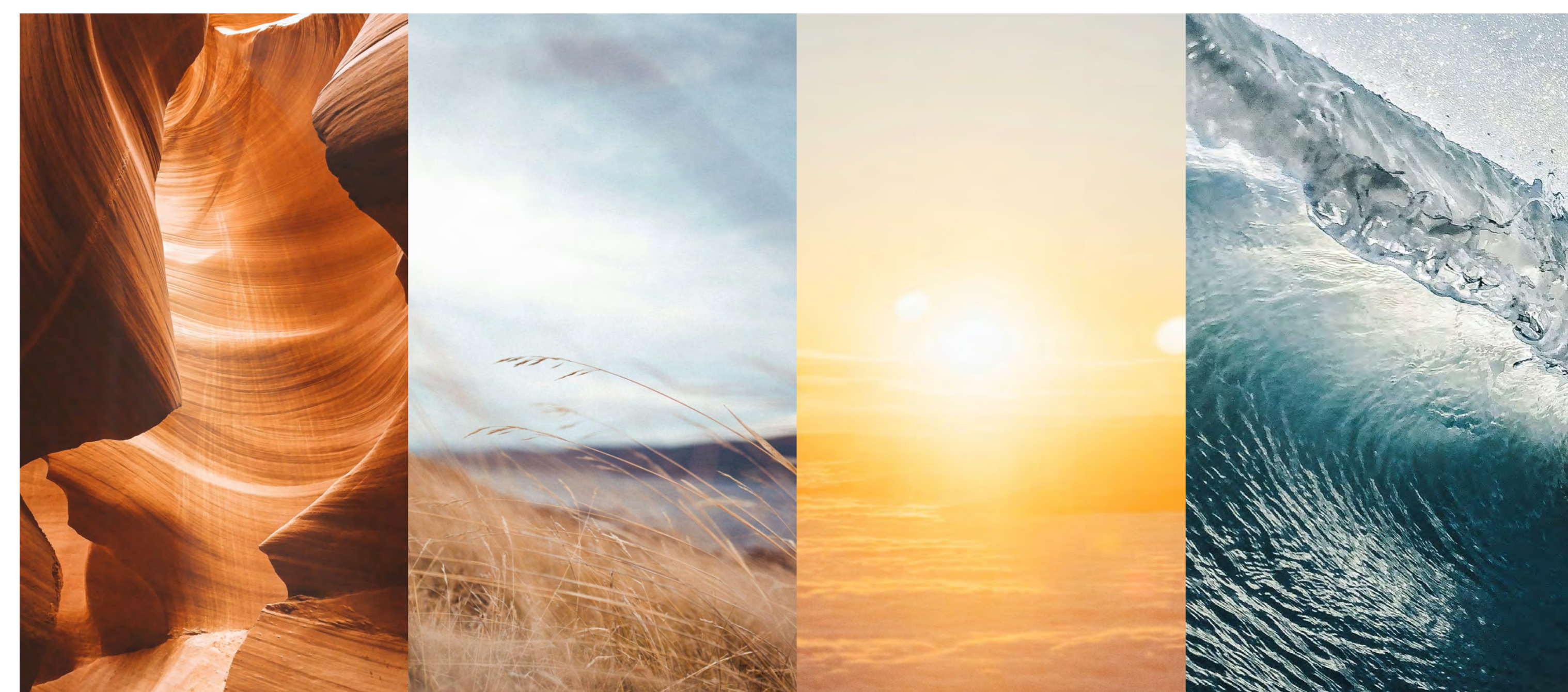
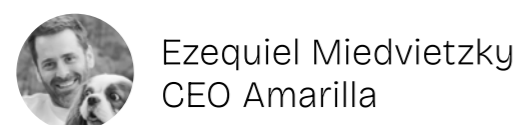


# WORLD SUSTAINABILITY AWARD

SUSTAINABILITY

10 INNOVATIONS THAT ALLOW US TO ACHIEVE THIS AWARD



## 01. Water Generation from the Air

Imagine a panel that acts like a sponge, catching moisture (humidity) from the air. Powered by sunlight, the panel chills itself, just like a cold glass on a hot day with condensation forming on its surface. This condensed water is the most pure drinking water possible (100%), delivered straight to the kitchen through a pipe.

**SOURCE** [visit -->](#)



## 02. Geothermal Passive

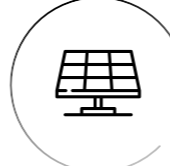
Inspired by ancient windcatchers, our system embraces the soil's stable temperature by burying pipes underground. This cooler soil temperature (summer condition) pre-cools fresh air as it flows through the pipes, reducing its temperature by several degrees before entering the air conditioning system. This air is fresh to renew the inside air.



## 03. Geothermal Active

Nineteen pipes, each buried 50 meters deep, act as a giant underground heat exchanger. Water circulates through these looped pipes, transferring heat from the warmer water to the cooler soil. This "warmer" water is actually relative to the Earth's constant temperature at that depth. The now cooler water then returns to the VRF Water system. This innovative approach utilizes the Earth's natural thermal energy, significantly reducing the energy needed.

**DAIKIN** [visit -->](#)



## 04. Solar Panel + Battery

This system integrates solar PV panels with battery storage and an intelligent energy management system for a comprehensive energy solution. Solar panels capture sunlight, generating clean electricity. The management system optimizes energy use, storing excess power and utilizing it during peak demand or low production periods, maximizing efficiency and grid independence.

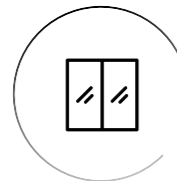
**AMPERE ENERGY** [visit -->](#)



## 05. Grey Water Systems

Giving water a second life. Our system captures leftover water from showers, sinks, and laundry (excluding detergent). After filtration, this "greywater" becomes a valuable resource for irrigation and toilets, reducing reliance on fresh water for these applications. We reduced significantly the use of fresh water.

**HYDRALOOP** [visit -->](#)



## 06. Solar Glass

These innovative panels are in size and shape like traditional windows, but with a hidden photovoltaic panel: generating clean energy. Sunlight strikes the special transparent layer within the glass, converting light into electricity. This electricity can then be used to power the building, reducing reliance on the grid.

**onyx SOLAR** [visit -->](#)



## 07. Intelligence through the house

Evolving beyond simple automation, this intelligent building system acts as the building's brain. Harnessing AI, it gathers data from occupants, weather, energy use, and many others. It analyzes this information and makes decisions. This "smart building" anticipates the needs, seamlessly integrating comfort and efficiency for a personalized experience.

**LOXONE** [visit -->](#)



## 08. Energy Management

This intelligent system learns habits, optimizes power for comfort, and adapting to dynamic pricing – all while keeping costs down. Like a smart circuit panel, it takes charge, making real-time decisions for efficient and accountable energy management.

**AMPERE ENERGY** [visit -->](#)



## 09. Soil Sensors

Soil sensors precisely measure moisture levels, optimizing irrigation for healthy growth and water conservation. Working in harmony with weather data, these sensors predict rain events and automatically adjust watering schedules.

**Honeywell** [visit -->](#)



## 10. HVAC Integration

This intelligent HVAC system integrates with presence sensors. By detecting room occupancy, it automatically adjusts temperature and airflow for optimal comfort while minimizing energy waste. Additionally, the system learns from usage patterns to pre-condition the space for occupant arrival, ensuring a comfortable environment without unnecessary energy consumption.

**Honeywell** [visit -->](#)

*“IT WAS A PLEASURE WORKING WITH AMARILLA ON THE SMART HOME IN KAUST. DESPITE MANY CHALLENGES, AND DURING THE HEIGHT OF THE COVID-19 PANDEMIC, WE WERE ABLE TO CONTINUE SUCCESSFULLY AND COMPLETE THE KAUST SMART HOME.”*



**Said H. Albader**  
King Abdullah University  
of Science and Technology

**SOURCE**

**DAIKIN**

**HYDRALOOP**

**onyx SOLAR**

**LOXONE**

**AMPERE ENERGY**

**Honeywell**