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Treasures from the Sea
Material Culture and Preservation

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ABSTRACT

The University of Amsterdam has been involved in research dedicated to a unique archaeological collection with objects from a 17th century shipwreck found near Texel, an island in the north of the Netherlands. Sport divers brought a very wealthy collection of textiles and precious metal objects to the surface. Research has focused on material technical analysis and preservation of the objects. To show the textile objects in a permanent exhibition, anoxic showcases were developed based on research performed on model samples and a small fragment with a low cultural value from the textile collection. This paper presents a short overview of the research performed and discusses the impact it had on museum Kaap Skil, where the textiles are currently shown. In addition, the research devoted to precious metal objects resulted in a conservation and research strategy which has been integrated into KNA guidelines for archaeological metal objects.

Keywords: Archaeological textiles, Precious metal objects, Maritime archaeology, Material technical research, Conservation.

1. INTRODUCTION

The spring of 2016 brought a remarkable discovery near the coast of Texel, Netherlands – a 17th-century shipwreck yielding an unparalleled textile find (Vos 2019). Unlike typical discoveries in the Netherlands, which often consist of fragmented and colour-faded textiles due to the archaeological environment (Joosten and van Bommel 2017) this find was extraordinary. It included nearly intact items of 17th-century textile fashion, namely two gowns (one of which completely woven with silver lamella), a bodice, two kaftans, stockings, and several interior textiles. Accompanying these were a toilette set including purse, comb, brush, mirror and tablecloth, all heavily embroidered in gilt silver, and a set of intricately decorated silverware. These high-quality objects, accompanied by a unique collection of 33 leather book covers (Dickinson 2023), strongly suggest a connection to a wealthy individual or family.

Recognizing the significance of this find, the University of Amsterdam initiated a collaborative research project with various partners, including Museum Kaap Skil, Texel, the Province of the Northern Netherlands (PNH), the Cultural Heritage Agency of the Netherlands (RCE), and the Rijksmuseum Amsterdam. Funding for the project was secured through both in-kind contributions and cash support from the partners.

2. PRESERVING AND PRESENTING THE TEXTILES IN A PERMANENT EXHIBITION

One of the primary concerns was the preservation of these artifacts. Despite their relatively good condition, the research team involved sought to understand the optimal conditions for storing and presenting the textiles. While existing knowledge shed light on the effects of temperature, humidity, and light exposure, the impact of oxygen on textiles had not been thoroughly studied. Previous research indicates that the dyes used are negatively influenced by the combination of oxygen and light, due to photooxidation (Korenberg 2008; Beltran, Druzik, and Maekawa 2012). This was confirmed by our study. However, most of the dyes found, such as cochineal, madder and indigo, are lightfast so we did not expect severe degradation at low light levels. Our main concern was the stability of the textiles, which are mainly composed of silk. Therefore, we studied the effect of oxygen and light by exposing mock-up samples (dyed and undyed silk), as well as samples cut from a fragment of the collection of low cultural value, to high doses of irradiation, either with or without oxygen. After exposure, it became clear that exhibiting the textile objects in an anoxic environment (using minimal levels of light exposure) better preserves the colour and silk fibres of the textiles. Degradation still might occur, but at a much slower and at a rate comparable to (or even slower) tha the fabrics in the depot, i.e. in presence of oxygen but stored in the dark (Serrano et al. 2020).

Based on this research, advice was provided to PNH, the legitimate owner of the collection, to develop anoxic showcases to allow permanent exhibition in museum Kaap Skil. These showcases were developed by Meyveart, in collaboration with museum Kaap Skil, the RCE, the PNH, and the UvA. The process to develop the scientific outcomes into a practical application took more than two years. Apart from securing funding, the development of anoxic showcases is challenging. Although some examples of anoxic showcases are known (Oddy and Maekawa 2000), the size of the required showcases was unprecedented. An active system was developed, with the showcases being very airtight to keep an active flush with 99.99 % nitrogen, and constant temperature and relative humidity levels (20 ºC and 50% ± 1% RH respectively, as recommended for textiles preservation) (Serrano et al. 2020). In addition, to avoid environmental oxygen from entering the showcases, they must be continually pressurized (1-3 millibar). In total, five anoxic showcases were built to exhibit the highlights of the textile collection (Figs. 1 and 2).

Fig 1. Anoxic showcase showing one of the 17th century gowns (known as 'the dress'). Photograph: Mike Bink

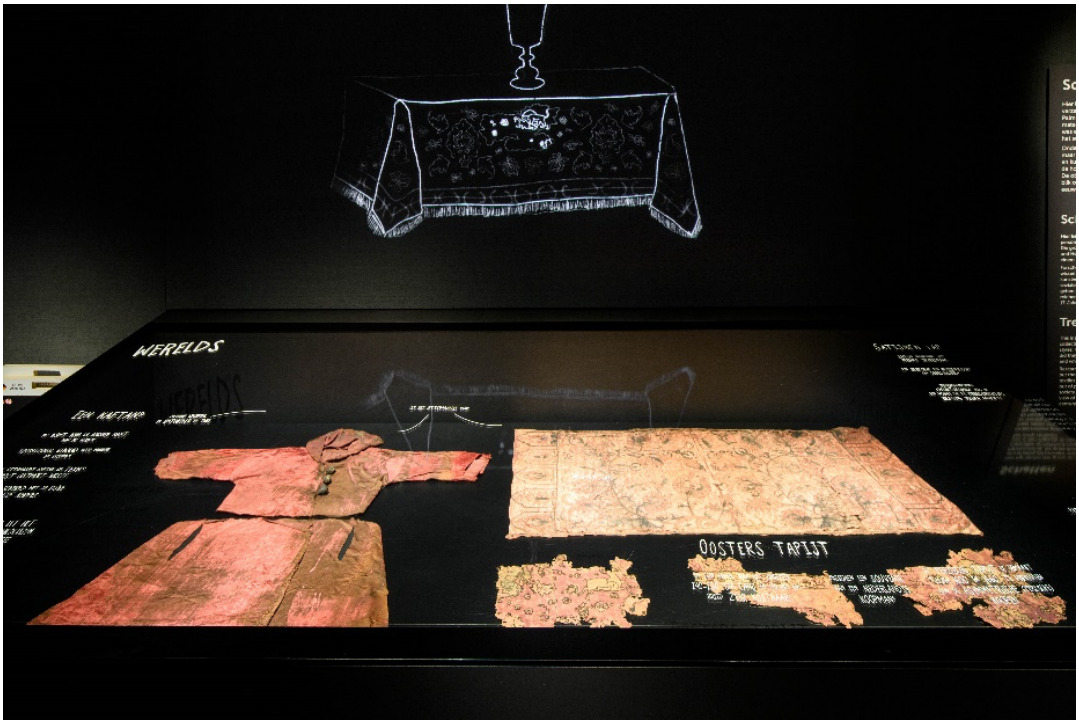

Fig. 2 Anoxic showcase showing the international context of the find, displaying one of the kaftans (left), fragments of a Persian carpet (bottom right), and a cushion with embroidered Ottoman motifs (top right). Photograph: Mike Bink

The permanent exhibition, including the anoxic showcases, was opened on November 12, 2022. Meyvaert and museum Kaap Skil received the 2023 "innovator of the year award" for these showcases during the international Museum + Heritage Awards ceremony in London . The museum was visited by the King and Queen of the Netherlands on May 9, 2023. After the visit, UvA scholars participated in a discussion with the Royal couple about the research performed and the inherent challenges of dealing with maritime archaeological heritage.

We are currently developing a follow-up research project in which the objects in the showcases will be monitored for the next decade. Two new showcases will be installed at Kaap Skil for research purposes: one will have similar anoxic conditions to those five already installed, whereas the second will be a climatized showcase with environmental oxygen levels. A test set of dyed silk materials and small fragments of the collection (with low cultural value), will be exposed and examined annually. They will be compared with another test set and the remaining textile objects kept in storage, belonging to the PNH, with limited climate control (in the dark, with typical oxygen levels, and controlled 50% ± 1% RH and ~15 ºC) at Huis van Hilde in Castricum,. This unique monitorization study will provide data to assess the impact of anoxic exhibition versus stable storage conditions of the precious artefacts. Furthermore, we aim to develop a citizen science project to engage a wide audience with the research.

3. PRECIOUS SILVERWARE RESEARCH

A parallel project focused on understanding the manufacturing processes of the silverware objects in the collection, for which we were awarded a NWO grant (AMOR, Archeologisch Metaal Oppervlak Research, project no. 342-60-003) and received additional funding from the PNH. The research was designed to pursue two main outcomes:

1 – To enhance understanding of the unique individual objects, their manufacturing techniques, their interrelation, and their relationship with the rest of the collection.

2 – To develop, test, and disseminate an improved research and conservation strategy post-excavation.

The project employed various analytical techniques on several precious metal artifacts from the shipwreck, enhancing understanding and testing technique applicability (Figs. 3 and 4). Using these techniques, the materials used were identified but it also provided information about the construction and making of these objects. The research resulted in scientific publications (van der Stok-Nienhuis et al. 2021; 2022), and we are currently exploring ways for funding a catalogue for the general public. Moreover, our research contributed significantly to the new KNA-guideline archaeological metal thereby translating fundamental research into archaeological practice.

Fig 3: Silverware, sphere with container, function still unknown. Photograph: Province of North Holland, Kees Zwaan

Fig. 4. Oval metal portrait holder with both sides decorated: (a) Venus and Amor, (b) Leda and the swan. Images: Archeologie West-Friesland.

An important outcome of this research is an updated model for a research and conservation as presented in figure 5. Archaeological metallic artifacts frequently necessitate conservation, such as cleaning and consolidation, which have the potential to modify the surface characteristics and, in some instances, result in the loss of pertinent information. Consequently, it is advisable to undertake material-technical investigations of metallic artifacts prior to conservation. Nonetheless, practical considerations often complicate this process, including limited funding for research. Additionally, certain artifacts may require immediate conservation interventions. The research and conservation strategy provides information about which research methods are available and which conservation strategies can be applied. Based on this, while considering available resources in terms of budget and time, one can make informed decisions regarding the optimal timing for conservation interventions and/or technical analyses.

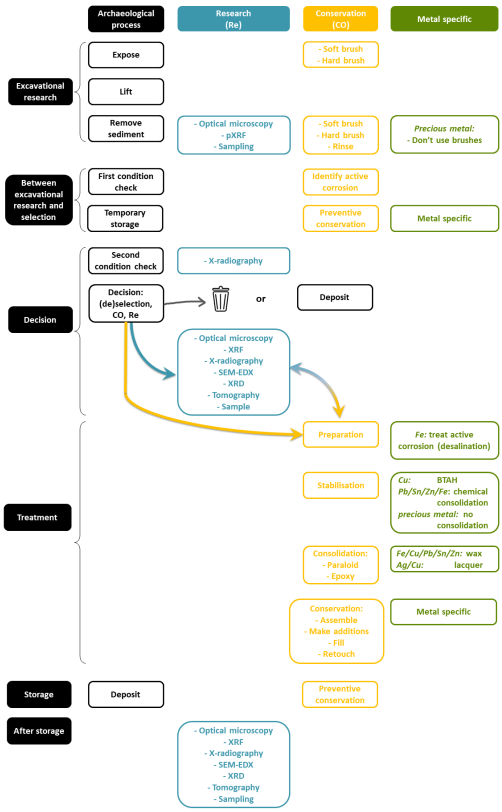

Fig. 5. Research and conservation strategy developed for metal objects from an archaeology context

4. IMPACT

These multidisciplinary efforts underscore the broad impact of the project, integrating conservation, science, archaeology, history, and art history. Throughout the project, collaboration and outreach played a crucial role, with involvement from scholars, scientists, and students from different institutes. For example, several scientific papers were published, more than 15 MA research theses were dedicated to the collection, and over 65 scholars from national and international institutions participated in the research. In addition, a documentary was broadcasted on Dutch national television (Van Bruggen 2023) and nominated for the Zilveren Nipkov Schijf award in 2023, and the creators also produced a podcast and an online game. During the project, the local Texel community was involved and informed via several channels such as public lectures, symposia and news items in regional, national and international media. Finally, the research project had a strong impact on the professionalisation of the museum Kaap Skil, which developed a new narrative of the role of Texel as international hub in the 17th century with a permanent exhibition on the topic.

The project represents a convergence of education, research, and art, with the potential to enhance understanding of material culture in the 17th century. By valorising fundamental research and applying scientific knowledge, the project seeks to ensure the proper preservation and exhibition of this unique collection. Collaboration between researchers and technological advancements will continue to drive innovation and deepen our understanding of these historical artifacts.

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