OPEN TO WATER

A search towards an integral approach to live in areas that are allowed to flood on the southern side of Dordrecht

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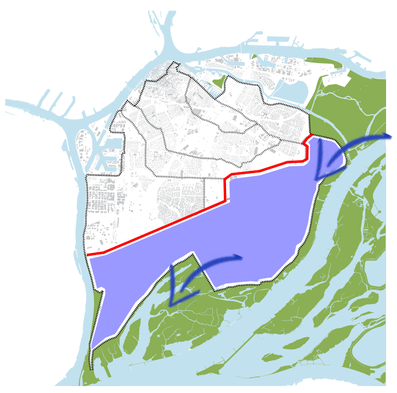
The city of Dordrecht has an interesting relationship with the water. Being an island Dordrecht is surrounded by rivers. This watery landscape offered the city to once prosper given its strategic position for trade. Today the cultural center and its connection to the water are is still an attractive city scape for residents and tourists.

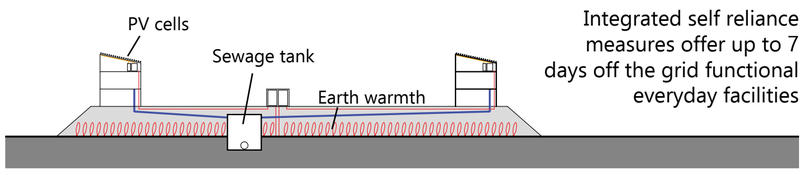
On the downside the water can be devastating for the city. Once almost flushed away during the Elizabethvloed in 1421 centuries went by before the land was reclaimed back to the current shape of the island. Today the threat of the water is making its way again with the support of climate change. Extremes in weather will drive extremes in water levels up to new heights. Conventional safety measures as strengthening current dikes are deemed not flexible enough anymore to scale up to future needs.

Within the graduation project a plan to be able to adapt the southern side of the island to a room for the river area was researched. This would benefit the entire region lowering the rivers water levels by an estimated 20 centimeter. The room for the river methodology however does not account for the influence of the city as it is applied in open landscapes. This research was done to further develop the room for the river methodology by defining contributors of the relevant city dynamics that have implications for the dikes.

The results of the research offer a starting point to room for the river project bordering cities and a redevelopment of the old concept of the mound. To accomodate for different factors the mounds were upscaled to be able to carry more development, the borders were urbanized for a more flexible integration in its location and self-reliance and sustainable upgrades were made to the mounds.

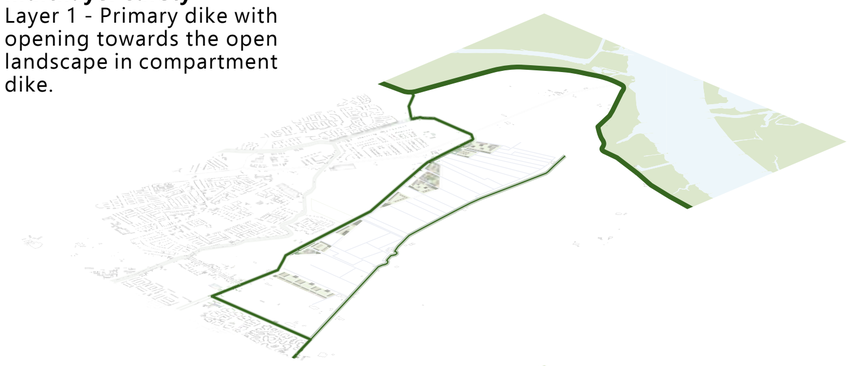
The design offers a framework for placing these mounds that can be filled when space is needed for expansion. The plan can comply to the needs of the growing city as well as the rising threat of water by offering space if this is needed in the future.





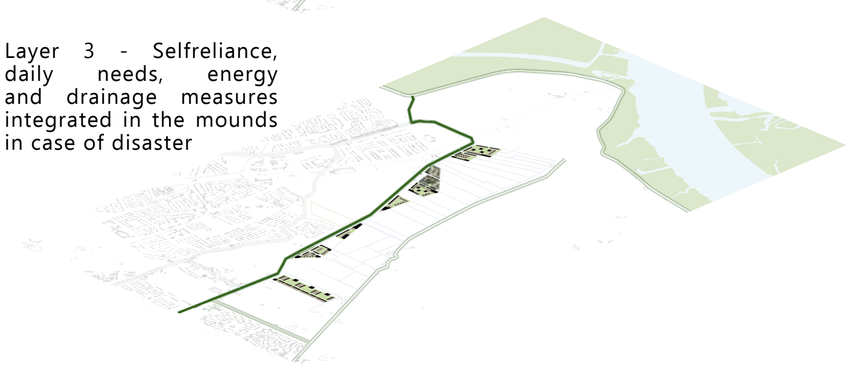
Integrated self reliance measures offer up to 7 days off the grid functional everyday facilities

Multilayer safety
Layer 1 - Primary dike with opening towards the open landscape in compartment dike.

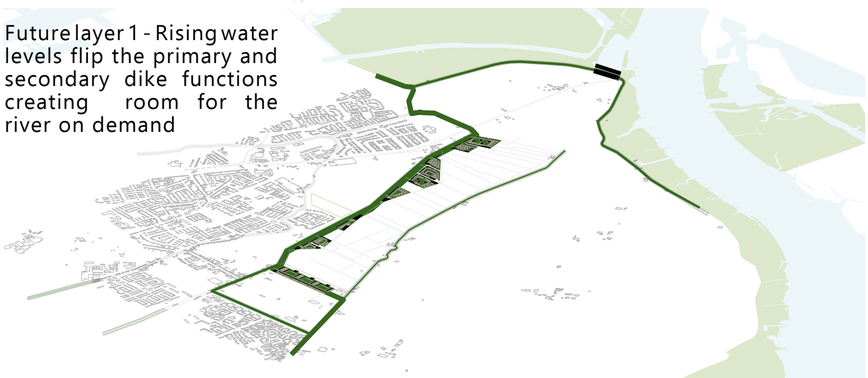


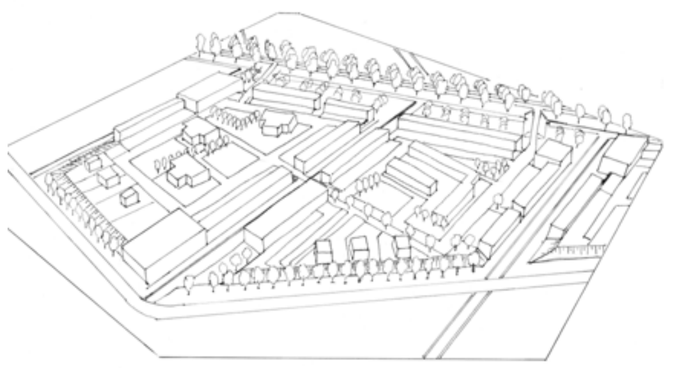
Layer 2 - Built areas on mounds in the landscape

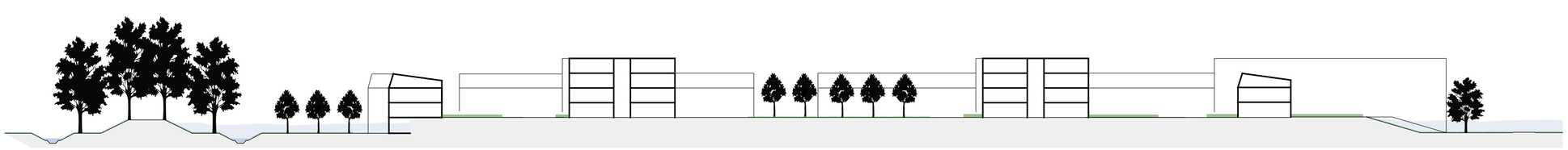
Layer 3 - Selfreliance, daily needs, energy and drainage measures integrated in the mounds in case of disaster



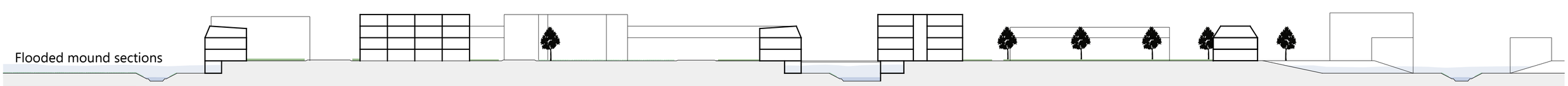
Future layer 1 - Rising water levels flip the primary and secondary dike functions creating room for the river on demand



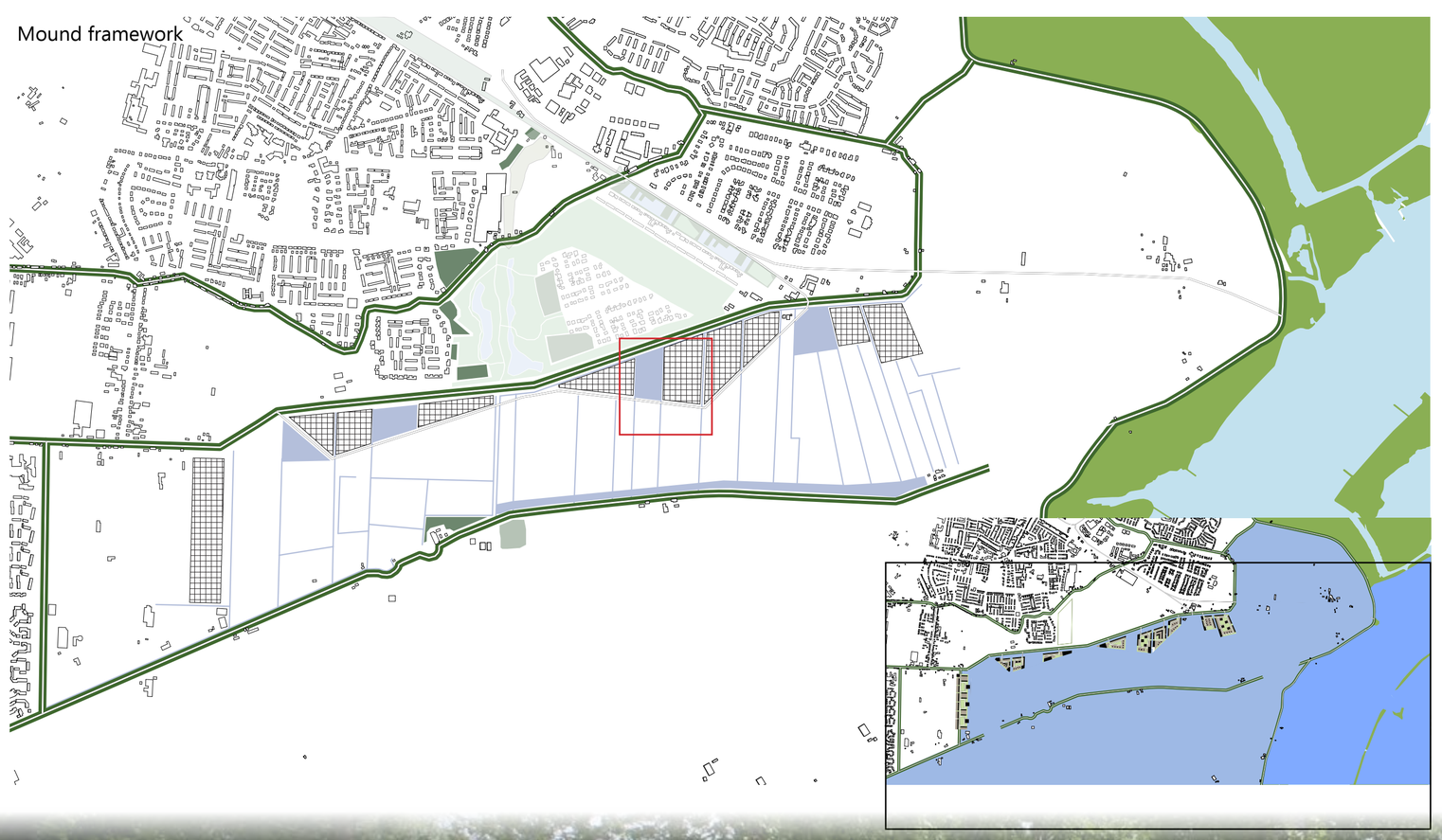




Flooded mound sections



Mound framework



Possible mound design