



Vertical farming: in a nutshell



Vertical farming in a nutshell

Every nation around the world needs a sustainable and secure supply of fresh, affordable and nutritious food, and this need is growing in intensity across the globe. The need for nutritious food is also rapidly increasing. Over 51 per cent of global consumers in 2021 desire to incorporate more healthy food into their diet¹.

It is increasingly believed that such supplies should be available even more locally, at community level, as close to the point of consumption or production as possible to minimise waste and reduce climate change impact.

Moving food from distant farms is responsible for 25 per cent of all miles covered by heavy goods traffic in the UK. Transporting food within, to and around the UK produces 19 million tonnes of CO₂ annually - equivalent to around 5.5 million typical cars².

Farming everywhere is straining under the constant increase in demand and the crippling decrease in arable land on which to grow. According to the UN State of Food Security and Nutrition World Report released in 2020, over 50 per cent of habitable land in the world is currently used for agriculture³.

If we are to produce enough to feed the global population, which the UN projects to grow from the current 7.6 billion now, to 9.7 billion by 2050, we will need new food production innovation.



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1. <https://www.fooddive.com/news/consumer-trends-shifting-toward-health-and-wellness-adm-finds/584388/>
2. <https://www.bbcgoodfood.com/howto/guide/facts-about-food-miles#:~:text=DEFRA%20estimates%20that%20moving%20food,travel%20to%20buy%20our%20food.>
3. <http://www.fao.org/3/ca9692en/CA9692EN.pdf>

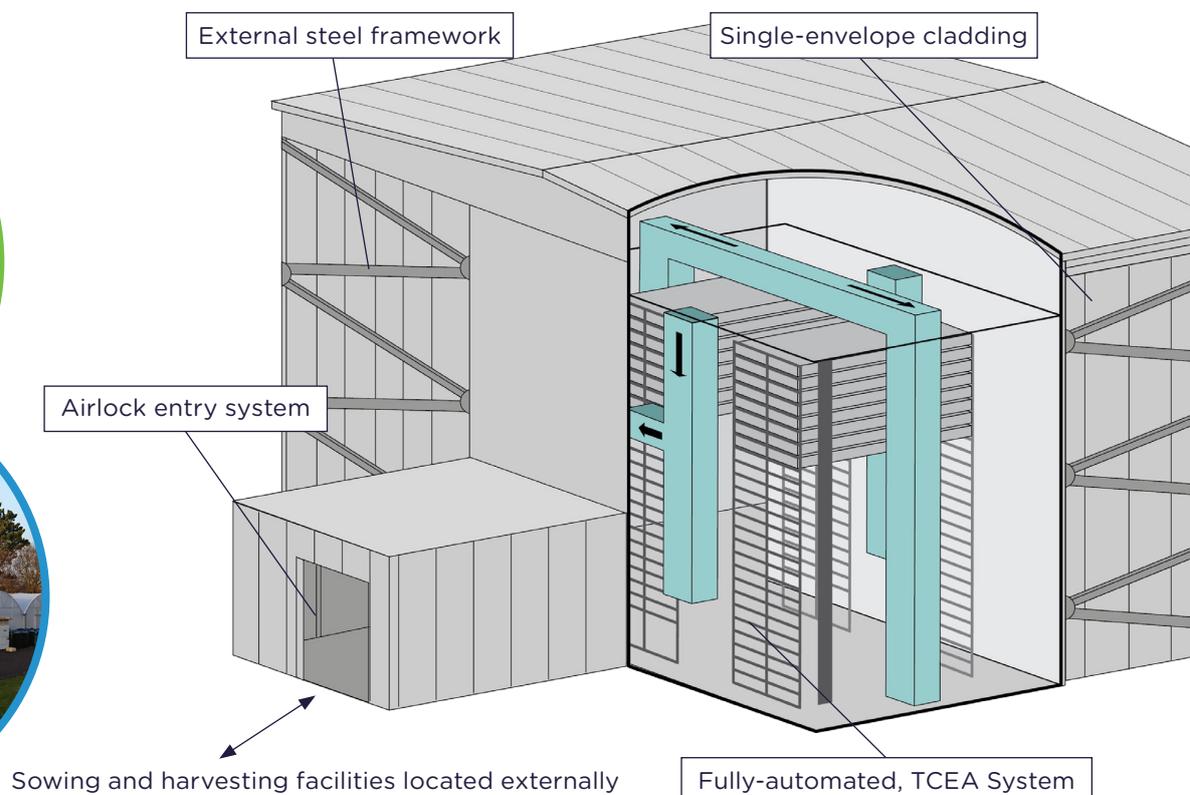
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Vertical farming offers a progressive, modern way to complement traditional farming methods, so that the planet can sustain this increased demand for food. As farmers and other growers put greater emphasis on sustainable food security and surety of supply chain, vertical farming is being recognised as an increasingly valuable way to diversify and drive efficiency. However, it is not a silver bullet and will never completely replace traditional farming.

Different forms of vertical farming have different costs, efficiency and scalability. Our specialism at IGS is in enabling Total Control Environment Agriculture (TCEA) - a very precise and fully automated but industrial-scale approach to indoor growing based on the latest agritech methods.

IGS technology is designed to optimise the growth of produce indoors on a small footprint of land. Here are some of our specifications:

- Minimum growing area, two towers plus airlock: 200m²
- Minimum growing area, four towers (recommended) plus airlock: 307m²
- Minimum service area: 500m²
- Superstructure heights: 6m, 9m or 12m
- Growth Trays per tower: 32, 52 or 72 (according to height of tower)
- Growth Tray size: ~6m²



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The rectangular trays can be individually controlled to provide optimal conditions for growth, with remote monitoring and adjustment via an app. Each tray can have a unique microclimate which is easily altered for every crop cycle and even during crop cycles.

A vertical farm is an industrial agritech machine rather than a building. Its modular setup allows for quick and simple replacement of water filters, lighting, trays and other components of the system. It suits seed-to-harvest for various crops, such as leafy greens, and fruit or root plants for propagation, such as strawberries and seed potatoes.

Farmers, producers, retailers and even governments can use vertical farming to sustainably improve their food security and ensure their supply chains, while reducing their carbon footprint and food miles.

Even today, feeding the people of the world is a great challenge. Current UN estimates show that the number of people affected by severe food insecurity is trending upward. In 2019, close to 750 million – or nearly one in ten people in the world – were exposed to severe levels of food insecurity.

Vertical farming is just one of many new industrial agritech solutions to help increase the efficiency of the supply chain and complement traditional farming. Our goal at IGS is to efficiently feed people across the world not only today but for many years to come.

For more information, please get in touch at intelligentgrow.io.



Farmers, producers, retailers and even governments can use vertical farming to sustainably improve their food security.

Build a vertical farm where plants thrive through a fully controlled environment.

IGS has an international profile for its approach to vertical farming. We achieved global press coverage for our innovations. Leading publications such as The Economist, The Financial Times and the BBC have reported on the productivity and efficiency benefits we create, plus our systems' engineering and technical excellence.

IGS is multi award-winning with accolades received from peers and independent observers across industry, environmental and professional services organisations, in recognition of the systems and approach that we have developed for the market.

[Click here to find out how you can build a vertical farm](#)

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