

## HAMBURG HAFENCITY COMBATS FLOODING RISK

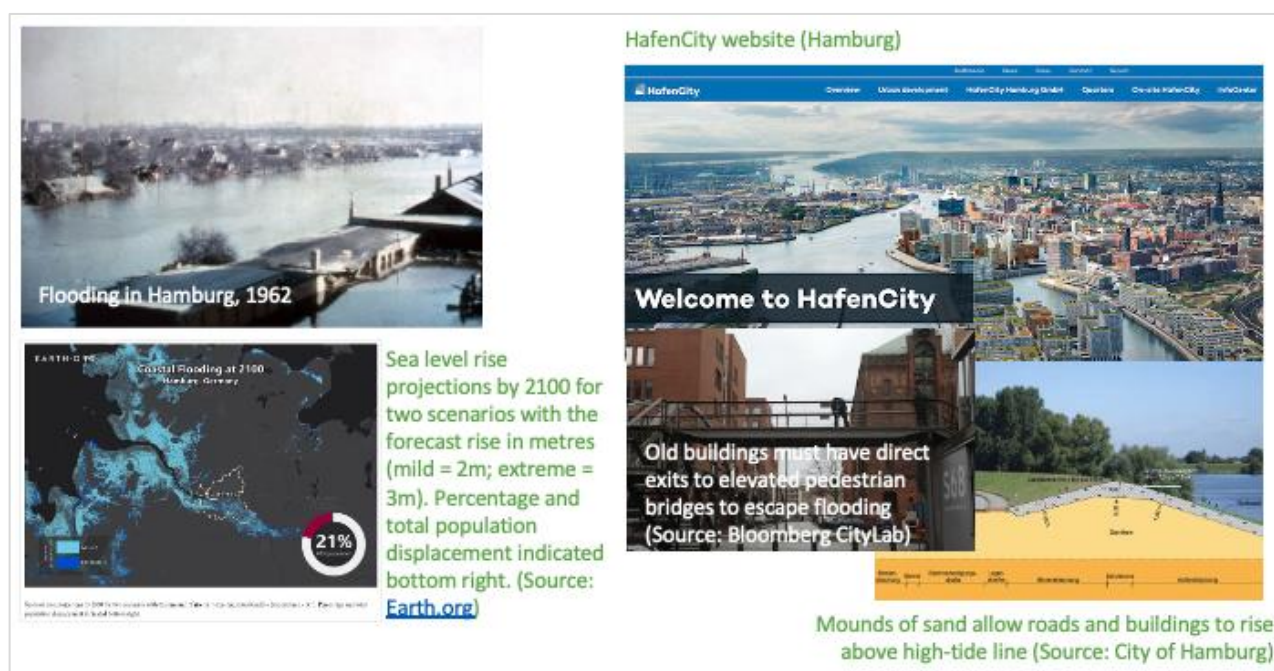
Avoiding urban flooding disasters with governance foresight and investment

- Good government regulation and urban planning lead to good urban resilience.
- Good data assists decision-making through to the crucial local level.
- Multiple tested communications channels alert and warn citizens, who act on the advice of authorities because of meaningful inclusion and respect.

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The 1962 floods in Hamburg, future change and HafenCity resilience (Images collage: various)



### Brief general context:

- Hamburg is a German city situated on one of its large rivers, the Elbe.
- The city has a track record of sustainability, which includes working with the Elbe and respecting the power of water.
- The city operates an effective flood gates system, which is an example of human engineering working with nature rather than against it.
- Sea level rise could pose a major challenge to Hamburg; the city has participated in research projects to improve flood risk management and urban planning.
- HafenCity, a major urban development in the centre of Hamburg and next to its port, is a multi-purpose urban area of 7,500 residences for 15,000 people. It is an example of how an urban environment can exist in harmony with a local ecological environment. Good governance and design ensure the urban fabric is planned, designed, built, and maintained with respect for nature.

### The right mindset:

- The city is tackling its flooding hazards and focusing on minimising the threat they pose.

### The right investment / funding:

- The city government has invested in flood resilience measures for HafenCity that work.
- Ongoing investment in technology to monitor flood risk is reaping economic, financial and social benefits.

**Good governance:**

- City of Hamburg governance includes the enforcement of building codes, with effective planning laws that mandate flood resilience measures required for urban development.
- HafenCity is not surrounded by dikes nor “walled off” from the water. Aside from its quays and promenades, the area is raised to 8-9m above sea level.
- An advanced flood control system has been incorporated into HafenCity. Rather than using dikes, which would have cut off views and been expensive to implement and maintain, all roads and public spaces have been elevated on sand terraces over 7.5m in height. All shore-adjacent buildings in HafenCity must be appropriately water-proofed and provide access to the elevated areas in the case of a flood event.
- Flood gates in buildings that need them are operated by a core team, the Flutschutzgemeinschaften.

**Good data:**

- Earth observations of weather and tracking of storm surge risks from the nearby North Sea coast are important for keeping people safe and protecting the urban environment.
- Data for modelling uses is improving the ability to predict how floods could evolve.

**Meaningful inclusion:**

- Good community engagement ensures local people understand measures being taken and why. “Sturmflut- Merkblätter” (storm surge information sheets) in multiple languages are sent out annually to households that could be potentially affected by a storm surge.

**Meaningful targets:**

- Specific flood measures targets for buildings and infrastructure (e.g. minimum elevation levels above water level), which links to governance, ensure flood resilience is in place.

**Examples of action to avoid disasters:**

- Building on artificial compacted mounds (warfts) provides a new topography, retaining access to the water and the port atmosphere, while protecting people from flood risk.
- In February 2022, storm Zeynip caused the highest storm surge for a decade (3.75m). HafenCity remained resilient and protected residents and the general public.

**Example considerations for any city to consider that may help to reduce disaster risk:**

- Use counterfactual analysis to keep learning from events and near misses.
- Rather than plan for a “once in a 100-year storm or flooding event” based on historical data, city and town administrations need to look into the future and consider scenarios of plausible worst-case events.
- Run a multi-party (authorities, emergency services, businesses, citizens, academics etc.) simulation exercise to test preparedness and response to a plausible disaster event.
- Consider representing economic benefits of investment in disaster prevention in a visual way, and having a broad cross-section of people involved in its creation and use.
- City and town planning needs to mandate sensible zoning for building development. In too many cases (not HafenCity, which has good governance in place), property development continues to take place in high-risk areas, with eventual owners exposed to risk.

**Sources:**

- Managing Flooding Risk in Hamburg HafenCity – Case Study Supporting Paper ([contact author](#)).
- [HafenCity website](#).
- A strategy-based framework for assessing the flood resilience of cities ([Planning Theory & Practice](#))
- Simulating storm-flooding maps over HafenCity ([Journal of Flood Risk Management](#)).
- The neighbourhood of the future, in Hamburg, Germany ([BBC, 2011](#)).