Evolve Growing Solutions Ltd

Design and Access Statement

Proposed Greenhouses with Associated Buildings and Infrastructure.

Decoy Farm, Postland Road, Crowland, PE6 0LX

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TABLE OF CONTENTS

1. Executive Summary 1

2. The Proposal 2

3. Design and Access Including Planning Justification for the Proposal Set Against Prevailing Policies in the Development Plan and National Guidance ... 9

4. Conclusions 13

1. EXECUTIVE SUMMARY

1.1. Full Planning Permission is sought for the erection of 5.3ha of greenhouses, associated buildings and infrastructure that will sit on land between an existing Anaerobic Digestion Plant and solar arrays, all of which is shown on the submitted plans.

1.2. This application essentially replaces the extant permission for 8.3ha of glasshouses and associated infrastructure that was granted permission on the same site in May 2014 (H02-0147-14). An ecological assessment of the site has previously been carried out to assess the presence or otherwise of Protected Species and an archaeological survey undertaken which assesses the entire development site. There are no ecological or archaeological interests on the site and a new Flood Risk Assessment also demonstrates that the proposal will be safe from flooding and will not cause flooding beyond the site to other land uses or users.

1.3. The proposal complies with the prevailing development plan policies and national planning guidance contained in the National Planning Policy Framework (NPPF) and represents a sustainable form of development. The extant permission is a material consideration of significant weight in the decision making process.

1.4. The proposed greenhouse development at Decoy Farm by Evolve Growing Solutions Ltd represents the most sustainable growing operation possible in commercial horticulture worldwide. The project is possible due to the closing of the circles with the other technologies on site, thus enabling a truly holistic approach to food production to be achieved. The project brings together a number of key technologies and growing strategies in order to fully achieve a sustainable 'Waste to Energy to Food' model of production, which is more profitable than conventional operations. Although each element of the project is based on tried and tested technologies and developments from around the world, they have never been put together in such a complete system before. Evolve's Decoy operation will become the benchmark of what is achievable in the UK and the EU growing models for sustainable, nutritious, safe, locally-produced production for many years to come.

2. THE PROPOSAL

2.1. Full Planning permission for an Anaerobic Digestion Plant was granted in 2012 at Decoy Farm, alongside the existing compost and green waste recycling facility that has operated on site for many years and this is now nearing completion.

2.1. The AD Plant consists of a number of significant digestion tanks and associated buildings and these are shown on the site plan that accompanies this latest application.

2.2. A solar farm is located on land to the south, west and north west of the glasshouses. The area to the south of the proposed greenhouses has now been developed with the arrays and in time the entire solar farm project will produce 13.8MW of electricity sufficient to power 3100 homes. It is planned to be in place for 25 years, which will have the effect of saving 189,750 tonnes of CO2 over the lifetime of the proposal.

2.3. It is now proposed to erect 5.3ha of greenhouses (in place of the 8ha already consented), a biomass boiler, packhouse and associated infrastructure. The greenhouses will be used to grow tomatoes that traditionally would have had to be imported from warmer climates. Electricity from the AD plant will be used to power LED lighting in the greenhouses.

2.4. The AD Plant, biomass boiler, greenhouses and solar farm will together create an energy park at the forefront of renewable energy production, together with the use and the recycling of green waste and the sustainable production of food.

2.5. There is likely to be 70 fulltime employees working in the greenhouse and packing facility. A car parking area is proposed together with welfare facilities to accommodate the workforce.

2.6. The working patterns will be dictated by customer orders etc.

2.7. In addition to the employee movements, there will be in the region of 2-3 HGV vehicle movements per week taking the finished product to customers and this number will also include any vehicular movements involved with the necessary packaging. There will be no importation of compost/growing medium as this is already being produced on site.

Accordingly, traffic movements will be low and the associated impact on the local road network equally low.

2.8. The landscape character is flat and open and is punctuated by farmsteads, isolated dwellings and the new A1073 road. Views of the site will be generally distant and transient from moving vehicles and there are few public rights of way in the vicinity of the site.

2.9. A landscape appraisal was submitted as part of the previous application and this demonstrates that the combined greenhouse and solar farm proposals have a very light touch on the landscape. Hedge planting to the exterior of the site will screen the majority of views. There will be economic benefits from the proposal in terms of employment and ongoing work and contracts with local businesses.

Ethylene Tetrafluoroethylene (ETFE) Greenhouse

2.10. The Evolve Growing Solutions Ltd project at Decoy Farm will be the first commercial scale ETFE glazed tomato production project in the UK. ETFE is a fluoropolymer, only 100microns thick, that transmits more light than glass, is self-cleaning (it is also known as teflon) does not break down over its life time (typically quoted in architecture as 30-50 years) and at end of life is completely reusable, hence placing it at the top of the waste hierarchy.

2.11. In architecture, where its adoption globally has been running at 9-12% year on year for the last 10 years, it is often referred to as the 'new brick' - due to its fundamental impact on building design. Projects such as the Eden project and its global adoption driven via London based architects, has positioned the UK as the leading adopter of this material.

2.12. Because it is not possible to build greenhouses out of glass in Japan due to earthquakes, there are now over 3500ha of ETFE greenhouses, some of which are nearly 40 years old and showing no signs of deterioration or reduction of light transmission.

2.13. The only reason it has not been widely adopted in the EU is due to the Dutch domination of the market, and their reliance on glass for their entire production model.

2.14. The other barrier has been cost. ETFE has been at a disadvantage compared to traditional float glass (glass of uniform thickness

produced on a bed of molten metal) costs. Now that tempered glass is required in greenhouse construction, the price gap has closed and the use of ETFE is now competitive in the marketplace.

2.15. Evolve Growing Solutions Ltd is the International Technical Advisor for the Japanese corporation AGC in their use of modern greenhouse structural design, and has now created a viable robust system with the leading Dutch roof system provider, BOAL.

2.16. Decoy Farm will be the first to adopt this new system using these advanced glazing materials that transmit all the natural daylight (glass does not transmit UV light, leading to 'weak plants' that need significantly more management). While this is new to the UK and most of the EU, the propagators in Europe (growing the plants from seed to 5 leaf plants that the commercial growers then use) have been adopting this material over the last 5 years as the most optimal for growing their high value/density crops, because of the significant increase in growth, strength and uniformity of their crops.

Energy

2.17. The Decoy project also represents the most sustainable use of energy in horticulture globally, focusing on a 'Waste to Energy to Food' design model from inception. This starts with the feedstock for the Biomass boiler heating system.

2.18. Working closely with the leading Biomass company in the EU, the applicant has developed a system capable of using 100% of the 'woody fraction' of green waste already produced at Decoy Farm.

2.19. By enabling this material to be separated and used within the biomass heating system, this not only results in a very cost effective solution for greenhouse heating needs, but also makes a significant impact on sustainable waste management practices for this sector and increases the financial viability of the sector for the long term.

2.20. The source of this waste stream will be from the existing green-waste processing facility at Decoy Farm, now owned by Material Change (who operate the AD Plant). The use of this existing waste stream on site has a positive impact for the carbon footprint of the application proposal by significantly reducing road miles in the transportation of fuels. There is also the added advantage of reducing road traffic to the site for the site for this element of the project.

CO2

2.21. CO2 is one of the key 3 ingredients in plant growth (alongside water and light) and it is critical to optimise its use in a modern commercial greenhouse environment.

2.22. In a relatively low passively ventilated structure, the absorption of CO2 by a mature crop can quickly reduce available levels of CO2 to a level which compromises the growing potential

2.23. The use of additional CO2 in greenhouse operations has become standard best practice over the last 15 years, mainly as a consequence of the adoption of gas driven heating and power systems which provide an abundant supply of relatively clean CO2. The applicant company's proposal represents a significant step forward as it implements a new CO2 capture system that extracts the gas from the combustion of biomass. It is already used successfully in 2 projects in Holland; this will be the first time it will be used in the UK.

Electricity

2.24. The source of a significant amount of the electrical load for the greenhouse project will be derived from a combined heat and power system allied to the biomass boiler.

2.25. The rest will be taken direct from the AD Plant and the solar arrays already on site.

2.26. In the future, it is likely that LED lighting will be used to enable year-round production. The energy needs of this lighting is lower than the overall site-wide electricity production thereby making year-round production sustainable in the long run.

Water

2.27. Water is increasingly the single most important issue in food production worldwide. Part of the applicant company's business model is to ensure maximum water efficiency throughout the various stages of production.

2.28. Water supply - The project will utilise 100% rainwater harvesting for all water use on site, with all roof surfaces (greenhouse, packing areas, offices) used to capture water for re-use. There will be no requirement for ground water abstraction, although a connection to the mains water will be required as an emergency back-up.

2.29. The project will utilise the most up to date recirculating systems with Ultra Violet sterilising units enabling the reuse of all irrigation water without any discharge to surrounding watercourses.

2.30. Waste water – foul water will be treated via an electrochemical process.

2.31. Reed Bed filtration - An area has been set aside for condensate water from the biomass boiler to pass through an interceptor and then discharged to a reed bed system.

Crop Waste

2.32. Greenhouse operations create a significant amount of plant waste. Because of synergies with the other processes on site, this material can be easily reprocessed via the existing composting and AD Plant facilities on site. This results in a waste footprint that is as small as possible.

Food Nutrition for UK Consumers

2.33. From day one the project will implement a best-practice pesticide-free strategy that sits halfway between a commercial/intensive and totally organic method of production. The applicant company's head grower established the first branded/certified pesticide free production in the EU in 2012 on a 10ha production facility in Cambridge.

2.34. That knowledge base will be part of the onward training of new growers at the Grower Academy that the applicant company will set up at Decoy Farm.

2.35. The applicant company is committed to further developing these strategies until all UK horticulture is grown in this way. Decoy Farm will be leading the way in such an important goal.

2.36. A major focus of this development is on significantly increasing both quality (taste) and nutritional values of the produce, through the adoption of specialised micronutrients and bio-stimulants, all derived from natural, plant based sources. These materials have been subject to intense research and development in recent years and offer a 'natural' alternative to genetic modification strategies. Recent trials conducted by Evolve Growing Solutions Ltd showed a 37% increase in yields and a five-fold increase in calcium levels in peppers, all overseen by the UK's leading commercial Horticulture Agronomist.

2.37. Due to the significant combination of all of the above approaches, the end product will be grown under a specific new brand of 'sustainable' UK food production. The applicant already has agreements with a leading high quality supermarket chain in the UK, on a 5yr rolling contract.

Employment

2.38. By securing the highest value supply chain access from day one in a long term partnership and focusing on a model of cost efficiency for waste to energy to food that provides a significantly higher return on investment, the applicant is able to address properly the biggest issue in the horticulture sector - fair pay and conditions for staff.

2.39. It is well reported in the press that the entire agriculture sector is based on low wages and often conditions of employment that are not favourable for the employees. This has led to an increase in reliance on foreign workers, typically from Poland. These are often compounded by strategies of using 'work gangs' under contract to get around UK employment rules and minimum wage levels.

2.40. In the applicant's business model, there is no need to operate in such a manner and it has already produced a forecast that includes the next 12 month's increases in the minimum wage and they are in discussions with their supply chain in order to secure price levels that will enable them to adopt the Living Wage as and when it is adopted.

2.41. At full production the project will employ 70 staff, 30 of which will be core staff on permanent contracts. In the future, when trials on artificial LED lighting is proven to be viable, this will enable the applicant to move the entire workforce to annual contracts as they shift to year round production.

Grower Training Academy

2.42. The greatest threat to the long term sustainability of the UK horticulture sector is the availability of growers themselves. 5 years ago, the average age of UK growers was 57 with little or no direct strategy employed by the industry to address this issue.

2.43. The Decoy Farm project is proposing to train new growers for their planned expansion programme, both in the UK and for international projects. There are already discussions being held with a number of

Horticulture Colleges and degree providers to help develop a specific programme to enable a better fit with commercial horticulture, which is often missing from the curriculums.

2.44. For example, exposure to modern commercial grade environmental computer-control systems is a critical aspect to this bridging, as it is entirely missing from any academic course in the UK, and yet this is the fundamental tool of a commercial grower. The applicant company have already arranged formal training courses specifically for this area.

2.45. This type of new approach to growing and technologies is creating a great deal of interest amongst students, who previously had a negative view of intensive horticulture.

2.46. Between 3-5 graduate internships will be provided annually on site and double that number in short term placements, developing a formal programme recognised by both the institutes and industry alike. This will lead to 3-5 new Grower Assistant posts fed into the UK sector from year 3 onwards. This represents a significant improvement over the current situation.

Future Investment

2.47. To date, the majority of growing operations have been self-funded by growers, or using normal banking facilities. The significance of Evolve Growing Solutions Ltd's development is such that it has attracted significant interest from the City and from international sources not normally interested in food production, with much better interest rates and terms, such as investment bonds.

2.48. The Decoy Farm investors are keen to see significant further development, both at this site and at other suitable UK sites, and to use this facility as a show case to the retailers and other growers, where Evolve Growing Solutions Ltd can build and lease out such facilities which will benefit the entire UK growing industry.

3. DESIGN AND ACCESS INCLUDING PLANNING JUSTIFICATION FOR THE PROPOSAL SET AGAINST PREVAILING POLICIES IN THE DEVELOPMENT PLAN AND NATIONAL GUIDANCE

3.1. Section 38(6) of the Planning and Compulsory Purchase Act 2004 states that, "If regard is to be had to the development plan for the purpose of any determination to be made under the planning Acts the determination must be made in accordance with the plan unless material considerations indicate otherwise."

3.2. The development plan consists of the South Holland District Local Plan (LP) Saved Policies 2007.

3.3. The South East Lincolnshire Local Plan which will eventually replace the current local plan is at a very early stage of formation and carries no weight in the decision making process in respect of this application.

The Principle of Development

3.4. LP policy SG4 – Development in the countryside sets out that planning permission will only be granted for development in the countryside which is essential in the location and cannot reasonably be accommodated within defined settlement limits.

3.5. Having regard to the scale of the combined proposal coupled with the need to locate it adjacent to the existing AD plant, composting facility and solar arrays, it would be neither possible nor feasible to find sufficient land within defined settlement limits. It would also be inefficient to disaggregate the various elements of the project as there is a clear association between the constituent parts.

Design and Visual Impact

3.6. A Landscape Appraisal has already been approved as part of the previous glasshouse application, therefore, no further work in this regard is necessary.

3.7. The greenhouses measure 6m to the eaves with low pitched roofs and are a relatively common sight across the Lincolnshire landscape. The view of these will be set against the backdrop of the largely complete AD plant which consists of similar sized buildings (12m) and tall tanks (17.3m). The greenhouses are located away from the main road that lies to the east and south of the site and the majority of transient public views of the development site are distant ones.

3.8. The proposal, therefore, complies with LP policy SG4 in that there is no detrimental impact on landscape character. In addition, having regard to the flat topography of the area, the zone of influence of the development, is effectively zero.

Access

3.9. The application site is associated with an existing green waste composting site that produces an alternative to peat for use as a growing medium. The business has a retail outlet for individuals and company consumers and it is anticipated that the proposed greenhouses will take advantage of the availability of this resource on site, thereby negating the need to import its own growing medium and biomass fuel. This will result in far fewer traffic movements than if compost and fuel were to be imported to the site to meet the needs of the greenhouses.

3.10. It is anticipated that up to 70 workers will be employed in the greenhouses. A car parking area will be provided and there is ample space within the site to accommodate all the necessary vehicles. The working hours will be dependent on the order requirements.

3.11. The product from the greenhouses will be low volume/high value.

3.12. The HGV movement of product from the site and associated packaging into the site will be in the region of 2-3 movements per week, which by any reasonable assessment is low and will therefore have a negligible impact on the local highway network, especially when compared to those movements generated by the existing facilities on site.

3.13. There will be the initial construction phase where traffic movements will be significantly greater, however, this will be for a limited period only.

3.14. Again, there will be the initial construction phase when traffic associated with the proposal will be greater, but again, this is only temporary.

3.15. It can be seen, therefore, that the traffic levels generated by the proposal will be low, especially when compared to the current operations on site.

Flood Risk and Drainage

3.16. The site lies within Flood Zone 3a and, accordingly, a Flood Risk Assessment has been carried out in accordance with the requirements of the NPPF.

3.17. The FRA concludes that the development is not at risk from tidal or fluvial flooding and that the surface water from the greenhouses and buildings will be collected and reused within purpose made surface water lagoons, the capacity of which is designed to accommodate a 1 in 100 year storm event and an allowance for climate change. The reuse of surface water will result in a significant saving in the use of valuable water resources and obviate the need for abstraction during the winter months, which would be the case if the land was to continue in normal arable production.

3.18. The proposal, therefore, accords with paragraph 94 of the NPPF.

Ecology

3.19. The application site is currently agricultural land with limited ecological value due to intensive methods employed to ensure the land is used as productively as possible.

3.20. Crops are routinely grown in rotation on the fields and there are few hedges or trees on the site and no other landscape features of any interest.

Heritage Impact Statement

3.21. Paragraph 128 of the NPPF requires applicants to describe the significance of any heritage assets including the contribution made by their setting and that the level of detail should be proportionate to the asset importance and no more than is sufficient to understand the potential impact of the proposal on their significance.

3.22. The application site lies in open countryside away from any Listed Buildings, Scheduled Ancient Monuments, Conservation Areas or preserved trees.

3.23. The nearest Listed Building is 2.6km to the south west within the settlement of Crowland and is not visible from the application site and vice versa.

3.24. There are no preserved trees on the application site or in its vicinity.

3.25. When considering the archaeological implications of the original greenhouse application, the County Council's Historic Environment Department confirmed that there is known archaeological interest in the area and, accordingly, an archaeological desk-top assessment was carried out and this included the land that forms this latest planning application.

3.26. The assessment concluded that the site is archaeologically sensitive with prehistoric and Roman remains identified on higher ground to the southwest. It is envisaged that a condition requiring a scheme of archaeological work that will involve monitoring of groundwork and the investigation and recording of any uncovered archaeological remains will be appended to the grant of permission as was the case with the previous application.

Statement of Community Involvement

3.27. Prior to the submission of the last planning application which included the AD Plant, the greenhouses and the solar farm, a public drop-in session was held in the offices on the site on the 23rd July 2013. A flyer was dropped off at those dwellings nearest to the site and a copy of the draft submission including plans informing them of the drop-in session was sent to both Crowland and Cowbit Parish Councils.

3.28. Attendance at the event was low (three members of the public) and no written observations were received from either parish council. The amount of public involvement is a fair indication of the low impact arising from the development and the absence of any dwellings likely to be affected by the proposal.

3.29. On the basis that this application is in effect a smaller version of that already consented together with the low interest generated by the first round of publicity it has been decided not to repeat the earlier exercise.

3.30. The proposal is not development that falls to be considered The Town and Country Planning (Environmental Impact) (England and Wales) Regulations 2011.

4. CONCLUSIONS

4.1. Decoy Farm is currently occupied by an existing green waste composting facility that produces a variety of composts and mulches for the horticultural industry and for domestic use. In addition to this, an Anaerobic Digestion Plant has been completed together with a solar farm, both of which provide green electricity and heat for use locally and for export to the National Grid.

4.2. This planning application will see the erection of 5.3ha of greenhouses that will take advantage of the compost materials produced on site for use as a growing medium and biomass fuel for the production of high value crops that would otherwise be imported from abroad.

4.3. The electricity that will be produced may also power low energy LED lighting within the greenhouses.

4.4. The proposal will have limited visual impact when considered in the context of the existing development on site and the propensity of the flat open landscape to accommodate large development

4.5. A Flood Risk Assessment that accompanies the proposal indicates that the proposal is safe from flooding and will not result in flooding of neighbouring land uses or users.

4.6. The archaeological interest in the area will be assessed through an agreed scheme of archaeological work with the County Council secured through an appropriate condition.

4.7. The highway impact arising from the proposal is negligible and benefits from the economies of scale arising from the linked trips with existing development on the site.

4.8. The project complies with the prevailing Development Plan policies together with national guidance contained within the NPPF and represents a sustainable from of development.

4.9. The Decoy Farm proposal will be used as the demonstration model for future greenhouse design and operation in the UK, enabling the UK to lead the world in the production of highly sustainable and nutritious food for UK consumers.

4.10. Two other significant supermarket chains have expressed interest to source as much food as possible from the UK for reasons of food quality assurance and traceability, creating a market for over 100ha of

UK new production before demand is met. This can be achieved by both a replacement of old operations but mostly by the replacement of imported goods.

4.11. Evolve have already identified 15 sites in the UK where similar developments could be implemented in direct proximity to green-waste materials supplies, and that sector has expressed strong support to see such developments adopted.

4.12. In addition, Evolve Growing Solutions Ltd have had interest from a number of other UK growers wanting to lease such facilities, enabling the applicant's development to lead to a national 'upgrade' in the quality, sustainability and financial viability of the UK horticulture sector.

4.13. The proposal represents a multi-million pound investment in the district and one that will put it once more at the forefront of the UK and worldwide horticulture industry.

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