

REGENERATIVE DESIGN

GROUP 1

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WHAT IS
REGENERATIVE DESIGN?

does good

Regenerative building is planned and maintained to minimize harm and have a net-positive influence on the ecosystem.

vs.

less bad

Sustainably designed structure is founded on the principle of just utilizing the least resources you need.

Top regenerative design strategies



Green roofs & skins

Buildings with skins that clean the ambient air and sequester carbon.



Capturing rainwater

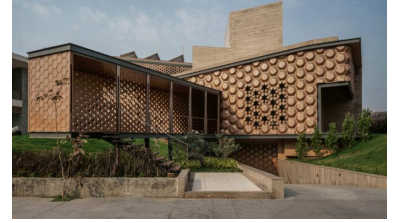
Designing constructed wetlands that capture and naturally store stormwater is a useful tool that replenishes the underground aquifer.



Energy consumption & production

It's important to not only design buildings that use less energy but to also design them to produce and store energy on site so that there is less or no reliance on the utility grid.

Renewable technologies such as solar panels and wind turbines are becoming more commonplace in projects as energy generators.



Thermal efficient construction

encompasses the whole building envelope, creating a building that is more energy efficient, which reduces the mechanical system load. Curtain walls, for example, can contribute to thermal efficiency, by creating a thermal barrier between the exterior and interior.

CASE STUDY

green roof

ACROS Fukuoka

Fukuoka, Japan
Designed by Emilio Ambasz

Acros Fukuoka is a building designed with the aim of coexisting with greenery and water in the city.

It plays a role in regenerating green spaces in Japanese cities with few green spaces.



About 30 years after its completion, the step garden has become what it is today.



1995
(At the time of completion)



2005
(10 years after completion)

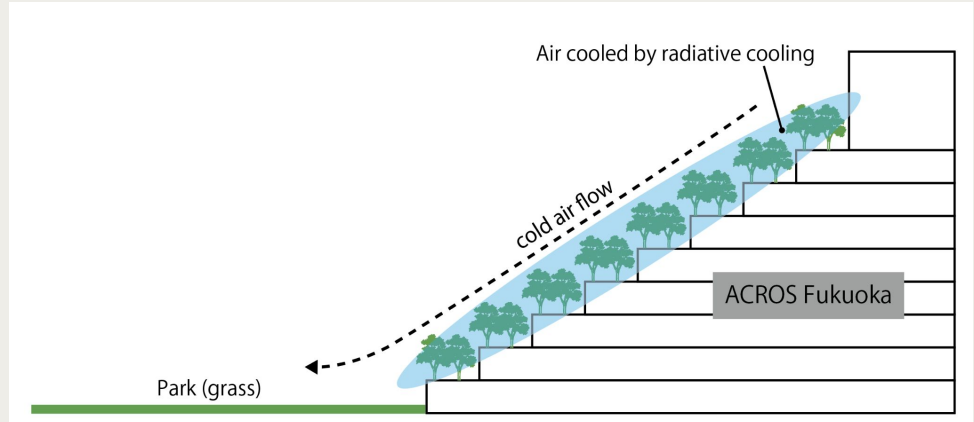


2022
(the current)

There are not many green areas in Japanese cities, so the temperature in the city is rising.



At ACROS Fukuoka, the air cooled by radiative cooling is sent to the city along the step garden, which can lower the temperature of the city.



CASE STUDY
thermal efficient construction

HIVE HOUSE

Surat, Gujarat, India
Designed by Openideas Architects

Hive is conceived and designed as an intelligent, adaptable and sustainable family home at Surat, Gujarat, India.

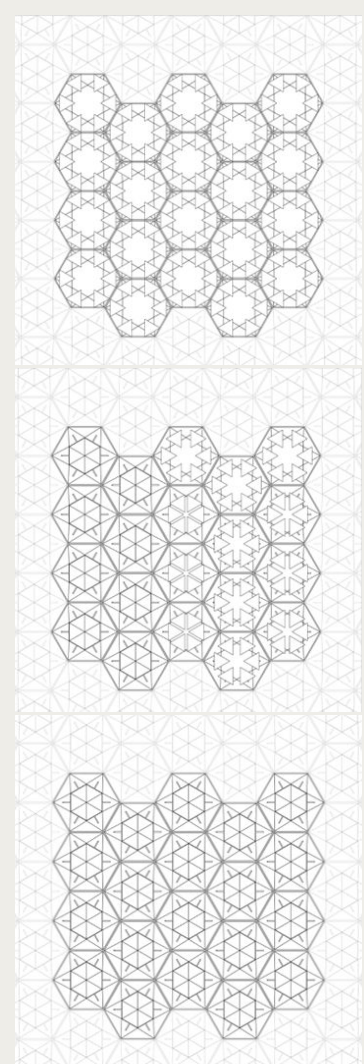
One of the most impressive features of the HIVE is its solar-sensor-based façade, which helps to regulate the building's temperature. Opening and closing the windows allows for plenty of natural light and helps keep the area at a comfortable temperature.



The architectural presence is established by the solar sensor-based facade that changes with the diurnal rhythm of the sun.

Its geometry is inspired by the hexagonal structural patterns found in nature such as those of honeycombs and carbon crystals.

Analyzed as per the structure, function and mechanism, its design is based on structural strength, transformability and bio mimicry. The unique opening mechanism of the facade positions are derivatives of quality of light exposure and thermal comfort levels inside the house.



CASE STUDY

Cheong-gye Overpass to Cheong-gye Stream

Seoul, Korea
Designed by Suhong Noh

The entire length of Cheonggyecheon Stream, which runs through the heart of Seoul's city center, has been restored 27 years after it was trapped by a concrete overpass in 1978.



Cheong-gye Overpass

a covered stream with concrete

22.03.1969 - 30.06.2003

- Safety issues with aging overpasses
- Safety issues with pollutants from the surroundings accumulated, the inside of the cover was filled with methane gas
- Degradation of the cityscape



Cheong-gye Stream a regenerated stream

01.07.2003 ~

- Contributing to reducing and mitigating the heat island effect
- The temperature is lowered by more than 3 degrees compared to the surrounding area and the air quality of the city has improved by opening the wind path.
- Cultural assets discovered during the restoration



THANK YOU

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