



Flood-protection innovations discussed at conference at old U.S. Mint

By Molly Reid, The Times-Picayune
February 26, 2010

Engineers and politicians should be more open to new technologies and integrated systems of flood prevention and mitigation, German engineer Erik Pasche said Friday at a conference on water management and urban planning in risk-prone communities that was held at the old U.S. Mint in New Orleans.

Pasche's lecture on "cascading," or compartmentalized, levee systems was a keystone of the two-day conference titled "Building Resilience," in which planners, architects, engineers and environmental advocates discussed challenges and opportunities in marrying traditional, levee-based flood protection with newer, innovative water-management systems.

Americans and Europeans are both apt to feel that once levees are built, "now we are safe," said Pasche, who is based in Hamburg and is the director of the Institute of River and Coastal Engineering. "But we know nowadays that this is not correct, because of the uncertainty which came with climate change.

"The world is different," he said. "We have to live with floods. We have to do flood-risk management, and not just that, but we have to do it in an integrated way."



Aerial map of Wilhelmsburg island

As an example of such a system, Pasche talked about efforts to implement a cascading levee system protecting the flood-prone island of Wilhelmsburg, which sits between two branches of the Elbe River in Hamburg. The cascading levee plan uses a tiered system in which the outer dikes are built resistant to breaches and weatherization, allowing for controlled overtopping. Buildings in those areas have to be "amphibious" or raised to meet the expected flood level, he said. Inner levees decrease in height, according to risk, and again allow for overtopping, he said.

"We found that when you can control the flooding of the dikes so that you get just overtopping, then you can better handle it," Pasche said. "Once you are sure that the dikes are resistant (to breaches and erosion), then you must control the inundation in the floodplain. You need a kind of containment system."

Pasche said that technology -- in particular, engineering dike material that won't erode with every overtopping -- is still being vetted. The system requires an enormous amount of cooperation among government entities, including municipal drainage authorities, land use planners and emergency services.

Facing those difficulties is a challenge that governments should embrace, rather than falling back on "old solutions," he said.

"We should be ready to experiment," Pasche said.