

POLITECNICO DI TORINO
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Honors theses

Underwater archaeology. Proposal of a model for the musealization of an underwater archaeological site

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This thesis has been conceived as an improvement and a continuation of the TETI Project – Integrated Technologies for the Sustainable Management of the Underwater Cultural Heritage, which was developed during the 6th Cycle of Alta Scuola Politecnica.

The introduction is dedicated to the description of the final results obtained by the team that worked on the TETI Project; there are also three further sections that consider the historical, theoretical and methodological aspects of underwater archaeology, the analysis of the reference law apparatus, in particular the UNESCO Convention on the Protection of the Underwater Cultural Heritage, and finally the presentation of the proposal concerning the musealization of the underwater archaeological site of Capo Graziano (Filicudi Island). The latter was taken as a case-study.

The analysis of the pros and cons of the typologies of museum that are currently employed in the field of the underwater cultural heritage and that are divided into three main categories (“conventional museum structure”, “museum under water” and “underwater museum”) was followed by the definition of the main requirements of the new museum model. In particular, four main goals were established, namely the improvement of the accessibility to the underwater site, the respect of the archaeological context, the environmental and the financial sustainability of the project.

The most peculiar aspect of the museum model proposed is the “double fruition system”, which is articulated into a system of direct or “in situ” fruition and a system of indirect or “in a conventional museum structure” fruition.

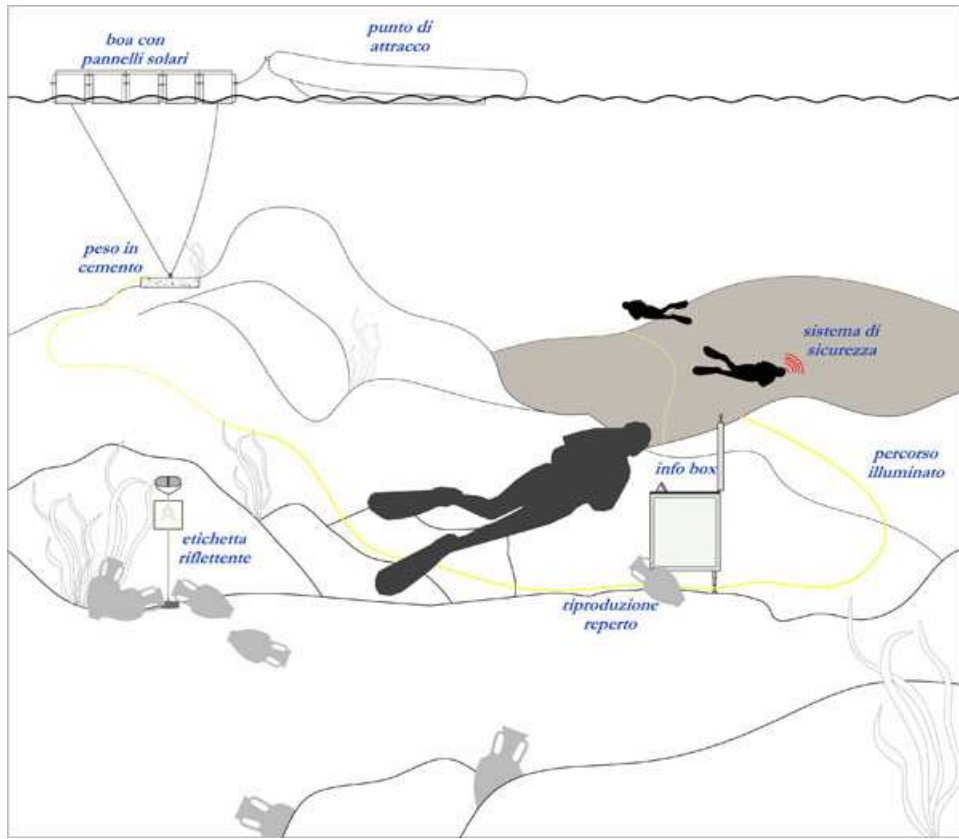
The direct fruition is obtained through two alternative visitor paths characterized by a similar extension and duration, an informative packaging including info boxes and explanatory floating tags and lighting paths. In fact, the paths are well signaled thanks to the installation of dispersive optical fibers illuminated by LEDs, which have the double objective of improving the safety of the visitors and of conferring an aesthetic value to the site.



Suggestion for the optical fiber/LED – based lighting system on the seabed of Capo Graziano

The safety level is granted even further by the installation of two arrays of hydrophones; thanks to them the visitors cannot lose their way: in fact, if they accidentally leave the right path, an acoustic alarm is sent to them in order to help them come back to the protected area. These tools are also employed for the monitoring of the site because they are able to register the presence of an unauthorized scuba diver, allowing a prompt Police intervention.

The power supply of the museum is obtained through the construction of a “solar platform” on which some variously oriented photovoltaic panels and a hermetically isolated technical compartment are installed.



Graphical synthesis of the functioning of the underwater museum

The indirect fruition takes place mainly in the two sites of the Aeolian Archaeological Museum “L. Bernabò Brea” in Lipari and Filicudi Porto, in particular in the rooms dedicated to submarine archaeology. Here it will be possible to observe two 3D models of the site and its context that were built on the occasion of the TETI Project. The “online visit”, which is a sort of “fruition from a distance”, is also part of the indirect fruition system. This will allow really every kind of user to reach the beauties of the site simply by using some Internet tools, like YouTube and Facebook, which are, moreover, almost cost free.

The underwater museum proposed in this thesis satisfies the requirements established in the first phase of the project: it is accessible to everyone thanks to the “double fruition system”, it is characterized by an absolutely reversible display, it is environmentally friendly thanks to the use of renewable energy, it entails low investment and maintenance costs, it respects the principles of the UNESCO Convention and it represents a model that could be applied to every underwater site, independently of its dimension and the type of archaeological finds.

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