

Rivenhall
Greenhouse

Rivenhall Low Carbon Greenhouse

Safeguarding our future by re-shoring
UK Fresh Produce Production and
delivering a horticultural eco-system.



Project Overview

- Rivenhall Greenhouse plans to develop a 40-hectare series of low-carbon greenhouses on previously quarried land at Bradwell, to the East of Braintree, Essex.
- The quarry offers a unique situation, where waste heat and CO₂ can be utilised by the greenhouses. We will do this through a collaboration with the Indaver Integrated Waste Management Facility (IWMF), which is currently under construction.
- The greenhouse will provide 420 full-time jobs and 80 part time jobs.
- The greenhouse will inject circa £300 million into the Braintree economy from full-time salaries in the first 20 years of operation.
- The construction phase will inject circa £4.14 million into the local hospitality sector.
- Once operational the greenhouse will provide an annual injection of circa £600,000 into local agriculture supply businesses.
- The greenhouse will produce 28,194 tonnes of tomatoes per year, offsetting 7.1% of UK tomato imports from Southern Spain, Morocco and Holland.
- The project aims to convert the existing Wallace Hanger into a hi-tech vertical farm capable of annually producing 375 tonnes of leafy greens.
- The greenhouse delivers an operational blueprint for Essex County Council and Braintree District Council's respective climate change strategies.

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Why Bradwell Quarry and NE Essex

The Rivenhall Greenhouse team has undertaken a nationwide study into determining the most favourable sites to align commercial low-carbon horticulture with industry, as promoted by the UK Food Strategy.

Bradwell Quarry and its collaboration with Indaver and Wren Renewables offers the best opportunity for the following reasons:

- **Alignment of Engineering**

Having visited and reviewed other IWMF's in the UK, it became clear that retro-fitting to make use of heat, CO₂ and electricity was not possible. However, as the site is currently under construction, Rivenhall Greenhouse has been able to collaborate with the Indaver engineering team to design heat and CO₂ provision from the inception of the scheme.

- **Life span of the industrial partner**

The long-term security of heat and CO₂ supply is critical for developing a partnership between horticulture and industry. The IWMF provides this assurance unlike the steel, chemical and refining industries.





- **Security of Supply – Heat and CO₂**
From an agronomy perspective, the provision of heat and CO₂ for 365 days / 24 hours is imperative to ensure that optimum growing conditions are met.
- **Alternatives sites and alternatives to co-location**
Establishing greenhouses further away from the IWMF adds complexity and inefficiencies, including heat loss.
- **Ease of logistics**
The site is well served by A roads as well as being strategically situated close to supermarket distribution centres.
- **Largest expanse of flat land**
The restoration of the Bradwell Quarry, following mineral extraction, provides a flat expanse of land with landscaped boundaries and water catchment.
- **Water Security**
The greenhouses, with their integrated network of reservoirs will be water independent, with rainwater captured to support growing operations.
- **Favourable growing conditions**
Braintree receives 1,611 hours of sunshine annually. By comparison the Dutch horticultural areas of the ‘Westland’, north of Rotterdam, receives 1,624 hours annually.
- **Provision of green employment**
With over 400,000 people living within 12 miles, there is scope to attract the 500 staff required to operate the site. Colchester and Chelmsford have notably higher levels of unemployment for the 25-49 year age bracket.

The urgent need to re-shore fresh produce production

- On average the UK consumes 500,000 tonnes of tomatoes annually. With 82,000 tonnes grown in the UK, over 400,000 tonnes are imported. Similarly with peppers, over the last 20 years our imports have increased from 80,000 tonnes to over 200,000 tonnes, with only 20,000 tonnes produced in the UK.
- In 2021, the UK ranked as the world’s fourth-largest tomato importer, primarily sourcing from the Netherlands (\$279 million), Morocco (\$160 million), and Spain (\$143 million).
- In 2023 the UK saw shortages due to gas price spikes resulting in Dutch greenhouses not planting due to spiralling operating costs.
- Spanish production, covering 50,000 hectares of poly-tunnel around Almería, is not environmentally friendly, remains unsustainable and is not resilient to the effects of climate change. Excessive pesticide usage and increasing drought conditions continue to challenge production; whilst extremes of heat from the early spring onwards, is shown to severely curtail bees and other pollinators from working.
- A one-way lorry journey from Almería to Dartford (a hub of supermarkets distribution centres) is 1,401 miles.

At our core we recognise that businesses can be part of the solution to climate change.

Frequently Asked Questions:

- **Is the project classed as industrial development?**
No. Horticulture is described under the 1947 Agriculture Act as being part of agriculture.
- **What is the relationship with Indaver?**
Indaver and Rivenhall Greenhouse share a commercial relationship with the former providing heat, CO₂ and electricity to the greenhouse.
- **What is the relationship with Wren Renewables?**
Wren Renewables is the landlord.
- **What is the access to the site?**
All construction and operational traffic servicing the greenhouses will come from the A120 via the road serving the IWMF.
- **What jobs are being created?**
500 jobs will be created once the greenhouse is fully operational.
- **Is there going to be a crèche facility on the site?**
Yes. It is the intention of Rivenhall Greenhouse to provide an on-site crèche facility for workers. This will be subject to a separate planning application.
- **Are any of the greenhouses going to have grow lights?**
Yes. The northern greenhouse will have grow lights. This will allow Rivenhall Greenhouse to plant crops in August to provide retailers winter produce. Greenhouses with grow lights will be fitted with blackout blinds which are proven to mitigate 99% of light egress.
- **Will the site produce any agriculture run-off?**
No. The growing of fresh produce within the greenhouses is undertaken in a closed loop hydroponic system with all water run-off captured, cleaned and re-used.
- **Will the site exacerbate flooding in the area?**
No. All water falling on the roofs will be captured in reservoirs and used for growing.
- **Will footpaths access still be available?**
Yes. There will be some amendments to current routes, but the plan will see an increase in footpath lengths over the site.
- **Will there be any noise from the site?**
No. Aside from routine noise from vehicular movements, minimal noise from operating the greenhouses will occur within the structures.

For further information contact:

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