

concept + theory

community

history + context

the **THEORY** behind
the **CONCEPT** of
VERTICAL FARMING
what's all the hype about?

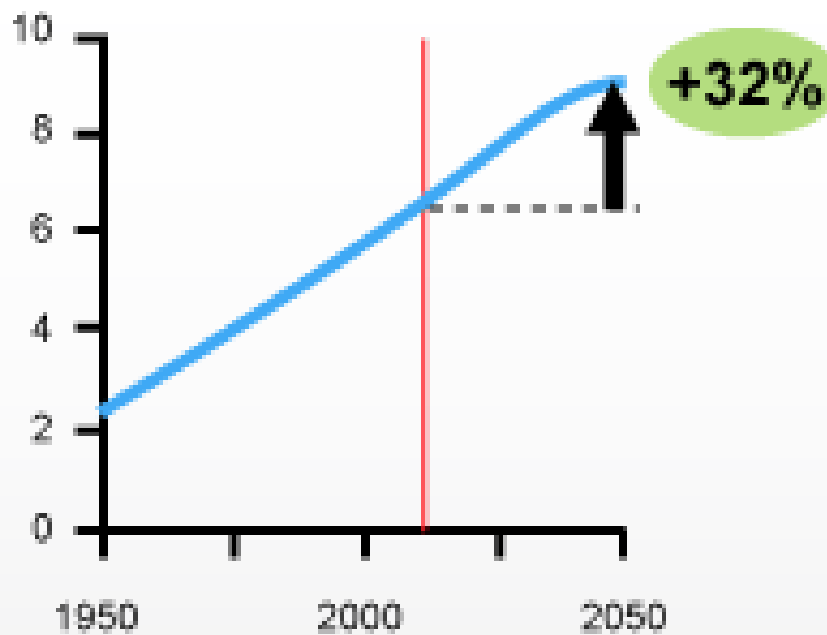
[charleston]
VERTICAL FARM



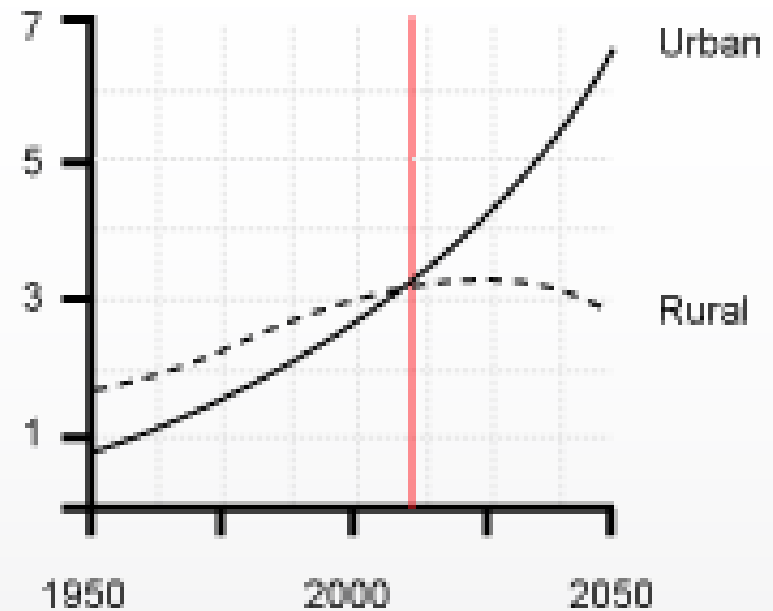
by 2050 the human population will increase by 3 billion and 80% of people will live in cities

POPULATION: 2050 population to reach 9bn

World population forecast
(billions of people)



Urbanization tipping point
(billions of people)



Source: UN Department for Economic and Social Affairs, DESA, and UN Habitat, Living Planet Report, 2005

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currently, traditional agriculture makes it difficult to achieve **profitability**, **distances customers** from their food and **hurts the environment**

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the fact is that **bad weather** makes farming difficult, risky and uncertain. Millions of tons of **valuable crops are lost** to hurricanes, floods, long-term droughts, and monsoons **every year**

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so what is the **solution?** how do we revolutionize the **food system?** a new kind of **farming** has to emerge



urban farming



sky farming



vertical farming

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THE URBAN FARM

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VERTICAL FARM



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THE URBAN FARM

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VERTICAL FARM



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THE SKY FARM

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VERTICAL FARM



The Living Skyscraper: Farming the Urban Skyline | Blake Kurasek



Pierre Sartoux's Living Tower | Gordon Graff

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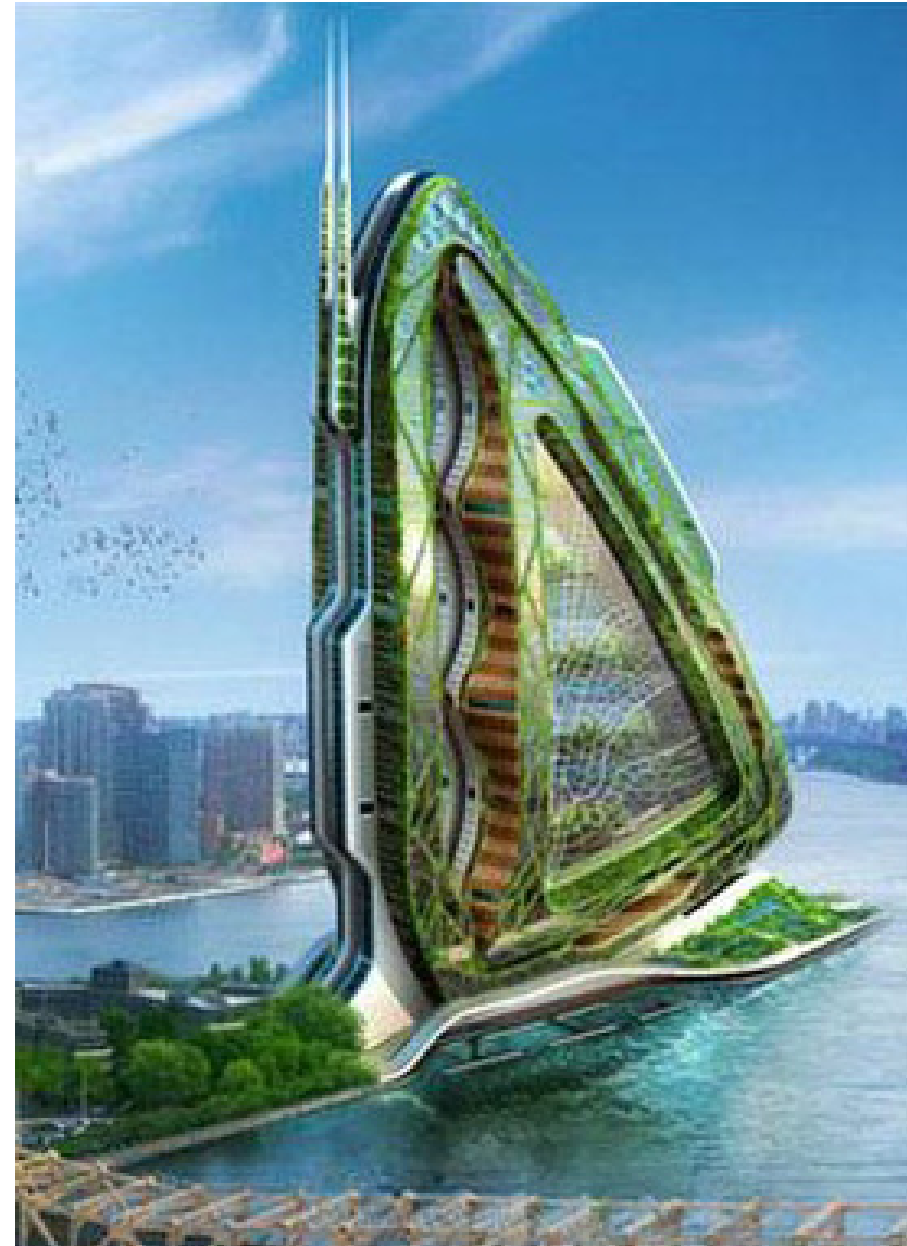
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THE SKY FARM

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VERTICAL FARM



La Tour Vivante | SOA Architects



Dragonfly | Vincent Callebaut

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THE VERTICAL FARM

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VERTICAL FARM



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THE VERTICAL FARM

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VERTICAL FARM



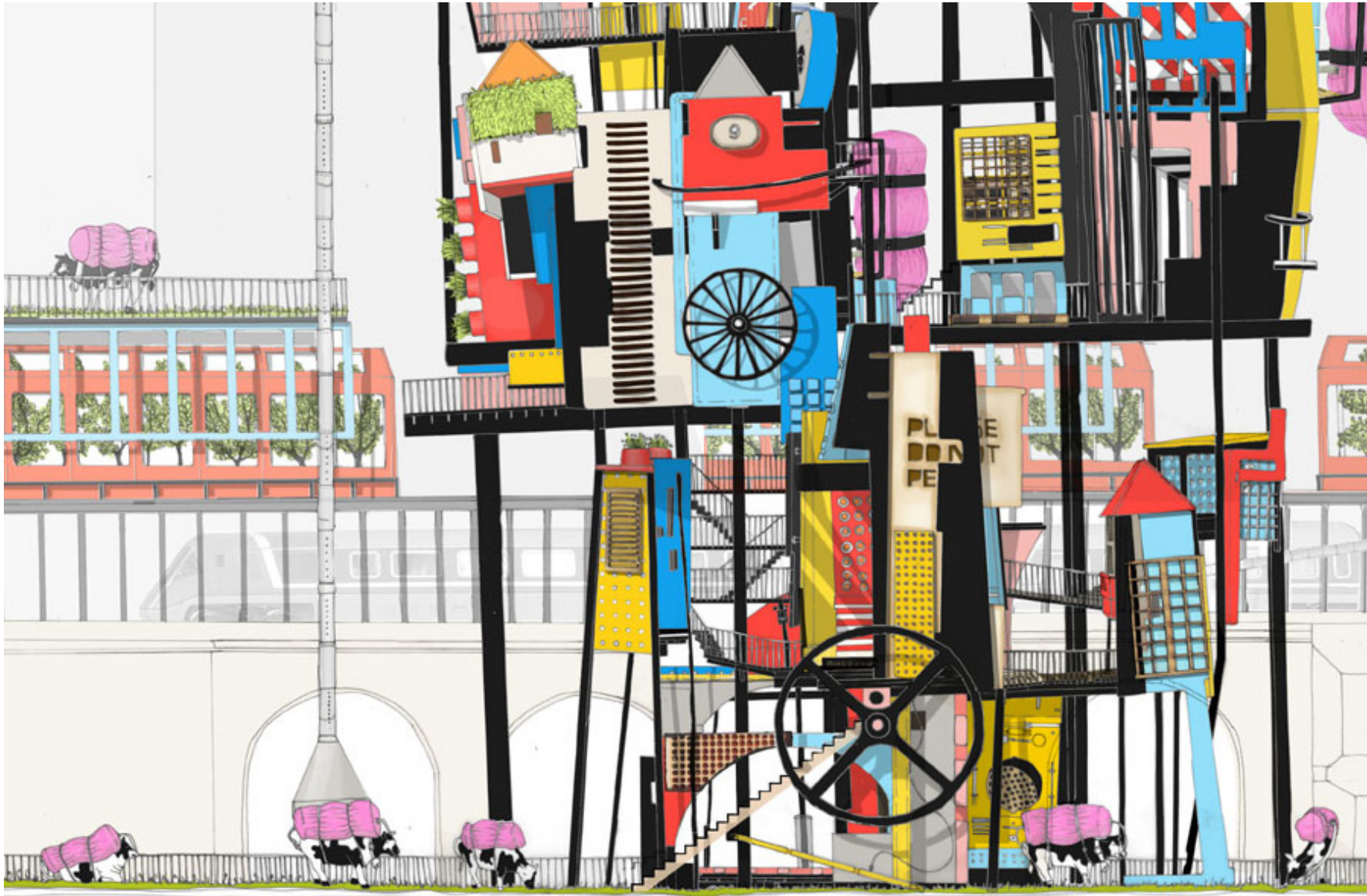
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THE VERTICAL SOLUTION

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VERTICAL FARM



The London City Farmhouse by Catrina Stewart

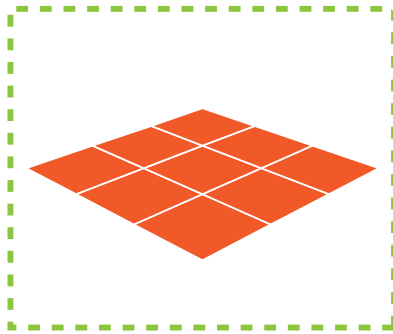
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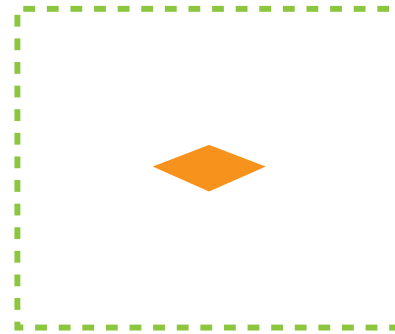
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HORIZONTAL VS. VERTICAL

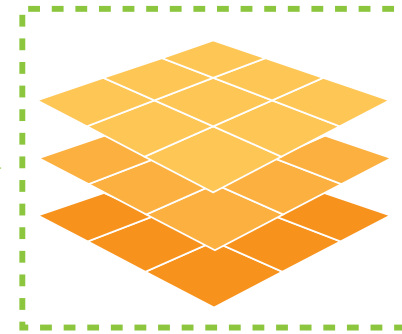
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VERTICAL FARM



9 acres in a
horizontal farm...



equals 1 acre in a
vertical farm...



27 vertical farm
acres is equal to
243 horizontal
farm acres

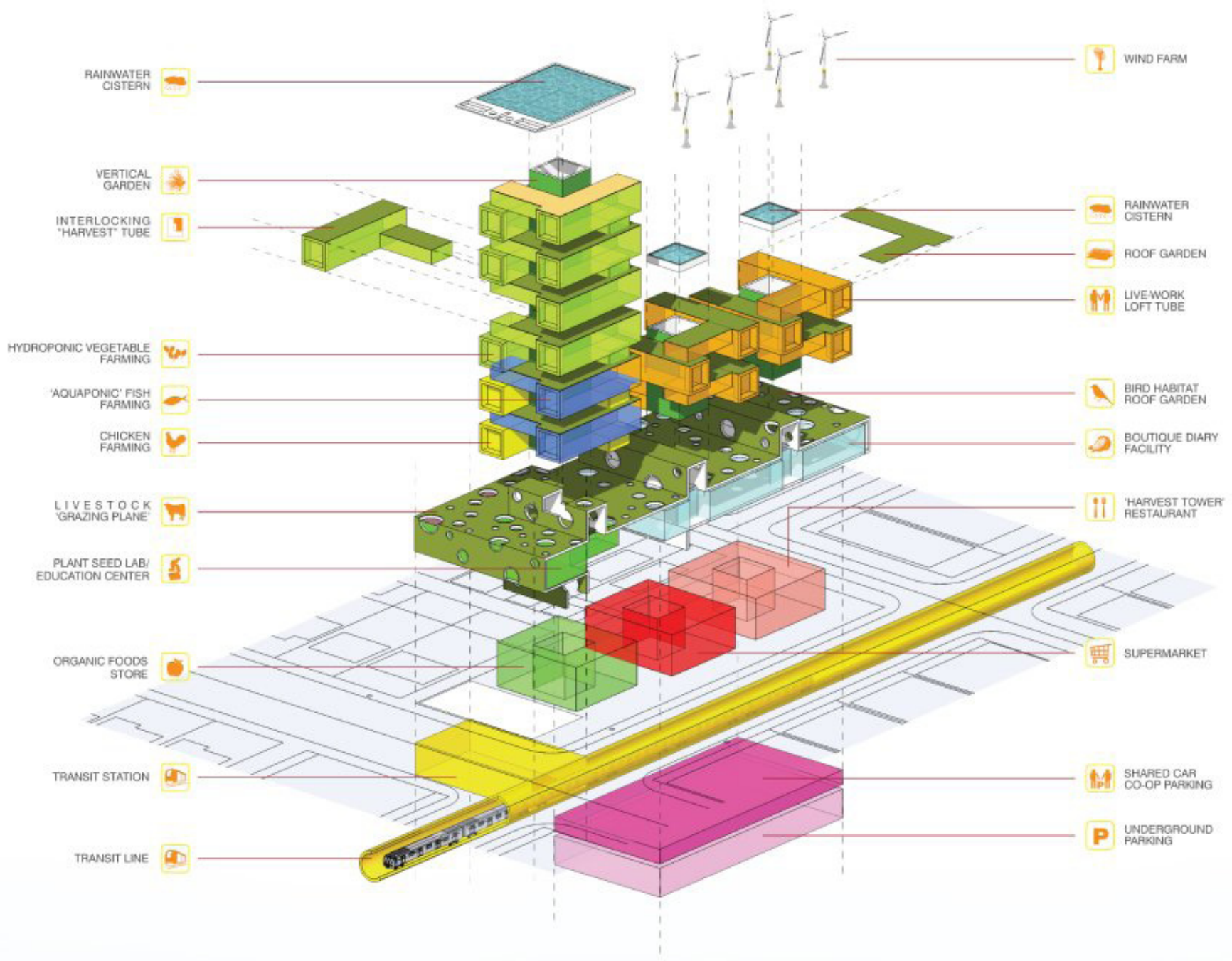
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VERTICAL STACKING

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COMMUNITY INTEGRATION

what do we get out of it?

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FARMING



COMMUNITY

How can the vertical farm design target each of these groups within the community?



CROPS



FARMERS MARKET



PEOPLE



EDUCATION



RETAILERS



RESTAURANTS

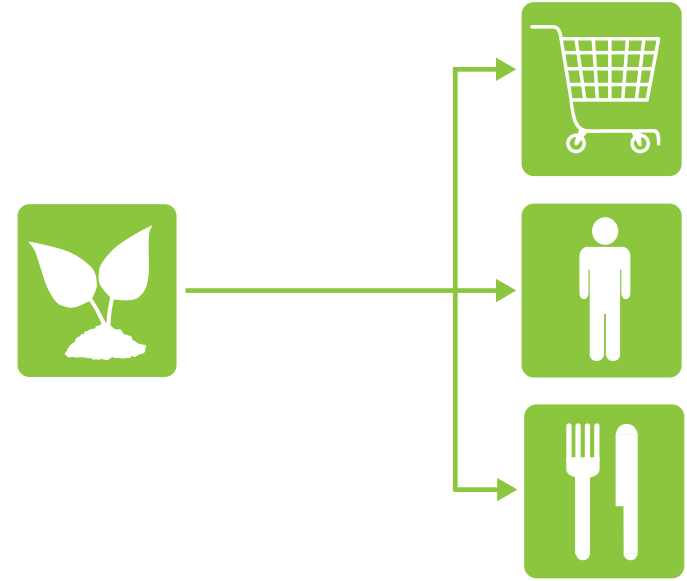
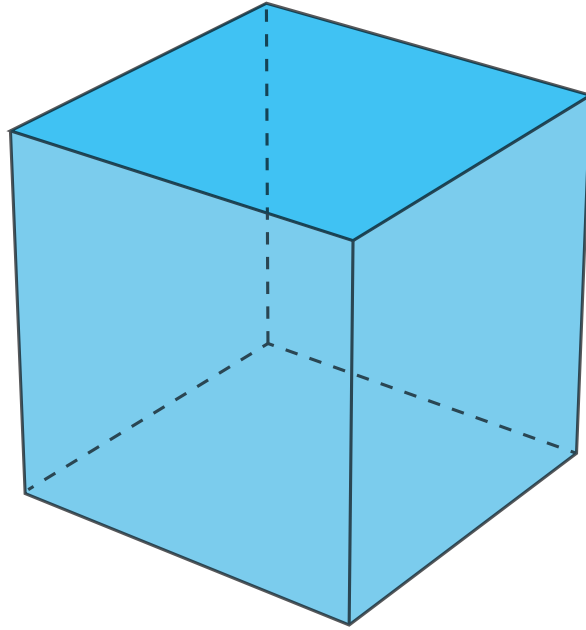
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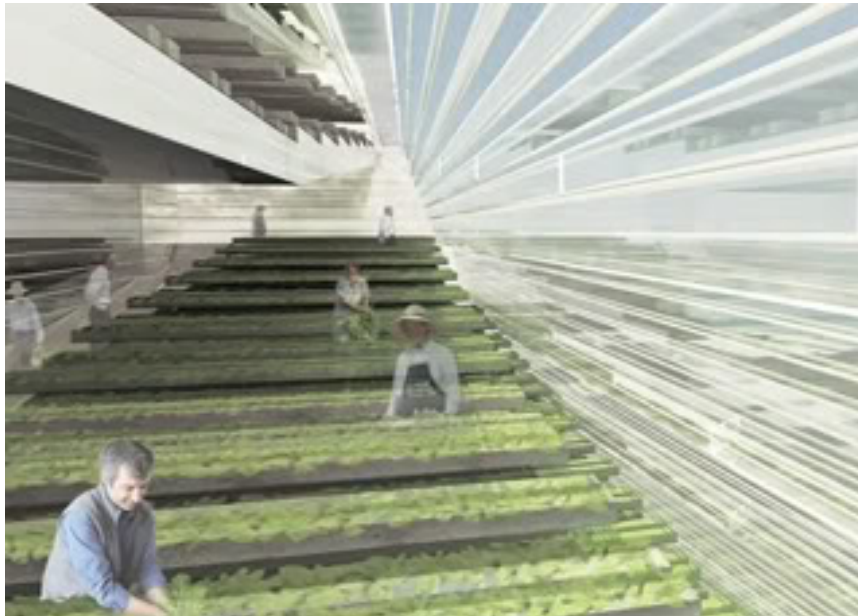
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THE "U-PICK" SYSTEM

level of integration: high



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VERTICAL FARM



Urban Farm, Urban Epi-center | Jung Min Nam



Vertical Farm | Victorian Eco Innovation Lab

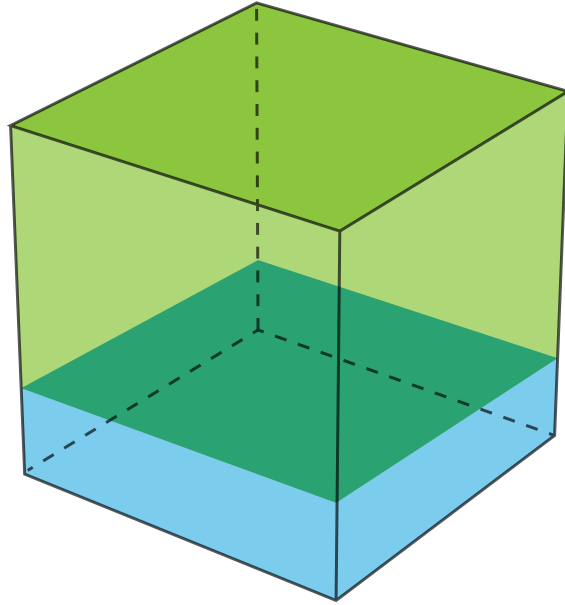
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THE FARMERS MARKET

level of integration: medium



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VERTICAL FARM



Vertically Integrated Greenhouse | Kiss + Cathcart Architects



Vertical Farm Outdoor Market | TKWA + Growing Power

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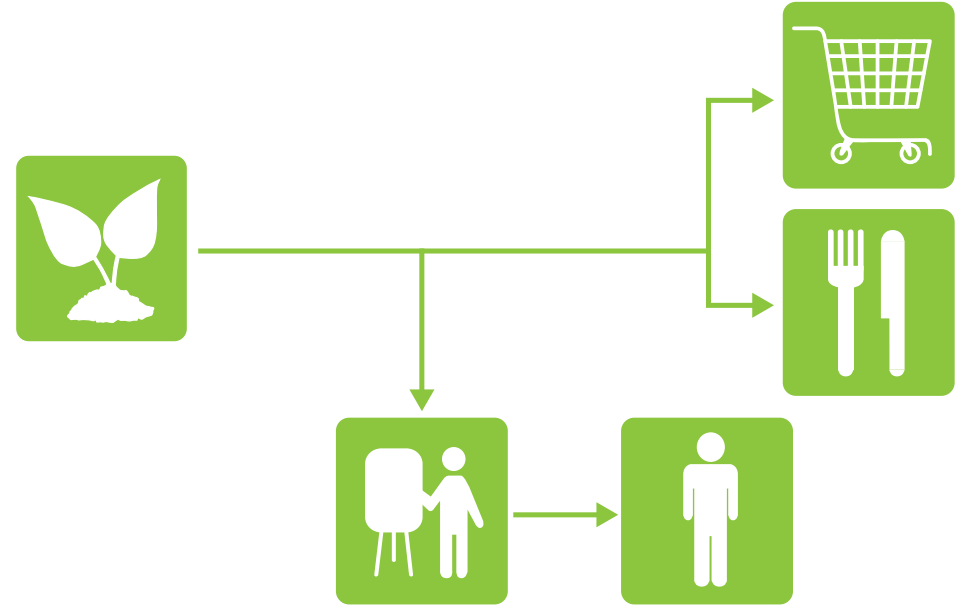
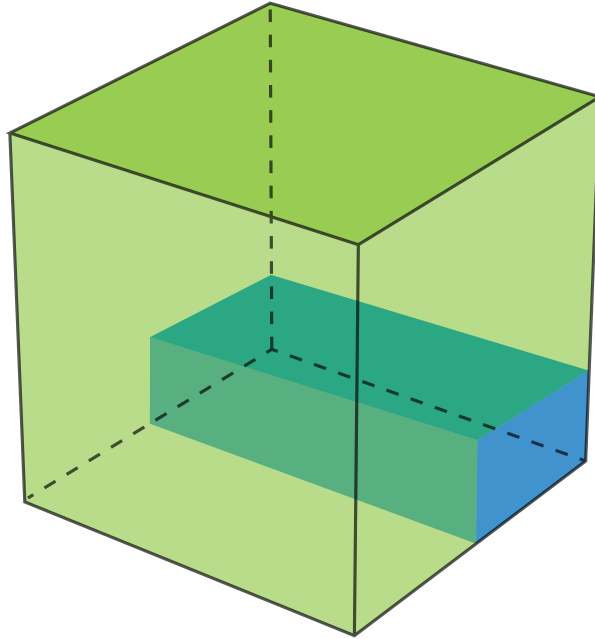
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THE EDUCATION LAB

level of integration: medium

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VERTICAL FARM



Singularity University | Agropolis



Eco-Laboratory | Weber-Thompson

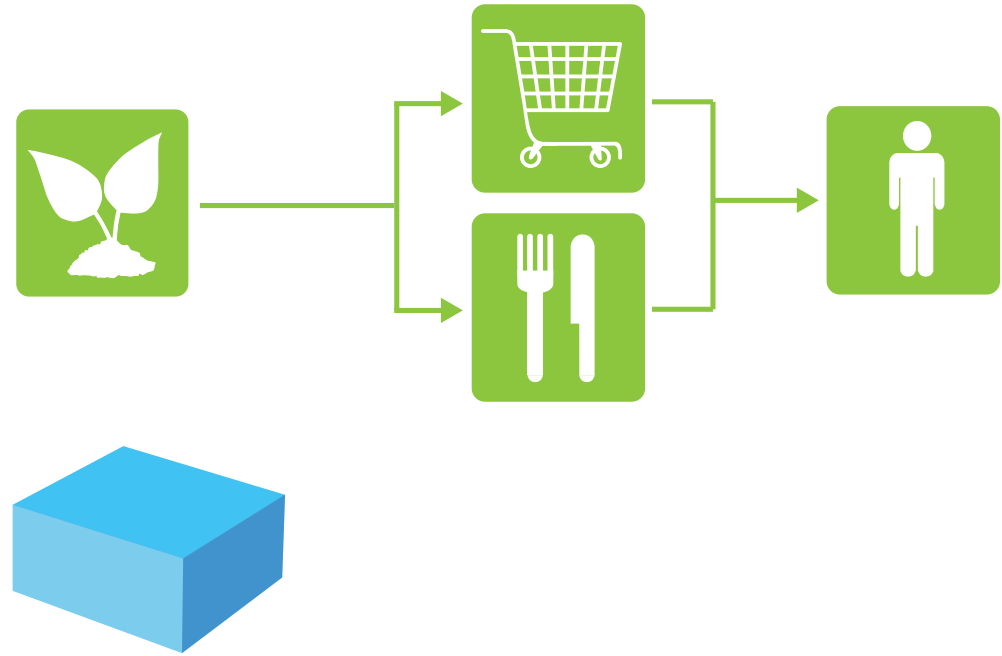
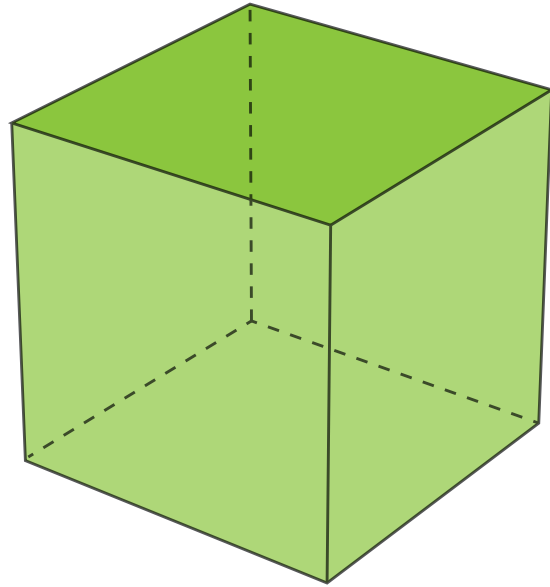
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THE EXPORT SYSTEM

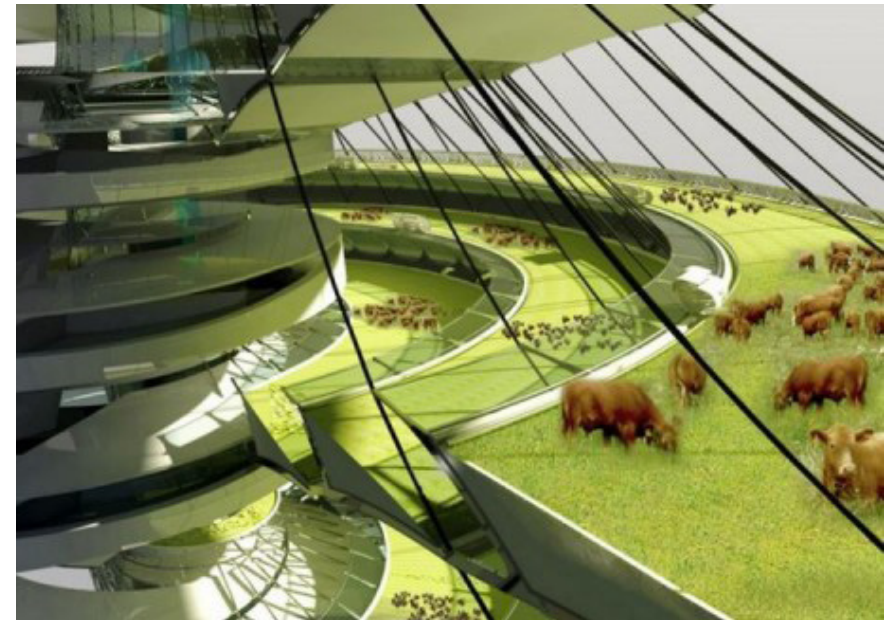
level of integration: low



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VERTICAL FARM



Vertical Farm | Chris Jacobs



Vertical Farm | Lee Dongjin, Park Jinkyu, Lee Jeongwoo

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VERTICAL FARMING FOR THE COMMUNITY

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VERTICAL FARM

