Third Revolution Projects

Gas Peaking Station at New Farm, Tutbury, DE13 9HE

Pre-Application Briefing for Parish Councillors

Applicant: New Farm Energy Limited

14th July 2017

1. Purpose and background

The purpose of this briefing is to introduce Councillors to the proposed alternative energy scheme within the landholding at New Farm, to enable them to understand what the Applicant is proposing, ask any questions and to help us amend the proposals, if necessary, ahead of a planning application to the local planning authority.

The development described here will be instead of the withdrawn application for a 10MW Flexible Diesel Generation Facility on Land off Burton Road (see Appendix 1). This scheme was withdrawn due to Case Officer and stakeholder concerns about the principle of development in the open countryside, noise and visual impacts. There was also some concerns about the use of diesel fuel. In consultation with the Case Officer, the Applicant has therefore proposed an alternative gas generation scheme within the existing farm complex at New Farm, which address these concerns.

In summary, the proposed development is:

- A low emissions gas generation scheme, rather than diesel.
- Needed to meet growing local demand for power at peak times to keep the lights on.
- Incorporated within the existing farm complex, rather than in the open countryside.
- A valuable farm diversification without adversely impacting on the agricultural use of the farm.
- Well screened from properties and other sensitive receptors to minimise noise and visual impacts.

2. Alternative proposed development

The proposed alternative project is a 10MW gas peaking station, approximately in the area shown on Figures 1 and 2. The precise location is still to be agreed as part of the pre-application process.

Figure 1 - Location of the proposed alternative project

Figure 2 - Approximate location of the proposed compound shown in green

This site has been chosen for the following reasons:

- All energy projects require available grid capacity and a willing landowner, and this location has both.
- Urban areas are typically less suitable due to noise and air quality constraints.
- The site is contained within the existing New Farm complex, which will minimise impacts on the open countryside.
- The site has been operated for B1 and B8 uses alongside traditional agriculture for many years and so the principle of diversification in this location has been demonstrated.
- The location within the farm complex is not currently used for agricultural purposes and so the proposed development will not adversely affect the farming operation.
- The site is some 130m from the edge of Tutbury on the far side of the A511 and is very well screened by existing earth embankments and trees, which will minimise visual and noise impacts. These will need to be moved to accommodate the proposed development but will be retained – see Figures 3 and 4.
- No public rights of way will be affected by the proposed development.

Figure 3 - Proposed location of the facility looking north-west

Figure 4 - Proposed location of the facility looking north

3. The need for the development

3.1 The emergence of a decentralised low carbon energy system

The proposed development comprises small-scale, highly efficient low carbon thermal generation, i.e. gas, which is the lowest carbon form of fossil fuel.

Paragraph 97 of the NPPF offers support for the supply and development of renewable and low carbon energy sources. The UK's power market is going through a once in a generation transition to a decentralised mostly renewably powered system. As part of this process, the UK Government's policy is to close all coal-fired power stations by 2025, combined with the retirement of most of the UK's ageing nuclear fleet, leading to retirement of 7.7 gigawatts (GW) from the system by 2030. The past decade has seen the rapid growth of energy efficiency, solar and wind farms, both on and offshore, and these will form the backbone of the new system. However, these technologies alone will lead to supply shortages and price volatility: the Institution of Mechanical Engineers estimates a 40-55% electricity supply gap in the next decade[1].

The National Grid Future Energy Scenarios are clear that "Security of supply is maintained through an increasingly diverse combination of technologies: more small-scale thermal

[1] Institute of Mechanical Engineers (2016) Engineering The UK Electricity Gap

generation, access to additional capacity through greater interconnection, and the continued growth of thermal low carbon technologies."[2] The UK's power market is being re-design to deliver this diversity.

The proposed combination of flexible peak power generators and grid balancing services provided by the proposed facility, is exactly what the Government and National Grid are asking the market to deliver. The proposals will therefore make a very valuable energy security contribution to the UK as a whole.

3.2 Meeting additional demand

Paragraph 162 of the NPPF also requires LPA's to use evidence to assess its ability to meet forecast demands, including for energy. While a single development like the one proposed cannot meet all demand within the district, it does make an important contribution to the resilience of the local network; helping to prevent back-outs.

The demand for power is constantly changing depending upon the time of day, localised events, weather conditions and numerous other factors. The power supply can vary as it reacts to the loads being placed upon it, often seen in the home as lights dim slightly or flare brighter for short periods. This is caused by the network adjusting to the load conditions and ensuring that the average power supply remains as constant as possible. In rural areas where the distances covered by individual power lines connecting settlements are greater, compared to more densely populated cities, the effects of load fluctuations and supply outages can be more frequent.

Recent research showed big jump in power outages across the UK, resulting in loss productivity for various industries. The statistics highlight the problem of unreliable electricity supply at a time when the UK's ageing energy infrastructure is coming under increasing pressure. The Annual Blackout Report for 2015, showed that for West Midlands the total number of people affected by outages was 97,591 with well over 50% of outages due to the grid operator with an average duration of 31 minutes[3]. Therefore, it is clear that the area does require backup energy supply that can respond rapidly to power shortages in the grid.

4. The proposals

The proposed project will include 3 no. gas generators, oil tank, gas kiosk, radiators, transformers and acoustic fence. Gas has been chosen as a fuel in preference to diesel as it produces significantly fewer emissions.

The initial proposed layout and scheme components are shown in Appendix 2. These show that:

- The proposed development complex will measure 26.75m x 50.05m.

[2] National Grid (2016) Future Energy Scenarios 2016

[3] http://powerquality.eaton.com/blackouttracker/default.asp?act=smtc&id=&key=&Quest_user_id=&leadg_Q_QRequired=&site=&menu=&cx=101&x=19&y=13

- This complex will replace the existing barn shown in Figure 3 with similarly styled slightly larger new barn measuring 24.52m x 17.55m, with a maximum height at the tip of the 3 exhaust stacks of 8.54m, with the barn being lower than this at 7.8m to the apex. This is significantly smaller and a little higher than the existing large barn immediately to the south in Figure 2, which has a height of 7.47m to the apex.

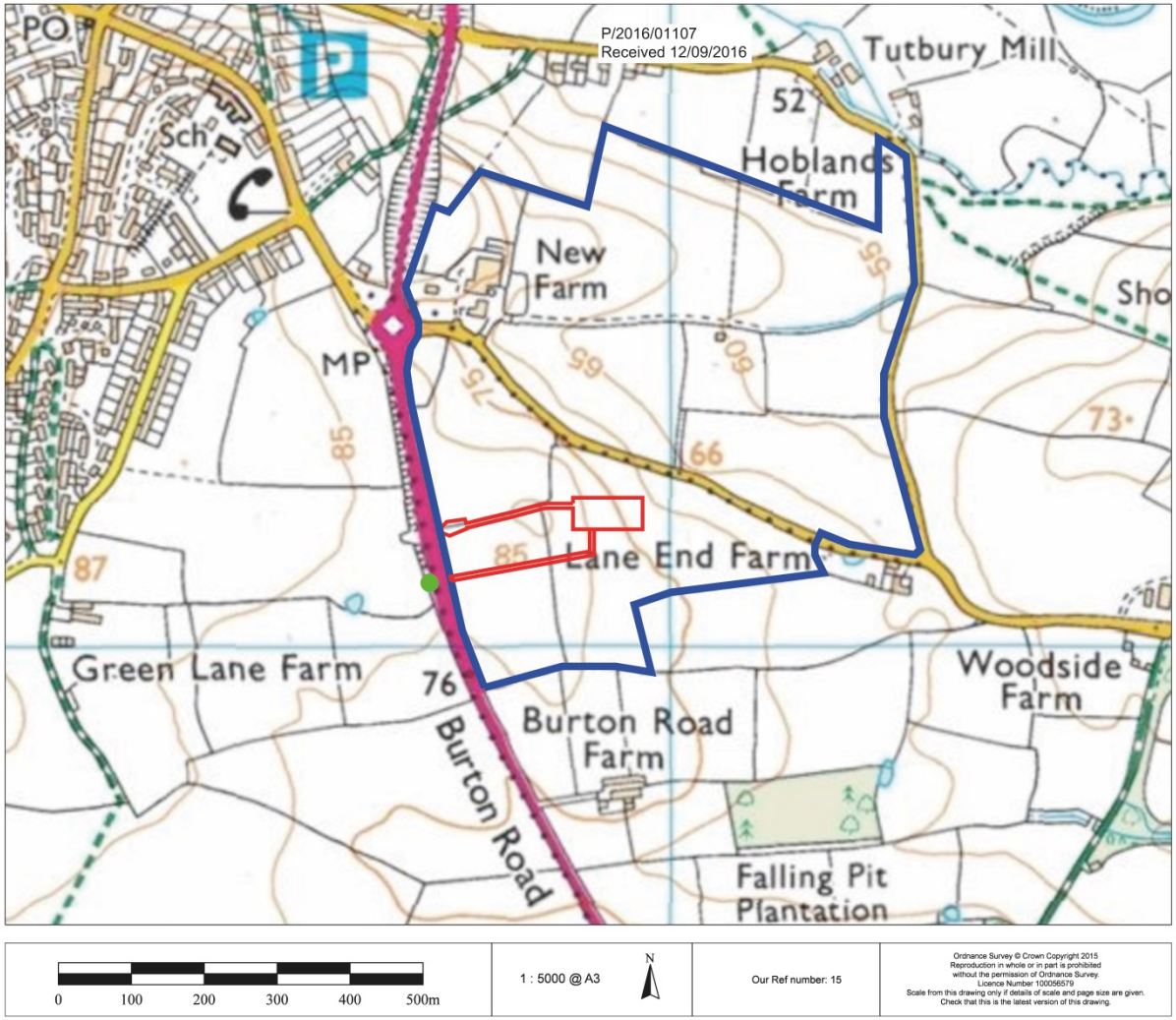
It is estimated that the plant will operate approximately 1,500 hours per year. The daily run time will be greater in the winter when peak demand is at its highest, mainly morning and early evening.

Access to the site for construction and operation will be via the existing farm access on Rolleston Lane. Once operational, there will be little traffic generated and this will be solely for maintenance purposes since the gas will be supplied from the mains.

The facility is being designed to attenuate noise and the overall impact will be minimal. A Noise Impact Assessment is being carried out which will demonstrate this and advise on measures to ensure the proposed development has no negative impacts on nearby sensitive receptors.

An Air Quality Assessment will confirm that the emissions of particulate matter (PM10 and PM2.5) and nitrogen dioxide (NO_2) does not exceed acceptable levels, and that the impact on local air quality will be insignificant.

Appendix 1 – Location of the *withdrawn* Flexible Diesel Generation Facility



KEY

- SITE LOCATION
- EXTENT OF THE PROPERTY AROUND SITE
- PROPOSED POINT OF CONNECTION

System Details

System Size DC:	~10.0 MW
Cable Length:	~200 m
Development Area:	0.49 ha / 1.20 acres
No of Diesel Generators:	25 x 500kW
No of Transformers:	4
Access Road Lenght:	280 metres
Compound Area:	0.16 ha / 0.40 acres

DRAWING NUMBER

1 - Site Location Plan - New Farm

DRAWING TITLE

Diesel Generation 10 MW,
OS Master Map,
Site Location Plan

ADDRESS

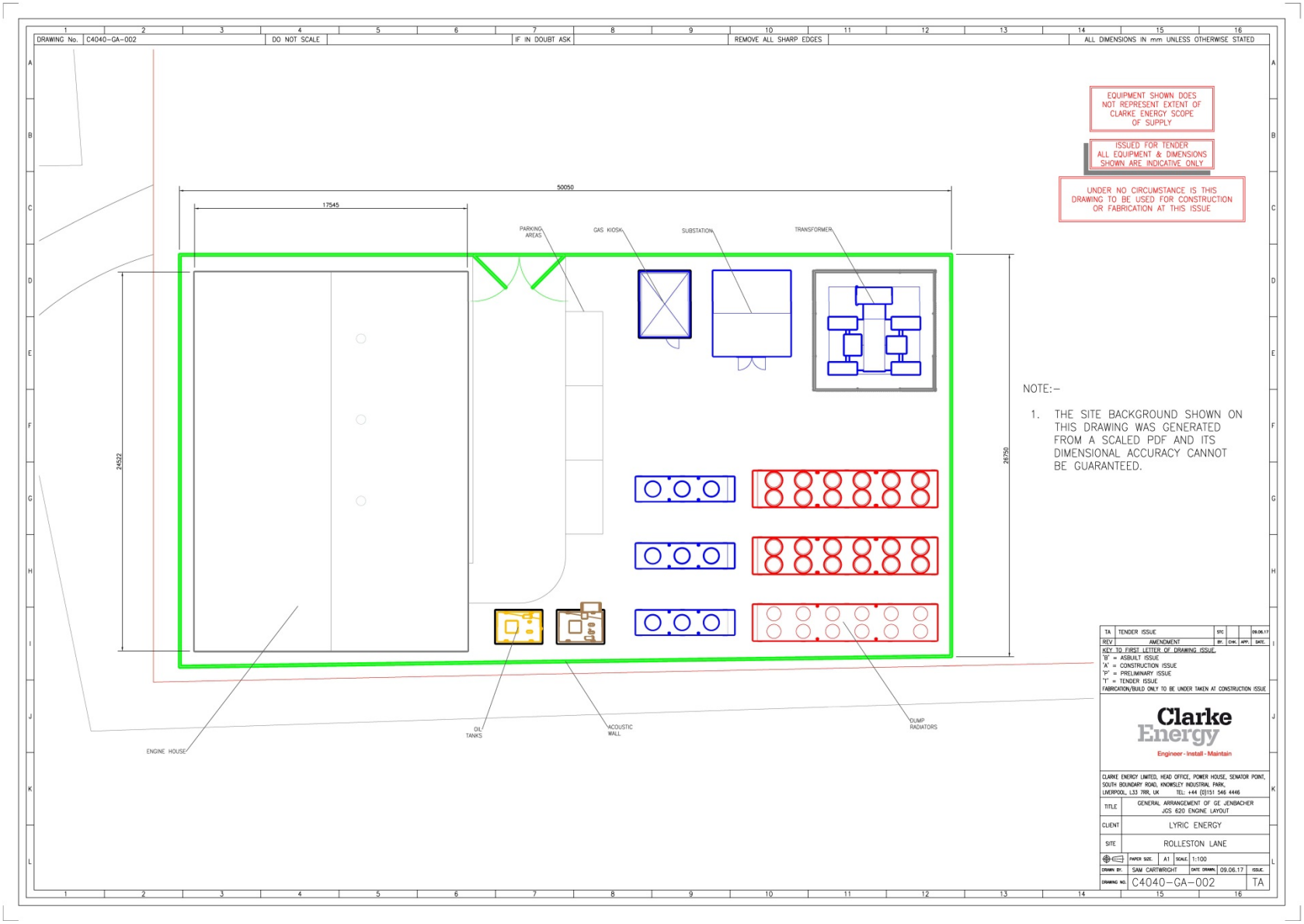
New Farm,
Burton Rd, Burton-on-Trent,
Staffordshire
DE13 9NF

Lyric Energy

39 Austenway,
Gerrards Cross Bucks SL9 8NN
Company Number 10077874
info@lyricenergy.co.uk

Rev	Date	Drawn	Check	App'd
00	08 / 07 / 2016	NMR	AM	PVR
01	28 / 07 / 2016	NMR	AM	PVR
02	01 / 08 / 2016	NMR	AM	PVR
03	05 / 08 / 2016	NMR	AM	PVR

Appendix 2 – Initial proposals for the new Gas Peaking Plant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PARKING AREAS
GAS KIOSK
SUBSTATION
TRANSFORMER
ENGINE HOUSE
OIL TANKS
ACOUSTIC WALL
DUMP RADIATORS
NOTE:-
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TITLE GENERAL ARRANGEMENT OF GE JENBACHER JGS 620 ENGINE LAYOUT
CLIENT LYRIC ENERGY
SITE ROLLESTON LANE
PAPER SIZE A1 SCALE 1:100
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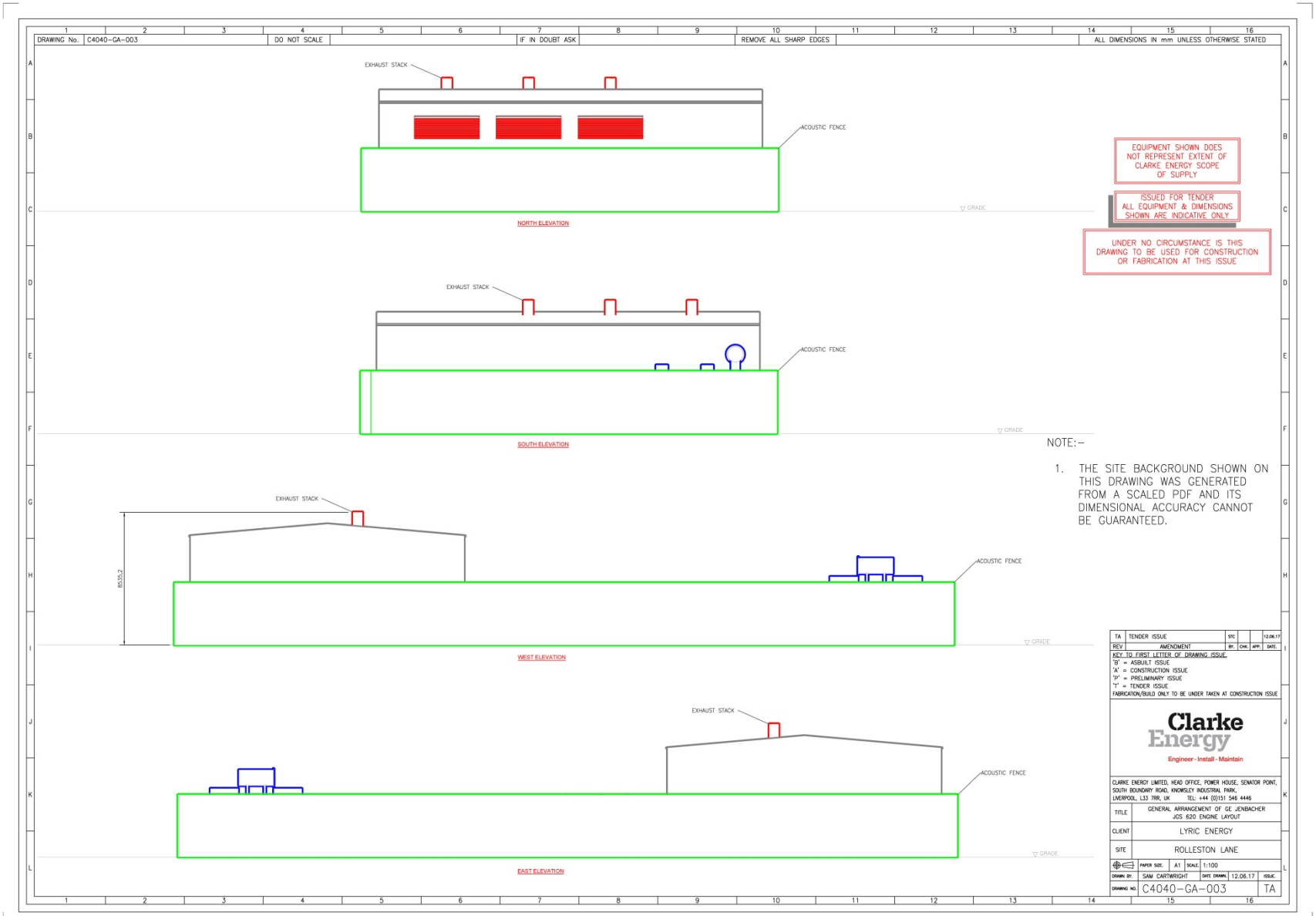
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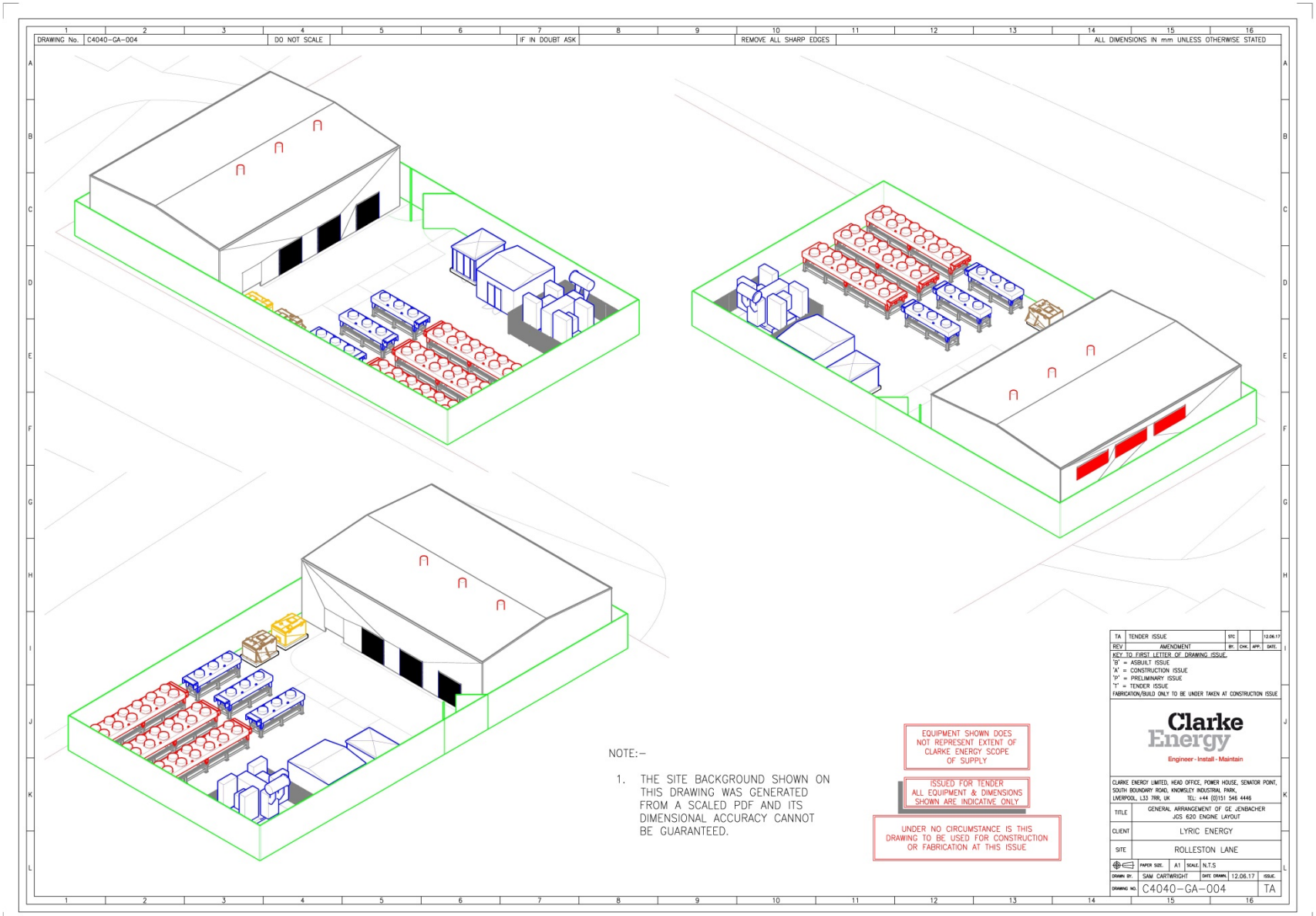
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