Venice gives thanks for hidden dam

LUIGI COSTANTINI/AP; TOM KINGTON FOR THE TIMES

Italy

Tom Kington Venice

Deep below the chilly waters of the lagoon, an engineer is prowling a 400-metre long undersea corridor and checking the massive machines saving Venetians from flooding this winter.

On the other side of a thick concrete wall, a row of metal boxes that make up the Moses flood barrier — each as big as a house — are ready to swivel up from the sea bed to block the increasingly frequent tidal surges threatening the city.

"We have already raised Moses 13 times this winter and it's only December, so we are on course to beat last winter when the barrier was used 20 times," says Alessandro Soru, who ensures the smooth functioning of the 78 boxes protecting three entrances to the lagoon.

Long delayed, often doubted and plagued by kickbacks before corrupt officials were convicted, Moses is increasingly viewed as a godsend by Venetians accustomed to bolting out of bed to barricade their homes when flood sirens sound.

Now, as climate change kicks in and Venice's destructive *acqua alta* (high water) becomes ever more regular, officials say Moses will be saving the city a lot more often.

Since it first went into action last year, the tops of the 30-metre long boxes that emerge above the waves to halt floods have become a familiar sight, but few have glimpsed the underwater mechanics that make it work.

Access is gained from the artificial island built where two stretches of barrier converge in the opening to the lagoon between the Lido and Punta Sabbioni. The size of 20 football pitches, the island features a control room, accommodation for 18 staff and one anonymous grey door leading to 140 steps which descend into the innards of the barrier, stretching 400 metres west to the Lido.

Visitors find themselves inside a line of massive concrete structures embedded in the seabed, each one measuring 60m by 40m, weighing 14,000 tonnes and housing three boxes fixed to the concrete by 15-tonne hinges.

When a high tide is approaching, air is pumped into the water-filled boxes which swivel upward to form a barrier. Water is let back in when the tide recedes, making the boxes sink back into the concrete housing.

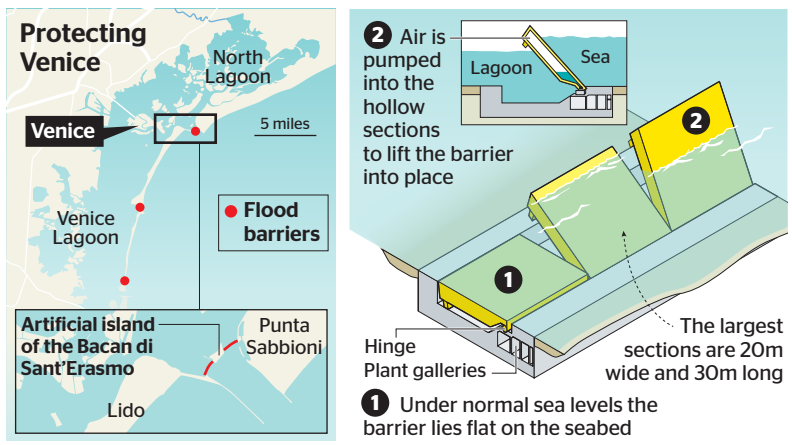
The structures are also linked by a maintenance corridor where Soru, 39, is checking pipes and valves. "There are 12 metres of water above our heads — this is the point cruise ships passed over before they were banned from Venice," he says.

Heading along the corridor, which is packed with ventilation pipes and electrical wiring, Soru ducks into side rooms to check the visible end of enormous circular hinges and complex valves that help pump air into the boxes. He points to a rubber seal where two of the concrete structures have been pushed together. "The seal is compressed from 27cm to 18cm when the structures are aligned and should be good for 100 years," he says.

The €6 billion Moses project was launched in 2003. However, its slow progress due to kickback investigations meant it was not ready in 2019, when Venice was devastated by a freak high water of 1.87m, second only to the 1966 record of 1.94m.

Rushed into service last year, Moses is still officially in its test phase and is raised only when water reaches 1.3m, keeping 60 per cent of Venice dry. By mid-2023 it will rise at 1.1m, preventing flooding in 85 per cent of the city.

As he emerges up the steps from the other end of the tunnel on the Lido, Soru looks across the lagoon to Venice. "People used to protest against Moses but now they complain we don't raise it often enough," he says.



Tourists were left struggling two years ago when a 1.87m high tide flooded large areas of Venice, including St Mark's Square. After years of delays, the giant Moses flood barrier was brought into use soon afterwards to protect the city. Alessandro Soru, right, is responsible for keeping the machinery, hidden below the waters of the lagoon, in good working order

Teething problems have emerged, including a build-up of sand in the housings for the boxes, which need scooping out with a dredger twice every winter. Sand also gets sucked with water inside the boxes, which will need cleaning out every five years.

A major criticism is that increasing use of the barrier will play havoc with the natural tidal flows in and out of the lagoon, damaging its delicate ecosystem. Elisabetta Spitz, the manager sent in to run Moses after the scandals, says that those fears are exaggerated. "The barriers are raised for only two to four hours at a time, so even if they are raised 13 times it has no effect. Moses is also unique because when it is lowered it doesn't exist," she says.

Her main concern, she adds, is opening locks next year at key entry points to the lagoon to allow shipping in and out when the barriers are raised.

What is undeniable, Spitz says, is how Moses has already boosted Venice's economy. "With the barrier working, the value of ground floor properties has risen by 30 per cent," she says. "I receive messages from Venetians, from senior officials to bar and restaurant owners thanking me for making their life easier. They used to have to stay in town during the winter, ready to run and put up barriers when that siren sounded."

Franco's mass graves give up secrets

Spain

Charlie Devereux

Archaeologists working at one of the most infamous execution sites used during General Franco's regime have created a catalogue of objects found with the bodies that because of an anomaly in Spanish law may be lost to history.

Spain's protocols for the conservation of objects found in the mass graves obliges them to be reburied if they cannot be assigned to a victim.

The law needs to be modified, Andrea Moreno, Miguel Mezquida and Eloy Ariza wrote in the journal *Saguntumm*. "We advocate that families are always given the first choice, but that in situations where identification has not been possible, the administration should take custody of these materials and place them in institutions and public museums, since their reburial eliminates the possibility they can be used for scientific and public purposes," they said.

El Terrer, a wall a few hundred yards from Paterna cemetery in Valencia, became known as "the firing line of Spain" because it was used to execute 2,237 Republican prisoners over 17 years after the civil war ended in 1939.

The bodies were dumped in mass graves in the cemetery and left for more than 60 years. In the past two decades, the Socialist government has led a push to exhume and identify the victims of Franco under his four decades of dictatorship.

Archaeologists began exhuming the bodies from 27 graves in 2012 and have identified 1,163 of the victims. But alongside the bodies they also found personal objects such as watches, pipes, combs and toothbrushes — crucial pieces of evidence that confirm the atrocities committed but also serve to humanise the victims. Bullets, for example, can show which security forces took part in the killings based on the type of weapon used.

Thanks to a combination of humidity levels and the presence of lime in the soil, which slows the process of disintegration, the archaeologists managed to excavate almost-perfectly preserved sets of clothing, which gives them indications of the professions, social status and gender of the victims.

Some victims even managed to document their death. One left on a scrap of paper inside a bottle, which read: "My name is Manuel Lluesma Masia. Executed 29-12-1942 at 7.30am in the morning. I leave children behind."

Lessons in Basque hold pupils back, says adviser

Sabrina Penty Madrid

Using Basque as the primary language at schools in Spain's Basque Country is impeding the education of 80,000 Spanish-speaking children, while a new language law would affect hundreds of thousands more, an expert has warned.

Ricardo Arana, a teacher and former adviser to the Basque government, said education in essential skills like maths, science and reading is only at a "beginner's level". A rise in the number of students who begin schooling in Basque has not improved proficiency in the language but is hampering their ability to learn, he argued before a working group in the Basque parliament, reported by the newspaper *El Mundo*.

The comments come as debate swirls over a Basque education law to take effect next year. It would make it mandatory to use Basque as the primary language and abolish state-funded, private schools, affecting 366,000 students.

The number of children who start schooling in Basque has increased by 40 per cent in a decade to 98,444 in 2019, according to data from the Basque government cited by *El Mundo*.

Language can be a divisive issue in Spain, whose government has to contend with strong nationalist movements in the Basque Country and Catalonia. Pedro Sánchez, the socialist prime minister, relies on nationalist parties in both regions to get legislation through the parliament in Madrid.