

---

# FENWICK SOLAR FARM

**Preliminary Environmental Information Report**

**Volume III Appendix 2-2: BESS and On-Site Substation**

March 2024

Prepared for:  
Fenwick Solar Project Limited

Prepared by:  
AECOM Limited

© 2024 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited (“AECOM”) for sole use of our client (the “Client”) in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

## Table of Contents

1.	Battery Energy Storage System.....	1
2.	On-Site Substation.....	1

## Plates

Plate 2-1: BESS Area Indicative Layout .....	2
Plate 2-2: On-Site Substation Elevation and Indicative Layout .....	3

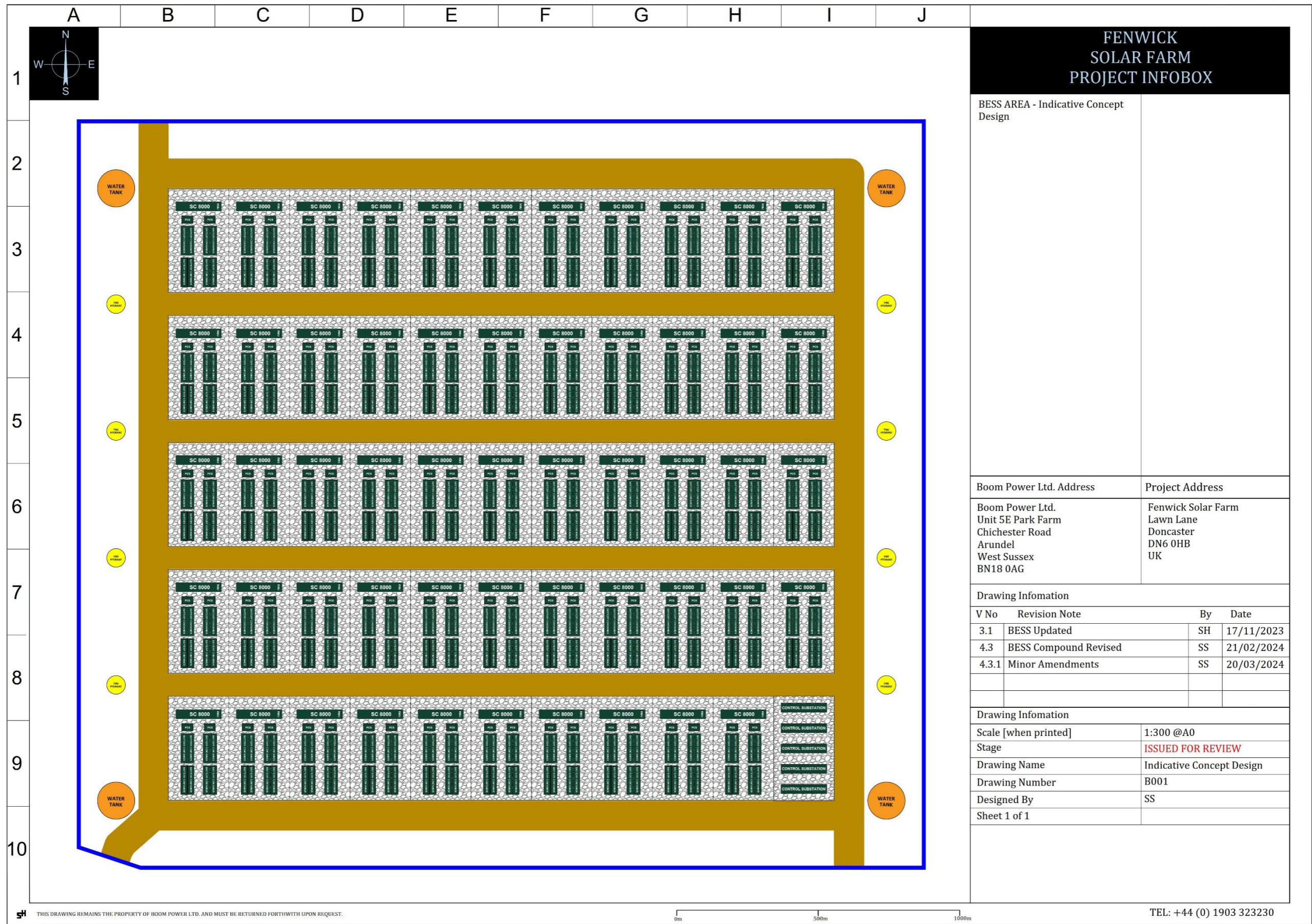
## 1. Battery Energy Storage System

- 1.1.1 The Battery Energy Storage System (BESS) allows excess energy in either the Solar PV generation or excess energy in the grid to be stored and released at times of peak demand, assisting the UK grid to become more resilient and efficient.
- 1.1.2 The BESS Area would comprise the following equipment:
  - a. Up to 432 individual BESS Battery Containers;
  - b. Up to 108 inverters;
  - c. Up to 54 containerised units consisting of transformers and switchgear;
  - d. Underground power and control cabling; and
  - e. A main control point for the supervision and management of the BESS equipment located within the Control Building.
- 1.1.3 Batteries and inverters would be replaced approximately every 15–20 years depending on their use and technology at the time.
- 1.1.4 The BESS Area contains above ground water storage tanks for firefighting purposes. The volume of water to be stored on-site, as well as access requirements for firefighting vehicles will be agreed with the relevant fire and rescue services. Any fire water runoff would be contained within the lined impermeable swale using a penstock to ensure no firewater is released to groundwater or to surface water without prior testing. More details on the preliminary firewater storage and containment requirements are provided in Section 9.4 of **PEIR Volume I Chapter 9: Water Environment**.
- 1.1.5 Indicative layout of the BESS Area is shown in Plate 1.

## 2. On-Site Substation

- 2.1.1 The On-Site Substation would have a single bay and is the intermediary between the transmission network and the Scheme. It is the collector of the multiple 33 kV outputs at the Field Stations to a single point. The separate 33 kV connectors are all independently connected, protected and monitored before being accumulated into a single transformer. This then transforms the voltage up to 400 kV ready for transmission level for the energy to be accepted by the National Grid. The transformer has a single output being connected to the underground Grid Connection Cables back to the Existing National Grid Thorpe Marsh Substation.
- 2.1.2 An indicative layout of the On-Site Substation is shown in Plate 2-1.





**FENWICK  
SOLAR FARM  
PROJECT INFOBOX**

BESS AREA - Indicative Concept Design

Boom Power Ltd. Address	Project Address
Boom Power Ltd. Unit 5E Park Farm Chichester Road Arundel West Sussex BN18 0AG	Fenwick Solar Farm Lawn Lane Doncaster DN6 0HB UK

Drawing Information			
V No	Revision Note	By	Date
3.1	BESS Updated	SH	17/11/2023
4.3	BESS Compound Revised	SS	21/02/2024
4.3.1	Minor Amendments	SS	20/03/2024

Drawing Information	
Scale [when printed]	1:300 @A0
Stage	ISSUED FOR REVIEW
Drawing Name	Indicative Concept Design
Drawing Number	B001
Designed By	SS
Sheet 1 of 1	

TEL: +44 (0) 1903 323230

**Plate 2-1: BESS Area Indicative Layout**



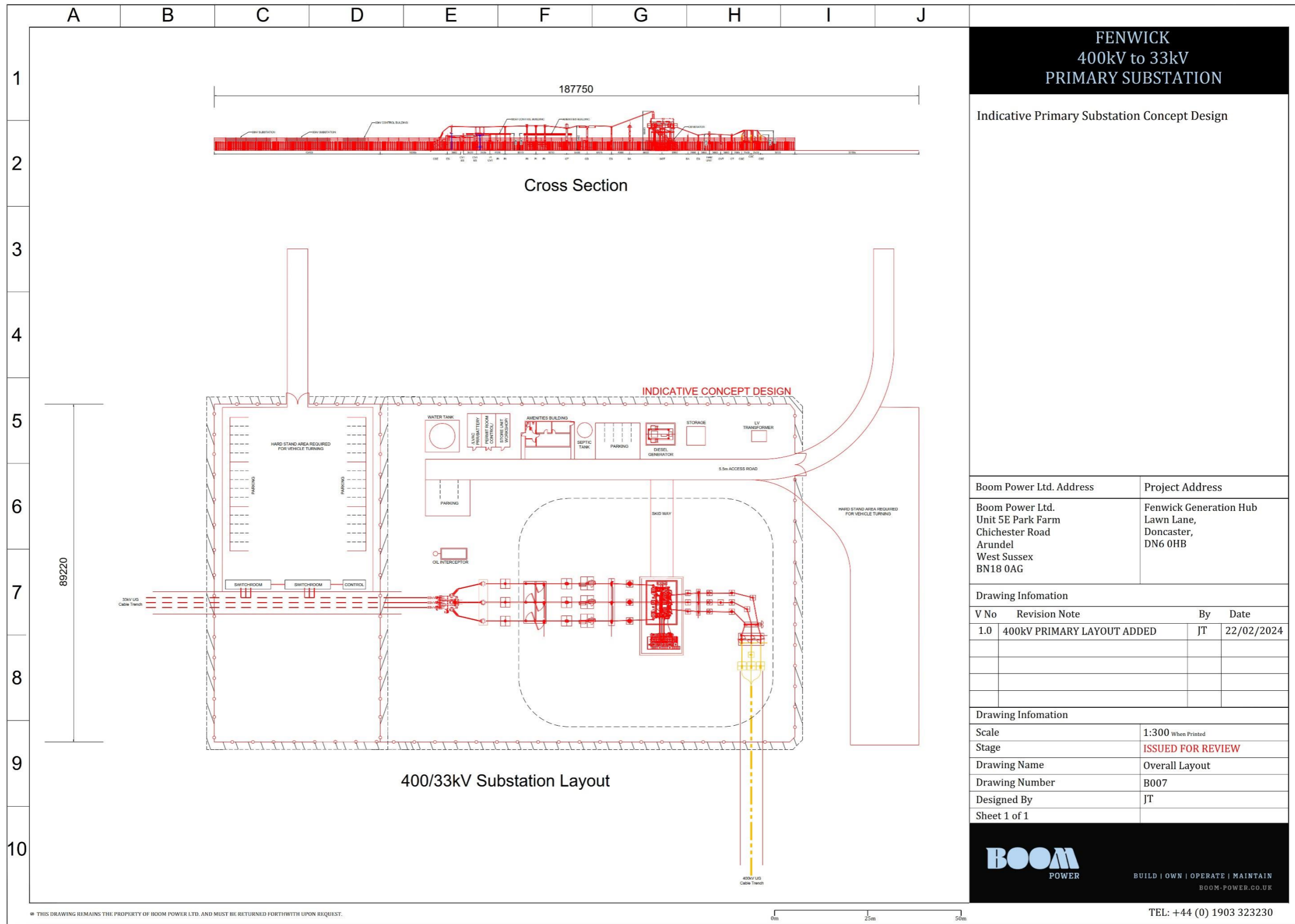


Plate 2-2: On-Site Substation Elevation and Indicative Layout



BUILD | OWN | OPERATE | MAINTAIN

[BOOM-POWER.CO.UK](http://BOOM-POWER.CO.UK)