

PRESERVING DREDGING HISTORY

Translating intangible heritage into museum design

Located in Sliedrecht, the Netherlands, the National Dredging Museum houses countless models of dredging ships, tools, photographs, and more. All of this is enclosed within the beautiful walls of a nineteenth-century monument, which holds far more history and stories than are currently on display. A study at the TU Delft shows the importance of these extra layers of intangible cultural heritage and how they contribute to the museum's deeper significance.

The Netherlands is renowned for its long-standing battle against water. Over the centuries, Dutch ingenuity has transformed landscapes, constructed dikes, and developed advanced dredging techniques that have shaped the country's infrastructure, waterways and beyond. This rich, water-based heritage is deeply embedded in one of the key heritage areas in South Holland known as the *Waterdriehoek*. This region, which lies between Dordrecht, Kinderdijk, and Sliedrecht, has played a crucial role in Dutch maritime and industrial history. As maritime industries expanded and relocated to areas like the Maasvlakte, they left behind a network of historic maritime and industrial buildings, resulting in a unique urban fabric that reflects both past achievements and future possibilities.

The National Dredging Museum in Sliedrecht is a significant landmark within this heritage line that highlights the evolution of dredging. While it has long been viewed as a technical museum focused on machinery and engineering innovations, it is more than just a collection of models, photographs, and tools. The museum holds an additional layer of intangible cultural heritage, preserving the personal stories, traditions, and social structures that have shaped the

dredging industry. This human dimension – embedded in the experiences of dredging families and the knowledge passed down through generations – adds depth to the museum's role in safeguarding maritime heritage.

One of the museum's main challenges is preserving its intangible cultural heritage. Currently, this heritage is kept alive through the personal stories shared by a dedicated team of volunteers, many of whom have firsthand experience in the dredging industry. However, as this generation ages and no clear successor emerges, the absence of a preservation strategy puts an irreplaceable part of dredging history at risk of being lost.

Additionally, the museum itself is ageing and has struggled to keep pace with the expectations of modern visitors. The lack of modernisation of the museum space and exhibitions limits its ability to provide a modern and appealing visitor experience. Furthermore, the museum's growing collection of artefacts requires additional space, highlighting the need for expansion.

These challenges present a unique opportunity to rethink the museum's design, integrating both more space and innovative ways to embed intangible cultural heritage within the visitor experience. By doing so, the renewed National Dredging Museum can ensure that the human stories behind the dredging industry remain engaging, accessible, and relevant for future generations.

The evolution of Sliedrecht's dredging history

To design a sustainable future for the National Dredging Museum, it is essential first to understand the historical layers that have shaped both the museum and the dredging industry in Sliedrecht. Situated along the Merwede River, Sliedrecht is deeply intertwined with the history of Dutch dredging, an industry that played a crucial role in shaping not only the Netherlands' waterways, but also its economic and infrastructural development. The town's pioneering dredging families transformed this trade from a local craft into an international enterprise, influencing global dredging practices and engineering feats.

Until the nineteenth century, dredging was not a distinct profession, but rather a component of general contracting work. Contractors



National Dredging Museum, around 1980 (source Historische Vereniging Sliedrecht).



Repair bucket dredger HAM 107 Pernis, around 1950 (source Van Oord).

were all-round builders, responsible for diverse projects such as constructing roads, reinforcing dikes, and excavating canals. There was little distinction between those working on land (*in den droge*) and those engaged in hydraulic projects (*in den natte*), as both relied on manual labour and rudimentary tools, including shovels, wheelbarrows, and hand-operated dredging equipment. As a result, dredging contractors had not yet formed a specialised professional group (Korteweg, 2018).

By the seventeenth century, Dutch dredging techniques had become more sophisticated, particularly due to the increasing demand to deepen harbours and improve waterways. This necessity drove innovation, leading to the development of horse-powered dredging machines, inspired by earlier Mediterranean designs. These ad-

vancements laid the groundwork for the mechanisation of dredging (Korteweg, 2018).

By the mid-nineteenth century, Sliedrecht had firmly established itself as the heart of the Dutch dredging industry. The town's proximity to major waterways made it an ideal location for dredging companies, which thrived as they

developed new technologies to shape rivers, ports, and coastlines worldwide. Key dredging families, such as Volker and Boskalis, were at the forefront of this transformation, revolutionising the industry and expanding its reach far beyond the Netherlands.

A major shift occurred in the latter half of the nineteenth century when Rijkswaterstaat introduced standardised dimensions for river widths and depths. This was part of an effort to improve water management and accommodate the increasing demands of modern shipping. The introduction of these regulations marked the beginning of a new era in Dutch hydraulic engineering, with *water-beheersing* (water control) becoming a central focus (Korteweg, 2018).

Sliedrecht is deeply intertwined with the history of Dutch dredging



Downstairs exposition room National Dredging Museum (own picture, October 2024).

One of the most defining moments in this transition came in 1868 with the excavation of the Nieuwe Waterweg canal at Hoek van Holland. When natural scouring failed to maintain the canal's depth, Rijkswaterstaat turned to private contractors, who introduced steam-powered dredging machines – a groundbreaking shift away from manual labour. Inspired by British engineering, these machines proved essential in ensuring the project's success.

Recognising the growing need for mechanisation, three entrepreneurs from Sliedrecht financed the development of the first Dutch suction dredger in 1878, combining British and French technologies (Van Oord, 2020). This innovation revolutionised dredging and positioned Sliedrecht as a global leader in the field. As dredging evolved from a labour-intensive craft to a mechanised industry, the town secured its reputation as the birthplace of modern dredging.

One of the most influential figures in this transformative period was Adriaan Volker, a visionary entrepreneur who played a critical role in shaping the dredging industry. Despite having only a primary school education, Volker built a highly successful business through perseverance and entrepreneurial skills. In the mid-nineteenth century, he established his company in Sliedrecht, where his residence at Molendijk 181 and office at Molendijk 208 became the central hubs of his operations. These locations served as the foundation for the company's growth, housing key business decisions and technological advancements.



Adriaan Volker was a visionary entrepreneur who played a critical role in shaping the dredging industry in the mid-nineteenth century (source National Dredging Museum).

Recognising the need for both business expansion and a family residence, Volker commissioned the construction of a new director's house at Molendijk 204 in 1885 for his son Leendert. More than just a home, the director's house became an integral part of the company's daily operations. Major projects – including the Nieuwe Waterweg and the Zuiderzee Works – were planned within its walls. The

Innovative exhibition techniques can bring the dredging industry's human narratives to life

house functioned as both a living space and a business hub, reinforcing the deep connection between the Volker family and the dredging industry (personal communication, December 2024). After Volker died in 1903, his three sons – Leendert, Arie, and Abram – took over the company. While Leendert focused on financial management, Arie specialised in technological innovations, ensuring that the company remained at the forefront of dredging advancements. Following Abram's early death, Leendert and Arie led the company to new heights, climaxing in 1954 with its recognition as the Koninklijke Volker Groep, marking its 100th anniversary. At the time, the company operated over 100 dredging ships and employed approximately 2000 people, further establishing its international significance (Van Oord, 2020).

The director's house remained central to the company's legacy long after Leendert's passing in 1930. While his son, Adriaan Volker II, continued to run the business from the original family home at Molendijk 181, Leendert's other children – Willem and Antonia (Toos) – continued to live in the director's house until their deaths. Their residence preserved the family's legacy, maintaining the building's

historical significance as a symbol of Sliedrecht's maritime heritage (Nationaal Baggermuseum, 2024).

In 1980, the director's house was repurposed into the National Dredging Museum, preserving not only the tools and machinery that defined the industry, but also the social and cultural narratives that shaped it. The museum stands as a testament to Sliedrecht's dredging heritage, safeguarding the stories of families like the Volkers and their enormous influence on the town's identity.

Integrating intangible cultural heritage

To ensure the continued relevance of the National Dredging Museum, a new approach is needed – one that integrates intangible cultural heritage directly into its design. Museums are no longer just repositories of objects; they are immersive spaces that should engage visitors on multiple sensory levels. The director's house should not merely serve as a neutral backdrop, but should actively participate in storytelling.

Innovative exhibition techniques, such as interactive installations, audio storytelling, and immersive spatial experiences, can bring the dredging industry's human narratives to life. For example, multimedia exhibits embedded within the original rooms of the director's house could allow visitors to hear recordings of former dredging workers recounting their experiences. Archival footage could project historical imagery, and digital reconstructions of past dredging sites could further enhance the visitor experience.

By integrating intangible cultural heritage into museum design, the National Dredging Museum can preserve and communicate the rich history of dredging, ensuring that the stories of people, innovation, and resilience remain at the heart of its mission. Sliedrecht's dredging legacy is not just a story of machines and engineering achievements – it is a story of families, communities, and a deep connection to the waterways that shaped the Netherlands.

REFERENCES

- Korteweg, J. (2018), Grondleggers: Het verhaal van de Nederlandse baggeraars, Uitgeverij Balans
- Nationaal Baggermuseum, (2024), Baggermuseum digitaal, <https://www.nationaalbaggermuseum.nl/baggermuseum-digitaal/>
- Van Oord, (2020), Van Oord – Historie, <http://vanoord.com/nl/over-ons/historie/>



Winnie van de Sande

Master Student Architecture, TU Delft, Studio Revitalising Maritime Heritage, w.m.vandesande@student.tudelft.nl