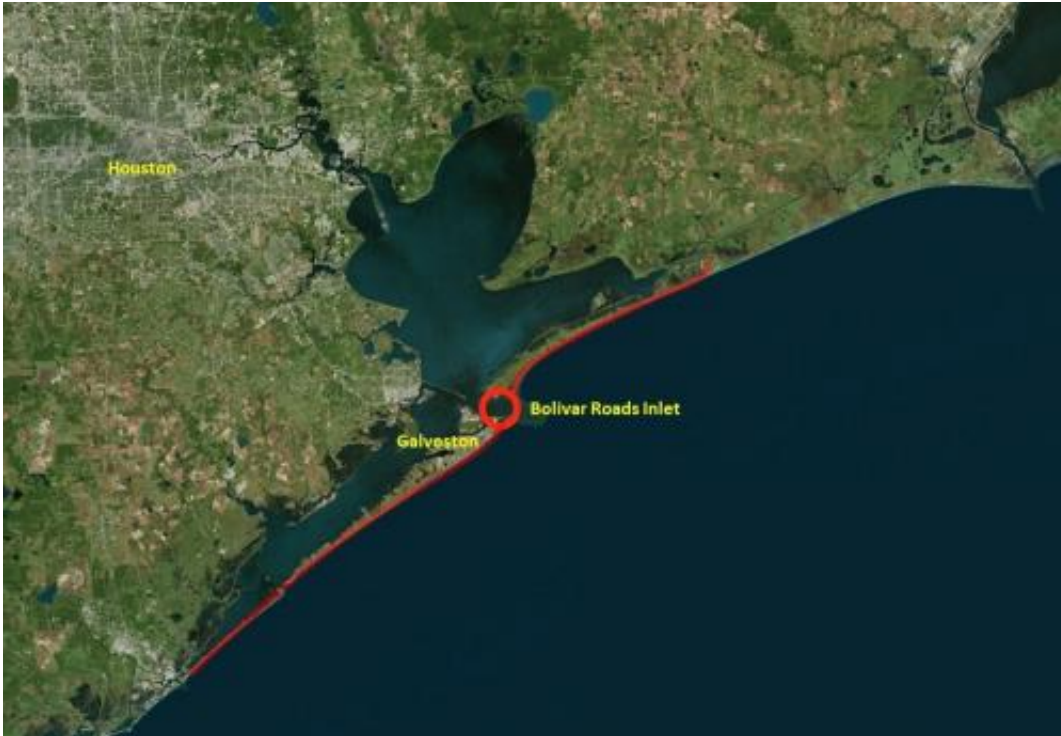


Design concepts for Houston flood barrier

September 16 2013

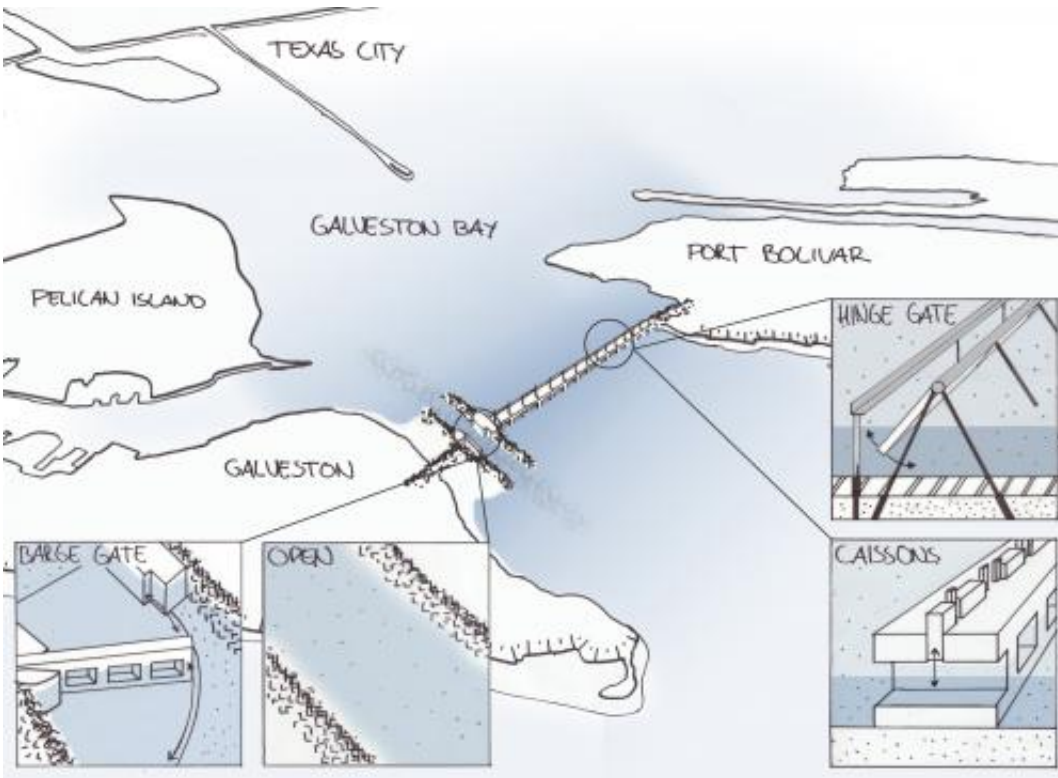


This month it will be exactly five years ago that Hurricane Ike caused enormous damage in and around Houston and Galveston in the US state of Texas. With more than \$38 billion in damage and over 100 deaths, Ike ranks third in the list of the costliest hurricanes in US history. But it could have been a lot worse. With more than two million inhabitants, Houston is not only the fourth largest city in the United States, it is also the centre of the oil and gas industry. The Port of Houston fulfils a

crucial economic role and generates around \$178 million in revenues each year. Given the vulnerability of the area, it is a question of when rather than whether the city will again be hit by a major hurricane. This makes good coastal defences essential. Delft University of Technology (The Netherlands), Royal HaskoningDHV and Iv Infra are exploring possible designs for a flood barrier off the coast of Houston.

The Ike Dike concept

Immediately after Hurricane Ike, Professor Bill Merrell of the Texas A&M University developed and unveiled the 'Ike Dike' concept. A key element of the concept is a movable flood barrier that can seal off the bay near Galveston and Houston during a [hurricane](#). Under normal conditions the bay provides a passage to the Port of Houston, so it must remain accessible for shipping. Another matter of great importance is the preservation of the ecosystems in the bay. Which types of flood barriers are buildable to protect the Houston/Galveston area optimally against storm surges? This is the question that the Delft University of Technology, Royal HaskoningDHV and Iv-Infra are currently examining on behalf of principals in Texas.



Texas surge barrier - overview.

Detailing of preferred variants Over the past months the Delft University of Technology, Royal HaskoningDHV and Iv-Infra have worked out some flood defence concepts for closing off the approximately three kilometres long opening and have presented them to Bill Merrell and his team. In terms of their dimensions the barriers are similar to the Maeslant and Eastern Scheldt storm surge barriers in the Netherlands. The various concepts were compared with each other in respect of criteria like reliability, makeability, maintainability and life-cycle costs. The three parties will elaborate the preferred variants in greater detail in the coming period. A joint research programme will also be set up between the Delft University of Technology and the Texan universities.

Provided by Delft University of Technology

Citation: Design concepts for Houston flood barrier (2013, September 16) retrieved 23 June 2024 from <https://phys.org/news/2013-09-concepts-houston-barrier.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.