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### **Fog collection in facades as a method to meet the future water needs of buildings**

Access to water and long-term sustainable management of existing water resources are found as the sixth of the UN SDG:s. Water has long been regarded as a human right, but in the aftermath of climate change, the lack of water and low groundwater levels have become increasingly common among many communities around the world. One of them is the Spanish region of Valencia where it is precisely the lack of water that is predicted to be the most critical consequence of climate change. A large-scale agricultural industry that has often been forced to rely on illegal water wells, along with ever-increasing tourism, has put the water supply under intense pressure and historically low groundwater levels have been measured.

New innovative solutions are required in order to secure a long-term and sustainable water supply, not only for the region but for a lot of coastal communities around the globe with similar conditions. It is with this starting point that I in my thesis examine how, by studying and understanding principles that work within biological organisms and systems, we can create architectural elements that help to make buildings less resource demanding. Biomimicry is the research area where, by understanding processes that occur naturally in biological organisms, they can succeed in emulating these in technical systems to solve specific problems. Through my work, I try to investigate how biomimicry can be used as a tool in designing a building that is less resource-demanding with special regard to water supply. Valencia has excellent conditions for extracting water from air through so-called fog collectors and therefore my thesis in particular explores how these can be integrated into a façade system that adapts to prevailing conditions in order to contribute in various ways to reducing a building's energy needs.

Presented in English.