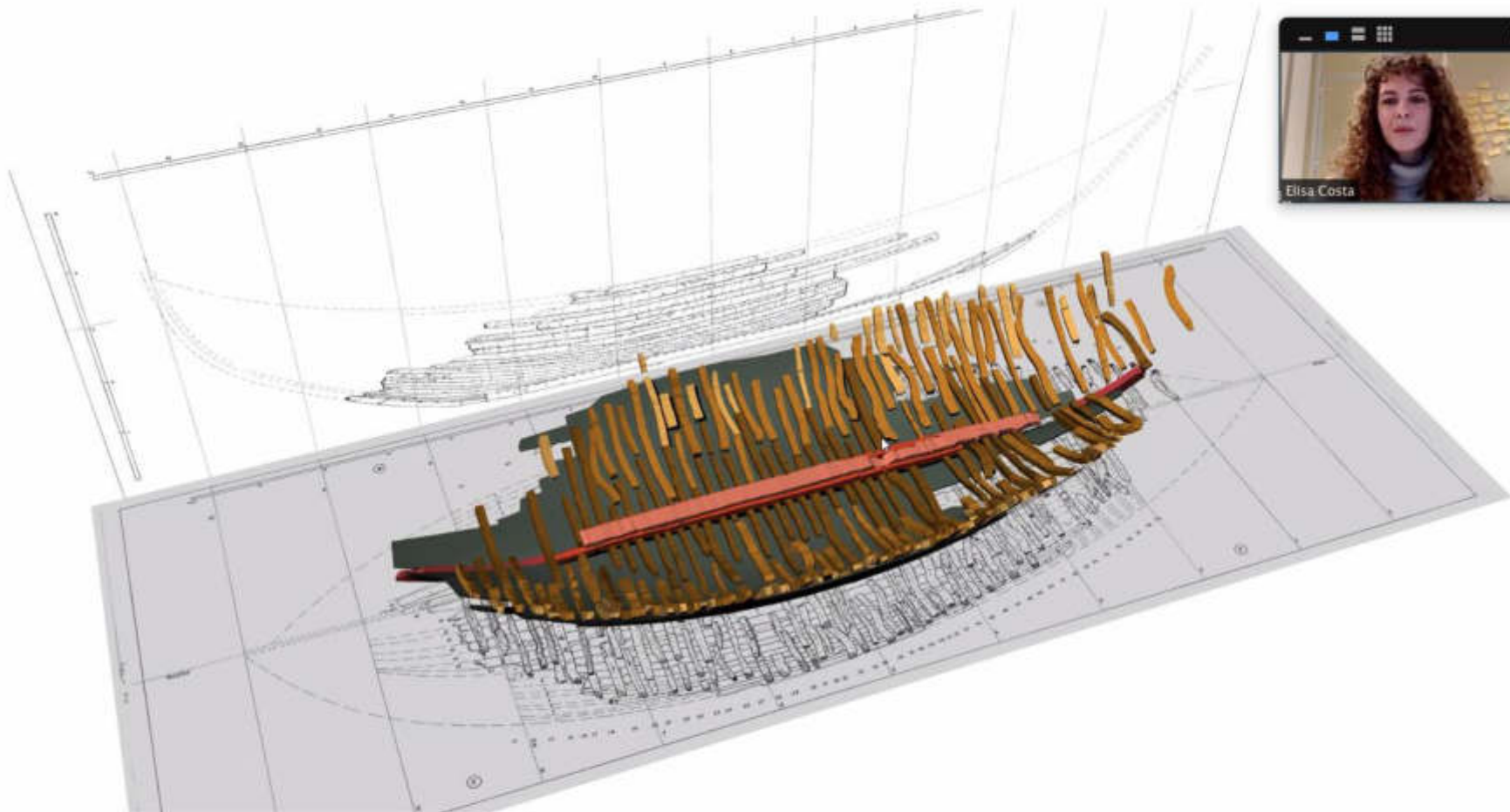
Elisa Costa

Pat Tanner

Elena González Manrique...

DATA PROCESSING: THE RECONSTRUCTED SHIPWRECK

Riattiva l'audio
 Avvia video
 Sicurezza
 Partecipanti 40
 Chat
 Condividi schermo
 Votazione in corso
 Registrazione
 Reazioni
 Lascia

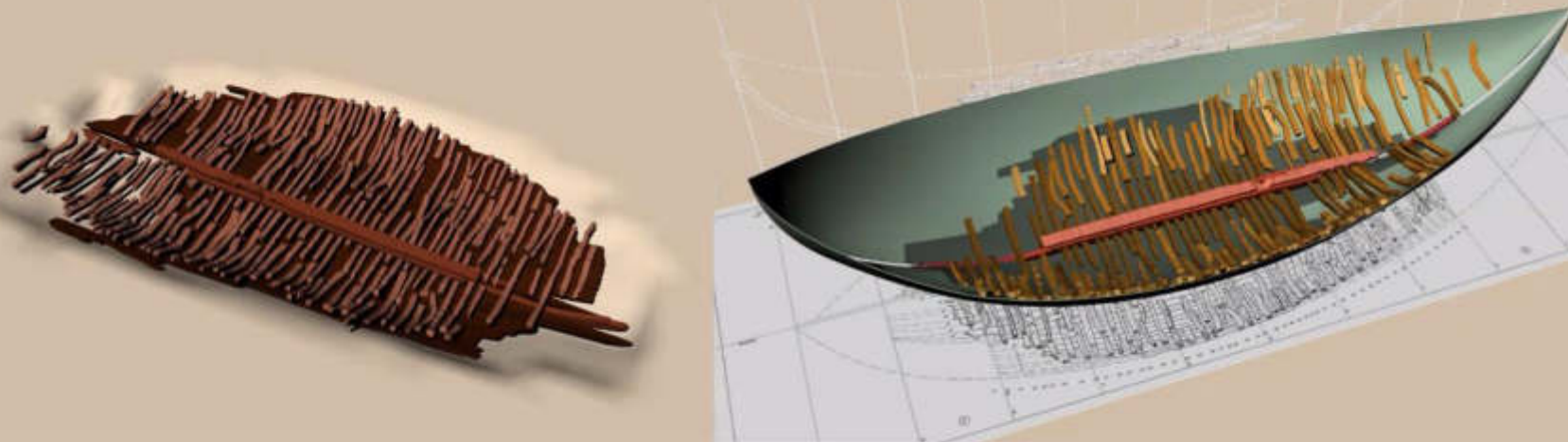
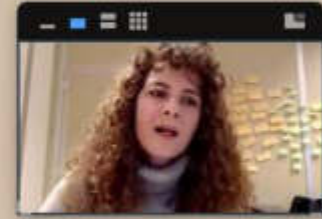


DATA PROCESSING: THE RECONSTRUCTED SHIPWRECK

Riattiva l'audio
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 Sicurezza
 Partecipanti 40
 Chat
 Condividi schermo
 Votazione in corso
 Registrazione
 Reazioni

Concluding:

- Essential requirement of the recovery of legacy data
- Digital technologies and innovative solution to resolve problems
- New studies and visualization of a site not available and never exposed to the public



3D DOCUMENTATION, DIGITAL RECONSTRUCTION AND HYDROSTATIC ANALYSIS OF ARCHAEOLOGICAL BOATS AND SHIPS

Pat Tanner



Full-scale replicas are then constructed as a means to validate the proposed reconstruction. However, as noted by Ravn *et al.* (2013:239) drawings sometimes have to be altered due to the fact that oak planks do not behave in exactly the same way as the paper or cardboard used in the scale model.

Kraka Fyr a replica of Skuldelev 6 was built in 1998, but an error in the stem meant a second replica, *Skjoldungen* had to be rebuilt with a different interpretation of the bow and stern design.

Skuldelev 3 now has three replicas constructed – each with differing interpretations.

Talking: Pat Tanner

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Project	Date	Site Survey	Timbers Recorded	As Found	Initial basis for Hull Form	Development of Reconstruction	Validation of Reconstruction
Kalmar	1932	Traditional 2D offsets survey	2D Offsets	Survey Drawing	Scale Drawings	Scale Model	Scale Model
Ferriby	1937	Traditional 2D offsets survey	2D Offsets	Interpreted excavation dwg.	Scale Drawings	Scale Drawings and 5 Scale Models	Coefficients + displacement and 1/5 scale replica
Yassi Ada 7 th C	1961	Underwater Photography		Corrected and scaled from photographs	Reassembly of scaled model strakes	Scale Models	Tonnage
Skuldelev	1962	Photogrammetry Then scale dwg.	Full-scale Elevated plane tracing	Interpreted Torso dwg.	Reassembly of 2D scaled model strakes	Scale Model	Coefficients + displacement and full-scale replica
Kyrenia	1968	Underwater Photography	Drawn full-scale Photographed	Corrected and scaled from photographs	Initial hull form model	18 models – some full-scale replicas	Tonnage and 2 full-scale replicas
Graveney	1970	Traditional 2D offsets survey and full-scale plaster cast	Full-scale Contact tracing	Reduced scale dwgs.	Reduced scale drawings	Scale Drawings and 4 Scale Models	Coefficients + displacement and 1/5 scale replica
Serçe Limani	1977	Underwater Photography	Full-scale Elevated plane tracing	Site Diorama model	Site Diorama model and mould + batten model	Various models	Tonnage

Project	Date	Site Survey	Timbers Recorded	As Found	Initial basis for Hull Form	Development of Reconstruction	Validation of Reconstruction
Grace Dieu	1980	Traditional 2D survey and Sub-bottom profile	Some with 2D Offsets				
Ma'agan Mikhael	1985	Underwater 2D offsets survey and photographs	2D Offsets	Survey Drawing	Surviving frame shape and reassembly of hull remains	reassembly of hull remains and 3 scale models	Coefficients + displacement causing hull redesign and full-scale replica
Barland's Farm	1993	Traditional 2D offsets survey	2D Offsets	Interpreted 'as-found' dwg.	Reassembly of scaled model strakes	Scale Model	Coefficients + displacement
Roskilde	2002	Photogrammetry Then scale dwg.	3D full-scale digitising	Interpreted Torso dwg.	Flatten data to 2D and assemble scaled model strakes	Scale Model	Coefficients + displacement and full-scale replica
Newport	2002	Traditional 2D offsets survey and Photogrammetry	3D full-scale digitising	As surveyed and post-deposition model	3D Post deposition model	Full-scale 3D digital model	Full Orca3D hydrostatic and hydrodynamic analysis
Sørenge 7	2007	Traditional 2D offsets survey	3D full-scale digitising	Traced from on-site digital scan	Surviving frame shape 3D printed and reassembly of hull remains	Scale Model	Orca3D hydrostatic analysis

Talking: Pat Tanner

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- **Source Data**

A review of past projects illustrates that all archaeology is contingent on the source data and everything stems from that. As such, the technology used to record site data is not a secondary concern but is central to the activity of site archaeology.

- **Reconstruction**

The majority of reconstruction projects have involved, or been based to some extent, on some form of three-dimensional scale modelling.

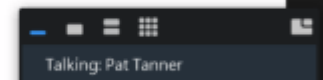
Fully understanding that process is therefore critical to understanding the reconstruction process itself.

- **Validation**

Any reconstruction can only be that reconstructor's interpretation, how do we analyse and validate that reconstruction.

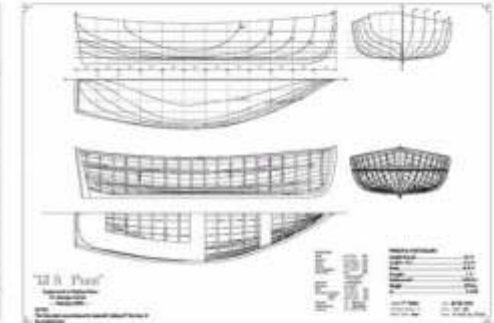
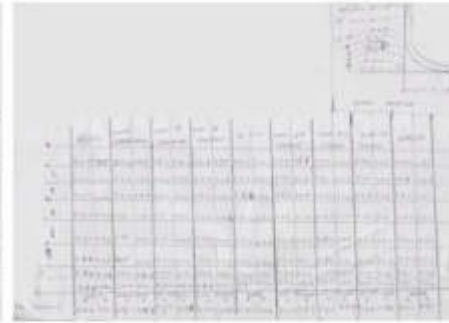
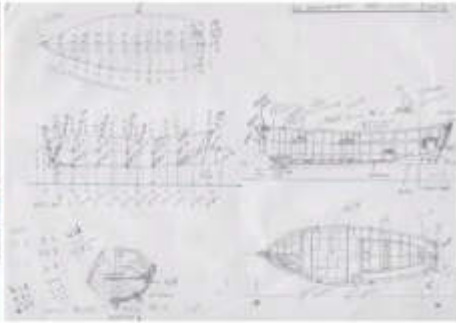
- **Publication**

Utilising a publication format other than traditional two-dimensional drawings to represent the complex three-dimensional shape of a vessel.



End

- Source Data – Traditional recording methods



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• Source Data – Tacheometric surveying



Tacheometric surveying such as with a theodolite or total station, involves the measurement of individual three-dimensional points relative to one another, using a combination of angular and distance measurements

One of the first uses of a total station to record large ship structures in Denmark was pioneered by Christian Lemée in 1996 during the excavation of the renaissance ships at the B&W site in Christianshavn (Lemée 2006). With typical logging of up to 1,200 points per day, and a total of circa 32,000 points logged

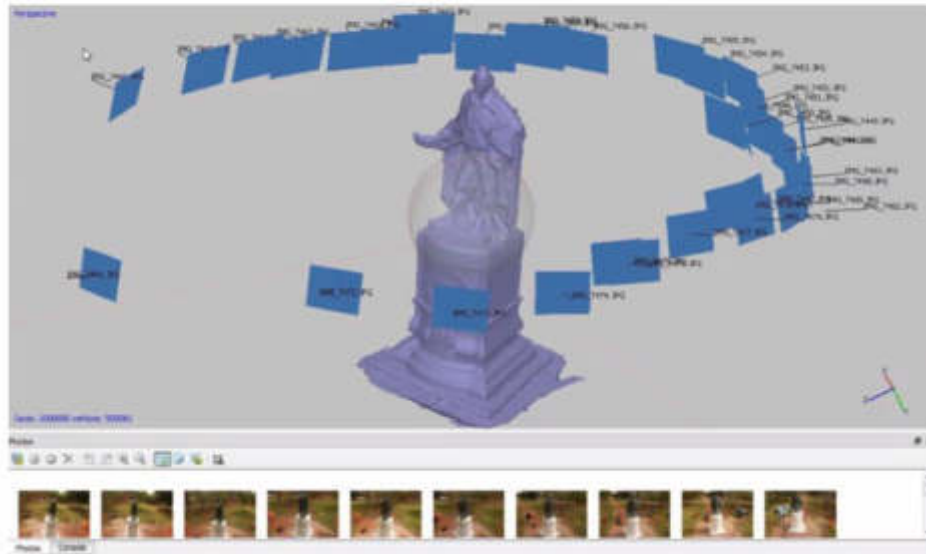
The recording of multiple wrecks in Yenikapi, Turkey, also employed a total station with a recorded point density of between 4000 and 10,000 points per wreck depending on its size

Lemée, Christian PP 2006 *The Renaissance Shipwrecks from an Archaeological and Architectural Study of Large Carved in Danish Waters, 1580-1640*. Viking Ship Museum.

Talking: Pat Tanner

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- **Source Data – Photogrammetric Surveying**



For underwater surveying of archaeological sites, the potential of photogrammetry was recognised as early as the 1960s when George Bass used paired cameras mounted on a mini submarine to document a late Roman wreck

Advances over the last two decades have included a move away from stereo paired photogrammetry with the advent of multi-image photogrammetric software such as Agisoft Photoscan - also commonly known as structure from motion.

If the computer software can correctly identify a sufficient number of tie points, then the relative position and orientation of the cameras can be correctly calculated. However, an insufficient number, or incorrectly matched tie points, may produce inaccurate camera positions, resulting in a distorted representation of the source data. One thing purveyors of photogrammetric software often neglect to mention is how long it takes to process high-resolution photos and how much computing power is needed.

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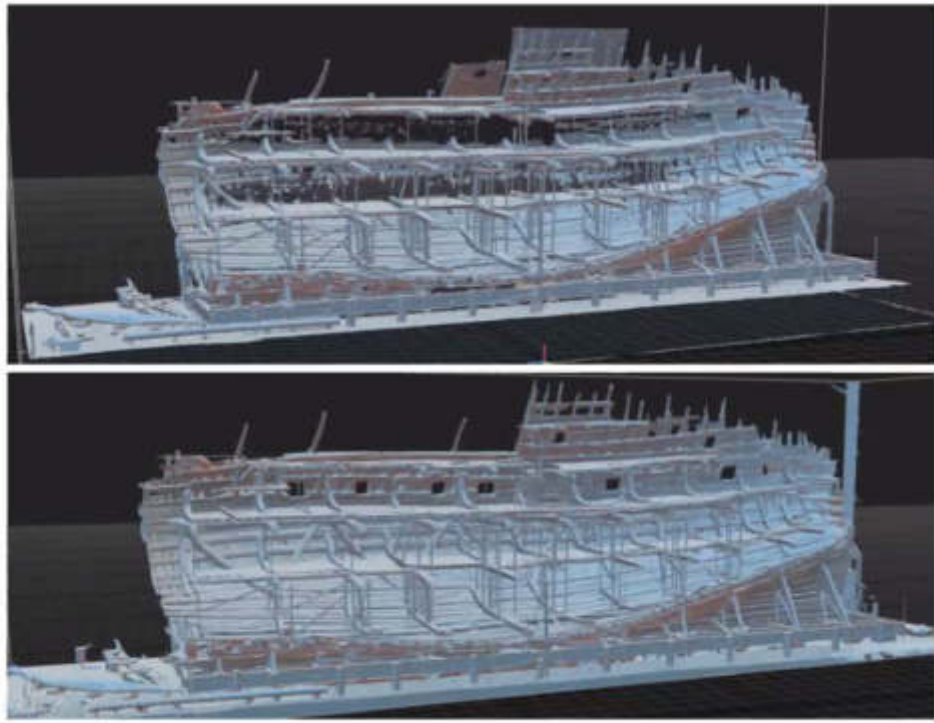
Reactions

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End

- **Source Data – Hybrid techniques – combining 3D Laser Scanning with Photogrammetry**

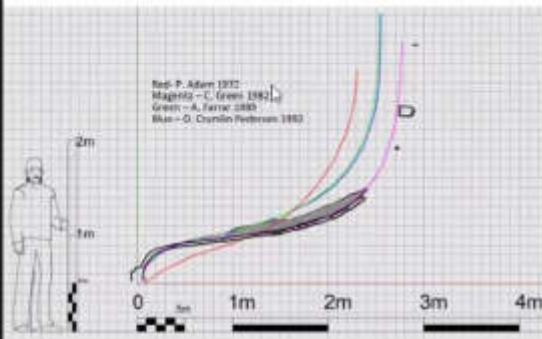
Recent software developments such as RealityCapture® now mean there is no reason why the two techniques cannot be used together. This software can use the geometrically accurate laser scanning as a control network for scale and relative positioning, while using the high-resolution photography for colour and surface texture.



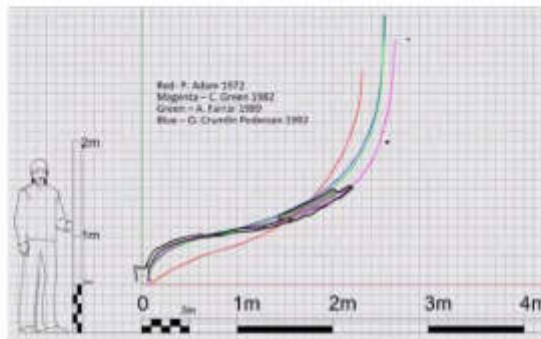
In a proof of concept case study, thanks to Eleanor Schofield and the team at the Mary Rose museum, Henry VIII's Tudor ship the *Mary Rose* was recorded using a combination of 22 individual laser scans, and a total of 374 photographs taken by Rodrigo Ortiz.

As it was not an organised or pre-planned survey, the conditions were less than ideal, with limited access and constant changes in lighting conditions

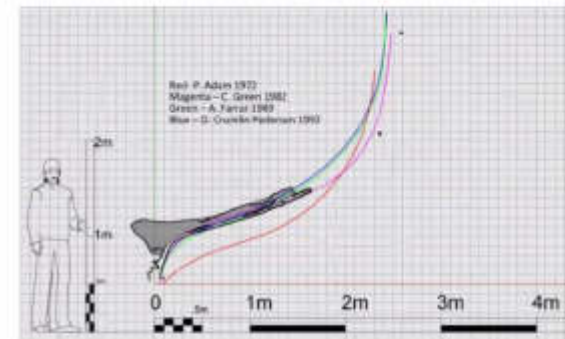
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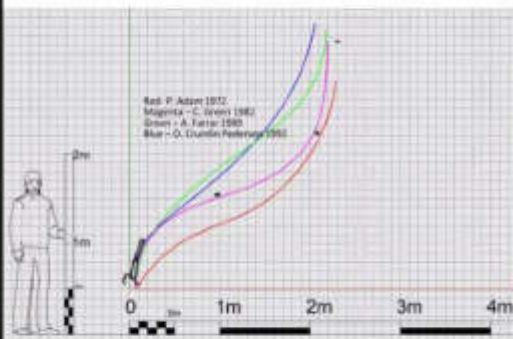
Section at 8m (forward of keel)



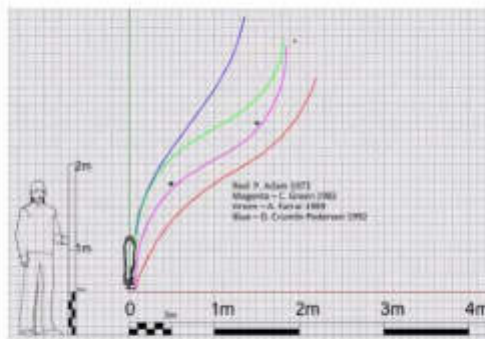
Section at 6m (forward of keel)



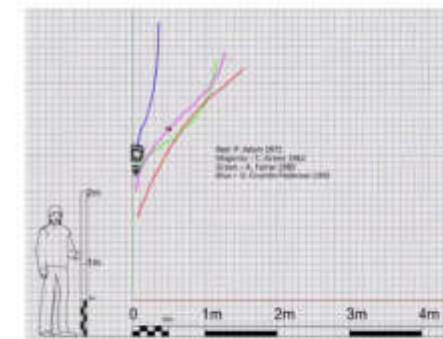
Section at 4m (forward of keel)



Section at 2m (forward of keel)



Section at 0m (Aft face of keel)

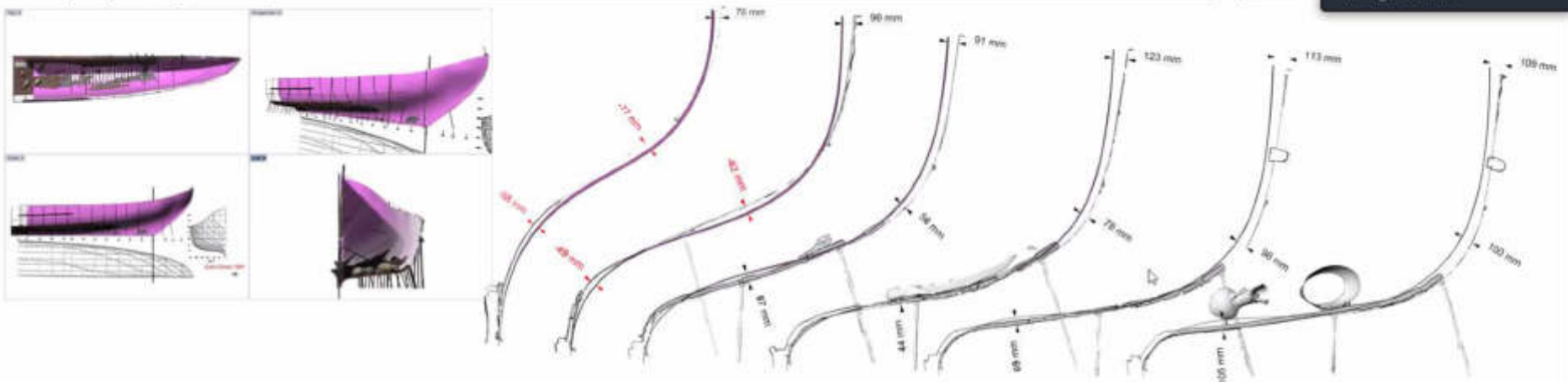


Section at -2m (aft of keel)

Red- P. Adam 1972, Magenta – C. Green 1982, Green – A. Farrar 1989, Blue – O. Crumlin Pedersen 1992

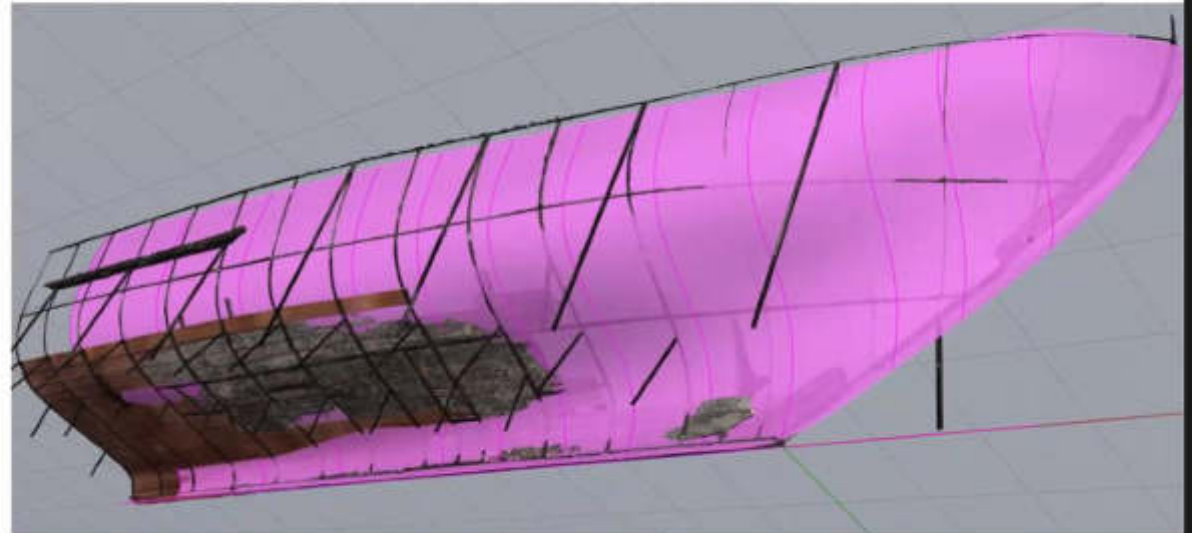


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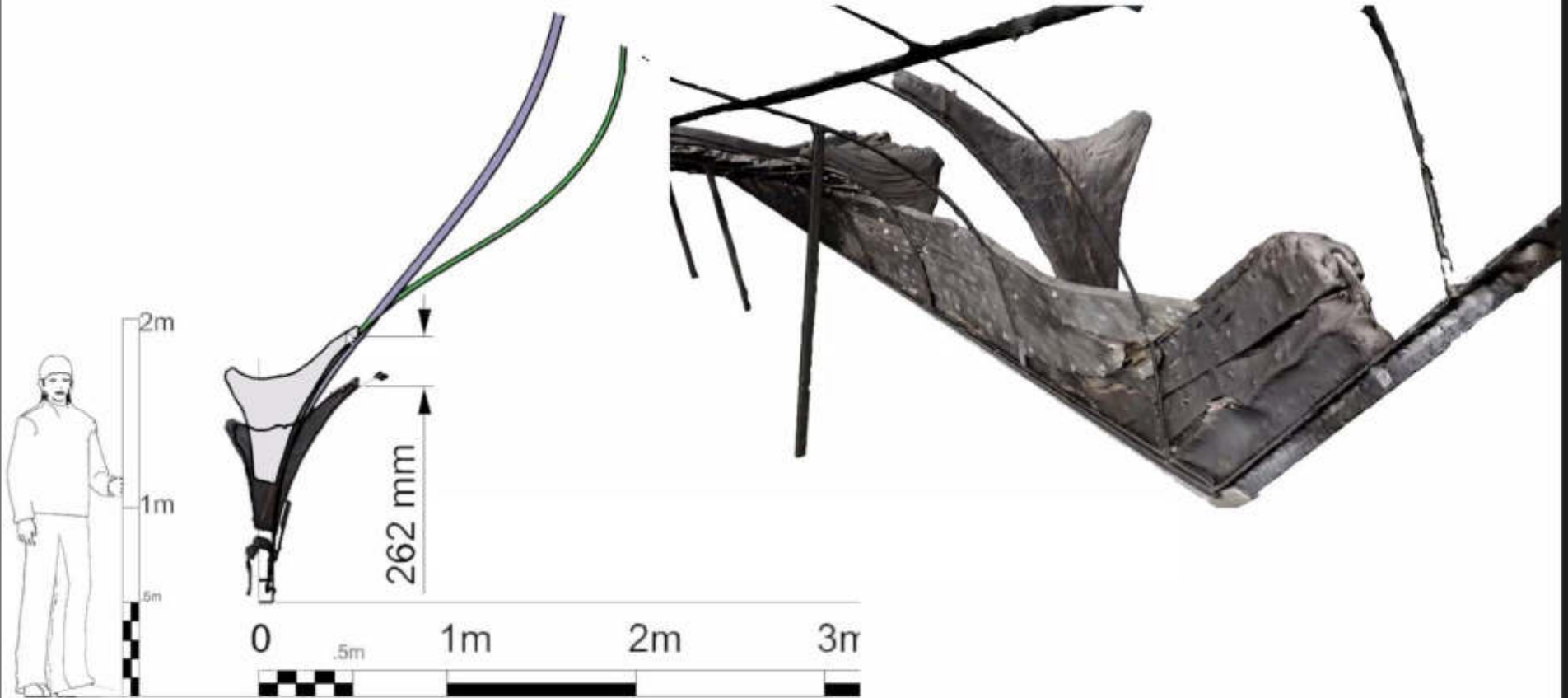


The Carol Green 1982 drawing is therefore a survey of the shape of the vessel in 1982

The 3D scanned shape gives an indication of the amount the vessel has continued to move and distort during the past 37 years



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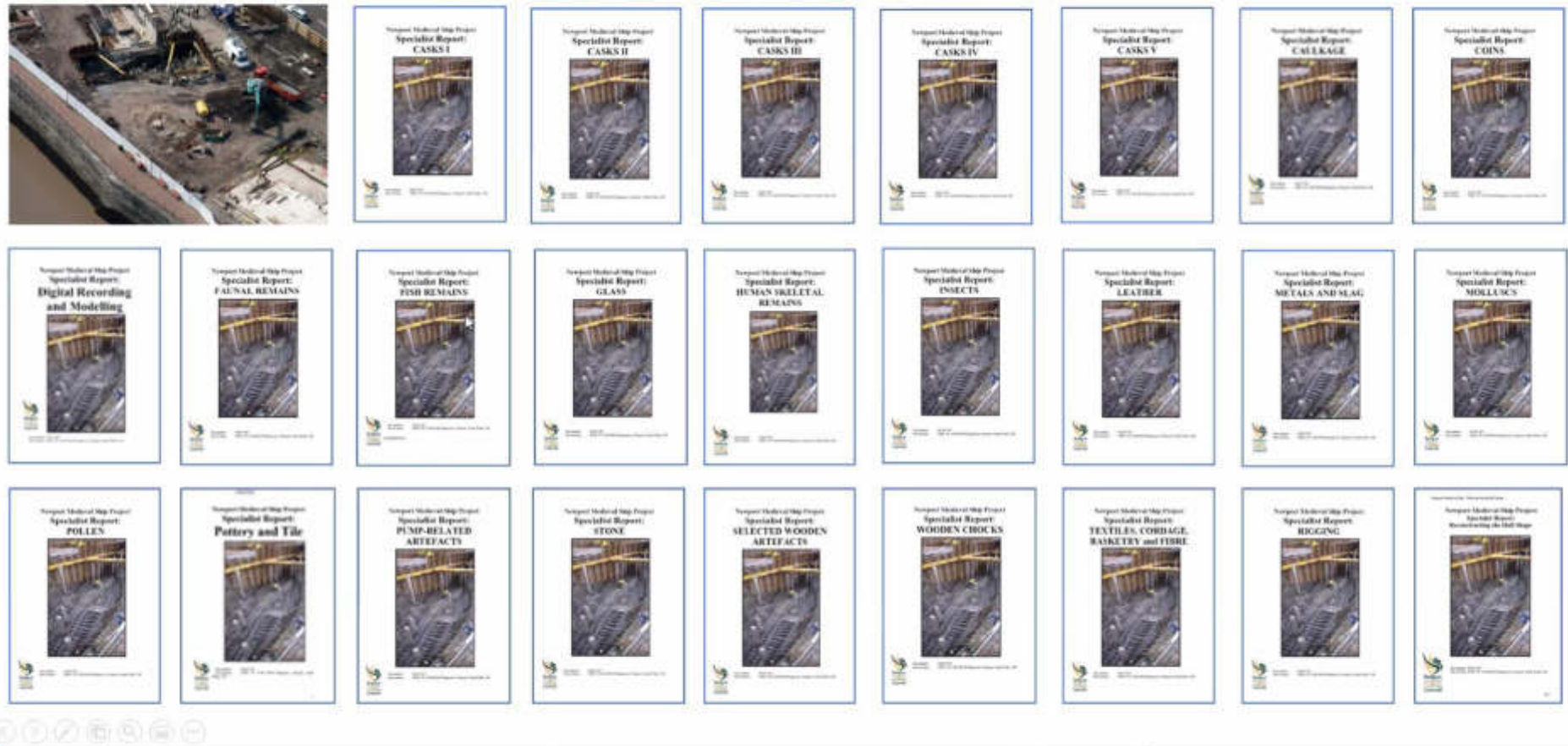
Breakout Rooms

Reactions

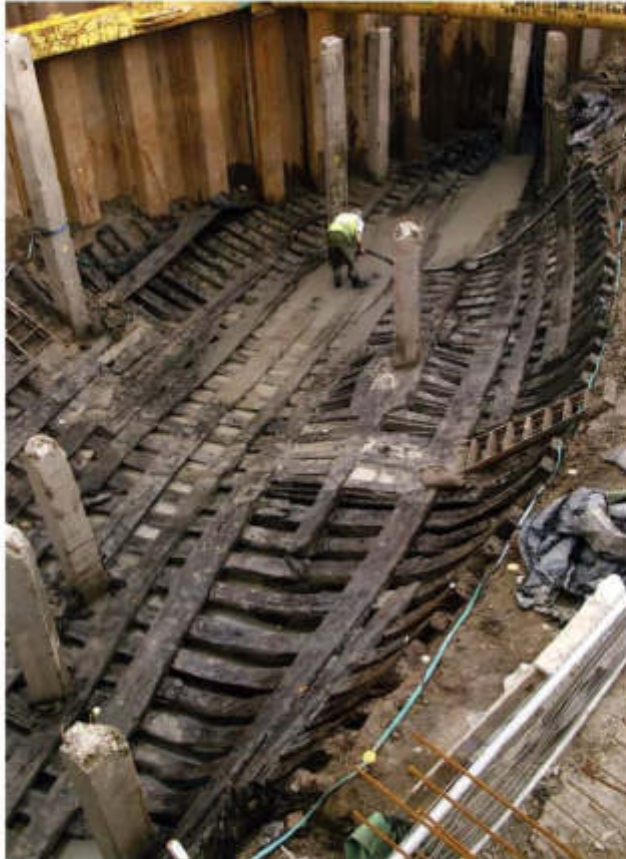
End

As an example the Newport Medieval ship project included 28 specialist reports, all of which are available online:

https://archaeologydataservice.ac.uk/archives/view/newportship_2013/downloads.cfm



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- Discovered in Newport, Wales in 2002
- Built after AD 1449 and repaired in the late 1450s and early 1460s
- A late example of a large clinker-built merchant vessel (with 1000+ artifacts)
- Preserved by anoxic river sediments
- Around 30m in length with a displacement of 210 - 390+ tons
- Cargo capacity of between 100–200 tons
- Capable of direct/long-duration voyages
- Evidence of travel and trade with the Iberian Peninsula
- Ended its working life in Newport after the spring of AD 1468



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Digital Reconstruction and Analysis of the Newport Medieval Ship

Untitled - Rhinoceros - [Top]

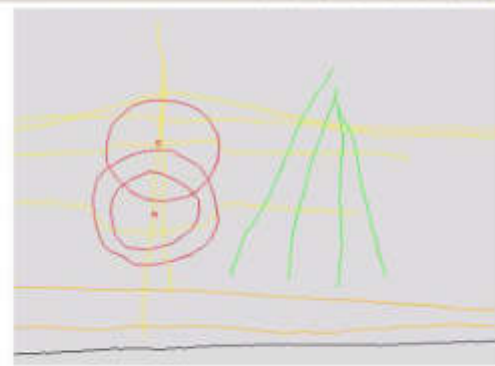
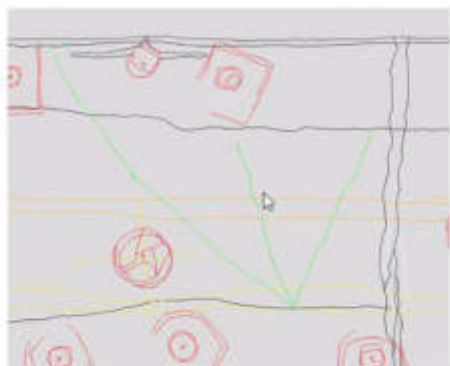
File Edit View Curve Surface Solid Transform Tools Dimension Analyze Render FARO Help

Select digitizer (Digitizer=FaroUSBDigitizer).
Connecting Faro Arm ...
Enter origin with digitizer (press Enter to use native digitizer coordinates):

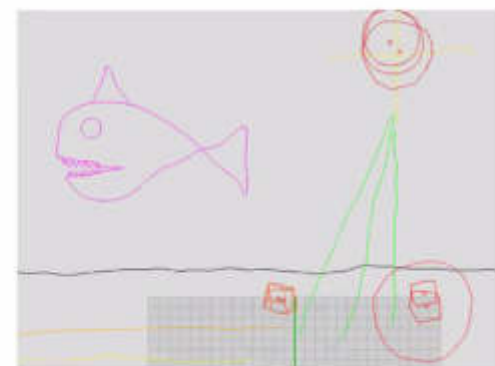
Untitled - Rhinoceros - [Top]

File Edit View Curve Surface Solid Transform Tools Dimension Analyze Render FARO Help

Connecting Faro Arm ...
Command: DigSketch
Push and hold button to sketch (Points=No Curve=No Pglyline=Yes Planar=No PointSpacing=1):



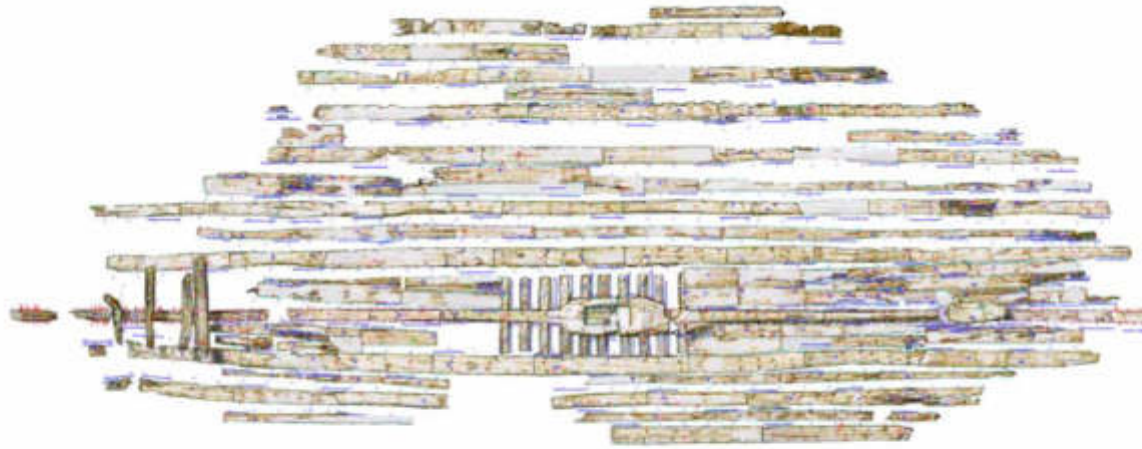
- d01 additional nails X
- d04 nail angle X
- pg02 wooden plugs or nails X
- cg03 wooden fastener centers X
- cl0 toolmarks axe X
- cl03 intentional marks X
- ec01 sapwood in
- ec02 original edges in
- ec03 limits of original edges
- ec04 damaged edges in
- ed01 cracks < 1mm in
- ed03 grain in
- ef0 additional nails in
- ef04 nail angles sl
- q01 wear from use in
- gc01 sapwood O
- gc02 original edges O
- gc03 limits of original edges O
- gc04 damaged edges O
- gd01 cracks < 1mm O
- gd03 grain O



Examples of Inscribed Lines and other Features

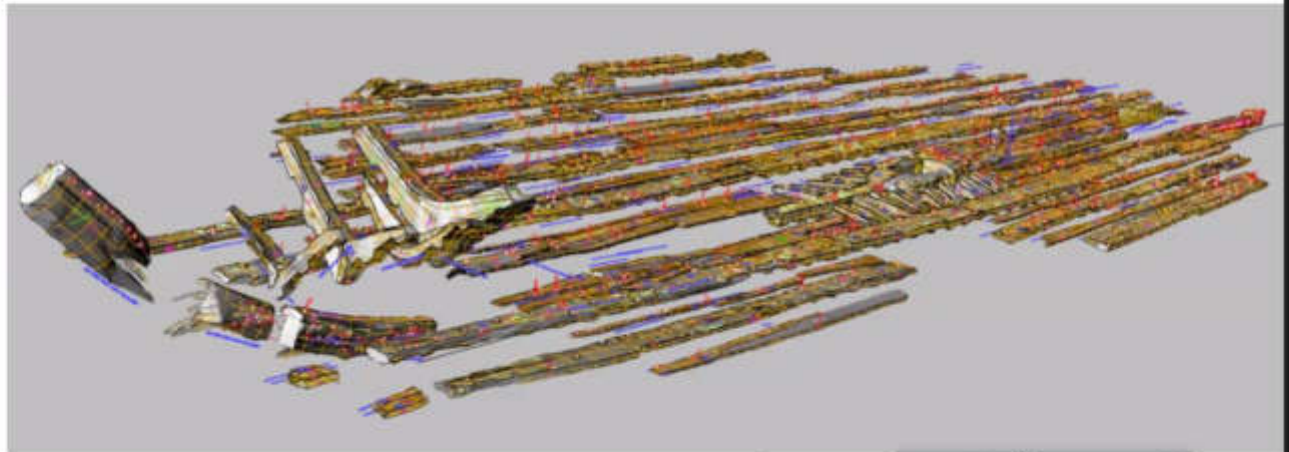
Unmute Start Video Security Participants Chat Share Screen Record Breakout Rooms Reactions Talking End

Digital Reconstruction and Analysis of the Newport Medieval Ship



Inner Hull timbers master composite, the mast step/keelson, braces, stringers, ceiling and riders. The bow is to the left.

Perspective view highlighting the flattened two-dimensional nature of the schematic view



Unmute Start Video

Security

Participants 38

Chat

Share Screen

Record

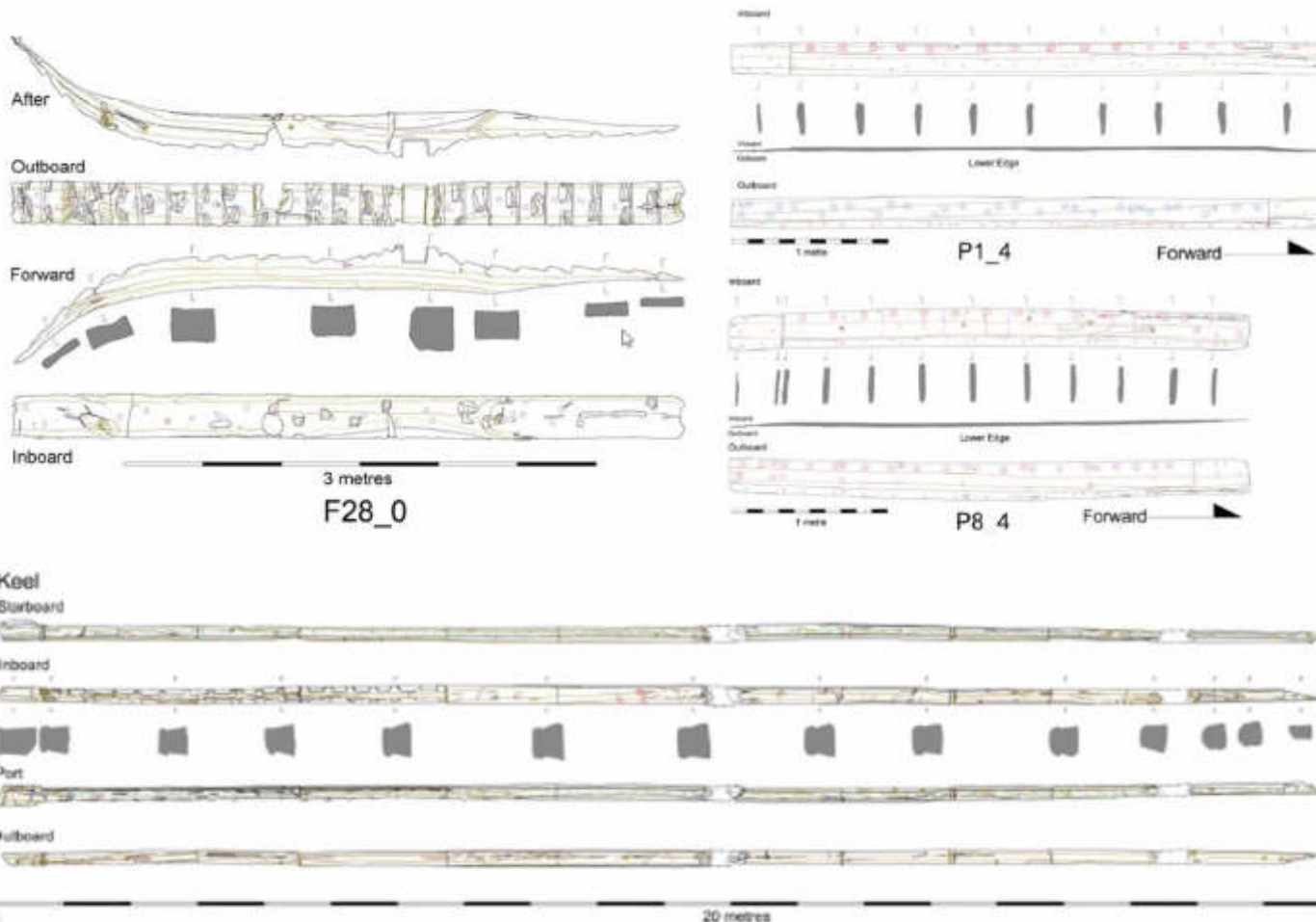
Breakout Rooms

Reactions

Talking: Pat Tanner

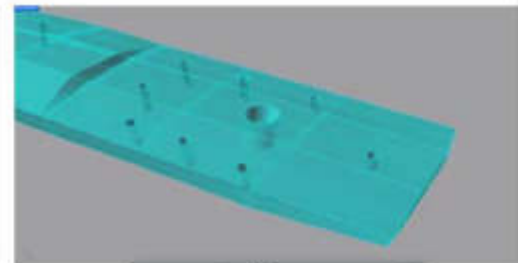
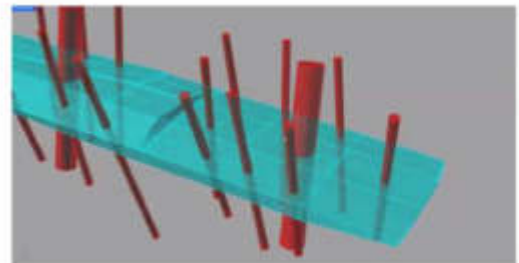
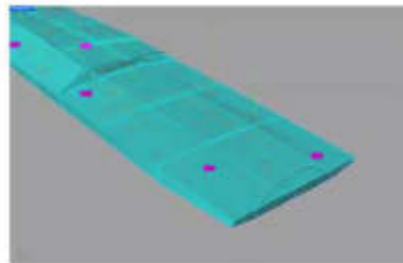
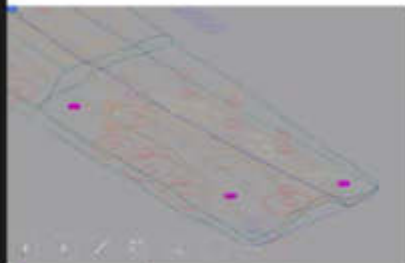
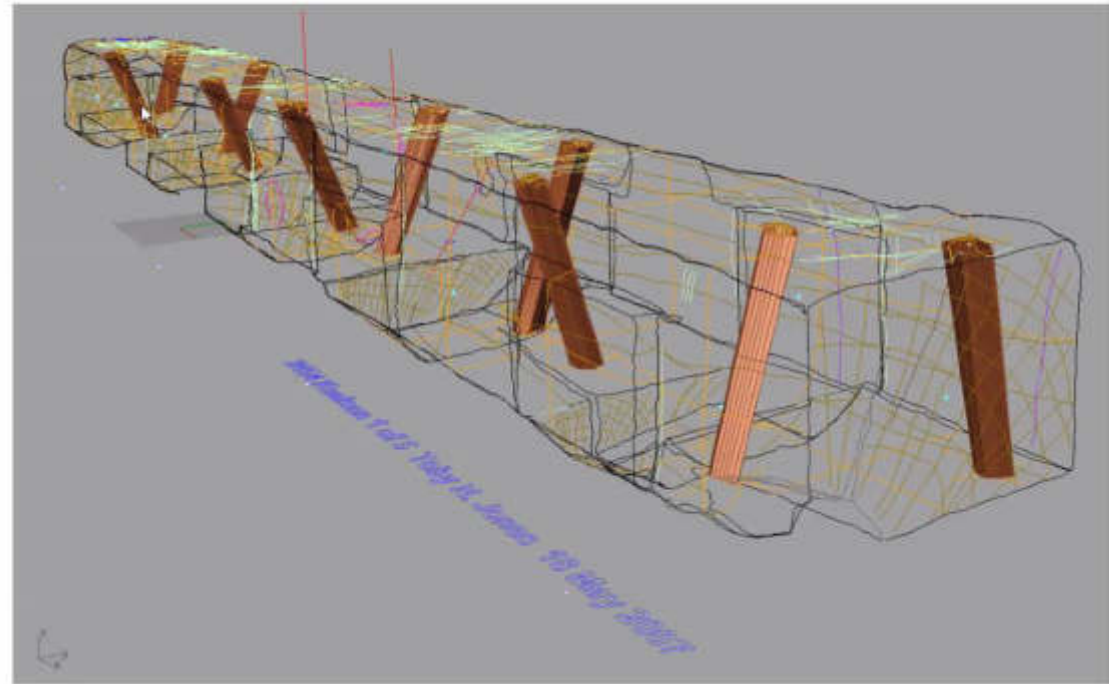
End

Digital Reconstruction and Analysis of the Newport Medieval Ship



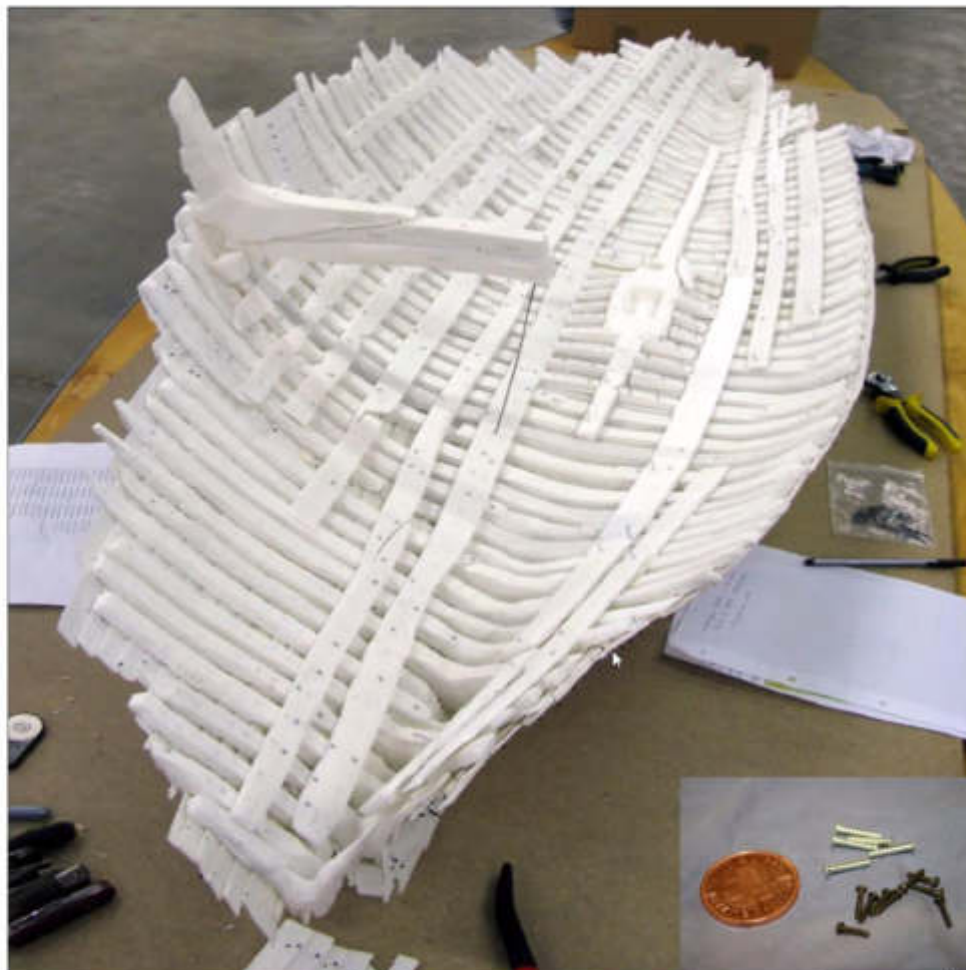
Unmute Start Video Security Participants 38 Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

Digital Reconstruction and Analysis of the Newport Medieval Ship



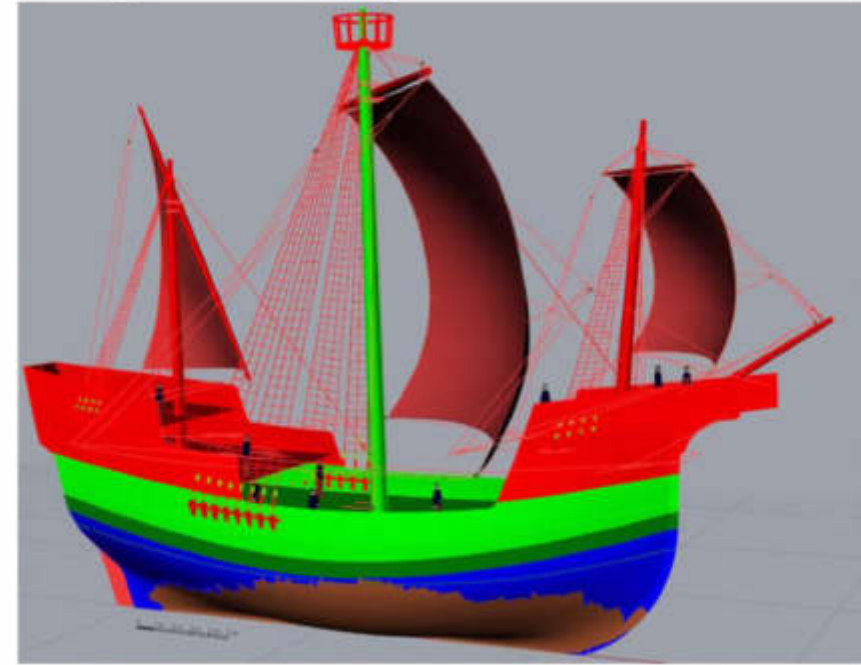
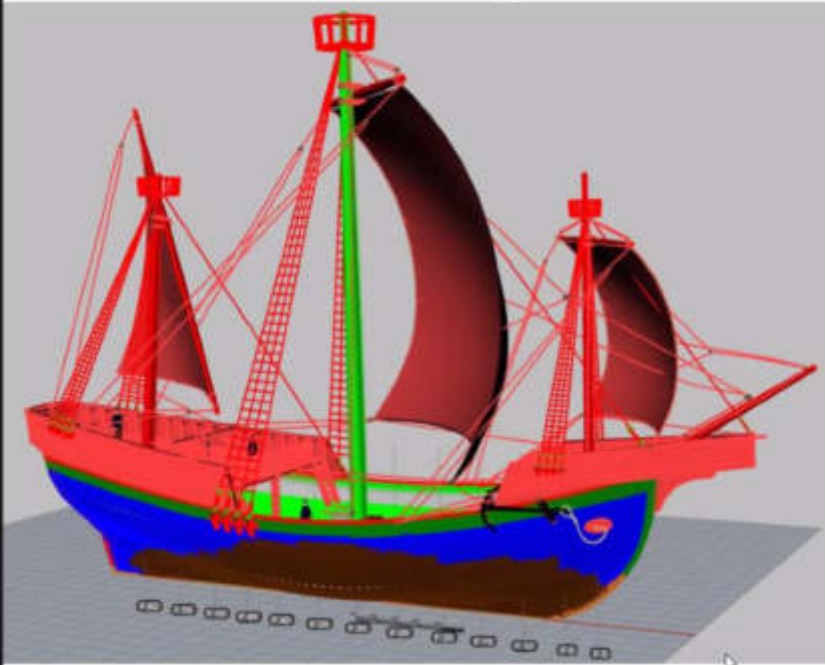
Unmute Start Video Security Participants Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

Digital Reconstruction and Analysis of the Newport Medieval Ship



Unmute Start Video Security Participants 38 Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

Digital Reconstruction and Analysis of the Newport Medieval Ship



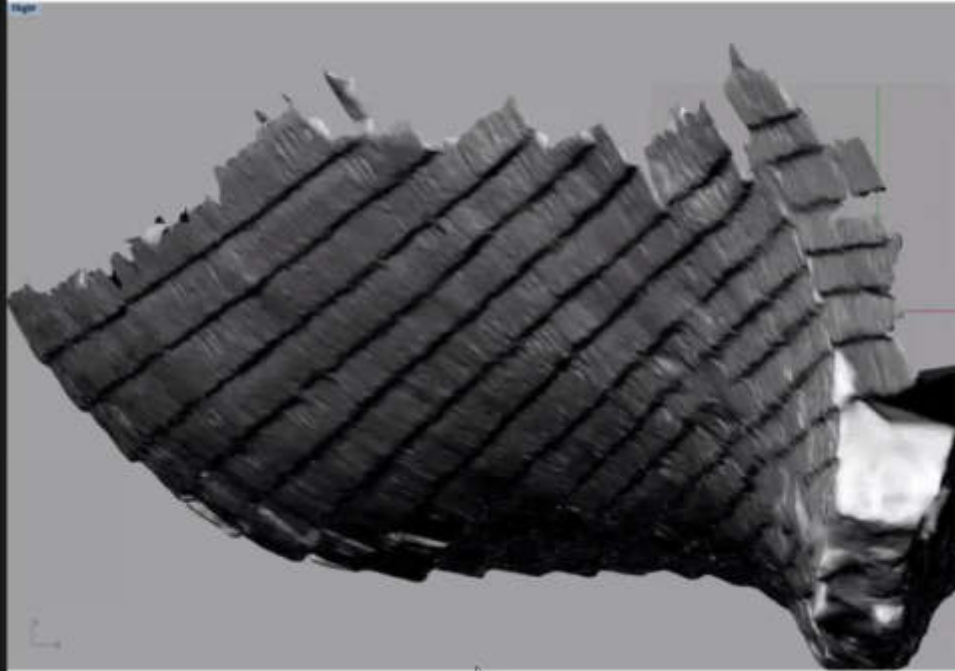
The concept of minimum or capital reconstruction

Minimum reconstruction is a model formed of the boat as found, but with distortions and compressions removed, displaced elements replaced, fragmented timbers made whole, and the hull rotated to its deduced attitude when afloat

A capital reconstruction will build on the hull form developed during a minimum reconstruction, in the case of Newport Medieval ship, this involved utilising the several hundred disarticulated elements recovered during excavation, as well as iconography, comparable archaeological evidence and ship building knowledge.

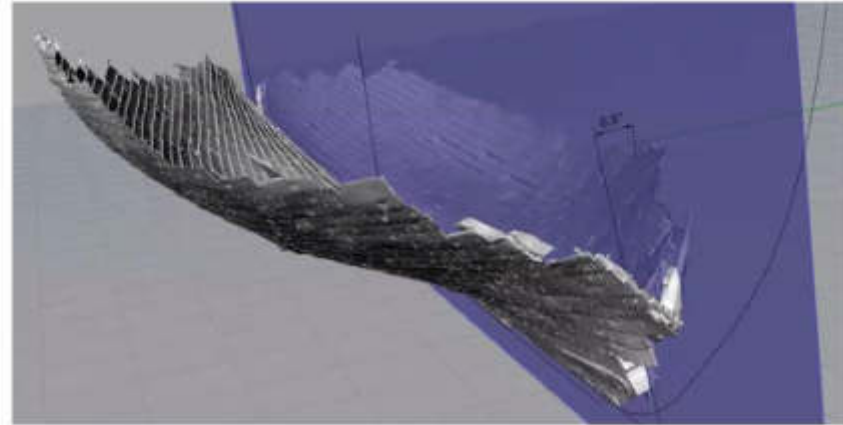
Unmute Start Video Security Participants Chat Share Screen Record Breakout Rooms Reactions Talking: End

Digital Reconstruction and Analysis of the Newport Medieval Ship



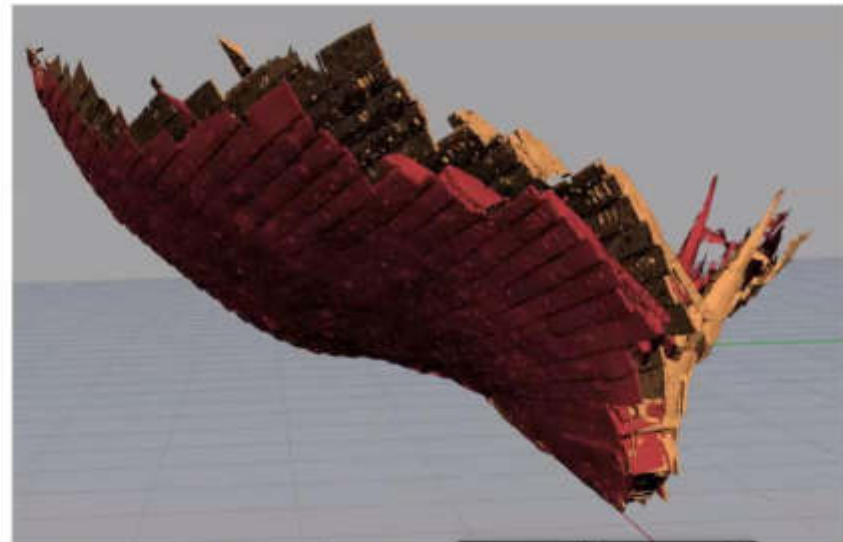
Measuring Global Distortion

A longitudinal symmetry plane was fitted along the vessel centre line to check twist.



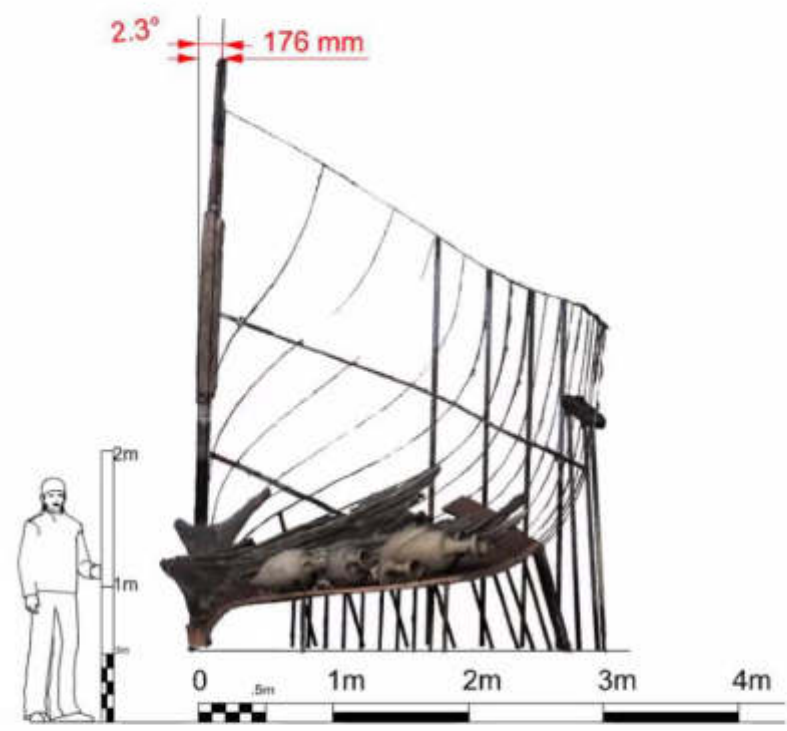
Repairing Global Distortion

Twisting the scanned mesh to correct global distortion. Original scanned mesh shown red and rectified mesh shown brown

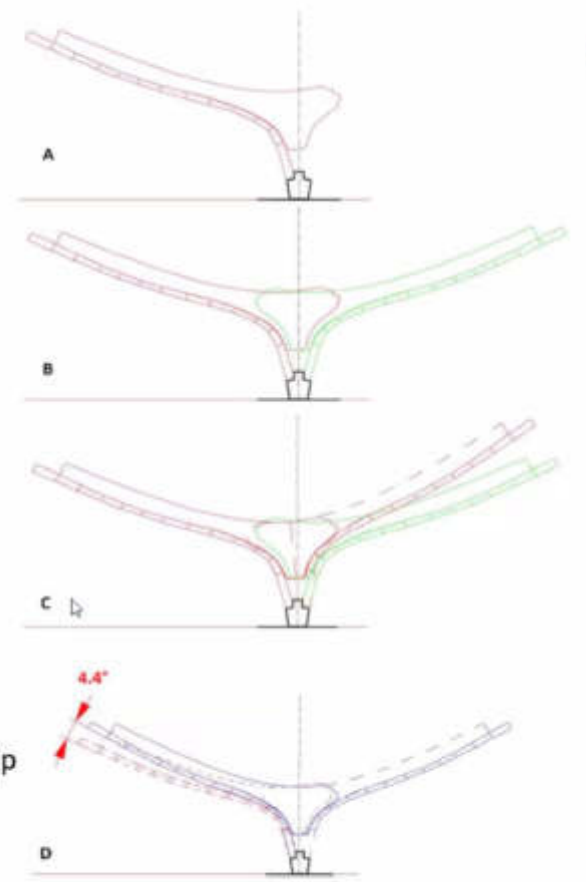


Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: End

Global distortion

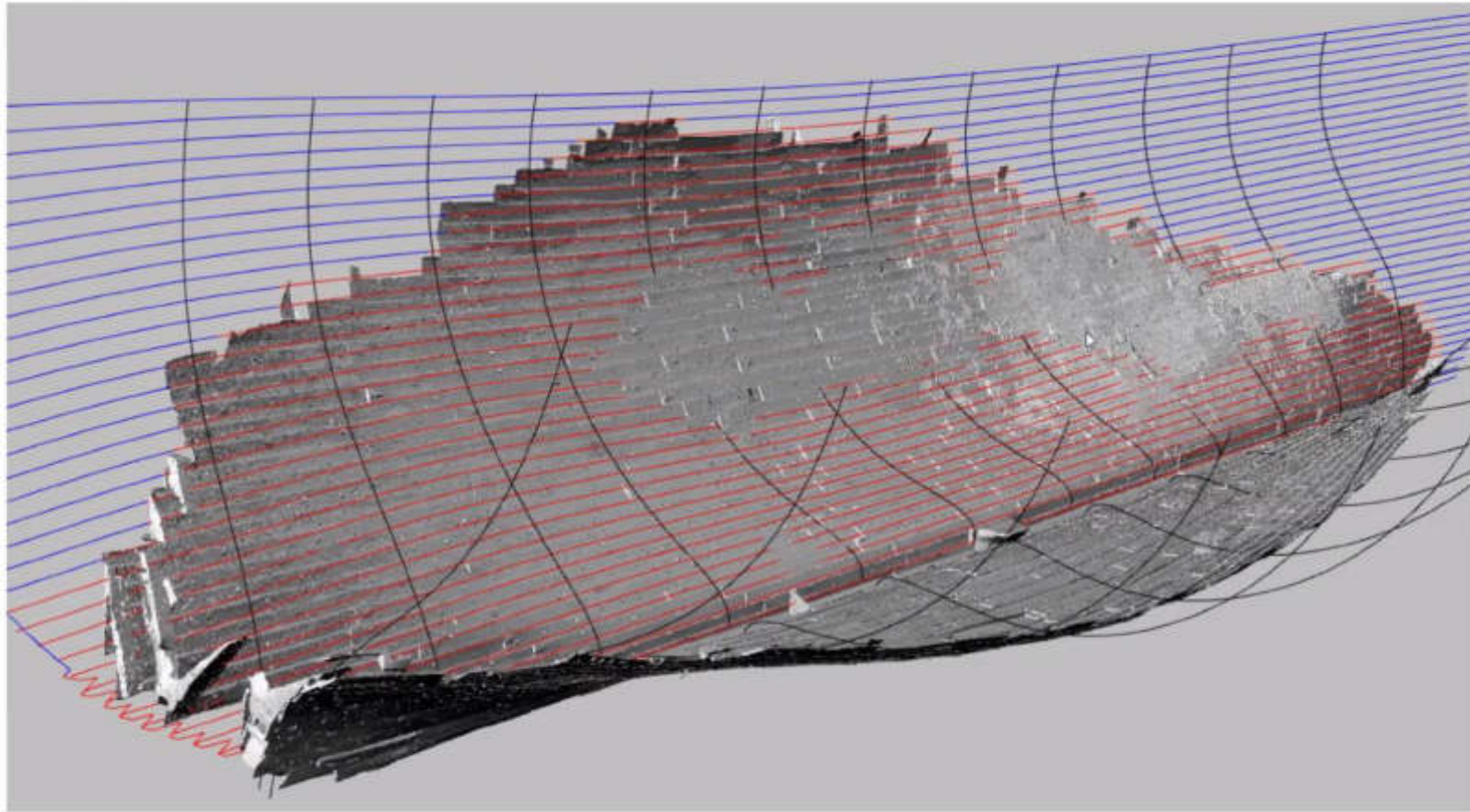


Measuring distortion of the stern post in the Marsala Punic ship



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Local distortion



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With the archaeological evidence initially orientated to a reference baseline, and valid explanations developed for any global or localised distortion evident in the surviving material, that material can then be digitally repaired in order to reverse engineer the idealised hull form to recreate the design intent shape as represented in the archaeological evidence.

As duplicate copies of the material are used to digitally modify and repair the evidence-based data, the result is a clear record of all the interpretation (paradata), allowing future researchers a better understanding of the processes employed.

Once this process has been completed, the archaeological record has been correctly orientated and 'repaired', and attention can turn to the creation of a minimum reconstruction.



Unmute

Start Video

Security

Participants
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Chat

Share Screen

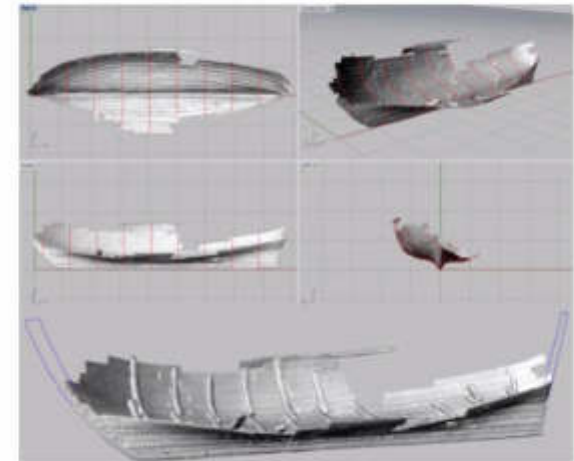
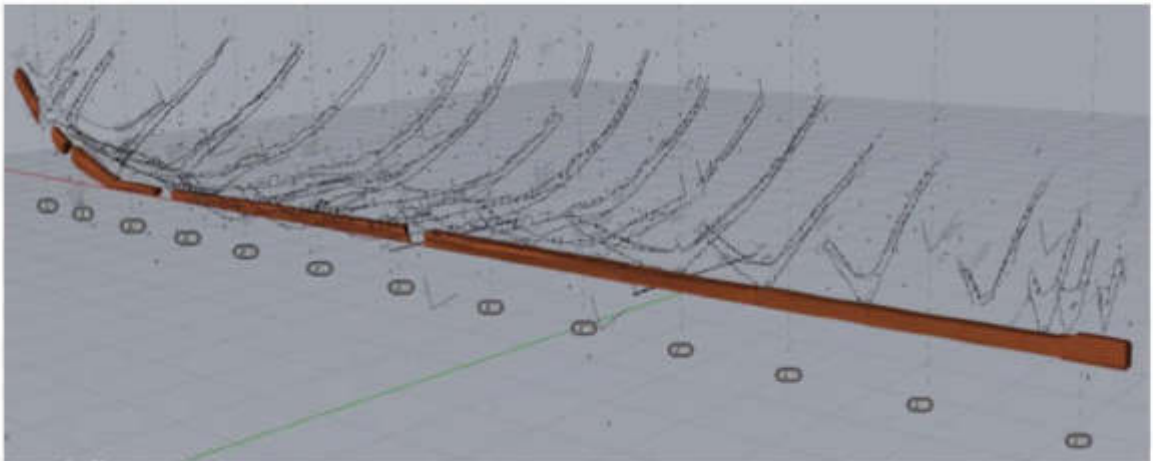
Record

Breakout Rooms

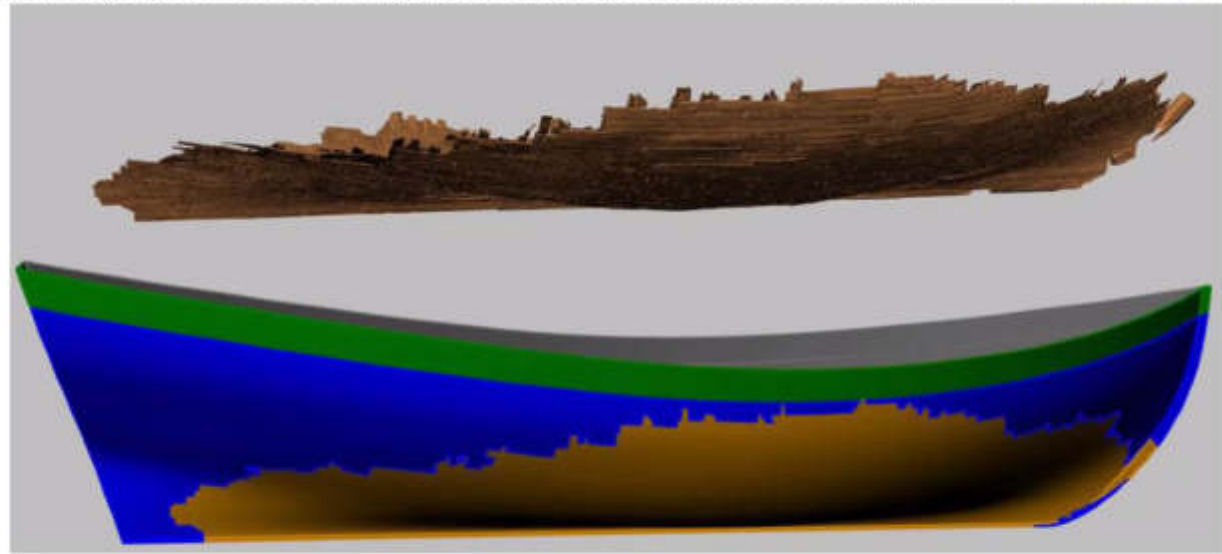
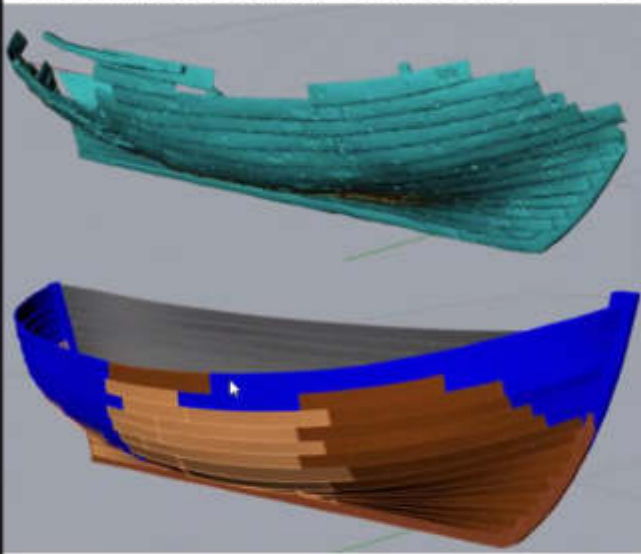
Reactions

Talking: Pat Tanner

End



Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End



The archaeological remains of the vessel have now been 'repaired' to remove both global and localised distortion.

The recovered partial remains have been extended to determine the hypothetical extents of the hull using faired curves, essentially a digital version of Steffy's 'mould and batten' model.

This has the same effects as McGrail's definition of 'as-found' but without the assumption of rotating the vessel to its deduced flotation attitude when afloat, as this is still an unknown.



Unmute

Start Video

Security

Participants
39

Chat

Share Screen

Record

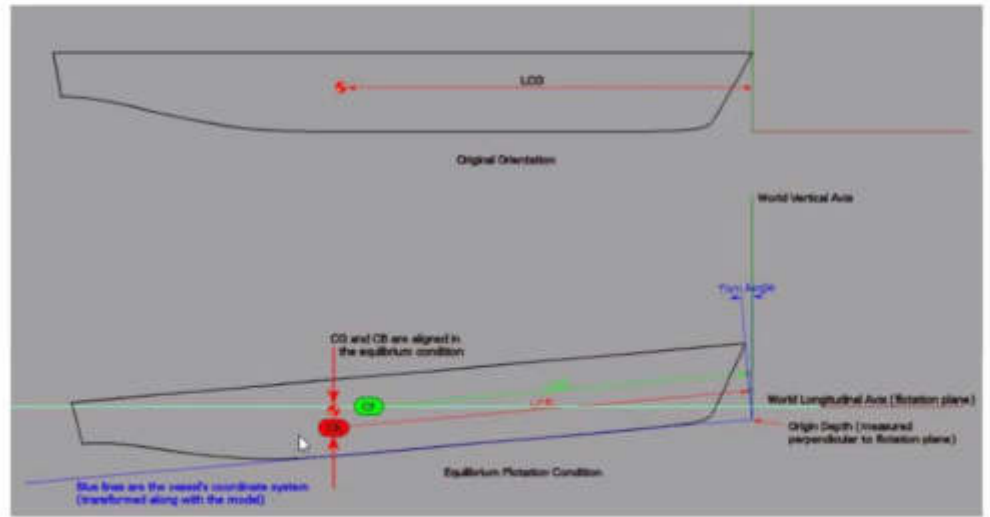
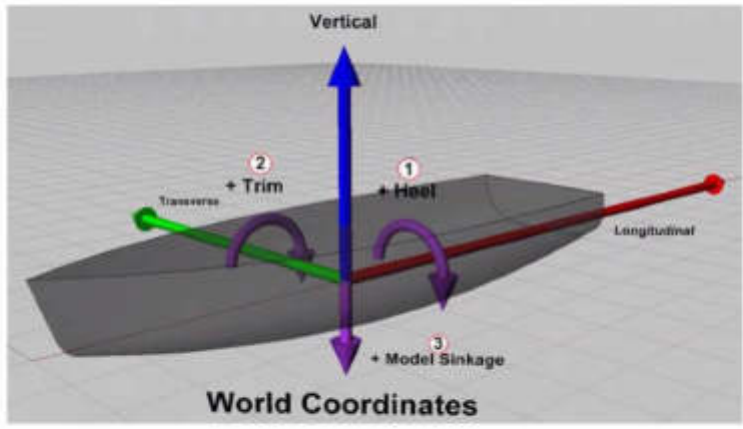
Breakout Rooms

Reactions

Talking: Pat Tanner

End

• Validation - Floating the hypothesis



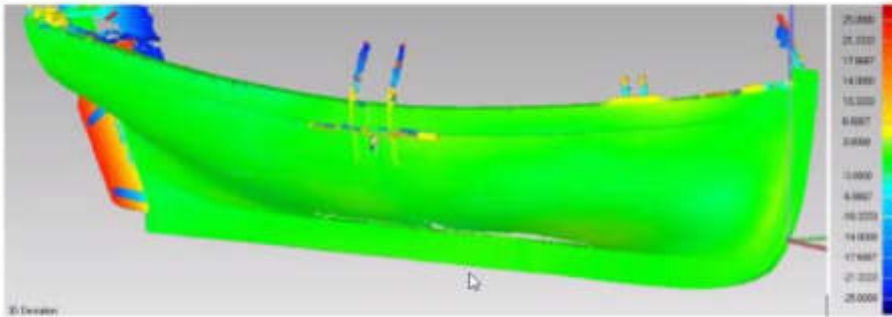
In order to establish a floatation condition for a vessel:

- the volumetric shape of the underwater hull surface
- the weight of the vessel with and without loads
- the positions for centre of gravity and centre of floatation

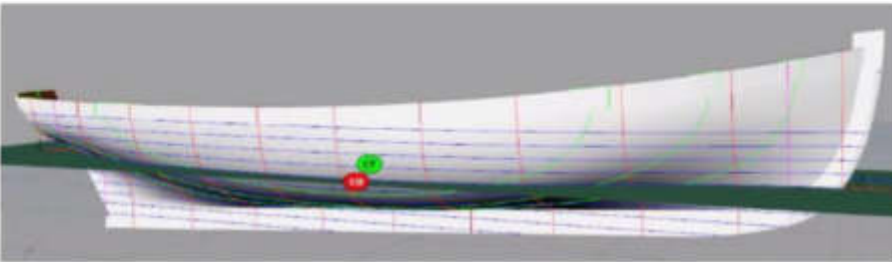
all need to be established before any static stability calculations can be examined.

Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

• Validation - Floating the hypothesis



The NURBs surface model was manually orientated to match the documented flotation waterline and was then analysed by the Orca 3D software.

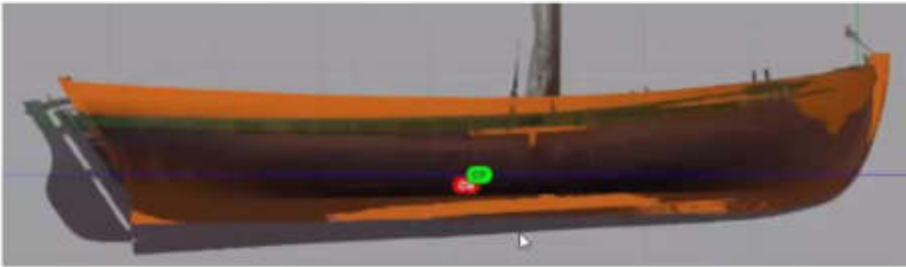


This generated a set of baseline hydrostatic data for the digital vessel in its known flotation condition, which could be compared to an actual physical vessel.

Condition Summary			
Keel Conditions Parameters			
Condition	Keel		
Height	0.000 m		
Keel Type	Keel		
Decking Model Details and Substructure Properties			
Condition	Deck		
Material	Steel		
Thickness	0.008 m		
Stiffness	210000 N/mm²		
Area	10.000 m²		
Baseline Dimensions			
Waterline Length, Lwl	7110.000 mm	Waterline Beam, Bwl	1020.000 mm
Waterline Length, Lwl	7110.000 mm	Waterline Beam, Bwl	1020.000 mm
Waterline Length, Lwl	7110.000 mm	Waterline Beam, Bwl	1020.000 mm
Displacement Values			
Displacement Weight	1027.000 kg	Displacement Volume	102.000 m³
LCB	3607.000 mm	TCL	500.000 mm
TCL	500.000 mm	Waterline Area	10.000 m²
Waterline Area	10.000 m²	Waterline Area	10.000 m²
Stability Values			
Waterline Area, Awl	10.000 m²	LCF	3607.000 mm
LCF	3607.000 mm	TCL	500.000 mm
TCL	500.000 mm	Weight to Increase	10.000 kg/m³
Sectional Parameters			
Aw	10.000 m²	Aw Location	3607.000 mm
Aw Location	3607.000 mm	Aw Location, Lwl	3607.000 mm
Roll Form Coefficients			
Cb	0.200	Cd	0.200
Cd	0.200	Ce	0.200
Ce	0.200	Cf	0.200
General Dimensions			
Length Overall, LOA	7110.000 mm	Keel Type	Keel
Waterline Length, Lwl	7110.000 mm	Waterline Beam, Bwl	1020.000 mm
Waterline Length, Lwl	7110.000 mm	Waterline Beam, Bwl	1020.000 mm

Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

- Validation - Floating the hypothesis

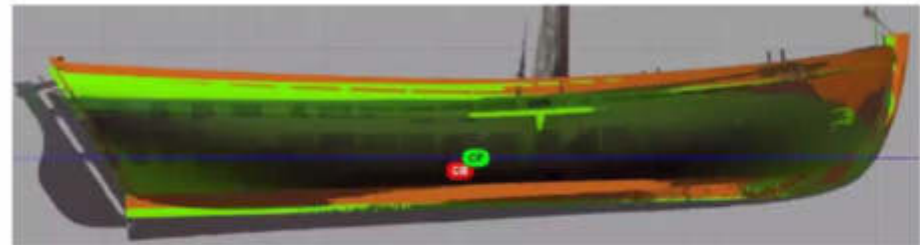


“Hull material only” flotation condition coloured brown overlaid on original vessel.

Clearly the brown (timber only) modelled hull form is floating high when compared to the actual physical vessel’s flotation condition.



The additional elements such as: iron fastenings; flooring; rigging; oars; life raft; additional warps; anchors; and equipment were modelled, and the resultant weight calculations applied to the Orca surface model (green).



• Validation - Floating the hypothesis

Condition Summary

Load Condition Parameters

Condition	Weight / Sinkage	LCG / Trim	TCG / Heel	VCG (mm)
Condition 1	1935.430 kgf	-3950.000 mm	0.000 mm	70.9

Resulting Model Attitude and Hydrostatic Properties

Condition	Sinkage (mm)	Trim(deg)	Heel(deg)	Ax(m^2)
Condition 1	-6.784	-0.063	0.000	0.48

Condition	Displacement Weight (kgf)	LCB(mm)	TCB(mm)	VCB(mm)	Wet Area (m^2)
Condition 1	1935.430	-3950.247	0.000	-154.815	12.848

Condition	Awp(m^2)	LCF(mm)	TCF(mm)	VCF(mm)
Condition 1	8.341	-3805.142	0.000	-2.612

Condition	BMt(mm)	BMI(mm)	GMI(mm)	GMI(mm)
Condition 1	867.578	10198.842	641.889	9973.154

Condition	Cb	Cp	Cwp	Cx	Cws	Cvp
Condition 1	0.200	0.549	0.640	0.364	3.508	0.313



The internal ballast is then modelled and added to the digital reconstruction, having combined weights of 842 kg.

The ballast is then included in the Orca 3D weight analysis, and the Orca 3D free flotation analysis repeated.

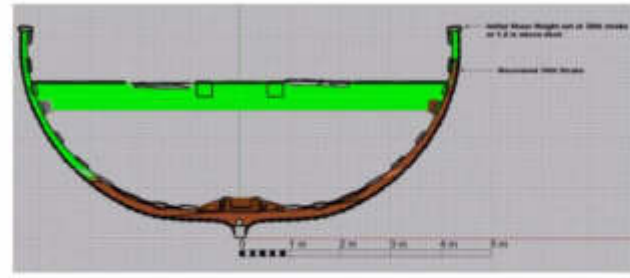
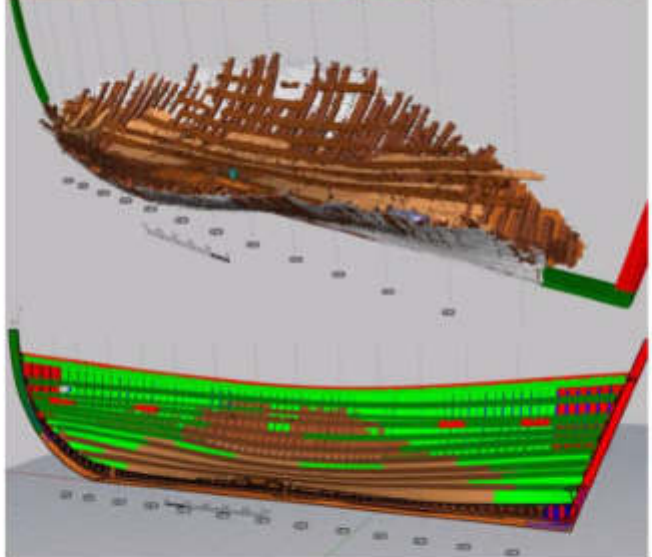
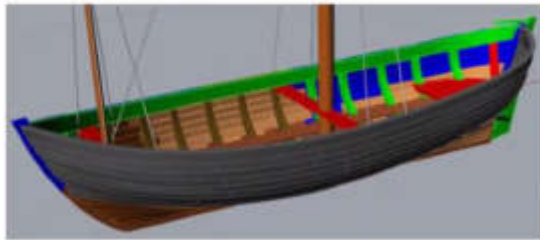
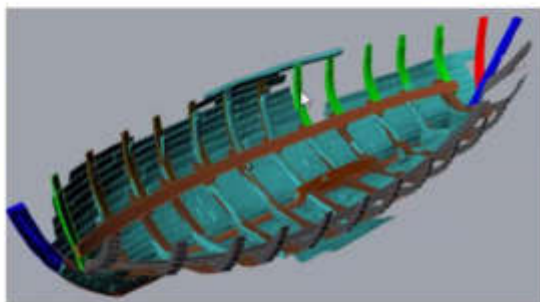
When the results from the digital modelling process are compared to the baseline flotation condition, the results are almost identical.

The baseline vessel has a displacement of 1957.85 kg, while the digital modelled version has a displacement of 1935.43 kg,

a difference which indicates the digital version is underweight by 22.42 kg, indicating an accuracy of 98.8%.

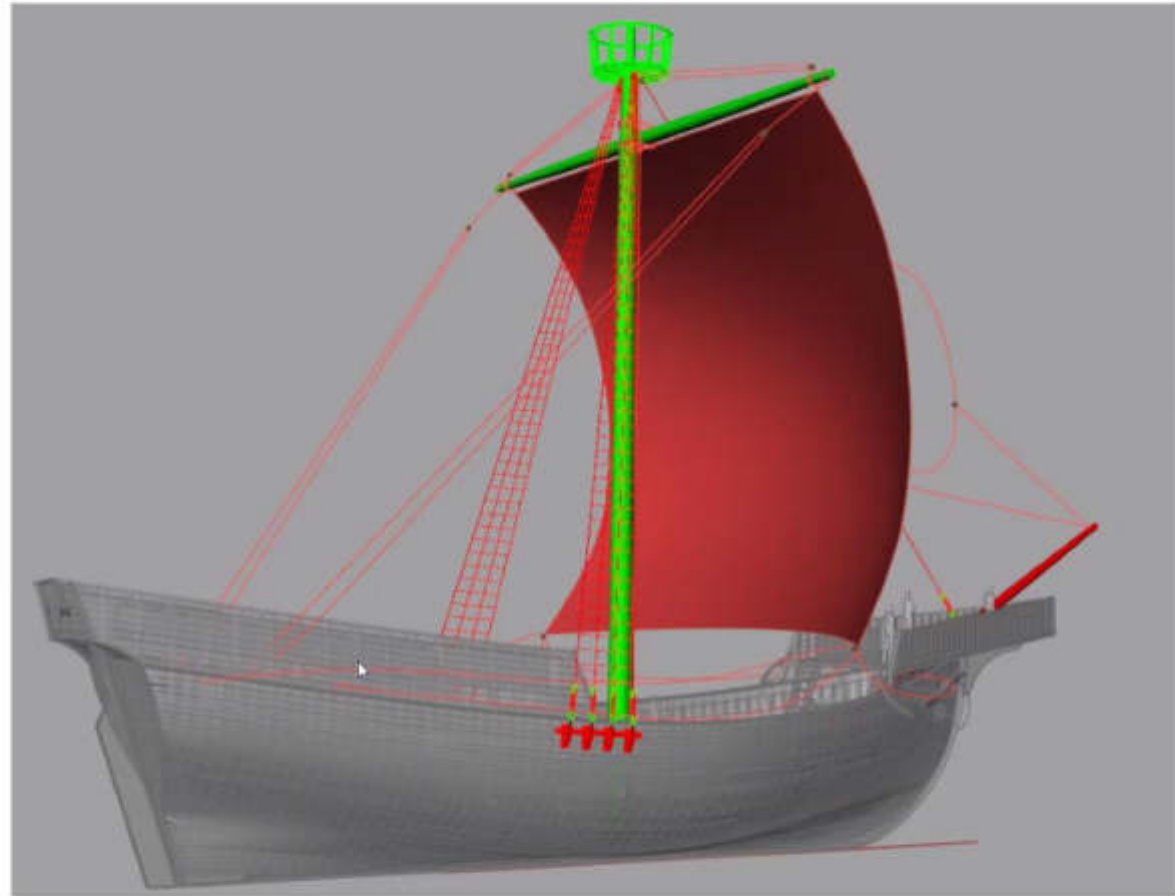
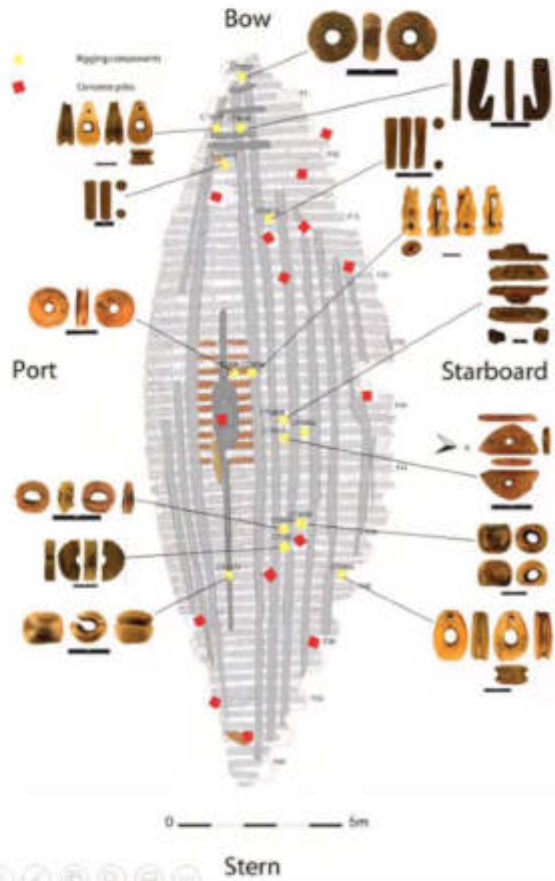
Unmute Start Video Security Participants (40) Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

Hull Structure



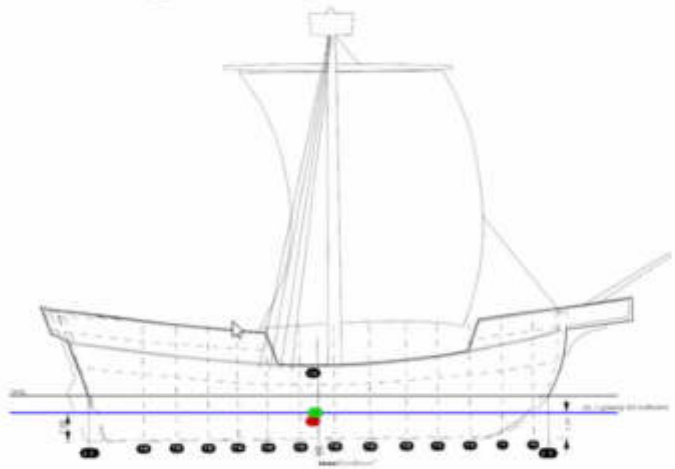
Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

Minimum Reconstruction

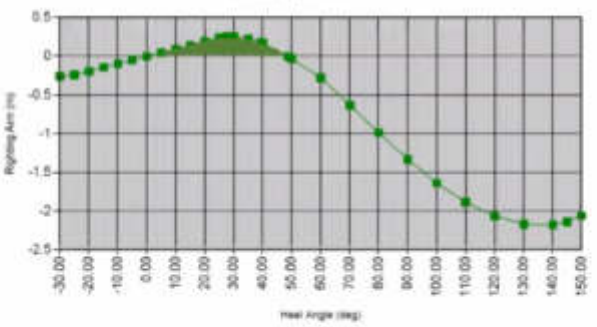


Unmute Start Video Security Participants 38 Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

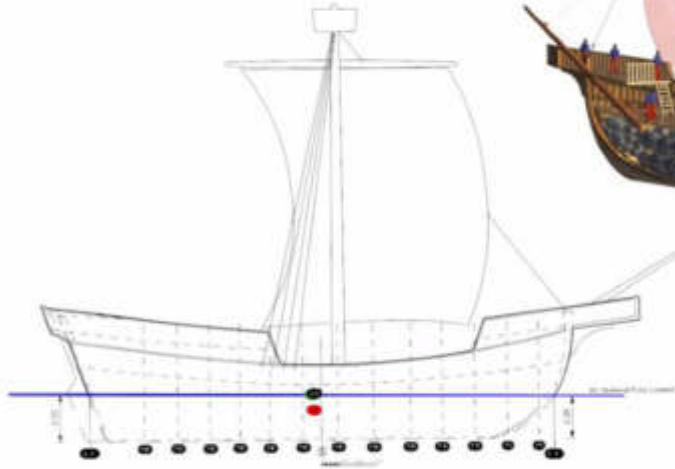
• Testing and analysis of the Minimum Reconstruction



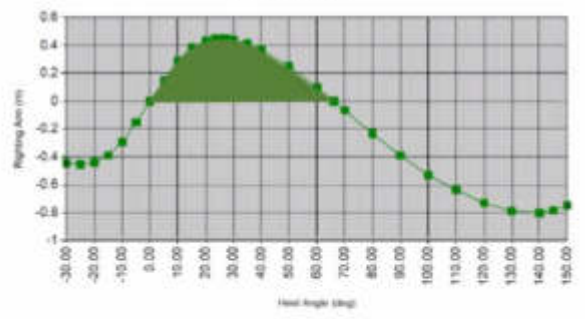
Stability Curve



Newport Medieval ship unballasted lightship flotation condition



Stability Curve

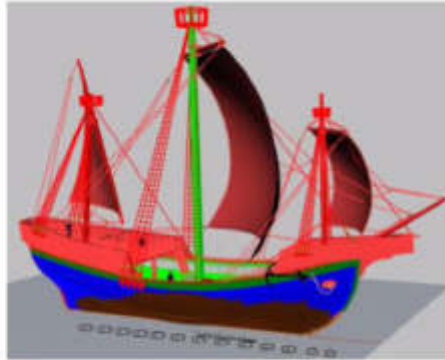


Newport Medieval ship fully loaded flotation condition

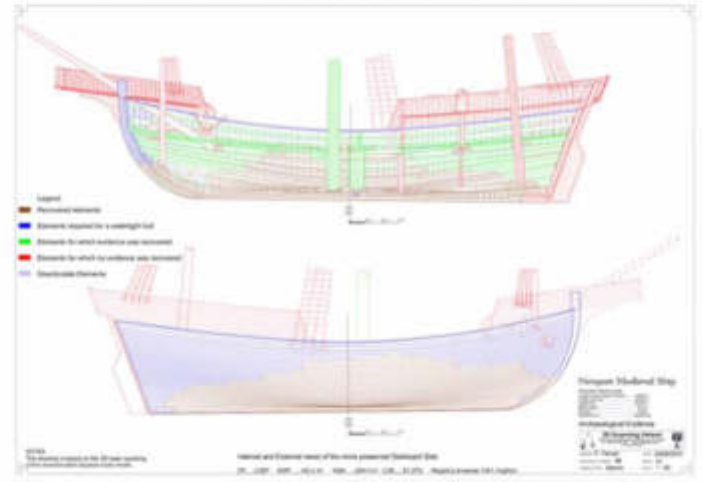
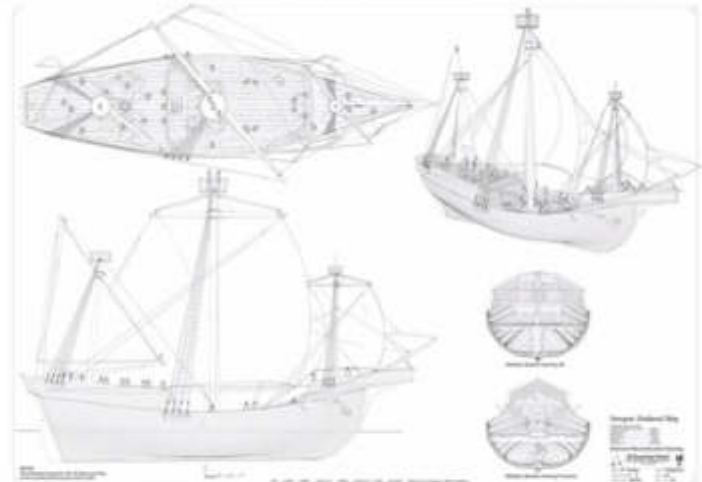


Unmute Start Video Security Participants 37 Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

Initial publication for peer review

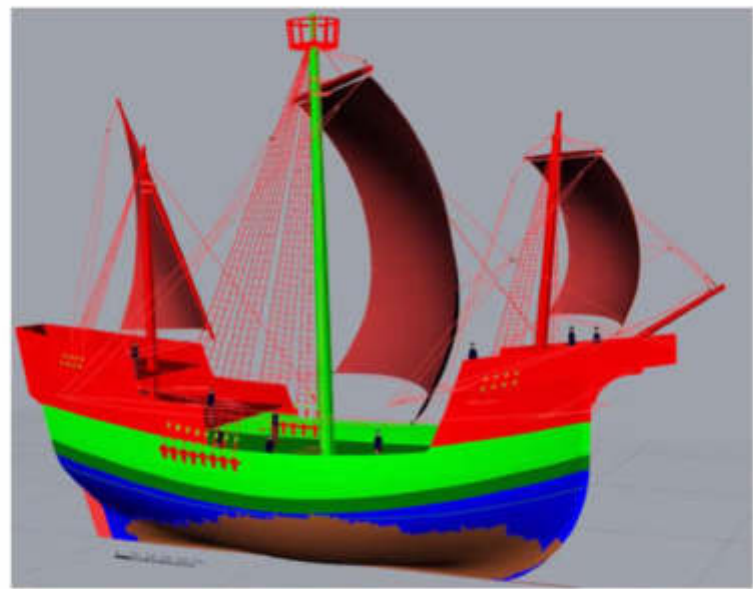
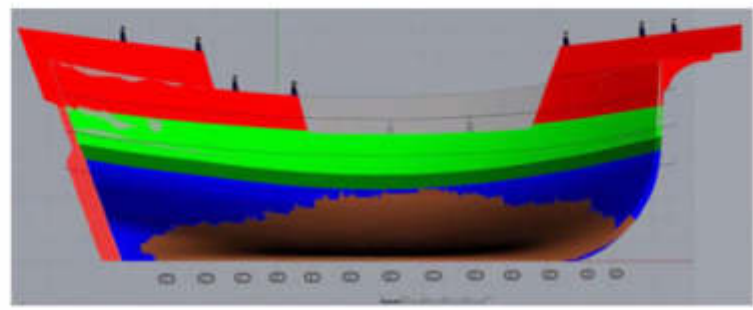
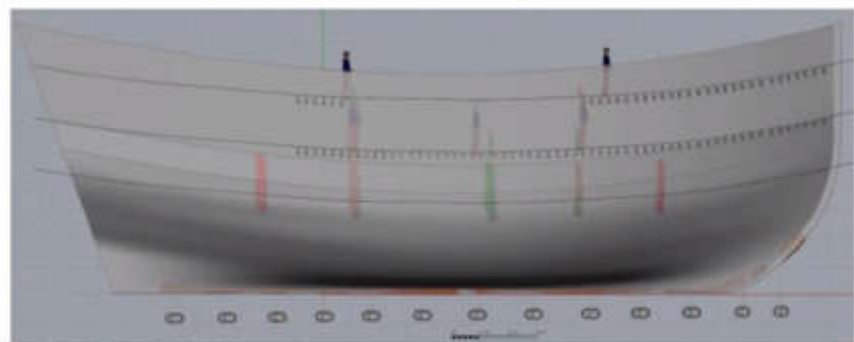
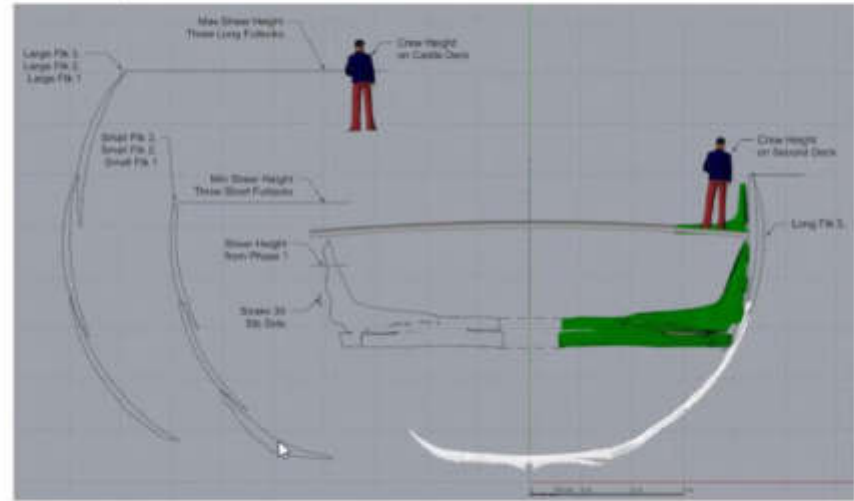


The results of the minimum reconstruction and digital testing is subsequently published for peer review to allow feedback and/or criticism, which can be further investigated using the same techniques, and will allow if the evidence permits, to continue to a hypothetical Capital reconstruction.



Unmute Start Video Security Participants 37 Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

Capital Reconstruction



Unmute Start Video Security Participants 38 Chat 1 Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

Launch Meeting - Zoom Covid19 - London Virtual You are viewing Pat Tanner's screen View Options

cloudfour.tv/london/information_introduction/0_0

Apps Crypto Imported From If Maritime Imported 3D modeling Traditional Boats st... Google Scholar My Maps Holgrams - All pa... Orta3D Sci-Hubs removing... Scripps Library Resu... SUSSED Portal for S... Other bookmarks

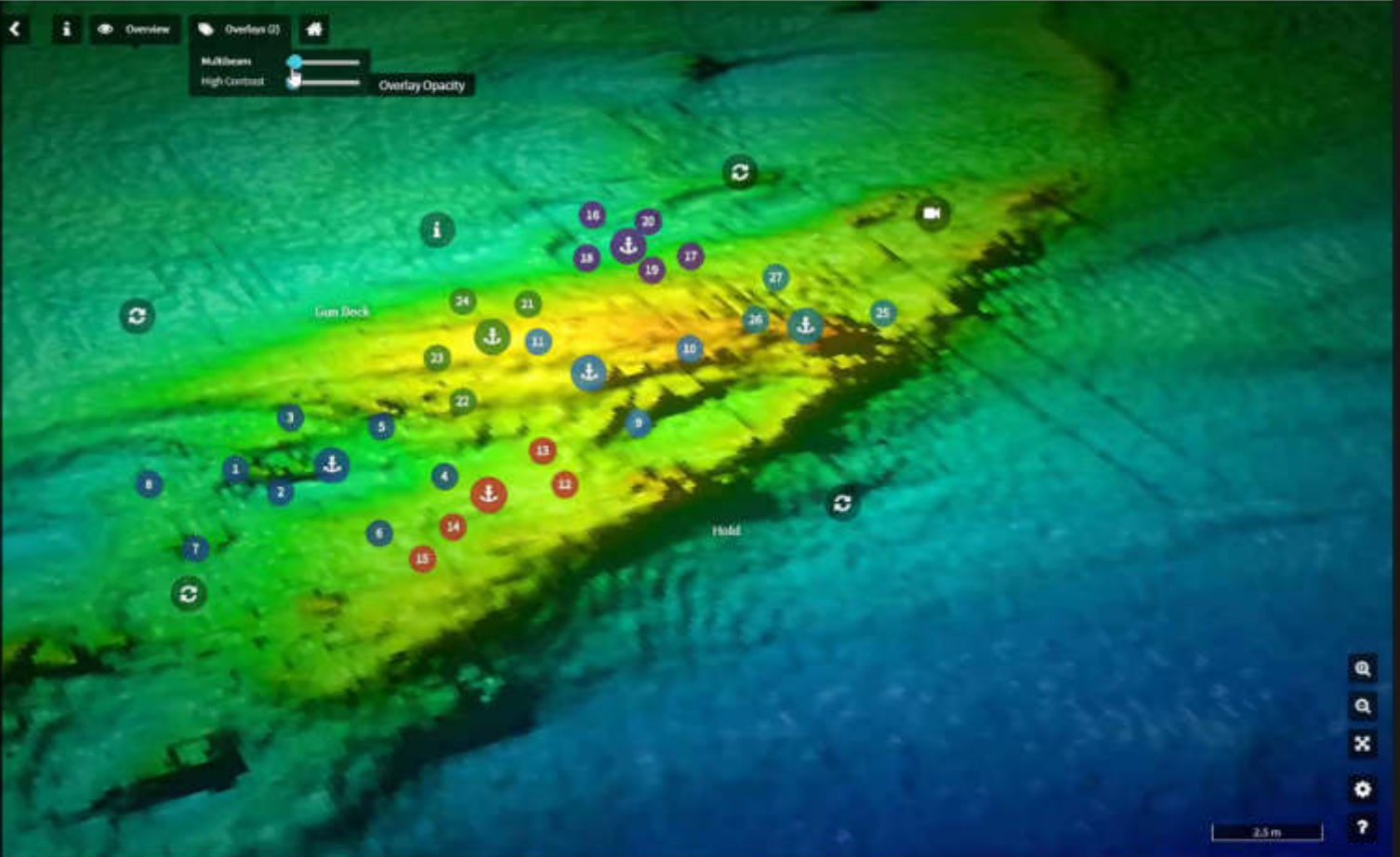
Wreck information



© National Maritime Museum, Greenwich, London

The *London* was an English second rate 'ship of the line' built at Chatham in Kent in 1650. This period, between the death of Charles I (1649) and the restoration of Charles II (1660) following the English Civil War (1642-51), is known as the interregnum. [\[Read More\]](#)

- Introduction
- History
- Loss
- Rediscovery
- Survival
- Location
- Site investigation
- Acknowledgements



Overview Overlays (0) Multibeam High Contrast Overlay Opacity

Gun Deck Hold

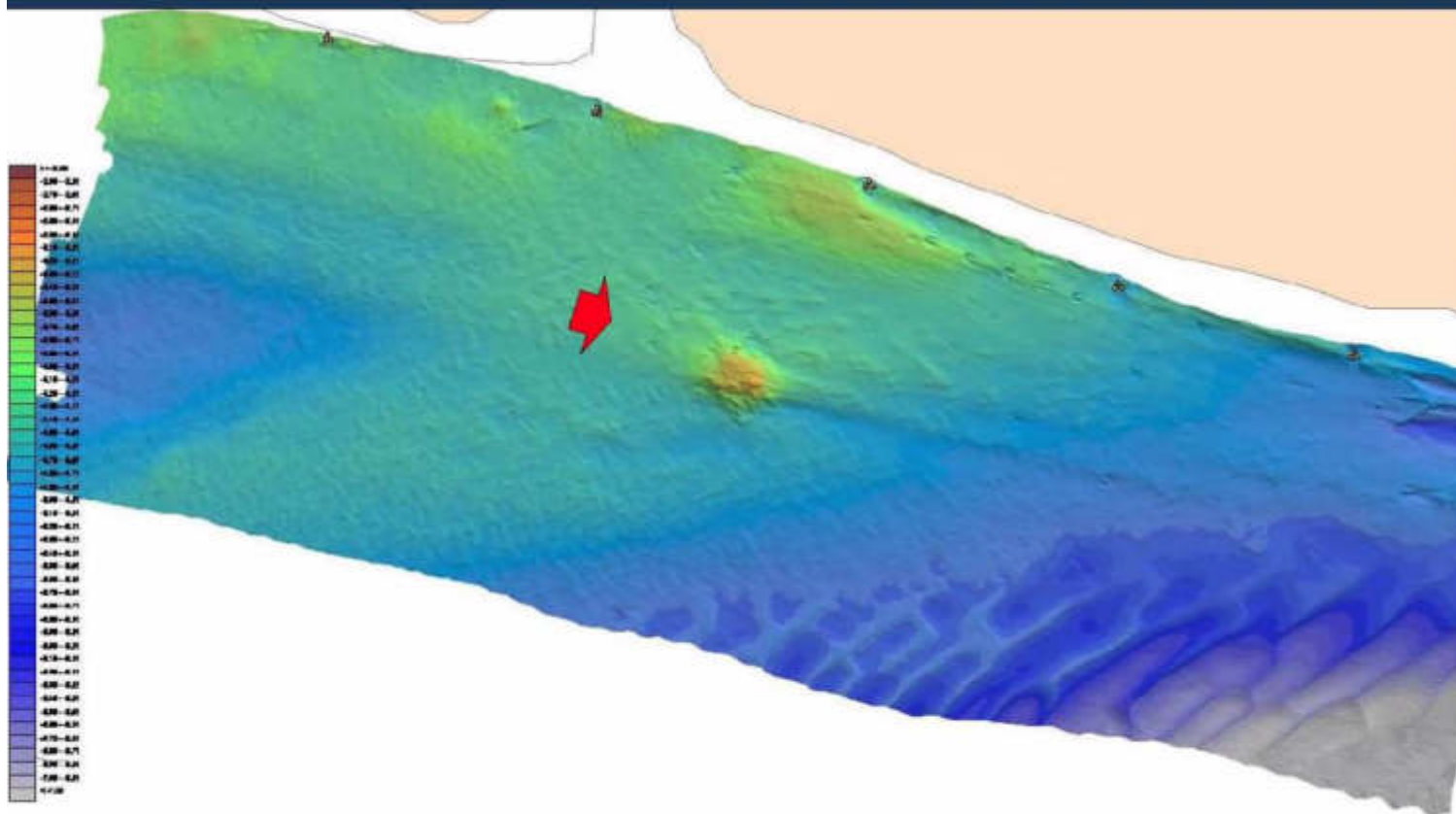
2.5 m

Unmute Start Video Security Participants Chat Share Screen Record Breakout Rooms Reactions Talking: Pat Tanner End

UNDERWATER PHOTOGRAMMETRY

Elisa Costa

DTM - DIGITAL TERRAIN MODEL



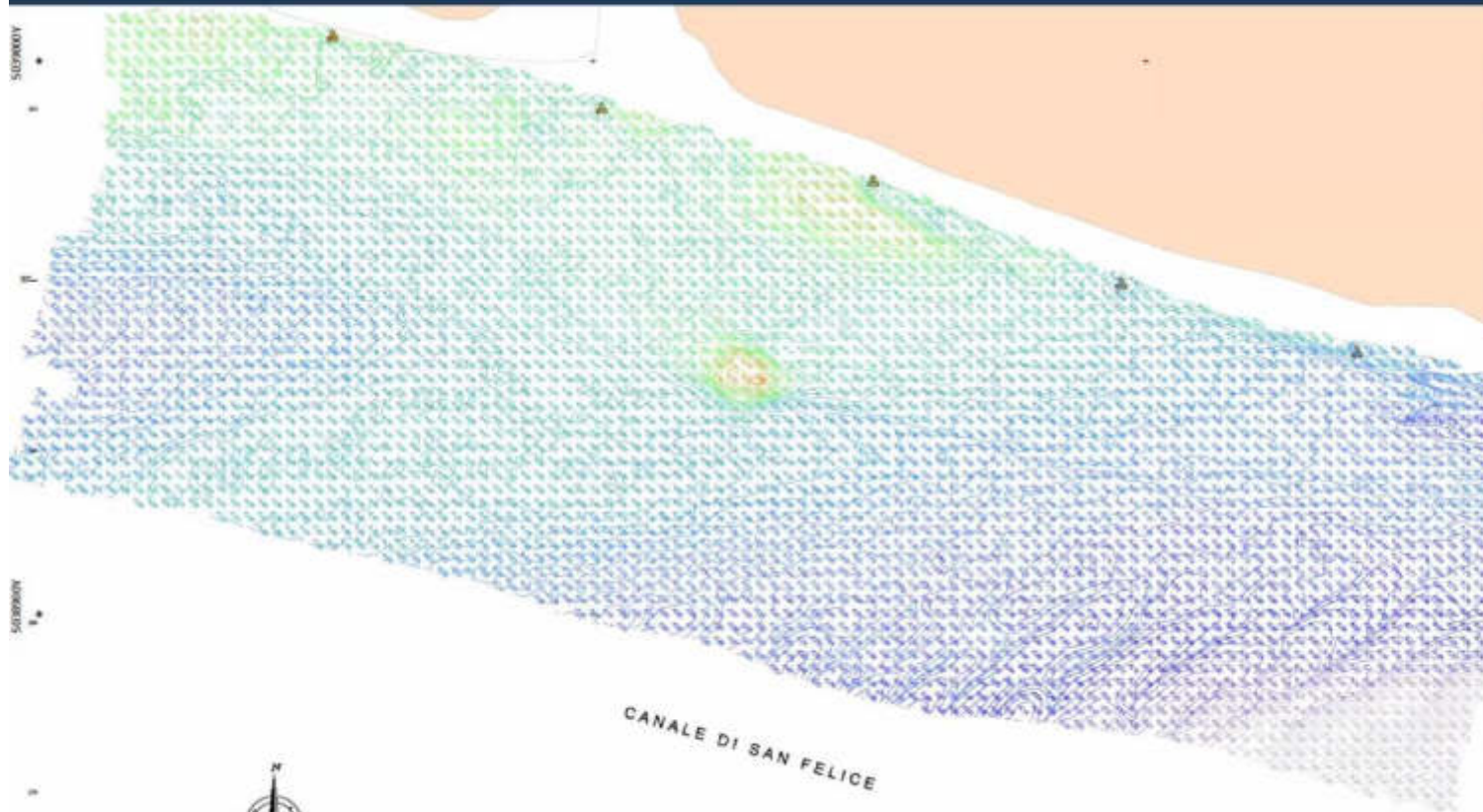
Paola PEROZZO



Rita Auriemma

balletti

BATHIMETRY



Paola PEROZZO



Rita Auriemma

balletti

DIRECT SURVEY



Paola PEROZZO

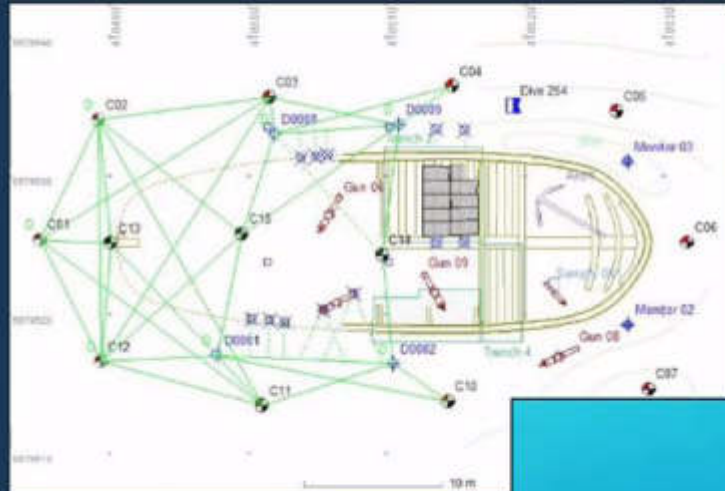


Rita Auriemma

balletti



3D TRILATERATION - DSM - DIRECT SURVEY METHOD



Paola PEROZZO



Rita Auriemma

balletti



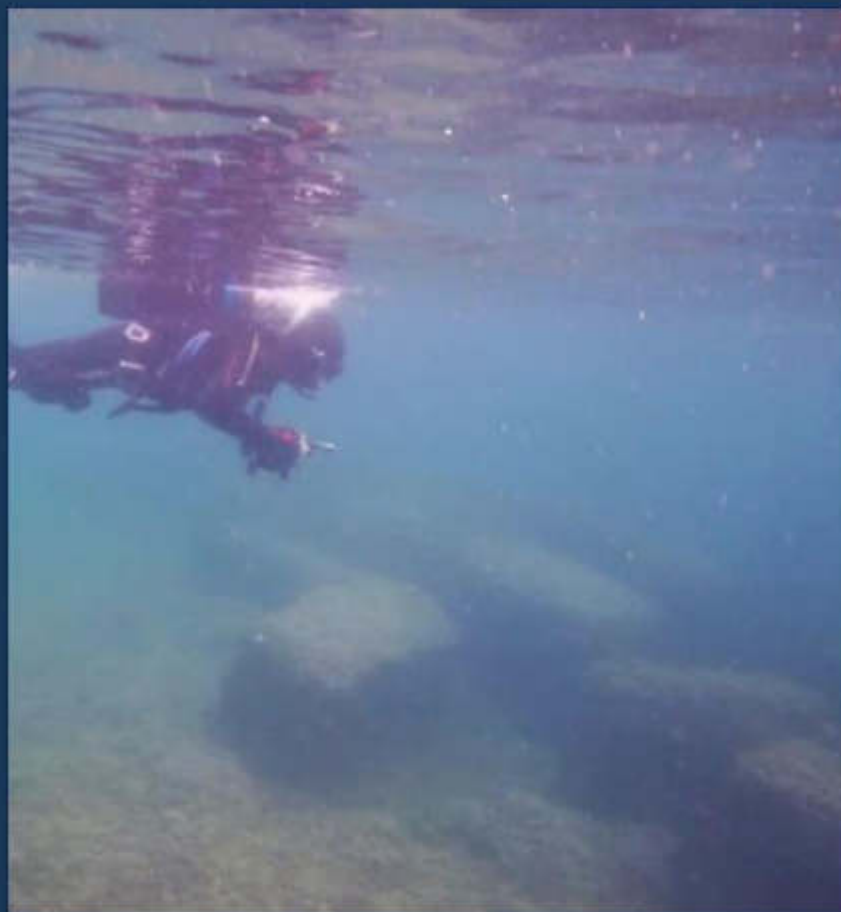
Paola PEROZZO



Rita Auriemma

balletti

MULTI IMAGE PHOTOGRAMMETRY

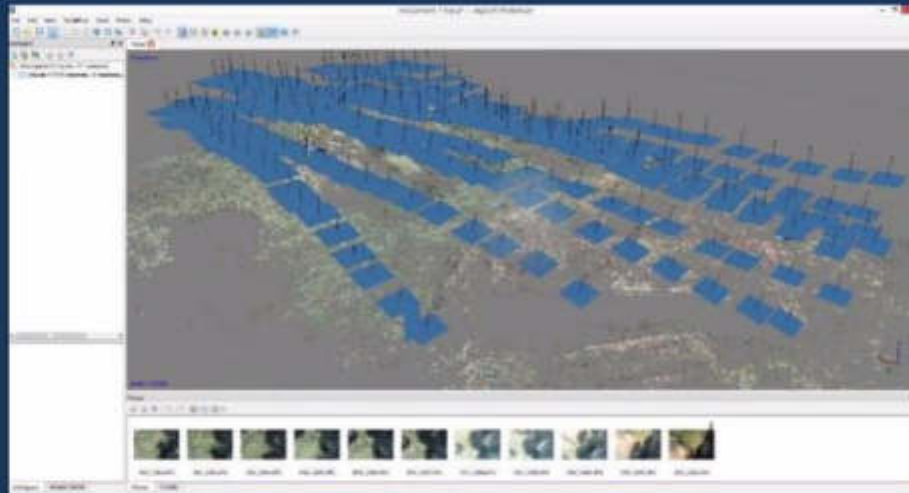


Paola PEROZZO



Rita Auriemma

balletti



Paola PEROZZO



Rita Auriemma

balletti

Stai visualizzando lo schermo di Elisa Costa Visualizza opzioni

Riattiva l'audio Avvia video Sicurezza Partecipanti 39 Chat Condividi schermo Votazione in corso Registrazione Reazioni Lascia

3D DATA PROCESSING



PHOTOGRAMMETRIC SURVEY

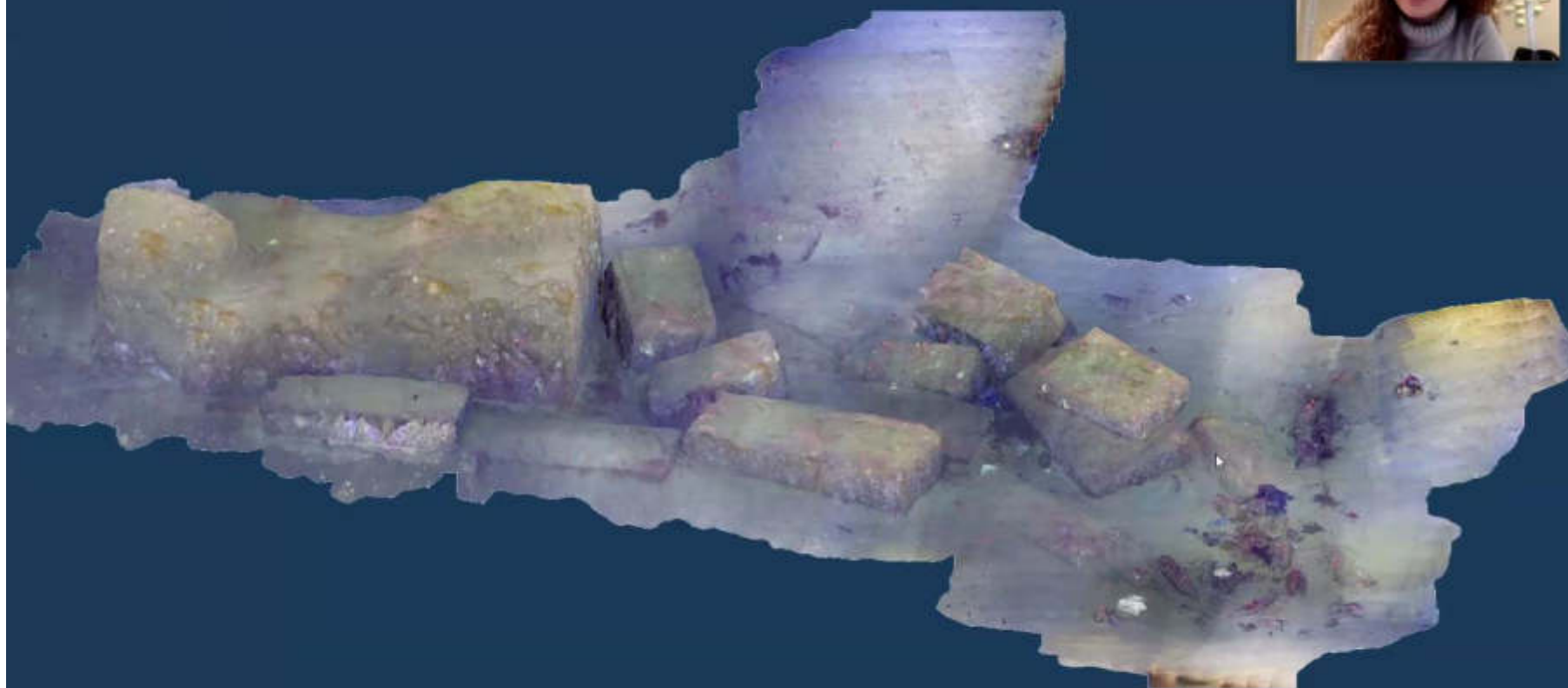
CAD SOFTWARE

HIGH RESOLUTION TEXTURE MAPPING





ABISSAL ROV



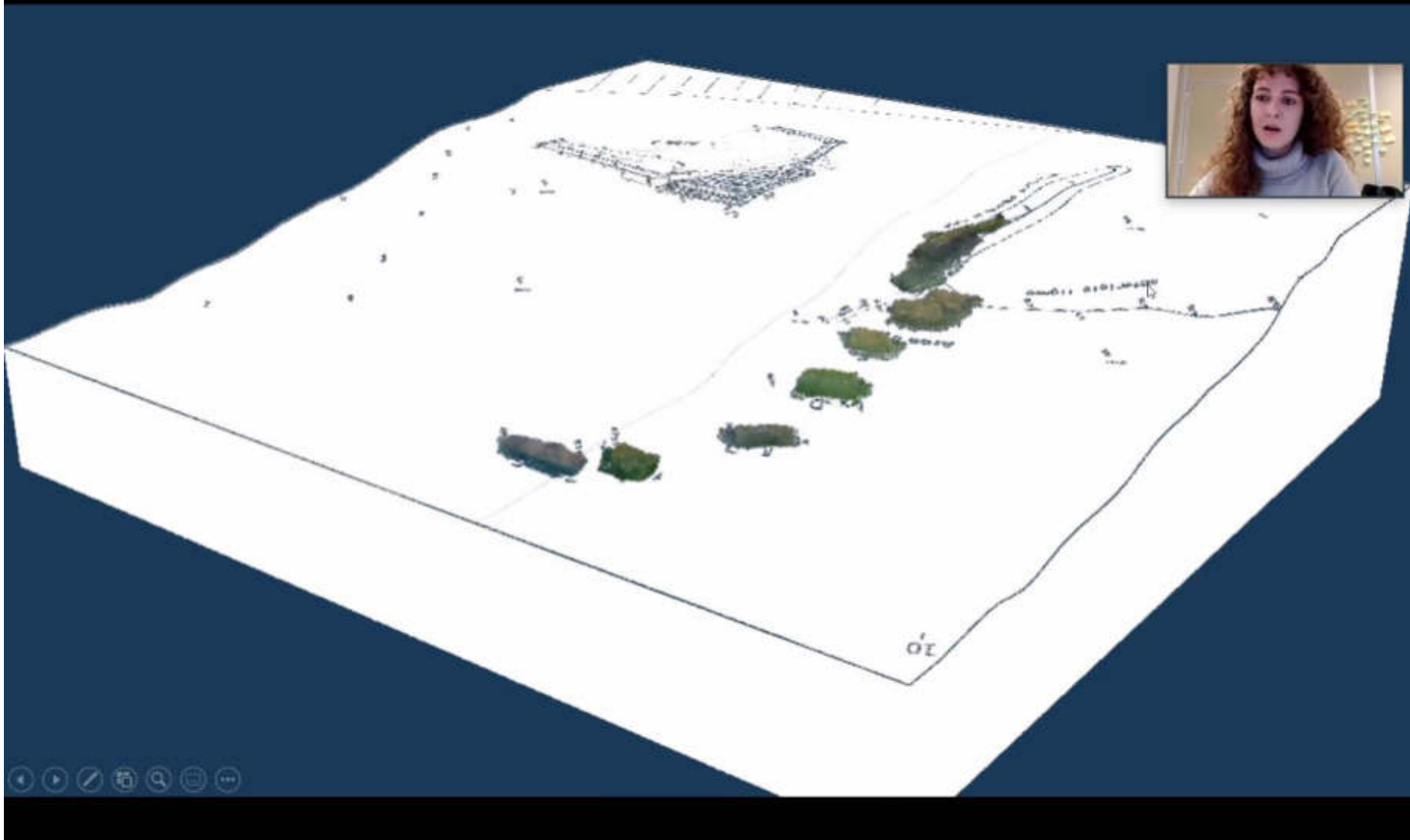
DRESSEL 2-4 DAL RELITTO DAE37

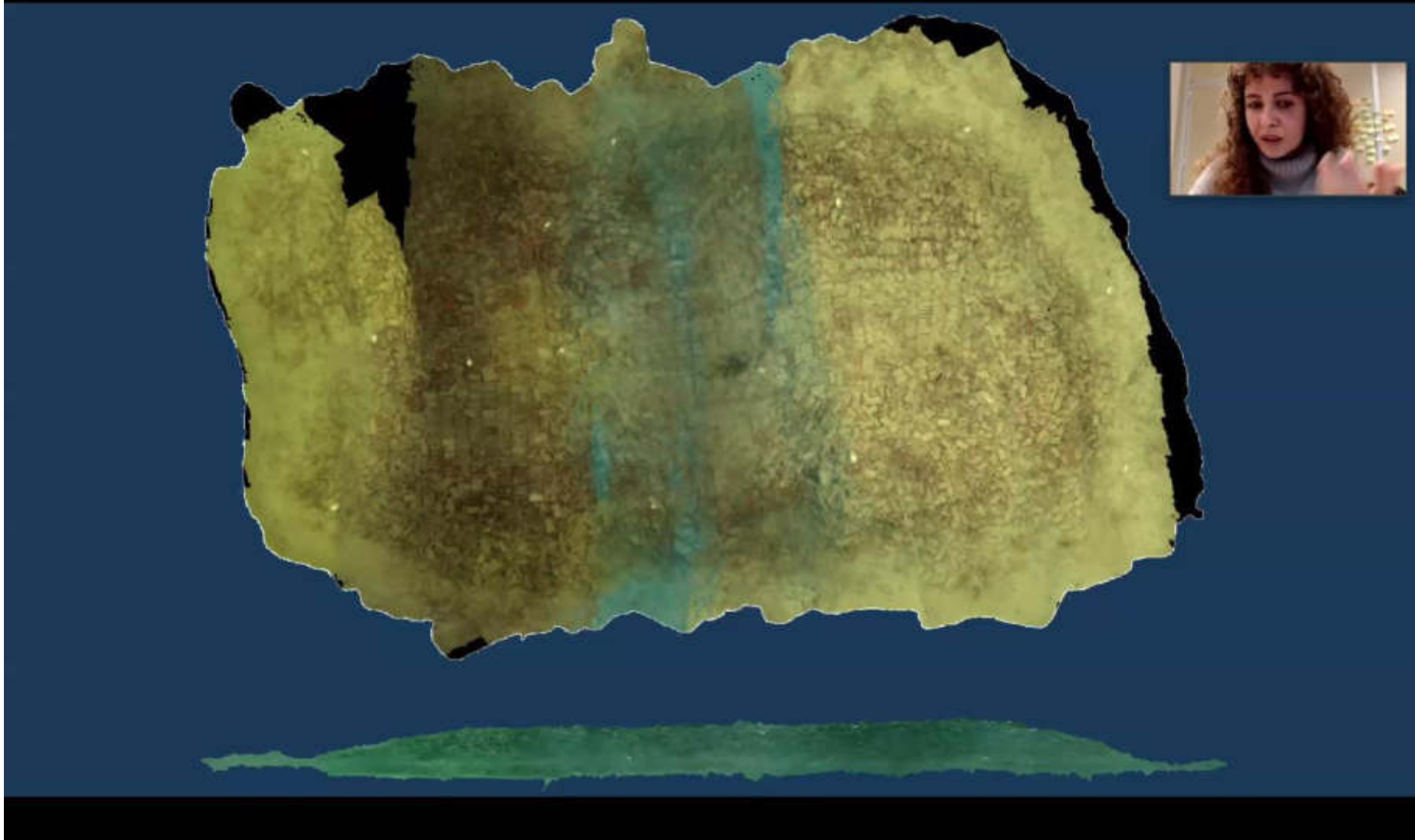


CA' BALLARIN «PIER»

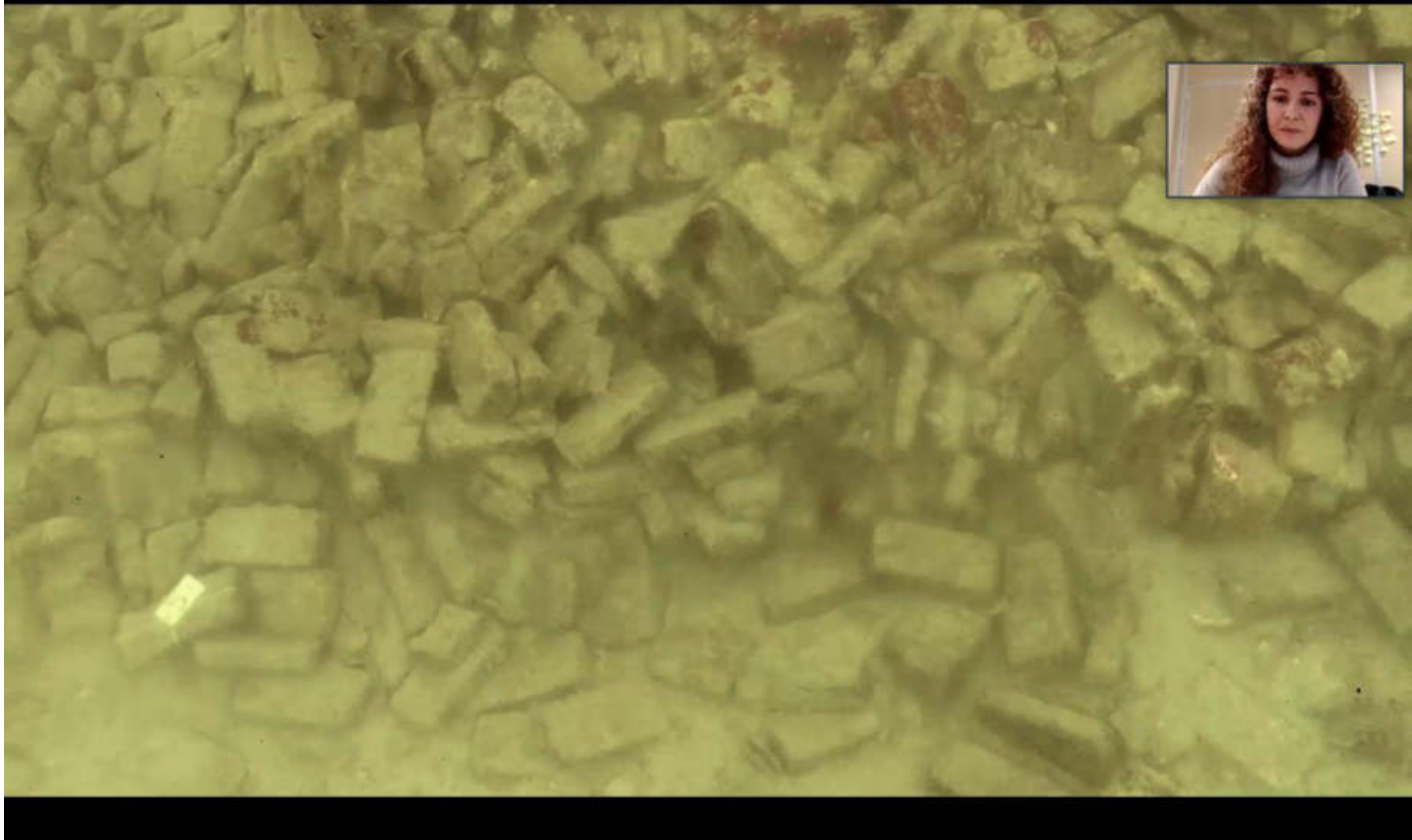


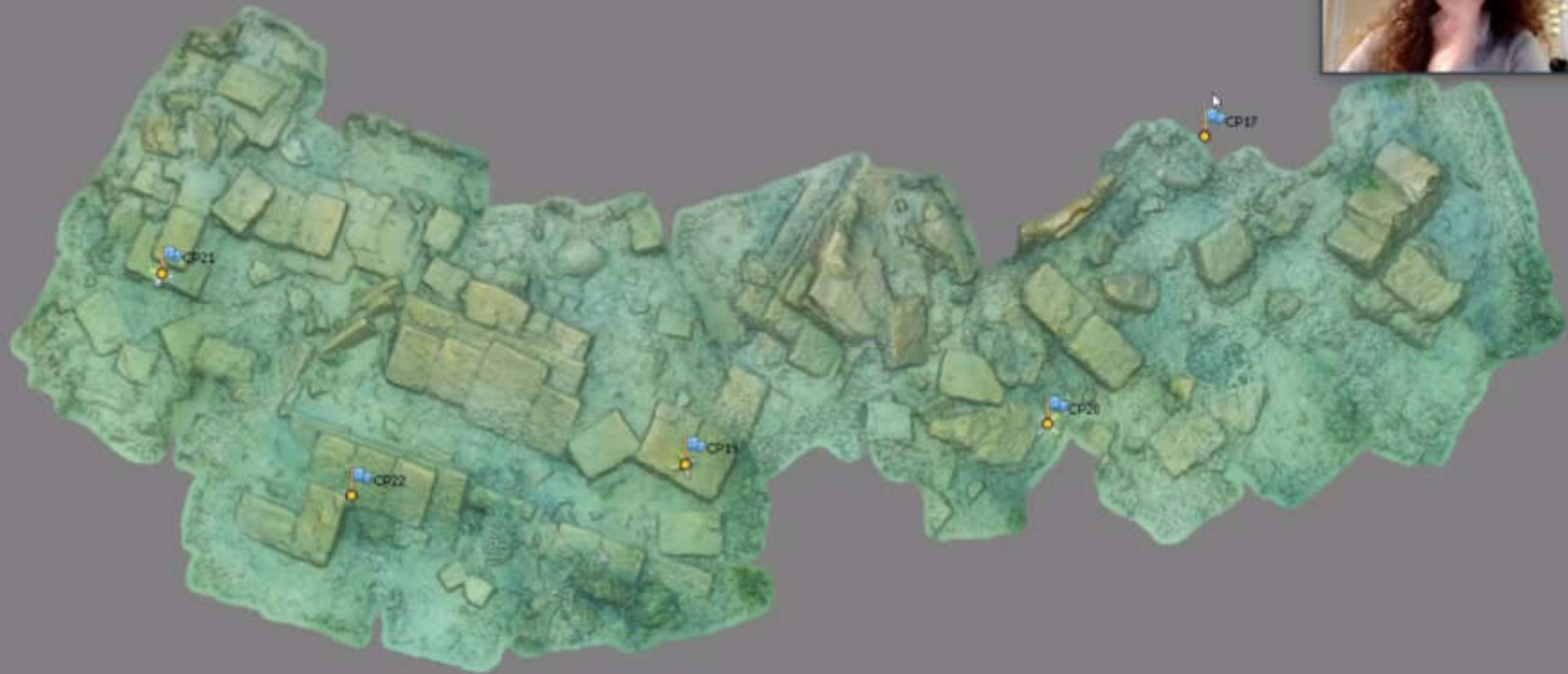


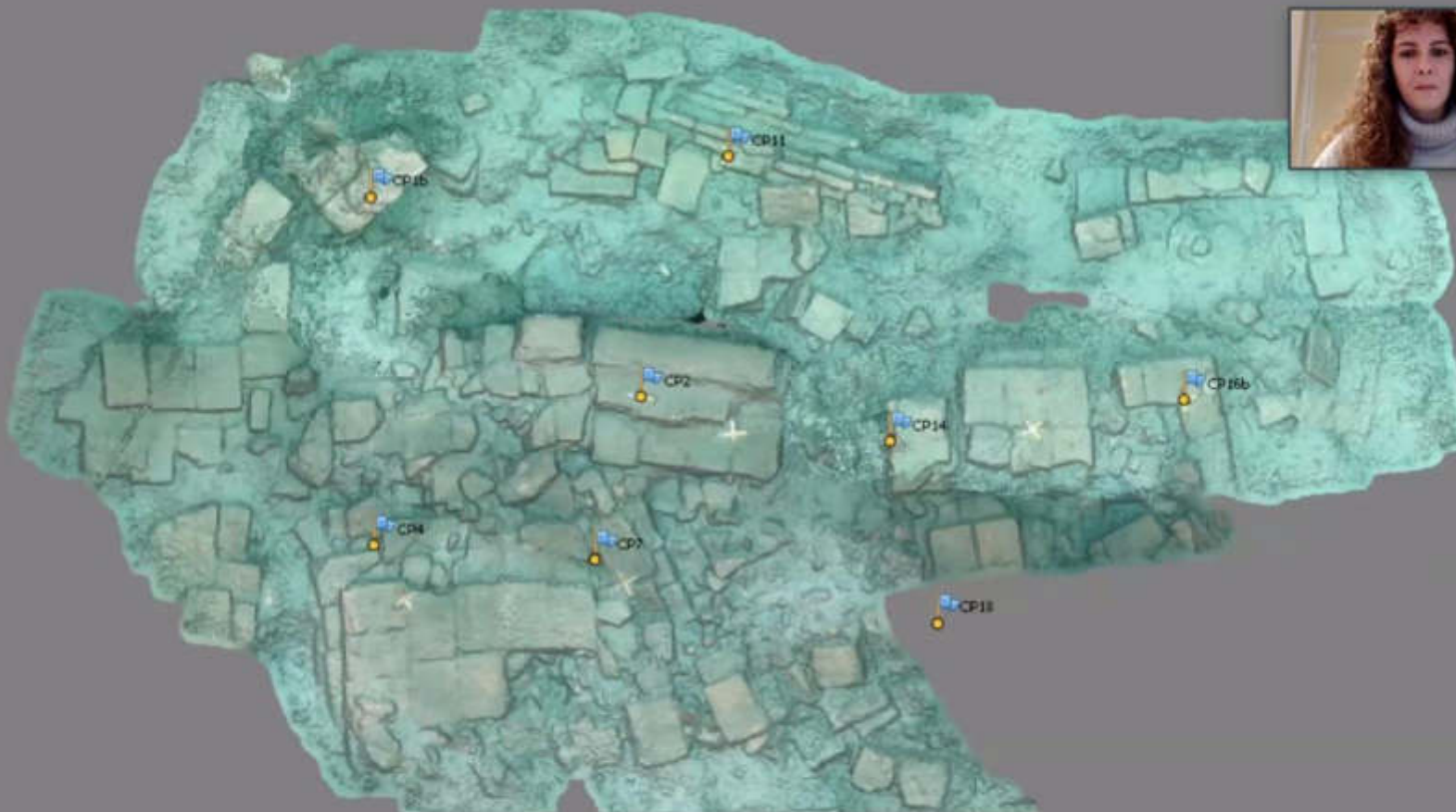








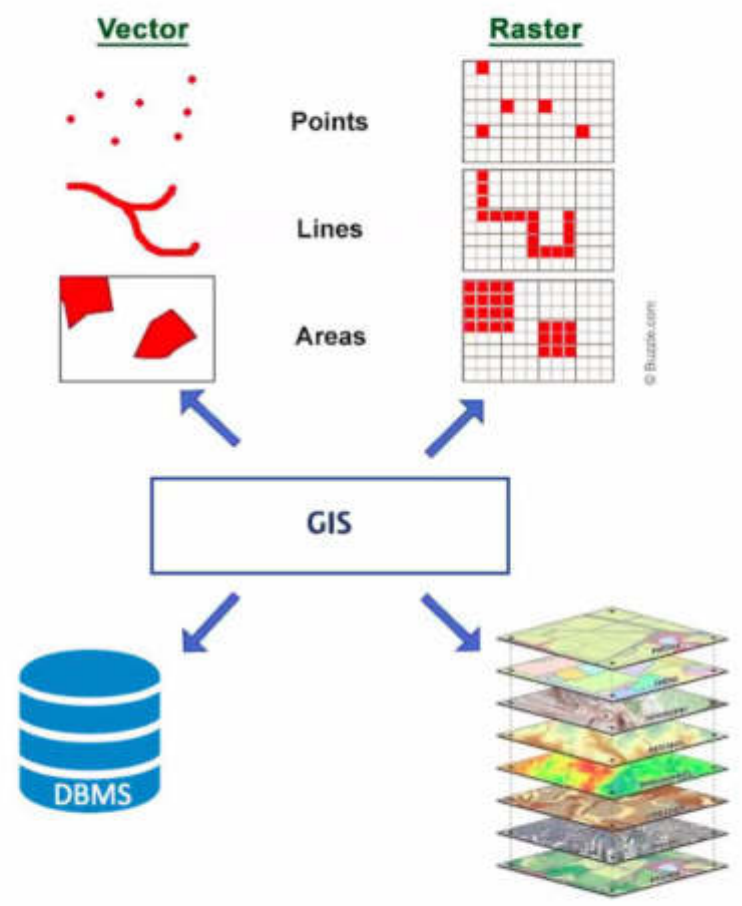




GIS IN UNDERWATER ARCHAEOLOGY

Caterina Balletti

GIS IN [UNDERWATER ARCHAEOLOGY]



A **GEOGRAPHIC INFORMATION SYSTEM (GIS)** is a system for capturing, storing, checking, and displaying data related to positions on Earth's surface. GIS can store different kinds of data on one map, such as street names and vegetation. This enables people to more easily analyze and understand patterns and relationships.

- Identify problems
- Monitor change
- Manage & respond to events
- Perform forecasting
- Set priorities
- Understand trends

Elisa Costa

Carlo Beltrame

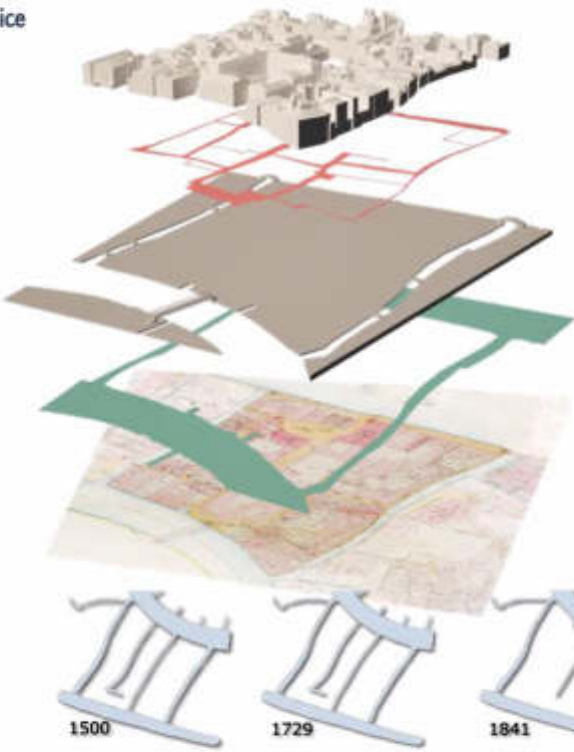
balletti

Rita Auriemma

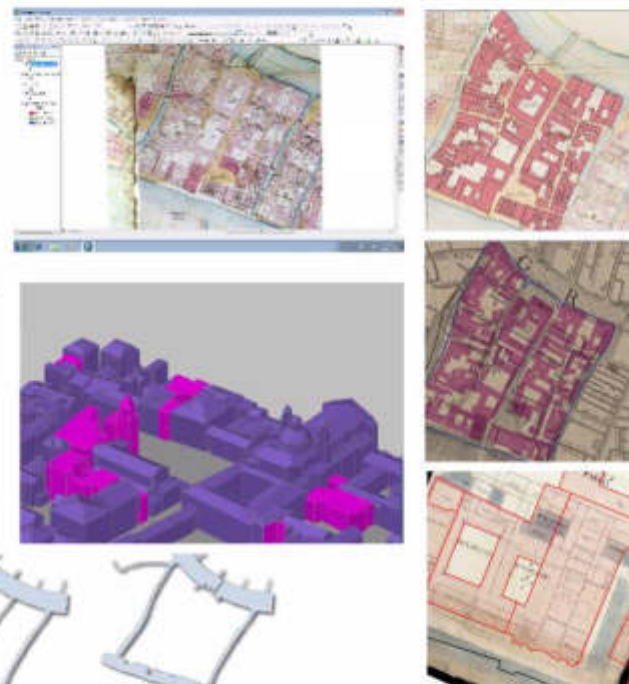
Simona Floris

GIS IN UNDERWATER ARCHAEOLOGY CATERINA BALLETTI

Visualizing Venice project: from Hgis to communication



LAYERS AND GEOREFERENCING (4TH DIMENSION IN GIS)



Participants (45)

Find a participant

- EC Elisa Costa (Host, me)
- B balletti (Co-host, guest)
- PP Paola PEROZZO (Co-host)
- JM Jerko Macura (Guest)
- AT Alessandro Tagliapietra (Guest)
- AC ALESSIO CALANTROPIO (Guest)
- AD alina del fabbro (Guest)
- CB Carlo Beltrame (Guest)
- Carolin Negrin (Guest)
- CT CATERINA TOMIZZA
- CP Claudia Pizzinato (Guest)
- CP Claudio Parisotto (Guest)
- Cristina Barbiani (Guest)
- DP Dimitra Petrocheilou (Guest)
- Guest (Guest)

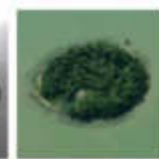
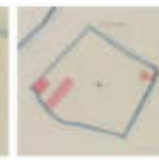
Unmute Start Video Security Participants 45 Chat Share Screen Record Breakout Rooms End

yes no go slower go faster more dear all Invite Mute All Unmute All

GIS IN UNDERWATER ARCHAEOLOGY CATERINA BALLETTI

LAYERS AND GEOREFERENCING (4TH DIMENSION IN GIS)

Micro-histories of a Lagoon Island in a Visual Mapping Project

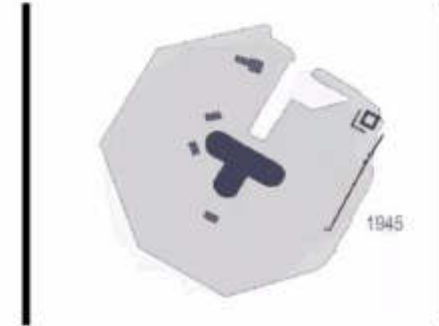


18th cent.

1850

1945

Today



Unmute Start Video Security Participants 45 Chat Share Screen Record Breakout Rooms End

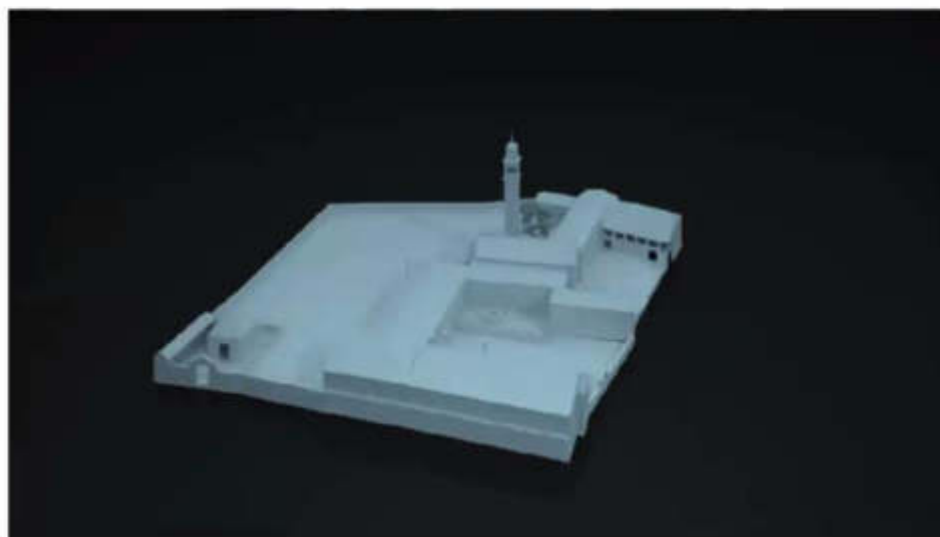
Scrivi qui per eseguire la ricerca

15:39 02/12/2020

GIS IN UNDERWATER ARCHAEOLOGY CATERINA BALLETTI

LAYERS AND GEOREFERENCING (4TH DIMENSION IN GIS)

Micro-histories of a Lagoon Island in a Visual Mapping Project




End

Scrivi qui per eseguire la ricerca



15:40 02/12/2020

Zoom Meeting You are viewing balletti's screen View Options





Elisa Costa  balletti Rita Auriemma Jerko Macura

Zoom Group Chat

GIS IN [UNDERWATER ARCHAEOLOGY] CATERINA BALLETTI

LAYERS AND GEOREFERENCING (4TH DIMENSION IN GIS)

Historical GIS: modelling transformation

1911 	1758 
1550-1600 	1850 

From Me to Everyone: elisa.costa@unive.it

From Mariusz Milka to Everyone: diversleague: please find me on facebook, I might be able to answer some of you technical questions

From diversleague to Me: (Privately) Thank you very much for the two helpful presentations, We are trying to do some photogrammetry in a cave system and we are having a problem with the lighting the software is not processing the pics because the shadow is so different from a pic to pic and there is no ambient light at all, do you have any suggestions for this issue.

From Me to diversleague: (Privately) thank you for your interest. it is very difficult to explain all the possibilities and difficulties of photogrammetry in two hours, because every sites have different characteristics and sometimes it is difficult also for me to give advice. in the cave if it is possible leave stable some lights around, but i think that you are not too much near the wall of the cave could realize the photogrammetry also with light, as I do in depth sites

From diversleague to Me: (Privately) Thank you very much for your insights.

From Emily Robertson to Everyone: are these sessions recorded?

To: diversleague (Privately) File

Type message here...

Unmute Start Video Security Participants (42) Chat Share Screen Record Breakout Rooms Reactions End

Scrivi qui per eseguire la ricerca

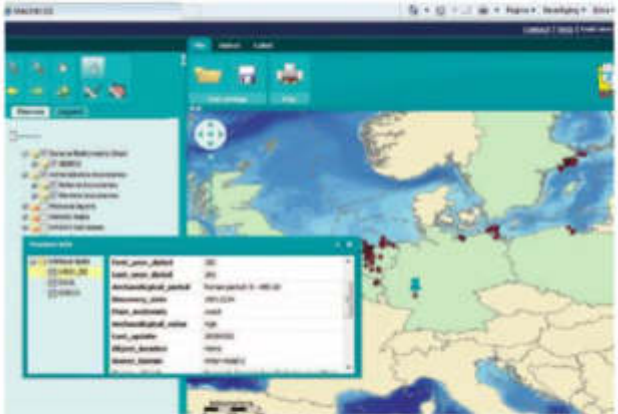
1550 02/12/2020

GIS IN UNDERWATER ARCHAEOLOGY

CATERINA BALLETTI

GIS IN UNDERWATER ARCHAEOLOGY

The use of historic sea maps to predict where to expect shipwrecks. © WW Brown



- Archaeological sites
- Accessible water
- Submarine maps
- Historical maps
- Research areas
- Geo-historical vector models
- Legislation
- Work made in parallel

Data relevant for managing underwater cultural heritage in a GIS. © MACHU Project



THE MERCURE GIS

Il relitto del Mercure, Caorle

[Beltrame, C., Manfio, S., 2014. ALCUNE PROPOSTE METODOLOGICHE PER L'IMPIEGO DI UN GIS INTRA-SITE NELLA DOCUMENTAZIONE DI UN RELITTO: L'APPLICAZIONE SUL BRICK MERCURIO (PUNTA TAGLIAMENTO, ITALIA). In Archeologia e Calcolatori, 25, 2014]

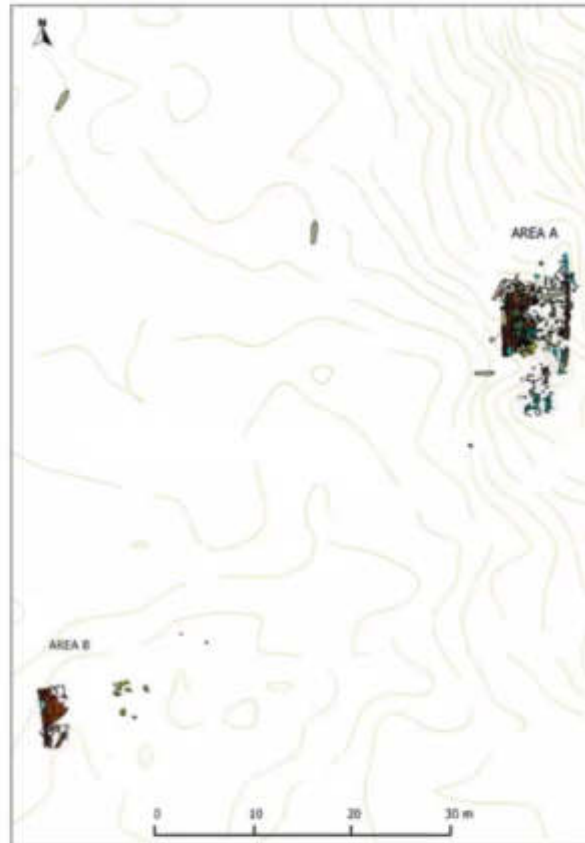
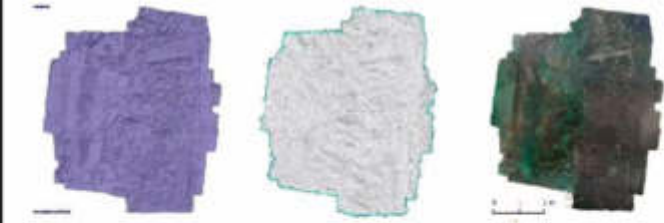


Fig. 1 - Pianta del sito prodotta dal GIS: si notino le aree A e B corrispondenti rispettivamente a terra e poggio.



Fig. 2 - Area di prova del relitto del Mercureo con oggetti metallici, concretioni e frammenti di legno in evidenza.



Fig. 3 - Fiancata di sinistra di prova del relitto del Mercureo (si noti la presenza a destra dei sotterranei frammenti di legno).

Unmute Start Video Security Participants 43 Chat Share Screen Record Breakout Rooms Reactions Talking: balletti End

THE MERCURE GIS

Il relitto del Mercure, Caorle

[Beltrame, C., Manfio, S., 2014. ALCUNE PROPOSTE METODOLOGICHE PER L'IMPIEGO DI UN GIS INTRA-SITE NELLA DOCUMENTAZIONE DI UN RELITTO: L'APPLICAZIONE SUL BRICK MERCURIO (PUNTA TAGLIAMENTO, ITALIA). In Archeologia e Calcolatori, 25, 2014]

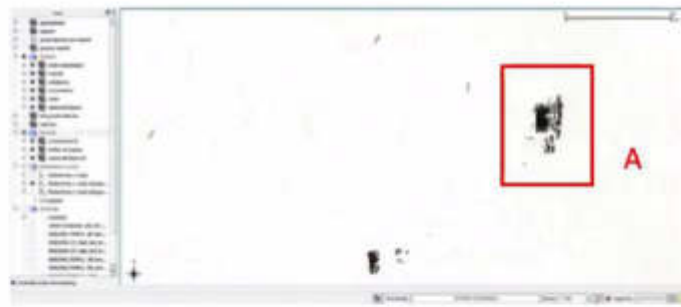


Fig. 4 - Planimetria dell'intero sito, prodotta dal GIS, comprensiva delle zone A e B e di quattro carronate disperse ad O.

Unmute Start Video Security Participants 42 Chat Share Screen Record Breakout Rooms Reactions Talking: balletti End

THE MERCURE GIS

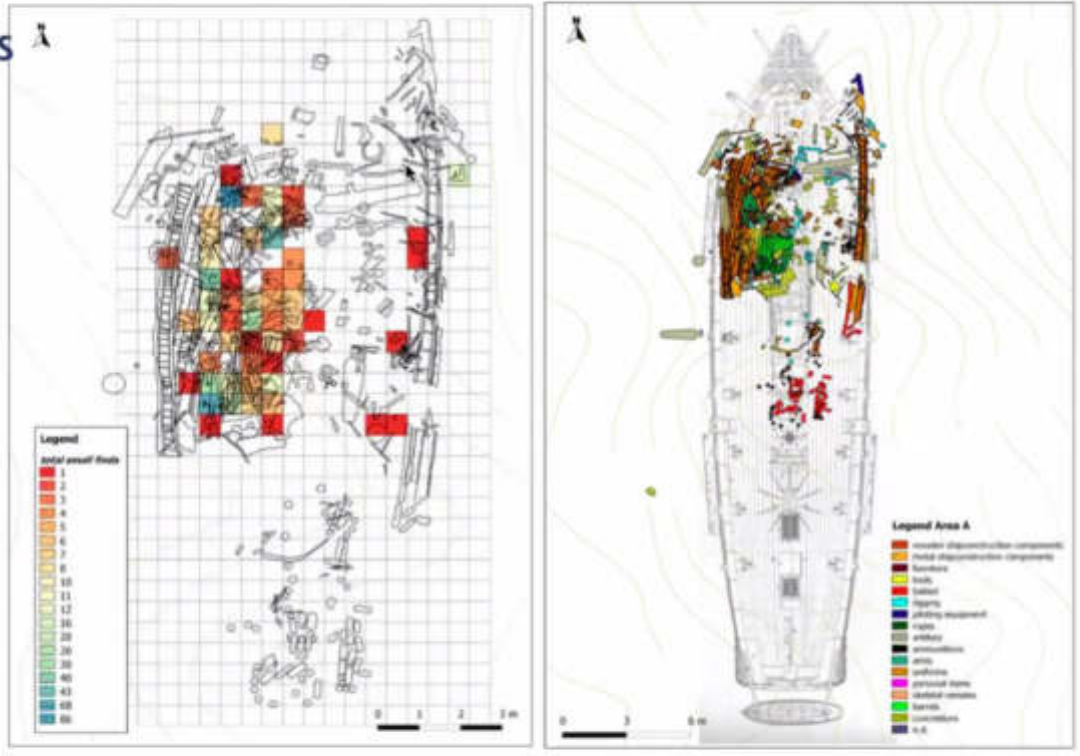
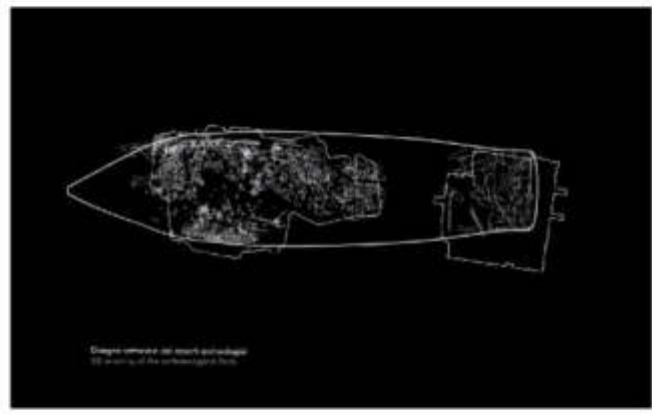
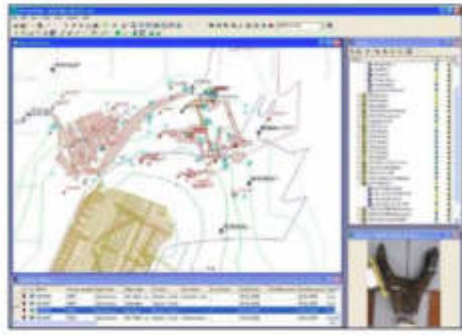


Fig. 6 - Pianta dell'area A del GIS con la distribuzione topografica dei piccoli reperti: ogni cella contiene un numero specifico di piccoli reperti.



Unmute Start Video Security Participants (42) Chat Share Screen Record Breakout Rooms Reactions Talking: End

THE MERCURE GIS





You are viewing balletti's screen

View Options



THANKS



Unmute

Start Video

Security

Participants 40

Chat

Share Screen

Record

Breakout Rooms

Reactions

Talking: balletti

End

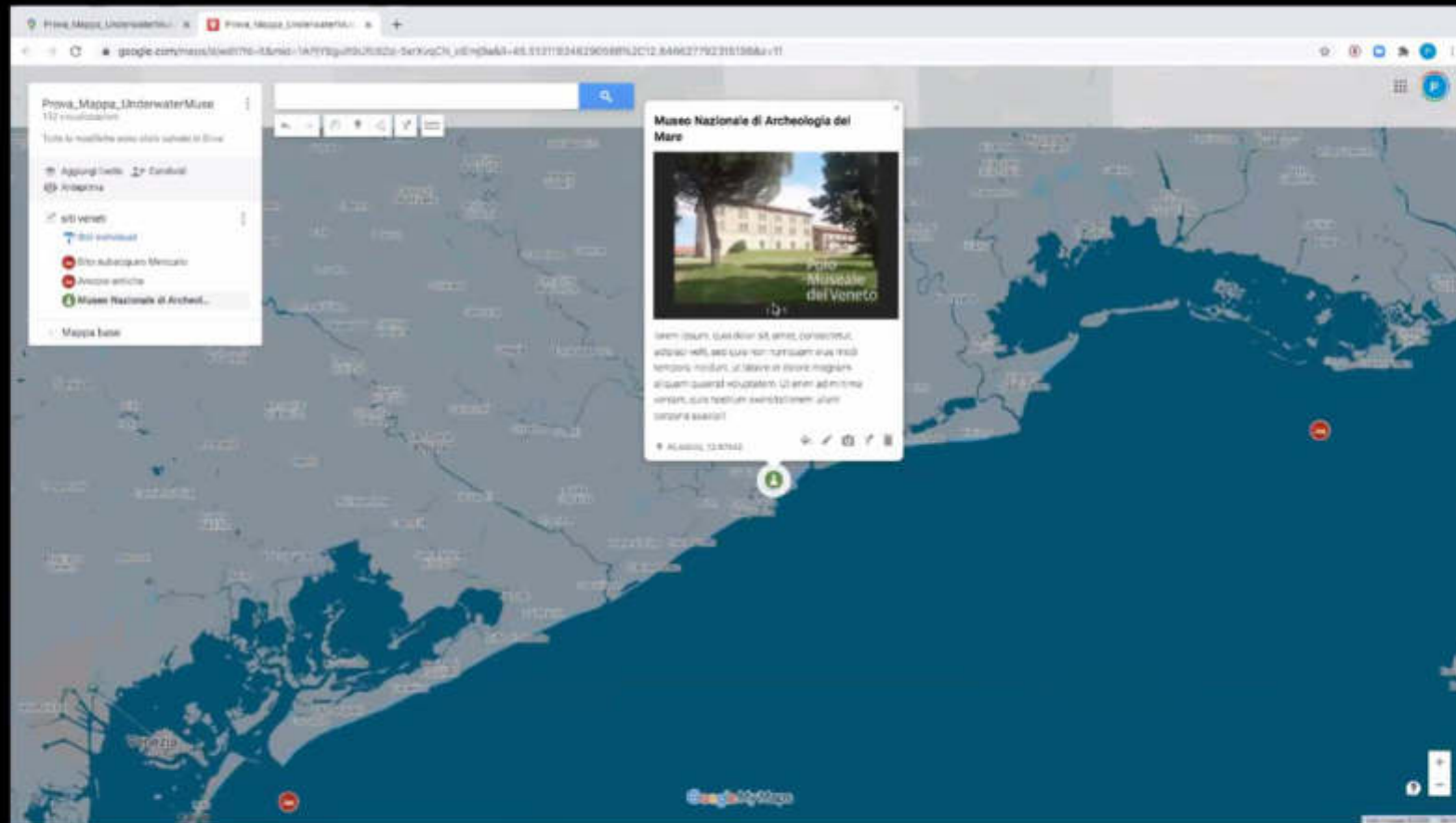
POSSIBLE ALTERNATIVES TO GIS FOR A GEOREFERENCED WEB MAP

Paola Perozzo

GOOGLE MAPS

1

Unmute Start Video Security Participants 40 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End



Unmute Start Video Security Participants 40 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

Prova_Mappa_UnderwaterMuse
137 visualizzazioni

Tutte le localizzazioni sono state salvate in Drive

Aggiungi livelli: Contorni
Antenna

Sei venuti

Sito subacqueo Mercurio

Antenna storica

Museo Nazionale di Ancona...

Mappe base

Sito subacqueo Mercurio

Sono quasi due anni che, grazie a un contratto, abbiamo un sito che non abbiamo mai visto prima. È un sito che ha una storia molto interessante e che ha una grande importanza per la nostra regione. È un sito che ha una storia molto interessante e che ha una grande importanza per la nostra regione. È un sito che ha una storia molto interessante e che ha una grande importanza per la nostra regione.

Unmute Start Video Security Participants 40 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

INTEGRATION OF GOOGLE MAPS IN A WEB SITE

```
var myMap;
function initMap() {
  var mapOptions = {
    center: new google.maps.LatLng(45.764042, 12.109215),
    zoom: 15
  };
  myMap = new google.maps.Map(document.getElementById("map"), mapOptions);
}
```



Unmute

Start Video

Security

Participants 40

Chat

Share Screen

Record

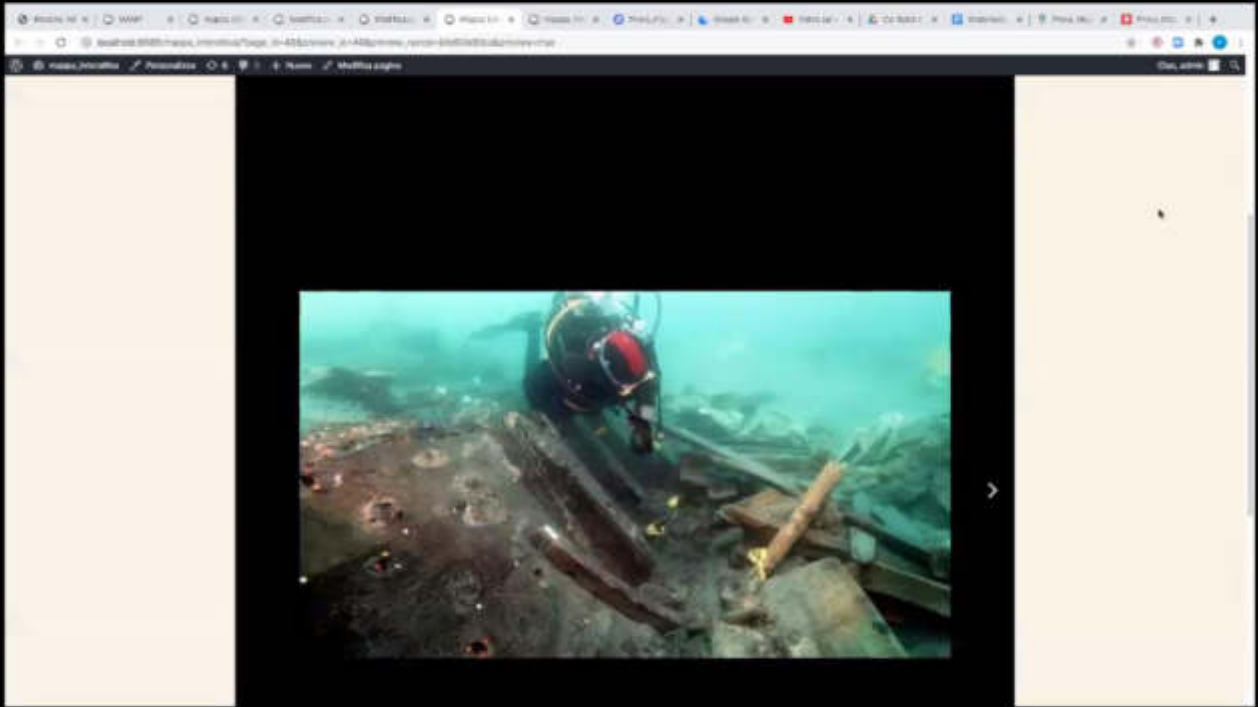
Breakout Rooms

Reactions

Talking: Paola PEROZZO

End

INTEGRATION OF GOOGLE MAPS IN A WEB SITE



Unmute Start Video Security Participants 40 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

RECAP ABOUT GOOGLE MAPS

Features	Google Maps + web site
Available online	Integrated in a web site
Customizable map	Yes, but not many possibilities
Customizable layout UI	No, fixed layout
Contents: Texts, Audios, Pictures, Videos	Yes, except for audio files
Contents: 3D models	No
Easy to share with partners to upload contents	Yes



Unmute Start Video Security Participants 40 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

GOOGLE EARTH

2

Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

Mercurio

Mercurio

MORDELORE ipsum, quis dicit sit, unde, consernata, aditioi nisi, sed que non nuptiam wux modi tempore pidiat, ut labore et dolore magna aliquam quaref voluptatem. Ut enim ad minima veniam, quis nostrum exercitationem ullam corporis suscipit

Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End



Unmute Start Video Security Participants Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

RECAP ABOUT GOOGLE EARTH

Features	Google Earth + web site
Available online	Integrated in a web site
Customizable map	No
Customizable layout UI	No, fixed layout
Contents: Texts, Audios, Pictures, Videos	Yes, except for audio source
Contents: 3D models	No
Easy to share with partners to upload contents	Yes



Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

IZI TRAVEL

3

Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

The screenshot shows the izi.TRAVEL website interface. At the top, there is a navigation bar with links for 'audio guides', 'create a guide', 'api', 'about us', 'login', 'offers', and 'EN'. Below the navigation bar is a search bar with the text 'Vene' entered. A dropdown menu displays a list of search results for 'Vene', including 'Venezuela', 'Veneta, Vittorio Veneto, Italy', 'Veneta, Veroga, Italy', 'Veneta, Pavia, Italy', 'Veneta, Venezia, Italy', 'Veneta, Cambranolesse, Italy', 'Veneta, Belluno, Italy', 'Veneta, Treviso, Italy', 'Veneta, Casale, Italy', and 'See all search results'. A semi-transparent grey box with the text 'Press ESC or double-click to exit full screen mode' is overlaid on the search results. Below the search bar, there is a section titled 'Featured audio guides' with three image thumbnails: a classical building facade, an interior museum hallway, and a museum sign that says 'MUSEUM'.

Unmute

Start Video

Security

Participants 39

Chat

Share Screen

Record

Breakout Rooms

Reactions

End

The screenshot shows the izi.TRAVEL website interface. At the top, there is a search bar with the word "VENEZIA" entered. Below the search bar, there are two rows of search results. Each result card includes a thumbnail image, a title, and a category icon. The first row includes results for "Venezia", "Palazzo Ducale Venezia", "Alle scoperte di Udine veneziana", "La dolce vita a Venezia", "Sulle tracce della nobiltà veneziana", and "Venice tour". The second row includes results for "Museum of Oriental Art of", "Venezia: Estoria Esimothan", "Venezia tra porte d'acqua e", and "Venezia: Estoria Esimothan".

Talking: Paola PEROZZO

Unmute

Start Video

Security

Participants 39

Chat

Share Screen

Record

Breakout Rooms

Reactions

End

Talking: Paola PEROZZO

Unmute

Start Video

Security

Participants 39

Chat

Share Screen

Record

Breakout Rooms

Reactions

End

VENICE TOUR

Venice: Explore Forgotten Pellestrina and its Sailing Traditions

★★★★★ (1 review) | 100% | Free

Download this to your phone

Map Summary

- 1 Chioggia and the Fishing Harbour
- 2 The Cathedral and its Origins
- 3 The Coat of Arms and the Flag
- 4 The Sanctuary of the Madonna
- 5 The Murazzi Walls and the...
- 6 Men of the Sea
- 7 The Beach

Map: Mappa Satellite

Provided by CulturalAm

Yearbook Project - Strategy Center Europe

View all guides

Reviews

Unmute Start Video Security Participants 38 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

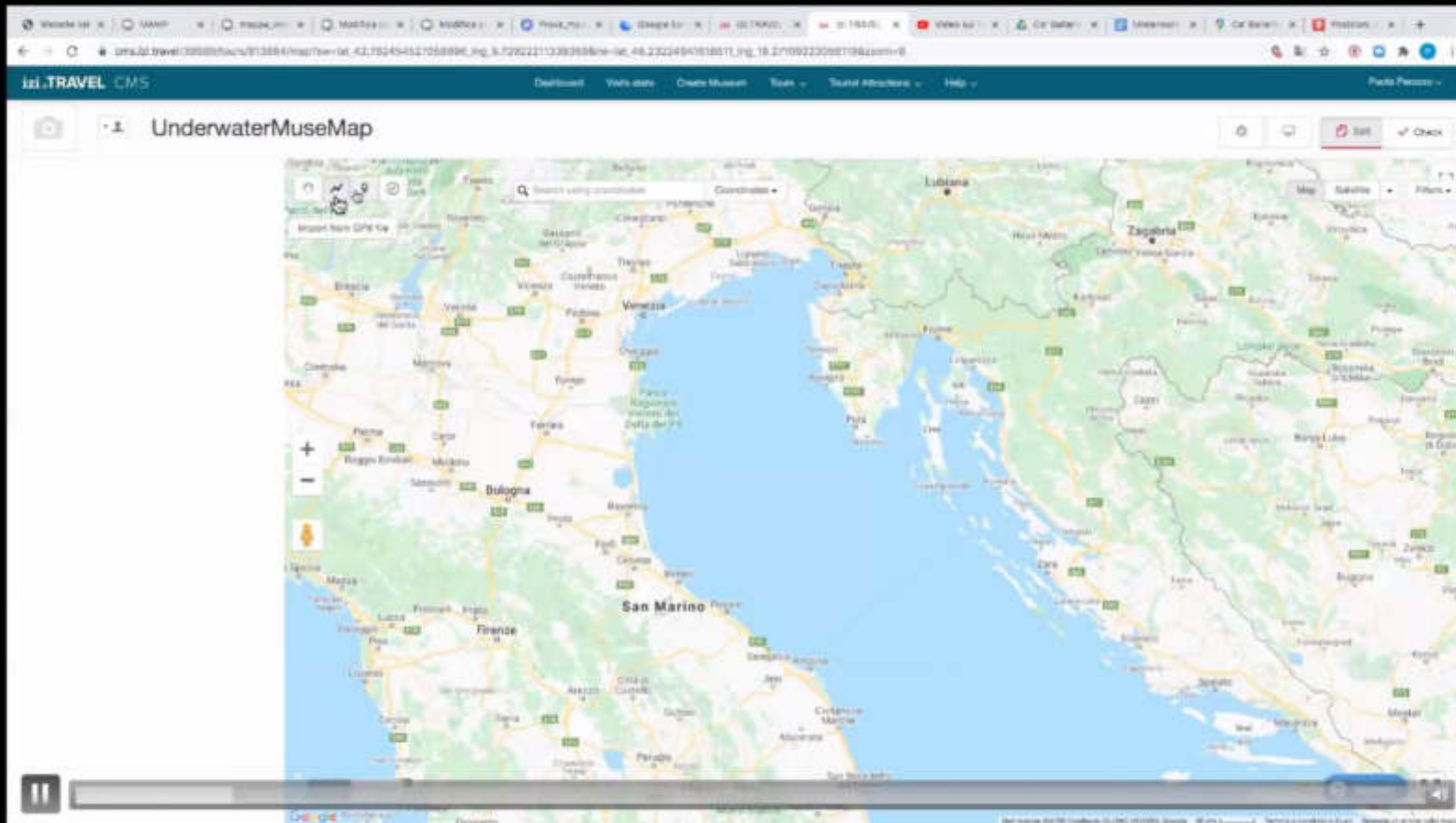
The screenshot shows the iai.TRAVEL CMS dashboard. At the top, there is a navigation bar with 'Dashboard', 'Video state', 'Create Museum', 'Create Tour', 'Tourist Attractions', and 'Help'. The user's name 'Paola Perozzo' is visible in the top right. The main content area features three cards for creating audio guides: 'MUSEUM', 'TOUR', and 'TOURIST ATTRACTION'. Each card includes an icon, a brief description, and a 'Learn more...' link. A red '+ Create' button is located in the top right of the content area. Below the cards, a message states: 'You have no audio guides. Please, click Create and choose the audio guide type.' On the right side, there are sections for 'Last updated' and 'Support', with 'Live chat' and 'Email' buttons.

This block shows the Zoom video player interface. It includes a play/pause button, a volume icon, and a progress bar. The video URL 'https://www.zoom.us/j/91660000000?pwd=...' is visible at the bottom left of the player area.

The Zoom meeting control bar is located at the bottom of the screen. It contains several icons and labels: 'Unmute', 'Start Video', 'Security', 'Participants' (with a count of 38), 'Chat', 'Share Screen', 'Record', 'Breakout Rooms', 'Reactions', and 'End'. The current speaker is identified as 'Talking: Paola PEROZZO'.

The screenshot shows a web browser window displaying the 'UnderwaterMuseMap' application. A modal dialog box titled 'Add language' is centered on the screen. The dialog has two input fields: 'Name' with the text 'Italiano/croato/italo' and 'Language' with a dropdown menu showing 'English'. At the bottom right of the dialog are two buttons: 'Create' (in red) and 'Cancel'. The background of the browser shows a dark-themed map interface with various navigation and editing tools. The browser's address bar shows a URL starting with 'https://travel360.com/913884/properties'. The browser's tab bar shows several open tabs, including 'google maps', 'MAMP', 'maps_musemap', 'musemap_page', 'musemap_page', 'musemap_page', 'google earth', 'ULTRAVEL CRO', and 'ULTRAVEL CRO'.

The Zoom meeting control bar is visible at the bottom of the screen. It includes the following controls from left to right: Unmute (muted), Start Video (video off), Security (lock icon), Participants (38), Chat (chat icon), Share Screen (share icon), Record (record icon), Breakout Rooms (grid icon), Reactions (smiley face icon), Talking: Paola PEROZZO (current speaker), and End (red button).



Unmute



Start Video



Security



Participants



Chat



Share Screen



Record



Breakout Rooms



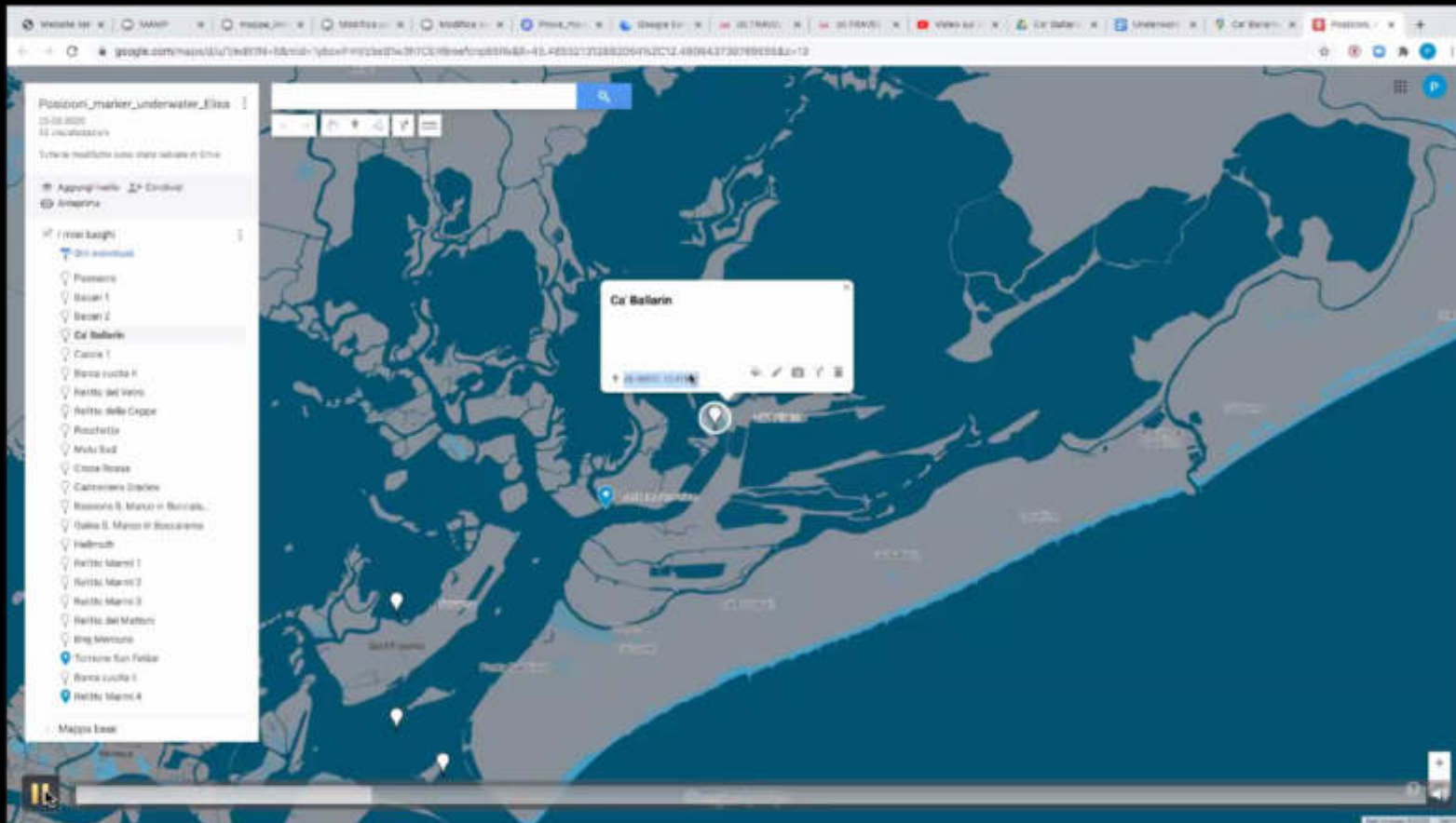
Reactions



Talking: Paola PEROZZO



End



Unmute

Start Video

Security

Participants 38

Chat

Share Screen

Record

Breakout Rooms

Reactions

Talking: Paola PEROZZO

End

ist.TRAVEL CMS Dashboard [View site](#) [Create Museum](#) [Tours](#) [Tourist Attractions](#) [Help](#) Paola Perozzo

1. Ca'Ballarin

Tour [Stories](#) [Properties](#) [Location](#) [Image \(2\)](#) [Used in tour \(2\)](#) [Links \(2\)](#) [3D-Data](#) [Delete tourist attraction](#)

English [Add language](#)

Name: Ca'Ballarin

Description: **B** *I* U

Discovered in 1987 during the protection work of the Magistrate site Acquai - Concazzo Veneta Nuova, the site has been excavated in 2002 and 2003, carried out by Magistrate site Acquai - CNR under the scientific direction of the Soprintendenza Archeologica del Veneto. The main structure consists of a rectangular cistern (8.80 x 8.50 m) made with semi-circular bricks with the inner base of special sun-dried bricks (pavese). The tank was filled with sand and gravel, a material that served as a filter to purify the water which, by pressure, slowly filtered inside the wall base, from which the water was drawn. It is a structure that allowed the use of rainwater, purifying it, in a territory where freshwater could not be reached: the structure operated according to the same principle as the "Venetian wells" of the freshwater era.

Now the system shows the remains of a longitudinal structure, realized with cement-sandstone and stone chips, fragmented into at least six large blocks, descending towards the middle of the

1200-1300 [View 3D](#)

Audio [Listen](#) [Control](#)

[Add video](#) [Add Quiz](#) [Add editor notes](#)



Unmute Start Video Security Participants 38 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO [End](#)

RECAP ABOUT IZI TRAVEL

Features	IZI TRAVEL	
Available online	Yes but only in izi.travel/it or in mobile app	✓
Customizable map	No	✗
Customizable layout UI	No, fixed layout	✗
Contents: Texts, Audios, Pictures, Videos	Yes, in particular audio guide	✓
Contents: 3D models	No	✗
Easy to share with partners to upload contents	Yes	✓

Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

STORYMAP JS

4

Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

knightslab.northwestern.edu/stu/


About Us

Overview Faculty & Staff Student Fellows Alumni

Northwestern University Knight Lab is a community of designers, developers, students, and educators working on experiments designed to push journalism into new spaces.

The Lab provides an open, collaborative environment for interdisciplinary exploration and conversation, where students and professionals learn together and from one another. In short, **we're energized by hard questions worth answering; we believe in the process as much as the product.**

We're probably best known for our innovative suite of open-source, adaptable, and lightweight tools for media makers. The most popular, TimelineJS, has been used by more than 250,000 people to tell stories seen hundreds of millions of times, and is available in more than sixty languages. We also develop prototypes of tools for reporting, data management, research, and storytelling, often in connection with Northwestern classes. Students from our community have gone on to work at the New York Times, Vox Media, NPR, Medium, FiveThirtyEight, the Washington Post, the Los Angeles Times, Huffington Post, and more.



The Podcast Discovery group present their findings to the rest of the Knight Lab Studio class.



Unmute Start Video Security Participants 39 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

storymap.knightdao.com/experiences/royal-journey/

TRAVELS TO KING'S LANDING

At Winterfell each of the Stark children received a direwolf pup, Arya named hers Nymeria, after a warrior queen. While traveling to King's Landing, Prince Joffrey hits Arya following an argument and Nymeria attacks Joffrey. Queen Cersei then orders the direwolf to be killed, and Arya throws rocks at Nymeria to scare her away to safety. Sansa's wolf, Lady, was killed in her place.



Unmute



Start Video



Security



Participants 39



Chat



Share Screen



Record



Breakout Rooms



Reactions

Talking: Paola PEROZZO



End

The screenshot shows the StoryMap JS website. At the top, there is a navigation bar with the 'knight lab' logo and links for 'Projects', 'Docs', 'Device Lab', 'Posts', and 'Community'. The main heading reads 'StoryMap JS' with the tagline 'Maps that tell stories.' Below this is a prominent green button labeled 'Make a StoryMap'. A secondary navigation bar includes links for 'Overview', 'Examples', 'Make a StoryMap', 'Advanced', and 'Help'. The central part of the page features a map of the Great Lakes basin, with a yellow highlighted area stretching across the region from the western shore of Lake Erie to the western shore of Lake Ontario. A series of small map thumbnails is visible along the bottom edge of the main map area.

This is a Zoom meeting control bar. From left to right, it contains: 'Unmute' (muted), 'Start Video' (video off), 'Security' (lock icon), 'Participants' (39), 'Chat' (speech bubble), 'Share Screen' (green screen icon), 'Record' (circular icon), 'Breakout Rooms' (grid icon), 'Reactions' (smiley face icon), a 'Talking: Paola PEROZZO' indicator, and a red 'End' button.

storymap.knightlab.com/story?id=underwater-muse-map

My Maps Options Done

Edit Preview

This is your story. The title shows all points from your other slides.

Media

No Media Selected

URL to your media or Upload an image

Credit

Caption

Accepts HTML

UNDERWATER MUSE MAP

Marker Options Background Options

Unmute

Start Video

Security

Participants 39

Chat

Share Screen

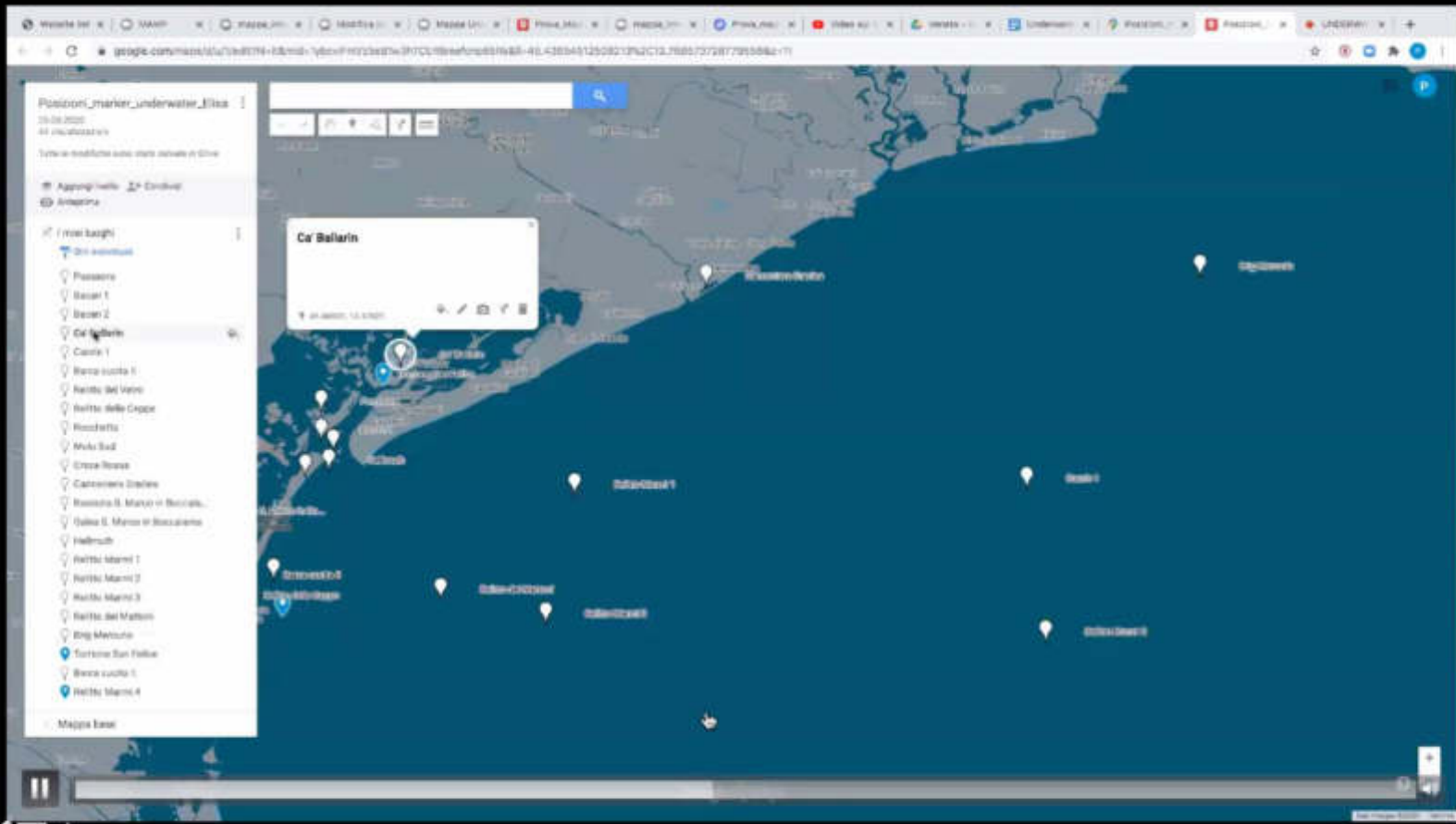
Record

Breakout Rooms

Reactions

Talking: Paola PEROZZO

End



Unmute Start Video Security Participants Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

The screenshot shows a video player interface. The main content is a webpage titled "BRIG MERCURIO" with a map of a coastal area. A file explorer window is overlaid on the map, showing a folder named "Brig Mercurio" containing files like "Menu_3.jpg" and "Menu_4.jpg". The video player controls at the bottom show a progress bar at 01:01:40.

Unmute

Start Video

Security

Participants 38

Chat

Share Screen

Record

Breakout Rooms

Reactions

Talking: Paola PEROZZO

End

storymap.knightlab.com/v/7d-underwater-muse-map

My Maps Options Save

Unmute Start Video

Media

Drop media here or upload an image

Credits

Caption

BRIG MERCURIO

of many objects inside the wooden structure. The quantity of the objects preserved and the quality of the conservation conditions of the artifacts, many of which are organic material, allow to Mercurio (emerging site of the last general war in the Mediterranean).

Hundreds of tools (artillery, hand arms, naval equipment, metal parts of the hull, pottery and other objects from the galley, maritime tools, shoes and buttons from the crew's uniform, personal and children's objects) were recovered from the site. Last week

Unmute Start Video Security Participants 38 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

storymap.knightlab.com/viz/7fd-underwater-muse-map

My Maps Options Share

UNDERWATER MUSE MAP
Map of archaeological sites in Adriatic Sea

Start Exploring

San Donà di Piave Eraclea Mira-Treport



Unmute

Start Video

Security

Participants 38

Chat

Share Screen

Record

Breakout Rooms

Reactions

Talking: Paola PEROZZO

End

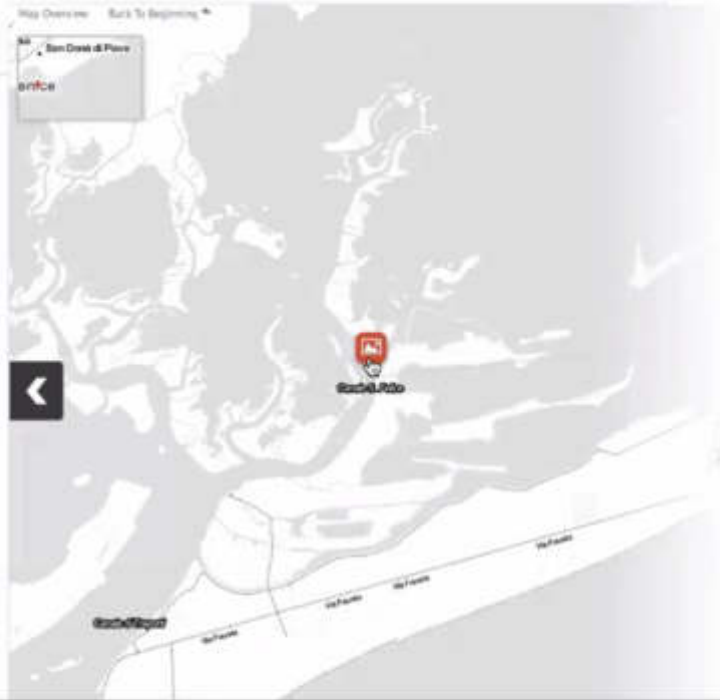

storymap.knightlab.com/viz/7fd-vndrwater-muse-map

My Maps Options Share

Map Overview Back To Beginning

Ben Doss di Piero

Grinca

CA'BALLARIN

Discovered in 1997 during the protective work of the Magistrato alle Acque - Consorzio Venezia Nuova, the site has been excavated in 2001 and 2005, carried out by Magistrato alle Acque - CVN under the scientific direction of the Soprintendenza Archeologica del Veneto. The main structure consists of a rectangular cistern (9,30 x 6,30 m) made with *scarpellati* bricks with the inner barrel of special curvilinear bricks (*quozzi*). The tank was filled with sand and gravel, a material that served as a filter to purify the water which, by pressure, slowly filtered inside the well barrel, from which the water was drawn. It is a structure that allowed the use of rainwater, purifying it, in a territory where freshwater could not be reached; this structure operated according to the same principle as the "Venetian wells" of the medieval era.

Near the cistern there are the remains of a longitudinal structure, realized with concrete roughmasonry and stone chips, fragmented into at least six large blocks descending towards the middle of the canal. The remains of the structure could be conducted by the presence of a quay or a pier, which could connect the entire area, including the tank, with the waterways used for navigation in ancient times.

Unmute Start Video Security Participants 38 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

RECAP ABOUT STORYMAP JS

Features	STORYMAP JS
Available online	Yes integrated in a web site
Customizable map	Yes totally (using MAPBOX)
Customizable layout UI	No, fixed layout
Contents: Texts, Audios, Pictures, Videos	Yes, but not many contents (only a picture or a video, not audios)
Contents: 3D models	No
Easy to share with partners to upload contents	Yes



Unmute Start Video Security Participants 38 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

The screenshot shows a web browser window with a world map. A settings dialog box is open in the center, titled "Display" with a "Settings" tab. The dialog box contains the following fields and options:

- StoryMap Size: Width: 100%, Height: 800
- Language: English (dropdown menu)
- Fonts: Default (dropdown menu)
- Treat As: Cartography, Image
- Call To Action: Yes, No (with a note: "enter text, or use default" and "Default: 'Start Exploring'")
- Map Type: Mixbox (dropdown menu)
- Style URL: mapbox:// (text input)
- Access Token: public-access-token (text input)

At the bottom of the dialog box is a "Close" button. The background map is titled "UNDERWATER MUSE MAP" and has navigation controls below it.

The Zoom meeting control bar is visible at the bottom of the screen. It includes the following controls from left to right:

- Unmute (muted)
- Start Video (video off)
- Security (lock icon)
- Participants (38)
- Chat (chat icon)
- Share Screen (share icon)
- Record (record icon)
- Breakout Rooms (grid icon)
- Reactions (smiley face icon)
- Talking: Paola PEROZZO
- End (red button)

The screenshot shows the Mapbox Studio web interface. A modal window titled 'Share & develop' is open over a map of the Balkans region, including countries like Bosnia and Herzegovina, Serbia, Montenegro, Kosovo, North Macedonia, and Albania. The modal contains the following information:

- Share & develop** (Draft Production)
- The Production URL is cached for performance and scale, so new changes may take a few minutes to appear.
- Share style**: Includes a 'Production URL' and a 'Link about anyone to preview your style'.
- Developer resources**: Includes a 'Style URL' and an 'Access token'.
- A 'Download' button for the style file.

Unmute Start Video Security Participants Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

RECAP ABOUT STORYMAP JS

Features	STORYMAP JS
Available online	Yes integrated in a web site
Customizable map	Yes totally (using MAPBOX)
Customizable layout UI	No, fixed layout
Contents: Texts, Audios, Pictures, Videos	Yes, but not many contents (only a picture or a video, not audios)
Contents: 3D models	No
Easy to share with partners to upload contents	Yes



Unmute Start Video Security Participants 37 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

5

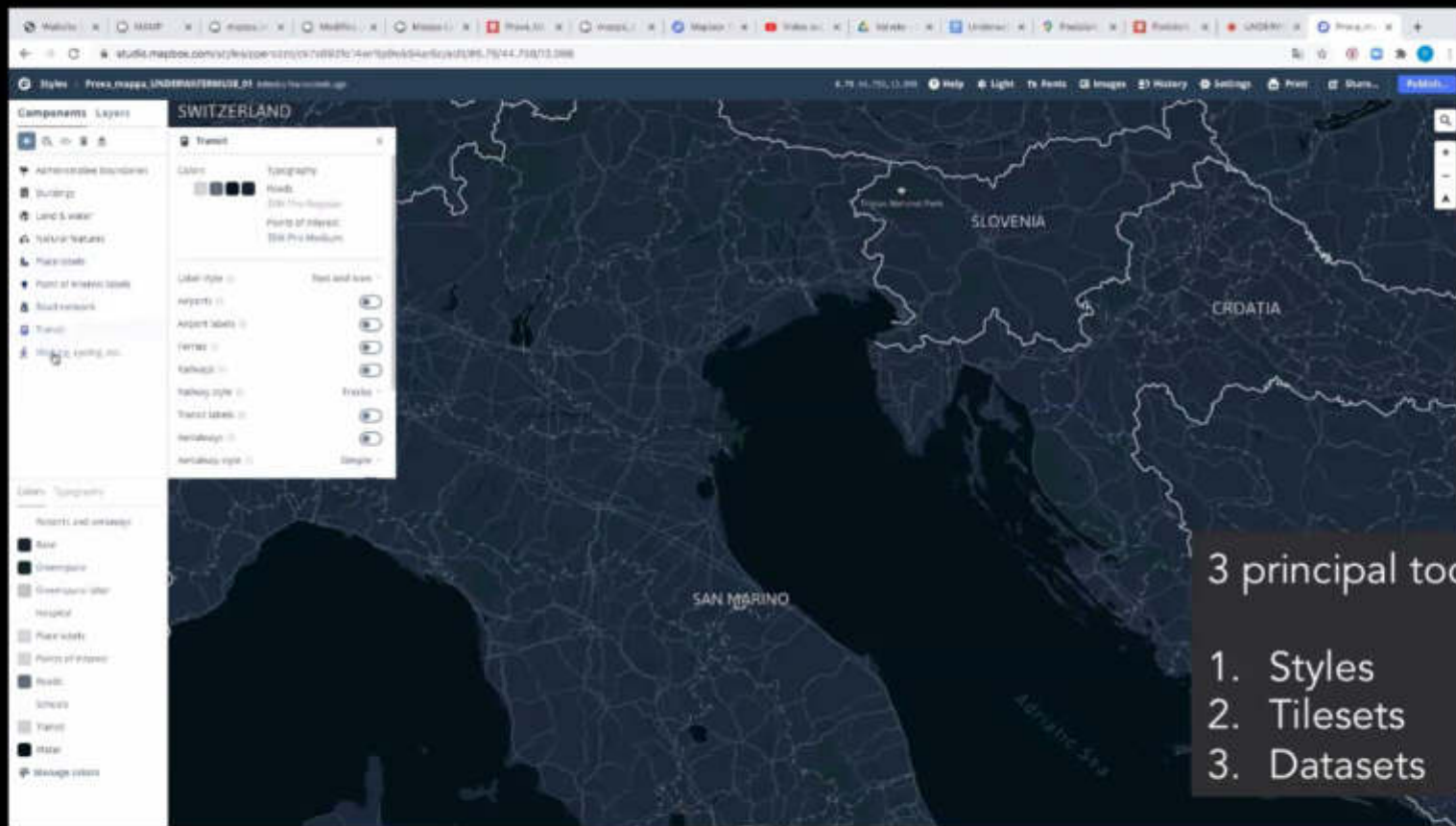
MAPBOX

Unmute Start Video Security Participants 37 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

The screenshot shows the Mapbox Studio interface. At the top, there's a navigation bar with 'mapbox | studio' and links for 'Styles', 'Tilesets', and 'Datasets'. Below this, the 'Styles' section is active, featuring a search bar and a list of styles. The styles listed include 'Previo mappa UNDERWATERMUSE 31', 'Previo mappa ARCA mappa1.night', 'Example: Add 3D buildings', and 'cityjournalist@facebook.com'. To the right, there's a 'Tools & resources' section with links to 'Read the Studio Manual', 'Preview styles on iOS or Android', 'Find inspiration in the style gallery', and 'Watch how-to videos'. The interface is clean and modern, with a white background and blue accents.

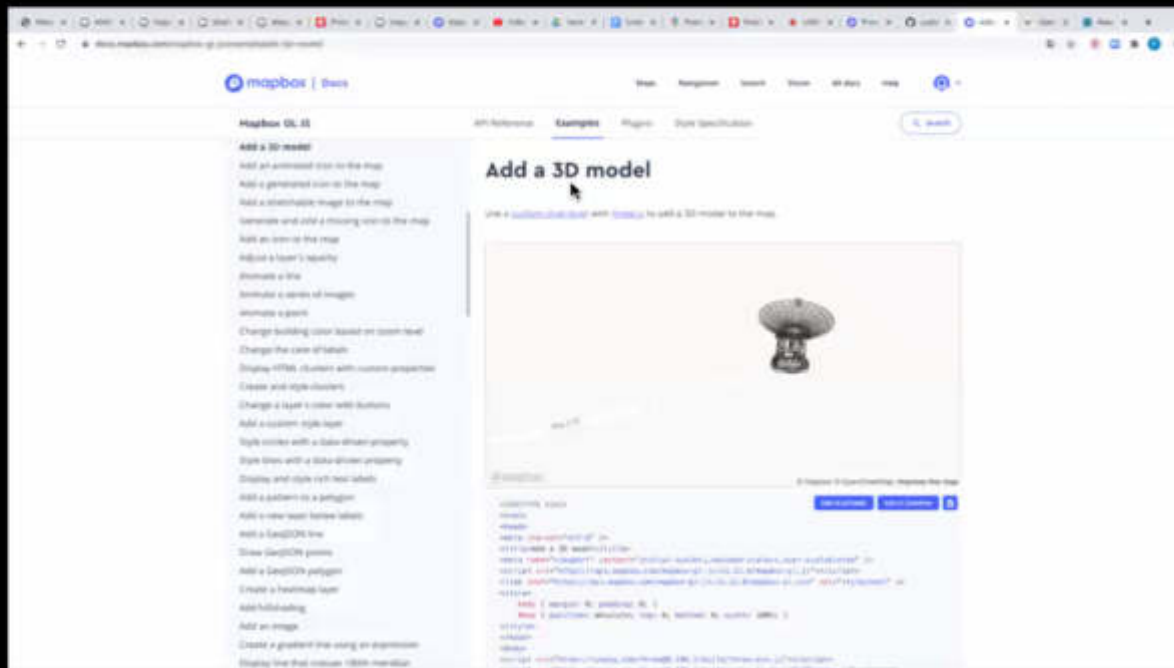
3 principal tools:
1. Styles
2. Tilesets
3. Datasets

The bottom of the image shows a Zoom meeting control bar. From left to right, it includes icons for 'Unmute', 'Start Video', 'Security', 'Participants' (showing 36), 'Chat', 'Share Screen', 'Record', 'Breakout Rooms', 'Reactions', and a red 'End' button. The text 'Talking: Paola PEROZZO' is visible on the right side of the bar.



- 3 principal tools:
1. Styles
 2. Tilesets
 3. Datasets

Unmute Start Video Security Participants 36 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End



Possibility to add a 3D model directly to the map



Unmute Start Video Security Participants 34 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

RECAP ABOUT MAPBOX

Features	STORYMAP JS
Available online	Yes integrated in a web site
Customizable map	Yes totally
Customizable layout UI	Yes but with coding bases
Contents: Texts, Audios, Pictures, Videos	Yes
Contents: 3D models	Yes
Easy to share with partners to upload contents	No, coding skill needed



Unmute Start Video Security Participants 34 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

PROBLEMS TO BE SOLVED:

1. COLLABORATORS NEED CODING SKILL TO ADD CONTENT IN THE MAP
2. WEB SPACE IN WHICH OUR MAP CAN BE HOSTED

1. Collaborators need coding skill to add content to the map



Use of STRAPI to upload every kind of content

2. Web space in which our map can be hosted



Ca'Foscari server (website)



Unmute Start Video Security Participants 33 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

ID	Type	Title	Available
70	wreck	San Cloro - Billo	True
3	wreck	Bocca 1	True
4	wreck	Bocca 2	True
91	wreck	Bocca di Norddove	True
52	wreck	Bogofin Minerva	True
9	underwaterStructure	Cugulim	True
74	wreck	Cavali Papard - Redito	True
78	wreck	Cannonera Duca	True
8	wreck	Cavali 1	True
72	underwaterStructure	Epoca - Strutturazione	True

Media playback controls including a play/pause button, a progress bar, and a volume icon.

Zoom meeting control bar with buttons for Unmute, Start Video, Security, Participants (33), Chat, Share Screen, Record, Breakout Rooms, Reactions, and an End button. A status indicator shows 'Talking: Paola PEROZZO'.

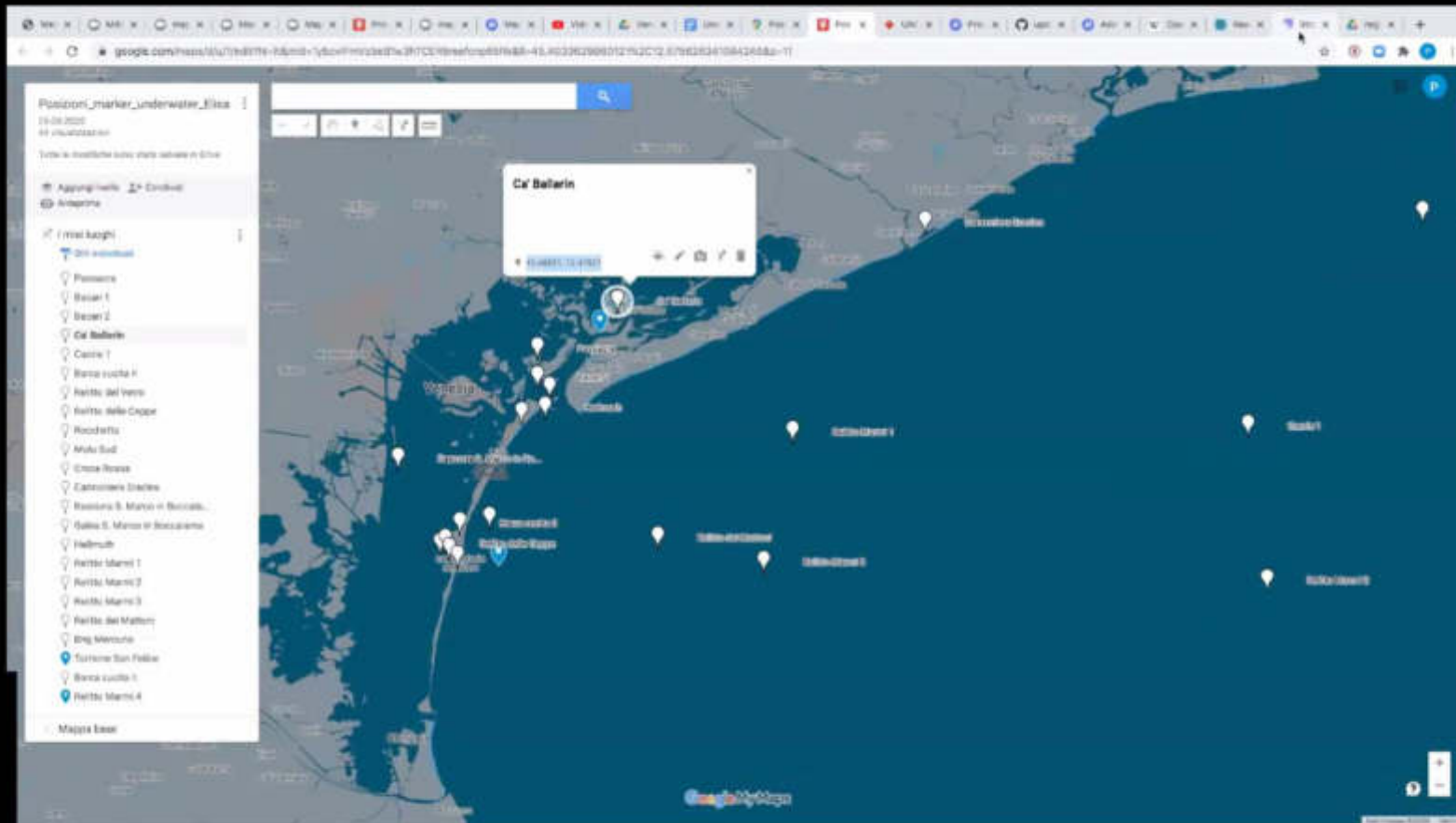
The screenshot shows a web browser displaying the 'stropi' application. The page title is 'Ca' Ballarin' and it is categorized as a 'location'. The main content area contains a form with the following fields:

- Type:** A dropdown menu with 'UnderwaterStructure' selected.
- Title:** A text field containing 'Ca' Ballarin'.
- GPS Position (1):** A field containing the number '7'. Below it is a blue button labeled 'ADD NEW ENTRY'.
- Location:** A section with two columns for 'EN' and 'IT'.
 - EN:** 'San Felice Canal, near Ca' Ballarin'
 - IT:** 'Canale San Felice, presso Ca' Ballarin'
- Depth:** A section with two columns for 'EN' and 'IT'.
 - EN:** 'from 0 to 6 m'
 - IT:** 'Da 0 a 6 m'
- HR:** An empty text field.
- Dating:** An empty text field.

On the right side of the form, there is a 'Tags (0)' section with a list of tags: 'Applied for download', 'Visible', 'Not Accessible', and 'Underwater Structure'. At the top right of the form area, there are buttons for 'Create', 'Update', and 'Delete'.

A set of playback controls for a Zoom meeting. It includes a play button on the left, a progress bar in the center, and navigation arrows on the right. The text 'Paused at 00:00:00' is visible below the play button.

A Zoom meeting toolbar with the following elements from left to right: 'Unmute' (muted), 'Start Video' (video off), 'Security' (lock icon), 'Participants' (33 people icon), 'Chat' (speech bubble icon), 'Share Screen' (green screen icon), 'Record' (circular icon), 'Breakout Rooms' (grid icon), 'Reactions' (smiley face icon), 'Talking: Paola PEROZZO' (current speaker name), and a red 'End' button.



Unmute Start Video Security Participants 33 Chat Share Screen Record Breakout Rooms Reactions Talking: End

stropi

Ca' Ballarin

EN

1st-2nd Century AD (abandoned in the 3rd Century AD)

1-4 secolo d.C. (abbandonato nel III secolo d.C.)

EN

Aggiungi un titolo

Foto e Immagini

Descritta in 1997 during the protective work of the Magistrato alle Acque - Consorzio Venezia Nuova, the site has been excavated in 2002 and 2003, carried out by Magistrato alle Acque - CVN under the scientific direction of the Soprintendenza Archeologica del Veneto. The main structure consists of a rectangular cistern (7.52 x 6.33 m) made with acropolite brick with the inner barrel of special curved-line bricks (pavati). The tank was filled with sand and gravel, a material that served as a filter to purify the water which, by pressure, slowly filtered inside the well barrel, from which the water was drawn. It is a structure that allowed the use of rainwater, purifying it in a location where freshwater could not be reached. This structure operated according to the same principle as the "sifoniani wells" of the medieval era.

Non far cadere: sono le rovine di una struttura, realizzata con mattoni coccinacci e pietra calcia, frantumata in almeno sei lunghi blocchi disposti radendo la parete del cisternale. I resti della struttura potrebbero consistere in un pilastro, il quale costituirebbe la base della cisterna, collegata al tank, con la sua funzione di filtro per l'acqua.

EN

Aggiungi un titolo

Foto e Immagini

Scoperto nel 1997 nell'ambito dei lavori di salvaguardia del Magistrato alle Acque Venezia Nuova, il sito fu oggetto di due campagne di scavo e messa in sicurezza nel 2002 e 2003, realizzate dallo stesso Magistrato-Consorzio sotto la direzione scientifica della Soprintendenza Archeologica del Veneto. La struttura principale consiste di una cisterna rettangolare (7,52 x 6,33 m) realizzata con mattoni coccinacci (pavati) con un interno rivestito di mattoni a profilo curvo. La cisterna era dotata di un filtro a sabbia e ghiaia che purificava l'acqua piovana, permettendone l'uso in un'area dove l'acqua dolce non era raggiungibile. Questa struttura funzionava secondo lo stesso principio dei "pozzi sifoniani" dell'epoca medievale.

Unmute Start Video

Security Participants Chat Share Screen Record Breakout Rooms Reactions Talking: End

stropi

Ca' Ballarin

Can Be Visited

How To Visit

Images (2)

File

Selected Item - Details

Size: 432KB Date: Sunday, October 22nd, 2023

Dimensions: 1210x1000 Extension: .jpg

File name: Untitled_2 (1).jpg

Alternative text: This item will be displayed if the main item is shared.

Caption:

Buttons: Annulla, Ripristina titolo, Caricamento...

ADD NEW ENTRY

Participants (23)

Find a participant

- EC Elisa Costa (Host, me)
- PP Paola PEROZZO (Co-host)
- B balletti (Co-host, guest)
- AT Alessandro Tagliapietra (Guest)
- AD alina del fabbro (Guest)
- CB Carlo Beltrame (Guest)
- CT CATERINA TOMIZZA
- CP Claudia Pizzinato (Guest)
- CP Claudio Parisotto (Guest)
- CM CRISTIAN MURRAY (Guest)
- Cristina Barbiani (Guest)
- D DKg4lIGbbpgyAVQ+4zAAAEAAAApM. (Guest)
- EP Edoardo Pasotto (Guest)
- E elisabeth (Guest)
- EN Eran Nisenboim (Guest)

yes no go slower go faster more dear all

Invite Mute All Unmute All

Unmute Start Video Security Participants 33 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

stropi

Ca' Ballarin

Can Be Visited

OFF

How To Visit

Images (8)

File

Search for images...

Browse

Sort by

Fig.3-DSC_0018.jpg

DSC_0048.JPG

DSC_0837.JPG

Fig.3.jpg

DSC_0092.JPG

IMG06487.JPG

IMG-20160406-WA0...

ADD NEW ENTRY

Unmute Start Video Security Participants 33 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

stropi

Tag

22 tags

ID	Name	IT	EN
7	Accident	Accidente	
9	Field Visits Guide	Field Visits Guide	
2	History	Storia	
4	Not Accessible	Non accessibile	
6	Other	Altro	
10	Flags	Bandiere	
8	Recovered	Ricuperato	
11	Salt	Salate	
5	Underwater Decoy	Scultura Sottacqua	
3	Wrecks	Relitti	

You are viewing Paola PEROZZO's screen

View Options

The work-in-progress
UNDERWATERMUSE MAP
is already online

Unmute Start Video Security Participants 32 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

You are viewing Paola PEROZZO's screen

Non sicuro | mizar.unive.it/underwatermuseumap/

EN

- Underwater Structures (22)
- Wrecks (40)
- Other Points (3)
- Museums (11)

CROATIA

BOSNIA AND HERZEGOVINA

SERBIA

MONTENEGRO

KOSOVO

NORTH MACEDONIA

ALBANIA

ITALY

interreg
Italy - Croatia
UnderwaterMuse

Unmute Start Video Security Participants 32 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

Non sicuro | mizar.unive.it/underwatermuseumap/

FRANCE

EN

LIECHTENSTEIN

SWITZERLAND

AUSTRIA

HUNGARY

CROATIA

ROMANIA

Underwater Structures (22)

Wrecks (40)

Other Points (3)

Museums (11)

SAN MARINO

ITALY

BOSNIA AND HERZEGOVINA

SERBIA

BULGARIA

MONTENEGRO

NORTH MACEDONIA

ALBANIA

Adriatic Sea

Tirrenian Sea

Ionian

Interreg
Italy - Croatia
UnderwaterMuse

Unmute

Start Video

Security

Participants 32

Chat

Share Screen

Record

Breakout Rooms

Reactions

Talking: Paola PEROZZO

End

Non sicuro | mizar.unive.it/underwatermuseumap/

EN

- Underwater Structures (22)
- Wrecks (40)
- Other Points (3)
- Museums (11)

Interreg
Italy - Croatia
UnderwaterMuse


Unmute Start Video Security Participants 32 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

Provi x | Map x | Vid x | Ca' E x | UNDI x | You are viewing Paola PEROZZO's screen | View Options | Map x | Reac x | Home x | Avvis x | +

Non sicuro | mizar.unive.it/underwatermuseumap/

EN

← back



Ca' Ballarin

Position
San Felice Canal, near Ca' Ballarin

Depth
From -3 to -6 m

Dating
1st-2nd Century AD (abandoned in the 3rd Century AD)

Description
Discovered in 1997 during the protective work of the Magistrato alle Acque - Consorzio Venezia Nuova, the site has been excavated in

Ca' Ballarin San Felice
Ca' Ballarin San Felice
Via Lib. Plebana
Via Lib. Plebana

Interreg
Italy - Croatia
UnderwaterMuse


Unmute | Start Video | Security | Participants (32) | Chat | Share Screen | Record | Breakout Rooms | Reactions | Talking: Paola PEROZZO | End

Provi x | Mapl x | Vide x | Ca' E x | UNDI x | You are viewing Paola PEROZZO's screen | View Options | Mapl x | Reac x | Homi x | Avvia x | +

Non sicuro | mizar.unive.it/underwatermuseum/

EN

← back



Ca' B

Position
San Felice C

Depth
From -3 to -6

Dating
1st-2nd Cent
Century AD)

Description
Discovered in 1997 during the protective work of the Magistrato alle Acque - Consorzio Venezia Nuova, the site has been excavated in

Interreg Italy - Croatia UnderwaterMuse

Unmute Start Video Security Participants 32 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

Non sicuro | mizar.unive.it/underwatermuseumap/

EN

Filters

Accessible: Friuli Venezia Giulia

Museum: Not Accessible Other

Puglia Wreck Veneto

Underwater Structure Spilt Recovered

- Underwater Structures (22)
- Wrecks (40)
- Other Points (3)
- Museums (11)

Canale San Felice Via Liri Piccola Via Liri Piccola

Interreg Italy - Croatia UnderwaterMuse

Unmute Start Video Security Participants 32 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

Non sicuro | mizar.unive.it/underwatermuseumap/

EN

Filters (1)

Accessible Friuli Venezia Giulia

Museum Not Accessible Other

Puglia Wreck Veneto

Underwater Structure Split Recovered

Underwater Structures (18)

Wrecks (7)

Other Points (1)

Museums (10)

ALBANIA

Interreg Italy - Croatia UnderwaterMuse

Unmute Start Video Security Participants 32 Chat Share Screen Record Breakout Rooms Reactions Talking: Paola PEROZZO End

Provi x | Mapl x | Vide x | Ca' E x | UNDI x | You are viewing Paola PEROZZO's screen | View Options | Mapl x | Reac x | Home x | Avvia x | +

Non sicuro | mizar.unive.it/underwatermuseumap/

← ca|

Underwater Structures (1)

Ca' Ballarin

Canale Sec. 18
Canale Sec. 17
Fiume Corone
Ause
Strada Provinciale 01 del Submestre

Interreg
Italy - Croatia
UnderwaterMuse

Unmute | Start Video | Security | Participants (32) | Chat | Share Screen | Record | Breakout Rooms | Reactions | Talking: Paola PEROZZO | End

Please go to

MIZAR.UNIVE.IT/UNDERWATERMUSEMAP

Try the "work-in-progress" map

And let us know your feedback!



End

DIGITAL STORYTELLING AND MULTIMEDIA FOR UNDERWATER ARCHAEOLOGY: THE NATIONAL ARCHAEOLOGICAL MARITIME MUSEUM EXAMPLE

Cristina Barbiani

Mac OS window title bar: Visualizza, Ridimensiona, Appunti, Appuntivo, Rimuovi, Tabella, Grafici, Testo, Forme, Multimedia, Commenti, Colloquio, Formattazione, Animazione, Documenti

Zoom status bar: You are viewing cristinabarbiani's screen, View Options

Zoom interface elements: Unmute, Start Video, Security, Participants (33), Chat, Share Screen, Record, Reactions, Talking: cristinabarbiani, Leave

Thumbnail gallery (left): 17 thumbnails showing various slides and images.

Main screen content (grid):

- Top-left: 3D model of a white architectural structure.
- Top-middle: 3D model of a white architectural structure from a different angle.
- Top-right: A collage of images including a text document, a map, and a glowing architectural model.
- Bottom-left: A yellow 3D architectural model.
- Bottom-middle: A 2D architectural plan or map.
- Bottom-right: A glowing blue 3D architectural model.

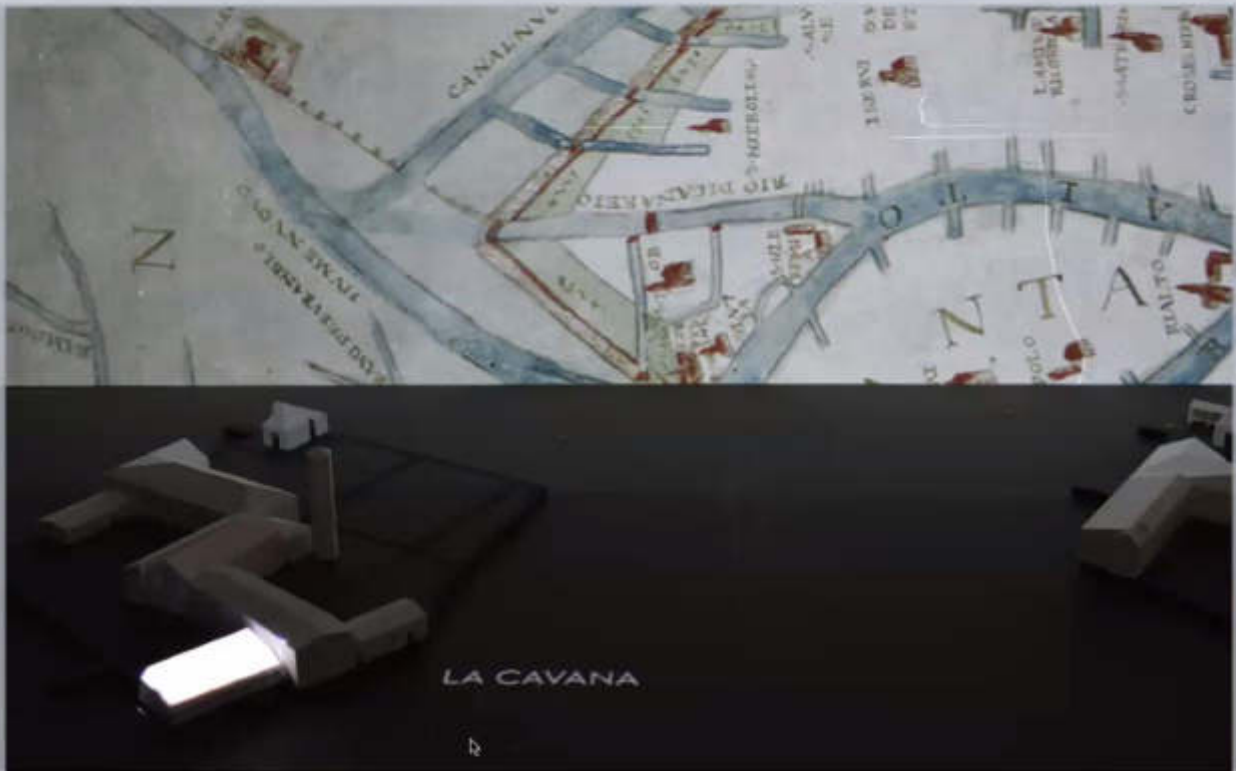
Zoom Meeting Interface

Top Bar: You are viewing cristinabarbiani's screen | View Options

Navigation: Visualizza | Admissioni | Aggiungi | Diagnostica | Rimuovi | Tabella | Grafici | Testo | Forme | Multimedia | Commenti | Collabora | Formattazione | Freccia sinistra | Freccia destra | Desumero

Thumbnail List (Left): 1-17 (Current slide highlighted)

Main Content Area:



Bottom Bar: Unmute | Start Video | Security | Participants (34) | Chat | Share Screen | Record | Reactions | Talking: cristinabarbiani | Leave

You are viewing cristinabarbiani's screen

Visualizza: 34 partecipanti, Aggiungi diapositiva

Remotati

Tabella Grafici Testi Forme Multimedia Commenti

Colorbox

Formattazione Animazione Documenti

Laguna 1809

1814

Laguna di Venezia 2012

Linea:

Lorem ipsum. Proin gravida nibil vel velit
mauris ultricies. Aenean adipiscing. Lorem
quis bibendum auctor. risi elit consequat

Lorem ipsum. Proin gravida nibil vel velit
mauris ultricies. Aenean adipiscing. Lorem
quis bibendum auctor. risi elit consequat

1611

2012

Unmute Start Video Security Participants 34 Chat Share Screen Record Reactions Talking: cristinabarbiani Leave

100% View Options

Visualizza: Presentazione, Appunti (Aggiorna)

Tabella Grafici Testi Forme Multimedia Commenti

Colibri Formattazione Animazione Documenti

12

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94

95

96

97

98

99

100

Unmute Start Video Security Participants 34 Chat Share Screen Record Reactions Leave

Visualizza | Ritrasmettono | Aggiungi | Spostato

Reimposta

Tabella | Grafici | Testo | Forme | Multimedia | Commenti

Collabora

Formattazione | Animazione | Documenti

You are viewing cristinabarbiani's screen

View Options

Unmute

Start Video

Security

Participants 34

Chat

Share Screen

Record

Reactions

Leave

cristinabarbiani

Visualizza: Ritrasmissione Appuntamenti Agende

Remotati

Tabella Grafici Testi Forme Multimedia Commenti

Colabori

Formattazione Animazione Documenti

You are viewing cristinabarbiani's screen

View Options

THE NATIONAL ARCHAEOLOGICAL MARITIME MUSEUM

Unmute Start Video Security Participants 34 Chat Share Screen Record Reactions Leave

Visualizza: Presentazioni, Appunti, Segretaria

Reproduci


Tabella Grafici Testi Forme Multimedia Commenti

Colabora


Formattazione Animazione Documenti

You are viewing cristinabarbiani's screen

View Options



The experience and superior ability of the crews and officers, as well as better use of artillery, made it difficult for the French even to leave port.



Unmute Start Video Security Participants 35 Chat Share Screen Record Reactions Leave


You are viewing cristinabarbiani's screen

Visualizza: Presentazione Aggiungi Slideshow


Tabella Grafici Testo Forme Multimedia Commenti

Caribbers

Formattazione Animazione Documenti



The Rivoli was built at the Arsenale shipyards in Venice under the supervision of engineer Tupinier.



Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

You are viewing cristinabarbiani's screen

Visualizza: Ritrasmissione Appuntamenti Agende

Tabella Grafici Texti Forme Multimedia Commenti

Caratteri Formattazione Animazione Documenti

The gunwales, supported with poles to fill these hulls with water, were then emptied, allowing the hulls to be strong enough to resist their draught.

Unmute Start Video Security Participants 34 Chat Share Screen Record Reactions Leave

Visualizza: 70% Zoom, Appunti (6/20/2020), Riproduci

Tabella Grafici Testi Forme Multimedia Commenti

Colori Formattazione Animazione Documenti

16 febbraio 1812



The 74-gun Victorious, captained by John Talbot, and the brig Weasel, commanded by William Andrew, had been waiting for the departure of French-Italian ships – the movements of which they knew well – since 16 February.



Unmute Start Video Security Participants 34 Chat Share Screen Record Reactions Leave

You are viewing cristinabarbiani's screen

Visualizza: Presentazioni, Appunti, Segnalibri

Visualizza: Tabelle, Grafici, Testi, Forme, Multimedia, Commenti

Colloca

Formattazione, Animazione, Documenti

21 febbraio 1812
16:

Weasel

Victorius

Despite the darkness and fog, however, an English crew realized that the French-Italian ship was exiting.

Unmute

Start Video

Security

Participants 34

Chat

Share Screen

Record

Reactions

Leave

cristinabarbiani

You are viewing cristinabarbiani's screen

Visualizza: 100% Rimuovi Tabella Grafici Testi Forme Multimedia Commenti Collabora Formattazione Immagini Documenti

22 febbraio 1812
04:55

Weasel Jena Mercurio

For 40 minutes the three brigs exchanged gunfire until the Mercurio suddenly blew up, struck by the gunpowder of the Santa Barbara.

Unmute Start Video Security Participants 34 Chat Share Screen Record Reactions Leave

You are viewing cristinabarbiani's screen

Visualizza: Ridimensiona Aggiorna dispositivo

Remotul

Tabella Grafici Testo Forme Multimedia Commenti

Collabora

Formattazione Annotazioni Documento

Layout dispositivo

Titolo e contenuto

Cambia master

Aspetto

Titolo

Corpo

Numero dispositivo

▼ Slides

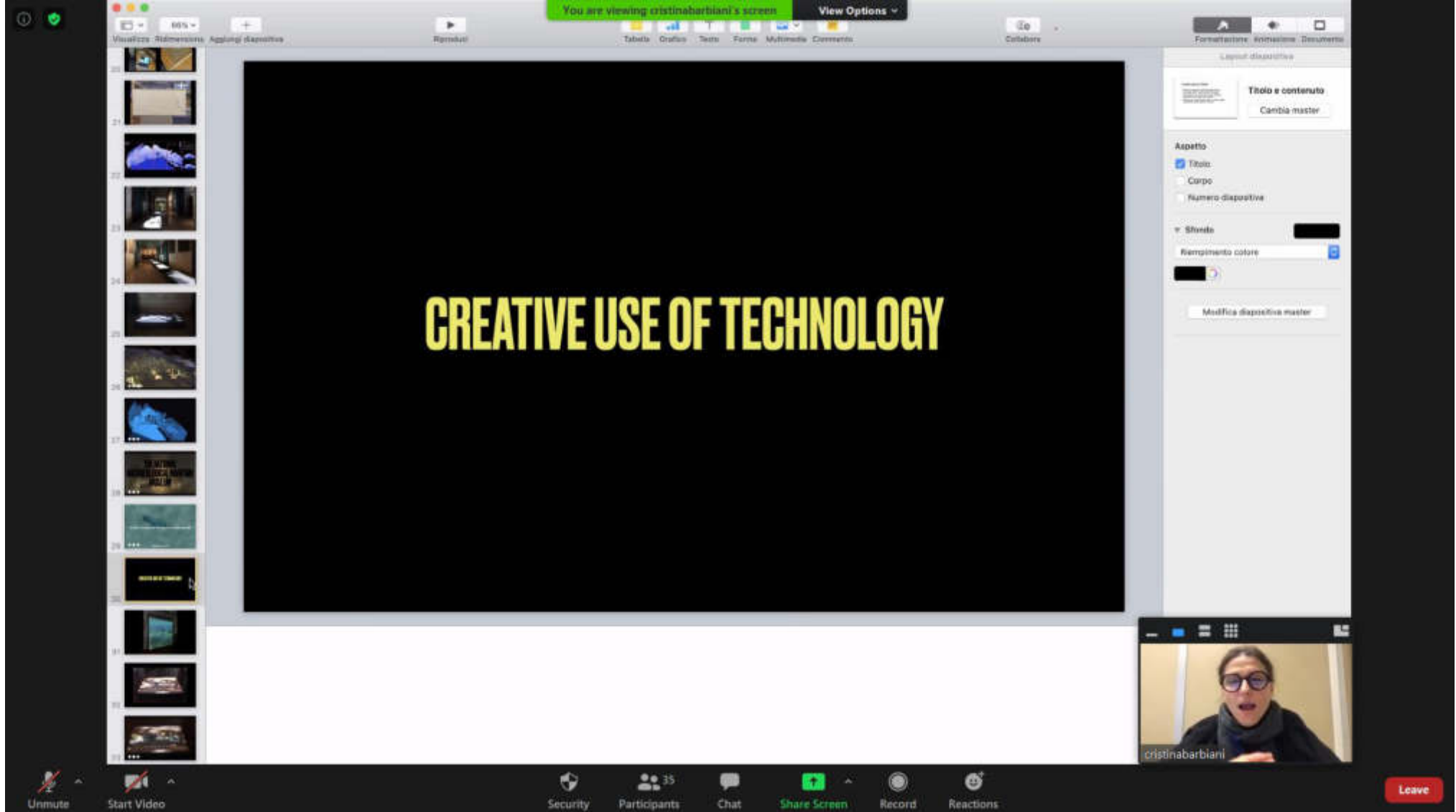
Riempimento colore

Modifica dispositivo master

CREATIVE USE OF TECHNOLOGY

Unmute Start Video Security Participants 35 Chat Share Screen Record Reactions Leave

cristinabarbiani



You are viewing cristinabarbiani's screen

Visualizza Ridimensiona Aggiungi dispositivo Riproduci Tabella Grafico Testo Firma Multimedia Commenti Collabora

Formattazione Formattazione Documento

Slide Filtrato Disposizione

Informazioni file
9C0B72FD-7731-...F14657A22D.mov
Sostituisci

Controlli
⏮ ⏪ ⏩ ⏭

Volume
0 40

Modifica filmato

Taglia
00:00:00,000 00:00:38,555

Fotogramma di anteprima
00:00:00,000

Ripetizione
Nessuna

Avvia il filmato al clic
 Riproduci filmato tra dispositivi

Descrizione

Unmute Start Video Security Participants 33 Chat Share Screen Record Reactions Leave

cristinabarbiani

You are viewing cristinabarbiani's screen

Visualizza | Ridimensiona | Aggiorna diapositive

Reproduci

Tabella | Grafici | Testo | Forme | Multimedia | Commenti

Collabora

Formattazione | Annotazioni | Desumere

Layout diapositiva

Foto - Orizzontale

Cambia master

Aspetto

- Titolo
- Corpo
- Numero diapositive

▼ Slides

Riempimento colore

Modifica diapositiva master

Unmute

Start Video

Security

Participants 33

Chat

Share Screen

Record

Reactions

Leave

cristinabarbiani

You are viewing cristinabarbiani's screen

Visualizza: 16:9 - Riproduci

Tabella Grafica Testi Forme Multimedia Commenti Collabora

Formattazione Animazione Documenti

Sfide Filmati Disposizione

Informazioni file

- MontaggioUltimo Carverfio.mp4

Controlli

Volume

Modifica filmato

Taglia

00:00:00,000 00:03:21,786

Fotogramma di anteprima

00:00:00,000

Ripetizione

Nessuna

- Avvia il filmato al clic
- Riproduci filmato tra dispositivi

Descrizione

Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

Le campagne di scavo: identificazione dei quadranti, scavo con sorbona e rilievo fotogrammetrico

Excavation campaigns: identification of dials, digging with sorbona and photogrammetric relief

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9 L1
2001			2004		2005		2006 2007	2008

cristinabarbiani

You are viewing cristinabarbiani's screen

Visualizza: 3Dselezione, Aggiungi diapositiva

Visualizza: Tabella Grafici Testi Forme Multimedia Commenti

Formattazione Animazione Documenti

Layout diapositiva

Foto - Orizzontale
Cambia master

Aspetto

- Titolo
- Corpo
- Numero diapositive

▼ Slides

Riempimento colore

Modifica diapositiva master

SCATO

OGGETTI

ARMI

SCELLETRI

NUMO

Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

You are viewing cristinabarbiani's screen

Visualizza: Presentazione Aggiungi diapositiva

Tabella Grafici Testo Forme Multimedia Commenti

Colabora

Formattazione Animazione Documenti

Layout diapositiva

Foto Cambia master

Aspetto

- Titolo
- Corpo
- Numero diapositive

▼ Slides

Riempimento colore

Modifica diapositive master

Unmute Start Video Security Participants Chat Share Screen Record Reactions

cristinabarbiani

Leave

You are viewing cristinabarbiani's screen

Visualizza: Presentazione Aggiungi Slideshow

Tabella Grafico Testo Forme Multimedia Commenti

Colabora

Formattazione Animazione Documento

Sfide Filmati Disposizione

Informazioni file

- 08Mercurio20180726_002.mov

Controlli

Volume

Modifica filmato

Taglia

00:00:00,000 00:03:52,767

Fotogramma di anteprima

00:00:00,000

Ripetizione

Nessuna

- Avvia il filmato al clic
- Riproduci filmato tra dispositivi

Descrizione

Elaborazione del modello di mesh
Mesh model processing

Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

cristinabarbiani

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Visualizza: 1080p - Aggiungi Dispositivi

Tabella Grafici Testi Forme Multimedia Commenti

Colore

Formattazione Animazione Documento

Sfida Filmati Disposizione

Informazioni file

- 08Mercurio20180726_002.mov

Controlli

Volume

Modifica filmato

Taglia

00:00:00,000 00:03:52,767

Fotogramma di anteprima

00:00:00,000

Ripetizione

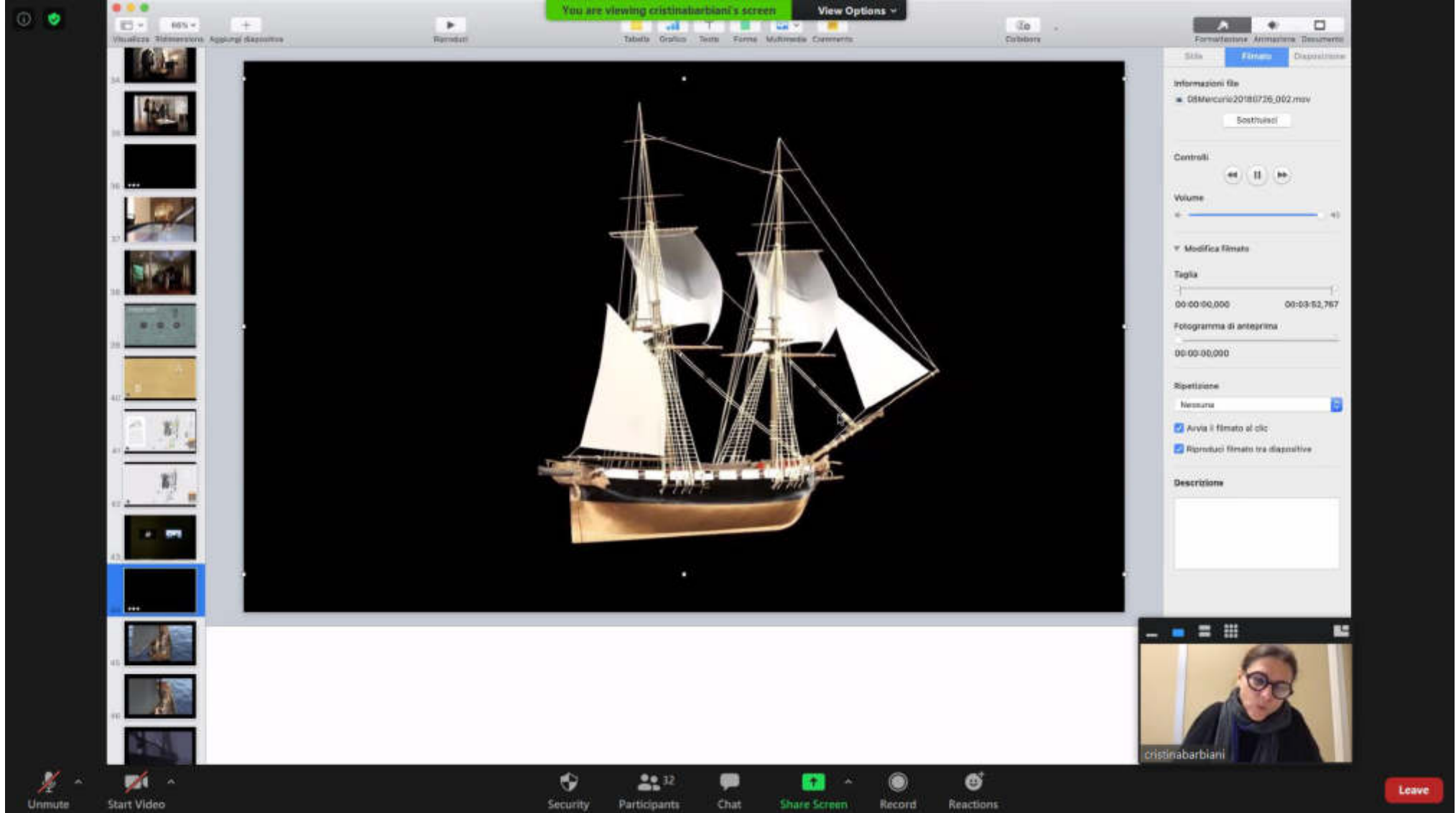
Nessuna

- Avvia il filmato al clic
- Riproduci filmato tra dispositivi

Descrizione

Disegni di dettaglio del Mercurio

Unmute Start Video Security Participants 32 Chat Share Screen Record Reactions Leave



You are viewing cristinabarbiani's screen

Visualizza: 32 partecipanti, Aggiungi dispositivi, Rimuovi

Tabella Grafico Testo Forme Multimedia Commenti

Colore

Formattazione Animazione Documento

Sito Filmati Disposizione

Informazioni file

- 08Mercurio20180726_002.mov

Controlli

Volume

Modifica filmato

Taglia

00:00:00,000 00:03:52,767

Fotogramma di anteprima

00:00:00,000

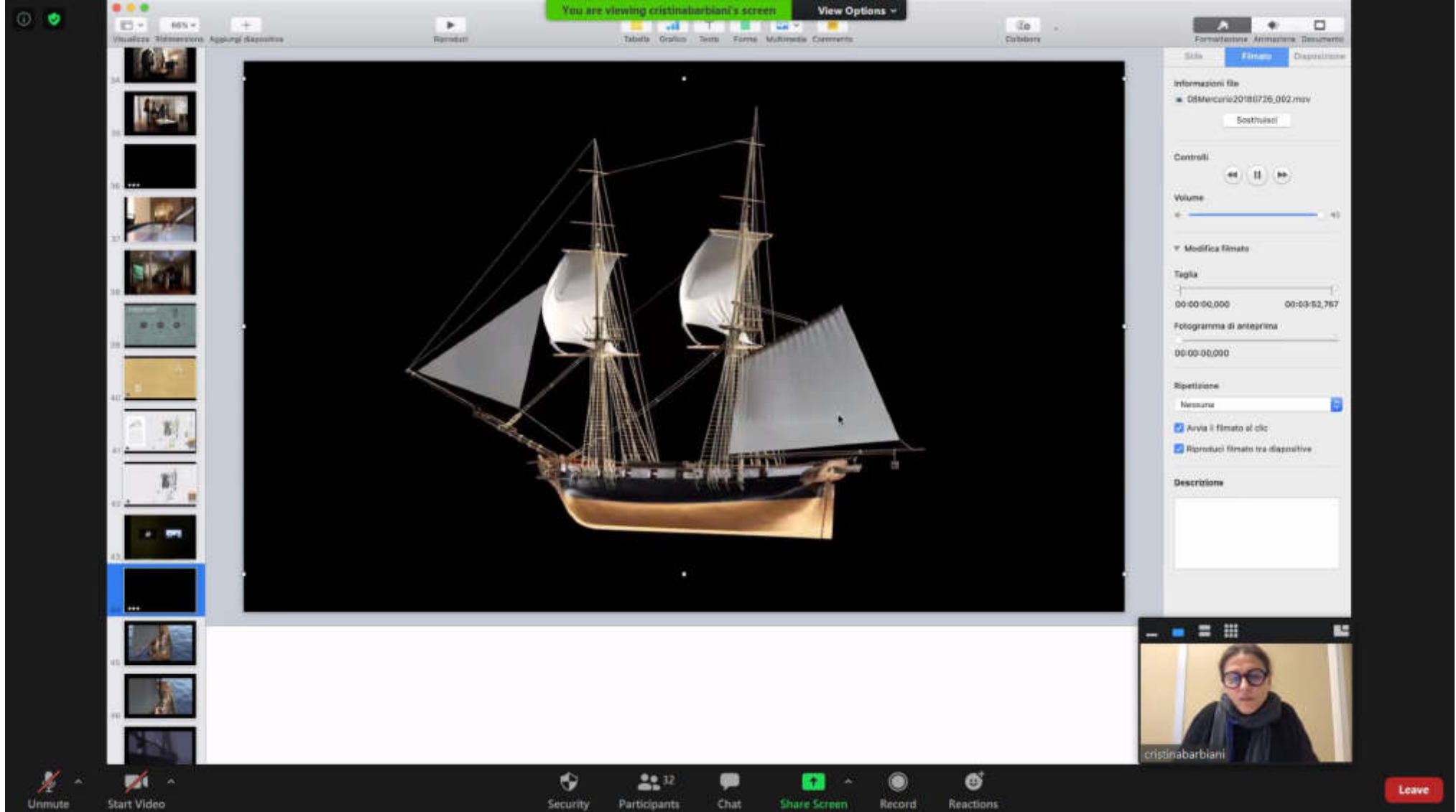
Ripetizione

Nessuna

- Avvia il filmato al clic
- Riproduci filmato tra dispositivi

Descrizione

Unmute Start Video Security Participants 32 Chat Share Screen Record Reactions Leave



You are viewing cristinabarbiani's screen

Visualizza: 1080p - Aggiorna Dispositivo

Reproduci

Tabella Grafico Testo Forme Multimedia Commenti

Colabora

Formattazione Animazione Documenti

Sfida Filtrato Disposizione

Informazioni file

08Mercurio20180726_002.mov

Strumenti

Controlli

Volume

40

Modifica filmato

Taglia

00:00:00,000 00:03:52,767

Fotogramma di anteprima

00:00:00,000

Ripetizione

Nessuna

Avvia il filmato al clic

Riproduci filmato tra dispositivi

Descrizione

Unmute Start Video

Security Participants 32 Chat Share Screen Record Reactions

Leave

cristinabarbiani

You are viewing cristinabarbiani's screen

Visualizza: Ritrasmissione Aggiungi diapositiva

Tabella Grafici Testo Forme Multimedia Commenti

Colore

Formattazione Annotazione Documento

Sfida Filtrare Disposizione

Informazioni file

- 08Marcorio20180726_002.mov

Controlli

Volume

Modifica filmato

Taglia

00:00:00,000 00:03:52,767

Fotogramma di anteprima

00:00:00,000

Ripetizione

Nessuna

- Avvia il filmato al clic
- Riproduci filmato tra dispositivi

Descrizione

Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

You are viewing cristinabarbiani's screen

Visualizza: 3Dselezione, Aggiungi diapositive

Remotati

Tabella Grafica Testo Forme Multimedia Commenti

Collabora

Formattazione Animazione Documenti

Layout diapositiva

Titolo e punti elenco

Cambia master

Aspetto

Titolo

Corpo

Numero diapositive

▼ Slides

Riempimento colore

Modifica diapositiva master

Unmute

Start Video

Security

Participants 31

Chat

Share Screen

Record

Reactions

Leave

cristinabarbiani

PALLA DA CANNONE IN FERRO
 KANONENKUGEL

PALLA MANUBRIATA IN FERRO
 KANONENKUGEL

CALCATOIO IN LEGNO DA PETRIERA
 HOLZ SAMROD

TAPPO IN LEGNO DA CARRONATA
 KAPPE HOLZ

You are viewing cristinabarbiani's screen

Visualizza: Ritrasmissione Aggiungi diapositiva

Tabella Grafici Testo Forme Multimedia Commento

Formattazione Animazione Documento

Layout diapositiva

Foto - Orizzontale

Cambia master

Aspetto

Titolo

Corpo

Numero diapositive

▼ Slides


Riempimento immagine

Alarga

Scegli...

Scale 100%

Modifica diapositive master



AQUISITION

Trough photogrammetry and laser scanning

Nella fase di restauro e recupero dei reperti è stata usata la fotogrammetria per produrre repliche di oggetti e costruire un patrimonio di materiali digitali necessari alla realizzazione dell'allestimento multimediale attualmente in corso.
In questo caso la fotogrammetria e il laserscanning sono stati utilizzati al fine di comporre i materiali digitali di base utili alla configurazione di display espositivi di vario tipo grazie ai quali sia possibile comunicare contenuti altamente scientifici e approfonditi ma in modo nuovo e coinvolgente.

Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

cristinabarbiani

You are viewing cristinabarbiani's screen

Visualizza: Presentazione, Aggiungi diapositive

Tabella Grafici Testi Forme Multimedia Commenti

Colloca

Formattazione Animazione Documenti

Layout diapositiva

Sezione

Cambia master

Aspetto

Titolo

Corpo

Numero diapositive

▼ Slides

Riempimento colore

Modifica diapositiva master

ORIGINAL / REPRODUCTION

DIGITAL TWIN

Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

cristinabarbiani

You are viewing cristinabarbiani's screen

Visualizza: Ritrasmissione Aggiungi diapositive

Tabella Grafici Testo Forme Multimedia Commenti

Colaboratori

Formatore Animazione Documento

Layout diapositiva

Foto - Orizzontale
Cambia master

Aspetto

Titolo

Corpo

Numero diapositive

▼ Slides


Riempimento immagine

Alarga

Scegli...

Scala 100%

Modifica diapositive master



PHISICAL RECOSTRUCTIONS
3D modeling and 3d print

Ad esempio grazie alla modellazione tridimensionale e alla stampa 3d, è stato possibile riprodurre i reperti e mettere a confronto l'oggetto deteriorato dalla permanenza in mare con il modello ricostruito.

Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

cristinabarbiani

You are viewing cristinabarbiani's screen

Visualizza: 3D Interazione: Aggiungi Dispositivo

Tabella Grafici Testi Forme Multimedia Commenti

Colore

Formattazione Animazione Documento

Sito Filmati Disposizione

Informazioni file

03Apistolamp00180725_001.mov

Download

Controlli

Volume

Modifica filmato

Taglia

00:00:00,000 00:01:52,078

Fotogramma di anteprima

00:00:00,000

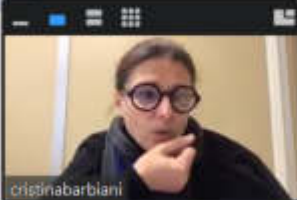

Ripetizione

Nessuna

Avvia il filmato al clic

Riproduci filmato tra dispositivi

Descrizione



Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

You are viewing cristinabarbiani's screen

Visualizza: 3D Interattivo, Aggiungi Dispositivo, Rimuovi

Tabella Grafici Testi Forme Multimedia Commenti

Colore

Formattazione Animazione Documento

Sfide Filmati Disposizione

Informazioni file

03Apistolamp00180725_001.mov

Download

Controlli

Volume

Modifica filmato

Taglia

00:00:00,000 00:01:52,078

Fotogramma di anteprima

00:00:00,000


Ripetizione

Nessuna

Avvia il filmato al clic

Riproduci filmato tra dispositivi

Descrizione



Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

You are viewing cristinabarbiani's screen

Visualizza: Presentazione, Appunti, Dispositivi

Tabella Grafici Testi Forme Multimedia Commenti

Colore

Formattazione Annotazioni Documenti

Scegli Filtrare Disposizione

Informazioni file

03Apistolamp00180725_001.mov

Download

Controlli

Volume

Modifica filmato

Taglia

00:00:00,000 00:01:52,078

Fotogramma di anteprima

00:00:00,000

Ripetizione

Nessuna

Avvia il filmato al clic

Riproduci filmato tra dispositivi

Descrizione

Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

You are viewing cristinabarbiani's screen


Visualizza: Presentazione, Appunti, Dispositivi

Formatore, Annotazioni, Documenti

Tabella, Grafici, Testo, Forme, Multimedia, Commenti

Colore

03:00
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24:00

Informazioni file
03Apistolamp00180725_001.mov
Sostituisci

Controlli
Ripetizione
Nessuna

Avvia il filmato al clic

Riproduci filmato tra dispositivi

Descrizione

Unmute Start Video Security Participants 30 Chat Share Screen Record Reactions Leave

cristinabarbiani

You are viewing cristinabarbiani's screen

Visualizza: Ritrasmissione Aggiungi dispositivo

Remotati

Tabella Grafica Testo Forme Multimedia Commenti

Colloquio

Formattazione Animazione Documento

Layout dispositivo

Foto - Orizzontale

Cambia master

Aspetto

- Titolo
- Corpo
- Numero dispositivo

▼ Sfilata

Riempimento colore

Modifica dispositivo master

Unmute Start Video Security Participants Chat Share Screen Record Reactions

cristinabarbiani

Leave

You are viewing cristinabarbiani's screen

Visualizza: Ritrasmissione, Aggiorna il dispositivo

Reproduit

Tabella Grafici Testi Forme Multimedia Commenti

Colabora

Formattazione Annotazioni Documenti

Sito Filmati Disposizione

Informazioni file

- 0/divise map_DivL-180723_003.mov

Download

Controlli

Volume

Modifica filmato

Taglia

00:00:00,000 00:01:20,208

Fotogramma di anteprima

00:00:00,000

Ripetizione

Nessuna

- Avvia il filmato al clic
- Riproduci filmato tra dispositivi

Descrizione

Unmute Start Video Security Participants 30 Chat Share Screen Record Reactions Leave

You are viewing cristinabarbiani's screen

Visualizza: 100% - Aggiorna Dispositivo

Tabella Grafici Testi Forme Multimedia Commenti

Colore

Formattazione Animazione Documenti

Layout dispositivo

Foto - Orizzontale

Cambia master

Aspetto

- Titolo
- Corpo
- Numero dispositivi

▼ Slides

Riempimento colore

Modifica dispositivo master

Unmute Start Video Security Participants Chat Share Screen Record Reactions Leave

The screenshot shows a Zoom meeting interface. The main window displays a presentation slide with a large illustration of a three-masted sailing ship. The slide is titled 'MUSEO MERITURIO'. Below the ship illustration is a smaller diagram of the ship's hull. The meeting controls at the bottom include 'Unmute', 'Start Video', 'Security', 'Participants' (30), 'Chat', 'Share Screen', 'Record', 'Reactions', and a red 'Leave' button. A small video feed in the bottom right corner shows a participant named 'cristinabarbiani'. The top of the screen shows a status bar with 'You are viewing cristinabarbiani's screen' and various application menus.

VIRTUAL REALITY ENGINES FOR MULTIMEDIA INSTALLATION AT THE NATIONAL ARCHAEOLOGICAL MARITIME MUSEUM

Paola Perozzo

You are viewing Paola PEROZZO's screen View Options

1

Unmute Start Video Security Participants 30 Chat Share Screen Record Reactions Paola PEROZZO Leave

You are viewing Paola PEROZZO's screen View Options

MAPPA DI PROVENIENZA DEGLI IMBASCATI
MAP OF PROVENIENCE OF THE ENBASCATI

2

Unmute Start Video Security Participants 30 Chat Share Screen Record Reactions Paola PEROZZO Leave



1. the mesh model from photogrammetry of the "Cygne wooden model



Unmute Start Video Security Participants 30 Chat Share Screen Record Reactions

Leave



INTERACTIVE INSTALLATION

- Windows application
- Desktop computer with Touch-screen
- Orbit camera in 3D environment
- UI buttons
- Different scenes



Unmute Start Video Security Participants Chat Share Screen Record Reactions



Leave



INTERACTIVE INSTALLATION

- Windows application
- Desktop computer with Touch-screen
- Orbit camera in 3D environment
- UI buttons
- Different scenes

Unmute Start Video Security Participants 31 Chat Share Screen Record Reactions Paola PEROZZO Leave



UNREAL ENGINE

Unreal Engine is a cross-platform to develop games with real-time technology: rendering is real-time like in gaming.

C++ language, coding with Blueprint



Unmute

Start Video

Security

Participants 31

Chat

Share Screen

Record

Reactions



Leave

3D ENVIRONMENT

The screenshot displays a 3D software interface, likely Blender, with a central viewport showing a 3D model of a two-masted sailing ship on a blue ocean. The interface includes a top toolbar, a left-hand 'Properties' panel, a bottom 'Outliner' and 'Dopesheet' panel, and a right-hand 'Properties' panel. A video call inset in the bottom right corner shows Paola PEROZZO. The bottom of the screen features a meeting control bar with icons for Unmute, Start Video, Security, Participants (31), Chat, Share Screen, Record, and Reactions. A red 'Leave' button is visible in the bottom right corner of the video call inset.

THIRD PERSON CHARACTER

The screenshot displays a virtual reality environment. The central view shows a 3D scene of a large sailing ship on a choppy sea. An inset window provides a closer view of a smaller boat. The interface includes a top toolbar with navigation and interaction tools, a left sidebar with a 'Properties' panel, and a bottom toolbar with controls for 'Unmute', 'Start Video', 'Security', 'Participants', 'Chat', 'Share Screen', 'Record', and 'Reactions'. A material library at the bottom center shows various sphere textures. A video feed in the bottom right corner shows Paola PEROZZO, with a 'Leave' button next to it.

THIRD PERSON CHARACTER

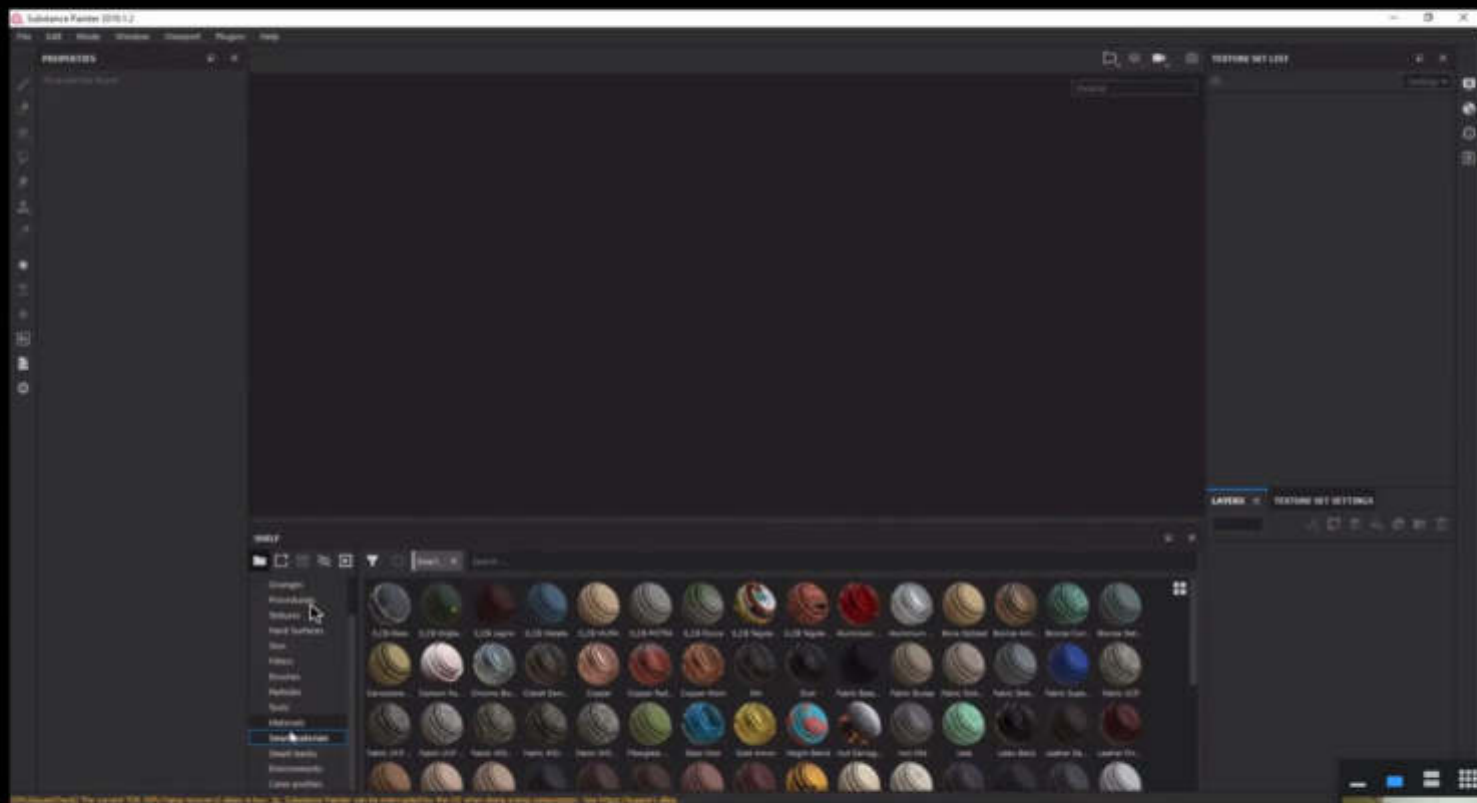


Leave

MATERIALS

The screenshot displays a virtual meeting interface. The central focus is a Blender 2.80.2 software window. The Blender interface includes a 3D viewport on the left showing a sphere, a Properties panel on the right, and a central workspace with a material editor. A 'MATERIAL' window is open, listing various material properties. The bottom of the screen shows a meeting control bar with buttons for Unmute, Start Video, Security, Participants (30), Chat, Share Screen, Record, Reactions, and a video feed of Paola PEROZZO with a 'Leave' button.

MATERIALS from Substance Painter (now Substance is a plugin of Unreal)



Unmute Start Video

Security Participants Chat Share Screen Record Reactions

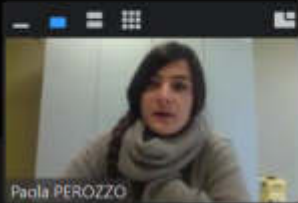
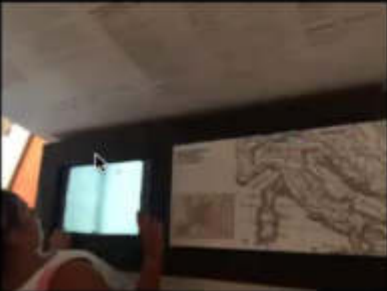


Leave



INTERACTIVE INSTALLATION

- Android application
- «All-in-one» device with Android operation system and Touch-screen
- Turning page book
- 2D environment
- UI buttons



Leave

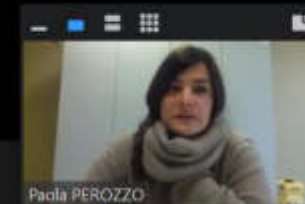
Unmute Start Video Security Participants 31 Chat Share Screen Record Reactions



Unity 3d is a cross-platform game engine with real-time rendering. C# language

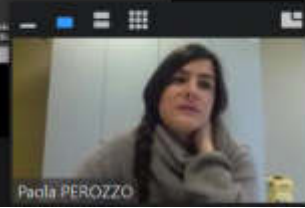
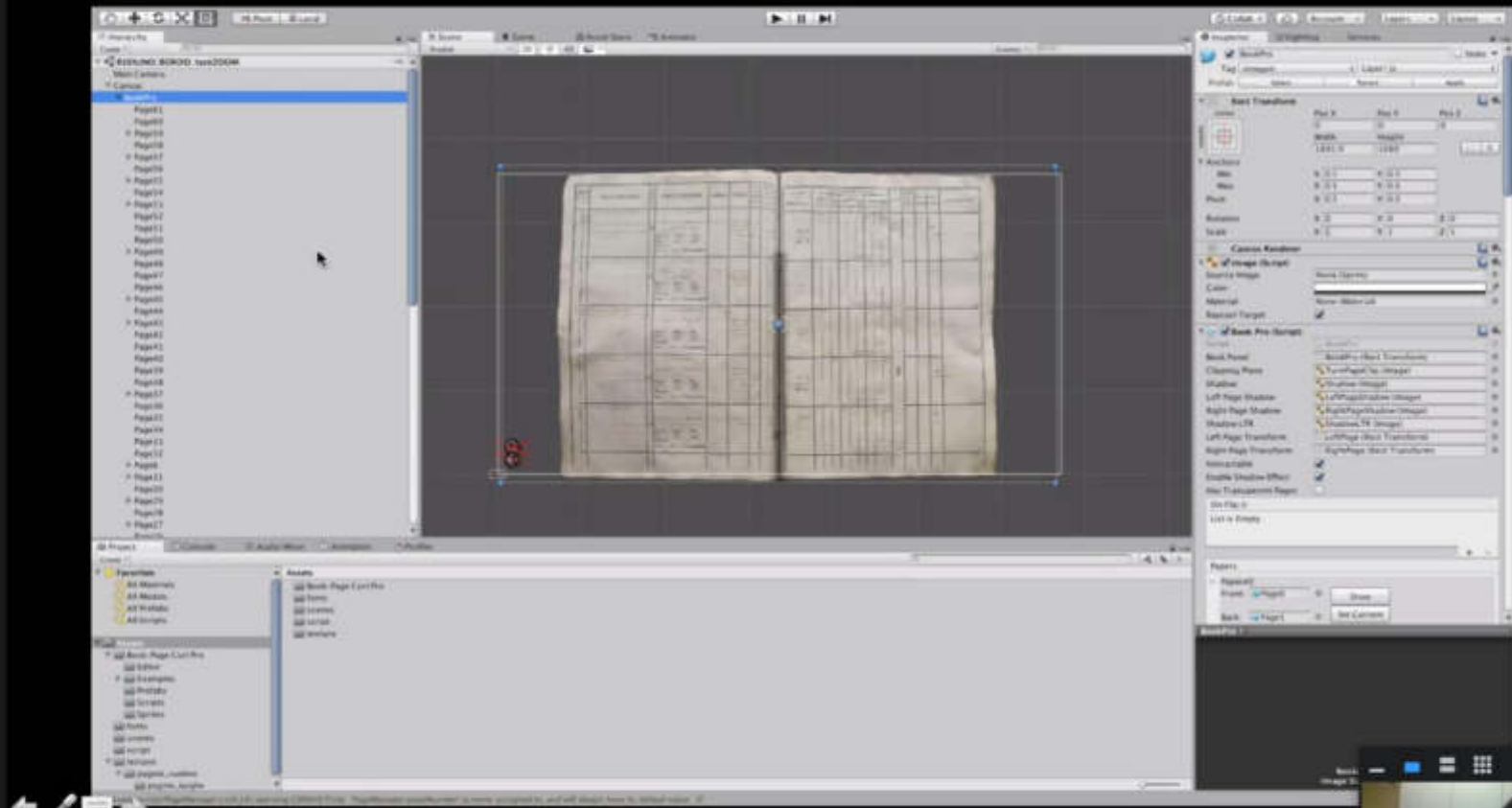


Unmute Start Video Security Participants 31 Chat Share Screen Record Reactions



Leave

2D ENVIRONMENT



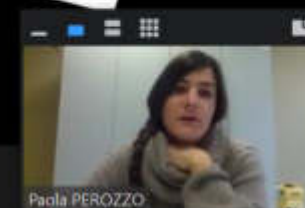
Unmute Start Video Security Participants 30 Chat Share Screen Record Reactions Paola PEROZZO Leave

USER INTERFACE - BUTTONS

The screenshot displays a 3D software interface, likely Blender, with a central 3D viewport showing a document model. The interface includes several panels: a 'Properties' panel on the left, a 'Tools' shelf at the bottom left, a 'Properties' panel on the right, and a 'Timeline' panel at the bottom right. The document model is a rectangular sheet with a central rectangular frame and some text. The interface is overlaid on a video call window showing a woman's face in the bottom right corner. The video call window has a 'Leave' button next to the name 'Paola PEROZZO'. The video call interface also includes a 'Share Screen' button and a 'Record' button.

FOCUS

ON THE DEVELOPMENT OF AN APPLICATION
FOR AN INTERACTIVE DISPLAY



Leave

Unmute Start Video Security Participants Chat Share Screen Record Reactions

3D ENVIRONMENT

Unity Products Solutions Case Studies Learning Support & Services Community Get started

Unity for all

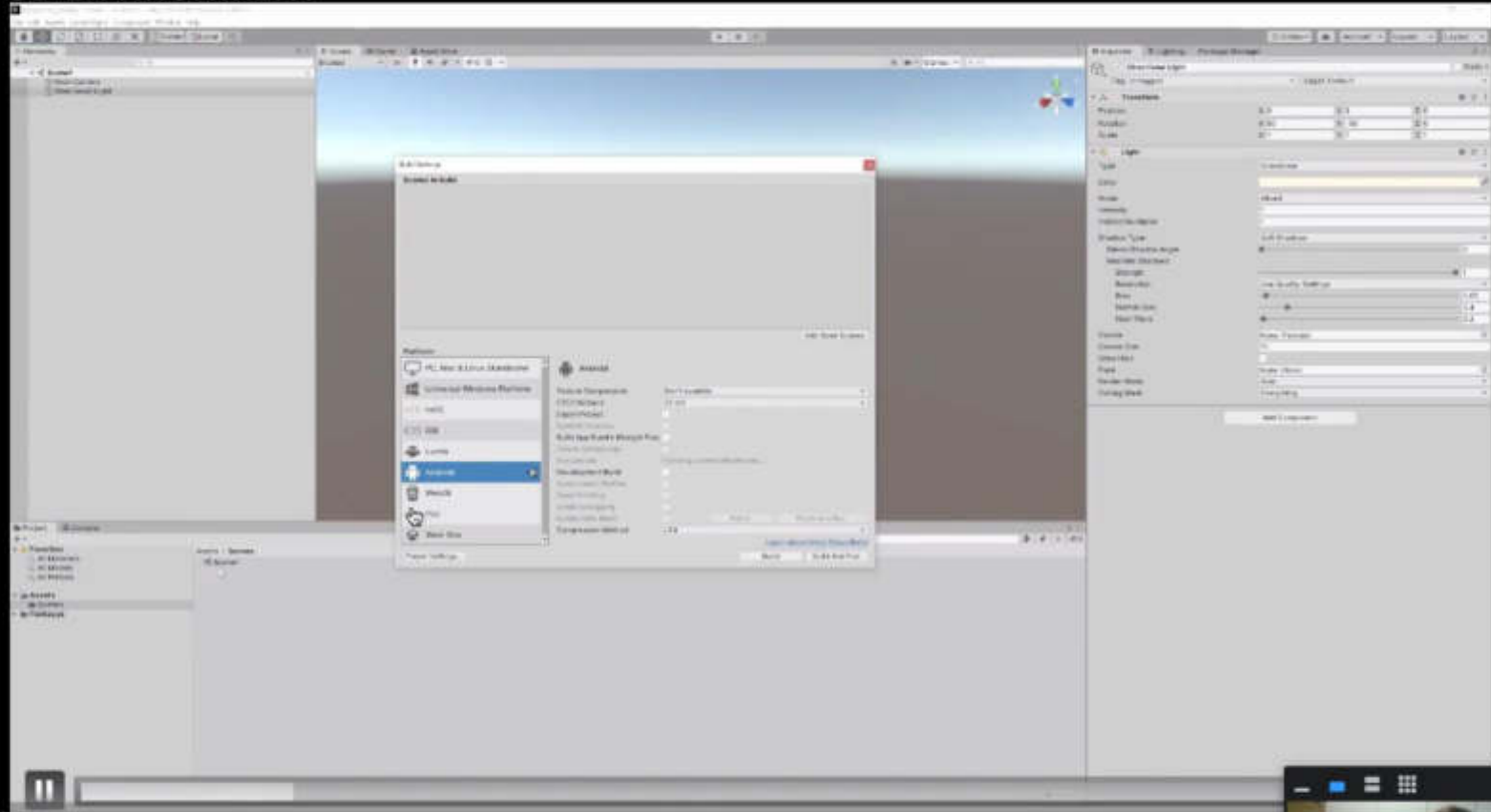
Start bringing your vision to life today with the Unity real-time 3D development platform.

Get started Learn more

- Games
- Automotive, Transportation & Manufacturing
- Film, Animation & Cinematics
- Architecture, Engineering & Construction

Unmute Start Video Security Participants 29 Chat Share Screen Record Reactions Paola PEROZZO Leave

3D ENVIRONMENT



Unmute

Start Video

Security

Participants

Chat

Share Screen

Record

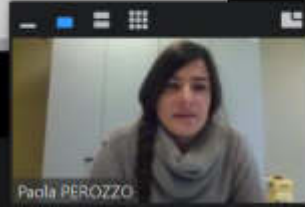
Reactions



Leave

3D ENVIRONMENT

The screenshot displays a 3D environment within a web browser. The central focus is a 3D model of a three-masted sailing ship on a blue sea under a clear sky. The browser's address bar shows a URL starting with 'https://www.unity3d.com/'. To the right of the 3D view, there is a product page for 'Brig Sloop Sailing Ship' by '3D Warehouse'. The page indicates the model is 'FREE' and includes a 'Download' button. Below the main image, there are several smaller thumbnail images of the ship from different angles. A small window is overlaid on the 3D view, showing a progress bar and some text, likely related to the download or rendering process. The browser's interface, including the address bar and navigation buttons, is visible at the top of the screenshot.



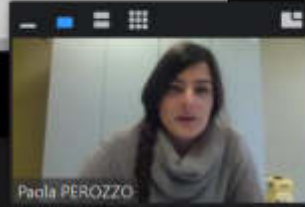
Unmute Start Video Security Participants Chat Share Screen Record Reactions

Leave

3D ENVIRONMENT

The screenshot displays a Unity 3D environment with a central window showing a product page for 'Ultimate Camera Controller'. The product page features a video player, a 'FREE' price tag, and a 'Buy Now' button. The Unity interface includes a Hierarchy panel on the left, a Console panel at the bottom, and a Properties panel on the right. The product page text includes:

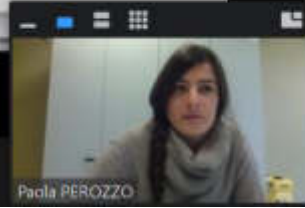
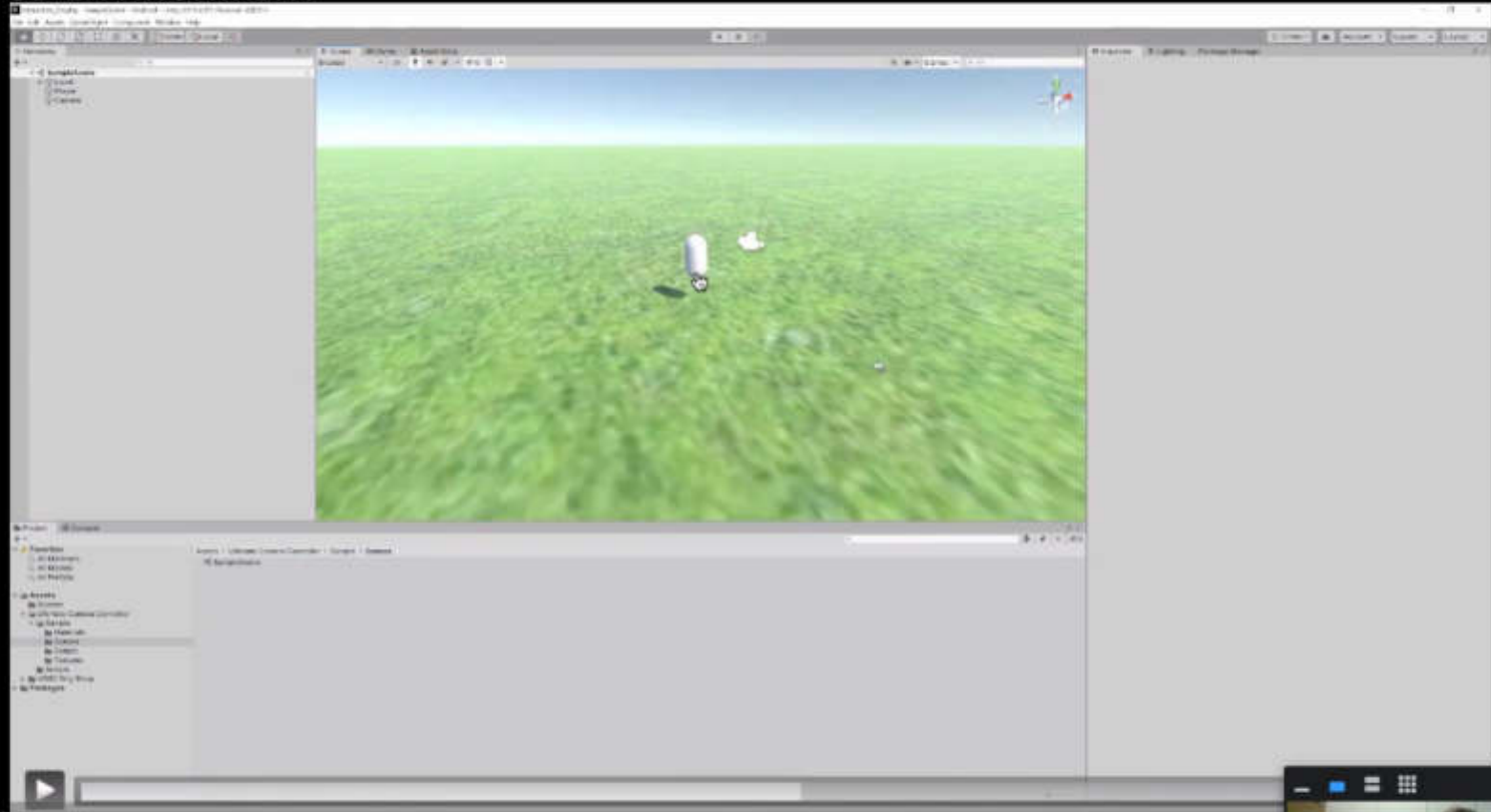
- Ultimate Camera Controller (Follow + Orbit + Zoom Functionality)
- FREE
- Buy Now
- Features:
 - Complete set-up and configuration
 - Includes Camera Zoom, Orbit and Follow
 - Extremely easy to set-up and customize
 - Example scene demonstrating usage of the package
 - Full commented source code & documentation included



Leave

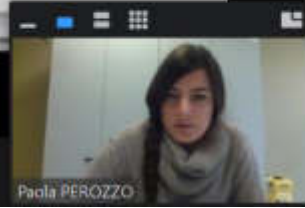
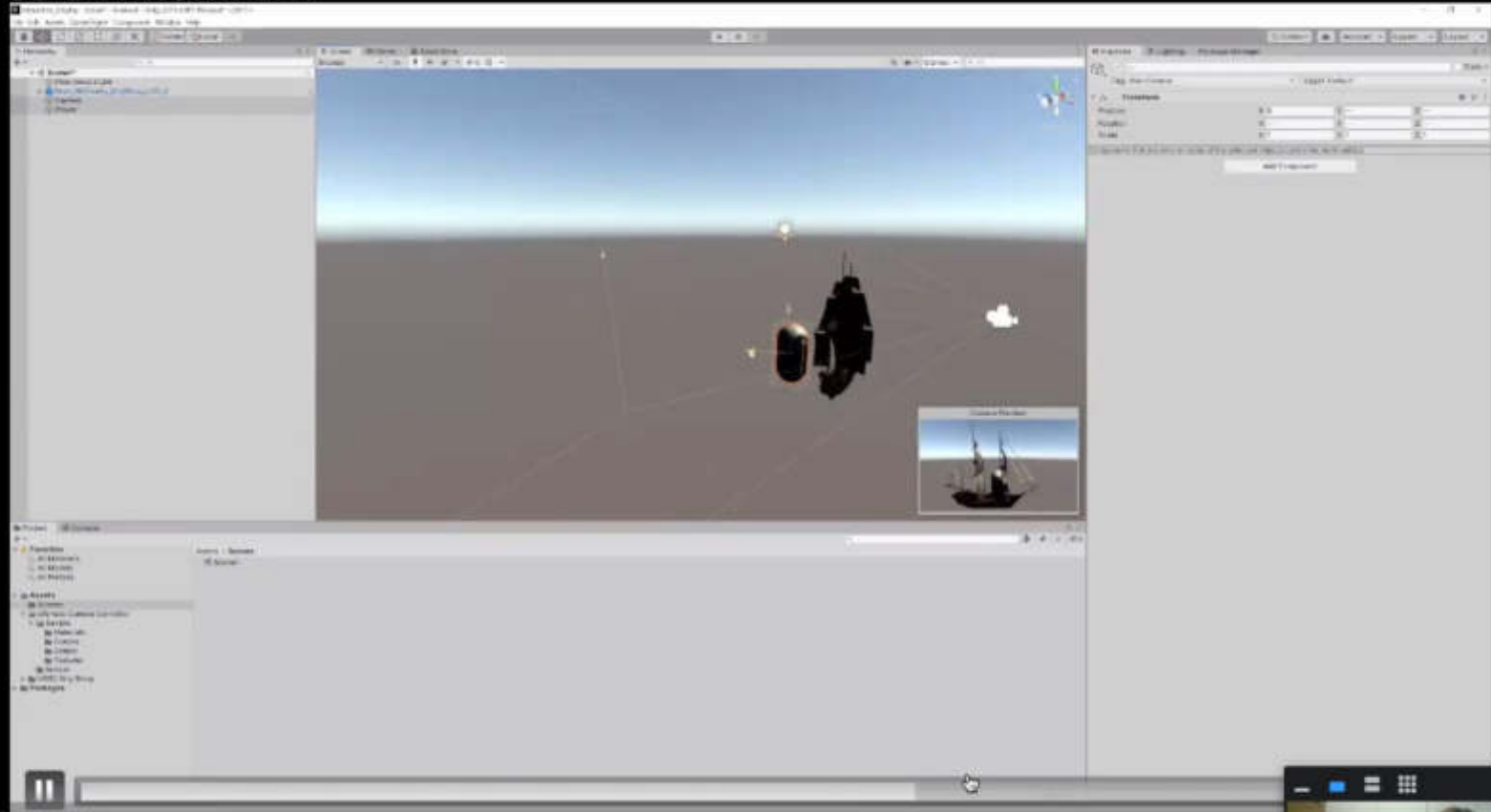
Unmute Start Video Security Participants Chat Share Screen Record Reactions

3D ENVIRONMENT



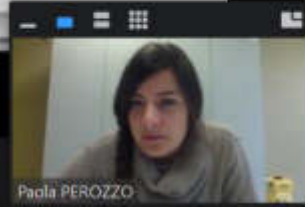
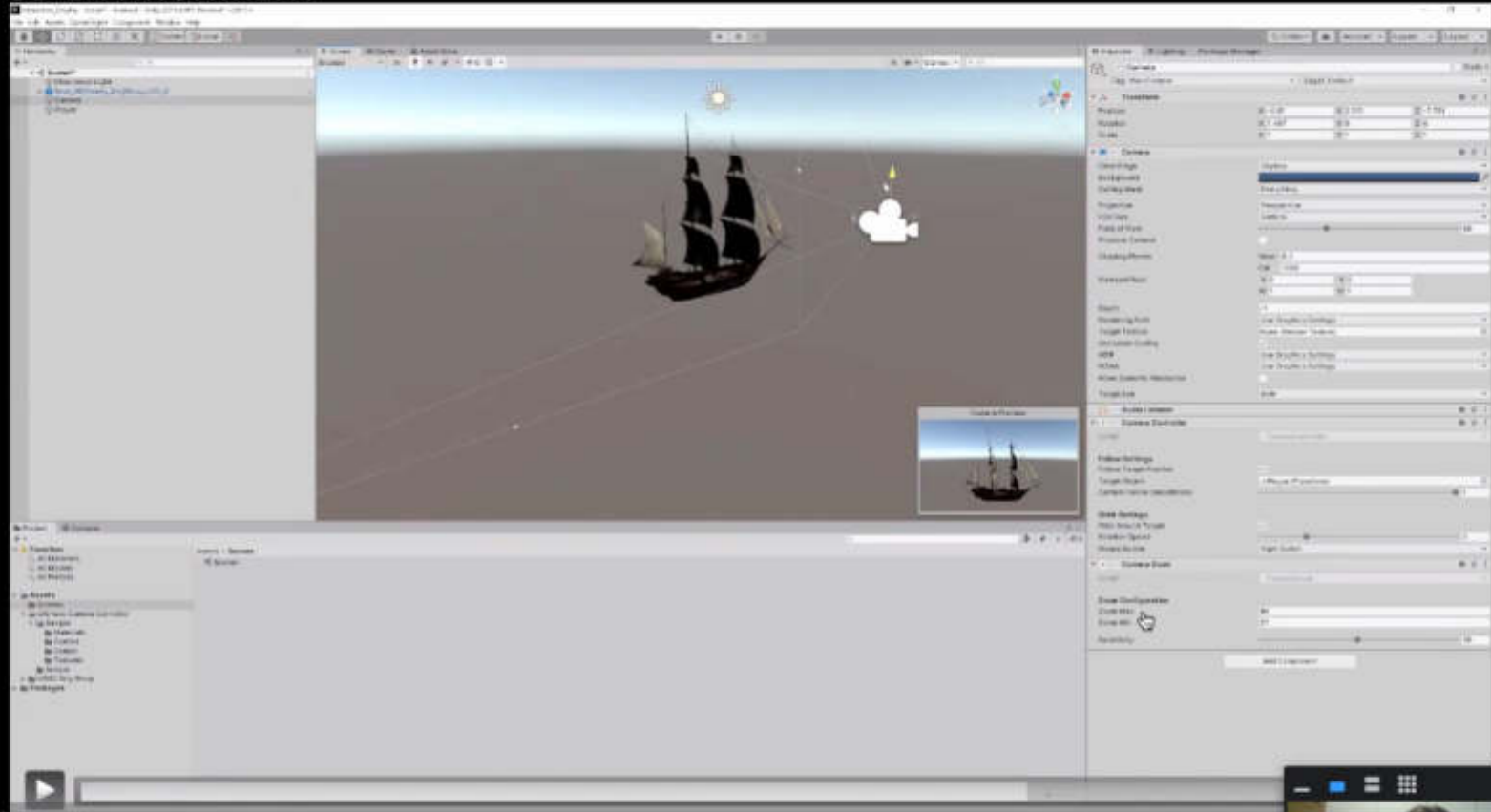
Unmute Start Video Security Participants Chat Share Screen Record Reactions

3D ENVIRONMENT



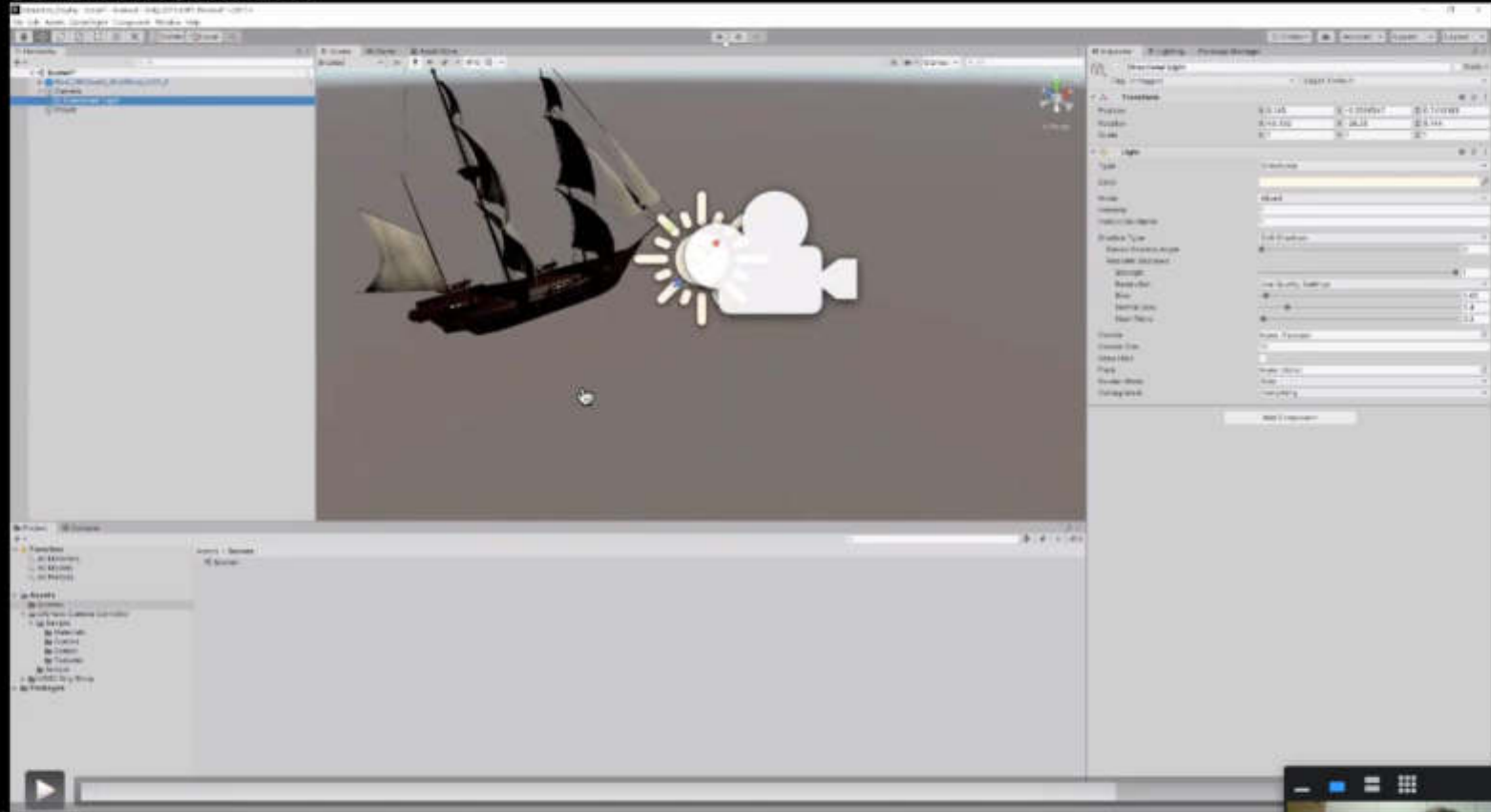
Unmute Start Video Security Participants Chat Share Screen Record Reactions

3D ENVIRONMENT



Leave

3D ENVIRONMENT



Leave

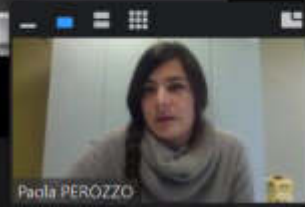
3D ENVIRONMENT



USER INTERFACE - BUTTONS

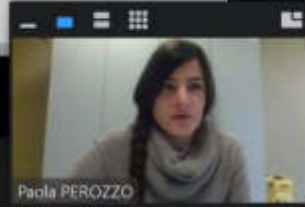


Unmute Start Video Security Participants Chat Share Screen Record Reactions



Leave

USER INTERFACE - BUTTONS



Unmute Start Video Security Participants 28 Chat Share Screen Record Reactions Leave

USER INTERFACE - BUTTONS



Leave

Unmute Start Video Security Participants Chat Share Screen Record Reactions