Programme cofinancé par le Fonds Européen de Développement Régional
Programme cofinanced by the European Regional Development Fund

BLUEMED

Plan/test/coordinate Underwater Museums, Diving Parks and Knowledge Awareness Centres in order to support sustainable and responsible tourism development and promote Blue growth in coastal areas and islands of the Mediterranean

Barbara Davidde
MiBAC-Istituto Superiore per la Conservazione ed il Restauro

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Università della Calabria – Dipartimento di Ingegneria Meccanica, Energetica e Gestionale

MED info DAY

Roma, 29 Novembre 2018

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BLUEMED Project

aims to promote and protect the Mediterranean underwater natural and cultural heritage by valorising and preserving the Mediterranean coastal region and by developing and strengthening a sustainable and responsible style of coastal and maritime tourism.

2,8 M €
Project budget

2,4 M €
ERDF / IPA

36 Months
Project duration

Interreg Mediterranean BLUEMED

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Project partners

RDF REGIONAL DEVELOPMENT FUND OF THESSALY

ATLANTIS CONSULTING

UNIVERSITÀ DELLA CALABRIA
DIPARTIMENTO DI INGEGNERIA MECCANICA, ENERGETICA, E GESTIONALE
DIMEG

FER LABUST

ISCR ISTITUTO SUPERIORE PER LA CONSERVAZIONE ED IL RESTAURO

University of Cyprus
Oceanography Centre

ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ
UNIVERSITY OF PATRAS

FUNDACIÓN UNIVERSIDAD EMPRESA
REGIÓN DE MURCIA

REGIONAL DEVELOPMENT AGENCY DUBROVNIK-NERETVA COUNTY
DUNEA
REGIONALNA RAZVOJNA AGENCIJA DUBROVAČKO-NERETVANSKE ŽUPANIJE

HELLENIC REPUBLIC
MINISTRY OF CULTURE AND SPORTS
GENERAL DIRECTORATE OF ANTIQUITIES AND CULTURE HERITAGE
EPHORATE OF UNDERWATER ANTIQUITIES

Associated partners

Area Marina Protetta CAPO RIZZUTO

ARQVA Museo Nacional de Arqueología Subacuática

PARCO ARCHEOLOGICO DEI CAMPI FLEGREI

AIMS & OBJECTIVES

- **Study the natural, cultural, and legislative conditions** of selected locations in the Mediterranean region with the aim to plan, test, and coordinate Underwater Museums and Diving Parks in a unified approach

- **Preserve and protect** underwater cultural resources, while making them **publicly accessible** with the promotion of the concept of Underwater Museums and organized underwater archaeological sites

- **Protect the marine ecosystem** of the Mediterranean

- **Promote a sustainable & responsible model of tourism development** for the selected coastal and island regions of the Mediterranean

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AIMS & OBJECTIVES

BLUEMED aims to support competent government authorities **develop strategies, plans and policies for local coastal and island economies** of the Mediterranean region **in adopting a sustainable and responsible model for tourism development.**

This will be achieved by planning, testing and coordinating **Underwater Museums, Diving Parks and Knowledge Awareness Centres (KACs)**. Main objective is the valorisation and protection of underwater natural and cultural heritage in accordance with UNESCO 2001, the raising of public awareness and tourism attractiveness.

MAIN FOCUS

a) a process scheme for supplying local/regional authorities with a **multi-disciplinary plan (management models, innovative technologies) for Underwater Museums, Diving Parks and Knowledge Awareness Centres** (policy recommendations, management practices, networking and promotion);
b) promoting innovation in the diving industry and improving divers experience through **innovative diving services and technologies**;
c) attracting an important part of the increasing number of people who choose diving tourism;
d) introducing the wider public to underwater cultural heritage by means of **3D immersive visualisation in museum exhibitions and KACs**;
e) setting up 'Underwater Natural and Cultural Routes in the Mediterranean' web-based platform for a **unified tourism promotion and networking** of Med underwater natural and cultural heritage sites.

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PILOT SITES

Capo Rizzuto
(Calabria, Italy)

Baiae
(Campania, Italy)

Western
Pagasitikos/
Sporades
(Thessaly, Greece)

Cavtat - Dubrovnik
(Neretva, Croatia)

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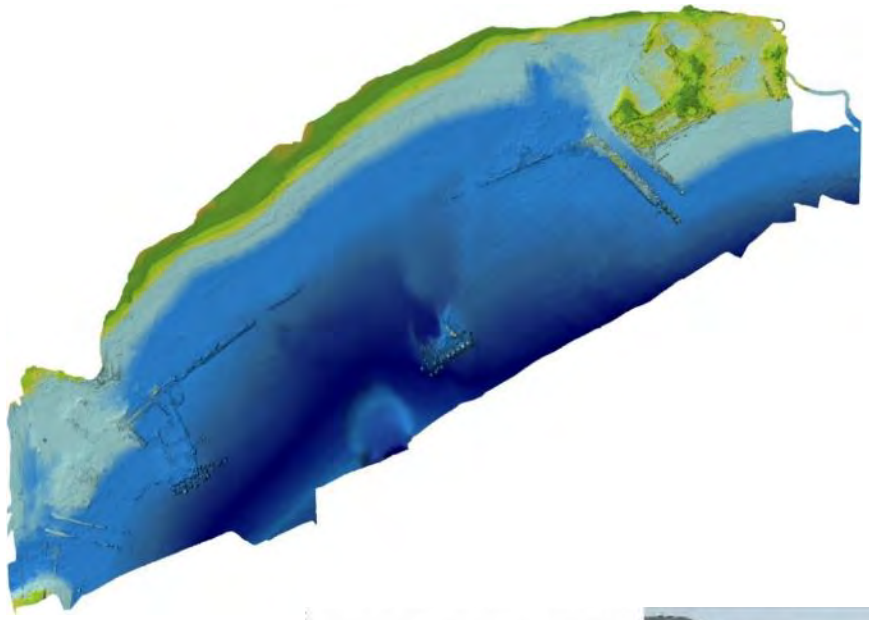
Marine Protected Area - Underwater Park of Baiae



Il battello Cymba

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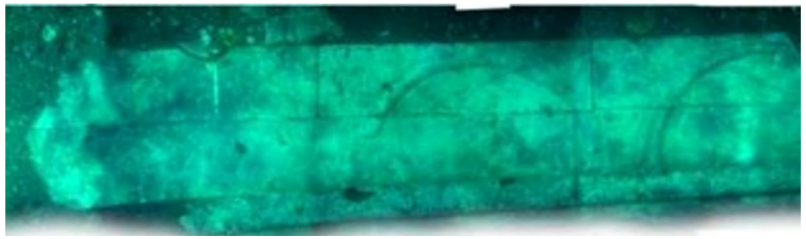

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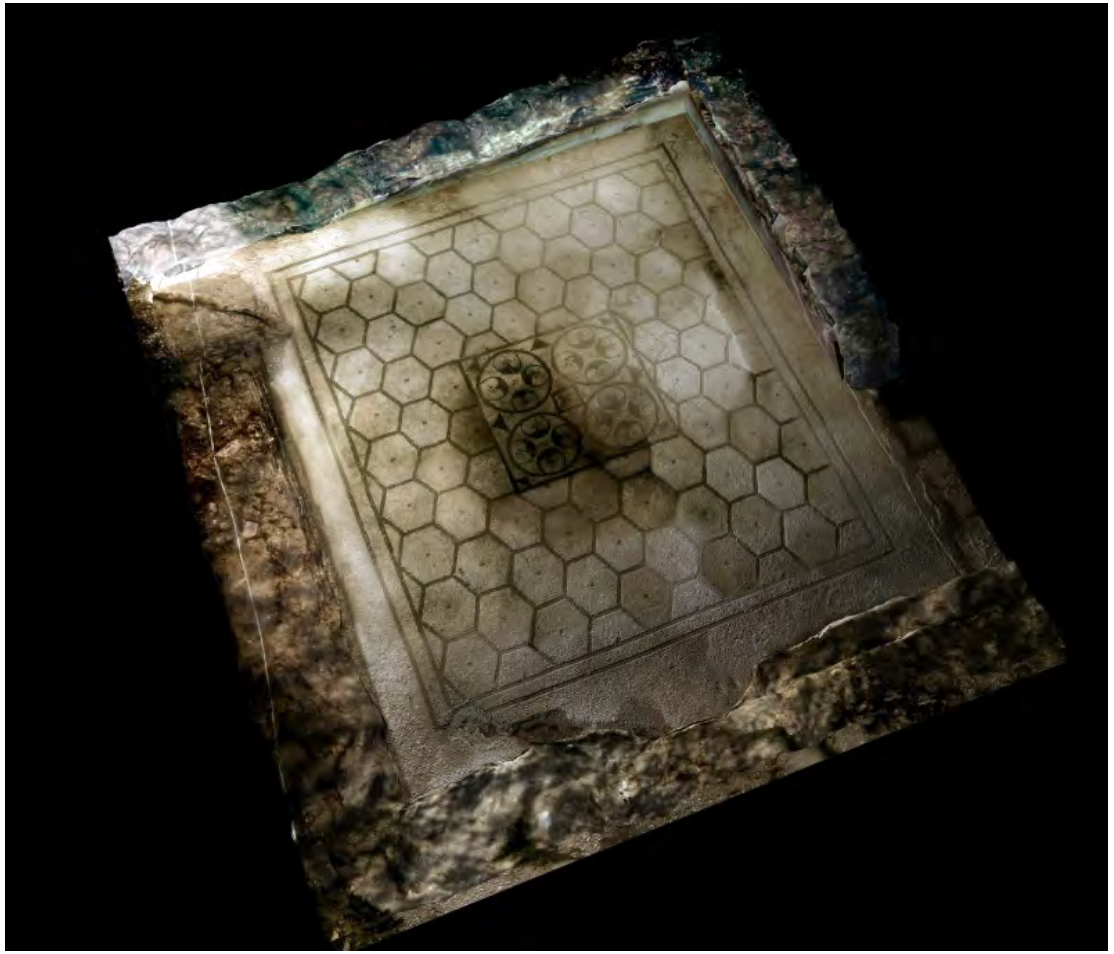

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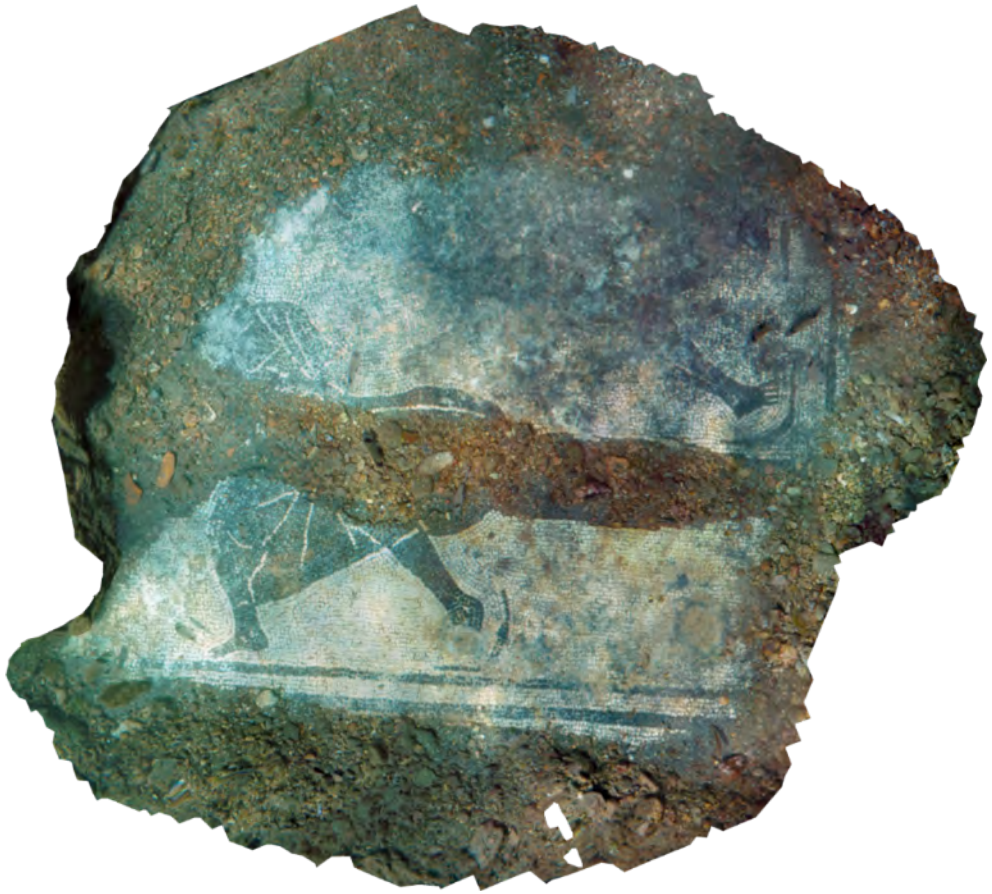
Marine Protected Area - Underwater Park of Baiae
Restoration of two mosaic floor



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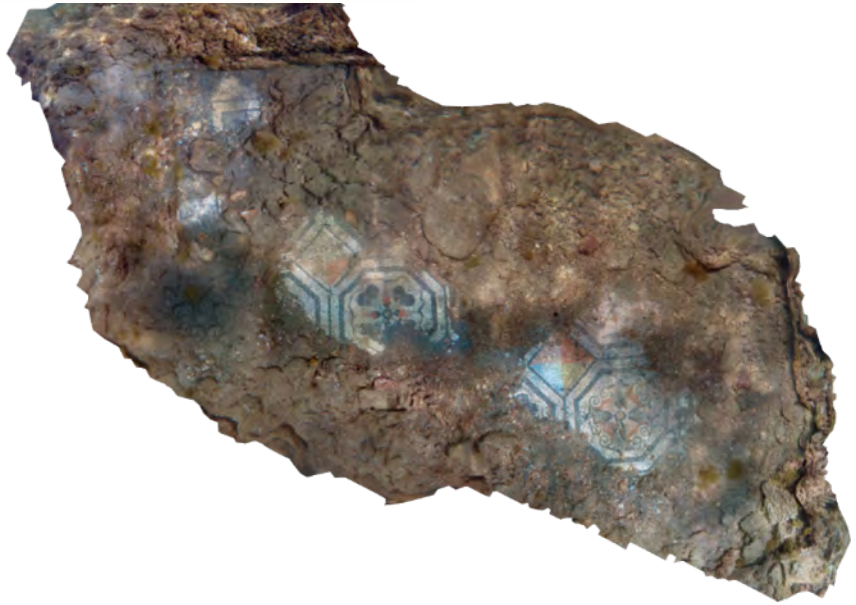

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THE EXCAVATION AND CONSERVATION OF THE SUBMERGED "ROMAN VILLA OF THE DOLIA" IN PALAIA EPIDAURUS

PILOT PROJECT

HELLENIC REPUBLIC
MINISTRY OF CULTURE and SPORT
EPHORATE OF UNDERWATER ANTIQUITIES

Ministero dei beni e delle attività culturali e del turismo

ISTITUTO SUPERIORE PER LA CONSERVAZIONE ED IL RESTAURO

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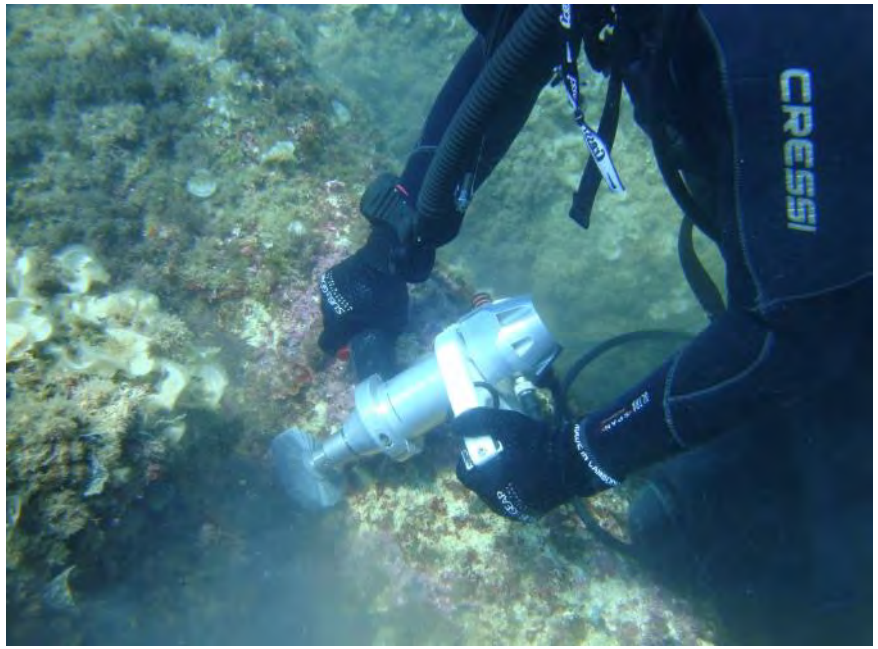
Cleaning at Capo Rizzuto (06-2017, UNICAL)

Mechanical cleaning was conducted at “Cala Cicala” wreck on marble blocks and slabs, belonging to the ancient vessel



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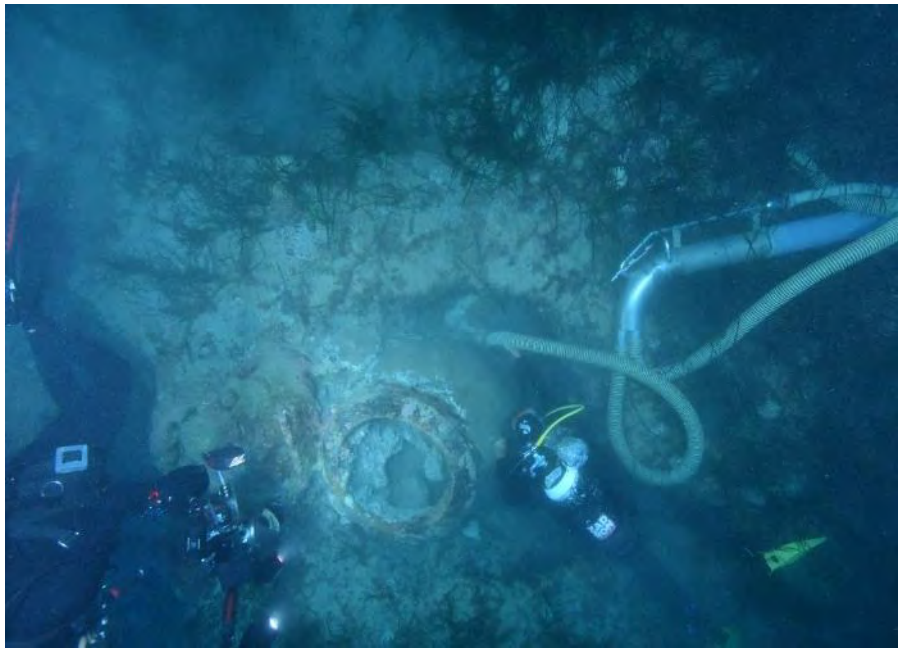
Cleaning at Cavtat (06-2018, DUNEA-UNIZD)

An airlift was used in the "Cavtat" wrecks to remove sand that partially covered amphoras and dolias



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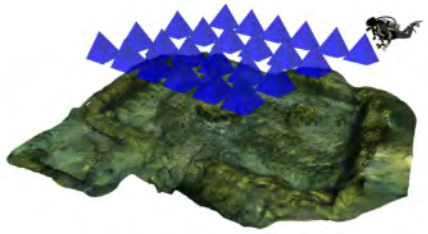
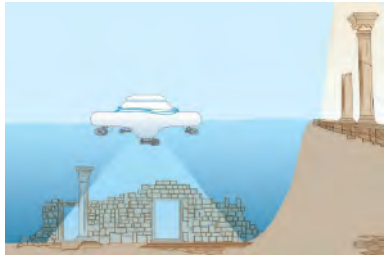
Cleaning at Peristera (10-2018, EUA)

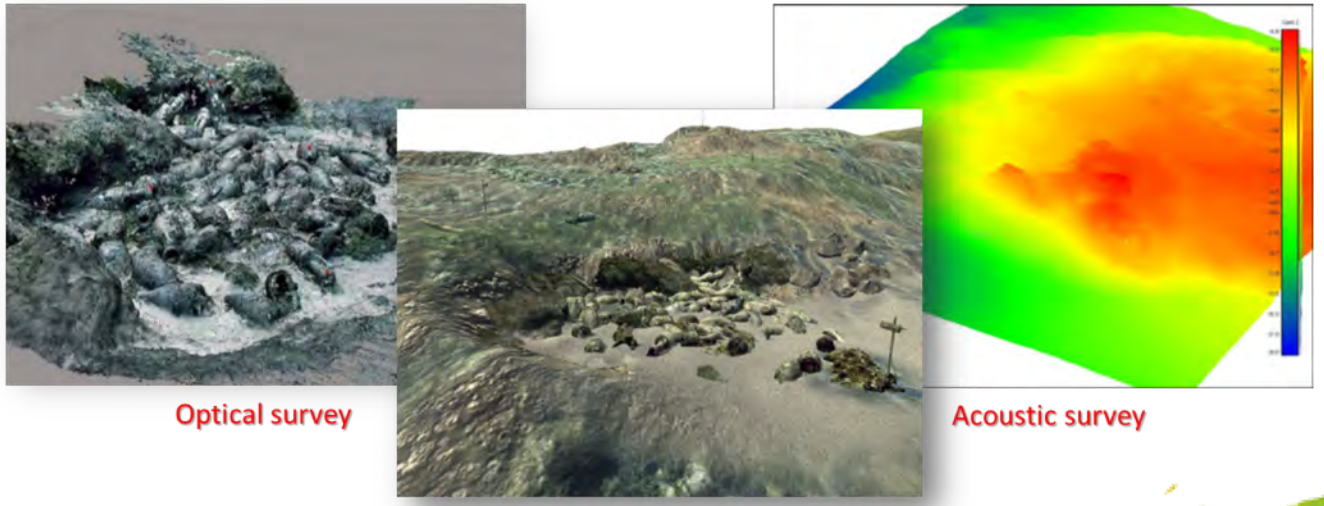
A Manual Cleaning was conducted at "Peristera" wreck to remove ropes and pols dating back to the last excavation

Main results:

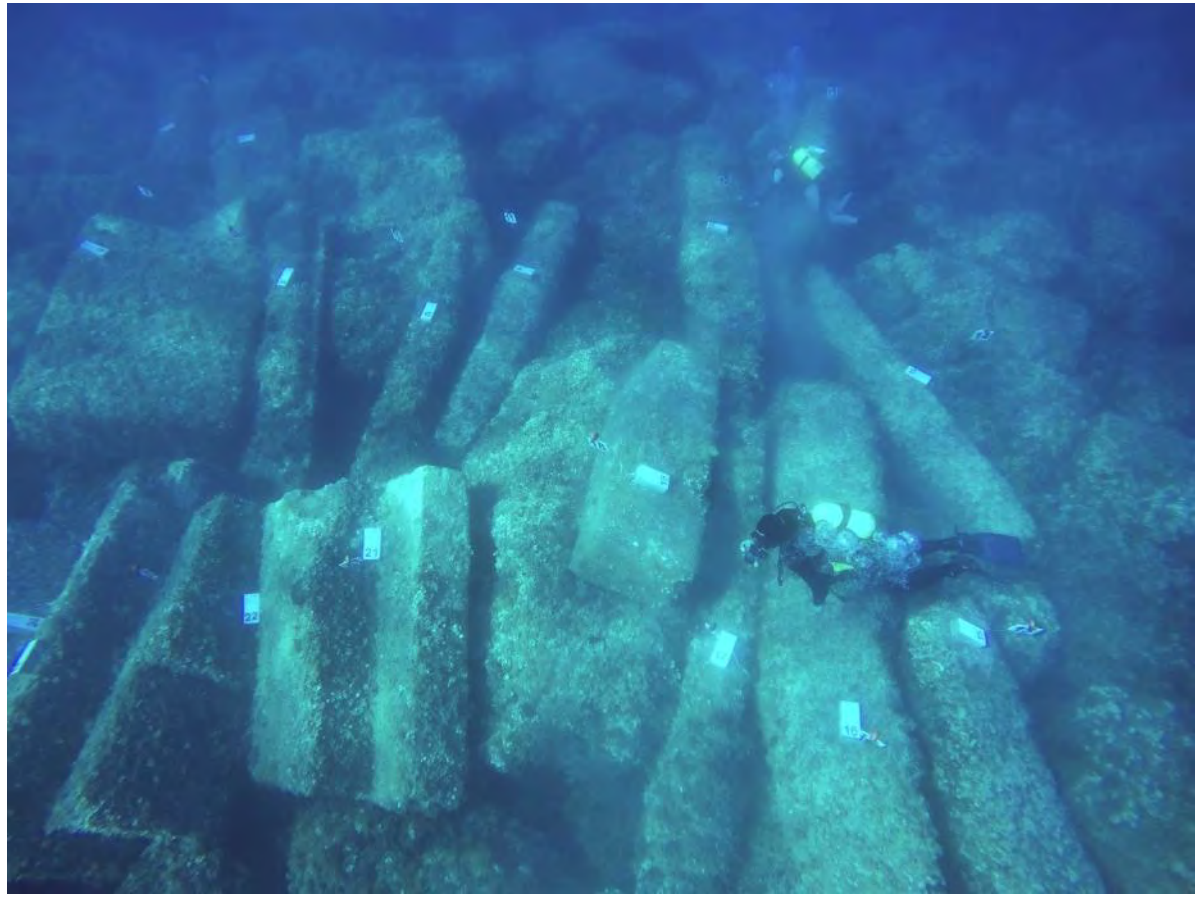
An integrated optical and acoustic survey of the underwater archaeological sites in pilots was conducted to obtain a multi-resolution textured 3D model of the underwater scenario.







Survey and 3D documentation at Cala Cicala (06-2017)



Survey and 3D documentation at Capo Rizzuto (Cala Cicala)

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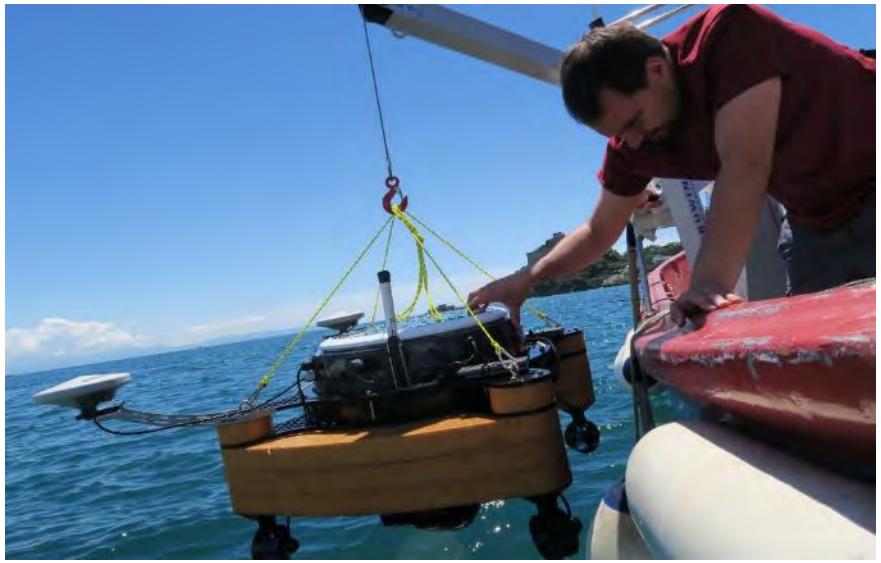
Survey and 3D documentation at Baiae (05-2018)



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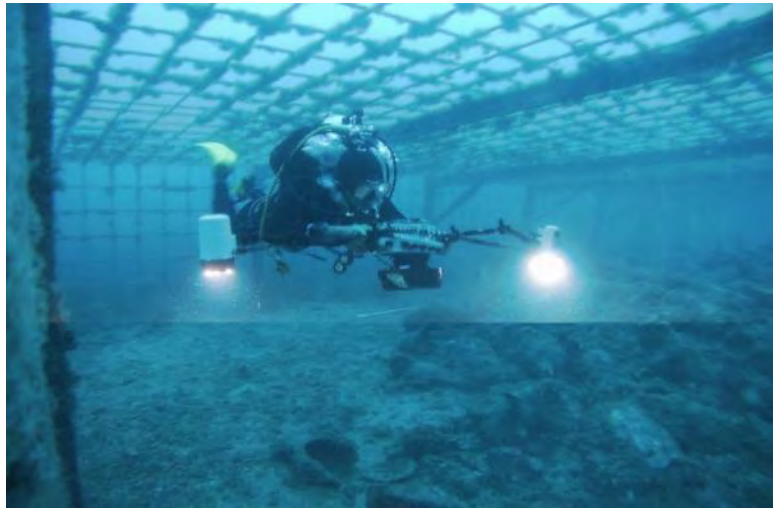
Survey and 3D documentation at Cavtat (06-2018)



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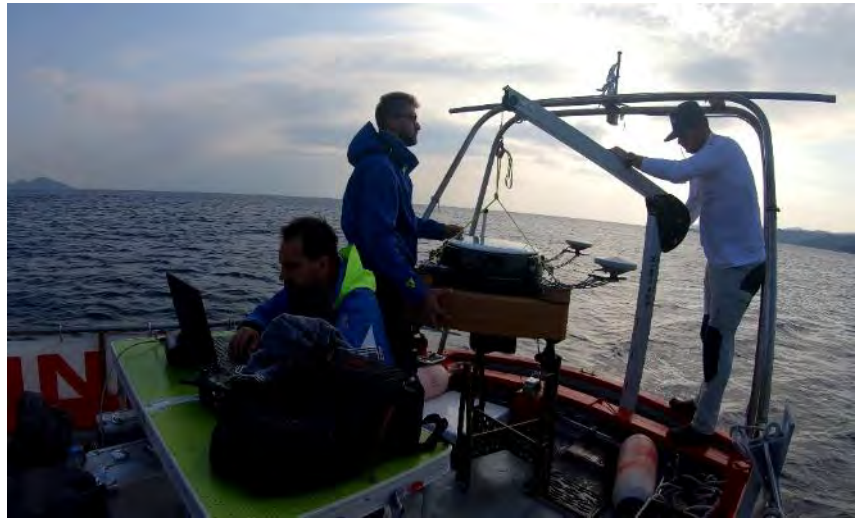
Survey and 3D documentation at Peristera (10-2018)



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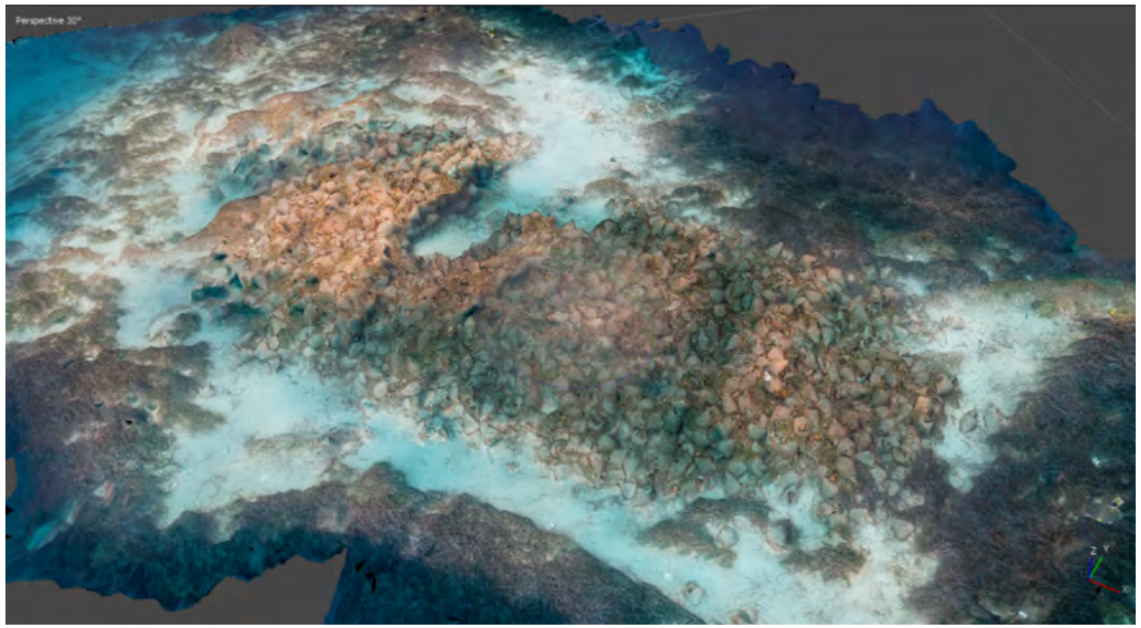
Survey and 3D documentation at Peristera: preliminary data



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Survey and 3D documentation at Kikinthos (10-2018)

Survey and 3D documentation at Glaros (10-2018)

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Survey and 3D documentation at Telegraphos (10-2018)

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Creation of Underwater Virtual Environment

Thematic data collection on underwater natural and cultural heritage sites for 3D reconstruction and exhibition material

KAC Alonissos: preliminary design

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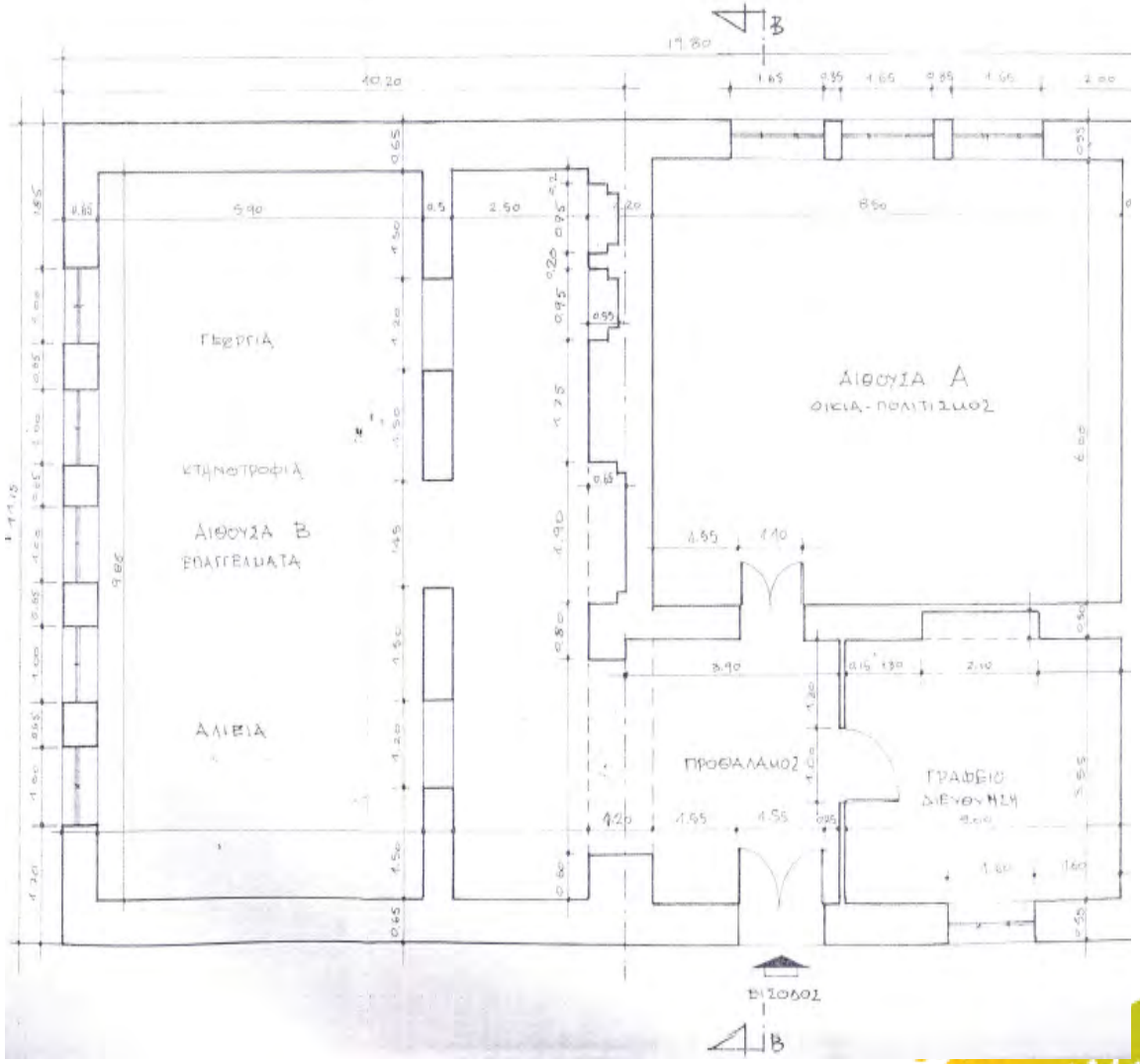
KAC Alonissos



KAC Alonissos – room A

KAC Alonissos – room B

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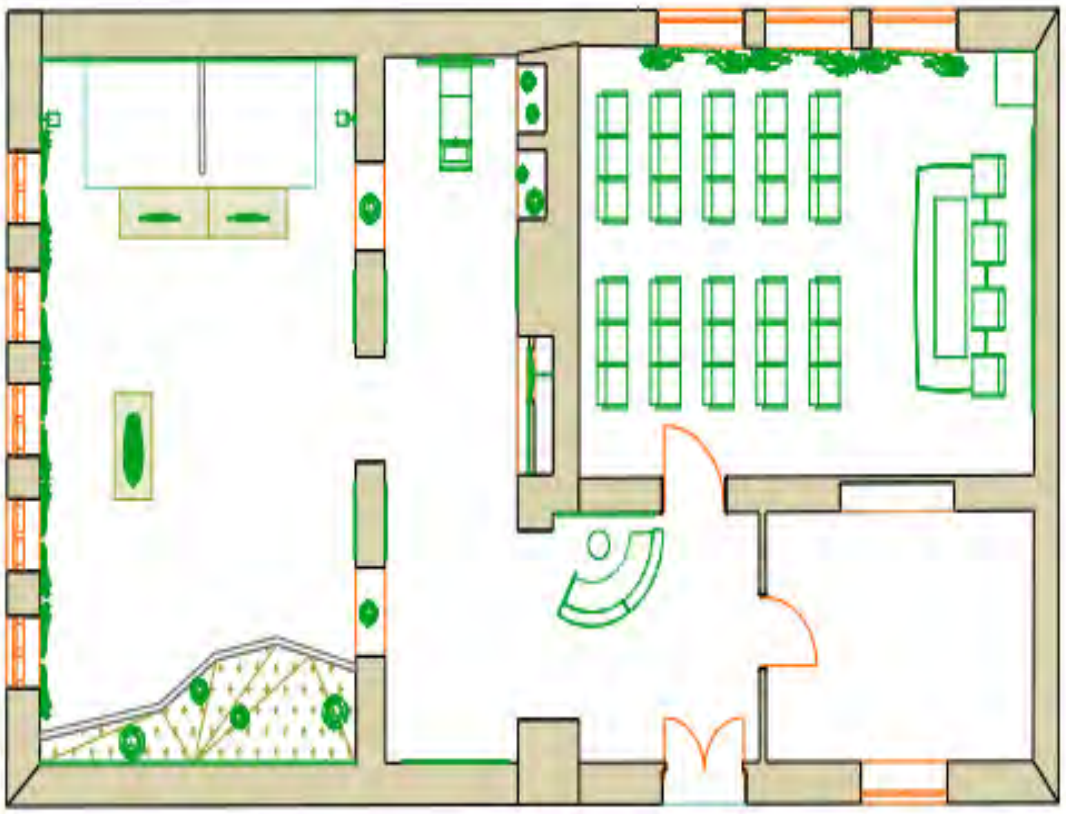
KAC Alonissos



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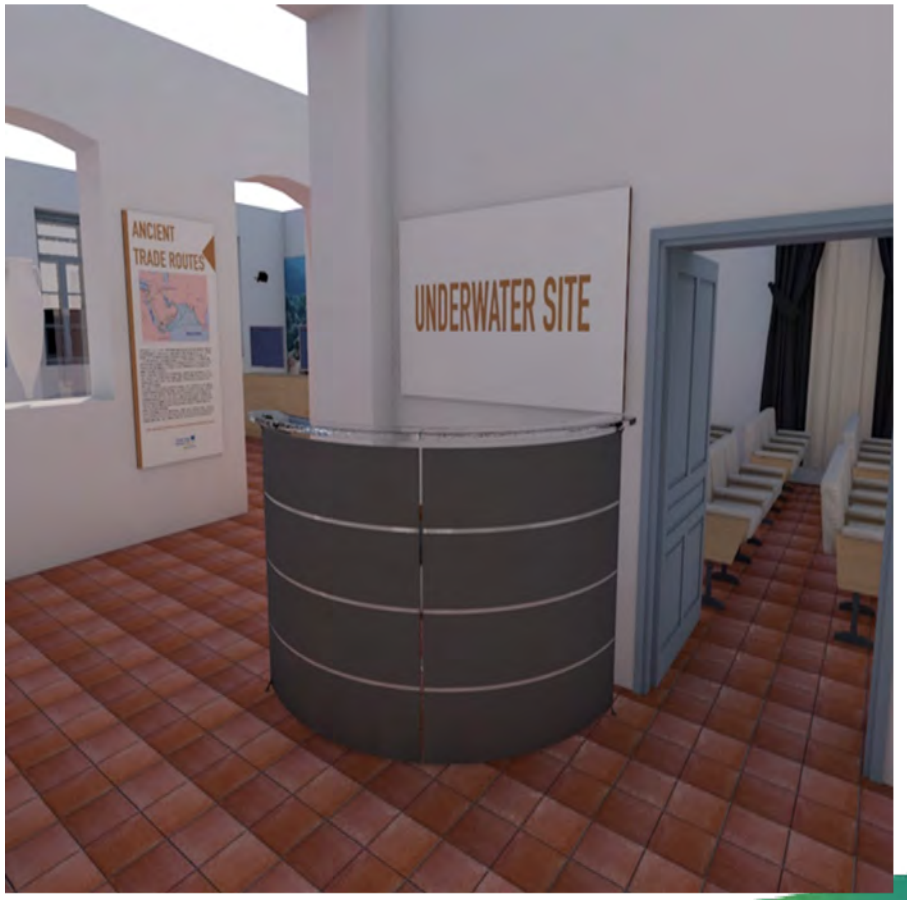
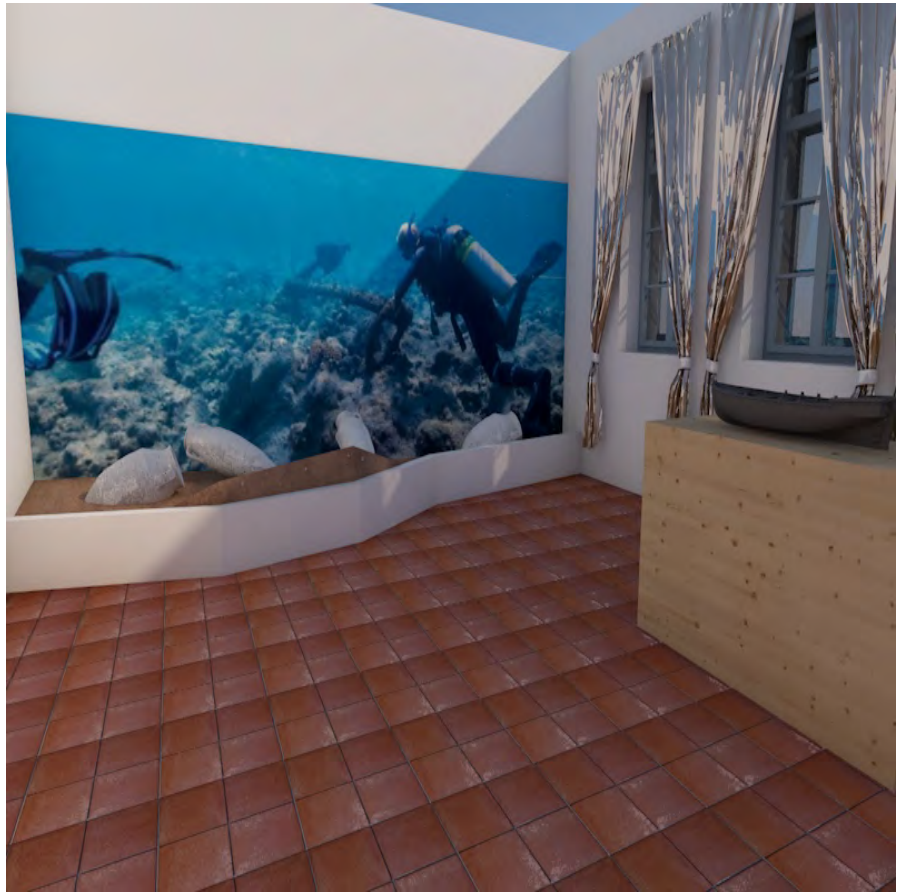
KAC Alonissos



KAC Alonissos



KAC Alonissos

KAC Alonissos - Budget

Room	Product	Tipology	Quantity	um	Costs €/um
Conference room	Chairs for conference room	30	parts	66,00 €	1.980,00 €
	Conference table 3,20 x 1,35 meters	1	parts	1.500,00 €	1.500,00 €
	Chairs for conference table	4	parts	180,00 €	720,00 €
	Curtains 2x 3 meters	3	parts	550,00 €	1.650,00 €
	Motorised Projection Screen 4 x 3,10 meters	1	parts	980,00 €	980,00 €
	Enclosure for sound equipment	1	parts	300,00 €	300,00 €
	Video projector 3000 lumen	1	parts	600,00 €	600,00 €
	Ceiling telescopi bracket for the projector	1	parts	200,00 €	200,00 €
	Sound equipment 2 loudspeaker enclosures + 1 desk microphone + mixer devise 2 channels	1	parts	600,00 €	600,00 €
	Wiring	1	unit	150,00 €	150,00 €
Reception	Curved receptionist desk 1,30 x 1,30 meters	1	parts	973,00 €	973,00 €
	Chair for front desk	1	parts	150,00 €	150,00 €
	PC All-In-One	1	parts	700,00 €	700,00 €
	Forex panel 30 millimeters 1 x 1,80 meters	1	parts	40,00 €	40,00 €
	b/n laser printer	1	parts	270,00 €	270,00 €
Hallway	32-inch touch-screen monitor	1	parts	943,00 €	943,00 €
	Frame for touch-screen monitor	1	parts	150,00 €	150,00 €
	Wall mount for 32-inch TV monitor	1	parts	100,00 €	100,00 €
	Plasterboard walls	4	smq	35,00 €	140,00 €
	PC for touch-screen monitor	1	part	500,00 €	500,00 €
	Forex panel 30 millimeters 2 x 0,6 meters	1	part	80,00 €	80,00 €
	Forex panel 30 millimeters 2 x 1 meters	3	parts	80,00 €	240,00 €
	Forex panel 30 millimeters 2 x 2 meters	2	parts	120,00 €	240,00 €
	Virtual Museum	1	parts	9.500,00 €	9.500,00 €
Exhibit Room	Sandbox	10	smq	50,00 €	500,00 €
	Amphorae replicas	6	parts	400,00 €	2.400,00 €
	Large format poster 6x3 meters	2	parts	1.000,00 €	2.000,00 €
	Platform for VR	8	smq	110,00 €	880,00 €
	Enclosure for VR electronics VR 3,20 x 0,80 x 0,80 meters	1	parts	800,00 €	800,00 €
	Secondary 55-inch monitor	2	parts	300,00 €	600,00 €
	HTC VIVE electronics	2	parts	2.200,00 €	4.400,00 €
	3D Printed model of Peristera Wreck	1	parts	4.800,00 €	4.800,00 €
	Enclosure for 3D Printed model	1	parts	400,00 €	400,00 €
	Curtains 1,65 x 3,20 meters	5	parts	300,00 €	1.500,00 €
	Forex panel 30 millimeters 2 x 1 meters	2	parts	80,00 €	160,00 €
	Electrical system adjustments	2	man/days	200,00 €	400,00 €
	Installation and implementation	12	man/days	200,00 €	2.400,00 €
Total cost					**43.946,00 €**

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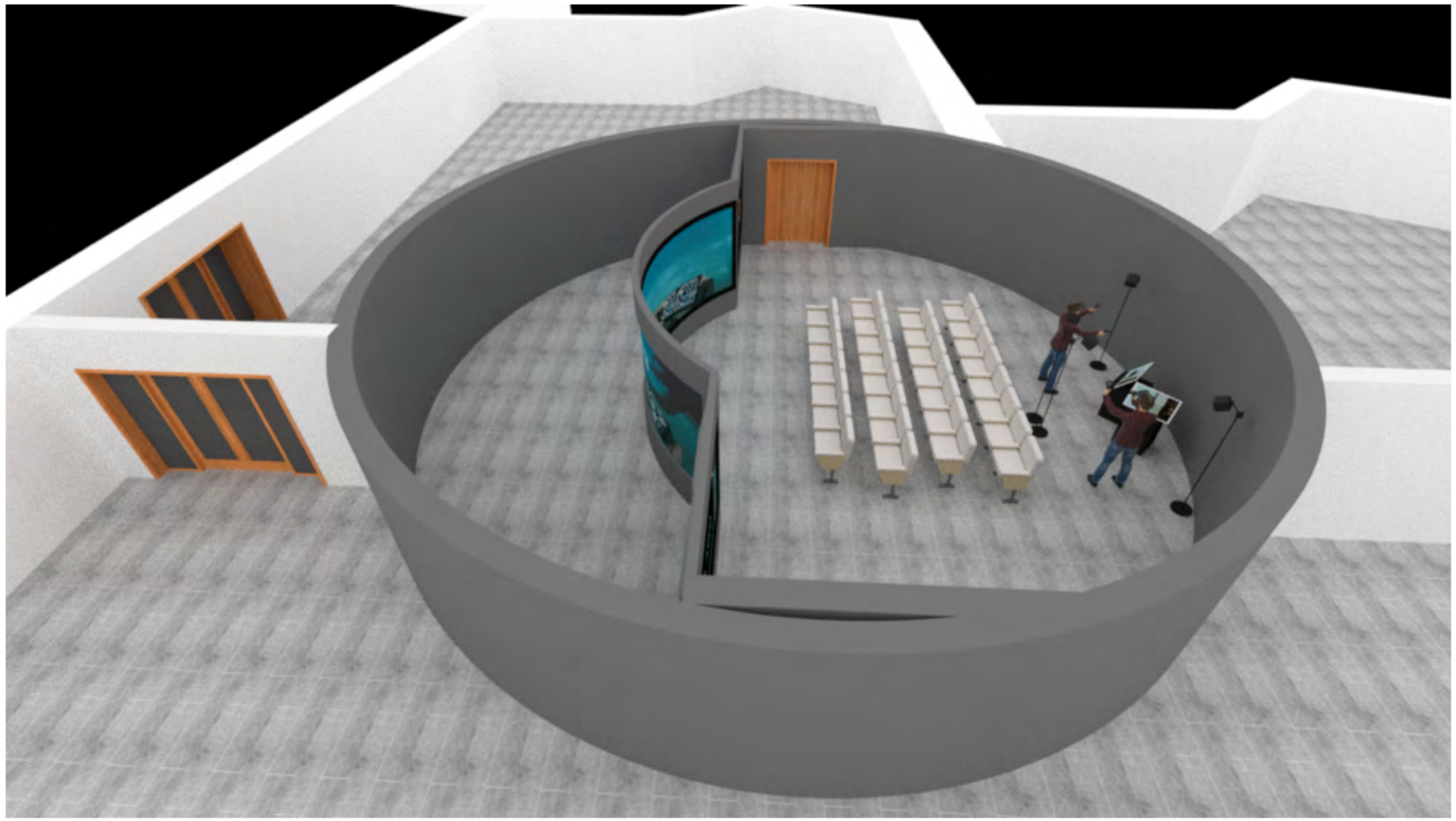
KAC Amaliapolis: *preliminary design*

KAC Amaliapolis - Budget

Room	Product	Tipology	Quantity	um	Costs €/um	Costs
Room 1	Plasterboard walls (depth 10 cm)	AR	15	square metres	35,00 €	525,00 €
	75-inch monitor	HW	1	parts	3.000,00 €	3.000,00 €
	Wall mount for 75-inch TV monitor	HW	1	parts	200,00 €	200,00 €
	Plasterboard walls (divisor, depth 40 cm)	AR	15	square metres	50,00 €	750,00 €
	Wooden Diorama 100 x 40 cm of an ancient cargo with support	HW	1	parts	3.800,00 €	3.800,00 €
	Pouf (cube seats)	AR	12	parts	75,00 €	900,00 €
	Forex panel 30 millimeters 2 x 1 meters	PA	4	parts	80,00 €	320,00 €
Reception	Curved receptionist desk 1,30 x 1,30 meters	AR	1	parts	817,00 €	817,00 €
	Chair for front desk	AR	1	parts	300,00 €	300,00 €
	PC All-In-One	HW	1	parts	700,00 €	700,00 €
	Forex panel 30 millimeters 2 x 2 meters	PA	2	parts	80,00 €	160,00 €
	b/n laser printer	HW	1	parts	150,00 €	150,00 €
Room 2	Large format poster 4x3 meters	PA	1	parts	800,00 €	800,00 €
	Platform for VR	AR	7,22	square metres	110,00 €	794,20 €
	Enclosure for VR electronics VR 3,20 x 0,80 x 0,80 meters	AR	1	parts	2.200,00 €	2.200,00 €
	Secondary 32-inch monitor	HW	2	parts	300,00 €	600,00 €
	HTC VIVE with PC	HW	2	parts	2.400,00 €	4.800,00 €
	Forex panel 30 millimeters 2 x 1 meters	PA	7	parts	80,00 €	560,00 €
	Virtual Museum - Interactive Artifacts Showcase	HW	1	parts	9.500,00 €	9.500,00 €
	Installation and implementation	SE	10	man/days	200,00 €	2.000,00 €
	Small construction works (plasterboard wall removal, painting, etc)	SE	1		3.000,00 €	3.000,00 €
Total cost						**35.876,20 €**

KAC Capo Rizzuto: *preliminary design*



KAC Capo Rizzuto: *preliminary design*

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Programme cofinanced by the European Regional Development Fund

KAC Cavtat: *preliminary design*

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MINISTERO PER I BENI E LE ATTIVITÀ CULTURALI

ISTITUTO SUPERIORE PER LA CONSERVAZIONE ED IL RESTAURO

UNIVERSITÀ DELLA CALABRIA

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