

PLANNING ACT 2008 (AS AMENDED) – SECTION 89 THE INFRASTRUCTURE PLANNING
(EXAMINATION PROCEDURE) RULES 2010 (AS AMENDED) – RULE 8(3) AND RULE 17

THE INFRASTRUCTURE PLANNING (COMPULSORY ACQUISITION) REGULATIONS 2010 –
REGULATIONS 10 TO 16

APPLICATION BY NNB GENERATION COMPANY (SZC) LIMITED FOR AN ORDER GRANTING
DEVELOPMENT CONSENT FOR THE SIZEWELL C PROJECT

AMENDMENT TO THE APPLICATION AND INCLUSION OF ADDITIONAL LAND

Submission to Planning Inspectorate on behalf of Suffolk Building Preservation Trust concerning the impact of proposals regarding Pakenham Fen and the operation of the historic Pakenham Water Mill. Updated 1 October 2021.

INTRODUCTION

1. This submission relates to a report by consultants Wood issued in September 2021 titled ‘9.64 Draft Fen Meadow Plan – Clean Version (Revision 2.0)’ (Report 9.64). It is apparent from the report that issues raised in the submission by Suffolk Building Preservation Trust (the Trust) on 27th July 2021 titled “*Submission to Planning Inspectorate on behalf of Suffolk Building Preservation Trust concerning the impact of proposals regarding Pakenham Fen and the operation of the historic Pakenham Water Mill*” have not been addressed. That submission related to the security of the water supply to Pakenham Water Mill and volunteered to engage in the data gathering and impact assessment process.
2. It is apparent that Pakenham Water Mill, which is outside the study area identified by Wood, has not been considered as a key receptor in the hydrogeological conceptual model outlined in Report 9.64. A change in water management on Pakenham Fen with different objectives, that is not based on a sound and thorough understanding of the water management, has the real and significant risk of resulting in a severe negative impact on the ability of the mill to function.

3. The submission to the Planning Inspectorate on 27th July 2021, and which is attached to the submission for easy reference as Appendix A, provides important detail of the history and operation of the mill, and its reliance on the water supply from Pakenham Fen.
4. In its historical configuration, Pakenham Stream does not feed into the fen; that is, the flow in the stream is carried through Pakenham Fen but is not connected to the Fen. Locally the Pakenham Stream is known as the “upper stream”, as opposed to the “lower stream”, which is referred to as the “Central Ditch” in Report 9.64.
5. Although there should be no connection between Pakenham Stream and Pakenham Fen, there is currently a breach in the bank of the Pakenham Stream which allows the water to flow from the stream to the Central Ditch. This is a recent issue, which should be repaired by the riparian landowner.
6. Pakenham Mill is totally dependent on the flow of water from Pakenham Stream and therefore must be considered as a key receptor in any proposed changes that will affect the flow rate in the Pakenham Stream, including changes to groundwater levels in the fen.
7. The scope of the monitoring and investigation work by Woods as detailed in Report 9.64 has not extended as far north as Pakenham Mill (Figure 1) and no baseline flow monitoring has been established at Pakenham Mill, despite the offer from Suffolk Building Preservation Trust to provide full support and assistance in this regard.
8. It is our considered view that Pakenham Mill has been overlooked as a key environmental receptor in the assessment described Report 9.64, and that the conceptual site model proposed in Report 9.64 fails to incorporate the water supply to the mill, and therefore no assessment of the risk to the mill has been undertaken.

POINTS OF IMMEDIATE CONCERN

9. Site work by Woods has identified a breach in the Pakenham Stream bank where a west-east ditch crosses over the stream, referred to in Paragraph 4.3.7 in Report 9.64 (Figure 1). The report identifies that the flow in the Central Ditch is being supported by flow from Pakenham Stream via this breach.
10. Report 9.64 proposes that that the surface level between the Central Ditch and Pakenham Stream in the Northern area will be lowered. There has been no assessment of how this will impact flow rates in Pakenham Stream, and therefore influence Pakenham Mill which lies downstream of this area.
11. Report 9.64 notes at section 4.5.8 that the “leak” from Pakenham Stream supports the ditch water levels on the proposed site and therefore should be retained. However, the report does not mention that this breach is due to poor maintenance of the riverbanks by the riparian owner, and is not a naturally occurring feature. Therefore, it cannot be relied on as a source of water to the Central Ditch and must be repaired.
12. There is significant concern that if this “leak” is not repaired it will be later relied on to raise groundwater levels in the proposed fen creation east of the “Central Ditch”. This will have a significant and negative effect on the water supply to Pakenham Mill and therefore its ability to operate.
13. The Trust wishes to reiterate that, despite repeated requests, there has been no active engagement between Wood and the Trust. This vindicates the assertion made at paragraph 22 of the submission made on 27th July 2021 (Appendix A) that the stakeholder engagement process has not been taken seriously by EDF and has been treated simply as a tick box exercise.
14. Had Wood discussed their site investigation and monitoring with the Trust the nature and significance of the breach could have been explained, together with the impact that the breach is having on the water supply to the mill. The technical arrogance of EDF and its consultants continues to greatly concern the Trust.

FINAL COMMENT

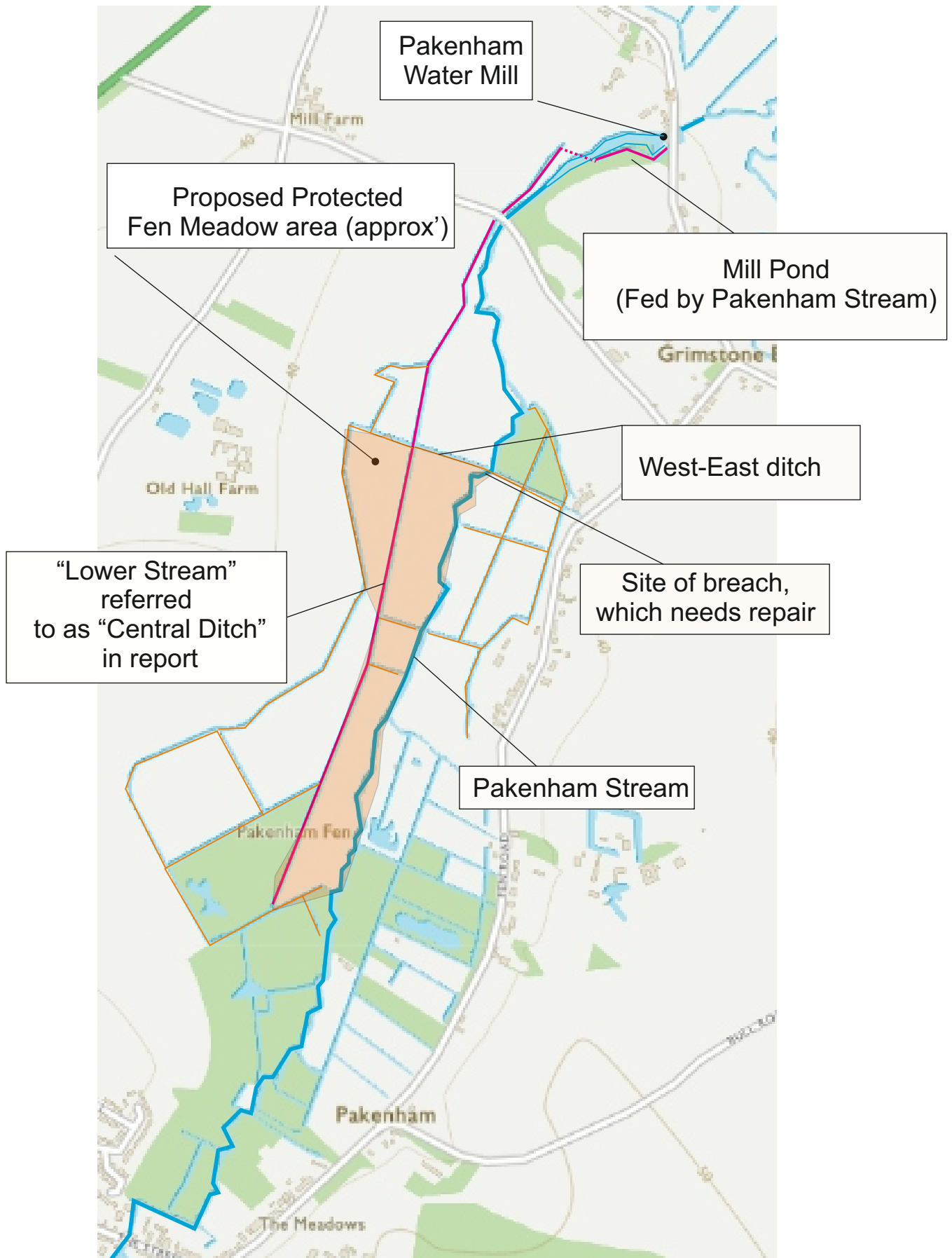
15. The Trust simply wishes to ensure that any actions carried out by EDF will not be to the detriment of the Mill's water supply. The Trust is not necessarily wishing to object to the improvement of the ecology on the fen. However, based on the continued extremely poor stakeholder engagement, the lack of an impact assessment on the mill's water supply and the proven lack of acknowledgment of the Trusts concerns by EDF or its consultants, at this point in time we feel that it is incumbent on us to **OBJECT** until our grave concerns have been adequately addressed.
16. The Trust would also like to point out that the latest version of Report 9.64 was received with only 24 hours notice before a submission needed to be made, which has not provided sufficient time undertake a thorough analysis of the technical work, data, analysis and proposals put forward by Wood.
17. This submission does not highlight all the issues that may be in Report 9.64 and omission of any reference in this submission to any issue should not be construed as agreement to that issue.

Piers Hart
Chairman

On behalf of

Suffolk Buildings Preservation Trust
1st October 2021

Figure 1 Proposed development of Fen Meadows



APPENDIX A

**Suffolk Building Preservation Trust Submission
27th July 2021**

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INTRODUCTION

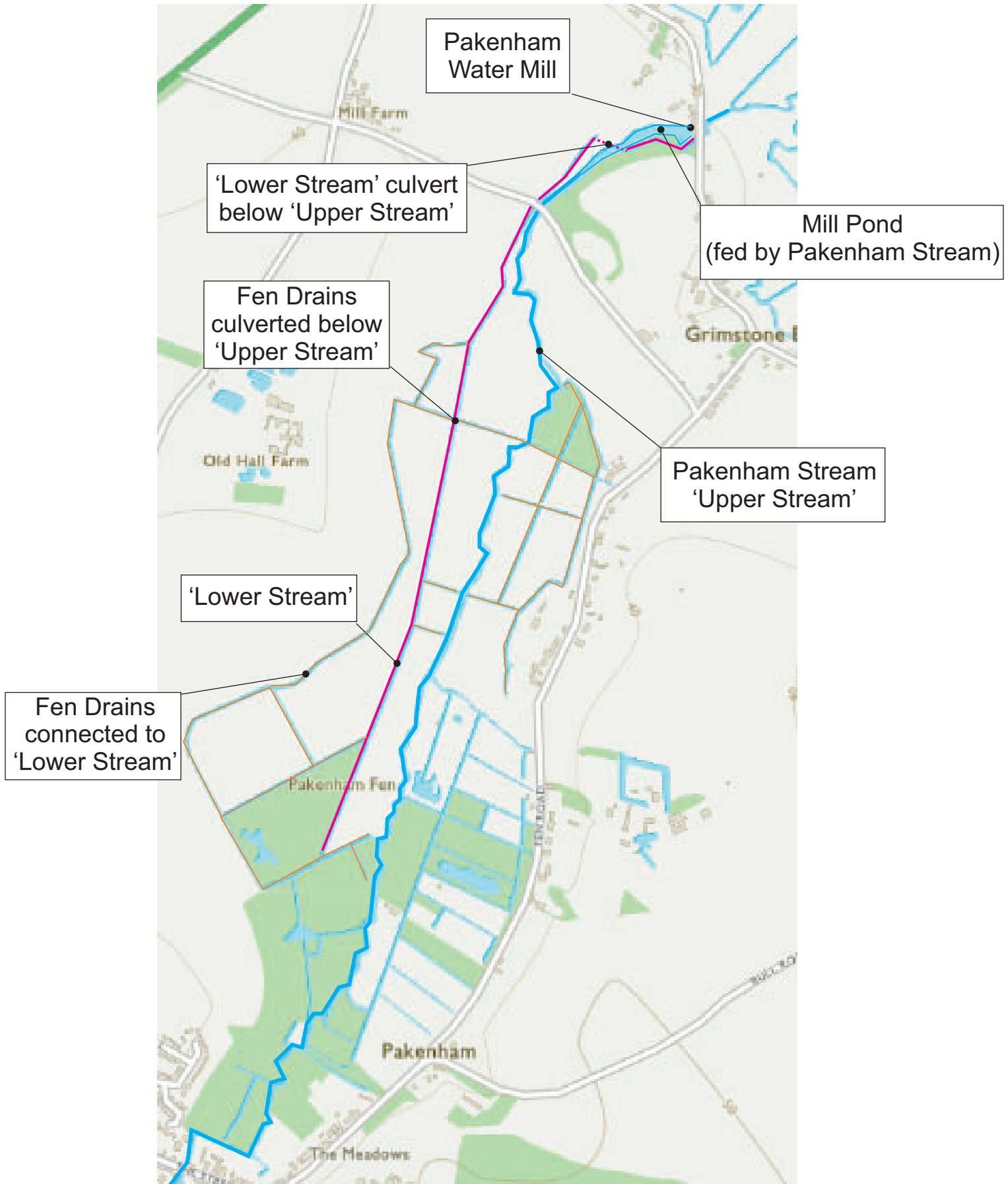
1. This submission relates to the continued operation of an historic, operational water mill which is dependent on the constant flow of water coming off Pakenham Fen. The historic drainage from and around the fen has evolved to maintain flows to power the mill. A change in water management on the fen with different objectives, that is not based on a sound and thorough understanding of the water management has the real and significant risk of resulting in a severe negative impact on the ability of the mill to function.
2. Pakenham Water Mill is owned and operated by the Suffolk Buildings Preservation Trust (The Trust), registered charity no 265212. The present mill is a late C18th building, listed Grade II*, with parts of the structure dating back to the mid C16th. Milling has likely been taking place on this site since Roman Times (there was major Roman settlement at adjoining Ixworth), and a mill is listed on the present site in the Domesday Book.
3. Today, the Mill is operated by The Trust, with the help of volunteers. It is not only a major national tourist attraction, but it is also a fully working mill, producing flour for sale to the public and artisan bakeries.

SOURCE OF WATER

4. By definition, a water mill is dependent on a secure and permanent flow of water. In the case of Pakenham Mill, the flow of water that drives the water is held in a mill pond at a 'high level' and released through the mill wheel when the mill is operating. The volume of water held in the mill pond governs how long the mill can operate for. The height (or depth) of water required to power the Mill is controlled by use of boards in a sluice, and when there is sufficient water in the mill pond, the flow is diverted by a second sluice through the mill.
5. The mill pond is fed by the Pakenham Stream (Figure 1), the catchment for which extends over c. 37km² (3747ha).
6. The flow in the stream is maintained by rainfall runoff, as well as groundwater from the shallow and deeper geology. The groundwater flow is critical in sustaining flows through the late spring, summer and early autumn.
7. An important feature of the drainage of the Pakenham Stream and the way in which it feeds the mill pond. In its present and historical configuration, Pakenham Stream does not feed into the fen; that is, the flow in the stream is carried through Pakenham Fen and is not connected to the Fen. Locally the Pakenham Stream is known as the "upper stream", as opposed to the "lower stream" which is discussed below.
8. The right to water for the Mill was established by the Enclosures Act 1802:

"Pakenham Mill situated on part of the Fen grounds intended to be hereby divided and enclosed, shall be continued working with the least possible obstruction".

Figure 1 Drainage System & Source of Water



RELATIONSHIP WITH PAKENHAM FEN

9. A series of ditches drain Pakenham Fen, the land to the east of Pakenham Stream being drained by ditches and culverts **under** the Pakenham Stream. This water leaves the Fen area by the “lower stream” which runs north, parallel to Pakenham Stream and passes in a culvert **underneath** the mill pond (Figure 1). The two streams merge after the mill pond sluice on their way to Mickle Mere where they join the Blackborne River. There should be no connection between the upper and lower streams. Only through poor maintenance of the riverbanks by riparian owners will water be lost from Pakenham Stream to the “lower stream”.

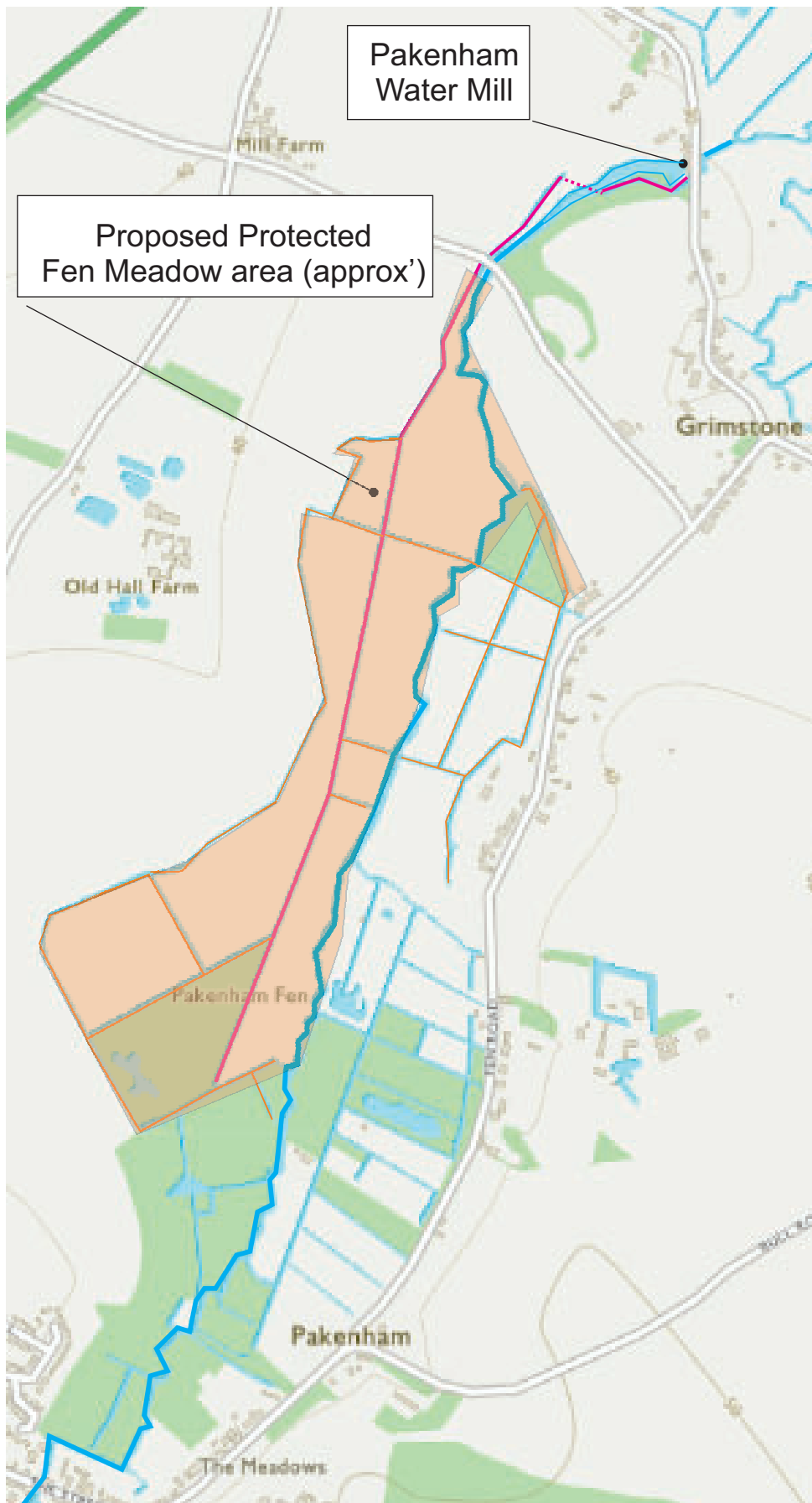
EDF PROPOSALS

10. NNB Generation Company (SZC) Limited (referred to in this document as EDF) have applied to include Pakenham Fen within their development proposal to **develop** an area of protected fen meadow as compensation for the loss of similar habitat at the Sizewell C construction site. It is important to note that the development of the fen meadow includes alterations that may have a severe negative impact on the supply of water to the Mill. A number of possible actions have been listed in EDF’s late entry application, including amongst others:

- Measures to manipulate water levels
- Removal of or alterations to historic drainage patterns
- Land excavation to alter ground levels

11. The proposed area for the fen meadow development is shown running along the boundary of Pakenham Stream (Figure 2), which feeds the mill pond. Any alteration to the adjoining land could have an impact on the supply of water to the Mill.

Figure 2 Proposed Area of Protected Fen Meadow



PRELIMINARY IMPACT ASSESSMENT

12. For the fen meadow to function it will require a supply of water, over and above what is on the land today. If this were not the case, then the land would already be a fen meadow. The land in question is in an intimate upstream relationship with the Mill and it is reasonable to assume that the land drainage that has evolved over millennia has taken the Mills requirements into account. Indeed, historically, it is likely that it was in the interests of all land managers to ensure that the Mill could function. The reference in the Enclosure Act demonstrates this position. This historic perspective, well known to the Trust, has not been investigated by EDF.
13. An increase in the supply of water to Pakenham Fen can be achieved in two fundamental ways, either by diverting water from Pakenham Stream, or by lowering the ground level in order to access shallow groundwater.
14. Diverting water from Pakenham Stream will have a direct impact and increasing access to groundwater will have an indirect impact, on the water supply to the Mill. Increasing losses from groundwater, either by increased uptake by the plants, or by diverting it to the "lower stream" has a high probability of reducing late spring, summer and early autumn flow in the "upper Stream" (Pakenham Stream). The magnitude of this impact has not been assessed by EDF.
15. Work done by EDF and their consultants has concentrated on the ecological suitability of the fen, with water supply aspects only covered at a very high level using inappropriate broad, large scale models which are not designed for this type of application. The assessments do not take account of the critical, local water management balance that exists in the area.
16. It is therefore our opinion that the Environmental Assessment carried out to date may be fatally flawed and that as a result the proposed development could have a severe negative impact on the operation of the historic Pakenham Water Mill.

STAKEHOLDER ENGAGEMENT

17. The Trust has already met with representatives from EDF regarding plans for the land in question. A 1 hour discussion via a 'Zoom' meeting were held with James Hanson BSc (Hons) MSc DipM MCIWEM C.WEM (DCO Technical Lead – Surface Water and Groundwater; Flood Risk Assessment; Drainage Sizewell C Nuclear Development), on 4th May
18. The Trust hosted Andy Brooks (Technical Director, Ecology Wood Group UK Limited) and one colleague on a site visit on 10th June 2021, but to date no detailed information, or discussions with respect to water management and impacts on the Mill have been provided. It is of note that the representatives on the site visit were not water management experts, but rather an ecologist and a 'geographical assistant', which rather reinforced our concerns regarding the water management aspects being taken seriously.
19. Due to the unusual and complex nature of water management on and around the fen, the direct, and indirect links to the water supply to the Mill, it is critical that decisions and fen meadow designs are based on a robust, local, small scale, baseline data set that includes all aspects of the surface water and groundwater flow and level systems, including hydrogeological conceptualisation at a detailed scale. Such a baseline should as an absolute minimum cover a 12 month period and depending on the weather during that period, a much longer period may be required.
20. Mr Brooks, during the site visit, referred to monitoring of stream flows and ground water depth being installed in June 2021, with data being collected and recorded electronically. To date no information on the construction of groundwater monitoring boreholes or the location of flow monitoring has been provided. No flow monitoring has been agreed or installed at the mill, which would be an ideal location for monitoring the flows on which the Mill is reliant, as well as the flow in the 'lower stream'.
21. Volunteers working at the Mill, along with members of the board, have demonstrated great willingness to work with EDF on the gathering of data and the formulation of a

conservation plan, but so far such offers of cooperation have not been taken up, and have quite frankly, been ignored.

22. This technical arrogance greatly concerns the Trust as we feel that the stakeholder engagement process has not been taken seriously by EDF and has been treated simply as a tick box exercise.

ONGOING COOPERATION

23. The Trust recognises that, while reserving the right to object to these proposals, it is in our best interest to cooperate with EDF and their consultants, in order that the correct decisions can be made and mitigation designs are robust, effective and long lasting. Such mitigation must be codified and, in our opinion, overseen in perpetuity by a body that is both independent of the fen managers and any government agencies, in order that all stakeholders have the confidence that their concerns carry appropriate weight.
24. The Trustees should be represented on the body to ensure that the Mill's interests are protected on an in-perpetuity basis.
25. Should planning permission be granted, the Trustees request that the Mill's right to water be recognised and that no actions be undertaken without prior meaningful, two way, consultation with the Trust. For the removal of doubt, the right to water for the Mill was established by the Enclosures Act 1802, "Pakenham Mill situated on part of the Fen grounds intended to be hereby divided and enclosed, shall be continued working with the least possible obstruction".
26. The Trust simply wishes to ensure that any actions carried out by EDF will not be to the detriment of the Mill's water supply. The Trust is not necessarily wishing to object. However, based on the poor stakeholder engagement, poor water resources impact assessment and poor acknowledgment of the Trusts concerns by EDF, at this point in time, we feel that it is incumbent on us to **OBJECT** until our grave concerns have been adequately addressed.

FINAL COMMENT

27. Neither the Trustees, nor the Mill's volunteers, are water management experts, and the Trust will inevitably need to draw on the expertise of professional hydrologists and hydrogeologists to examine the EDF proposals, when they are published. This may also require independent verification of the data submitted. All this costs money, which the Trust, as a charity working on very tight budgets, simply does not have. The Trust would therefore request that a fully funded review panel, independent of EDF, its consultants and government agencies, is established to scrutinise and verify the proposals, designs and mitigation measures put forward. Such a panel, if managed appropriately, is likely to help significantly in identifying the least cost, best case solution to any challenges that may arise.

Piers Hart
Chairman

On behalf of

Suffolk Buildings Preservation Trust

26th July 2021