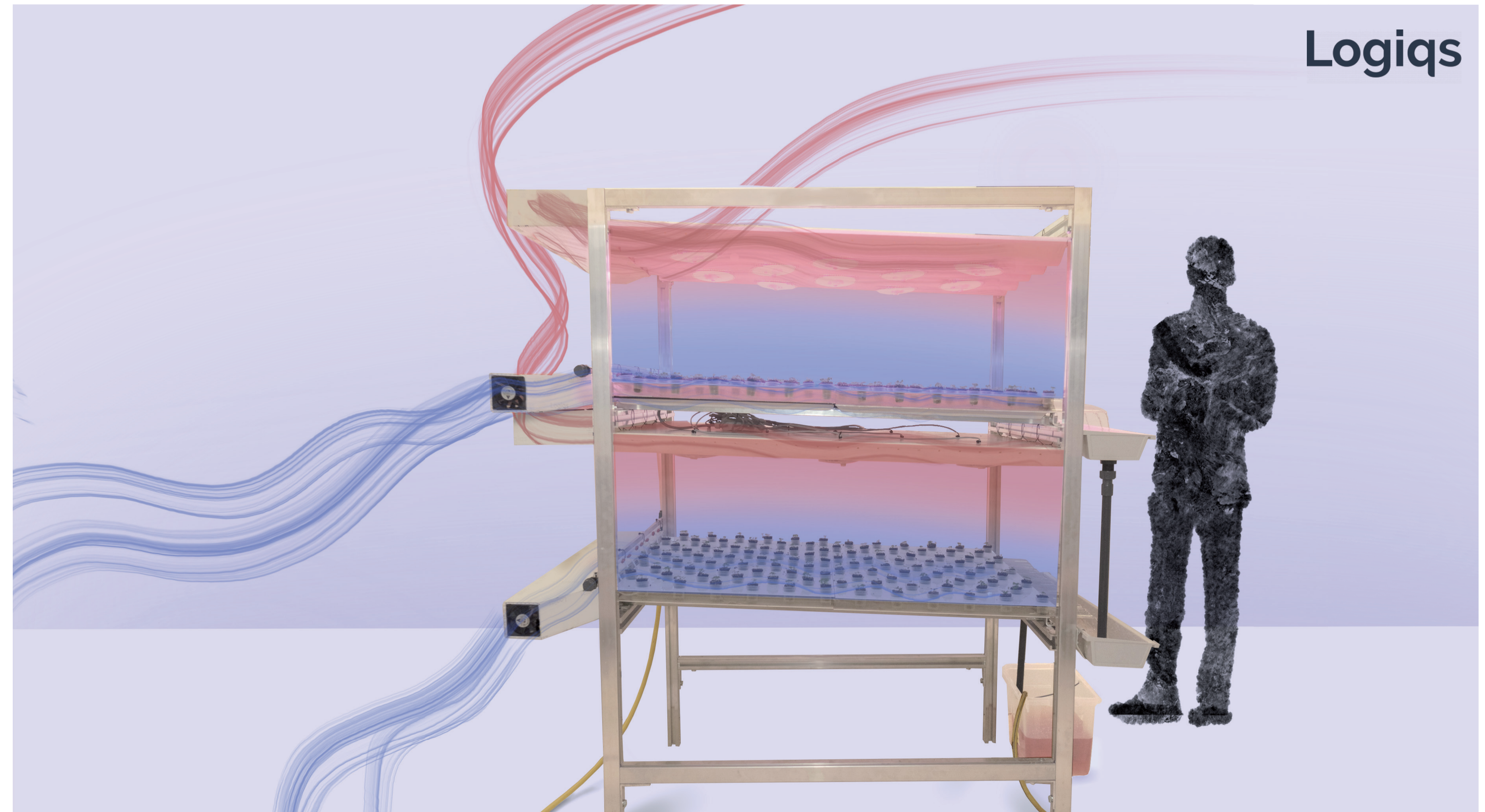


VERTICAL FARM GROWING TRAY

Enhancing the climate uniformity in vertical farms by growing trays with integrated ventilation for improved crop production.

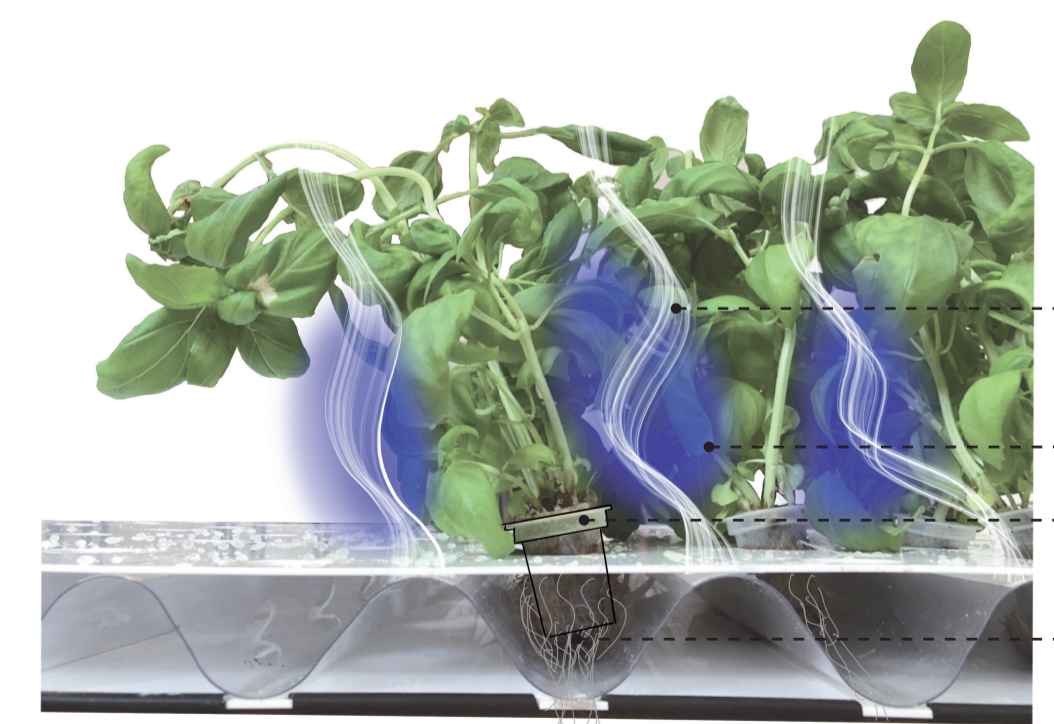
This project focuses on improving vertical farming by developing new growing trays with integrated ventilation channels that blow air vertically from beneath the plants. This vertical air supply ensures optimal air distribution within the farm and creates a microclimate at the plant level with ideal temperature, humidity, and CO₂ levels, promoting healthier and more efficient crop growth.

The farm system utilizes integrated LED lighting and a roof with perforations that lead to air channels, which exhaust air out of the farm structure. This design creates constant vertical air movement on every layer of the vertical farm, ensuring consistent and optimal growing conditions across all levels.



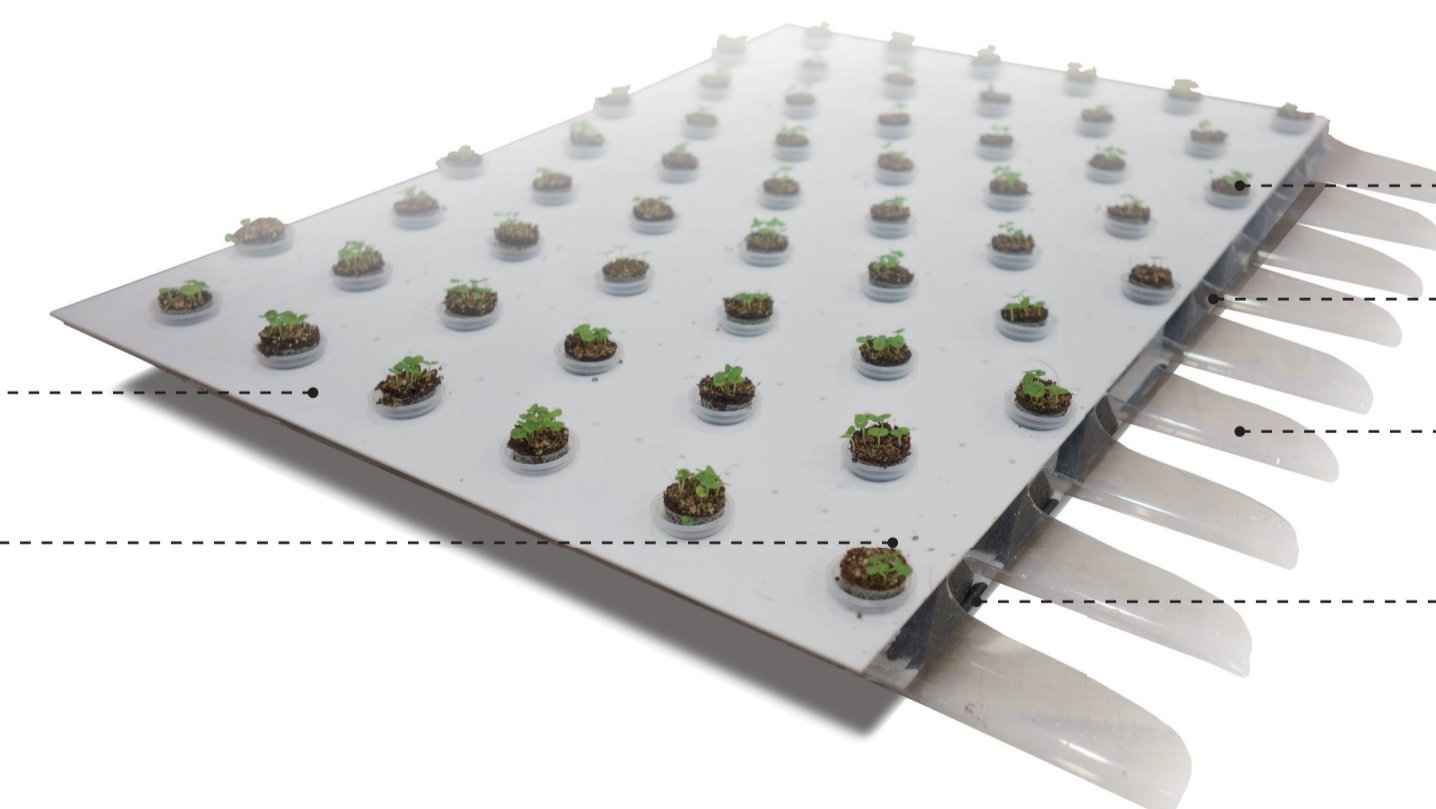
Logiqs

The growing tray features alternating water and air channels, making it space-efficient. The trays can be connected end-to-end, creating long rows of growing trays through which air and water can pass smoothly. This modular design allows for easy expansion and customization, enhancing the scalability and versatility of the vertical farming system.



Microclimate Buildup
Air Punctuations
Plug
Plant Roots

White PVC plate for light reflection and washability
3.2 mm hole for 0.2 m/s airflow



Holes for inserting the plant plugs
Caps for air channel to create an overpressure
Male parts for connection with new plate
Rubber trip for better connection and less air leakage

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