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**Designer and design researcher, graduate of ENSCI-Les Ateliers and Esad in Reims, Isabelle Daëron imagines objects, spaces and installations based on her reflections on the environment and natural elements, which she applies to urban and landscape design.**

**Her drawing and storytelling practices open up the imagination and a sensitive understanding of environments and their resources.**

**Winner of the France Design Impact Award in 2025, the 'Mondes Nouveaux' award in 2021, the FAIRE award in 2018, and the Audi Talents award in 2015.**

**She founded Studio Idaë, a multidisciplinary creative agency structured around a research and educational approach to urban, environmental and societal issues related to ecological transition.**

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## **Aéro-Seine**

# **A cooling devices supplied by the Seine water network in Paris**

**Isabelle Daëron**

### **Abstract :**

Dense cities, with many impervious surfaces, and non vegetated, will be more and more faced with the heat island effect. The project *Aéro-Seine* deals with the temperature increase in urban space, using water from the Seine river for cooling air.

### **Keywords :**

Water, urban space, city, reuse, cooling, heat island effect

In Paris, average daily temperatures are already around 2 to 3°C higher than in the rest of the Île-de-France region. In summer, this difference can reach 10°C compared to neighbouring rural areas. With average daily temperatures predicted to rise by 2°C to 4°C by the end of the 21st century, and an increasing number of heat waves, it is becoming urgent for the Paris region to adapt to climate change. We need to start thinking today about new ways to cool public spaces.

The City of Paris has a unique feature that could provide a solution : its non-potable water network or Seine water network. Designed in the mid-19th century to irrigate green spaces and clean the

**streets. This network draws its water from the main rivier, Seine and the Ourcq Canal. The infrastructure, consisting of the network and water plants, produces water that is cheaper and less energy-intensive than drinking water. It's also not chemically treated, it is simply filtered through a 3mm grid.**



***Pictures of the non-potable water network in Paris***

**How can public spaces be cooled using non-potable water while complying with health standards ?**

**To address this issue, we have designed a cooling point connected to this Seine water network. The device works by overflow, during the summer. Once opened, the water rises and spreads over a surface made of porous material (quartz). The latter increases the contact surface between water and air, thereby helping to cool the ambient air.**

In a study on the future of Paris's non-potable water network, APUR — *Parisian* urban planning workshop — estimates that "the combination of sprinkling and special road surfaces leads to spectacular results (...) This involves watering sunny surfaces in the morning before 10 a.m. and in the afternoon after 4 p.m., at a rate of 1 litre per square metre every 30 minutes (i.e. 2 litres/square metre/hour). This process reduces the air temperature by around 2°C in the morning and 4°C in the afternoon. In addition, tests conducted in Paris in July 2017 by researchers from LIED and Diderot University involved spraying water on the pavement and revealed temperature differences of nearly 15°C on the ground surface, with a perceived temperature drop of up to -1.5°C.

As part of the FAIRE program, organised by Pavillon de l'Arsenal, we designed Aéro-Seine for a street in the 20th arrondissement, in collaboration with city services and an engineering office. This device is around 20 square meters. It has three water outlets and it is made out of mineral aggregates. The device has been complemented by floor markings designed with children living in the neighbourhood.





***Aéro-Seine, rue Blanchard, Paris, designed by Studio Idaë.***

**Aéro-Seine was finalist of the Human city design award in Seoul in 2019.**

**This project has led to other experiments in Paris, including the creation of a cleaning station for a social housing provider. Its aim is to provide new uses for this Seine water network, which is currently underused.**

**Design : Studio Idaë**

**Engineering office : OGI**

**Sponsor : City of Paris / Pavillon de l'Arsenal**