

# AGRI-FOOD & DESIGN

## Increased yields & improved efficiency for aeroponic farming

Design in innovation insight series:  
LettUs Grow & Crux



Working  
EARLY STAGE

+



Working  
ITERATIVELY

=



Benefit  
IDENTIFY THE  
RIGHT OPPORTUNITY



03333 403250  
enquiries@ktn-uk.org  
www.ktn-uk.org

“The Design Foundations funding gave us breathing space to look at our technological process with more rigour. We had a bit of design knowledge but, honestly, we were circumventing certain design processes due to lack of funding. Now we were able to research the industry in a lot more detail. That was very fortunate for a company that was quite young. Not many companies at that stage have a chance to include user-focused features in their products.”

**Charlie Guy, Co-founder,  
Lettus Grow**

## LETTUS GROW Increased yields with aeroponics

Addressing the environmental pressures caused by the air miles used to transport food around the world, LettUs Grow have set out to demonstrate that local indoor farms can produce food at higher yields, lower costs and with a significantly reduced carbon footprint. LettUs Grow co-founder Charlie Guy explains how his company is unique in the way it combines aeroponic technology, using air to grow leafy green indoors, with software that helps manage farm systems more efficiently. Guy says the Design Foundations funding enabled them to work with fellow Bristol-based designers Crux. Together, they've done a very thorough exploration of the indoor farming market to see where LettUs Grow fits in and offers the most value.

### Early stage - researching the industry

Guy says he and his team of engineers were initially skeptical about the depth of research needed. “Is it valuable?” They asked. But, it soon became clear this human-centered process would give them a competitive advantage. Guy realised that, “The ability to look in detail at the industry is great for a company that is quite young. Not many companies have the chance to make user-focused features into products.” When looking round both urban and vertical farms Guy could see that labour is one of the biggest costs to the business. Alongside increasing yields of crops, reducing labour costs became one of the team's principal goals in the design of their growing system.

### Iteratively - hardware & software

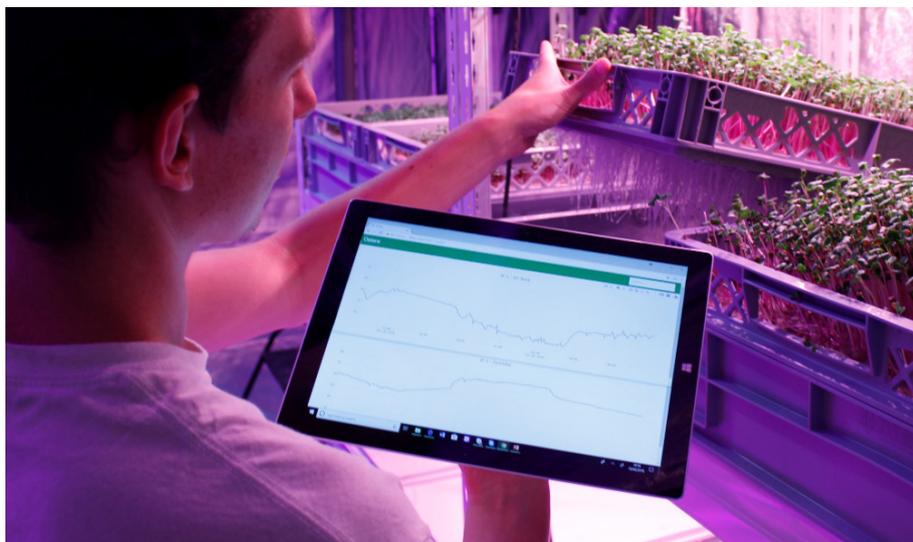
The LettUs Grow value proposition is a carefully designed symbiosis of hardware, such as the stacked grow beds where the crops flourish, and the software that

manages the indoor growing system. “We looked at all the different applications of technology in the industry and decided we wanted to use a systems approach to integrate the whole growing facility,” explains Guy. This meant applying greenhouse hardware technologies to vertical farming principles on the one hand, while adding in features to the software to reduce labour costs, on the other. The farm software controls the heat, light and ventilation in the growing environment, reducing the need for staff to manage those areas. It also collects data on the yield to help the farm operator run the facility as efficiently as possible.

As a business LettUs Grow benefitted hugely from the design collaboration, Guy confirms. “With Crux we were able to do research properly with value proposition, business model canvas, customer segments, service design and mapping. This project gave us the space to look at the design process by going out and talking to future users and understanding what their needs are.” As a result, LettUs Grow have been able to identify the right opportunities, where their vertical farming technology can be of most value.

### Design in innovation

Thanks to increased awareness about the benefits of human-centred design, more businesses want to bring designers on board in the early stages of innovation. Too often, however, companies struggle with finding or justifying the budget required for such a collaboration. Through the Innovate UK Design Foundations programme in 2017 £4 million of funding was awarded to 93 businesses of varying sizes. The objective was helping businesses work with designers to identify innovation opportunities and find viable routes to market. This insight series selects several of those projects to highlight a variety of design approaches.



LettUs Grow's Ostara ® software package in action

**This project identified the right opportunity through:**

- Deep market research
- Finding new applications
- Relationship building

