State of the Art Discussion

Salma Ibrahim

Smog Free Tower

The Smog Free Tower is the world's first smog vacuum cleaner which creates clean air in parks.

It is part of the Smog Free Project, which is a series of initiatives developed by Studio Roosegaarde aimed at addressing air pollution and raising awareness about environmental issues. The project includes various innovative solutions and artworks designed to tackle air pollution in urban environments.

The Smog Free Tower is a 7-meter tall tower that is equipped with environment-friendly technology that removes 30,000 cubic meters of smog particles out of the air per hour. It uses positive ionisation technology to produce smog free air in public spaces.

https://www.youtube.com/watch?v=qHNA96IQIlw

Why do you think innovative solutions like the Smog Free Tower aren't being more widely spread in urban areas around the world?

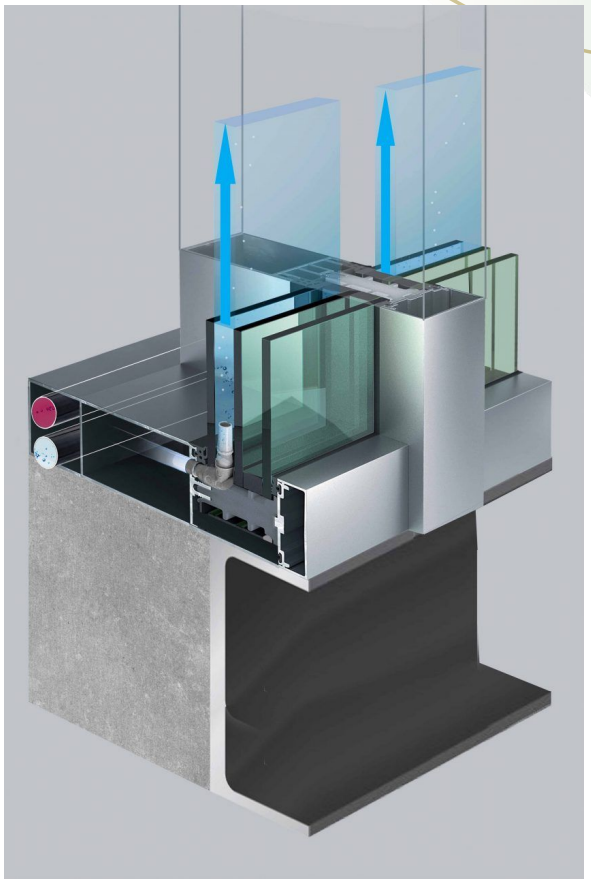
Water-Filled Glass

Water-filled Glass (WFG) is a company founded in 2020 that has developed windows that contain a thin layer of water between its glass panes that absorb heat and radiation from the sunlight.

The warmed water is then pumped through sealed pipes at low pressure to colder areas of the building, through an underfloor system or into thermal storage.

This system can reduce energy bills by around 25%. First, water-filled glass can be used as an energy-saving heating system. Additionally, it also limits how much solar heat gain enters the building through windows, which reduces the need for air-conditioning in hot climates.

What challenges or limitations might arise when incorporating water-filled glass into residential or public spaces?



References

Barker, N. (2023, January 4). Water-filled windows use sunlight to heat and cool buildings. Dezeen. https://www.dezeen.com/2023/01/03/water-filled-glass-solar-power-energy-bills/

Smog free tower: Smog free project: Studio roosegaarde. Smog Free Tower | Smog Free Project. (n.d.). https://www.studioroosegaarde.net/project/smog-free-tower