

# Why the Dutch are dismantling their famous dikes

As Americans look to the Netherlands, which has developed the world's most sophisticated flood-control structures, the Dutch have decided they've got to live with—even in—the water

By Tracy Metz

**T**he curving gates and three enormous trusses of the Maeslant Barrier are as tall as the Eiffel Tower and as technologically daring as this cast-iron extravaganza was in the late 19th century. Yet rather than standing in the city, they lie in the river—in Holland's New Waterway, to be precise. When storm-driven waters rise too high, the two curved arms of the Maeslant storm-surge barrier swing into place on ball bearings to block the channel and protect Rotterdam from flooding.

The Maeslant Barrier was a high point in a tour conducted for a delegation from Louisiana, including governor Kathleen Blanco. The officials came to have a look at the Dutch system of keeping out the sea in the wake of the disastrous performance of Louisiana's levee system during Hurricane Katrina. They were visibly impressed, both by the scale of the structures and by the level of government involvement and investment in flood control. They learned that dikes in Holland are designed to resist floods that may occur once in 1,250 or 10,000 years. The Dutch were shocked to learn that levees surrounding New Orleans were only intended to survive a miserly 30-year flood, an especially optimistic risk profile, it seems, given their poor state of maintenance.

Ironically, the storm-surge barrier that so impressed the American

visitors may well be the last generation of Holland's technological water management solutions. The Dutch are now looking for less defensive ways to deal with water—not as a foe, but as they now say in Holland, a friend.

One of the first projects to show this new accommodating approach is in the town of Schoorl, amid the dunes northwest of Amsterdam. In the mid-1990s, a notch was cut into the dunes to allow the sea to flow in at high tide and out again at low tide. The idea was to relieve the pressure of the rising sea on the dunes, like the valve on a pressure cooker, as well as to rehabilitate the flora that flourish on the borderline between freshwater (underground) and salt. Simple as it sounds, the idea of cutting into the country's key lines of defense against the sea went contrary to a long history.

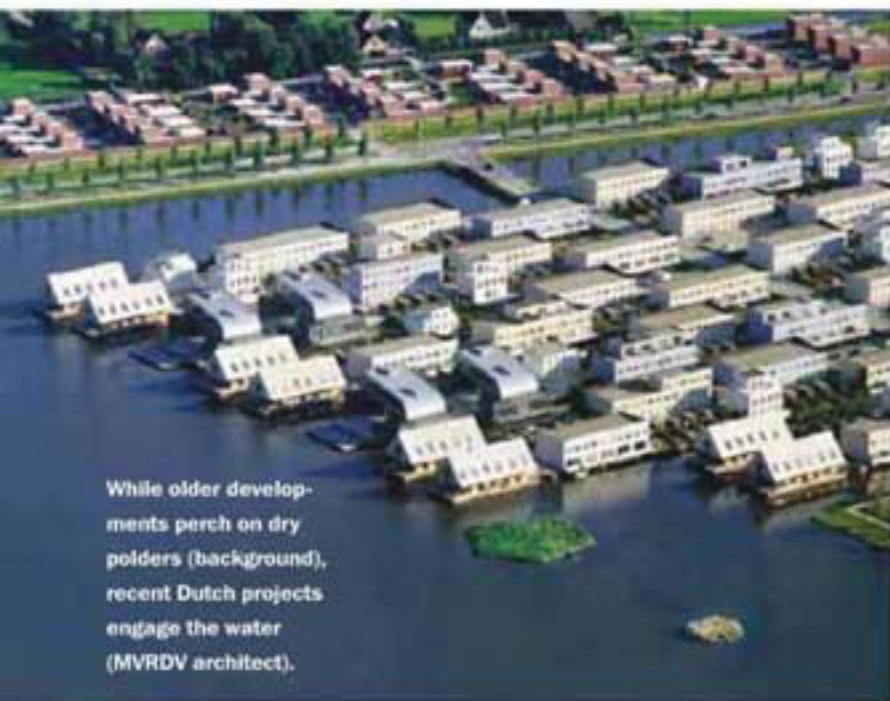
## As a nation sinks, seawaters rise

Holland's tradition of water management is symbolized by the tale of Hans Brinker with his finger in the dike—a story unknown in Holland itself, interestingly. That is a matter of sheer survival: Without the complex system of dikes, sluices, pumps, and polders (land reclaimed, usually for agriculture), a good half of the country would be submerged. The lowest inhabited area in Holland lies 7 meters (about 23 feet) below sea level, and for centuries planning has revolved around the separation of land and water. Ever since humans began to settle in this soggy delta in the Middle Ages, the Dutch have shoveled to keep the water out; it is even said that the cooperative effort this required laid the foundation of Dutch democracy. The necessity continues to grow: two thirds of the gross national product is earned in the flood-prone areas of the country.

In 1953, 1,800 people died in the Great Flood that inundated the southern archipelago-like province of Zeeland. After the disaster, the nation built a network of dams between the islands called the Deltaworks. The Maeslant Barrier was the last piece of this massive engineering puzzle.

But now, after centuries of pumping, a number of factors are forcing the Dutch to come to terms with water in a different way. The reclaimed land of the polders has continued to sink for a variety of reasons. Outside the levee systems, the waters are rising. Europe is subsiding just as river systems that drain into Holland carry more water from heavier rainfalls. The U.N. Intergovernmental Panel of Climate Change predicts more extreme and unpredictable weather patterns. Rainfall in the Netherlands could increase by up to 25 percent and the sea level could rise 43 inches in this century.

Tracy Metz, an international correspondent for RECORD, lives in Holland.



While older developments perch on dry polders (background), recent Dutch projects engage the water (MVRDV architect).