

THE MARY ROSE: SAVING HENRY VIII'S FLAGSHIP

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SINKING ON THE SOLENT
The Cowdray Engraving (a copy of a 1540s painting) shows the *Mary Rose* just before sinking while Henry VIII, mounted on his horse, looks on

SAVING THE MARY ROSE

Henry VIII's favourite warship was raised from its grave in the Solent, and now gives us a fascinating picture of Tudor life. But how was she lost, and then reborn? **Alice Barnes-Brown** delves into the story

A blustery wind began blowing around Portsmouth Harbour on the afternoon of 19 July 1545, which was good news for Henry VIII's fleet.

Having been becalmed during preparations to attack the approaching French navy, crews took advantage of the breeze and sped towards the enemy. But then the luck changed. As the *Mary Rose*, one of the large warships leading the English fleet, turned so that she could fire her guns, the wind turned against her. Water poured in through her open gunports, and the ship quickly sank. In just a matter of minutes, nearly all of the crew had been lost to the unmerciful waves of the Solent.

Such was the tragic fate of the *Mary Rose*, the favourite of Henry. But more than four centuries later, she would once again see the light of day when the *Mary Rose* Trust miraculously raised her from the seabed in 1982. Now housed in a state-of-the-art museum in Portsmouth Historic

19k

The approximate number of artefacts recovered from the *Mary Rose*

PRIDE OF THE KING

When built, the *Mary Rose* was one of the largest ships of her time. Designed as a carrack from solid oak, she had four decks and 'castles' at either end, which were fighting stations and quarters of senior crew. The normal crew size was 400, but she could carry up to 700 in wartime. The *Mary Rose* must have been a spectacular sight on her first voyage in 1511 – Henry had spent a hefty sum on flags and banners alone.



HALF A HULL
The intact cross section, or 'doll's house version', of the ship, on display in Portsmouth

Dockyard, the preserved ship is on display for visitors as a time capsule of the Tudor era.

For more than 30 years, the *Mary Rose* was the pride of the English fleet. She was involved in numerous conflicts with France, before she was put in reserve in 1522. While laid up in Portsmouth in the 1530s, historians believe she was fitted with extra gun ports, to increase her capacity as a fighter. With the *Mary Rose* back in action by 1545, the fleet was once again brought into battle.

In early July 1545, the French approached the Solent with 128 ships, while the English had only 80. On the 18 July, Henry dined on board the ship *Henry Grace à Dieu* with the admiralty

and gifted to his new vice admiral George Carew full command of the *Mary Rose*.

Unfortunately for Carew, the very next day was to be his last. When the French gave battle, the *Mary Rose* returned fire. She then caught in the wind and leaned over heavily on her right side, allowing water to rush in through her gunports. In the chaos of her swift sinking, furniture and even a heavy gun came loose, crushing sailors. Out of a crew of around 500, less than 40 survived. The captain went down with his ship.

Henry, watching over the water at Southsea Castle, was dumbstruck. His beloved flagship had gone down before his eyes, with the loss of hundreds of his subjects. Out in the Solent, meanwhile, the rest of the fleet desperately tried to repel the invaders and rescue their comrades. Ultimately, the French failed to capture Portsmouth and the Isle of Wight, and went home.

HOPES OF SALVAGE

In spite of the king's despair, several people remained hopeful that the *Mary Rose* could be raised.

A few weeks later, in August 1545, Venetian salvagers reported "by Monday or Tuesday, the *Mary Rose* shall be weighed up and saved". Since the masts of the ship were accessible in the shallow Solent, the sails and rigging were rescued.

Retrieving the rest of the ship proved more difficult. Their plan was to slip strong ropes under

the hull, attach them to two other boats, pull them taut and wait for high tide. The ship would then rise enough for it to be brought ashore. However, the *Mary Rose* was stuck fast into the clay, so getting any ropes underneath was nearly impossible.

Refusing to lose his precious ship that easily, Henry commissioned more salvagers to save whatever items they could. Early divers brought up guns and other loose items. One of the first divers, in 1549, was West African diver named Jacques Francis, who retrieved some of the most valuable weapons on the ship – alleviating the estimated £1,723 contemporary cost of lost ordnance.

After Francis and his peers salvaged all they could, all hope of retrieving her declined. The once mighty *Mary Rose* faded from public memory as she was left to rot. Her exposed port side was worn away by the tides and eaten by shipworms. What remained was covered over by sediment, which formed protective layers.

INSIDE THE MARY ROSE MUSEUM

The museum, opened in 2013, takes you back to a time when the *Mary Rose* sailed the seas. You begin by learning the history of the ship, getting to see certain objects up close, then, you can explore three of its decks by walking along parallel corridors with floor-to-ceiling glass. Across the path, artefacts are placed corresponding to where they were found on the ship, as if it were reconstructing the missing other half. Each and every item has been painstakingly researched, catalogued and documented, with helpful information displayed right alongside.

BIG GUNS

The *Mary Rose* was found with 39 carriage-mounted guns, like this one. As the most powerful guns, they could fire cannonballs weighing up to 30 kilograms.



THE GALLEY

At the bottom of the ship, in the galley, the team found two brick ovens. Each had a giant copper cauldron on top of them, as the cook had to make stews for hundreds of crew members.

ARTILLERY RANGE

On board, there were modern bronze cannons as well as medieval-style wrought iron ones

MEATY GRUB

Many animal bones were found, such as cow and pig, so the crew had a meaty diet

MISSING MASTS

Her masts are missing, as they were snapped off during the early salvage attempts.

SOUND THE ALARM

The watch bell, used to signal the changing of the sailors' watch patrols, was one of the last items to be recovered from the wreck site before the ship was raised in 1982. Made from bronze, the text at the top (translated from the original Flemish) reads, "I was made in the year 1510".

SMELLS FISHY

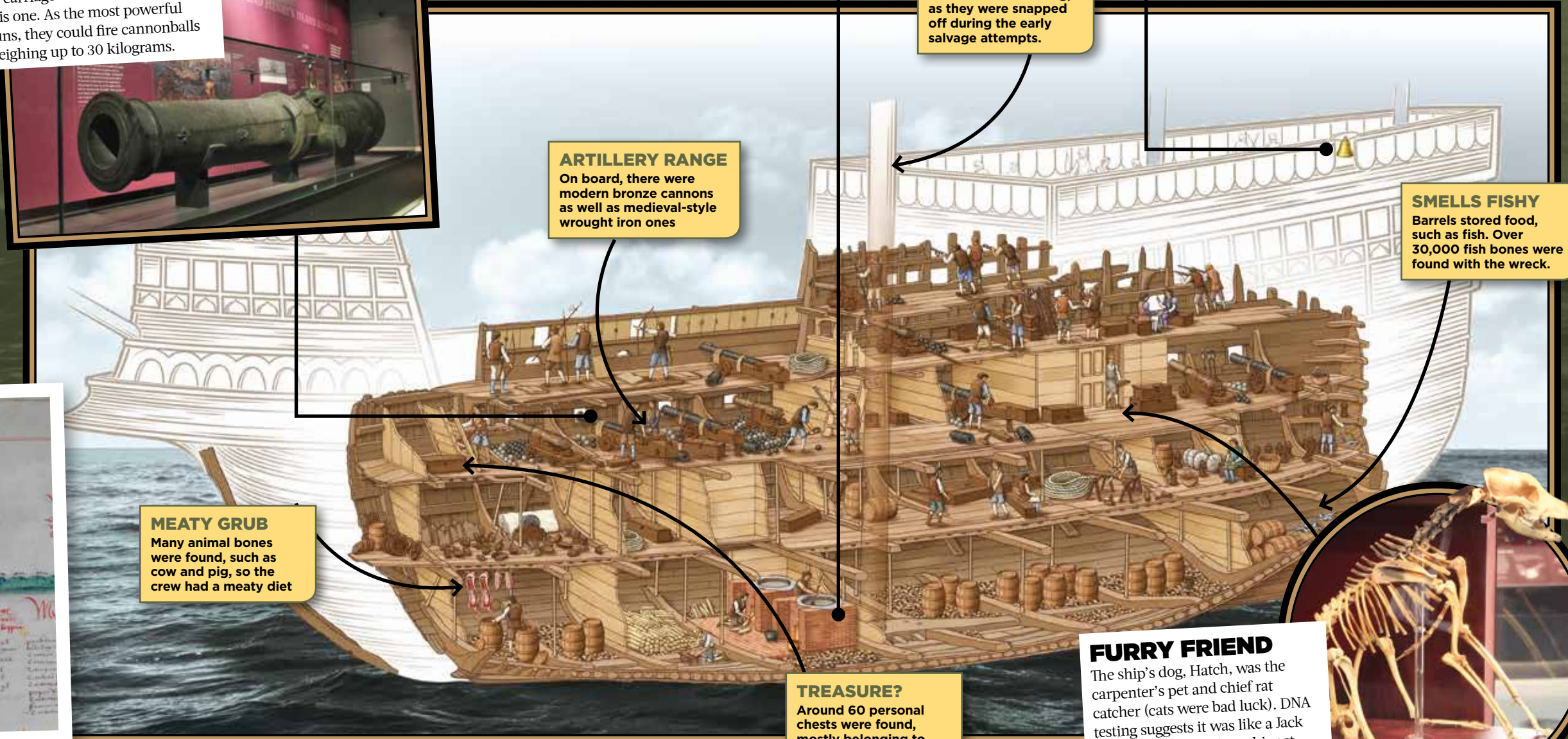
Barrels stored food, such as fish. Over 30,000 fish bones were found with the wreck.

FURRY FRIEND

The ship's dog, Hatch, was the carpenter's pet and chief rat catcher (cats were bad luck). DNA testing suggests it was like a Jack Russell crossed with a whippet.

TREASURE?

Around 60 personal chests were found, mostly belonging to wealthy crew members



ALAMY XI, THE PEPSY LIBRARY/MAGDALENE COLLEGE/CAMBRIDGE XI, COURTESY OF THE MARY ROSE TRUST X4, HUIFON/CROW XI



CAPTAIN AND LOG

ABOVE: George Carew was captain of the *Mary Rose* for just a day
RIGHT: The *Mary Rose* on the Anthony Roll, the only contemporary depiction of the ship to survive





570

The number of tonnes the cradle, ship and frames weighed all together

PAST AND PRESENT

This modern artist's impression of what the ship may have looked like is based on the remains



“Once you’ve exposed the wood to the elements, it’s a race against time to get it out”

THERE’S SOMETHING ABOUT MARY

ABOVE: The mechanism that rescued the sunken ship is lifted above the surface of the Solent on the dreary morning of 11 October 1982
LEFT: The ship was sprayed with water, then a chemical solution, for nearly 30 years. During this time, it was difficult to see the ship
RIGHT: In 2005, the Trust recovered more items from the sea bed, including this two-tonne anchor



The *Mary Rose* had finally been laid to rest. That is until the 19th century when some local fishermen began complaining that their nets were snagging on something. They called in a pair of pioneering divers – John Deane and William Edwards – to investigate. Diving down, they recovered a few planks of wood, longbows, and cannons, one of which identified the wreck as the *Mary Rose*.

The discovery caused public interest to soar, but only temporarily. Deane and co made numerous dives to the wreck over the next few years and collected a princely sum’s worth of items. At one point, they even took to putting gunpowder in the sediment protecting the ship, in order to search for buried treasures. But after they had taken any retrievable valuables, the *Mary Rose* was once again forgotten.

TROUBLED EXCAVATION

Languishing on the seabed, it was not until 1971 that she was relocated again. As part of a project to locate shipwrecks in the Solent, the British Sub-Aqua Club used sonar scans to identify the wreck site, and a few timbers were found. Dr Alex Hildred, who is now the Head of Ordnance and Human Remains at the Mary Rose Museum, first dived down to the ship in October 1979. “The first thing that the team found was the ends of four timbers, just sticking above the mud,” she describes. They soon knew that they had a large cross-section of a ship.

In the late 1970s, they decided to excavate the entire wreck. Receiving no government funding for the project, the Mary Rose Trust was formed in 1979 to fund the ambitious project. The current Head of Conservation, Dr Eleanor Schofield, explains that financing the work was, and continues to be, a struggle. “We’re always fighting for it,” she says. Thankfully, widespread media coverage meant donations soon came flooding in, and the project grew.

However, time was of the essence. If they were going to raise the *Mary Rose*, it had to be done within the next few years. “Once you’ve exposed the wood to the elements, it’s a race against time to get it out,” says Hildred. The deadline was set for the end of 1982. In the meantime, a number of priceless artefacts were brought up, such as wooden chests belonging to wealthier members of the crew.

Lifting the Tudor ship proved incredibly problematic. With only part of the hull remaining, slinging cables under the wreck meant risking its collapse. Pulling it up could cause worse damage, so the ship had to be strengthened and reinforced to stop it from breaking apart. Firstly, the deck planks were taken off, as were any surviving bulkheads, to lighten the load and prevent any breakages. All that was left was, as Hildred aptly describes, “a shell of a ship”.

“We deconstructed her under the water, then drilled holes through the thickest parts of the



ALL ROSES
Hildred holding a piece of carved wood, which would once have been the Tudor Rose

SEA ARCHAEOLOGY
DIVING THE TUDOR WRECK

Once the wreck was discovered by a group of diving enthusiasts, the long process of surveying and documenting the wreck could begin. The ship was to be gently excavated from centuries’ worth of debris, to determine what it looked like, what had survived, and whether or not it could be lifted from the seabed.

To make this massive project possible, the salvage vessel *Sleipner* was moored at the site, housing up to 40 divers at any one time, working in shifts. It didn’t take long for the team to expand massively, bringing in large numbers of volunteers, so the work could be completed as quickly as possible.

Dr Alex Hildred, who joined the team in the late 1970s and still dives the site today, describes what the divers did under the murky depths of the Solent.

“We had a team of 12 full-time people, and the only way we could maximize dive time was to bring volunteer divers out. So we had six boats, each coming at different times, bringing 10-12 volunteers to the boat. The first would come out at 8am, they’d do their dive, then get sent back to shore again.

“When you got on board, you had a talk about the history of the *Mary Rose*, followed by a safety briefing. Visibility under the water was atrocious, as little as 30 centimetres, so everything was done by feeling rather than seeing. Over the ship there was a bright yellow grid, which indicated roughly where you were on the ship,” continues Hildred. They then excavated their dedicated section and returned to the surface.

Using trowels and airlifts (a handheld dredging device), the divers peeled back layer upon layer of sediment, uncovering artefacts from the years since the *Mary Rose* sank along the way. In 1982, it was decided the ship was ready to emerge from hundreds of years of slumber.



SITTING PRETTY
The *Vasa* is incredibly well preserved, complete with ornate carvings only partially worn away

THE VASA SWEDEN'S MARY ROSE

While the *Mary Rose* is unique, the raising of the 17th-century Swedish warship *Vasa* set a precedent that the archaeologists could follow. "We take a lot of inspiration from the *Vasa*", says Dr Eleanor Schofield of the *Mary Rose* Trust. "It's not uncommon for us to get in touch and ask them questions."

When it capsized and sank on its maiden voyage in 1628, the *Vasa* rested upright at the bottom of Stockholm harbour. The cold waters of the Baltic made it very difficult for shipworm to survive, so even after 333 years underwater, the ship was in excellent condition. After the raising, in 1961, using the same methods the Tudor salvagers would propose, the *Vasa* was doused with PEG and went through a slow drying process.

Like the *Mary Rose*, the ship has not completely dried out, but visitors are still able to enjoy and appreciate the splendid vessel. Having been restored to its former glory, you can get up close and personal with the beautiful, intricate carvings and get a sense of what it was really like to be on board such a masterpiece.

GARETH GARDNER XI, COURTESY OF THE MARY ROSE TRUST X2, ALAMY XI

"The team watched with bated breath as the *Mary Rose* broke the surface"

hull, placed wires through with rubber backing plates underneath," she continues. A steel bolt kept it all together, and this was reproduced on the other side of the wood, so the ship was "sandwiched between the protective material". The wires themselves led up to a frame, which held the hull in place.

The fragile skeleton of the *Mary Rose* was then hydraulically jacked up to free it from the seabed and delicately placed into a cushioned, bespoke cage – the famous yellow cradle seen in news broadcasts all over the world. On the day of the lift, 11 October 1982, some 60 million people tuned in to see the ship edge slowly out of the water for the first time in over 400 years. The team watched with bated breath as the *Mary Rose* broke the surface just after 9am. But as it slowly moved up, disaster nearly struck when one of the wires in the lifting frame broke, almost bringing heavy metal down onto the hull. Prince Charles, watching from a nearby boat, gasped.

Once safely out of the water and in dry dock, the team had to act immediately to stop the wood decaying. Schofield explains, "We sprayed it with cold water so it didn't dry out, and

to stop bacterial activity happening." Where shipworm and other bacteria had eaten away parts of the wood, it became so waterlogged that the water was the only thing keeping it together.

INDUSTRIAL CONSERVATION

With the Trust ever struggling for funds, the *Mary Rose* went on public display just a year later, still being sprayed with cold water. "At the end of the day, she's a showcase. We need people coming and paying for tickets so we can keep doing what we're doing", says Schofield. This meant that the ship had to be more than a waterlogged shadow of its former self. Over the next decade, she was turned upright, and her decks put back in.

In 1994, the ship was no longer sprayed with water, but with a waxy substance called polyethelene glycol (PEG). As a liquid, it gets into every nook and cranny of the wood and replaces the water molecules holding the structure together with something more stable. But, as Schofield argues, conservation work walks a fine line between putting enough PEG in and not bombarding it so it "looks too much like plastic, and not like wood anymore".



DRYING OUT
In the first phase of drying, black ducts were put on the decks to blow conditioned air, and remove water

£25
The amount, in millions, the Trust was given towards the new museum

intended to cover the outer layers of the ship and seal in the hard work done so far. By then, an incredible discovery had been made at the wreck site. The five-metre long stem of the ship – the foremost part of the hull – had been found. Though it looks unassuming, this strip of wood was critical in confirming the dimensions of the ship, now estimated to be 35 metres long and 15 metres wide.

But while it was being sprayed, the *Mary Rose* could not be seen in its full glory, as the view of the damp ship was obscured by pipes and mist. In order to prepare for the final stages of conservation, when the drying out process would begin, a new museum was built in 2013. Financed by a £25 million Heritage Lottery grant, the elegant museum reunites the ship with many of the artefacts and human remains she was found with, forming a perfect time capsule of the Tudor era.

So began the process dubbed "industrial conservation". The PEG was sprayed onto the ship using a complex system of pipes, filters and specially designed nozzles, to ensure every last part of the wood was covered. Then, in 2006, they switched to a different form of PEG,

CONSERVING THE TUDOR TREASURE MARY ROSE: WHAT'S TO COME

As well as continuing the drying out process, there's still a lot of work to be done on the *Mary Rose*. It's not all plain sailing, explains Dr Eleanor Schofield: "We're constantly monitoring the ship for movements, and measuring the temperature and humidity of where it's kept." There has been some shifting of planks since the drying out process began, Schofield states, and to stop it from getting worse the large structure has been propped up with scaffolding.

The conservators have experienced other issues. "PEG is something that can degrade, which we have seen from places like the *Vasa*", notes Schofield. Combined with what she affectionately calls "junk from under the sea bed", the wood has turned into an entirely new material, which requires constant surveying.

Schofield laments, "People don't like scaffolding, but I think it's great. We need to support the ship, so we've got these scaffolding tubes in place at the moment." When the ship eventually dries completely, the plan is to design a new support system, which will stand the test of time.

As well as onshore work, any keen-eyed diver at the wreck site of the *Mary Rose* will notice a curious white sheet on the sea floor. Under this protective membrane lies another significant piece of the puzzle. In 2005, a large part of the bow was found and surveyed, as well as the stem and an anchor, which were both raised. The rest of the bow was reburied to keep it safe for future archaeologists to study.



SHIP SHAPE
The new *Mary Rose* Museum, next to the *HMS Victory*, was designed to pay homage to the Tudor ship by imitating its curved timbers

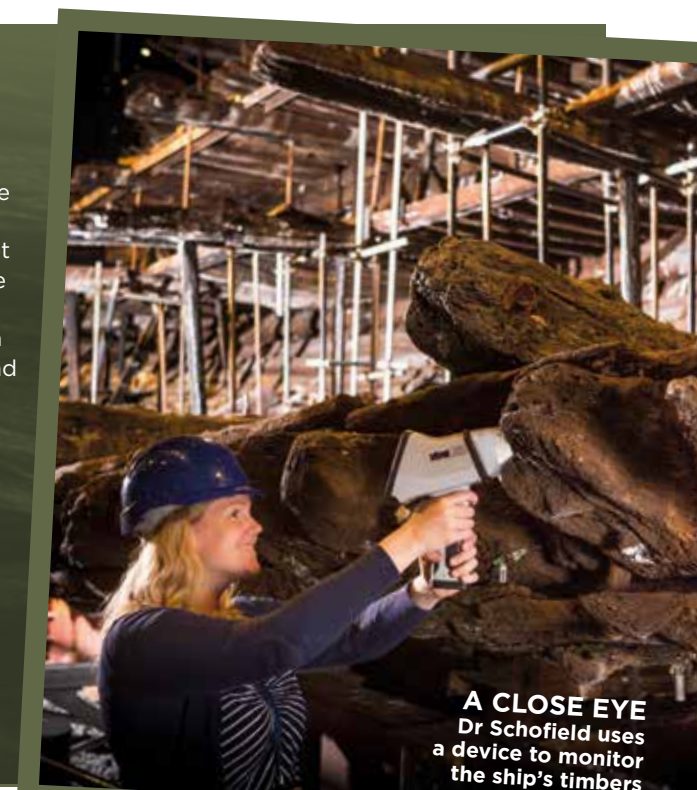
The ship forms the centerpiece of the museum, and visitors can walk parallel to the decks, seeing what was once inside ship. They are even afforded the opportunity to breathe the same air as the *Mary Rose*, as if you were walking upon its top decks.

As the ship isn't fully dry yet, there's still plenty of work to be done. The wood has to be meticulously monitored to ensure the ship doesn't collapse and eventually, visitors will be able to experience a 360-degree view of the entire ship. With the large-scale conservation 35 years and counting, Henry's beloved ship is in safe hands for future generations to discover, learn and enjoy. 📍

GET HOOKED

VISIT

The *Mary Rose* Museum is a part of the Portsmouth Historic Dockyard complex, showcasing other key pieces from Britain's naval history, such as *HMS Victory*. It's open all year round, tickets from £18.



A CLOSE EYE
Dr Schofield uses a device to monitor the ship's timbers