# The Sizewell C Project

## 9.10.21 Initial Statement of Common Ground - Pro Corda Trust / Leiston Abbey

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June 2021

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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# TABLES



# APPENDICES

# 1 INTRODUCTION

## 1.1 Status of the SOCG

1.1.1 This Statement of Common Ground ('SoCG') has been prepared in respect of the application for development consent under the Planning Act 2008 ('the Application') for the proposed Sizewell C Project. This version 1, dated 2 June 2021, has been prepared through a programme of engagement between NNB Generation Company (SZC) Limited ('SZC Co.') as the Applicant.

1.1.2 Pro Corda Trust and the Applicant have been meeting regularly to discuss matters. However, due to the complexity of issues, Pro Corda Trust have not yet had an opportunity to respond in writing. Subsequent versions of this SoCG will therefore be submitted during the course of the Examination.

## 1.2 Purpose of this document

1.2.1 The purpose of this SoCG is to set out the position of the parties arising from the application for development consent for the construction and operation of the Sizewell C nuclear power station and together with the proposed associated development (hereafter referred to as 'the Sizewell C Project'). This SoCG has been prepared in accordance with the 'Guidance for the examination of applications for development consent' published in March 2015 by the Department of Communities and Local Government (hereafter referred to as 'DCLG guidance').

1.2.2 The aim of this SoCG is, therefore, to inform the Examining Authority and provide a clear position on the state and extent of discussions and agreement between the parties on matters relating to the proposed Sizewell C Project.

1.2.3 This SoCG does not seek to replicate information which is available elsewhere within the DCO application documents. All documents are available on the Planning Inspectorate website.

## 1.3 Structure of this Statement of Common Ground

1.3.1 Chapter 2 provides a schedule which detail the position on relevant matters between the parties, including any matters where discussions are ongoing. This is underpinned by Appendix A, which provides a summary of engagement undertaken to establish this SoCG.

# 2 POSITION OF THE PARTIES

2.1.1 Table 2.1 provides an overview of the position of the parties and any further actions planned.

### Table 2.1 Position of the Parties

| Ref. | Matter | SZC Co.'s Position | Pro Corda's Position | Further Action Required | Agreed / Not Agreed / In Progress |
|---|---|---|---|---|---|
| **Relevant Representation** | | | | | |
| PC1 | Pro Corda Trust's representation focuses its concern as the charitable trust and business responsible for the running of Leiston Abbey, the acknowledged closest publicly accessible site to the proposed Construction worker campus for the Sizewell C project. | In recognition of the fact that English Heritage and Pro Corda perform different functions in relation to the Leiston Abbey second site, two separate contributions have been proposed under the Deed of Obligation (formerly S106 agreement): a heritage contribution for English Heritage and a resilience fund for Pro Corda. These will be set out in Schedule 8 (Heritage) and Schedule 13 (Third Party Resilience Funds) of the **Deed of Obligation** in due course (latest draft [REP2-060])<br>However, we recognise the contribution of the heritage asset to Pro Corda's activities and the fact that Pro Corda have managed the site for English Heritage since the 1990s. Therefore it will be important for all three Parties to work together in terms of addressing effects on the site, particularly in terms of wider landscape masterplanning / access etc. | Pro Corda's offer – both educationally and to the local community / public via its year round box office concerts series is integrally linked to the heritage. Likewise our role as local managers for English Heritage, and our position as freeholders. We therefore welcome the joint working of the 3 parties alongside the heritage fund and resilience fund being treated separately. | All parties to work together to ensure mitigation does not duplicate and that wider site issues e.g. landscaping and access are joined up. | In progress |
| PC2 | As set out to EDF throughout the 3 stages of submission thus far, our primary concerns within this representation are:<br>Security, including child protection as a national music education charity serving over 2,000 children and young people at the Leiston Abbey site each year, over 50% of whom are vulnerable with disabilities and additional needs. Within security we also wish to make representation on controlling visitor flow through to the public heritage site we are responsible | Leiston Abbey second site is an English Heritage guardianship site and is already open to the public (no admission charge). Both the issue of safeguarding of pupils on a site that is already open to the public and visitor flow through the site are pre-existing issues. However, SZC Co recognises that there is a risk that proximity of the accommodation and main development site may exacerbate these.<br>A number of discussions have been held on the issue of child safety and it is agreed that mitigation should be put in place to address this as part of the Pro Corda Resilience Fund. The scope and quantum is to be agreed. However, it is expected that this will comprise payment to convert a part-time staff role to a full-time role to allow a 24/7 presence on site, as well as a contribution for physical security measures.<br>SZC Co. welcomes the fact that Pro Corda's concern does not relate to all workers - they, as other members of the public, are very welcome to visit the heritage asset or attend community events e.g. concerts. Rather Pro | Pro Corda's position on safeguarding is connected to the significant potential increase in footfall alongside the proximity of the worker campus. We therefore welcome the significant progress made with EDF regarding agreement to support Pro Corda's staff costs throughout the construction period to increase to full time our year round site and security manager. | Scope and quantum of contribution to be agreed and set out in the Deed of Obligation (formerly the S106 agreement). | In progress |

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| | for which is on the doorstep of the worker campus. | Corda is concerned about the possibility of criminal activity related to the workforce, including access to the site at night for criminal purposes.<br>SZC Co. notes also that it will be putting in place a number of measures to support community safety (see Community Safety Management Plan - [APP-635]. The following may provide comfort:<br>• Sizewell C workers will be subject to pre-employment checks and vetting - vetting comprises a Valid Baseline Personnel Security Standard (BPSS) and DBS (Disclosure & Barring Service) check. DBS / BPSS are nationally recognised approaches (used by UK Government).<br>• Workers will be drug and alcohol tested both before starting work on the project and on an ongoing basis (random and 'for cause').<br>• The main development site and accommodation campus will have a 24/7 security team which Pro Corda will be able to contact if there are any concerns about worker behaviour.<br>• SZC Co. will be funding additional support from Suffolk Constabulary, based partly on site and partly in the community.<br>• There will be a mandatory code of conduct and workers may be dismissed from the project for breaching this - this will include for incidents off site.<br>• SZC Co. will provide a fly parking team who will visit site and check car registration numbers if it is suspected that a worker is using the Pro Corda car park due to proximity to the main development site. Repeat fly parking will lead to dismissal from the project. | | | |
| PC3 | Noise. (Both from construction work and also new rail route/road traffic supplying the proposed power station and campus.) We wish to make representations on the impact on our education sessions, on our public community concerts | Further engagement with the noise consultants, including a site visit, has taken place since the DCO submission and a "Pro Corda - Construction Timeline" note was provided in October 2020 setting out how noise may be experienced over different areas of the site throughout the main development site construction phase. This also included detail on rail noise. This is attached as Appendix B to this Statement of Common Ground. | We are pleased to have focused the impact on our many hundreds of students with autism within our discussions with EDF on noise mitigation. The impact goes beyond those students and extends to our instrumental music courses and | Scope and quantum of contribution to be agreed and set out in | In progress |

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| | and on those young people we work with who have additional needs - especially autism - who require special consideration and mitigation should the development proceed. | Discussions since then have focused on addressing the effects on students with severe autism and other additional needs and it is agreed that mitigation should be put in place to address this as part of the Pro Corda Resilience Fund. The scope and quantum is to be agreed. However, it is expected that this will be addressed through the provision of sensory spaces.<br>A contribution to upgrading or replacing the windows of the Abbey Farmhouse is also being discussed - this would address any potential nightime noise disturbance issues which may vary from expected patterns elsewhere, as well as provide a security enhancement for the lower floors of the building. It is envisaged that this would be funded through the Noise Mitigation Scheme (detail to be set out in Schedule 12 of the **Deed of Obligation** in due course - latest draft [REP2-060]). | public concerts. However, the mitigation in respect of anxiety caused to students with additional needs in particular and via the creation of safe sensory space is welcome. | the Deed of Obligation. | |
| PC4 | Physical impact. The impact of construction phases on an ancient site - both the heritage asset (which we have responsibility for under local management agreement with English Heritage) and our listed buildings and monuments on site. | No physical impacts on the heritage asset are predicted - as set out in the ES, impacts relate to the setting of the designated assets only.<br>However, SZC Co is working with English Heritage to define the scope of a heritage contribution for the designated assets. We recognise the contribution of the heritage asset to Pro Corda's activities and the fact that Pro Corda have managed the site for English Heritage since the 1990s. Therefore it will be important for all three Parties to work together in terms of addressing effects on the site, particularly in terms of wider landscape masterplanning / access etc. | Pro Corda will work closely with English Heritage and Historic England as local managers, and within our day to day protection and security offer in respect of the heritage assets at Leiston Abbey | Discussions ongoing with English Heritage | In progress |
| PC5 | Road layout. The impacts on access to and from a site where we have vulnerable children staying (many with additional health needs.) | It is understood that access would be vehicular only - to be discussed with Pro Corda whether some minor works at the site entrance might be helpful in this regard. This would form part of the detailed design of the bridleway which is proposed to run adjacent to Lover's Lane and crosses the entrance. | Pro Corda will continue to work with EDF within ongoing solutions on road layout. | Discussion to be arranged on the site entrance | In progress |
| PC6 | Visual impact. Impacts from the scale and massing of new build structures and infrastructure including lighting and floodlights | A number of primary and tertiary mitigation measures have been embedded in the project to reduce the visual impacts.<br>MDS construction | We will work with EDF and EH and via the commissioning of a landscape management plan – which we are very much in support of. | Discussions ongoing | In progress |

| Ref. | Matter | SZC Co.'s Position | Pro Corda's Position | Further Action Required | Agreed / Not Agreed / In Progress |
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| | at the worker campus, rail sidings etc. | • Change in design to offset roundabout on B1122 and allow for enhanced screening.<br>• Design of lighting to minimise light spill.<br>• Amended campus design west of Eastbridge Road to increase separation from asset - sports facilities moved off-site to Leiston.<br>• Retained landscape buffers between accommodation campus and asset.<br>• Strengthened planting in hedgerow to Abbey Lane.<br><u>Green rail route construction / operation:</u><br>• Retention of established vegetation.<br>• Introduction of appropriate landscape proposals.<br><u>MDS operation</u><br>• Restoration of agricultural land and heathland east of B1122.<br>• Retention of established vegetation.<br><br>The Lighting Management Plan, provided in **Volume 2, Chapter 2, Appendix 2B of the ES** [APP-182] sets out that its aim is ensure that the external lighting provided on the construction and operational sites of Sizewell C power station provides safe lighting for the staff on-site and is functional to allow the safe construction and operation, but is also both energy efficient and designed as far as reasonably practicable to minimise its impact on the surrounding environment.<br>SZC Co. is also proposing a S106 contribution to English Heritage to address the settings impact on Leiston Abbey (second site) and moated site (SM 1014520) / St Mary's Abbey, Grade I (LB 1215753) during the construction phase of the Sizewell C Project only. This will enhance the visitor experience for all visitors, including Pro Corda's.<br>SZC Co. has also suggested to English Heritage and Pro Corda that a whole site landscape strategy / masterplan might be helpful, drawing on | | | |

| Ref. | Matter | SZC Co.'s Position | Pro Corda's Position | Further Action Required | Agreed / Not Agreed / In Progress |
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| | | landscape, amenity, heritage and ecology perspectives. This would aim to address the residual visual impacts of the proposed development.<br><br>The palette of interventions that might be appropriate include for example, hedgerow improvements, new planting, meadow creation, new seating and mown paths. Interpretation could also be incorporated into a designed and agreed 'masterplan', subject to agreement with English Heritage.<br><br>It is proposed that the masterplan would be funded under the Deed of Obligation. This approach is not yet agreed and a decision would need to be made by the Parties as to whether it sits within the Resilience Fund or Heritage Contribution. Notwithstanding this, all Parties would need to work together and be consulted on this.<br><br>An application could be made to the Natural Environment Fund for and interventions identified by the masterplanning exercise - see Schedule 11 of the **Draft Deed of Obligation** [REP2-060]. | | | |
| PC7 | Disruption to business. Our business across all the operational areas of the charity relies on the tranquil and "retreat" aspects (and selling points) of the Leiston Abbey site. The dramatic changes to the immediately surrounding landscapes together with its increased population puts this at great risk, and for which we are seeking mitigation." | See PC2 / PC3 / PC6 above on mitigation measures proposed.<br><br>A contribution to staffing is being discussed to enable Pro Corda to bring in a part time marketing post to allow the development and marketing of new and additional activities to offset the risk of loss of business elsewhere e.g. should some schools feel unwilling to visit due to the presence of the Sizewell C Project. The scope and quantum is to be agreed.<br><br>In addition, SZC Co. is talking to Pro Corda, through the Net Zero Leiston Project, about addressing their need for heating in the barn (LB 1216380) and across the site as a whole. It is understood that the barn cannot be used in Winter as it is so cold. Bringing it into year round use would enable Pro Corda to increase their offer, particularly to the community (noting that it is a large space which allows for social distancing).<br><br>Pro Corda may also wish to make an application to the Community Fund for new or additional activities that might meet the criteria of the fund, which is defined as follows in **Schedule 14** of the **Draft Deed of Obligation** [REP2-060]: | Pro Corda welcomes the agreement, via the payroll investment portion of settlement, to invest in a part time marketing post to promote new activity we will put in place to mitigate loss of business. Long term it should be noted that this will be far more cost effective all round than simply mitigating financially loss of income. This reflects Pro Corda's wish to at all times come up with positive and imaginative solutions, and create new opportunities and services for Pro Corda's and Leiston Abbey's users. | Discussions ongoing | In progress |

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| | | *"The Sizewell C Community Fund shall be for the purpose of mitigating the intangible and residual impacts of the Project on the communities in the Area of Benefit through providing Grants for schemes, measures and projects which promote the economic, social or environmental well-being of those communities and enhance their quality of life".* | However, this will involve increase payroll costs and marketing and promotion – thus this area being built in to the agreement. | | |
| PC8 | It is clear that the proposed development will have a significant adverse effect on the monument and its attractiveness to our visitors including the effects of increased traffic, construction noise and the proximity of the workers village. | Please see response to PC4.<br>NB The historic environment chapters for main development site ad green rail route assess the effects on the setting of the designated assets at Leiston Abbey:<br>Significant effects are predicted for the Leiston Abbey (second site) and moated site (SM 1014520)/St Mary's Abbey, Grade I (LB 1215753) during the construction phase only of the Sizewell C Project only - this includes main development site construction and green rail route construction and operation. No significant settings effects are predicted for the Guesten Hall at Abbey Farm, Grade II (LB 1268290), Barn at Abbey Farm, Grade II (LB 1216380), Retreat House, Grade II (LB 1215754) during construction or operation. | We wish to work together with EDF and EH to create positive opportunities within the visitor experience and interpretation. We anticipate that this should also involve upgrades of the driveway and visitor car park at Leiston Abbey. | As for PC4 | As for PC4 |
| **Matters raised by the Examining Authority** | | | | | |
| PC9 | The SoCG should address all the issues raised by Pro Corda Trust/Leiston Abbey in their relevant representation [RR-0993]; | Addressed above. | Pro Corda are pleased to have reached this position of common ground with EDF in terms of our issues raised being addressed in this statement and proposed mitigation. | | |
| PC10 | The effects on heritage assets and archaeological considerations. | For the project as a whole, SZC Co. is addressing effects with stakeholders as follows:<br>• Scheduled Monuments, Grade I and II* listed assets, marine (below mean high water mark) archaeology, peat strategy - Historic England. | As above | | |

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| | | • Grade II listed assets, Conservation Areas - Conservation Officer, East Suffolk Council.<br>• Buried archaeology, peat strategy - Suffolk County Council Archaeology Service.<br>• Designated assets at Leiston Abbey (second site) for the purposes of agreeing the S106 heritage contribution - English Heritage.<br>Pro Corda and SZC Co. will work closely with the relevant stakeholders (English Heritage / Historic England / SCC) to ensure that any mitigation proposed under the resilience fund avoids or mitigates effects on buried archaeology and the setting of the designated assets, including securing any consents as necessary. | | | |
| PC11 | • The effects on commercial operations; • Security issues; • Noise effects; • Educational effects | All set out above. | As above | | |
| PC12 | A summary of matters agreed; and<br>A summary statement of matters not agreed or outstanding. | To be set out in this SoCG, with contribution to be set out in the Section 106 agreement. | To be set out in this SoCG, with contribution to be set out in the Section 106 agreement. | In progress. | In progress. |

# APPENDIX A: ENGAGEMENT ON THE SOCG

A.1.1. The preparation of this SoCG has been informed by a programme of discussions between the parties, are as summarised in **Table 2.2**.

**Table 2.2 SOCG meetings held between the parties**

| Date | Details of the Meeting |
|---|---|
| 14/5/20 | Catch up on DCO application / next steps |
| 29/6/20 | Update meeting including discussion on noise issues |
| 29/7/20 | Noise consultant site visit to understand in greater detail how different areas of the site are utilised by Pro Corda |
| 24/9/20 | Progress discussions on resilience fund and noise |
| 1/10/20 | Joint meeting Pro Corda and English Heritage |
| 8/10/20 | Net Zero Leiston team - discussion on heating at Leiston Abbey / bringing barn into year round use |
| 11/2/20 | Progress discussions on resilience fund, noise plus catch up with Net Zero Leiston team |
| 19/3/21 | Discuss structure of first draft SoCG ahead of issue on 22/3/21. |
| 1/4/21 | Progress discussions on resilience fund, noise plus catch up with Net Zero Leiston team |
| 29/4/21 | Discussion on SOCG, with focus on safeguarding concerns |
| 14/5/21 | Catch up |
| 9/6/21 | Meeting to discuss potential mitigation measures |
| 16/6/21 | Meeting to update SOCG for deadline 3 |

# APPENDIX B: PRO CORDA - CONSTRUCTION TIMELINE

Revision 01 – 11.09.20

# Sizewell C Project

# Pro Corda – Construction Timeline



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# DOCUMENT CONTROL

| | |
|---|---|
| **Prepared by:** | [redacted]<br>Topic Lead - Noise |
| **Verified by:** | [redacted]<br>Planning Manager |
| **Approved by:** | [redacted]<br>Environment Lead |

# REVISION HISTORY

# CONTENTS

# 1 INTRODUCTION

## 1.1 Purpose

This document provides a broad timeline for how construction noise levels are likely to change at Leiston Abbey (second site) and Pro Corda over the life of the Sizewell C (SZC) project. This summary was requested at a meeting between Pro Corda and SZC's Topic Lead for noise on 29th July 2020.

## 1.2 Scope

This document sets out a broad timeline describing how noise generated by the SZC project is expected to develop over the course of the construction works. The content of this document is based on the information provided in the DCO submission, specifically Chapter 11 of Volume 2 of the ES and its associated Appendix 11B, and Chapter 4 of Volume 9 and its associated Appendix 4A.

New information is not provided in this document, since the construction information set out in the DCO submission is the best and most current information available. However, some additional interpretation of the results is included where it is considered helpful to do so, and information pertinent to Leiston Abbey and Pro Corda is collated in one place for easy reference.

The impact assessment presented in the ES is not repeated in this document; instead, this document focusses on providing additional context to assist with better understanding how the construction noise levels might affect activities at Pro Corda.

## 1.3 Definitions

| Term / Abbreviation | Definition |
|---|---|
| ES | Environmental Statement |
| SZC | Sizewell C |
| DCO | Development Consent Order |
| WHO | World Health Organisation |
| BB | Building Bulletin |
| CoCP | Code of Construction Practice |

## 1.4 References

| Ref | Title | Location | Document No. |
|---|---|---|---|
| 1 | ES - Main Development Site – Noise and Vibration chapter | Book 6 Vol 2 Ch 11 | 6.3 |
| 2 | ES - Main Development Site – Construction Noise Assessment | Book 6 Vol 2 App 11B | 6.3 |
| 3 | ES – Main Development Site – Chapter 11 Figures | Book 6 Vol 2 Figures | 6.3 |
| 4 | ES – Rail – Noise and Vibration chapter | Book 6 Vol 9 Ch 4 | 6.10 |
| 5 | ES – Rail – Green Route Construction Assumptions | Book 6 Vol 9 App 4A | 6.10 |
| 6 | ES – Description of Construction chapter | Book 6 Vol 2 Ch 3 | 6.3 |
| 7 | Code of Construction Practice | Book 8 | 8.11 |

# 2 BASIS OF CONSTRUCTION NOISE ASSESSMENT

## 2.1 Construction Programme

The construction activities and programme, and the main construction land uses within the Main Development Site are set out in Volume 2, Chapter 3 of the SZC ES (Ref. 6) and are not repeated in full here.

To assist with assessing the construction programme, the works have been broken down into five stages, one of which has two sub-phases:

- Phase 1: Site establishment and preparation for earthworks (Years 1 – 2), which includes:
    - Phase 1a: initial site stripping and levelling;
    - Phase 1b: infrastructure construction and earth-moving;
- Phase 2: Main earthworks (Years 1 – 4);
- Phase 3: Main civils (Years 3 – 9);
- Phase 4: Mechanical and Engineering (M&E) fit out, instrumentation and commissioning (Years 4 – 11); and,
- Phase 5: Removal of temporary facilities and restoration of the land (Years 10 – 12).

The reason for two sub-phases within Phase 1 is to make a distinction between the potentially noisier site stripping and levelling activities (Phase 1a), which are expected to last for up to approximately 6 months, and the less noisy infrastructure construction and earth-moving (Phase 1b), which are expected to last for approximately 18 months.

## 2.2 Noise Calculations

The assumptions that informed the noise calculations are set out in Appendix 11B of Volume 2 of the ES (Ref. 2) and Appendix 4A of Volume 9 of the ES (Ref. 5); the information contained in those appendices is not repeated in full in this document.

It is important to remember that the noise levels presented in the ES are not definitive, and are based on assumptions about the works likely to be carried out by the appointed contractor(s). The DCO, if granted, requires further consideration of the construction works as they evolve once contractor(s) are appointed, and the mechanisms for controlling construction noise and vibration are found in the Code of Construction Practice (Book 8. Doc ref. 8.11, of the DCO submission). The CoCP sets out best practice construction methods, noise thresholds for the control of the works, and monitoring protocols that will be developed to provide an ongoing control mechanism throughout the works.

A number of physical mitigation measures are included in the noise calculations in the form of acoustic barriers or bunds, which are shown in Figure 11.4 of Volume 2 of the ES, included as Figure A1 in Appendix A of this document. The barrier B1 is the closest to Leiston Abbey.

It is important to understand how the noise levels are presented, so that the reader is aware of what the numbers mean.

Firstly, the construction noise levels presented relate to the construction activities only; for the Main Development Site, these take account of construction sources plus vehicles (including on access roads) and static but idling trains within the Main Development Site; for the Green Rail Route, they include the construction plant required to prepare the ground and lay the new or upgraded track. The calculations do not

take account of any existing sources, such as road traffic, aircraft or agricultural activities, nor do they take account of construction sources away from the Main Development Site, such as road traffic on public roads.

Secondly, the numbers seek to present the reasonable worst-case outcomes in the following ways, to take account of the inherent variability of the works over the course of each phase of works:

- Phase 1a: a typical day during the busiest month of activity;
- Phase 1b and Phase 2: a typical day;
- Phase 3: a typical day;
- Phase 4: a typical day;
- Phase 5: a typical day during the busiest month.

The values in each instance are 16 hour $L_{Aeq}$ values, representing the period between 07:00 and 23:00 hours.

For night-time construction work, the $L_{Aeq,8hrs}$ index is used, representing the night-time period between 23:00 and 07:00 hours. For the construction of the Green Rail Route, the $L_{Aeq,12hrs}$ index is used, representing the daytime period between 07:00 and 19:00 hours.

Although a form of 'average' sound level, the $L_{Aeq}$ over a particular time period is not a simple arithmetic mean, but it represents the average 'energy' of the sound. By way of example as to how this 'averaging' works, the simple arithmetic mean of the three values 20, 40, and 60, is 40. However, if these were decibel levels each occurring for an hour, the three hour $L_{Aeq}$ value, which is often termed an 'energy' average or a 'logarithmic' average, would be 55dB. It can be seen that the $L_{Aeq}$ value for any given period is weighted towards the higher values, which minimises the risk of under-estimating the sound level.

The duration of the sound also affects the overall $L_{Aeq}$ over a period, with the averaged value weighted towards the higher levels over longer periods, again, minimising the risk of under-estimating the sound level.

By considering the expected construction works by activity and time period, judged by how the works are likely to vary over a number of weeks, and within each working day, it is possible to determine the sound levels likely to be generated.

## 2.3 Baseline Conditions

Measurements carried out during September 2014 and November 2015 indicated typical ambient sound levels at Leiston Abbey of between 42-45dB $L_{Aeq,T}$ during the day and 30-35dB $L_{Aeq,T}$ at night. The sound climate consisted primarily of distant road traffic noise, from the B1112 in particular, occasional aircraft, occasional agricultural and ground maintenance activities, and birdsong from various species.

## 2.4 Consideration of Additional Criteria for Pro Corda

Pro Corda delivers chamber music training through residential courses for students aged 5 to 24 years old, and courses for young people with special educational needs and disabilities (SEND). Concerts and musical events are hosted, taking place within some of the historic buildings on the site, and in external courtyard areas.

Some of the individuals that Pro Corda caters for may be as sensitive to changes in the character of the acoustic environment as they are to absolute levels of noise, even when the individual may not have been exposed to the local acoustic environment for some time. Without knowledge of how each individual reacts to changes in the acoustic environment it is not possible to provide firm assurances that there would be no adverse effect, on an individual level, nor to identify specific criteria.

There are no widely-adopted acoustic criteria for the design of schools for SEND pupils, with adopted design targets for a particular situation tending to be informed by the specific needs of the users.

To provide some context for the noise levels presented in the DCO submission, as summarised in this document, it is noted that the Government's design guidance for schools is set out in the February 2015 document Building Bulletin (BB) 93 *Acoustic design of schools – performance standards*, issued by the Department for Education. BB93 recommends the following sound levels be adopted as design targets when designing a new school, or refurbishing an existing school:

- Primary music room, secondary music room, small or large practice or group room, performance of recital room, lecture room: 35 to 40dB $L_{Aeq,30mins}$;
- Teaching space intended for students with special hearing and communication needs: 30 to 35dB $L_{Aeq,30mins}$;
- SEN calming room: 35dB $L_{Aeq,30mins}$.

The above values are all internal sound levels, which can be translated to external free-field levels by adding 10dB to correct for an open window, to arrive at the following external criteria that would be equivalent to the internal criteria above:

- Target external free-field levels for primary music room, secondary music room, small or large practice or group room, performance of recital room, lecture room: 45 to 50dB $L_{Aeq,30mins}$;
- Target external free-field levels for teaching space intended for students with special hearing and communication needs: 40 to 45dB $L_{Aeq,30mins}$;
- Target external free-field levels for SEN calming room: 45dB $L_{Aeq,30mins}$.

A free-field sound level is determined at least 3.5m away from any reflecting surface, other than the ground.

The Institute of Acoustics and Association of Noise Consultants have jointly produced a design guide for schools, titled *Acoustics of Schools: a design guide* (dated November 2015), which is intended to supplement the guidance in BB93. The design guide provides criteria for external areas of schools:

*"For new schools, 60 dB $L_{Aeq,30min}$ should be regarded as an upper limit for external noise at the boundary of external areas used for formal and informal outdoor teaching and recreation."*

*"Noise levels in unoccupied playgrounds, playing fields and other outdoor areas should not exceed 55 dB $L_{Aeq,30min}$ and there should be at least one area suitable for outdoor teaching activities where noise levels are below 50 dB $L_{Aeq,30min}$. If this is not possible, due to a lack of suitably quiet sites, acoustic screening should be used to reduce noise levels in these areas as much as practicable, and an assessment of noise levels and options for reducing these should be carried out."*

These design criteria all take the form of 30 minute $L_{Aeq}$ levels, whereas the construction noise predictions are averaged over 16, 12 or 8 hour periods. At this time, there is not sufficient information on how the construction works will vary during a working day to identify a 30 minute value; however, comparing the predicted 16, 12 or 8 hour values with criteria defined over a 30 minute period will give a broad indication of potential impact.

For residential accommodation, British Standard 8233: 2014 *Guidance on sound insulation and noise reduction for buildings* sets out guidelines on acceptable internal sound levels to provide good or reasonable sleeping conditions. The standard indicates that internal sound levels of 30 to 35dB $L_{Aeq,8hrs}$ should be the aim.

The World Health Organisation (WHO) has published guidelines for avoiding sleep disturbance, in the form of maximum sound level criteria, indicating that by not exceeding an internal level of 45dB $L_{Amax}$ 10 to 15 times per night, disturbance to sleep should be avoided. The WHO indicates that this internal threshold translates to an external threshold of 60dB $L_{Amax}$, as a façade value. A façade value is typically determined 1m from a reflecting façade, such as a building.

While these criteria do not give the full picture for Pro Corda, where the particular sensitivities of individuals will vary, and where expectations defined by previous experience of the facility may be as relevant as the absolute noise levels, the criteria will provide some context for the construction noise levels that follow in this document.

# 3 FURTHER CONSIDERATION OF CONSTRUCTION NOISE LEVELS

The noise levels predicted at Leiston Abbey for each phase of works at the Main Development Site are summarised in Appendix 11B of Volume 2 of the ES (Ref. 2), and the noise levels predicted during the construction of the Green Rail Route are set out in Volume 9 Chapter 4 of the ES (Ref. 4), and its associated Appendix 4A (Ref. 5).

The predicted levels are set out here for easy reference, together with some further interpretation as to what the noise levels might mean for activities at Pro Corda.

## 3.1 Phase 1a – Site Stripping and Levelling

During the Phase 1a works, the daytime construction noise levels will vary across the Leiston Abbey site, as shown in Figure A2 in Appendix A.

The east-facing façades of some buildings are predicted to have noise levels of up to 58-60dB $L_{Aeq,16hrs}$ (mid-orange areas) and the western areas are predicted to have lower noise levels, in the range of 44 to 50dB $L_{Aeq,16hrs}$ (yellow and lighter green areas).

The noise levels on the eastern part of the site are predicted to be above the external 50dB $L_{Aeq,30mins}$ criterion that relates to internal spaces for music tuition, and above the external 45dB $L_{Aeq,30mins}$ criterion that relates to internal spaces for individuals with special hearing and communication needs or for SEN calming rooms.

These external criteria are based on windows remaining open, and it would be an option to close the windows, thereby reducing internal sound levels by a further 15dB (approximately) for typical double-glazed windows. Consideration would need to be given to the internal environment, particularly in terms of temperature control, where windows are closed to reduce noise levels.

Phase 1a is expected to last for a period of approximately 6 months, although the levels shown in Figure A2 are not expected to be consistent throughout this period; the predicted levels represent a typical day in the busiest month, so the noise is likely to last at the levels shown for approximately two months during the period where the works are close to Leiston Abbey.

During these noisiest two months, construction noise levels are expected to be approximately 15dB above the existing baseline levels, which is expected to be readily noticeable and may alter the acoustic environment at Pro Corda, particularly in outdoor areas and on the eastern side of the site.

Given the sensitive nature of the activities undertaken at Pro Corda, both in terms of the acoustic environment typically required for music tuition and performance, and the sensitivities of some of the individuals attending, it is likely that there will be some disruption to the normal running of activities during these noisy periods.

For the remainder of Phase 1a, and on the western parts of the site during the noisiest periods, it is likely that the noise levels will be markedly lower, although the exact reduction will clearly depend on where the works are located and which part of the Leiston Abbey site is considered.

The acoustic screening provided by the buildings at Leiston Abbey, which is illustrated by the quieter areas to the west of the various buildings in Figure A2, suggest that these spaces may offer better, quieter environments during the noisiest periods.

## 3.2 Phases 1b and 2 – Infrastructure Construction and Earth-Moving

Phases 1b and 2 are likely to be noticeably quieter than Phase 1a, as is shown in Figure A3 in Appendix A.

The east-facing facades of some buildings are expected to reach 52 to 54dB $L_{Aeq,16hrs}$ (yellow/orange area) with the west-facing parts of the site predicted to have noise levels below 50dB $L_{Aeq,16hrs}$ (green areas).

Phase 1b and 2 are expected to last for approximately 2 to 3 years in total.

The predicted noise levels over the 2 to 3 year period are much closer to the existing baseline levels, although still likely to be audible and possibly clearly noticeable at times. As with Phase 1a, the buildings offer a degree of acoustic screening, such that the western side of the site is expected to be noticeably quieter than the eastern side of the site, which is closer to the works areas.

The noise levels on the eastern part of the site are predicted to be only just above the external 50dB $L_{Aeq,30mins}$ criterion that relates to internal spaces for music tuition, and above the external 45dB $L_{Aeq,30mins}$ criterion that relates to internal spaces for individuals with special hearing or communication needs, or for SEN calming rooms.

These external criteria are based on the assumption that windows would be fully open and it is possible that partially closing windows would achieve a sufficient reduction to create acceptable internal teaching/performance conditions, although the construction noise may still be audible. It is likely that the acceptability of the environment at Pro Corda for its normal activities will depend on the sensitivities of the individuals taking part, particularly as the construction noise could alter the character of the acoustic environment.

Given the length of Phase 1b and 2 of the works, it is possible that a degree of acclimatisation may occur to the altered environment, although it is accepted that this is highly dependent on the individual. Further discussion on this point may be required with Pro Corda to better understand the likelihood of such acclimatisation occurring, balancing the length of the construction works with the relatively short duration of an individual's stay at any time.

## 3.3 Phases 3 and 4 – Main Civils Works and M&E Fit-Out

Phases 3 and 4 represent the largest portion of the construction programme, covering the construction of the power station itself, and are expected to last in the region of 9 years. Given that the works are relatively remote from Leiston Abbey, the noise levels are consequently lower than Phases 1b and 2.

The highest noise levels are expected to be around 46dB $L_{Aeq,16hrs}$, which is similar in level to the existing baseline conditions, as illustrated by the various green areas in Figure A4 in Appendix A. It is likely that the construction noise will be audible at times, but it is unlikely to be disturbing or disrupting, on average. However, as noted elsewhere, the sensitivities of individuals will be an important factor in how much of an effect the noise has.

It is likely that the Pro Corda site will be able to operate in a way that would resemble 'normal' during Phases 3 and 4, although as noted elsewhere, where individuals have sensitivities around their expectations of the acoustic environment, in terms of character as much as sound level, some alterations to normal activities may be required.

Given the duration of Phases 3 and 4 and the relatively low levels of construction noise, it is possible that a degree of acclimatisation may occur to the altered environment, although it is accepted that this is highly dependent on the individual. Further discussion on this point may be required with Pro Corda to better understand the likelihood of such acclimatisation occurring, balancing the length of the construction works with the relatively short duration of an individual's stay at any time.

## 3.4 Phase 5 – Restoration and Removal of Temporary Facilities

The highest noise levels expected during Phase 5 are likely to occur at locations on the eastern side of the Leiston Abbey site; with levels expected to be in the region of 60dB $L_{Aeq,T}$ during the busiest month. The levels are expected to be similar to those shown for Phase 1a, as shown in Figure A2 in Appendix A.

Overall, Phase 5 is expected to last for approximately 2 years, but as with Phase 1a, the noisiest period is likely to last a period of months within that timeframe.

Since the works in Phase 5 are very similar in nature to those in Phase 1a, the same outcomes are anticipated.

## 3.5 Night-time Construction Noise

The night-time noise levels from construction works to the east of Leiston Abbey are predicted to be in the region of 40 to 41dB $L_{Aeq,8hrs}$, primarily associated with the unloading of trains once the Green Rail Route is operational.

This level of noise would translate to internal levels of 30 to 31dB $L_{Aeq,8hrs}$, which are at the lower end of the 30 to 35dB $L_{Aeq,8hrs}$ range of recommended noise levels for bedrooms in residential properties. This would not be expected to give rise to adverse effects in most circumstances, however, where individuals have sensitivities around their expectations of the acoustic environment, in terms of character as much as sound level, some alterations to Pro Corda's normal approach to accommodation may be required.

The character of the night-time construction sound is likely to take the form of a distant rumble or hum of activity; distinctive, individual events are unlikely to be audible on a regular basis at Pro Corda, and it is possible that a degree of acclimatisation may occur to the altered environment. Further discussion on this point may be required with Pro Corda to better understand the likelihood of such acclimatisation occurring, balancing the length of the construction works with the relatively short duration of an individual's stay at any time.

## 3.6 Green Rail Route

The Green Rail Route, which is proposed to pass the Leiston Abbey grounds approximately 240 metres to the south, is expected to be constructed within the first 18 months of the construction programme, which will fall within Phases 1a and 1b of the Main Development Site works.

The noise levels from the construction of the Green Rail Route are predicted to be between 42 and 51dB $L_{Aeq,12hrs}$; at the higher end of this range, the predicted levels are marginally above the existing baseline levels, and at the lower end of the range, the predicted levels are at or marginally below the existing baseline levels.

Trains are generally expected to use the Green Rail Route at night, to fit in with the current timetabled movements on the East Suffolk Line. Maximum sound levels from passing trains, which are the highest levels caused by the passage of an individual train, are expected to be the key determinant of whether an adverse impact from the night-time train movements is likely; the number of trains per night is unlikely to give rise to an adverse effect based on the averaged levels over a night-time period, but the peaks of each train could lead to sleep disturbance where the train is very close to a receptor and no steps are taken to remedy this, for example, through the Noise Mitigation Scheme.

For Leiston Abbey, the residential areas are approximately 300 metres from the Green Rail Route, and the maximum sound levels from trains using the Green Rail Route are likely to be no higher than 47dB $L_{AFmax}$ outside the property; as noted above, the WHO indicate that not exceeding an external sound level of 60dB $L_{AFmax}$ 10 to 15 times per night should be sufficient to avoid sleep disturbance. This is expected to be achieved at Pro Corda and sleep disturbance as a result of passing trains would be considered unlikely in most cases.

However, as noted previously, the sensitivities of individuals staying overnight at Pro Corda, particularly in terms of prior experience defining their expectations and level of comfort, may be a more relevant factor in determining the effect of the night-time train movements than the level of noise itself.

Trains will operate along the Green Rail Route once it is constructed, for most of the main development site construction programme. It is likely that the regular passage of trains, with their low rumbling character, will become part of the acoustic environment and it is possible that a degree of acclimatisation may occur to the altered environment. Further discussion on this point may be required with Pro Corda to better understand the likelihood of such acclimatisation occurring, balancing the length of the construction works with the relatively short duration of an individual's stay at any time.

# 4 CONCLUSION

The information set out in this document is intended to assist Pro Corda with their understanding as to how the construction noise levels will vary at their site over the duration of the SZC construction programme. No further calculation is possible at this time, since there is no further information that would facilitate a more refined set of calculations.

However, some additional interpretation and context has been included in this document to assist Pro Corda in preparing their representations to the DCO.

It is concluded that disruption to Pro Corda's normal activities is likely during the noisiest parts of Phase 1a, which is likely to last approximately 2 months when the works are at their closest to Leiston Abbey, and again during the restoration works in Phase 5.

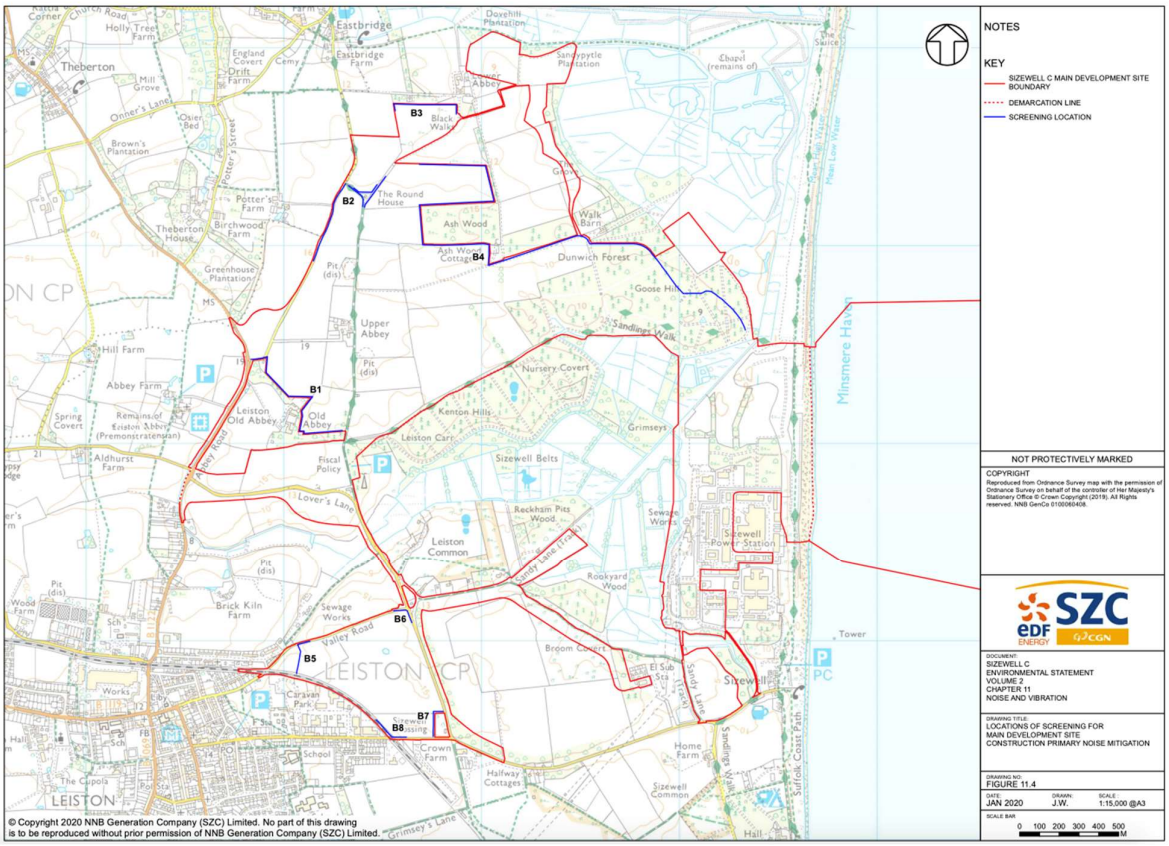
For the majority of the construction works, construction noise levels are predicted to be lower, and consequently carry a much lower risk of disrupting Pro Corda's activities in typical circumstances. However, it is acknowledged that Pro Corda caters for individuals whose sensitivity to sound may extend beyond the consideration of levels alone, and may be linked more to both the character of the acoustic environment, and their expectations based on previous experience.

Some very general suggestions are included as to how Pro Corda might enact operational changes to minimise the adverse effects of the construction work, but it is accepted that circumstances will vary according to the particular needs of individuals.

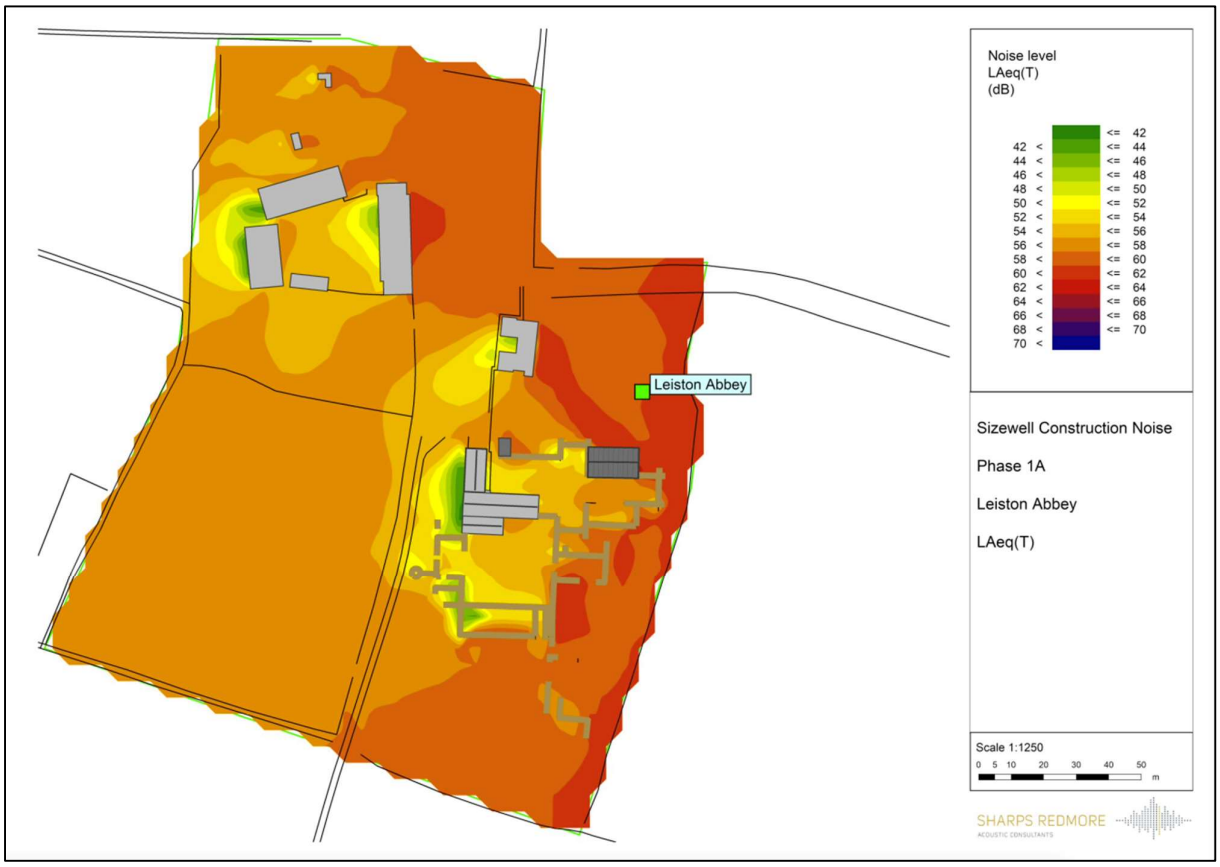
It is suggested that further dialogue between Pro Corda and the SZC team would be helpful to identify practical steps that could be taken to minimise adverse effects, and to maximise opportunities for noise control where possible.

# APPENDIX A FIGURES

## Figure A1: Construction primary noise mitigation (Figure 11.4 in Volume 2 of the ES)



## Figure A2: Phase 1a noise contours



## Figure A3: Phases 1b/2 noise contours

## Figure A4: Phases 3 and 4 noise contours