

Jones Food Company.

What is vertical farming
and what are the
considerations when
applying it in a real world
scenario?





Jones Food Company



“We take a long term view in terms of how vertical farming will be able to solve many of the UK’s food production issues, but we’re also working tirelessly to ensure we’re innovating now to ensure scale and accessibility.”

James Lloyd-Jones, CEO & Founder, City Food Lecture 2022

What is vertical farming?

“The activity of growing crops in many layers, one above the other, inside a building or under the ground, often in a specially controlled environment.”

Cambridge Dictionary



The vertical farming process.

1. Build controlled environment

Controlled inputs: light, water, nutrients, temperature, humidity



2. Seeding & Germination

Bespoke seeding density and germination period per crop



3. Growing

Accelerated grow time producing daily yields



4. Harvest & Goods Out

JFC2 - Automated harvester
JFC1 - Hand cut (basil)



Why the need for innovation?

Food Security



Mass crop failures expected in England as farmers demand hosepipe bans

Leaked documents predict crop failure rates of up to 50% as water companies resist calls to prioritise food production



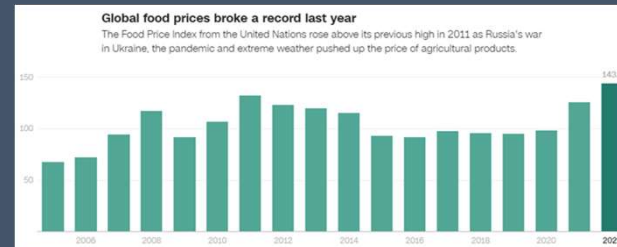
World's population is now 8 billion, according to UN

15 November 2022 • Comments



There are eight billion people living on Earth today, according to the United Nations (UN).

Nutrient Security



Global soils underpin life but future looks 'bleak', warns UN report

It takes thousands of years for soils to form, meaning protection is needed urgently, say scientists

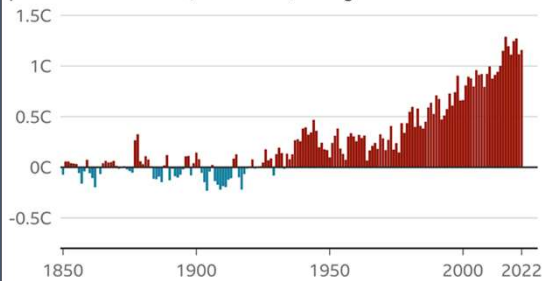


Scientists describe soils as like the skin of the living world, vital but thin and fragile, and easily damaged by intensive farming, forest destruction, and pollution. Photograph: Zsolt Czeglédi/EPA



The world has been getting warmer

Change in annual average global temperature from pre-industrial levels (1850-1900) in degrees C



Note: Average calculated from HadCRUT5, NOAA GlobalTemp, GISTEMP, ERA5, JRA-55 and Berkeley Earth climate datasets

Source: Met Office



The benefits of vertical farming.



Sustainability

1. Small physical footprint
2. No chemical pesticides.
3. Reduced water use
4. Efficient fertiliser use

Supply

1. Consistent Yield
2. Consistent Quality
3. Consistent Price

Jones Food Company Estate

2018 JFC1 - N. Lincolnshire



Proof of concept site

5,000m², 150T+ annual growing capacity
Supplying 30% of UK's cut basil
JFC's flagship facility

2022 JFC R&D - Bristol



Testing new products/varieties

Six distinct growing rooms
Trialling leafy greens, soft fruits, cut flowers
Allows for rapid integration of successful varieties
into commercial facilities

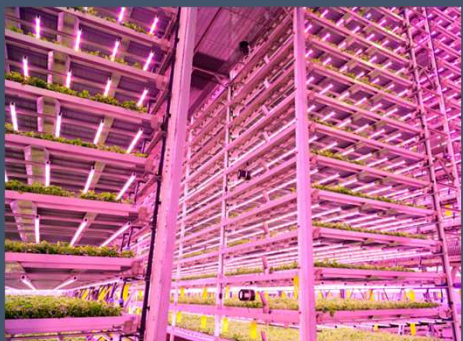
2023 JFC2 - Gloucestershire



3X JFC1 grow space with new processing capabilities

15,000 m², 1,000T+ growing capacity
100% renewable energy on launching
On site packaging facilities
Integrate all learnings and improvements from JFC1

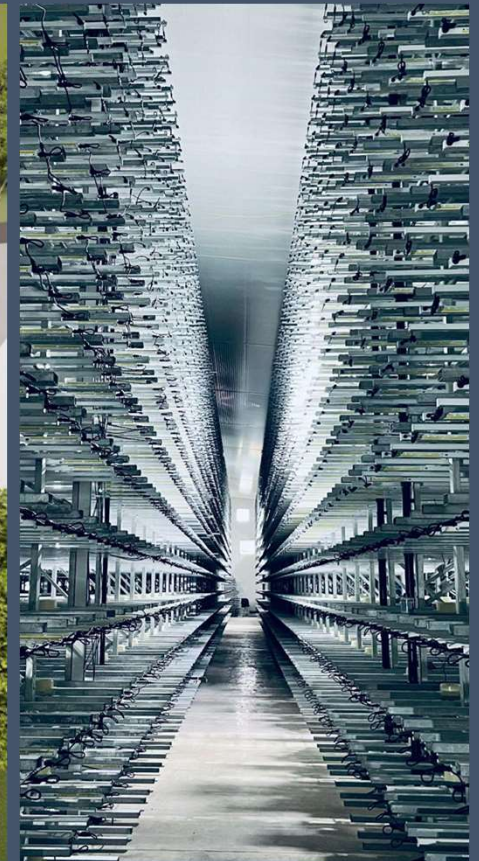
2018 JFC1 - N. Lincolnshire



2022 JFC R&D - Bristol



2023 JFC2 - Gloucestershire



The core grower considerations.



1. Growing Substrate
2. Growing Inputs
3. Growing Security



Thank you.
Any questions?