CARE Suffolk

Community Alliance for a Rural Environment

www.caresuffolk.org

Dear Ms Curtis,

Thank you very much for allowing the public the opportunity to re-consult on the new documentation for joint application **DC/20/05895** & **DC/21/00060**.

Since the last public consultation CARE Suffolk notes that new information available is in relation to the following:

Ecology – specifically on the Biodiversity Metric and Skylark compensation

A proposed permitted bridleway

Flood Risk Assessment

Phase 1 Archaeological Reports

In addition to this, new information has come to light on a topic that is of much concern to many residents - the concern over the battery safety. Since the last public consultation the Merseyside Fire and Rescue Services have published their findings and recommendations for BESS safety following their first-hand experience with a significant incident in September 2020.

We also wish to provide additional evidence regarding the landscape and a previously unconsidered heritage impact. Our previous objection on the significant landscape and heritage impacts still stand as we have seen no information since to consider otherwise. However, two case studies have been brought to our attention which are relevant to this application.

Both of these issues are discussed in the attached report too.

The application plans for this site continue to lack sensible consideration by the applicant, and CARE Suffolk continue to **STRONGLY OBJECT** to the above referenced applications, and ask that the applications be **REFUSED** by Babergh and Mid-Suffolk District Councils.

Yours sincerely,

[redacted]

Samantha Main

Chair

Report for CARE Suffolk

Mid-Suffolk Application DC/20/05895

Babergh Application DC/21/00060

Contents

1. Ecology

The recent LEMP changes appear to be in response to the concerns of the Ecology team, specifically around the Biodiversity Metric and skylark habitat. We have also noted a minor update to the plan for Flowton RNR 92 CWS.

Flowton RNR

We note the applicant's commitment to maintain the verges of Flowton RNR 92 CWS. It is not clear if this is for the entire duration of the development and clarification should be sought.

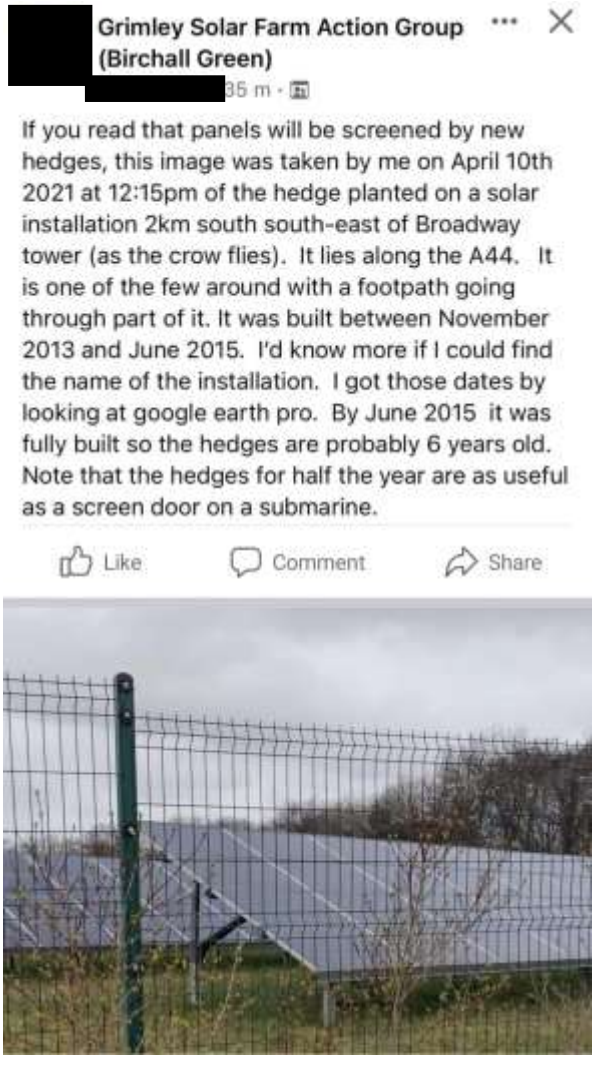
However, we are disappointed that the applicant still intends to trench through the CWS. We understand the choice of cable route, but technology exists that would avoid digging up the verges. Horizontal direct drilling would go under the verge, and the road too, and would avoid impacts on the RNR in the first place. This is a clear failure to follow the impact hierarchy of avoiding damage as the first step. It is also inconsistent with its claims in paragraph 1.1 of its Landscape and Ecological Management Plan that the proposed development would enhance and protect habitats and locally designated sites. The applicant's willingness to trench right through this nature reserve undermines confidence in all such claims.

Biodiversity Metric

The applicant seems to put a significant amount of emphasis on the Biodiversity Metric as part of the submission. Claiming a +146.7% increase in biodiversity simply because of hedge planting is premature, oversimplistic, and of no guarantee of a biodiversity increase for wildlife.

Any increase in hedgerow habitat would not be seen for many years as it takes time to grow (see Figure 1 below), and a gross amount of damage and loss would need to occur in the first place. Do we really want to destroy the strong ecosystem (predators such as birds of prey that we have in the area are a strong indicator of a strong ecosystem) we have now for promises on a spreadsheet?

Figure 1 – screenshot of a hedgerow at another solar PV installation. After 6 years this is barely 1m tall.



Similarly the studies on biodiversity fail to assess and recognise the wider connection of the site to its surroundings as noted in NPPF 2021 p.179 *"To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and* ***wider ecological networks****, including the hierarchy of international, national and locally designated sites of importance for biodiversity61;* ***wildlife corridors and stepping stones that connect them****; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation62; and…"*

Nature needs space to thrive and to be able to move through the landscape. The introduction of miles of fencing would fragment this and cut off existing larger wildlife such as deer from large areas of land important to their network. Equally the applicant intends to force animals to use mammal gates instead of allowing the free passage as animals need. These animals are part of, and important to, the overall ecosystem.

The following is a paper written by Michael Alder, Emeritus Professor of Rural Environment at Essex University, and a Fellow of the Royal Agricultural Society. This has been reproduced with his permission.

BIODIVERSITY NET GAIN

1. Introduction

Maintaining and increasing biodiversity is regarded as a critical factor in managing the stability of the planet. To this end, the 2021 Environment Bill mandates most new development will deliver an overall gain in biodiversity. This is called 'biodiversity net gain '(BNG) or sometimes 'net biodiversity gain' (NBG). This is therefore an important aspect for all local planning authorities to consider in approving or rejecting planning proposals and, in particular, solar farms. The law does not apply to NSIPs (Nationally Significant Infrastructure Projects). Nevertheless, developers may wish to show their NSIP proposals do deliver BNG.

2. Measurement

Biodiversity was originally measured by using Biodiversity Metric 2.0 (JPO 29) Natural England 007.2019; this has now been superseded by Biometric 3 (JPO 39) Natural England 07.2021.

3. Commentary

Ecologists in the UK generally regard the metric as not fit for purpose. Prof. K. Willis (Ref 3) a leading ecologist from Oxford University said in 2021 that the BNG total "will promote further loss and fragmentation of some of the UK's natural environment and even more important the ecosystem services that flow…" She concludes that "net biodiversity gain will end up being net biodiversity loss".

Dr C Betts, who head up Betts Ecology explains in more detail: (Ref 1):

"1, The metric calculation only accounts for direct impacts on habitats within the footprint of a development or project. It is only a simple assessment tool and only considers direct impacts on biodiversity through impacts on habitats. Indirect impacts, which it is important to consider, are not included in the metric.

2. Biodiversity unit calculations are not absolute values but provide a proxy for the relative biodiversity worth of a site pre- and post-intervention. The metric is not a substitute for expert ecological advice. The metric should never be used to override or undermine the mitigation hierarchy (see below) or any existing planning policy or legislation.

3. The metric does not include species explicitly but uses habitat types as a proxy for the so-called "biodiversity value" of the species communities of those different habitats. (Metric outputs do not change existing levels of species protection and do not replace the processes linked to species protection regimes).

4. Using habitats as a proxy for biodiversity is a simplification and biodiversity metric unit calculations/scores are not scientifically precise or absolute values, only a proxy for the relative biodiversity worth of a habitat or site.

5. The metric and any numerical outputs are not absolute values but must be interpreted using ecological expertise and common sense. If they are used at all, it should only be as one (potentially misleading, so great care needed)

element of the evidence that informs plans and decisions. The metric is not in or of itself a solution to biodiversity decisions. The metric does not give instructions, for example on the species to use in habitat enhancement/compensation.

6. Biodiversity metrics have a focus on typical habitats and widespread species; protected and locally important species' needs are not considered; protected sites and irreplaceable habitats are not adequately measured by the metric. Notable habitats and features require appraisal separately by a skilled ecological scientists/naturalist."

The comments by Willis & Betts are backed by a referred research paper (Saphus zu Ermogasson et al, June 2021) (Ref Z). The paper notes that losses in habitat areas (as a result of development) will be traded for habitats of higher distinctiveness in the future. The paper states "Mandatory BNG will generally trade biodiversity losses today for uncertain future gains".

The conclusion is "It is widely recognised that promises of future biodiversity gains is risky". The research was backed up by an analysis of 55 BNG assessments. In these there was a promise of a 25% increase in biodiversity but in fact there was a 34% reduction in green spaces.

Saphus zu Ermogasson concludes "that the safest mechanism for reducing the biodiversity impact of infrastructure is to avoid impacts to biodiversity initially. In practice this means redirecting development to previously degraded sites wherever possible".

This conclusion mirrors the advice offered by Natural England (Ref 5) particularly in relation to solar farms. "In the literature concerns have been raised that solar PV developments have the potential to negatively impact a broad range of taxa including birds, bats, mammals, insects and plants. In light of this it is highly recommended that research is undertaken into the ecological impact of solar PV arrays across a broad range of tuxa at multiple geographical sites". "The lack of evidence relating to the ecological impact of solar farms is concerning".

4. Overall Conclusions

4.1 Biodiversity is of critical importance.

4.2 The Metric used to measure BNG is flawed.

4.3 Ecologists believe that the BNG metric could lead to a biodiversity net loss.

4.4 Much more research and evidence is required before it can be stated that there will not be a significant adverse biodiversity impact from solar farms. It would therefore be premature to give approval for solar farm schemes, as after a few years considerable ecological damage could be achieved that would be difficult to correct.

4.5 Current advice is to site solar farms away from any areas of value (Ref 4).

5. References

1. Betts C.J. 'Biodiversity not so net gain', Dec 2021

2. Saphus zu Ermogasson et al, Society for Conservation Biology, June 2021

3. Prof. K. Willis, Oxford University, July 2021

4. Natural England TIN 101

5. Natural England 2017 NEE R012

We ask the Council to consider the biodiversity impact on the wider ecosystem, not just for this one proposal but also the cumulative impact of application DC/21/04711 (EDF Renewables Tye Lane Solar Farm) and DC/21/02958 (Statkraft Greybarn Solar Farm) over an area almost 600 acres in size. The applicant has failed to address this cumulative impact.

Skylark Nature Area

We note that where the applicant was offering to open up the "nature area" to the public, this permission has now been rescinded to set the area aside for nesting of skylark and other ground nesting birds.

Figure 2 – Proposed Nature Area for skylark and ground nesting birds

Measures include fencing and signage to *"dissuade people from accessing it"*[1]. Whilst these measures might have some impact, they would seem unnecessary. The land is already private property and people already do not use it. The introduction of yet more fencing into the natural environment would seem unnecessarily intrusive. Why not another hedge or some taller permanent grass species to "fence" the area? These would seem a much more natural option.

However, whilst we welcome the intention of a dedicated ground nesting bird area, we must point out that the arable fields currently offer this to the protected species, and they do so on a much larger scale than what is proposed.

The application site is 245 acres of open arable farmland. According to the applicants Breeding Bird Survey (Appendix 8.1 figure 5) there were 11 skylark nests recorded across the site. And for those who know the area well, it is obvious just from the map that these are away from the field boundaries and that of tall trees. This is in line with skylark breeding habits. There is also a very notable area that does not have any skylark in it! We'll come back to this.

Yet the applicant tries to argue that replacing these 245 acres of arable with around 7.4 acres of tussocky grassland is appropriate (figure 2 above). We strongly believe this is not appropriate. And this development alone, and cumulatively with the other solar farm developments in this area totalling almost 600 acres, we believe would be devastating to skylark in this area.

In the applicants response to Ecology Place Services 9th December 2021 they state at rep 6: *"The natural and innate behaviour of skylark to avoid nesting close to woodland in order to reduce the chances of their nest being predated cannot be altered or modified by actions of the Applicant. It is recognised that skylark may not nest within approximately 50 m of woodland adjacent to the Nature Area. The Nature Area extends ~140 m from Somersham Park Wood, providing extensive areas suitable for skylark to nest."*

This is true. Partly.

[1] Objection 5 LEMP revised 9th December 2021

First, we don't believe anyone is suggesting to change the behaviour of the skylark. This would be ludicrous. But destroying a large area of the habitat this protected species does utilise, and replacing it with a small area that does not meet the known needs of their behaviour is insensitive, inconsiderate, and reckless. The applicant knows the habits of the protected species yet continues, by their actions of pursuing this application, to seek to destroy, and not appropriately replace, their existing habitat. Perhaps the best action the applicant can take is to leave the existing habitat as it is – open arable farmland.

Secondly, the distance across this area from Somersham Woods is approximately 140m (see figure 2). However, what the applicant fails to mention is that on the opposite side it is also lined with tall trees and a small copse as part of the Lovetofts Farm estate. These can clearly be seen in figures 3 & 4 below.

Figure 3 – distance of Nature Area from Somersham Park.

Figure 4 – photo of tree line and copse at Lovetofts Farm

If skylark are known to not nest within around 50m of tall trees, then 50m either side of the nature area reduces this to a narrow strip of around 40m down the centre of the nature area, and an area of less than 4.5 acres. Would such a small area even be suitable for skylark? To say, as the applicant does in the extract quoted above that the Nature Area provides "*extensive areas suitable for skylark to nest*" is therefore misleading. The area is not extensive.

Enso make much of fencing off the nature area so people and dogs can't disturb nesting skylarks as a solution to the small plot size. But the area is already unused by the public because it is a private arable field. So the solution isn't really a solution anyway. It's just business as usual, but without the food production.

However, perhaps what is probably the best way to answer the question is with a bird survey. Luckily the developer already submitted one. If we now circle back to that notable area with no skylark, according to the developers own breeding bird survey there were zero skylark nests in the proposed nature area.

It clearly isn't the type of plant grown in this area that deters the skylark as they seem quite happy to nest in the same crop elsewhere in the fields as evidenced by the same survey. The more open areas of the fields.

Changing the area to grass isn't going to make the area more open. The area will still be unsuitable for skylark simply because the tall trees around it and the small area doesn't match their habitat requirements. And it certainly isn't enough to compensate for the 11 nests lost across the entire site which don't appear to be replaced anywhere else on or around the site. So the claim that the Nature Area is suitable for skylark to nest, whether extensive or not, is without foundation.

Signs & Information Boards

The signs the applicant intend to put in this area, and indeed around the site, claim they will allow *"local communities to engage and appreciate the natural environment"*[2].

It is clear from the numerous number of objections from the public, and the content of them, that the community here already do appreciate the local environment. They live in it, use it, and understand it. And they are aware of significantly more wildlife in the area than the applicant and their specialists have identified in their reports.

The signs would do nothing to further this appreciation, and may even reduce their observance. Residents here have learnt about the area because they watch and listen to nature in the moment. Not because they have read a board of fixed and limited information. We ask that should the Council be minded to approve the application, that all "information boards" are not permitted.

[2] p4.3.2 LEMP revised 9th December 2021

2. Proposed Permissive Bridleway

It is with interest that we noted the inclusion of a map showing the proposal of a new permissive bridleway in the southern parcel of the development.

However, we could find no reference to this proposal in any documentation, new or existing. Nor could we find any assessments of the suitability or safety of the proposed development alongside this.

We note that the bridleway would be adjacent to the substation and Battery Energy Storage System (BESS), as well as two inverter stations. These are due to be extremely noisy according to the Specific Sound Level Maps[3], and significantly overlap on the PRoW. The BESS, specifically the HVAC units, would also turn on and off without warning to the public.

In addition to this the solar panels proposed utilise a tracking system, and so the panels would move throughout the day. This creates a greater potential for glint and glare.

It is well established that horses can become skittish around sudden changes in their environment, such as loud sudden noises, perhaps from an HVAC unit that has just started up; or from a moving solar panel creating glint or glare for the horse. This is true even of well trained horses for experienced riders.

We note that the glint and glare assessment considered walkers along this PRoW as a footpath, but it has not assessed horses and their riders, who are of a considerably greater height and risk to injury than walkers.

The noise assessment has not considered any PRoW users, whether they be walkers or horses and riders, at any location.

We also note that a separate BESS under application DC/19/01601 is also adjacent to the proposed permissive bridleway, and the cumulative noise impact with that has not been considered either. Not only on the impact on users of the PRoW (footpath or proposed bridleway) but not anywhere in the Noise Impact Assessment document R011 either[4].

A proposed bridleway at this location would be welcome in principle, but the effects of noise and glint and glare on horses and riders must be assessed for their safety prior to deciding if this is a good idea or a dangerous one.

[3] Document R011 – Noise Impact Assessment Figures 5 & 6

[4] The BESS was not constructed, let alone in operation, when the Background Noise Surveys were carried out. Neither are the calculations in the assessment adjusted to account for it once built. Therefore, the cumulative noise impact has not been assessed and the Noise Impact Assessment is incomplete.

3. Flood Risk & Drainage

We were pleased to see a Flood Risk Assessment included within the new package of documents. That is, until we read it anyway.

Common Ground

Before the issues, we would like to share our agreement with two of the applicant's conclusions.

First, the conclusion regarding the inverter stations around the site. We agree that due to the small size and scattered nature of the inverter stations around the site the amount they would contribute to surface water flooding would be insignificant, and capturing any water run off would be impractical[5].

Second, the use of traditional soakaways is unlikely to be feasible.[6] This is due to the impermeable clay subsoil, and matches the conclusion of another application nearby[7].

A concern does however remain regarding the "sheet flow" from the inverter stations. In Appendix E it states *"Inverter stations comprise a 30m2 plan area storage container sited on a 300mm deep granular sub-base. It is proposed to construct the sub-base above a permeable membrane and allow runoff to percolate into the ground as far as practicable. Any excess runoff will overflow the perimeter of the sub-base at rates approximating greenfield rates and be dispersed as sheet flow."*

Our specific concern relates to the oil in the inverter stations. Oil has a lower density than water, and so floats on top of water. Where oil has leaked from the inverter unit, and there is an overflow in the form of sheet flow, how would the oil be prevented from riding the wave of sheet flow water and getting into the soil, and potentially into the water network?

Battery Energy Storage System (BESS)

The inclusion of the layout and some construction details for the BESS area was welcome.

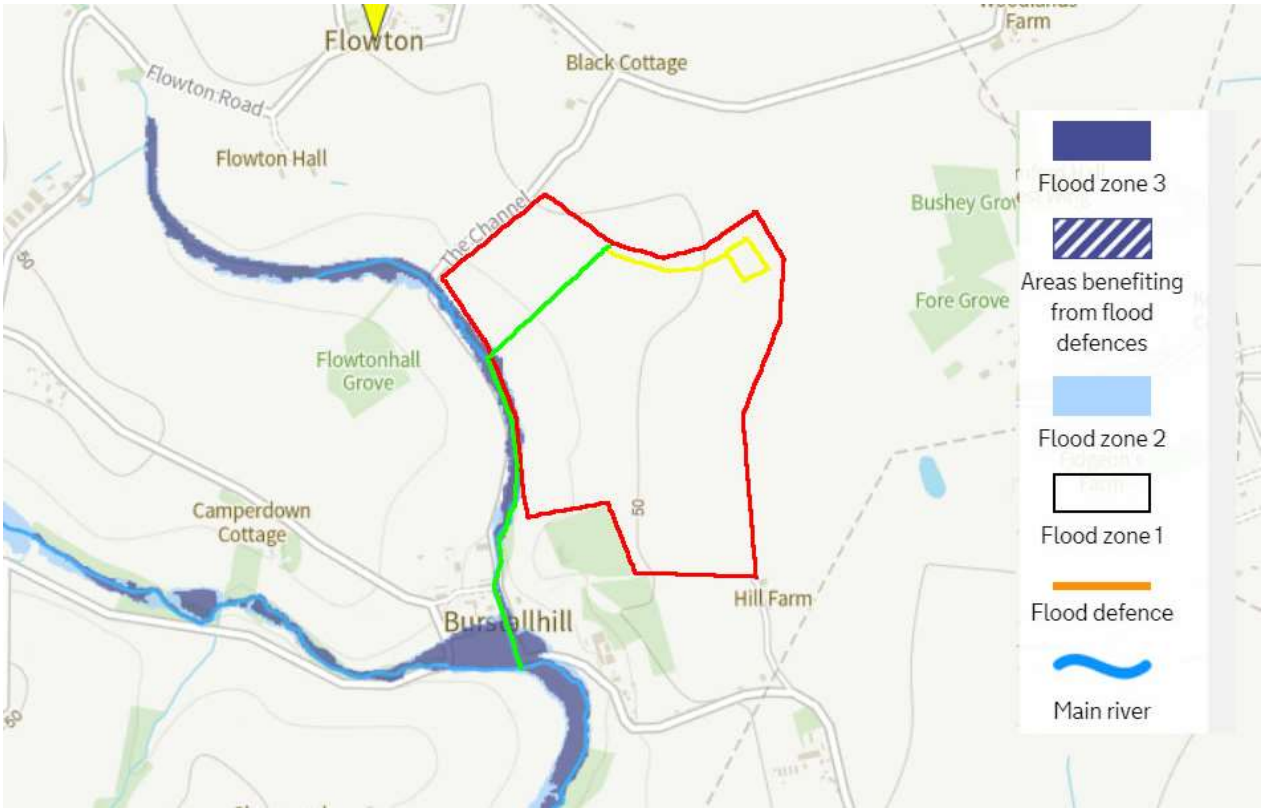
According to the calculations the current greenfield rates are 0.5l/s.

The applicant proposes a BESS area of an impermeable base, which would create an increased surface water discharge rate of 1.4l/s. This surface water runoff is proposed to be channelled to a nearby ditch to the west via an underground pipe system.

This ditch directly leads down the slope of the land and alongside The Channel, crossing it near the bottom, into an area that is already well known for flooding – Burstall Brook. Figure 1 below.

[5] p4.25
[6] P4.26
[7] DC/21/05468 for a 100MW BESS near Bramford Substation

Figure 1 – Environment Agency flood risk map, with added proposed flood drainage for BESS. Yellow area shows the BESS area and proposed pipe. Green shows the ditch they plan to feed surface water runoff into.



Planning policy is clear on flooding.

The NPPF makes it clear that *"development should be made safe for its lifetime without increasing flood risk elsewhere"*[8] and *"should consider cumulative impacts in, or affecting, local areas susceptible to flooding."*[9]

Further the NPPF states development should be *"using opportunities provided by new development to reduce the causes and impacts of flooding (where appropriate through the use of natural flood management techniques)"*[10] and *"Major developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate."*[11] The NPPF continues in paragraph 167 *"When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that: a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location; b) the development is appropriately flood resistant and resilient; c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate; d) any residual risk can be safely managed; and e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan."*

The MSDC Core Strategy 2008 states at policy CS4 *"The council will support development proposals that avoid areas of current and future flood risk, and which do not increase flooding elsewhere…"* and the Babergh Core Strategy 2014 states development should *"minimise the exposure of people and property to the risks of all sources of flooding by taking a sequential risk-based approach to development, and where appropriate, reduce overall flood risk and incorporate measures to manage and mitigate flood risk…"*

The emerging Joint Local Plan states at policy LP29 that *"Proposals for new development can be approved where… 2. In areas at medium or high risk from flooding, it has been soundly demonstrated that the new development or intensification of development, can be made safe for its lifetime without increasing flooding elsewhere. 3. Mitigation is*

[8] NPPF 2021 paragraph 159
[9] NPPF 2021 paragraph 160
[10] NPPF 2021 paragraph 161c
[11] NPPF 2021 paragraph 169

provided against existing and potential flood risks throughout the life of the development (including fluvial, surface, coastal and sewer flooding) through application of a sequential approach to flood risk, the implementation of Sustainable Drainage Systems (SuDS), and risks to ground or surface water quality. 4. Above ground, appropriate SuDS are incorporated within new developments wherever possible, and take opportunities to provide multifunctional benefits, including biodiversity, landscape, amenity and water quality enhancement. 5. Proposals are submitted appropriate to the scale of development detailing how on-site surface water drainage will be managed so as to not cause, or increase flooding elsewhere. This includes the cumulative impact of minor developments. 6. Opportunities to provide betterment of greenfield runoff rates to reduce the overall risk of flooding, have been provided wherever possible.

The applicant proposes to almost triple the surface water runoff rate, and feed this increase into a ditch that directly feeds into a known flood risk area, thus increasing the flood risk elsewhere. This is a clear breach of planning policy.

Solar Panel Arrays

We note that there are still no calculations regarding the surface water flow rates from the solar panel arrays.

Ground Compaction

We note that ground compaction during construction has also not been assessed. When the archaeology work was carried out in August & September 2021 an excavator travelled across the fields to reach the various points. One of those routes was across “field 2”, over Somersham Road, and into “field 1”. Figure 2 below was taken on 11th March 2022. This is 6 months later. The tracks show how easily the soil can become compacted by heavy machinery, such as that to be used during the construction period, and the subsequent inability for surface water to infiltrate into the soil. The water has been there so long it has started to become stagnant with dark growing algae.

Figure 2 – compaction and subsequent lack of infiltration due to heavy machinery

The increase of surface water runoff, and the ability of this to increase surrounding areas, which are already subjected to flooding, remains a high concern.

4. Archaeology

It is with interest that we studied the archaeology reports.

Whilst our team does not have any expertise in this area, it was obvious to us that a lot was found and over a significant period of time, including prehistoric evidence.

The overwhelming direction of evidence suggests this area has for many centuries, and even millennia, supported civilisation through farming and even some more traditional forms of industry such as pottery and food processing.

Historic civilisations have always thrived around areas of good food production. It is a fundamental condition of life. It is clear that this area has always been an area of great and varied food production. We would like to see that continue over the next 40 years and into the future beyond.

However, we are concerned about the recommendation for a phase 2 survey by the SCC Archaeology consultee dated 1st March 2022:

"In this case, a second phase of archaeological evaluation will be required (including able the connection corridor (sic)[12]) to establish the full potential of the site and decisions on the need for any further investigation (excavation before any groundworks commence and/or monitoring during groundworks) or preservation in situ of defined remains through construction methods which avoid ground disturbance, will be made on the basis of the results of the evaluation."

In the case of *R v Cornwall County Council ex parte Hardy* [2001] Env. L.R. 473 the court held that the local planning authority had not been entitled to grant planning permission subject to a condition which deferred a requirement for surveys to be carried out.

The authority could only have decided that it was necessary for the surveys to be carried out and additional data obtained because they had thought that additional impact needed to be assessed. It was possible that that might turn out to be the case and so, in granting planning permission, the authority could not rationally have concluded that there would be no significant adverse effects in the absence of that data. Consequently, they were not entitled to defer that decision.

If more surveys are needed to be carried out the conclusion that there will not be a significant effect cannot be arrived at without that data.

Additional surveys should be carried out prior to any decision being made on the application.

[12] Probably meaning "along the cable connection corridor".

5. Battery Risk

Battery safety, or more aptly lack of, remains a significant concern of CARE Suffolk. The recent publications of the Significant Incident Report by Merseyside Fire and Rescue Services (MFRS) only serves to reinforce the concerns we have previously written about.

To date, there remains no standard UK safety regulations on large-scale BESS, such as the one included in this proposal. In the absence of this, it would be pertinent to refer to the experience and recommendations of those who have dealt with an incident on such a site, like that by MFRS.

Paragraph 97(a) of the NPPF 2021 supports this by stating *"Planning policies and decisions should promote public safety and take into account wider security and defence requirements by: (a) anticipating and addressing possible malicious threats and natural hazards, especially in locations where large numbers of people are expected to congregate. Policies for relevant areas (such as town centre and regeneration frameworks),* ***and the layout and design of developments, should be informed by the most up-to-date information available from the police and other agencies about the nature of potential threats and their implications. This includes appropriate and proportionate steps that can be taken to reduce vulnerability, increase resilience and ensure public safety and security;"*** (our emphasis).

In September 2020 a BESS fire and explosion occurred in Merseyside, and MFRS were first responders on site. Whilst we understand an initial report of findings was distributed to other Fire Departments around the country, the report for that significant incident was only published to the public in March 2022. The report highlights a number of recommendations and lessons learned.

Many of the measures recommended would be appropriate to be included in a Risk Management Strategy, developed with the Suffolk Fire and Rescue Service (SFRS) that could be secured as part of any condition, and those do not need mention here.

One of the significant measures from the report – upwind access – is already a feature of the development, though we are not sure if this is by design or coincidence.

However, there are two other aspects of the significant incident report that stand out in particular in relation to this application. These are: the need and recognition of hazardous materials on site; and on site or nearby mains water and hydrant provision.

Hazardous Materials on Site

The current application form declares that there are no hazardous materials proposed on site. However, evidence from the MFRS IIT report suggests otherwise.

"After an external examination of the container and reviewing data from CCTV footage, there is evidence of a deflagration due to the ignition of gases that had been given off from the lithium battery cells. This would have been a mix of toxic and explosive fumes. When LiBs (Lithium ion Batteries) go into thermal runaway they generate a dense, white vapour containing hydrogen, hydrogen cyanide, hydrogen chloride, a large range of flammable/explosive hydrocarbons, carbon monoxide, carbon dioxide and droplets of the organic solvents used in the cells'"[13]

"The explosion was a result of a failure within Battery Zone 3-Rack 7 Module 6 (BZ3-R7M6) which led to a thermal runaway, which, in turn produced gases within the container culminating in a deflagration."[14]

The consistent expansion of the affected container at Merseyside clearly suggests that the chemical reactions as part of the battery failure caused the container to fill with gases. A mix of toxic and flammable gases. The ignition of these gases caused the explosion and subsequent fire.

The Planning (Hazardous Substances) Regulations 2015 Schedule 1 Part 3 includes the listing *"Where it is reasonable to foresee that a substance falling within Part 1 or Part 2 ("HS") may be generated during loss of control of the processes, including storage activities in any installation within an establishment, any substance which is used in that*

[13] MFRS Significant Incident Report page 25
[14] IIT Report Final p 1.2

process ("S")." Referring back to Part 1 of the same Schedule, it lists *"P2 FLAMMABLE GASES Flammable gases, Category 1 or 2"*.

The MFRS IIT Report paragraph 8.6.3 *states "Based on my investigations, the evidence is consistent with the initial cell having suffered an exothermic reaction which then lead to a thermal runaway which resulted in flammable and toxic vapours being produced."*

The same paragraph states *"The internal CCTV shows the vapours (vented gases-droplets of organic solvent from the cells building up at low level filling the container as to started to reach their flammable limits, before coming into contact with an ignition source, the exact ignition source within the container is not known. The vapours ignited causing a deflagration which blew off both doors and caused the HVACs to come detached from the roof as well as deforming the container."*

It is widely understood that battery failure is a loss of control of the normal process. Sadly a subsequent product of that failure is a mix of gases including flammable gases as evidenced at the Merseyside incident, where *"Due to the nature of the contents, the incident was declared as a fire containing hazardous materials and a Hazardous Materials Environmental Protection Officer (HMEPO) was requested."*[15]

We therefore contend that there would be hazardous substances on site as defined under Schedule 3 of The Planning (Hazardous Substances) Regulations 2015 and this must be taken into consideration by the relevant bodies for consulting on this application.

Mains Water Provision

The applicant has provided almost no information on the battery storage area of the development. We know it will be comprised of 20 x 40ft green-coloured containers, and we know a rough layout of these containers from DR-002 of the FRA. We also know that *"Fire suppression systems are integrated to each battery container."*[16]

In the Merseyside incident all preventative measures failed. The early warning alarms failed. The operational cooling system failed. And the aerosol fire suppression system failed (at least until it was too late to be of any use). The pace at which the incident progressed was very rapid.

Reliance on preventative measures is what led to the significant incident in Merseyside. Defensive safety measures can no longer be overlooked.

It is abundantly clear from the MFRS reports that the pivotal measure used in dealing with the significant incident was the nearby access to mains water and water hydrants. The MFRS started with 2 pumps as per standard protocol, however a request to "make pumps 5"[17] was made early on.

However, even this was insufficient. *"As near-by hydrant fed water supplies were inadequate to meet the needs of the ongoing firefighting, a High Volume Pump (HVP) was requested via National Resilience Fire Control for the purposes of augmenting water supplies, this was mobilised at 02:19 hours."*[18]

"Defensive firefighting continued on site for a total of 59 hours..."[19]

"The fire was brought under control by 06:30 hours; however, the energy dissipated by the fire and continual recycling of heat from the Li-Ion store was to prove an issue during the latter stages of the incident as it continued to burn. This incident type required a continual and prolonged cycle of cooling and temperature monitoring."[20]

[15] MFRS Significant Incident Report page 6
[16] ES Chapter 9 paragraph 9.3.3
[17] MFRS Significant Incident Report page 5
[18] MFRS Significant Incident Report page 7
[19] MFRS Significant Incident Report page 8
[20] MFRS Significant Incident Report page 14

Whilst we do not know if the nearby access to mains water and water hydrants was a determining factor in the choice of location for the Merseyside BESS, it is clear from the reports that this access was fundamental to a positive outcome to the incident. *"The tactic of applying water is correct and necessary to resolve the incident type."*[21]

Further, current insurance guidelines for BESS sites are to water cool for a minimum of 24 to 48 hours. This varies by insurer. This raises two issues. The source of this water. And the disposal of the water in an environmentally safe way.

There are no mains water connections or water hydrants on or near the proposed site here. Nor any proposed as part of the development.

The applicant states that fire suppression is included in the battery containers. As there is no water provision, it concludes that a gas fire suppression will be used. Gas fire suppression does not have the ability to cool the batteries as water does.

Further, there is no planned containment of any possible run-off from the site which will flow directly into the water system via the ditch and Burstall Brook area, and subsequently the River Gipping and nearby drinking water protection zone. If there is no separate containment, how would the contaminated water would be separated from the storm water for testing and safe disposal?

We wish to share the words of the Deputy Fire Safety Commissioner of the London Fire Brigade on 2nd March 2021 and the Energy Storage Summit 2021:

"If we know some things could fail catastrophically or it could have those effects, it's going to be a difficult day if one of us is standing there in court saying we knew about it but we didn't do anything."[22]

Conclusion

How long would it take to deal with an incident like the Merseyside event at the proposed location with zero water provision?

We know about the potential of battery storage containers. We have the opportunity to prevent it AND put in defensive measures to reduce the catastrophic potential should the worst happen.

It is clear, that without sufficient mains water and water hydrants on site, this location is unsuitable for the safe and sustainable installation of a BESS.

Whilst we recognise that a nearby BESS received permission in 2019 (DC/19/01601) without this requirement, this application is not being reviewed in 2019. So any claims of "precedent" cannot overrule the duty to properly assess the proposed development with today's known safety risks and recommendations.

[21] MFRS Significant Incident Report page 15
[22] https://www.energy-storage.news/news/retrofitting-could-be-essential-for-battery-storage-system-safety

6. Landscape & Heritage Impact

We note that the applicant discusses non-designated heritage assets briefly in their assessments, and claim to have searched the Suffolk HER records for all those within 1km of the proposed development area (shown on Figure 7.1 in application document R007). However, one significant HER record has been completely omitted from even a passing mention.

Suffolk HER record FLW 025 is that of *Flowton Hall.* Flowton Hall appears on the first edition Ordnance Survey map, and had a functional link with the countryside location. It is in a prominent and distinctive place within the landscape and the rural setting contributes greatly to the building. In fact the importance of the setting was recognised in a recent planning decision.

Application DC/19/05927, decided in March 2020, was for the conversion of existing office blocks at Flowton Hall, IP8 4LH to residential housing.

One of the conditions imposed is as follows:

"2. SPECIFIC RESTRICTION ON DEVELOPMENT: REMOVAL OF PERMITTED DEVELOPMENT RIGHTS Notwithstanding Section 55 (2)(a)(ii) of the Town and Country Planning Act 1990 as amended and the provisions of Article 3, Schedule 2 Part 1 Classes A to E and H and Part 2 Class A of the Town and Country Planning (General Permitted Development) Order 2015, (or any Order revoking and re-enacting that Order with or without modification):- - no enlargement, improvement, insertion of new openings or other alteration of the dwelling house(s) shall be carried out, - no garage, car port, fence, gate, wall or any other means of enclosure, building or structure shall be erected, except pursuant to the grant of planning permission on an application made in that regard.

Reason - To enable the Local Planning Authority to retain control over the development in the interests of the amenity of the locality and to safeguard local distinctiveness."

Planning Policy Guidance on the Historic Environment states "*Non-designated heritage assets are buildings, monuments, sites, places, areas or landscapes identified by plan-making bodies as having a degree of heritage significance meriting consideration in planning decisions but which do not meet the criteria for designated heritage assets."*

Since Flowton Hall is registered in the Suffolk HER database, but is not a listed building, it would be reasonable for this to be considered a non-designated heritage asset, and the impact of the proposal on the heritage asset merits consideration in the planning decision.

Flowton Hall is situated 440m from the proposed development (photo A on next page), and fields 4 & 5 would appear prominently in the landscape (photo B on the next page). This field in particular has an elevation of around 50m in difference from top to bottom, which slopes facing towards Flowton Hall. This is confirmed within the applicant's own topography map[23]. There are already numerous mature trees along The Channel which show that even a mature tree line would not be sufficient to screen the development from view, as shown in photo B.

[23] Appendix 6.7 Figure 6.3 Topography

Photo A – Flowton Hall is marked by the yellow X. The proposed site is outlined in red.

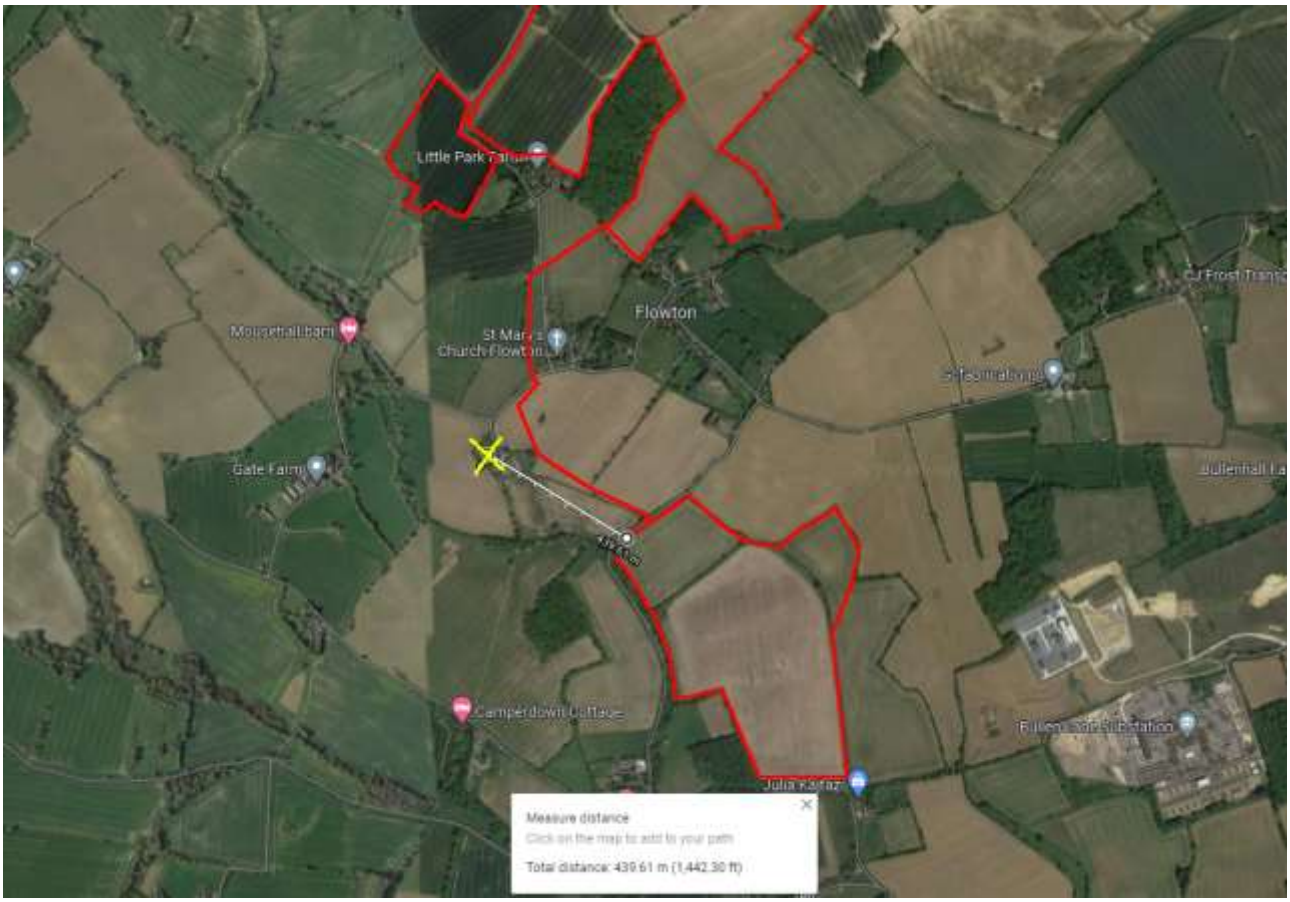
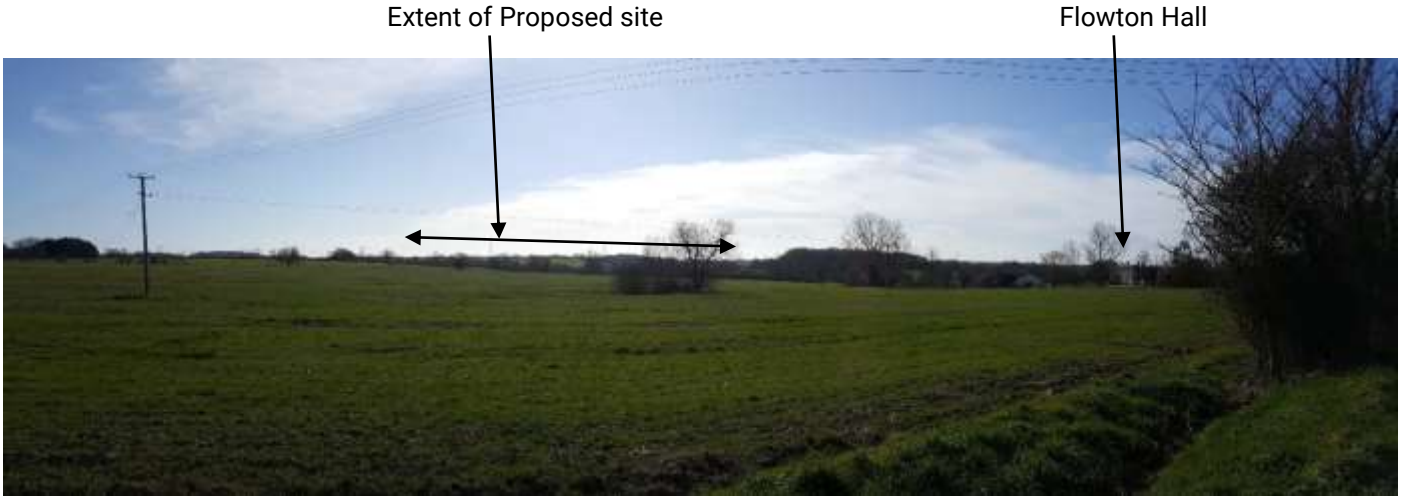


Photo B – view from Flowton Road towards Flowton Hall and fields 4 & 5 behind.



We also wish to highlight the decision for application B/12/01132/FUL/NC to Babergh District Council. This was for the erection of three small wind turbines at Gate Farm, Flowton. The application was refused on the following grounds…

"Having regard to the special landscape qualities of the area it is considered that the installation of three turbines in this location would be intrusive and would be detrimental to the local character of the Special Landscape Area and the wider countryside. It is considered that amendments could not be made to this proposal which would make the application acceptable in landscape terms."

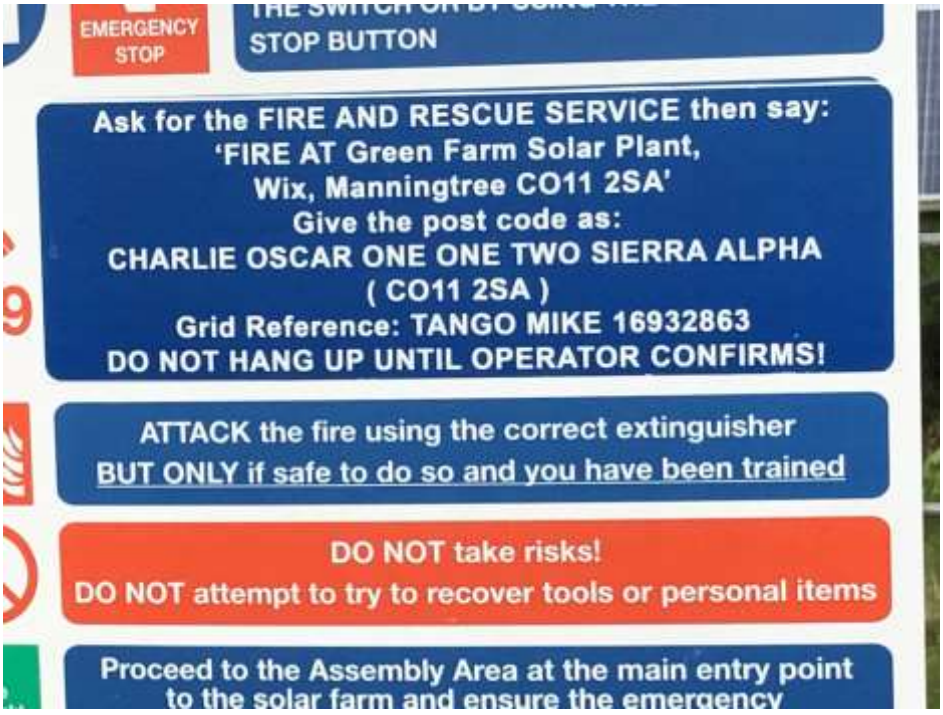
And *"The proposal site lies within the setting of several listed buildings including a Grade I listed church. The installation of three wind turbines would have an adverse impact on the setting of the listed buildings. The application documentation does not provide any details of any assessment of alternative solutions or justification that the proposal is the only solution to providing renewable energy on site. The proposal would cause substantial harm to the setting of*

several listed buildings and it has not been demonstrated within the application documents that any substantial public benefits can be achieved which would outweigh this harm."

The setting of the Grade 1 listed church mentioned in this refusal is the same setting (St Mary's Church, Flowton) that the proposal site lies within and would be in view of. If the erection of a garage, or even a fence, for a residential property can be considered to be detrimental to the local distinctiveness, then a 245 acre solar farm, with animated industrial panels and security fencing with high voltage warning signs (such as photo C & D below), would be disastrous.

Photo C – cabins, fencing and hazard signs at Green Farm Solar Plant, Manningtree

Photo D – large emergency sign at Green Farm Solar Plant, Manningtree



Alongside the harm to the settings of Grade 1 listed St Mary's Church and Lovetofts Farm (both in Flowton and which we have provided photographic evidence of previously), the development would clearly result in harm to the setting of Flowton Hall which cannot be mitigated against due to the elevation and orientation of the slope in fields 4 & 5.