



CopenHill

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The concept

- The concept of creating ski-slope topography in the roof of a building in Copenhagen where land is limited dates back to 2002. Where Bjarke Ingel's firm had the name PLOT. That idea was for a competition project and for the rooftop of the largest department store in the city. Despite winning the competition the project wasn't constructed.
- In 2011 that BIG had won the international design competition for Copenhagen's waste-to-energy plant with AKT, Topotek 1, Man Made Land, and Realities:United.

A sustainable plant

- Located in an industrial area near the city center, the new waste-to-energy plant was aimed to become an exemplary model in the field of waste management and energy production, at the same time being an architectural landmark.
- At that time, the project was the single largest environmental initiative in Denmark with a budget of 3,5 Billion DKK. It was set to replace the adjacent Amagerfor-brænderi plant, integrating the latest technologies in waste treatment and environmental performance.



The façade

- BIG stated in 2011 ; "The main function of the façade is to hide the fact that factories are having a serious image/branding problem. We want to do more than just create a beautiful skin around the factory. We want to add functionality! The ambition of creating added value in terms of added functionality does not stand in contrast to the ambition to create beauty. It does not have to be either/or – it can be both!"



The result

- CopenHill sets out to become the cleanest waste-to-energy plant in the world, to be the tallest and biggest building in Copenhagen, to house Denmark's first ski-slope, and to emit its CO2 emissions in sudden, bursting smoke rings.



Steam Ring

- Also there was another outstanding idea for the chimney which unfortunately was not constructed. The idea was that in order to give locals a new understanding of the issue of global warming, for every ton of CO₂ generated by the burning of waste, the plant would emit a super-sized ring of steam into the sky from the chimney perched at the top of its sloping roof.







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- During summer months, the rooftop activity park will provide visitors with hiking trails, playgrounds, fitness structures, trail running, climbing walls, and views across the city. In the winter, the park will be joined by a over 1,640 feet (500 meters) of ski slopes.
- Today, CopenHill is the result of nearly ten years of thought, time and design. To complete the project, BIG worked with SLA, AKT, Lüchinger+Meyer, MOE and Rambøll. The plant aspires to embody the notion of Hedonistic Sustainability while aligning with Copenhagen's goal of becoming the world's first carbon-neutral city by 2025.

Details

- The 41,000m² project includes an urban recreation center and environmental education hub, turning social infrastructure into an architectural landmark. Beneath the slopes, furnaces, steam, and turbines convert 440,000 tons of waste annually into enough clean energy to deliver electricity and district heating for 150,000 homes. CopenHill features a continuous façade comprised of 1.2m tall and 3.3m wide aluminum bricks stacked like gigantic bricks overlapping each other.





CopenHill for Bjarke Ingels

- “CopenHill is a blatant architectural expression of something that would otherwise have remained invisible: that it is the cleanest waste-to-energy power plant in the world. As a power plant, CopenHill is so clean that we have been able to turn its building mass into the bedrock of the social life of the city – its façade is climbable, its roof is hikeable and its slopes are skiable. A crystal clear example of Hedonistic Sustainability – that a sustainable city is not only better for the environment – it is also more enjoyable for the lives of its citizens.” Bjarke Ingels, Founder & Creative Director, BIG.



CopenHill for Bjarke Ingels

- “To me, CopenHill is a perfect example of the world changing power of architecture. That we have the power to give form to the future that we want to live in. My son turns one next month – he won’t ever remember that there was a time when you couldn’t ski on the roof of the power plant – or climb its facades. He will take that for granted – and so will his entire generation. Clean energy and skiable power plants is going to be the baseline of their imagination – the platform from which they will leap and propose new and wild ideas for their future. Standing at the peak of this humanmade mountain that we have spent the last decade creating – makes me curious and excited to see what ideas this summit may spark in the minds of future generations.” Bjarke Ingels, Founder & Creative Director, BIG.

A real example of Sustainable Architecture for the future of our world

