

Demonstration of High-performance ventilation,  
air conditioning, and showcase combined control  
to Food Supermarket in Asia  
(Co-Innovation Project 2020)

# Problem with Supermarkets

Condensation occurrence  
Can't see the product inside

Humidity

Mold occurs on the ceiling . . .  
Unsanitary !

Cold !  
I can not wait to go outside !

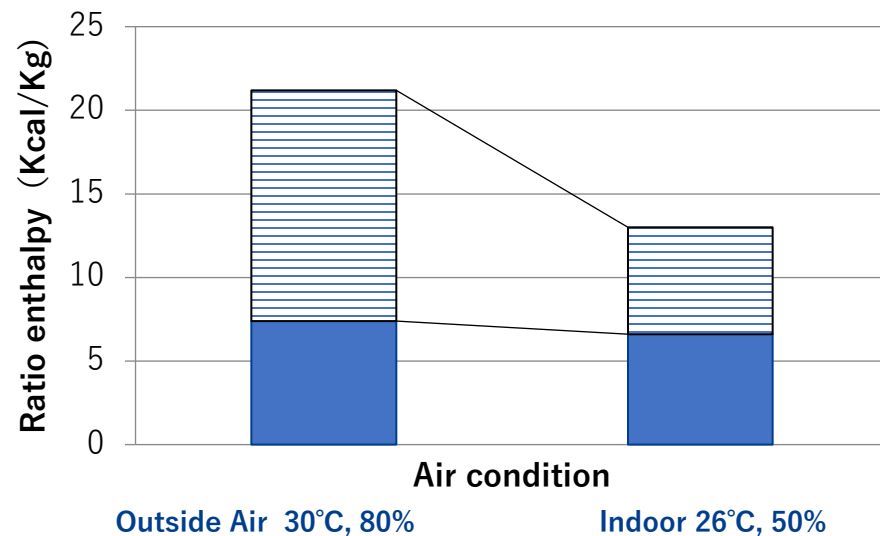


Vietnam is humid due to its high humidity, heavy rain  
And tropical climate



**Humidity** control is important !!

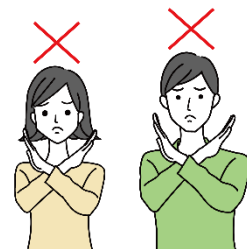
## Breakdown of air conditioner work (Summer)



Air Conditioner  
use energy to  
lower **humidity**  
rather than lower **temperature**



 Humidity  
 temperature



Controlling **humidity** with an  
air conditioner is  
inefficient

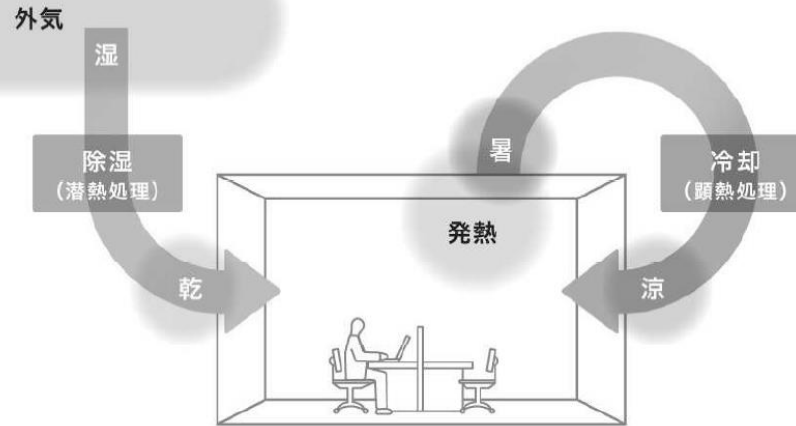
# Separation of work by desiccant and air conditioner

**Humidity** control is desiccant air conditioning  
**Temperature** control is air conditioning

## Dehumidification



Desiccant



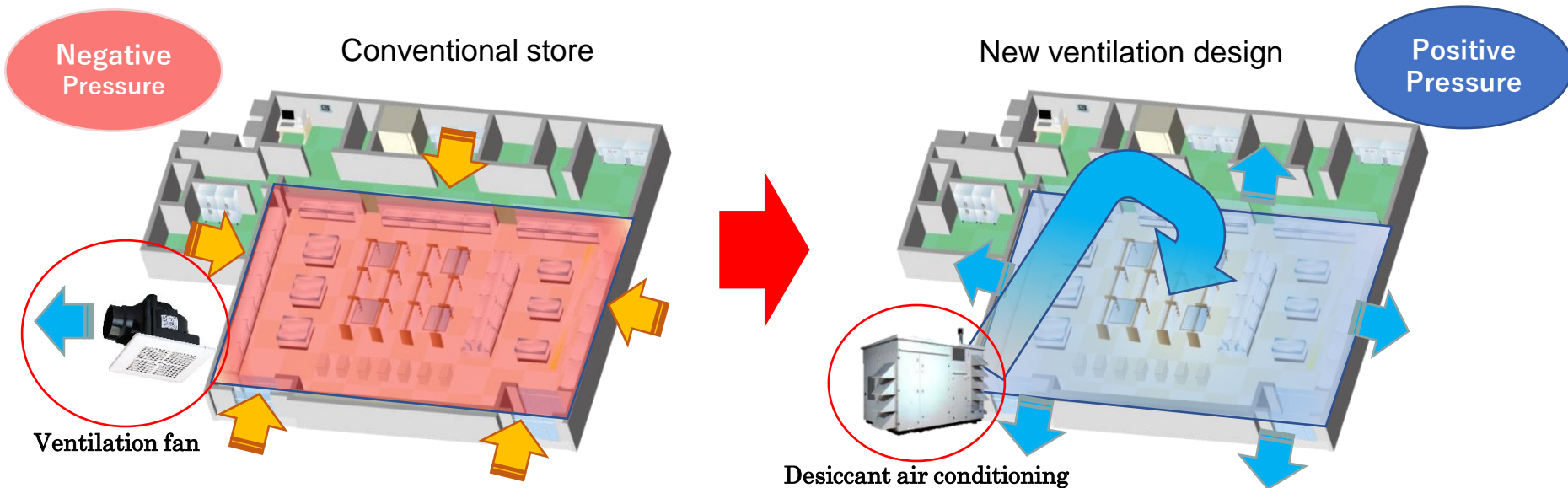
## Cooling



Air conditioner

However, the introduction of desiccant does not solve the humidity problem.  
A total of the entire store is required.

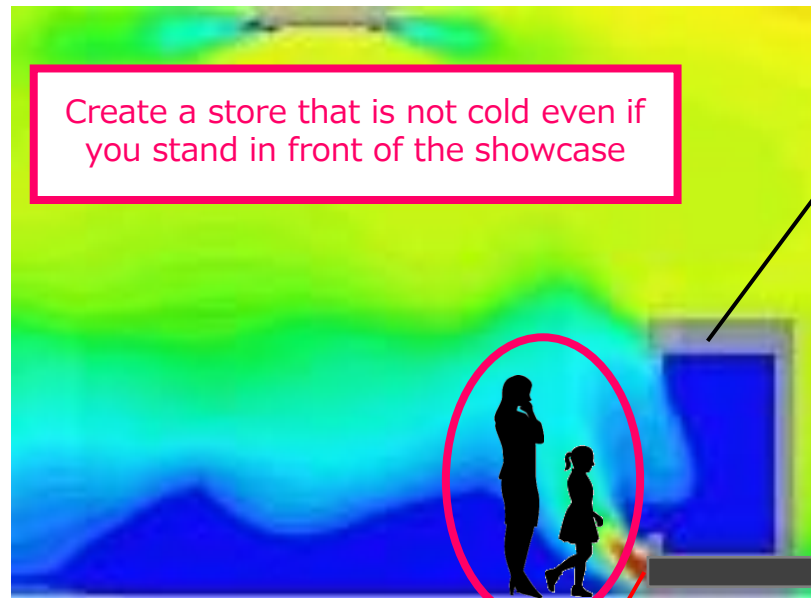
# Design points①



**In normal ventilation, high-temperature air containing a large amount of water enters from the entrance or gap in the store together with dust and bacteria in the air, creating a vicious cycle environment. Therefore, food supermarkets tend to reduce ventilation.**

**By using desiccant air conditioning, air with appropriate temperature and humidity is supplied to the store, so the environment inside the store does not deteriorate. In addition, a hygienic sales floor can be maintained with fresh air in which bacteria and mold are suppressed.**

## Design points②-1

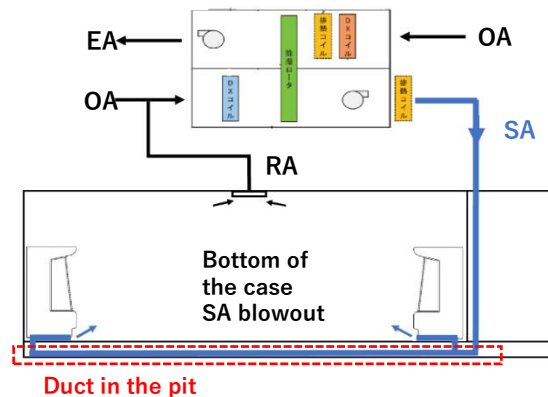


Showcase

Desiccant



Duct construction photo in the pit



Air processed by the desiccant air conditioner is supplied from the bottom of the showcase



## Design points②-2

### Regular store



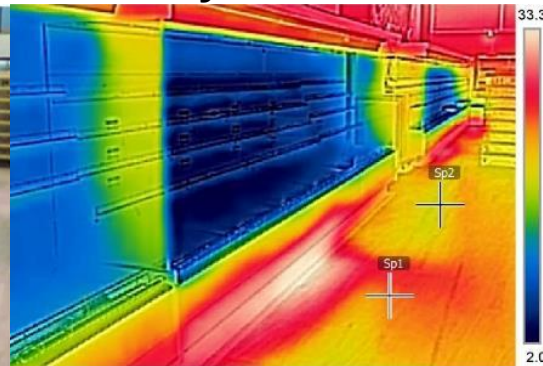
Sp1 : 14.9°C

Sp2 : 14.6°C



**The effect of raising  
the temperature by  
4 to 7°C at the  
bottom of case**

### Stores that have introduced the system



Sp1 : 22.3°C (with Desiccant SA Blowout )

Sp2 : 18.7°C (without Desiccant SA Blowout)

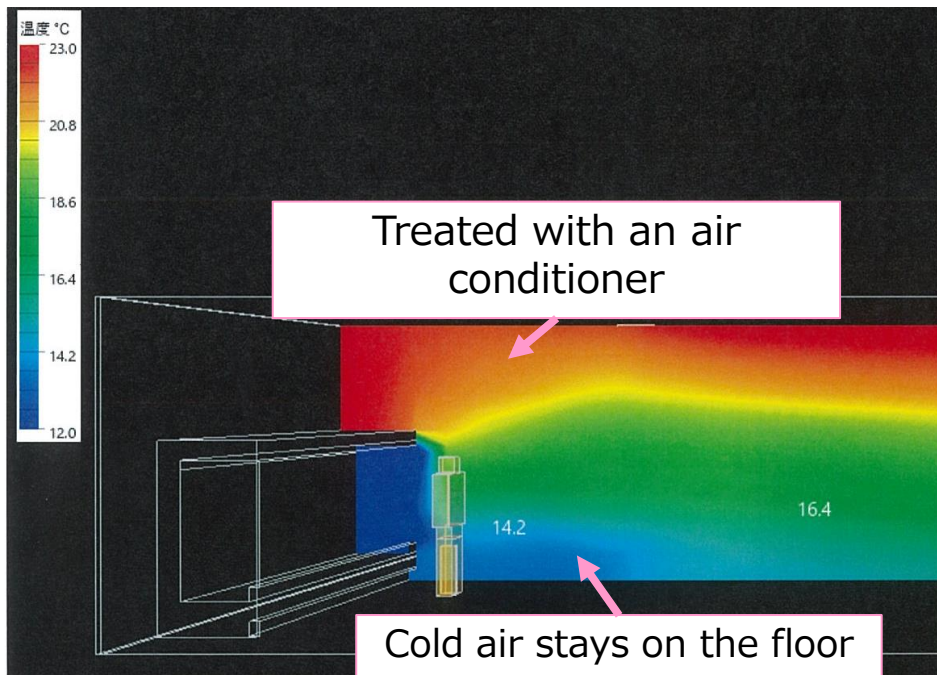
**Realization of  
comfortable space**

(It's not cold even in front of the showcase)

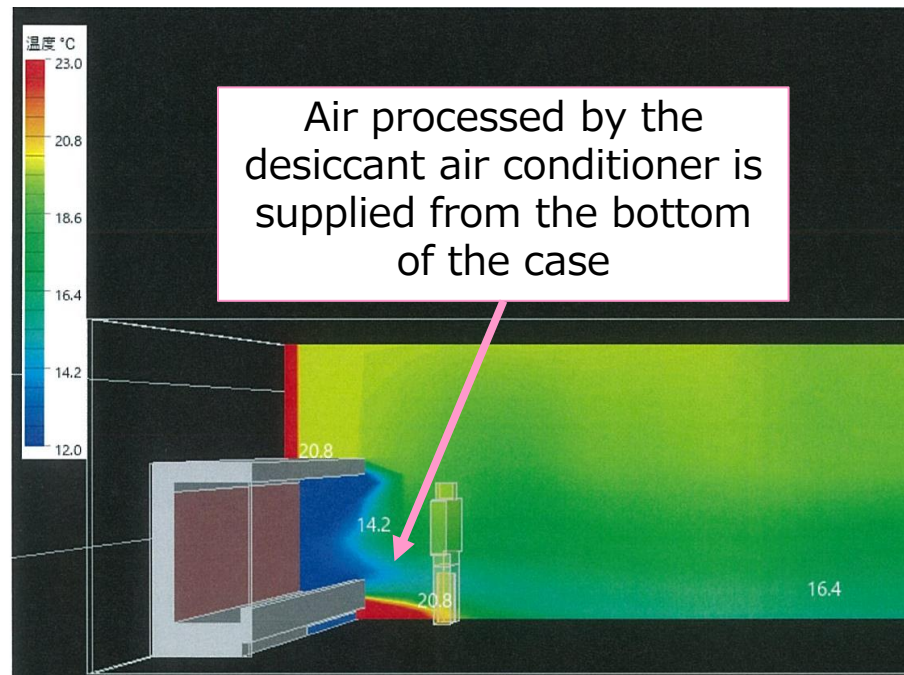


# Design points③

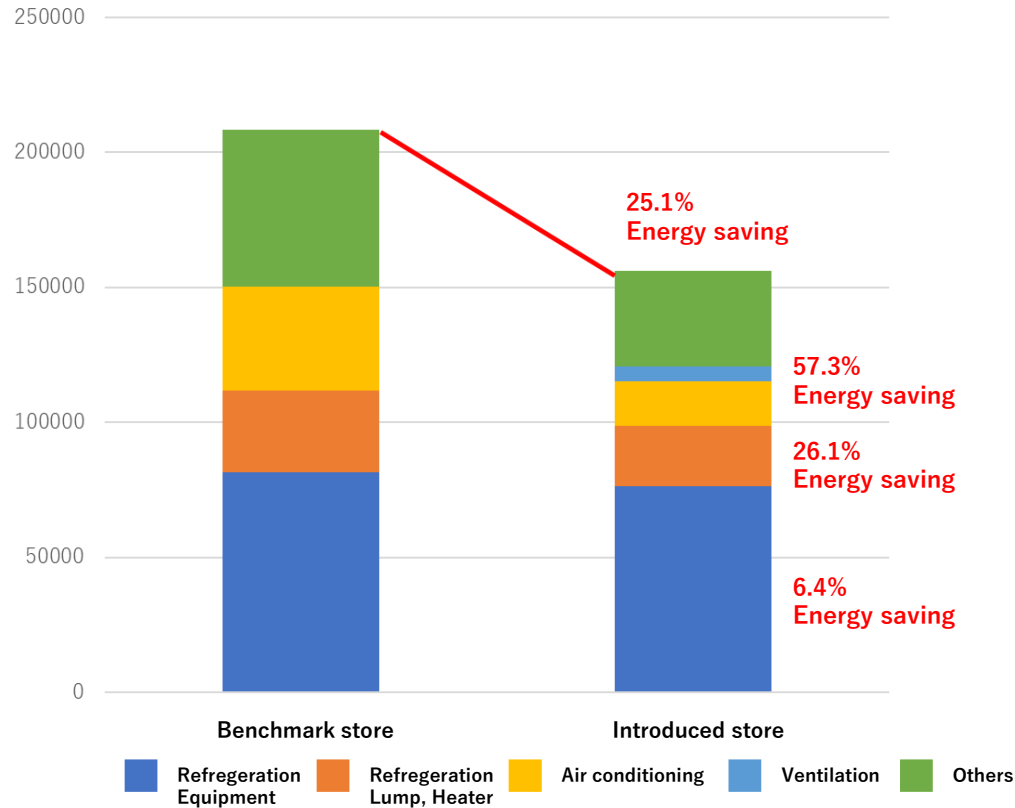
## Regular Store



## Stores that have introduced the system



# Energy saving effect



Achieved **20% or more reduction** in store power consumption in summer.

Energy saving effect exceeding the estimation was obtained throughout the year

# Improved problems

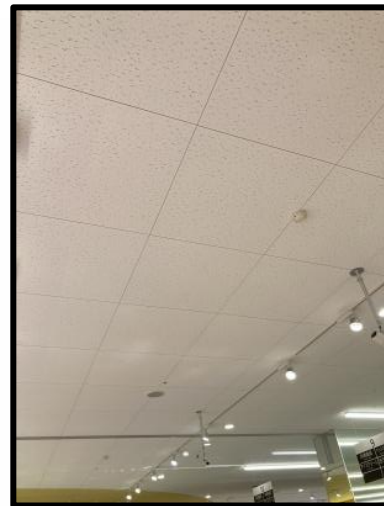
**No condensation !**

**You can see the product inside**

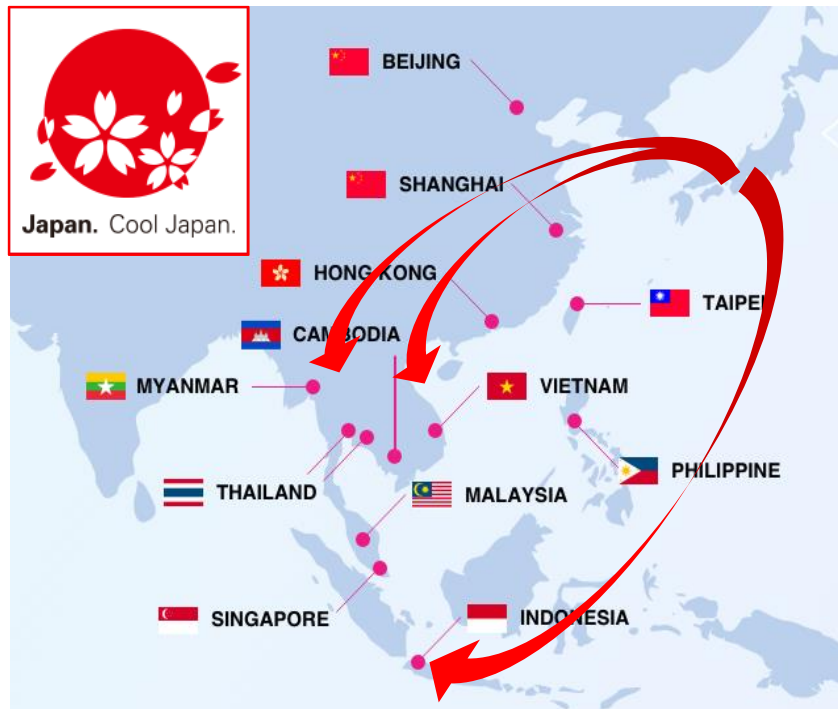
**Humidity**

**No mold**  
**Improved hygiene !**

**Comfortable store !**  
**You can shop slowly !**



# First overseas introduction



Two stores have already opened in Indonesia that have introduced the system in this demonstration



Desiccant unit



## Vietnam 1<sup>st</sup> Store

Scheduled to be held at AEON SORA garden Store in Ho Chi Minh, Vietnam. Please experience a comfortable Supermarket.

**Schedule to open in 2023.**



Based on the knowledge gained from this project, we aim to expand into supermarket in Asian countries.