

12 DEFENSIVE ARCHITECTURE OF THE MEDITERRANEAN

Julio NAVARRO PALAZÓN, Luis José GARCÍA-PULIDO (eds.)



cover image

Alcazaba of Salobreña (Granada, Spain)

A detail of the main tower facing the sea. In the Nasrid period, it hosted the throne room. The lower part is built in masonry reinforced with layers of bricks, and has, in one of its faces, a frieze with blind arches from the fourteenth century. The upper part is built in rammed earth with corners reinforced with bricks, and dates from the first half of the sixteenth century.

DEFENSIVE ARCHITECTURE OF THE MEDITERRANEAN
Vol. XII

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Editors

Julio Navarro Palazón, Luis José García-Pulido
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Table of contents

Preface	XV
Acknowledgements	XVII
Contributions	1025
RESEARCH ON BUILT HERITAGE	
Implantación territorial y análisis arquitectónico de los búnkeres del Subsector IV del estrecho de Gibraltar (Conil, Vejer y Barbate)..... <i>A. Atanasio-Guisado, J. F. Molina-Rozalem</i>	1029
La red de búnkeres construida en el siglo XX entre la bahía de Cádiz y la desembocadura del Guadalquivir..... <i>A. Atanasio-Guisado, J. Moya Muñoz</i>	1037
Porta Valbona a Urbino: la sua rappresentazione tra storia e restauro..... <i>L. Baratin, A. Cattaneo, E. Moretti</i>	1045
La rocca Paolina di Perugia. Da baluardo dell'inaccessibilità a <i>landmark</i> dell'accessibilità..... <i>P. Belardi, L. Martini, V. Menchetelli</i>	1053
Il faro dell'isola del Tino. Trasformazione di una struttura di difesa in riferimento per la navigazione..... <i>F. Borghini</i>	1061
Identification and preservation of the Cold War sites in Italy..... <i>S. Bravaglieri</i>	1069
De Diego de Vera a Juan Martín Zermeno: tres siglos de reformas en la arquitectura del castillo viejo de Rosalcazar en Orán, Argelia..... <i>A. Bravo-Nieto, S. Ramírez-González, K. Metair</i>	1077
The chain tower in Kyrenia's harbour, Cyprus..... <i>A. Camiz, M. Griffo, S. Baydur, E. Valletta</i>	1085
The so-called "beach-tower" of Kyrenia city walls, Cyprus..... <i>A. Camiz, M. Griffo, E. Valletta, A. Khafizou</i>	1093
The superb Brazilian Fortresses of Macapá and Príncipe da Beira..... <i>J. Campos</i>	1101

El Castillo de La Atalaya (siglo XVIII), en Cartagena (Región de Murcia, España). Análisis formal y constructivo.....	1109
<i>F. Carta, D. R. McDonnell, P. E. Collado Espejo</i>	
Il castello di Morrea. Evoluzione e destino delle strutture fortificate nel centro Italia.....	1117
<i>S. Cecamore</i>	
Fortified masserie in Calabria. Architectural features and typological models.....	1125
<i>D. Colistra, D. Mediatì</i>	
Fujian earth castles. Knowledge and typo-morphological analysis for the protection and design of the study case: Yue Zhuangzhai.....	1133
<i>A. Conte, X. Wu, J. Li, M. Calia</i>	
Una rete castellare: il sistema fortificato irpino.....	1141
<i>G. Coppola</i>	
Rural Private Defenses in the Venetian <i>Stato da Mar</i>	1151
<i>D. Cosmescu</i>	
Le torri “tipiche del regno” in Terra d’Otranto: caratteri morfologici e differenze costruttive.....	1159
<i>F. Errico</i>	
The Castle of Paraggi and its “double life”: evolutions and metamorphosis of a “suspended” Architecture.....	1167
<i>M. L. Falcidieno, M. E. Ruggiero</i>	
Recovering of an identity: restoration works of the Orsini-Colonna castle in Avezzano, Italy.....	1177
<i>M. Felli, A. Incerto</i>	
Las torres conservadas en el territorio de Vélez-Málaga (Málaga).....	1185
<i>L. J. García-Pulido, J. Ruiz-Jaramillo</i>	
Memoria e conoscenza. Il castello di Belmonte in Calabria.....	1192
<i>C. Gattuso, M. Castriota, P. Gattuso, F. Saggio</i>	
Conoscenza e analisi dei materiali per la conservazione del castello di Maida in Calabria (Italia)...	1201
<i>C. Gattuso, A. M. Palermo, I. B. Castagnaro, F. M. Ruberto</i>	
Restauro e consolidamento della parte sommitale di castel Penede a Nago (Trento) sul lago di Garda. Un progetto di conoscenza.....	1209
<i>G. Gentilini</i>	
Il castello dei conti di Biandrate: indagini sulle strutture superstiti.....	1217
<i>B. Guiso, M. V. Tappari</i>	
La réutilisation du patrimoine défensif urbain en Algérie.....	1225
<i>A. Korichi, Z. Guenadez, N. Faucherre</i>	
La decoración lítica de las Torres de Serranos de Valencia.....	1231
<i>C. López González</i>	
El baluarte de la Alcazaba de la Alhambra: un comienzo de su restauración.....	1239
<i>F. J. López Martínez, T. Koffler Urbano</i>	

Primeros resultados de la excavación del castillo medieval de Dos Hermanas (Montemayor, Córdoba).....	1247
<i>J. López Rider, S. Rodero Pérez, J. M. Reyes Alcalá</i>	
Riesgos naturales y conservación de la arquitectura defensiva de tierra: aproximación a los daños causados por seísmos en la Alcazaba de Almería y en la muralla de La Hoya.....	1255
<i>M. Marcos Cobaleda, M. L. Gutiérrez-Carrillo, E. Molero Melgarejo</i>	
El “Muro Mediterráneo” en el territorio de la Marina Alta: búnkeres y baterías de la Guerra de España (1936-1939).....	1263
<i>A. Martínez-Medina, A. Banyuls i Pérez, A. Pirinu</i>	
Le projet de restauration de Bordj Istanbul, à Alger.....	1271
<i>O. Menouer</i>	
Il ruolo dei nuovi porti e delle nuove fortificazioni cinquecentesche nella trasformazione dell’immagine delle città mediterranee.....	1279
<i>L. Micara</i>	
El Castillo de La Vilavella (Castellón). Estudios y primeras actuaciones de conservación.....	1287
<i>C. Mileto, F. Vegas, L. García-Soriano, S. Tomás Marquez</i>	
El sistema de abastecimiento de agua de la fortaleza más icónica de la Orden de Calatrava en la Encomienda de Martos (Jaén): El Castillo de La Peña.....	1295
<i>F. Ortega Camacho, L. J. García-Pulido</i>	
Nuevas arquitecturas o la protección de las fortificaciones en Tarragona.....	1303
<i>E. de Ortueta Hilberath</i>	
Évaluation de degré de défense de l’architecture défensive pré-coloniale en Algérie : cas des villages fortifiés.....	1311
<i>M. Oulmas, A. Abdessemed-Fouda, Á. B. González Avilés</i>	
La influencia de Pedro Luis Escrivá en el sistema defensivo colonial de América.....	1319
<i>F. Pérez Gallego, R. M. Giusto</i>	
The Aquila tower: a part of the Renaissance coastal defence system of Pučišća.....	1327
<i>S. Perojević, B. Trifunović</i>	
La Rocca di Arquata del Tronto: simbolo di rinascita per il territorio marchigiano colpito dal Sisma.....	1335
<i>E. Petrucci, D. Lapucci, N. Lapucci</i>	
Metodologie integrate per la conoscenza, la tutela e la rappresentazione dell’architettura militare storica. Sistemi costruttivi e percorsi voltati lungo i bastioni occidentali di Cagliari (Sardegna, Italia).....	1343
<i>A. Pirinu, V. Bagnolo, R. Argiolas, M. Utzeri</i>	
Il castello di Tutino (Le): una lettura storico-architettonica per la conoscenza del patrimonio Pugliese.....	1351
<i>A. Ponzetta</i>	
La intervención arquitectónica de 2018 en la Torre de la Sal de Cabanes (Castellón).....	1359
<i>J. Prior y Llombart</i>	

Intervención en el Castillo de Biar. Consolidación de una ruina como alternativa posibilista en la defensa del patrimonio.....	1367
<i>M. del Rey, A. Gallud</i>	
Una torre en la muralla de Biar. Consolidación y recuperación de una imagen urbana.....	1375
<i>M. del Rey, A. Gallud, S. Bronchales</i>	
El castillo de Iznájar y las reformas castellanias de Pedro I (1362-1366).....	1383
<i>Á. Rodríguez Aguilera</i>	
Castelli e borghi fortificati nell'Appennino centrale d'Italia. Storia e conservazione.....	1393
<i>L. Serafini</i>	
The Old Navarino fortification (Palaiokastro) at Pylos (Greece). Adaptation to early artillery.....	1401
<i>X. Simou</i>	
The Citadel of Turin: geometric design and underground archaeological evidence.....	1409
<i>R. Spallone, F. Zannoni</i>	
Da fortezza a residenza castellana: osservazioni stratigrafiche per la comprensione del processo trasformativo della Rocca di Novellara (RE, Italia).....	1417
<i>A. Squassina</i>	
Recupero architettonico e strutturale del "mastio" e del suo cortile della fortezza nuova di Volterra.....	1425
<i>D. Taddei, C. Calvani, R. Pistolesi, A. Taddei, A. Martini</i>	
Il paesaggio archeologico del castello di Nucetto (Piemonte, Italia): una possibile conservazione...	1433
<i>E. Tartaglino</i>	
Le fortificazioni litoranee di Terra d'Otranto: una panoramica sulle torri costiere della provincia di Lecce.....	1441
<i>G. Tricarico</i>	
Studi per l'analisi storico-critica di un centro storico. Il caso di studio di Castel Camponeschi.....	1449
<i>I. Trizio, S. Brusaporci, R. Continenza, P. Maiezza, A. Tata, A. Ruggieri, A. Giannageli</i>	
Considerazioni sulla conservazione di un paesaggio archeologico etrusco: il caso delle fortificazioni di Cerveteri.....	1457
<i>T. Vagnarelli</i>	
De cerca medieval islámica a frente abaluartado: génesis y evolución del Frente de Tierra de Ceuta.....	1465
<i>F. Villada Paredes</i>	

CHARACTERIZATION OF GEOMATERIALS

Studi sul recupero delle superfici decorate dell'architettura delle facciate della Cavallerizza e del Castello di San Giorgio in Palazzo Ducale di Mantova.....	1475
<i>L. Apollonia, M. C. Ceriotti, D. Lattanzi, A. Mazzeri, B. Scala</i>	

The construction materials and static-structural aspects of the Budello tower (Teulada, southwest Sardinia, Italy).....	1485
<i>S. Columbu, G. M. F. Picchizzolu, A. Cazzani</i>	
The building materials of “Colle del Melogno” Central Fort (Liguria, Italy).....	1493
<i>F. Fratini, M. Mattone, S. Rescic</i>	
Rapporto di ricerca storica sulle superfici architettoniche esterne della fortezza di San Leo.....	1501
<i>C. Galli, A. Tosarelli</i>	
Le tenaci malte della torre del castello di Cerreto Ciampoli (Siena, Italia).....	1509
<i>M. Giamello, S. Columbu, F. Gabrielli, S. Mugnaini, A. Scala</i>	

Preface

Defensive Architecture of the Mediterranean (volumes X, XI and XII) is a publication that aims to reach out, assemble and update many of the research works that have been developed during the last years about Mediterranean defensive Heritage by many institutions, professionals and researchers specialised on its study, conservation, restoration and management.

The papers included in this volume have been prepared within the framework of the fifth edition of the *International Conference on Fortifications of the Mediterranean Coast* (FORTMED2020), initially planned on March 26th, 27th, and 28th of 2020 in Granada (Spain). Due to the restrictions of mobility imposed by the Spanish Government as a consequence of the Covid-19 pandemic, FORTMED2020 could not take place that month, although everything was ready. The Conference was finally transferred to an online format and held on November 4th, 5th, and 6th of 2020 on the web platform: <https://fortmed2020.es>. The new format included live talks by invited lecturers, recorded videos, and presentations with the possibility for attendees to comment on and discuss each presentation. Both events were organised by the Laboratory of Archaeology and Architecture of the City (LAAC), a research group of the School of Arabic Studies (EEA) belonging to the Spanish National Research Council (CSIC).

This issue, composed by three volumes, is part of the series *Defensive Architectures of the Mediterranean*, which is focused on exchanging and sharing knowledge for a better understanding, assessment, management and exploitation of built Cultural Heritage in the Mediterranean area, from the Antiquity to the present day, including also other fortifications built overseas but high influenced by those on the Mediterranean.

The previous volumes that make up the series were edited by the Institute of Heritage Restoration of the Polytechnic University of Valencia (vols. I and II, 2015); the Architecture Department of University of Florence (vols. III and IV, 2016); the Technical School of Architecture of the University of Alicante (vols. V and VI, 2017) and the Department of Architecture and Design of the Polytechnic of Turin (vols. VII, VIII and IX, 2018).

The large number of contributions within this issue have been organised, according to their content, in thematic sections, representing different ways of approaching the study of defensive Heritage: *Islamic Defensive Architecture* and *Digital Heritage* (vol. X); *Historical Research, Theoretical Concepts* and *Culture and Management* (vol. XI); *Research on Built Heritage* and *Characterization of Geomaterials*, covered by this book (vol. XII).

Research on Built Heritage brings together fifty-five contributions that cover, from different perspectives of research and preservation, a wide range of topics related to the development of the fortifications since the tenth century, which have left their imprint on the landscape and on many Mediterranean towns. Some works describe intervention on Islamic heritage built remains: from restoration, valorisation and commissioning, to the documentation and study of Islamic buildings adapted and transformed after the Christian conquest of al-Andalus.

In a wider perspective, other papers are related to documentation, analysis and interventions on fortified urban and rural landscape in the Centre Mediterranean basin, with cases from Algeria, Egypt, Libya, Cyprus, Greece and the southern coast of Italy. Other works that applied a similar approach focus on networks of nearby fortresses, walled villages or individual cases as urban fortifications, mainly from eleventh to sixteenth centuries, in central and northern Italy. Finally, various studies approach the evolution of the defence systems influenced by Spanish, Italian and French military engineers on the Mediterranean and overseas, from the sixteenth to the twentieth century: a built heritage that is in a constant transformation and host a variety of contemporary uses.

The second section, *Characterization of Geomaterials*, features five contributions that studies building materials, especially stones and ancient mortars, in some Italian towers and castles, from stratigraphic surveys to mineralogical-petrographic and physical-mechanical analysis. These studies constitute an essential support both to compose the history of those constructions and to implement interventions and execution techniques for their conservation, starting from a deep knowledge of the materials.

Acknowledgements

The publication of this issue of the series *Defensive Architecture of the Mediterranean* (volumes X, XI and XII) has been possible thanks to the support and collaboration of various regional and local institutions as well as many academic organisations, all of them connected with Cultural Heritage knowledge, preservation and dissemination.

The contribution of the **Alhambra and Generalife Trust** (Regional Government of Andalusia) and the collaboration offered by its directorship and its personnel have been essential for the development of this publication, as well as to manage many of the activities that were planned for the *International Conference on Fortifications of the Mediterranean Coast* (FORTMED2020), and cannot be carried out due to the issues caused by the Covid-19 pandemic, like the guided visits to the monumental site.

Moreover, we gratefully acknowledge the participation of the **University of Granada**, through its master's programs in Architectural Rehabilitation and in the Historical and Artistic Heritage Protection of al-Andalus. Their contribution, both in this publication and in the conference, strengthens the link between that university and the Spanish National Research Council (CSIC) and promotes the transfer of knowledge from a variety of research groups to students at different levels. The **University of Granada** has also been present, together with the **Polytechnic University of Valencia**, by means of their publishing houses, which are co-editors of these three volumes. We extend our sincere gratitude to their directors and to all their technical teams.

We also appreciated the collaboration of the **City Council of Granada**, which initially offered the use of municipal spaces to carry out the physical conference. Equally important is the support given by the **City Council of Salobreña**, an institution closely connected with the Laboratory of Archaeology and Architecture of the City (EEA – CSIC), due to the archaeological and restoration works carried out there since 2014. Our gratitude goes to its major and to all the team of the municipality for the availability offered in planning the visit to the local fortress, a fine example of the Nasrid palatine architecture. We would have been glad to offer these cultural activities to all FortMed2020 participants.

We cannot forget to mention the relevance of the **Associated Unit UGR – CSIC** on Arabic and Islamic Cultural Heritage, whose work fosters collaboration between these two academic institutions, as well as the interdisciplinary thematic platform **Open Heritage: Research and Society** (PTI - PAIS), from the CSIC, which provided us with significant scientific support and a relevant level of dissemination among researchers involved in the study and the conservation of the fortified heritage.

We would also like to thank **Patrimonio Inteligente, S.L.**, whose support on the administrative and financial management has been essential. This collaboration has been of greatest importance to successfully carry out both the publication and the event.

The appreciation to all these institutions is extended to the **Scientific Committee**, which took charge of the scientific supervision of the papers, and to the **Organizing Committee**, especially its **Secretariat**, for the editing of the three volumes as well as the general management of the conference, both in its physical and then digital format, carried out with selfless dedication and professionalism. Special thanks

go to the **President of FORTMED®** and General Editor of the series *Defensive Architecture of the Mediterranean*, for his valuable and constant advice during the organization of the event.

A special and individual mention should be made, furthermore, to all the members of the **Laboratory of Archaeology and Architecture of the City** (EEA - CSIC), that has offered to the Organizing Committee continuous support and encouragement.

Finally, we express our most sincere gratitude to all the **authors** of this publication for the quality of their contributions, their compliancy with reviews evaluations and their patience throughout the registration and editing process. All together, we have made this possible.

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Contributions

Research on built heritage

Implantación territorial y análisis arquitectónico de los búnkeres del Subsector IV del estrecho de Gibraltar (Conil, Vejer y Barbate)

Territorial implantation and architectural analysis of the bunkers on Subsector IV, Strait of Gibraltar (Conil, Vejer and Barbate)

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Abstract

The fortified system executed on the north bank of the Strait of Gibraltar from 1939 pursued two objectives: an offensive one, for which coastal batteries and lighting projectors were installed; and a defensive one, for which around four hundred reinforced concrete bunkers were built for machine guns and / or anti-tank guns along the coastal strip that runs from San Roque to Conil de la Frontera.

According to the military archive documentation, the device for the defense of the land front and against landings on the coast was organized into four subsectors, designated with roman numerals from east to west. Subsector IV, the westernmost, extends from Barbate to Conil, through Vejer de la Frontera. Divided into two resistance centers, it is the one that contained the lowest density of positions, with a total of twenty-seven pillboxes.

This communication has a double purpose. On the one hand, deepen the territorial implantation of the bunker network of Subsector IV, to understand that is fundamental the systemic conception between them and between them and the whole set of bunkers. Secondly, to carry out an individual and specific architectural analysis of each one of the works, focusing on the constructive characteristics and the existence of possible typological relationships.

Keywords: Bunkers, Strait of Gibraltar, territorial implantation, architectural analysis.

1. Introducción

Al finalizar la Guerra Civil Española se construye en la orilla norte del estrecho de Gibraltar un sistema fortificado con un doble objetivo: recuperar el Peñón de Gibraltar y poder controlar el paso marítimo entre el océano Atlántico y el mar Mediterráneo. Forma parte de esa fortificación el dispositivo para la defensa contra desembarcos en el litoral, compuesto por casi cuatrocientos nidos de hormigón armado preparados para un diferente número de ametralladoras y/o cañones anticarro. Se extendía desde San Roque hasta

Conil de la Frontera, a lo largo de una franja litoral de más de 100 km.

2. Implantación territorial. El Subsector IV

El conjunto quedó definitivamente organizado en cuatro subsectores designados con números romanos. El Subsector I desarrollaba sus obras desde la margen izquierda del río Guadiaro (municipio de San Roque) hasta la margen derecha del Guadarranque, límite administrativo entre San Roque y el municipio de Los Barrios. El

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