Envision AESC Giga Factory

Design and Access Statement

DOCUMENT DETAILS

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1.0 INTRODUCTION

1.1 Statement Overview

This Design & Access Statement has been prepared by RPS, on behalf of Envision AESC, to support a Section 73 application for amendments to the full planning application the manufacture of batteries for vehicles with ancillary / office / welfare floorspace and associated infrastructure provision, parking, drainage and landscaping (planning permission 21/01764/HE4 and hereinafter referred to as the 2021 battery plant permission). This application was approved on 6th October 2021.

Three separate planning applications are being submitted for a HV substation compound, a Bulk Store Canopy and a Gas Governor House in parallel with the Section 73 applications. This Design and Access Statement document also considers these ancillary buildings / plant and equipment given that they lie within the redline boundary for the Section 73 application and provide necessary infrastructure for the battery plant. Please refer to sketch drawings in Appendix A for additional information and drawings associated with the Section 73 application with respect to Health and Safety improvements.

The site is located within the International Advanced Manufacturing Park One (IAMP One), a joint venture between Sunderland and South Tyneside Councils.

This document sets out the design development process and details of the scheme and has been written in accordance with CABE publications "Design & Access Statements - How to write, read and use them", based upon the principles of inclusive design.

The process has been fully informed by a consideration of issues, including:

- **Use:** What buildings and spaces will be used for;
- **Amount:** How much would be built on the site;
- **Layout:** How the buildings and public and private spaces are arranged on the site and the relationship between them and the buildings and spaces around the site;
- **Scale:** How big the buildings and spaces are;
- **Landscaping:** How open spaces will be treated to enhance and protect the character of the place;
- **Appearance:** What the buildings and spaces will look like;
- **Exclusivity:** How everyone can get to and move through the place on equal terms regardless of age, disability, ethnicity or social grouping.

Aerial View with Planning Application Boundary - NTS

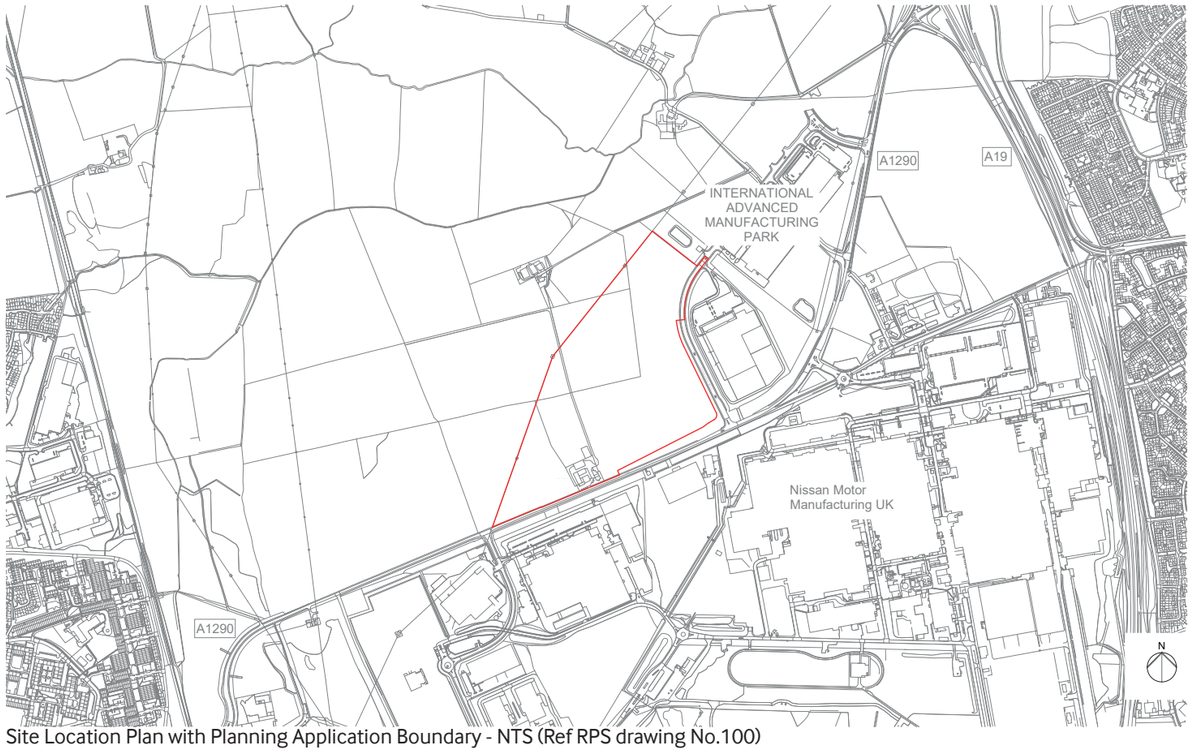
2.0 LOCATION AND CONTEXT

2.1 Site Location

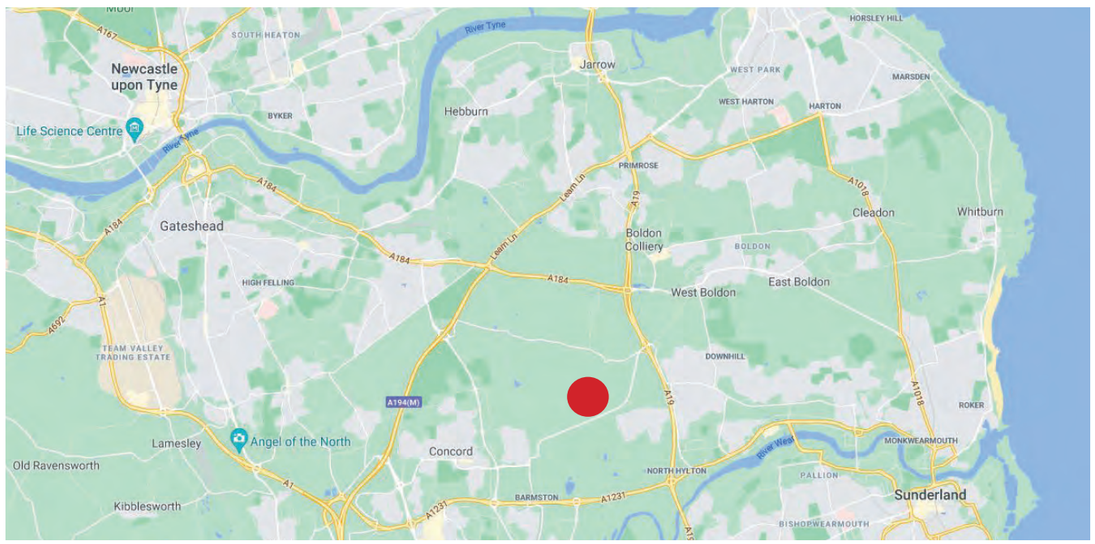
150 Ha of land at the International Advanced Manufacturing Park, or IAMP, is allocated for advanced manufacturing and automotive uses in the IAMP Area Action Plan (AAP) (adopted Nov 2017).

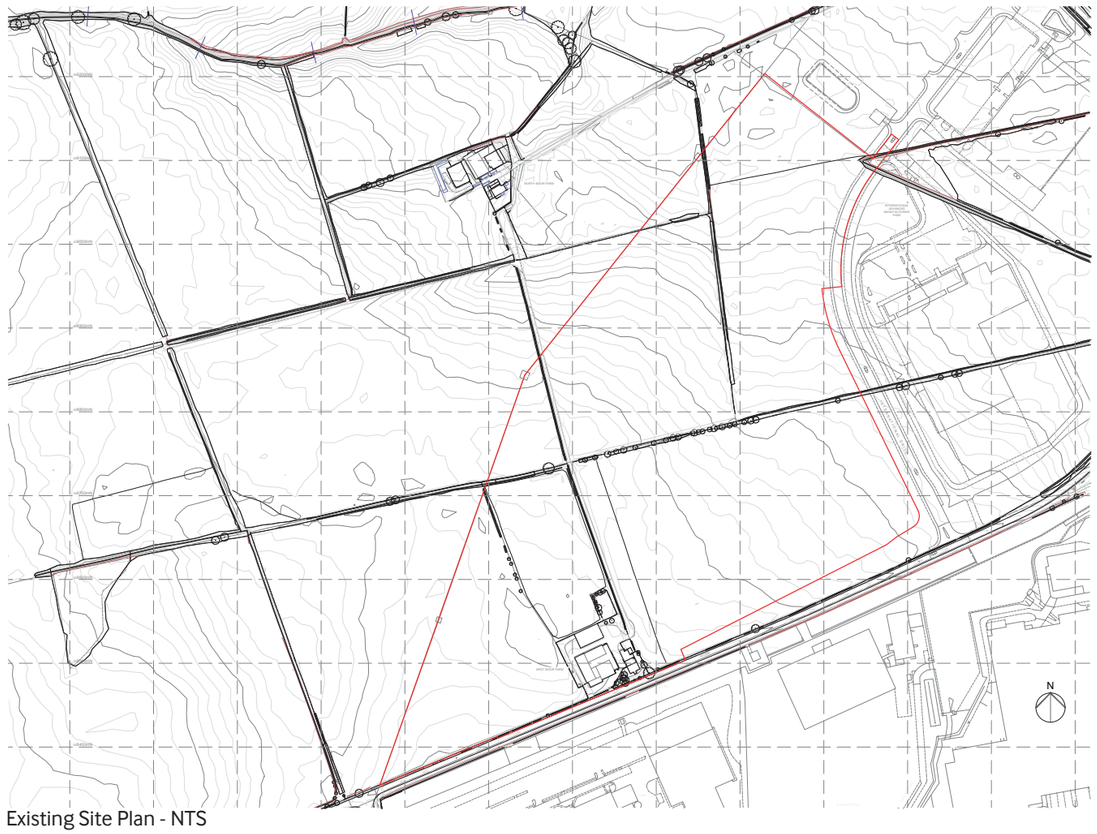
In 2018 the IAMP One application was approved which was for 61.03 Ha, including 2.5 Ha of land which is allocated for flood / ecological mitigation lying outside of the overall development area and in the Green belt land. In 2020 the IAMP One Phase 2 application included an additional 6.5 Ha located within the SW corner of IAMP One. Therefore the total development area for IAMP One that has permission is 65.03 Ha and will deliver 1.688m ft^2.

The proposals are to create a new Gigawatt Battery Manufacturing Plant, which will create employment opportunities for upto 700 new jobs and relocation of 300 employees from the existing Nissan Site, resulting in 1000 employees.



Site Location Plan with Planning Application Boundary - NTS (Ref RPS drawing No.100)





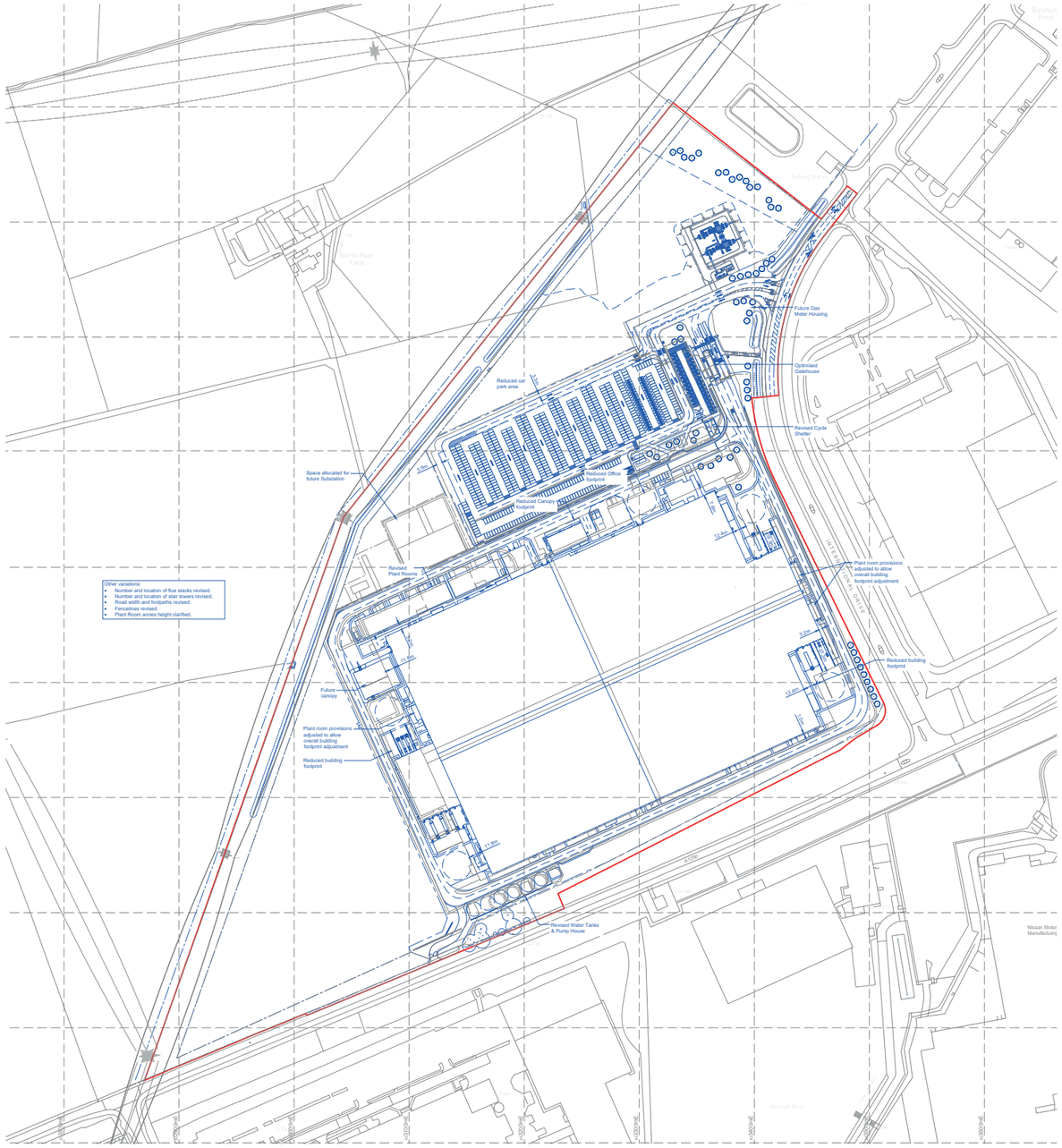
Existing Site Plan - NTS

3.0 DESIGN PROPOSALS

3.5 Overlay of Approved Application (Ref:21/01764/HE4)

Variations and Improvements

- Optimised gatehouse to suit health and safety and client operational requirements.
- Revised cycle and motorcycle shelter to improve access and security.
- Reduced car park area to suit British Parking Association Standards.
- Space allocation for HV substation compound increased due to design development and plant requirements.
- Gas Governor house and bulk store canopy 2 included due to new requirements.
- Bulk Store canopy 1 footprint reduced to minimise H&S risks in association with known on-site storage of material.
- Reduced office footprint to suit client operational requirements.
- Switch rooms relating to providing power to Life Safety equipment to the main facility generally relocated outside of main facility footprint.
- Ancillary plant rooms detached from main building to suit construction phasing and design development
- Revised water tanks and pump house to accommodate increase in volume demand.
- Overall reduced main factory building footprint due to processes rationalisation and operational requirements.
- Number and location of flue stacks revised due to design development.
- Number and location of stair towers revised due to fire safety requirements.
- Road width and footpaths minimised to reduce hard landscaping.
- Fence lines revised to reflect the 2021 battery plant application, with boundary treatment details having been approved under discharge of conditions application 22/00692/DIS
- Plant Room annex height increased to include screening to equipment.



(Overlay Of Approved Application - NTS (Ref RPS sketch drawing No. ENV1-RPS-ST-XX-SK-A-000062)

3.0 DESIGN PROPOSALS

3.1 Site Layout

The proposal for the site is to provide manufacturing space and support accommodation for the production of automotive batteries to enable the drive towards the removal of fossil fuel in personal vehicles.

This will include a manufacturing plant and support accommodation, ancillary plant rooms, space for R&D, office QA lab, security gatehouse, and utilities buildings.

The site boundary remains unchanged as per 2021 battery plant permission and has been set by the boundary in approved outline application 20/00556/OU4 IAMP ONE Phase 2, and specific boundary constraints are described below:

- North West – Limit of IAMP Phase 1, Existing National Grid Overhead HV Powerlines.
- North East – Flood zone, adjacent to IAMP Infrastructure Attenuation Pond
- East – Adjacent to new IAMP Highway Infrastructure – International Drive, and to new industrial IAMP units (SNOP)
- South – Adjacent to A1290 Highway, including space allocation for future duelling and Foul Water Rising Main. Adjacent to Nissan Motor Manufacturing UK.

The site boundaries and their various constraints have established the overall site available for the masterplan.

The required building footprint has been established by the demand of product output and requirements for the process equipment to provide. This building footprint has been used in early masterplan options analysis to determine the optimum building orientation to provide safe and efficient site access from International Drive as well as provide space for suitable boundary treatments to the Highways boundaries on South and East elevations.

Proposed Site Plan - NTS (Ref RPS drawing No.104)

3.0 DESIGN PROPOSALS

3.2 Scale

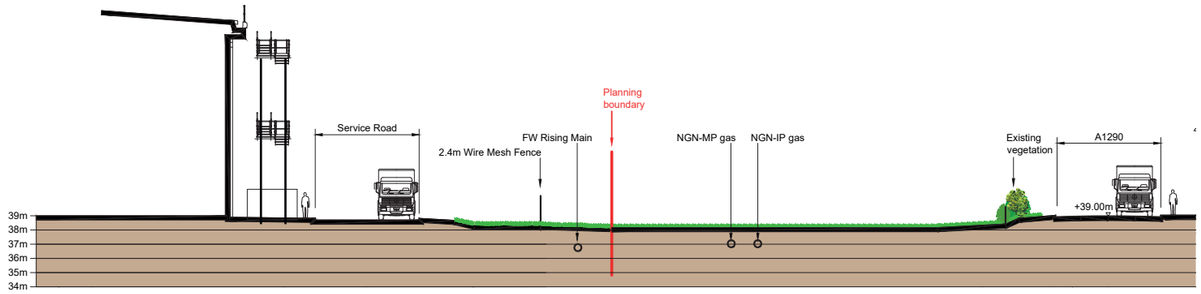
Maximum building heights have remained unchanged and not exceeding the heights of the 2021 battery plant permission. Additionally, maximum building heights have been maintained and are consistent with the maximum set in 'Building Heights Parameters Plan 4' from the outline planning permission 20/00556/OU4.

- Upper ridge 30m + handrail, walkways & PV
- Lower ridge 16.0m + handrail, walkways & PV
- Eaves 28 & 14m

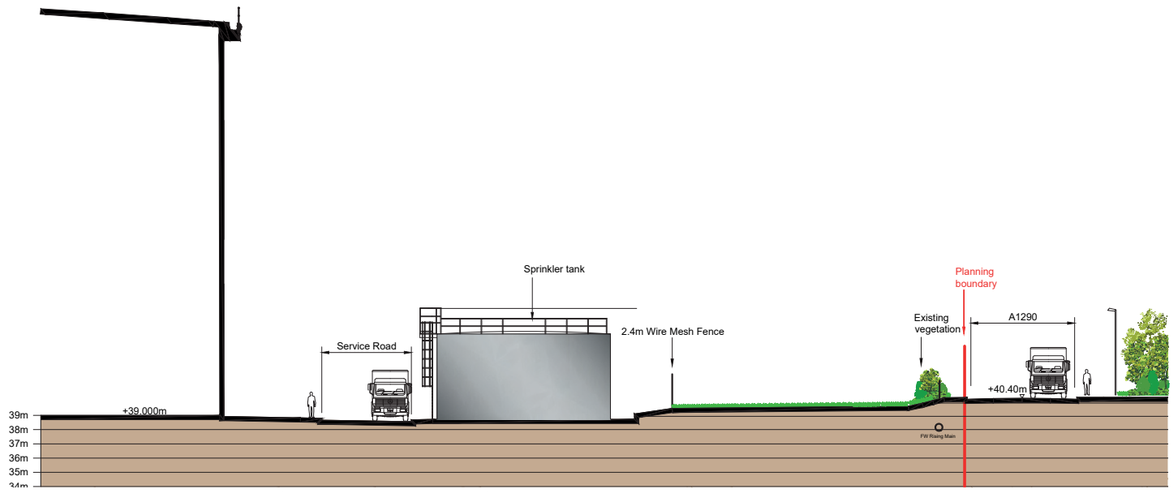
The manufacturing plant has various types of processes in a linear route which set the height requirements for different parts of the building. As part of the processes operational design development and improvement with respect to health and safety, the overall building footprint has been reduced. Furthermore, the building heights have been rationalised to create a simple and legible building form, the roof height varies to provide an efficient building skin to the overall process, and ensure that rainwater management is efficient and robust due to the sensitivity of the internal process to water ingress. Please refer to sketch drawings in Appendix A for additional information regarding changes that might affect the overall developments' scale.

The tallest part of the process is on the West of the building, and the roof height here has been set to 30m to ridge, with a number of flues, perimeter handrails and solar PV panels projecting beyond this point. The lower part of the manufacturing building roof is 16.0m and smaller ancillary stores and goods in and goods out areas project beyond the main building footprint to help to provide relief to the building elevations.

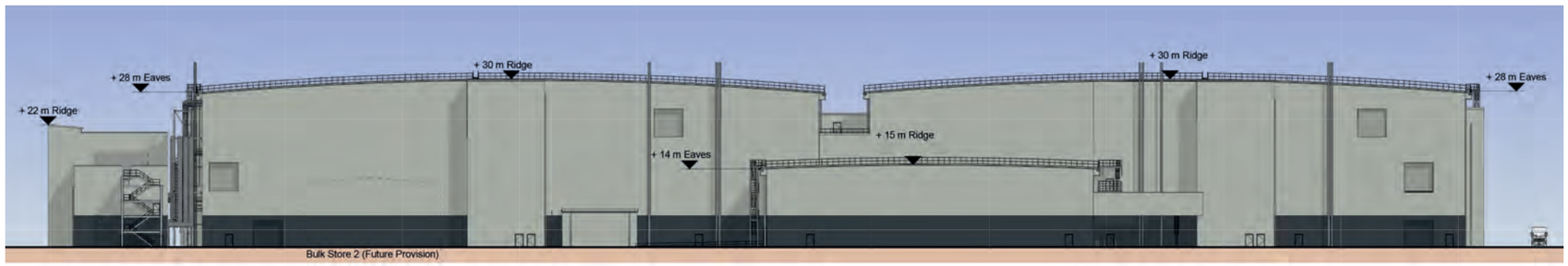
Stair cores, principally provided for fire escape and Fire Authority access, have been placed on the building perimeter, projecting from the elevations, and also help to provide some relief to the elevations to break down the overall building mass.



Proposed Site Section 4 - NTS (Ref RPS drawing No.102)



Proposed Site Section 5 - NTS (Ref RPSdrawingNo.102)



Proposed Elevation D - NTS (Ref RPS drawing No.105)

3.0 DESIGN PROPOSALS

3.3 Appearance

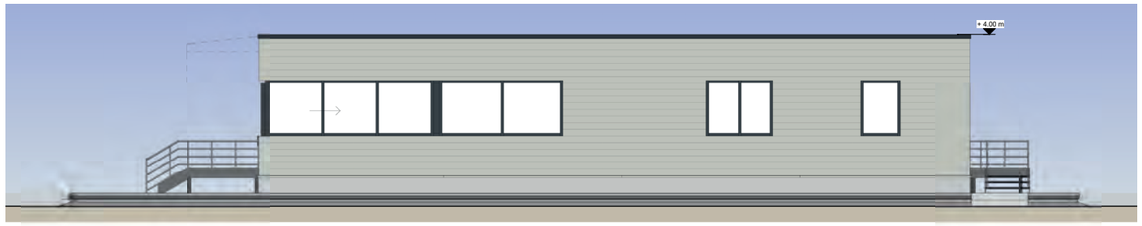
The selection of materials palette remain generally unchanged as per the 2021 battery plant permission and approved under discharge of conditions applications 22/02073/DIS (walls) and 23/00265/DIS (roof). The materials chosen must have due regard to the embodied energy for construction, environmental impact and ongoing maintenance. The use of recyclable materials, renewables and low carbon sources will be considered and implemented where appropriate.

The selected materials and colours are to be applied to all of the buildings within the site, in line with the clients global branding. This consistency in design will help visually harmonise the wider site. Ancillary buildings and structures such as the gatehouse, cycle shelters and other points where there is closer interaction with visitors and staff will have cladding and detailing that is more human in scale.

Windows, doors and louvres will be finished to contrast and compliment the wall cladding colours. While the entrance zones will be emphasised by adding elements of visual interest that aid in reducing the need for unnecessary signage and visual clutter.

The main building roof will be expressed as two low pitched barrels with eaves containing a hidden gutter detail and permanent edge protection provided with handrail system. Photovoltaic panel arrays will be incorporated into the roof design. The selection, detailing and maintenance of all external materials was considered at the outset of the original design process and only products with proven lifespan and quality will be specified.

Where possible external plant and process equipment has either been contained within the building volume, or dedicated ancillary plant rooms.



atehouse Elevation B
: 50

Gatehouse Elevation C
1 : 50

Gatehouse Elevation D
1 : 50

Proposed Gatehouse Elevations (Ref RPS drawing No.108)

Proposed Elevation A - NTS (Ref RPS drawing No.105)

3.0 DESIGN PROPOSALS

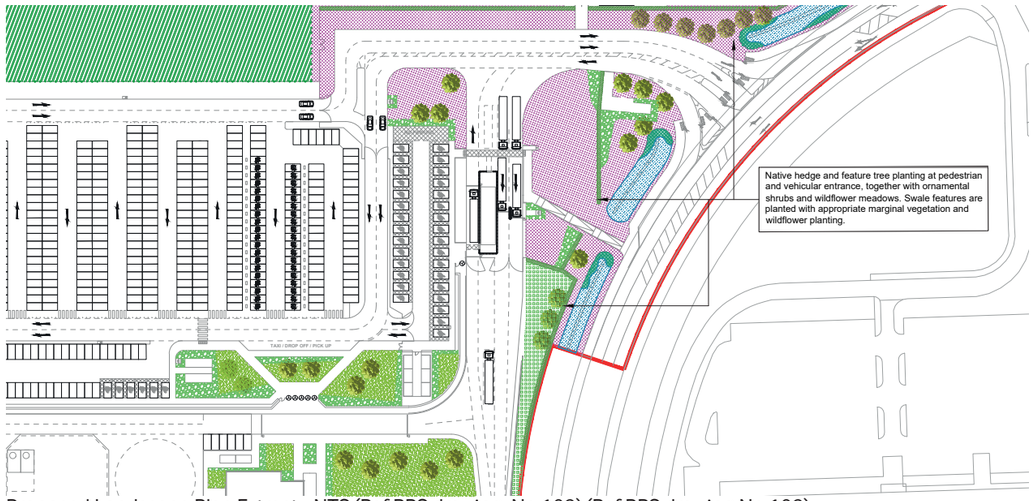
3.4 Landscaping and Boundary Treatment

The Landscape and boundary reflect the 2021 battery plant permission, with boundary treatment details having been approved under discharge of conditions application 22/00692/DIS.

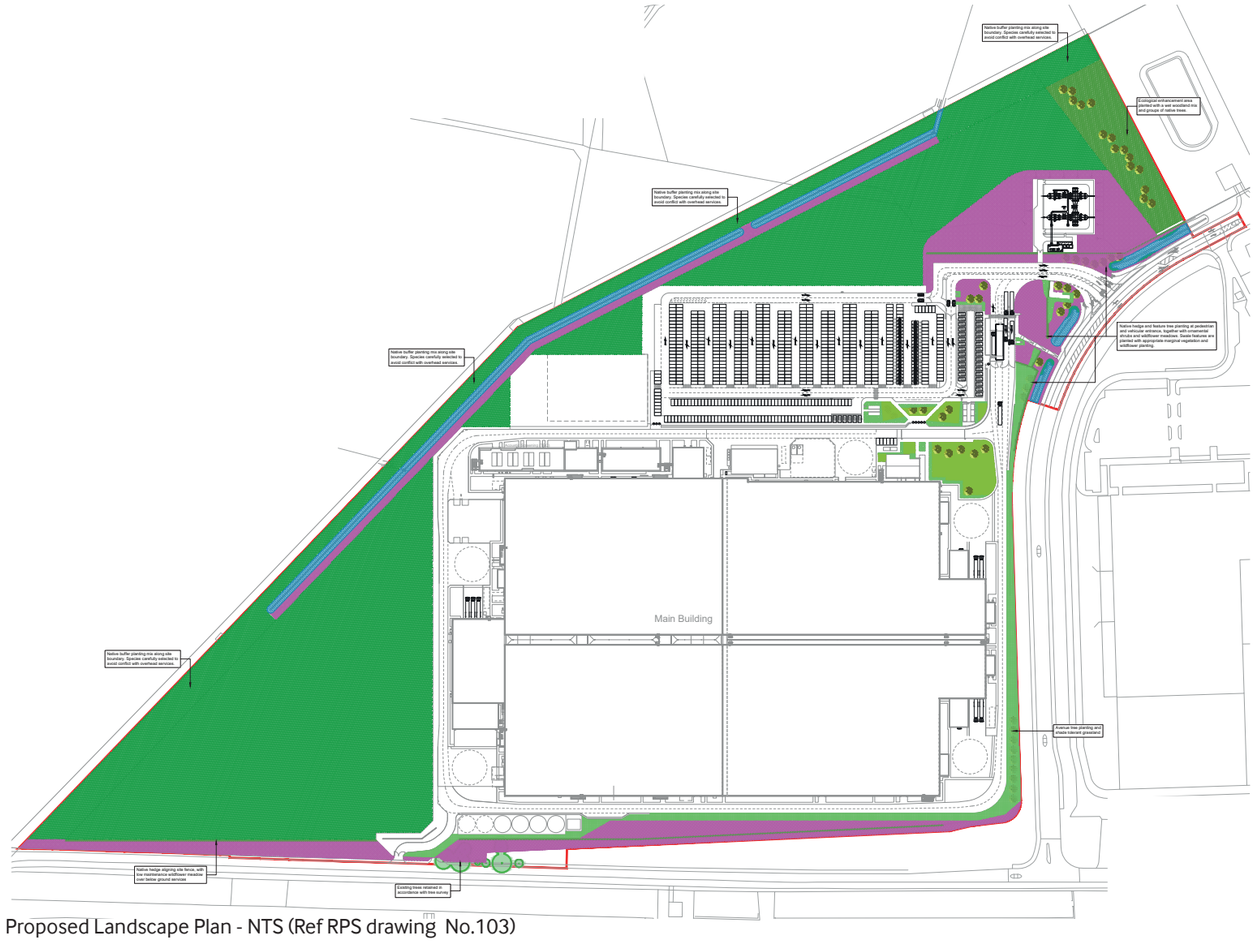
A holistic approach to landscape design has been adopted throughout the development, creating a coherent landscape character. Existing landscape assets have been retained and successfully incorporated throughout the development wherever possible. A comprehensive palette of soft landscape materials that complement the scale and form of the new development ensures that users will benefit from an attractive and welcoming environment. Trees, hedgerows, shrubs, grasses and swathes of wildflowers are incorporated within the planting scheme to provide seasonal interest, optimise biodiversity and enhance legibility.

Native buffer planting along the western boundary is proposed to help screen the development, with species selected to avoid conflict with overhead services. To the north of the site, an ecological enhancement area includes a wet woodland buffer with groups of native specimen trees. A range of marginal vegetation species, including wildflower grassland mixes that can tolerate wet soils are proposed along the banks of swale features along the site boundaries.

Within the site, specimen trees and a range of ornamental shrubs are proposed at key arrival points, providing shade, structure and enhancing legibility. Native hedgerows act to screen fencing and provide structure and definition within the site.



Proposed Landscape Plan Extract - NTS (Ref RPS drawing No.103) (Ref RPS drawing No.103)



Proposed Landscape Plan - NTS (Ref RPS drawing No.103)

Example - Landscape Buffer

Example - Entrance Feature

Example - Wild Flower

4.0 ACCESS

4.1 External Site Access

Access into the site has been optimised with the intent to segregate vehicle types as soon as possible, and to provide separate access for cyclists and pedestrians from the local highway. Within the site, personal vehicles will be parked in a secure car park and all HGV traffic will be directed through security controlled barriers to the perimeter service roads.
Care has been taken to ensure pedestrian access to the building does not have to cross HGV routes, and in front of the office accommodation vehicle access will be controlled by barriers.

Through design development the car park area was revised to satisfy the minimum British Parking Association Standards. Standard bay size of 2.4m wide by 4.8m long bay, with 6m roads in-between for manoeuvring.

Personal Vehicular Access

- Access and entry pre-determined by one-way IAMP infrastructure
- Primary Access point at North from International Drive
- 685 + 40 visitor parking spaces inc 5% accessible and upto 10% EV spaces

HGV / LGV

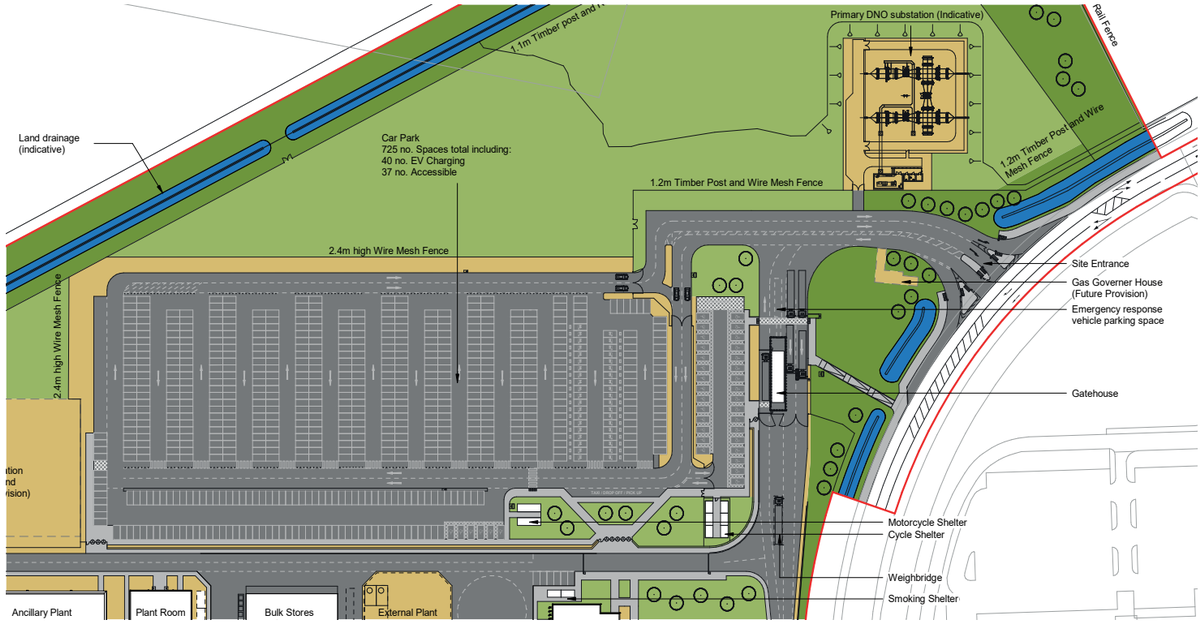
- HGV's will have separate, controlled access
- Perimeter bi-directional service road
- Goods In Yard – with level access doors and dock levellers
- Goods Out Yard – with level access doors and dock levellers

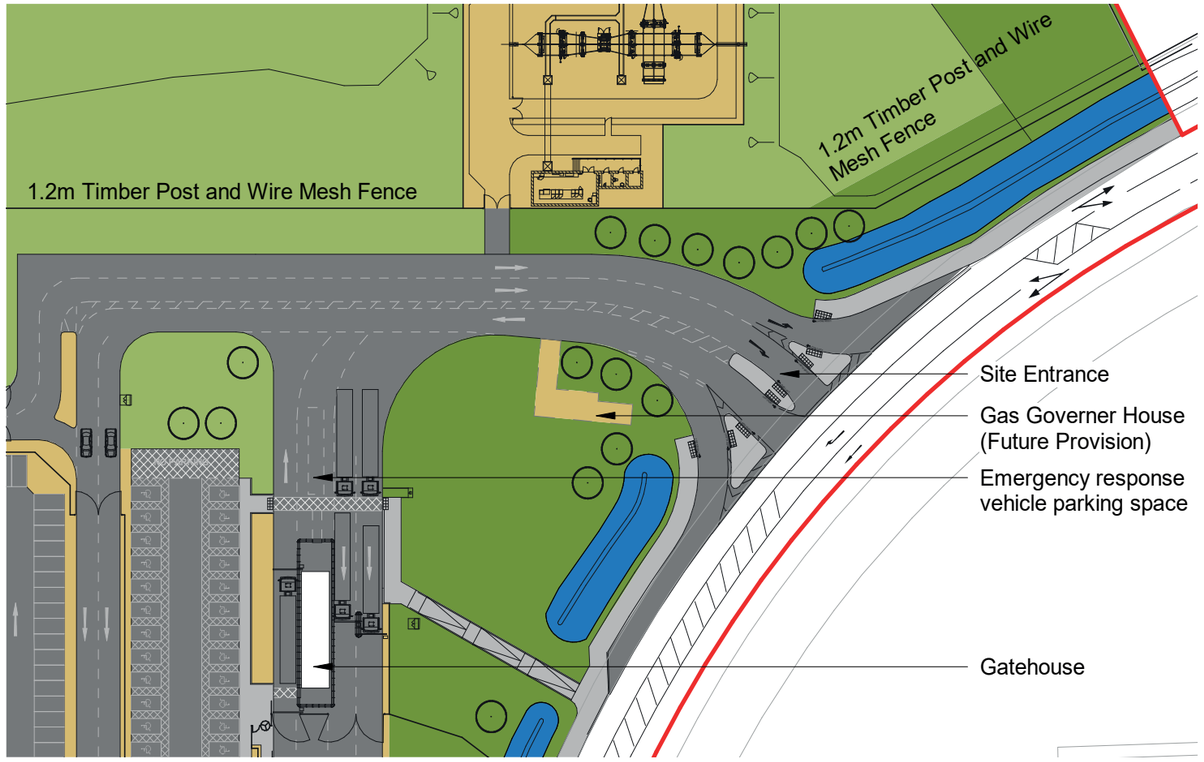
Pedestrian / Cycle Access

- Pedestrian & Cycle access via IAMP infrastructure to boundary. 3m wide shared route, continuing into site via security office
- Up to 80 Cycle & Motorcycle spaces
- Access and circulation designed for optimum flow during shift changes
- Staff access to facility via controlled turnstile entry
- Visitor access to facility via security office
- Designated drop off & pick up points will be provided

Emergency Access

- Emergency by-pass lane at security office
- Secondary (Emergency Access) from South A1290 at West Moor Farm





Proposed Site Plan - NTS (Ref RPS drawing No.104)

5.0 PERSONAL SAFETY & CRIME PREVENTION

Crime Prevention
Consideration has been given to the layout of the development to ensure personal safety. This relates not only to ensuring that the layout of the development does not create an environment conducive to crime but also to how occupiers and visitors to the site can move freely without risk.

Access and Movement
Spaces and pedestrian routes are currently well defined with easy to recognise entrances, this provides convenient movement without compromising security.
Proposed car parking is provided in the most prominent locations possible.

Structure
The building will be designed with robust materials; metal-faced cladding on a steel frame. Where appropriate, glazing will be toughened, laminated sections and where possible all windows and doors will be certified secure products.

Surveillance
Natural surveillance and active frontages was a key factor in the overall design of the site and the positioning of the offices overlooking the proposed car parking offers the occupier a high degree of visual control. The building design and layout has been considered to minimise visual obstacles and eliminate places of concealment; any potential "dark" areas will be well illuminated.

Physical Protection
The site perimeter to the north/northwest is defined by a 1.1m high timber post and rail fence and a 1.2m high timber post and wire mesh fence to maintain and encourage biodiversity. The south/southeast boundary of the site along the International drive and A1290 provides a higher level of security to the main buildings with a 2.4m high wire mesh fence. In addition, the car park is segregated with an additional 2.4m high fence with automatic barriers and gates.

Security
The site will be manned 24/7, 365 days a year and will have full site coverage via CCTV in a dedicated security office.


Precedent Wire Mesh Fence, height 2.4m. (RAL 6005, Green)


Precedent Timber Post & Rail Fence, height 1.1m


Precedent Timber Post and Wire Mesh Fence, height 1.2m

6.0 ANCILLARY BUILDINGS

6.1 HV Substation Compound

The substation compound will be located to the north of the development site; it will be situated between the ancillary plant rooms, the car park and the north western boundary as shown. The red line boundary area is circa 2.7 Acres (1.09Ha).

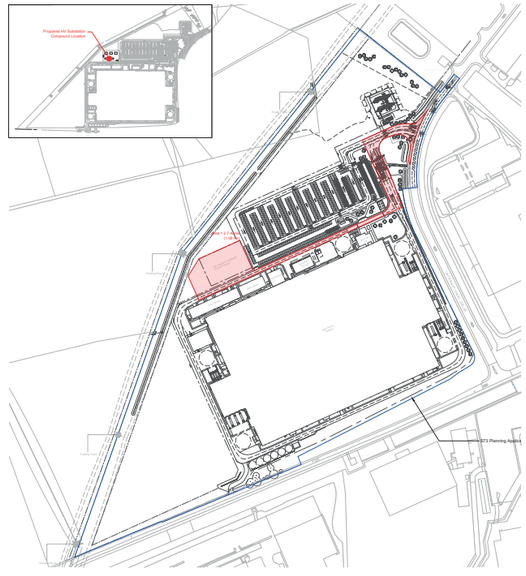
The compound footprint has been established by the demand of product output and requirements for the process equipment to be provided. The compound has been positioned and orientated to coordinate with the ancillary plant rooms, providing safe and efficient site access connection from International Drive and suitability of car park for heavy goods vehicles as well as provide space for suitable boundary treatments to the west and northern boundaries.

The secure HV substation compound is 72m x 48m and includes an 11kV substation and 2no. transformer units with future provision for an additional transformer. The 11kV substation is a single storey unit with a max height of 6m. The transformers are each 12 x 10m with an 8m separation from the compound boundary.

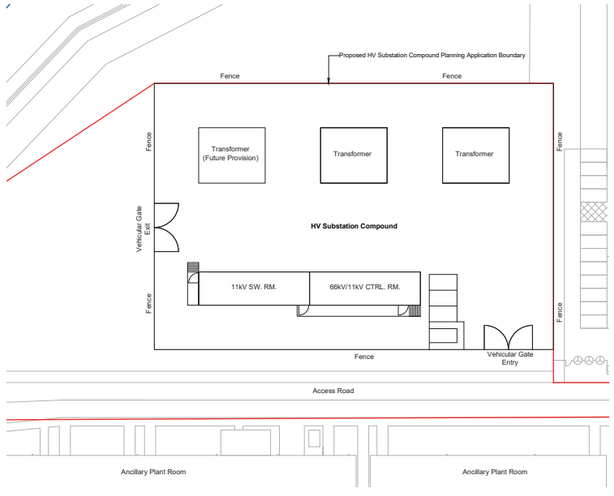
External materials consist of a metal profiled cladding system to match that of the new factory and ancillary plant rooms therefore matching the surrounding buildings within the masterplan development.

The substation compound is serviced by a concrete access road for maintenance vehicle. The remainder of the landscaping within the compound will be a permeable gravel layer.

In line with the development site masterplan outside the compound boundary native buffer planting along the western boundary is proposed to help screen the development, with species selected to avoid conflict with overhead services.

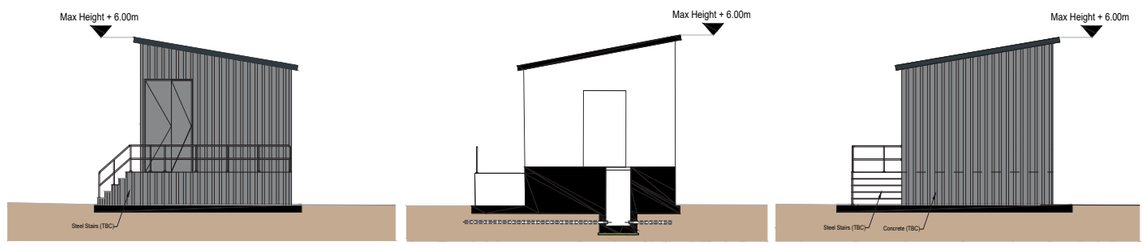


Proposed HV Substation Compound Location Plan NTS
(Ref RPS drawing No.140)



Proposed HV Substation Compound Plan NTS
(Ref RPS drawing No.141)

Elevation A



Elevation B | Section A-A | Elevation C

Proposed HV Substation Compound Elevations NTS (Ref RPS drawing No.142)

Note: HV Substation Compound layout and elevations are based on the following received information (File name: GIGA 1 FACTORY 11kV Compound Rev 3, Date received: 04/05/23)

6.0 ANCILLARY BUILDINGS

6.2 Proposed Bulk Store Canopy 2

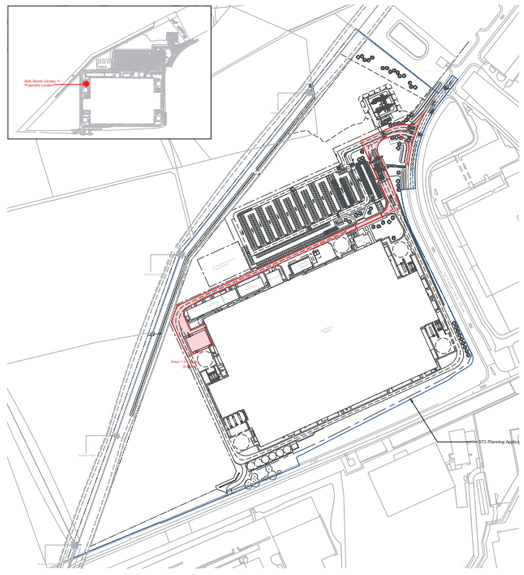
The proposed bulk store canopy 2 building will be located to the west of the development site adjacent to Area A of the main Factory Building as shown opposite. The red line boundary area is circa 2.1 Acres (0.85Ha).

The building footprint measures 34m x 25m with a max ridge height of 13m. The bulk store canopy 2 consists of 2 delivery bays and a bunded tank farm. This has been established by the demand of raw material product arriving on site and requirements for the manufacturing process. The store has been positioned and orientated to coordinate with the proposed factory.

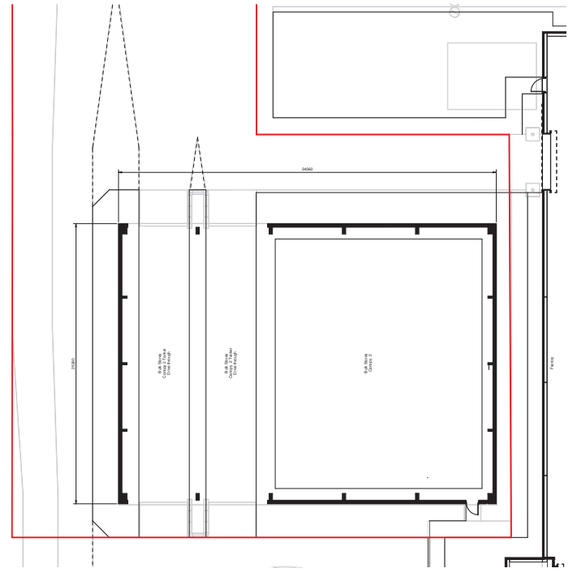
The layout within the bulk store is defined by the provision of the HGV drive through within the bulk store area providing safe and efficient site access connection from International Drive. This includes storage tanks located in an open standalone drive through canopy to reduce Health and Safety risk in association with on-site storage of materials.

External materials consist of a metal profiled cladding system to match that of the adjacent factory and ancillary plant rooms therefore matching the surrounding buildings within the masterplan development.

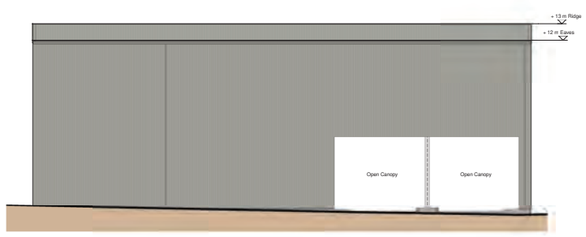
Access into the store is connected via the perimeter service road to International Drive where all HGV traffic will be directed through security controlled barriers to the perimeter service roads.



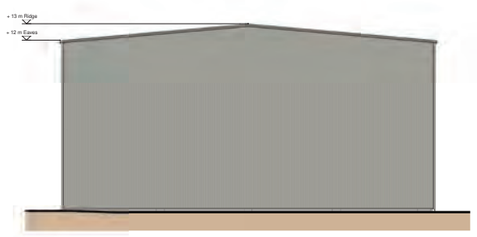
Proposed Bulk Store Canopy 2 Location Plan NTS
(Ref RPS drawing No.120)



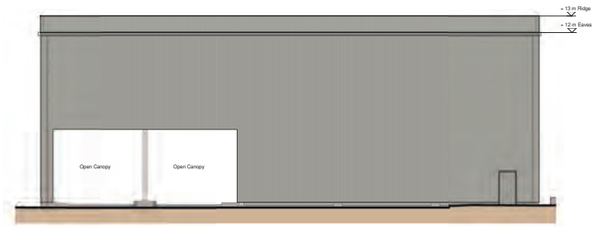
Proposed Bulk Store Canopy 2 Plan NTS
(Ref RPS drawing No.122)



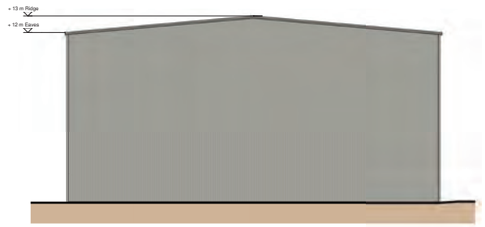
Elevation A
1 : 100



Elevation B
1 : 100

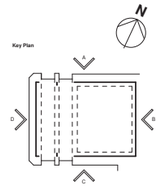


Elevation C
1 : 100



Elevation D
1 : 100

Proposed Bulk Store Canopy 2 Elevations NTS
(Ref RPS drawing No.121)



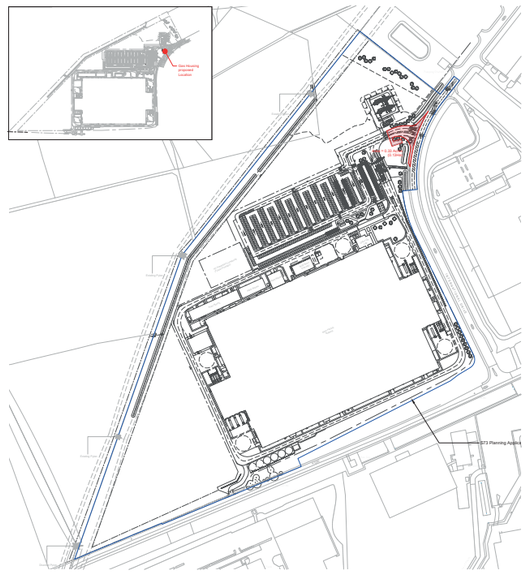
6.0 ANCILLARY BUILDINGS

6.3 Proposed Gas Governor House

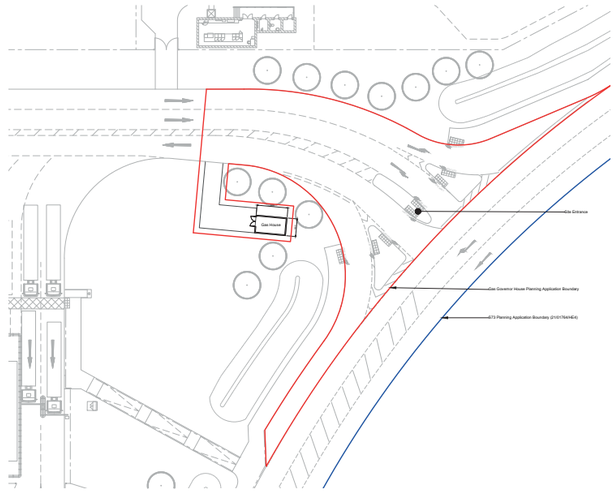
The proposed gas governor house is located to the northeast of the development site; it will be situated between the gatehouse and the development site main access point from International Drive approx 30m from the mains gas location. The red line boundary area is circa 0.33 Acres (0.13Ha). The Gas Governor House is accessed from within the curtilage of the development boundary. Provisions have been made for maintenance vehicle access to an area of hardstanding surface.

The gas house building footprint measures 5.6m x 3.3m measures and is a single storey with a height of 2.5m.

The material is a GRP finish, colour: Anthracite Grey to match the surrounding buildings within the masterplan development.



Proposed Gas Governor House Location Plan - NTS
(Ref RPS drawing No.130)



Proposed Gas Governor House Plan NTS
(Ref RPS drawing No.131)

Proposed Garrison *TM GRP Modular Housings (By Others)
Colour: Anthracite Grey RAL 7016

7.0 SUMMARY

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- The proposals are to create a new Gigawatt Battery Manufacturing Plant, which will create employment opportunities for upto 700 new jobs and relocation of 300 employees from the existing Nissan Site, resulting in 1000 employees.
- The required building footprint has been established by the demand of product output and requirements for the process equipment to provide.
- Natural surveillance and active frontages was a key factor in the overall design of the site.

8.0 APPENDIX A

8.1 Combined Planning Application Boundaries
(RPS drawing ref: ENV1-RPS-ST-XX-SK-A-000061)

8.2 Overlay Of Approved Application
(RPS drawing ref: ENV1-RPS-ST-XX-SK-A-000062)

Notes

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N

Key:

🟥 Planning Application Boundaries

🟦 Lease Boundary

P02	Planning Submission	HH	JAT	12/05/23
Rev	Description	By	Ckd	Date

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A TETRA TECH COMPANY

Sherwood House, Sherwood Avenue,
Newark, Nottinghamshire, NG24 1QQ
T:01636 605 700 **E**: rpsnewark@rpsgroup.com

Client

Envision AESC
Wates

Project: Envision AESC Giga Factory

Title: Combined Planning Application Boundaries

RPS Project Number	Scale @ A0	Date Created
NK020439-P	1:1250	14/04/23
Task Team Manager	Information Author	Task Information Manager
TH	HH	JAT

Status
S4 (Suitable For Approval)

Document Number: ENV1-RPS-ST-XX-SK-A-000061
Revision: P02
Project Code - Originator - Function - Space - Type - Role - Number

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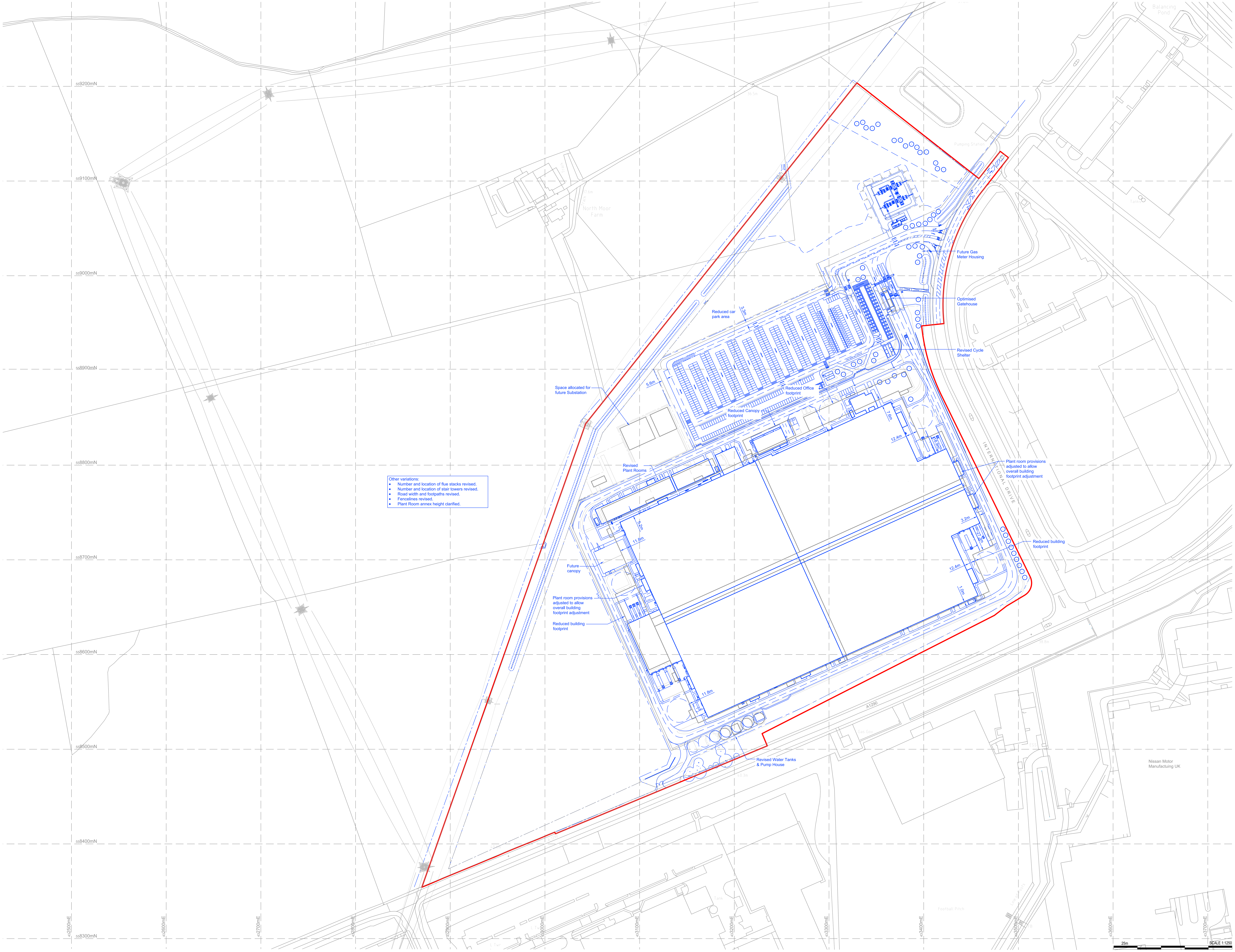

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Key:

- New Layout
- Application ref: 21/01764/HE4 Layout

Rev	Description	By	Ckd	Date
P01	First issue	TSR	JAT	12/05/23

MAKING COMPLEX EASY
A TETRA TECH COMPANY

Sherwood House, Sherwood Avenue,
Newark, Nottinghamshire, NG24 1QQ
T:01636 605 700 E: rpsnewark@rpsgroup.com

Client
Envision AESC Wates

Project: Envision AESC Giga Factory

Title: Overlay Of Approved Application Ref: 21/01764/HE4

RPS Project Number	Scale @ A0	Date Created
NK020439P	1:1250	12/05/2023

Task Team Manager	Information Author	Task Information Manager
TH	TSR	TSR

Status: S2 (Suitable for Information)

Document Number: ENV1-RPS-ST-XX-SK-A-000062
Revision: P01
Project Code - Originator - Function - Space - Type - Role - Number

rpsgroup.com

Contact

Sherwood House
Sherwood Avenue
Newark
Nottinghamshire
NG24 1QQ
T +44 1636 605 700