



**CHANGING THE FUTURE  
IN AGRITECH AND  
ADVANCED  
MANUFACTURING**

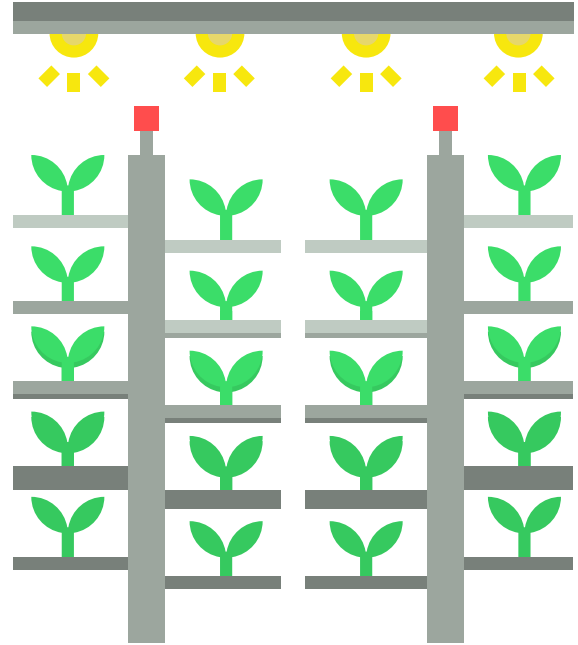
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March 2021

## **GBS Vertical Farms – Really modular – really sustainable, higher yield and... realistic.**

Sustainability building specialists, Green Build Systems, have launched their latest exciting range – The **GBS Modular Vertical Farm** a unique and sustainable vertical farm system designed to offer flexible solutions in an ever-changing environment, but in a fully sustainable, yield-conscious, and realistic way. Rarely do we find extensive knowledge of construction and agriculture – under one roof! Nothing prepared me for the instant WOW factor of stepping into the new on-site show farm. Looking every inch, a standard building from outside, simply step inside and enter a different world – plants spread before you almost as far as the eye can see – so much growth in this purpose-built space, oozing high-tech professionalism but also fresh, healthy, each plant bursting with flavour.



***What separates this vertical urban farm from the rest, and how did they get to this position? To discover what was behind this I spoke to Alex Pearce from GBS.***

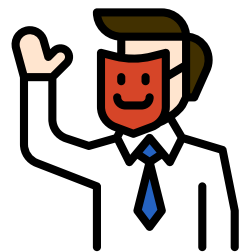


## No more smoke and mirrors please!

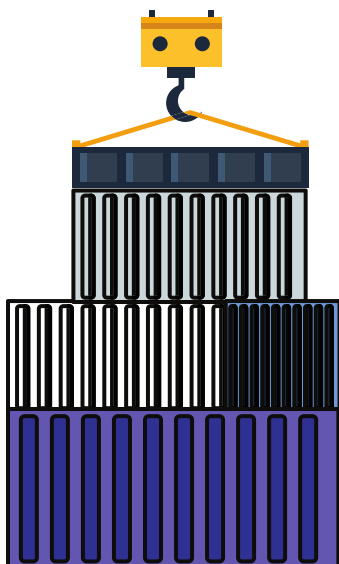
Sustainability conscious Alex Pearce (GBS CEO) and his team over the last few years have explored the controlled environment agriculture market. They travelled the world examining multiple vertical farm systems, looking at buildings and containers (envelopes), real crop yields (as opposed to published "wish-lists" for anticipated yields), and of course, equipment manufacturers and suppliers - from LED lights, racks, & air circulation to nutrient feed systems. "It's not simply a bridge between start-up and high end we offer - as experienced as our team are in both construction and vertical farming we can act as a bridge between both worlds - we can take a blank piece of paper and build your system from the bottom up".

## Beware the "experts"

Whilst simultaneously recognising that this would be an ever-growing market arena (highlighted by recent food security accessibility issues, plus serious health issues connected to diet on a global scale) he also realised that the marketplace was literally full of self-proclaimed "experts" sounding both plausible and knowledgeable, but who have little understanding of the longer-term implications of either running a farm or even managing a business.



## From one extreme to the other.



One of the first issues that hit the team was the lack of real choice - it appeared to be either:

The massive high Cap Ex draining industrial scaled farms, using automated systems where many have yet to break even; or,

Retrofitted metal container farms utilising all types of available internal equipment put into a structure that is not designed for purpose - This does not make optimum use of internal space because they are not designed for what is being asked of them, and they require almost constant heating and/or cooling in fluctuating weather conditions plus it was noted that air flow was constantly an issue.

***Alex recalls several occasions where he noticed multiple fans balancing on racks simply trying to force air flow and the frequent answer of “Yes, we do get larger plants at the ends where the vents are, and much smaller in the middle” – a direct result of poor airflow! He witnessed plant disease caused through mildew and rot due to poor air circulation and temperature control.***

## **Lack of efficient workspace.**



Another recollection from the team was watching a “container farmer” trying to move a large “tray” of fully grown plants out to prepare for packaging and the only way he could do it was to try to tilt the tray. “He had so little room that he had to tilt so much that all of his hard-earned plants simply slid off the tray and onto the floor. It could have been funny, but really it was heart-breaking – and this was not the way this guy was going to pay off his loans or make a living”.

## **“Most of these “buildings” don’t even conform.”**

With a background in construction and more recently eco construction, Alex possesses an extensive knowledge of sustainable buildings and quickly recognised that the “real costs” of making a container into a truly sustainable building envelope were so much higher than was being portrayed and certainly in today’s environment they “don’t conform – almost impossible to meet building reg “U” values, energy performance requirements, or levels of insulation without considerable expense.

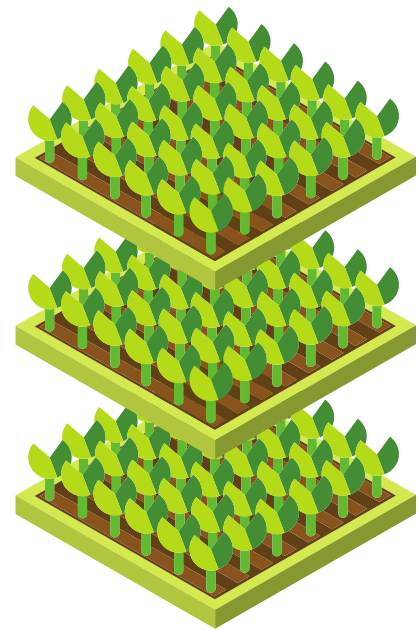


***“People just don’t seem to understand that good design and materials can save up to 30% of a farm’s energy cost”.***



Alex continued "I can appreciate that it seems a straightforward option, just buying into a ready-kitted container farm – and, in my view, if you simply want to grow some local greens and are not seriously interested in business economies and enjoy the lifestyle then good luck to you. If, however, you are seriously looking to make a difference and have a profitable farm capable of attracting interest from serious players developing urban projects, or supplying restaurant chains, then stop and think again. In our view you will need an "envelope" that complies with building regulations, can be adapted easily to suit local planners and Urban design control, so for example it can be cladded with brick-slip if it needs to have a brick finish to comply, and is both sustainable and energy efficient.

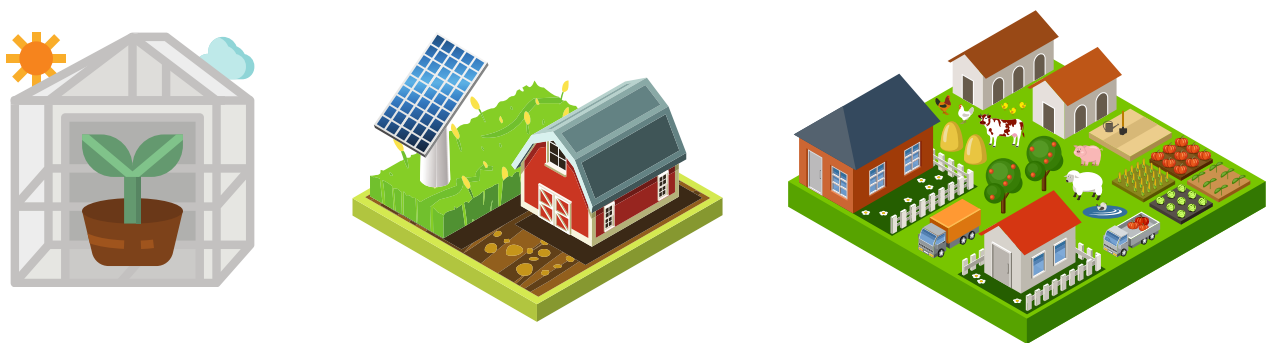
Imagine you are looking to put an urban farm into, say, an underground carpark – how do you get a full-sized container on the back of a truck into the space let alone unload it? All Green Build Systems modular vertical farms can be delivered flatpack and can be assembled on site if required, anywhere in the world. Fully designed and specified by our structural engineers to be sustainable, energy efficient and to comply with building regs, the farms have also undergone serious trials of internal equipment to find the most suitable for optimising yields, and even the HVAC system is a fully bespoke system that through mathematical modelling operates in the most efficient way. The systems are also designed to be able to work with renewable energy systems if required, back-up battery systems and designs can also include electric vehicle charging points.



***The Perfect Bridge between commercial start-up and the industrial scale farms - total flexibility - in every sense - Even the Farms can grow!***

**Each Farm - As small or as large as you need and multiple systems available.**

The beauty is simple, the farms can be as large or as small as you require, and they can grow with you. And, as well as being flexible in modular format the farms are capable of operating different systems that GBS have developed, from wide span shelving hydroponics, to tower hydroponics, aeroponics, aquaponics to a hybrid aeroponic system - it all depends upon your requirements - bespoke solutions for bespoke requirements.



**Why is GBS able to offer multiple systems when required?**

"Because we are working now with some of the world's leading hardware manufacturers, they are now recommending the GBS envelopes to suit the needs of their clients and we get to share in their latest developments".

**"Crate to Plate" is almost ready to purchase their first GBS modular vertical farm.**

GBS are not the only ones who recognise the potential or the significance of our range of modular vertical farms - This project has been monitored for some time by early visitors to the development and "Crate to Plate" are in discussions with us now for the potential commitment to purchase 16 farms over the next two years. Crate to Plate is an independent, London based, urban farming conduit harnessing the latest state-of-the-art hydroponics technology and eco-friendly innovation.

***"The modular concept of the Modularponic farm plus the flexibility of growing mediums is what first caught our interest especially knowing that we can fit in almost anywhere within an urban environment" - "If you think you can't grow veggies in your part of Scotland, think again"! Crate to Plate, CEO and founder, Sebastien Sainsbury.***





## The world now needs these systems.

Vertical farming within the frame of CEA (Controlled Environment Agriculture) and Agritech have come to the forefront since the global pandemic, with increased awareness of food security and food accessibility. The world's current methods of transporting food thousands of miles are no longer sustainable, and globally we are heading deeper into poor diets ranging from malnutrition to obesity next door to one another.

As CEO Alex Pearce pointed out to me "We know we can't single-handedly solve the world's problems, but we believe we can at least make a positive impact. The potential to feed people in isolated or urban areas where no agricultural land exists, to supply the finest restaurants with fresh produce, bursting with flavour and nutrients is enormous and we believe that our modular vertical farms can make a real difference".

Once the world is able – I would certainly recommend booking a visit to see for yourself and in the interim, book an online video call and virtual tour:

**GBS Vertical Farm Systems**  
**Green Build systems**  
**Enquiry@greenbuildsystems.co.uk**  
**www.greenbuildsystems.co.uk**