

COPENHAGEN UNVEILS FIRST CLIMATE-CHANGE ADAPTED NEIGHBORHOOD



Come hell or high water, the residents of St. Kjeld, a Copenhagen neighborhood, will be ready. Actually, skip the hell part. But when the next megastorm hits the Danish capital, St. Kjeld's residents will be safe and dry. That's because as of December, they live in the world's first climate-change-adapted neighborhood.

"St. Kjeld's transformation shows what can be done if you take climate change seriously," says Morten Kabell, Copenhagen's deputy mayor in charge of environment and technology. In truth, following a catastrophic cloudburst in 2011 that resulted in damage of about \$1 billion, this windy port city had little choice but to find ways of protecting itself.

"Climate change is a reality and we have to be prepared for floods, storms and rising sea levels," says René Sommer Lindsay, the city official in charge of St. Kjeld's transformation. "The cloudburst was really a wake-up call. We said, 'Instead of doing pinpoint projects, let's develop a rainwater master plan.' Rainwater is only a problem if it goes where you don't want it to go." That gave city planners the option of adding "gray infrastructure" — technologies that, in this case, would have included essentially more and bigger sewers — or designing "green," nature-based structures that collect the water and lead it away.

They went for the green option. "Adding sewers is insanely costly, so a green-and-blue [vegetation and water] approach is more economical," notes Esben Alslund-Lanthén, an analyst at the Copenhagen-based sustainability think tank Sustainia. There was just one challenge: No city has ever tried climate change-adapting a whole neighborhood using just plants and water. "It's a huge amount of water that we'll have to redirect when the next cloudburst hits," says Flemming Rafn Thomsen of Tredje Natur, the

Danish architecture firm chosen for the project. “We looked at St. Kjeld and thought, ‘That’s a lot of asphalt with no function. We can use some of that space for water.’ ” On top of having little function, the asphalt gave St. Kjeld, a somewhat run-down working-class neighborhood, an even more depressing feel.

The answer, Rafn Thomsen and the city decided, was to tear up the neighborhood’s squares and replace their asphalt covering with what’s essentially a hilly, grassy carpet interspersed with walking paths. Should a storm,flood or rising sea levels hit the Danish capital again, the bucolic miniparks will turn into water basins, the hills essentially functioning as the sides of a bowl. Thanks to a new pipe system, the squares will even be able to collect water from surrounding buildings’ roofs. Surrounding streets will, for their part, be turned into “cloudburst boulevards.” Under ordinary circumstances, they’ll just be ordinary streets with raised sidewalks, but during floods and megastorms, they’ll become canals, channeling rainwater away from the squares to the harbor. Millions of gallons of water will be dispatched back to the harbor on such above-ground waterways, St. Kjeld becoming a temporary Venice.

The team got to work, and on Dec. 6, the world’s first climate change-adapted neighborhood was inaugurated. Children grilled hot dogs over fires in the newly green Tåsinge Square, while older residents sat down for a rest on recently installed park benches. St. Kjeld is now officially known as Klimakvarteret, the Climate Quarter. By this summer, the transformation of the neighborhood’s courtyard will be complete, followed next year by another square and St. Kjeld’s streets-turned-cloudburst boulevards. A group of residents have also launched a 718-square-yard rooftop garden that will supply produce for the neighborhood.

To most people, though, reinvented plazas with hills and lush vegetation suggest city beautification, not hard-core climate-disaster preparedness. That’s exactly what the architects and city planners had in mind. “If the rain comes, it will be a spectacle rather than a problem,” says Sommer Lindsay. “And if we never have a flood or cloudburst again, it’s still value for money because we got a more beautiful neighborhood.” And as far as Rafn Thomsen is concerned, far from frightening residents, purposely flooded plazas and streets will bring them closer to nature. “Climate change is a huge opportunity to build greener cities,” he explains. “We should stop pushing nature away and stop pretending that we can push the weather away. It’s a whole new paradigm.” Should a cloudburst of the same size as the one from four years ago hit Copenhagen again, it will only fill Tåsinge Square to 40 percent capacity. During Copenhagen’s expected heat spells, the new vegetation will cool the air, and in order to collect water even faster during storms, Rafn Thomsen’s team is developing mini-water towers for use across the city.

Still, city officials may need to do more to inform residents about the Climate Quarter. One Copenhagener contacted by Al Jazeera America confessed to not knowing anything about it, adding that she is, at any rate, happy in her flat in the city’s old town. Another resident wasn’t familiar with St. Kjeld’s reinvention either, but suggested that it may be a good way of attracting new residents to Copenhagen.

They may not have to move to St. Kjeld: Copenhagen City Hall is about to embark on an ambitious plan to make the whole city climate-change-resilient. Though there will be individual variations, each neighborhood will feature cloudburst boulevards and beautified squares ready for water-basin duty. One Copenhagen suburb is already building its own climate quarter, and Kabell reports receiving climate-quarter inquiries from mayors around the world.

While a city like Mumbai, which the World Bank ranks as the world's fifth most exposed to floods, may not be able to afford Copenhagen's climate-change innovation, many others can: Seven of the 10 most exposed cities, including New York and Tampa, are located in developed countries. New York, which has committed \$20 billion to climate-change adaptation, is opting for flood walls, while the Dutch delta city of Rotterdam has gone even further, designing a plan for floating neighborhoods. Several others, in turn, are experimenting with Copenhagen-style miniparks, which Kabell accredits to the fact that "people like blue and green, not gray." "Countries talk," he adds, "but cities know they have to act."

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