

## Application for Planning Permission

### Town and Country Planning Act 1990 (as amended)

#### Publication of applications on planning authority websites

Please note that the information provided on this application form and in supporting documents may be published on the Authority's website. If you require any further clarification, please contact the Authority's planning department.

### Site Location

**Disclaimer:** We can only make recommendations based on the answers given in the questions.

If you cannot provide a postcode, the description of site location must be completed. Please provide the most accurate site description you can, to help locate the site - for example "field to the North of the Post Office".

Number

Suffix

Property Name

Address Line 1

Address Line 2

Address Line 3

Town/city

Postcode

Description of site location must be completed if postcode is not known:

Easting (x)  Northing (y)

Description

## Applicant Details

### Name/Company

Title

C/o Agent

First name

C/o Agent

Surname

C/o Agent

Company Name

Motor Fuel Group

### Address

Address line 1

Gladstone Place

Address line 2

36-38 Upper Marlborough Road

Address line 3

Town/City

St Albans

County

Country

United Kingdom

Postcode

AL1 3UU

Are you an agent acting on behalf of the applicant?

Yes

No

### Contact Details

Primary number

Secondary number

Fax number

Email address

## Agent Details

Name/Company

Title

First name

Surname

Company Name

## Address

Address line 1

Address line 2

Address line 3

Town/City

County

Country

Postcode

## Contact Details

Primary number

\*\*\*\* REDACTED \*\*\*\*

Secondary number

Fax number

Email address

\*\*\*\* REDACTED \*\*\*\*

## Site Area

What is the measurement of the site area? (numeric characters only).

0.08

Unit

Hectares

## Description of the Proposal

Please note in regard to:

- **Fire Statements** - From 1 August 2021, planning applications for buildings of over 18 metres (or 7 stories) tall containing more than one dwelling will require a 'Fire Statement' for the application to be considered valid. There are some exemptions. [View government planning guidance on fire statements](#) or [access the fire statement template and guidance](#).
- **Permission In Principle** - If you are applying for Technical Details Consent on a site that has been granted Permission In Principle, please include the relevant details in the description below.
- **Public Service Infrastructure** - From 1 August 2021, applications for certain public service infrastructure developments will be eligible for faster determination timeframes. See help for further details or [view government planning guidance on determination periods](#).

### Description

Please describe details of the proposed development or works including any change of use

The demolition of car wash and associated building and the creation of charging zone, erection of EV chargers, erection of canopy, three jet wash bays, sub-station enclosure and associated forecourt works.

Has the work or change of use already started?

Yes

No

## Existing Use

Please describe the current use of the site

Petrol Filling Station.

Is the site currently vacant?

- Yes  
 No

**Does the proposal involve any of the following? If Yes, you will need to submit an appropriate contamination assessment with your application.**

Land which is known to be contaminated

- Yes  
 No

Land where contamination is suspected for all or part of the site

- Yes  
 No

A proposed use that would be particularly vulnerable to the presence of contamination

- Yes  
 No

## Materials

Does the proposed development require any materials to be used externally?

- Yes  
 No

Please provide a description of existing and proposed materials and finishes to be used externally (including type, colour and name for each material)

**Type:**

Other

**Other (please specify):**

All materials.

**Existing materials and finishes:**

**Proposed materials and finishes:**

Please see submitted plans.

Are you supplying additional information on submitted plans, drawings or a design and access statement?

- Yes  
 No

If Yes, please state references for the plans, drawings and/or design and access statement

Please see all submitted documents.

## Pedestrian and Vehicle Access, Roads and Rights of Way

Is a new or altered vehicular access proposed to or from the public highway?

- Yes  
 No

Is a new or altered pedestrian access proposed to or from the public highway?

- Yes  
 No

Are there any new public roads to be provided within the site?

- Yes  
 No

Are there any new public rights of way to be provided within or adjacent to the site?

- Yes  
 No

Do the proposals require any diversions/extinguishments and/or creation of rights of way?

- Yes  
 No

## Vehicle Parking

Does the site have any existing vehicle/cycle parking spaces or will the proposed development add/remove any parking spaces?

- Yes  
 No

Please provide information on the existing and proposed number of on-site parking spaces

### Vehicle Type:

Cars

### Existing number of spaces:

8

### Total proposed (including spaces retained):

7

### Difference in spaces:

-1

## Trees and Hedges

Are there trees or hedges on the proposed development site?

- Yes  
 No

And/or: Are there trees or hedges on land adjacent to the proposed development site that could influence the development or might be important as part of the local landscape character?

- Yes  
 No

**If Yes to either or both of the above, you may need to provide a full tree survey, at the discretion of the local planning authority. If a tree survey is required, this and the accompanying plan should be submitted alongside the application. The local planning authority should make clear on its website what the survey should contain, in accordance with the current 'BS5837: Trees in relation to design, demolition and construction - Recommendations'.**

## Assessment of Flood Risk

Is the site within an area at risk of flooding? (Check the location on the Government's [Flood map for planning](#). You should also refer to national [standing advice](#) and your local planning authority requirements for information as necessary.)

- Yes  
 No

Is your proposal within 20 metres of a watercourse (e.g. river, stream or beck)?

- Yes  
 No

Will the proposal increase the flood risk elsewhere?

- Yes  
 No

How will surface water be disposed of?

- Sustainable drainage system  
 Existing water course  
 Soakaway  
 Main sewer  
 Pond/lake

## Biodiversity and Geological Conservation

Is there a reasonable likelihood of the following being affected adversely or conserved and enhanced within the application site, or on land adjacent to or near the application site?

To assist in answering this question correctly, please refer to the help text which provides guidance on determining if any important biodiversity or geological conservation features may be present or nearby; and whether they are likely to be affected by the proposals.

a) Protected and priority species

- Yes, on the development site  
 Yes, on land adjacent to or near the proposed development  
 No

b) Designated sites, important habitats or other biodiversity features

- Yes, on the development site  
 Yes, on land adjacent to or near the proposed development  
 No

c) Features of geological conservation importance

- Yes, on the development site  
 Yes, on land adjacent to or near the proposed development  
 No

### Supporting information requirements

Where a development proposal is likely to affect features of biodiversity or geological conservation interest, you will need to submit, with the application, sufficient information and assessments to allow the local planning authority to determine the proposal.

Failure to submit all information required will result in your application being deemed invalid. It will not be considered valid until all information required by the local planning authority has been submitted.

Your local planning authority will be able to advise on the content of any assessments that may be required.

## Foul Sewage

Please state how foul sewage is to be disposed of:

- Mains sewer
- Septic tank
- Package treatment plant
- Cess pit
- Other
- Unknown

Are you proposing to connect to the existing drainage system?

- Yes
- No
- Unknown

## Waste Storage and Collection

Do the plans incorporate areas to store and aid the collection of waste?

- Yes
- No

If Yes, please provide details:

As per existing.

Have arrangements been made for the separate storage and collection of recyclable waste?

- Yes
- No

If Yes, please provide details:

As per existing.

## Trade Effluent

Does the proposal involve the need to dispose of trade effluents or trade waste?

- Yes
- No

## Residential/Dwelling Units

Does your proposal include the gain, loss or change of use of residential units?

- Yes
- No



## All Types of Development: Non-Residential Floorspace

Does your proposal involve the loss, gain or change of use of non-residential floorspace?  
Note that 'non-residential' in this context covers all uses except Use Class C3 Dwellinghouses.

- Yes  
 No

## Employment

Are there any existing employees on the site or will the proposed development increase or decrease the number of employees?

- Yes  
 No

## Hours of Opening

Are Hours of Opening relevant to this proposal?

- Yes  
 No

## Industrial or Commercial Processes and Machinery

Does this proposal involve the carrying out of industrial or commercial activities and processes?

- Yes  
 No

Is the proposal for a waste management development?

- Yes  
 No

## Hazardous Substances

Does the proposal involve the use or storage of Hazardous Substances?

- Yes  
 No

## Site Visit

Can the site be seen from a public road, public footpath, bridleway or other public land?

- Yes  
 No

If the planning authority needs to make an appointment to carry out a site visit, whom should they contact?

- The agent  
 The applicant  
 Other person

## Pre-application Advice

Has assistance or prior advice been sought from the local authority about this application?

- Yes  
 No

## Authority Employee/Member

With respect to the Authority, is the applicant and/or agent one of the following:

- (a) a member of staff  
(b) an elected member  
(c) related to a member of staff  
(d) related to an elected member

It is an important principle of decision-making that the process is open and transparent.

For the purposes of this question, "related to" means related, by birth or otherwise, closely enough that a fair-minded and informed observer, having considered the facts, would conclude that there was bias on the part of the decision-maker in the Local Planning Authority.

Do any of the above statements apply?

- Yes  
 No

## Ownership Certificates and Agricultural Land Declaration

### Certificates under Article 14 - Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended)

Please answer the following questions to determine which Certificate of Ownership you need to complete: A, B, C or D.

Is the applicant the sole owner of all the land to which this application relates; and has the applicant been the sole owner for more than 21 days?

- Yes  
 No

Is any of the land to which the application relates part of an Agricultural Holding?

- Yes  
 No

### Certificate Of Ownership - Certificate A

I certify/The applicant certifies that on the day 21 days before the date of this application nobody except myself/ the applicant was the owner\* of any part of the land or building to which the application relates, and that none of the land to which the application relates is, or is part of, an agricultural holding\*\*

\* "owner" is a person with a freehold interest or leasehold interest with at least 7 years left to run.

\*\* "agricultural holding" has the meaning given by reference to the definition of "agricultural tenant" in section 65(8) of the Act.

**NOTE:** You should sign Certificate B, C or D, as appropriate, if you are the sole owner of the land or building to which the application relates but the land is, or is part of, an agricultural holding.

Person Role

- The Applicant  
 The Agent

Title

Miss

First Name

Rahma

Surname

Dwimunali

Declaration Date

29/11/2022

Declaration made

## Declaration

I / We hereby apply for Full planning permission as described in this form and accompanying plans/drawings and additional information. I / We confirm that, to the best of my/our knowledge, any facts stated are true and accurate and any opinions given are the genuine options of the persons giving them. I / We also accept that: Once submitted, this information will be transmitted to the Local Planning Authority and, once validated by them, be made available as part of a public register and on the authority's website; our system will automatically generate and send you emails in regard to the submission of this application.

I / We agree to the outlined declaration

Signed

Carney Sweeney

Date

29/11/2022



NORTH



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KEY PLAN:

- SITE BOUNDARY LINE  
AREA - 1585SQM - 0.1585 HECTARES
- SITE APPLICATION LINE  
AREA - 822SQM - 0.0822 HECTARES

REV	DATE	DESCRIPTION	DRAWN/CHECKED

REVISION NOTES

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CLIENT

PROJECT  
**FS465 - LONDON ROAD SERVICE STATION**  
 LONDON ROAD  
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DRAWING TITLE  
**BLOCK PLAN**

DRAWN BY	DATE	SCALE	PAPER SIZE
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RRB	13664-BP-FS465	-	

SCALE BAR 1:500@A3



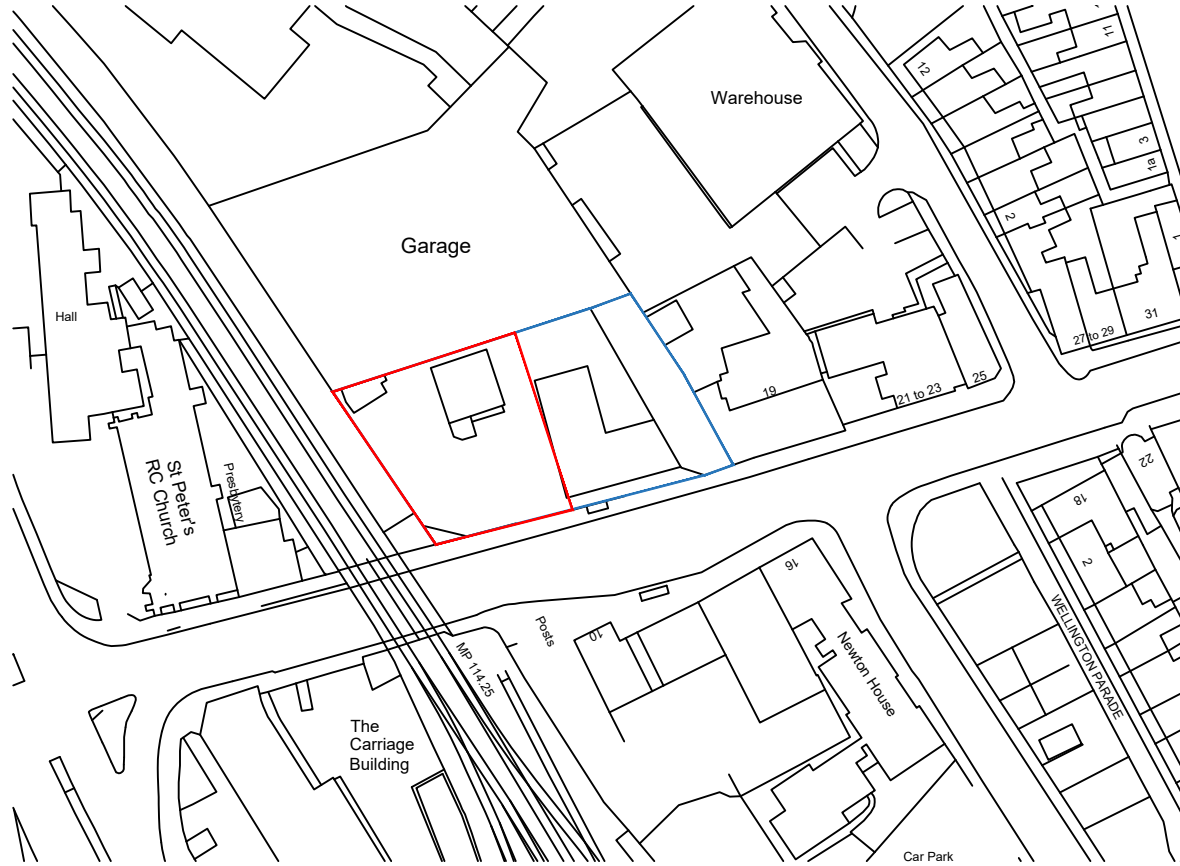


NORTH

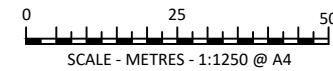
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**KEY PLAN:**

- █ SITE BOUNDARY LINE  
AREA - 1585SQM - 0.1585 HECTARES
- █ SITE APPLICATION LINE  
AREA - 830SQM - 0.083 HECTARES



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<b>LOCATION PLAN</b>		
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Warehouse

Garage

St Peter's  
RC Church

Presbytery

The Carriage  
Building

LONDON ROAD B4063

Posts

MP 114.25

10

16

Newton House

19

21 to 23

Sales  
Building

EXISTING  
PETROL  
INTERCEPTOR

LINE OF EXISTING CAPACITY

ENTRANCE

EXISTING  
EXIT CROSSOVER

EXISTING  
ENTRANCE  
CROSSOVER

POLE  
SIGN

EXISTING  
GROUND  
OFFSET FILL

EXISTING  
TANK FARM

VENTS  
STACK

EXISTING  
CAR WASH

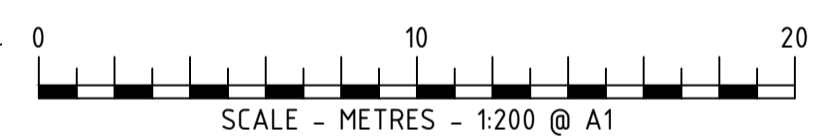
EXISTING CAR  
WASH BUILDING

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DRAWING TITLE  
EXISTING SITE LAYOUT

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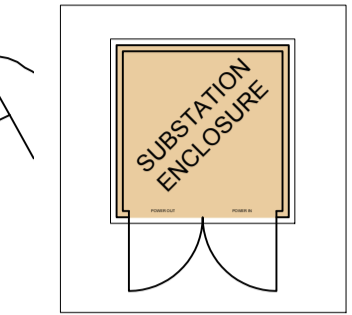
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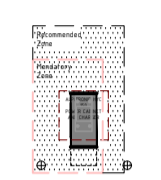
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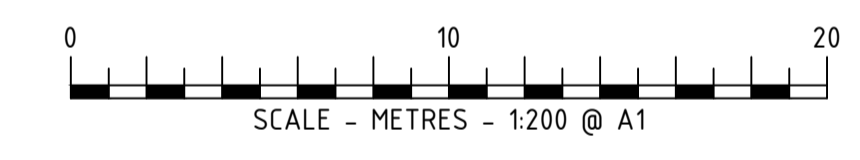
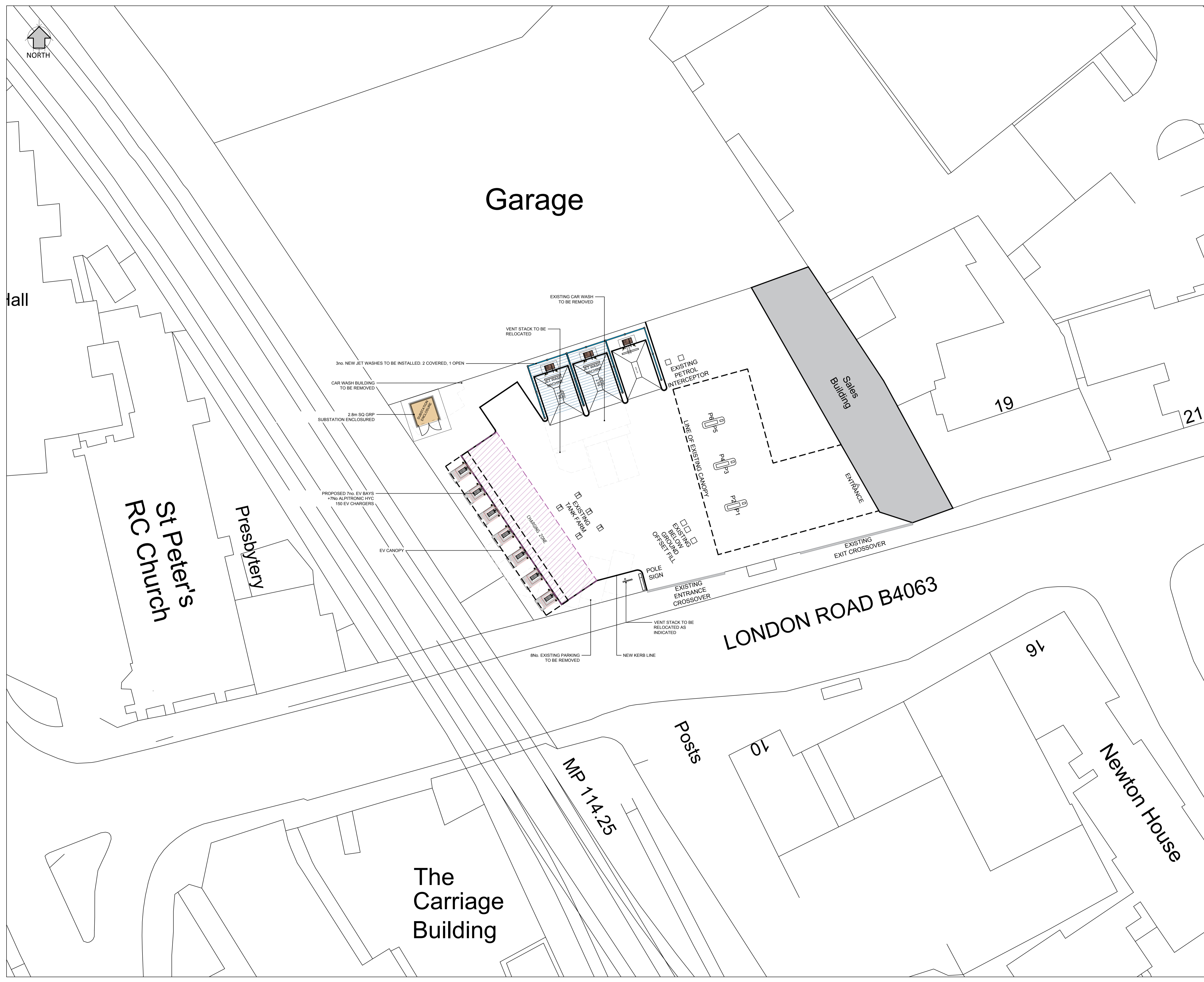
**EV INFRASTRUCTURE**



**DENOTES DNO HV/LV SUBSTATION**  
Typical GRP Enclosure 2.8m x 2.8m  
All to service provider standard details TO ICP DETAILS



**DENOTES CHARGING POST**  
ALPITRONICS HVC 150



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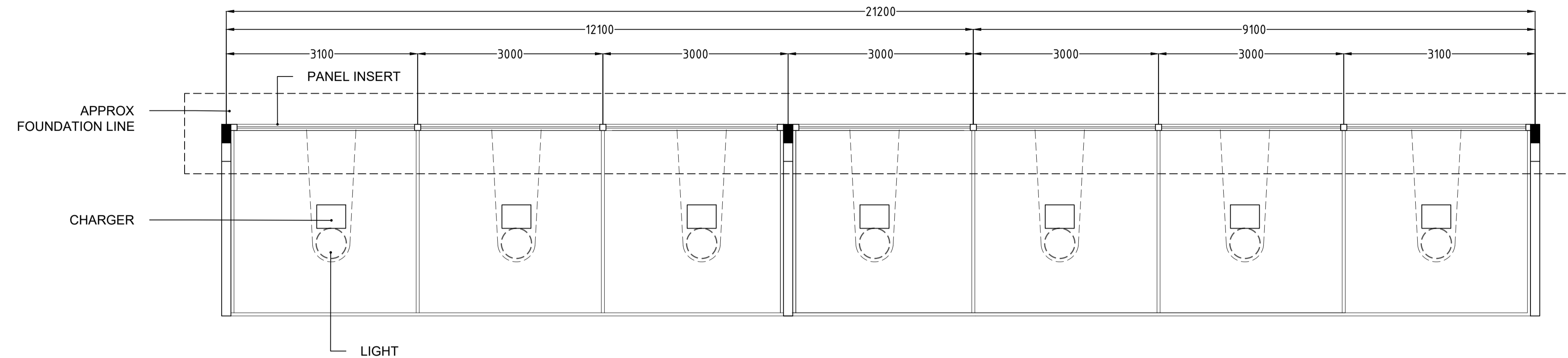
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**DRAWING TITLE**  
PROPOSED SITE LAYOUT

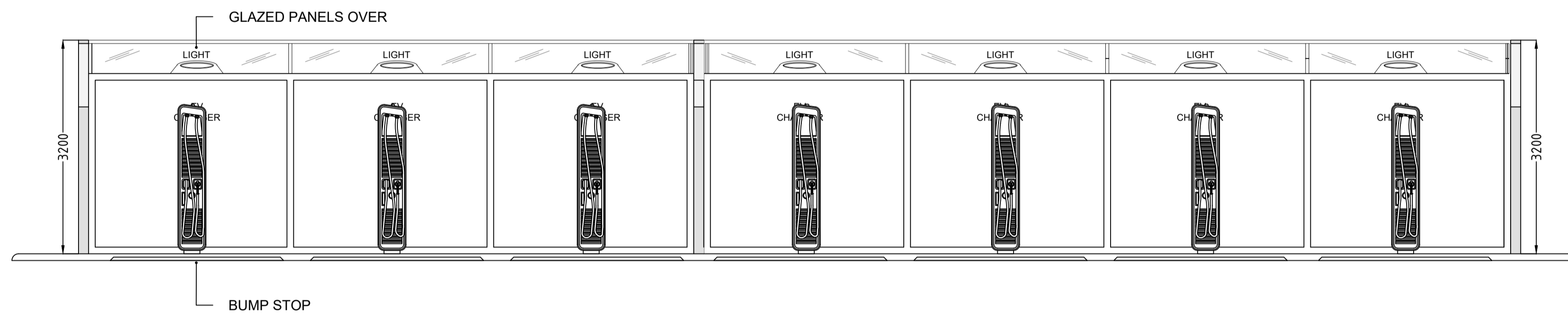
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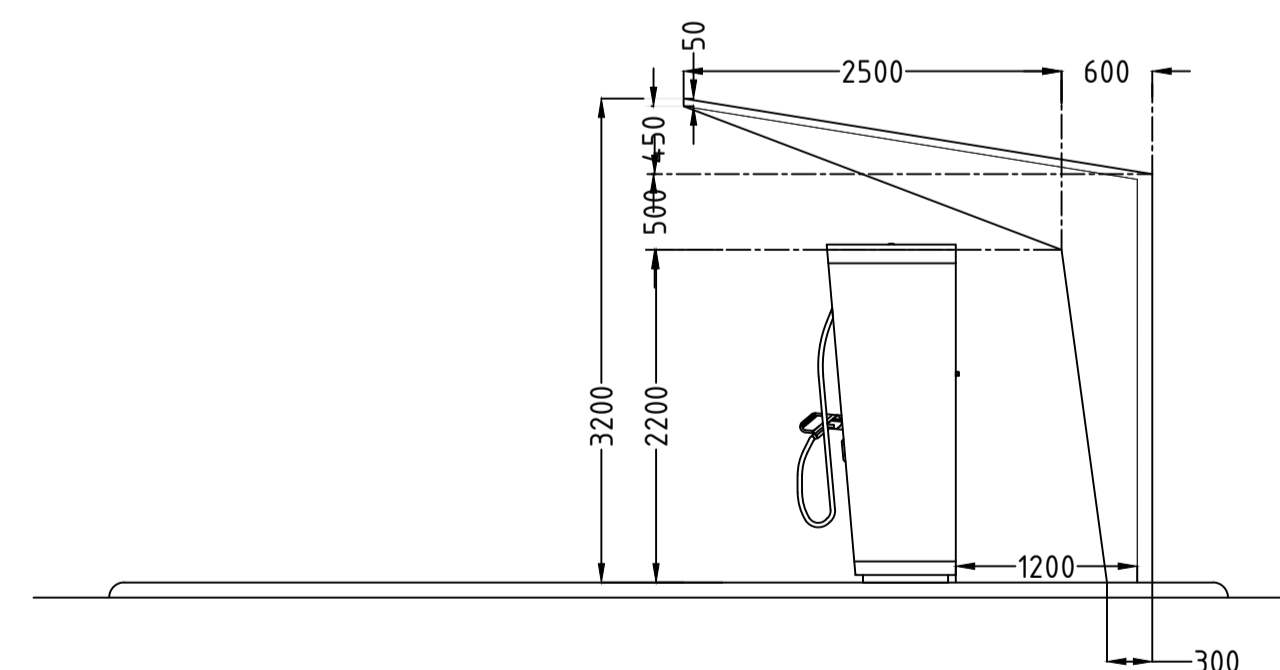
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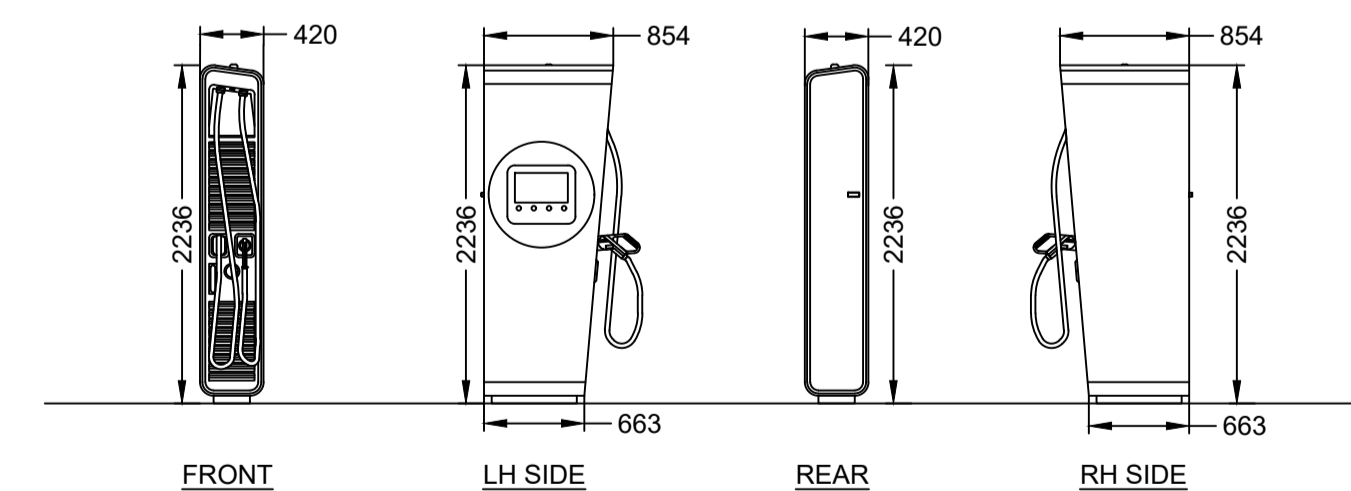
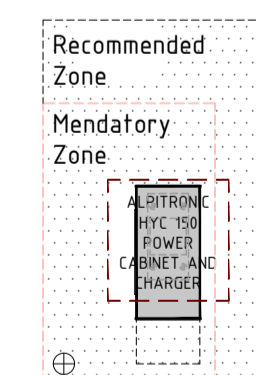
**EV CANOPY - PLAN**  
 Scale 1:50



**EV CANOPY - FRONT ELEVATION**  
 Scale 1:50



**EV CANOPY - SIDE ELEVATION**  
 Scale 1:50



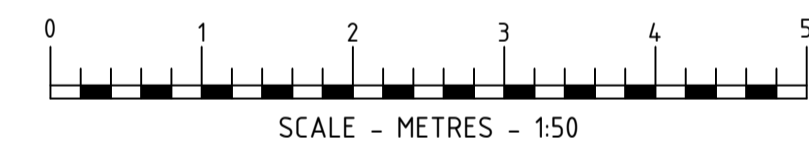
**ALPITRONIC 150 HYC CHARGER**  
 Scale 1:50

**Materials**

- Powder coated aluminium cladding panels, blue RAL 5015
- Steel frame columns and rafters, powder coated blue RAL 5015
- Glass support beam SHS finished in grey RAL 7016.
- Roof finished in 10mm toughened glass

**Lighting**

- LED Down lights to achieve 100 lux on each bay



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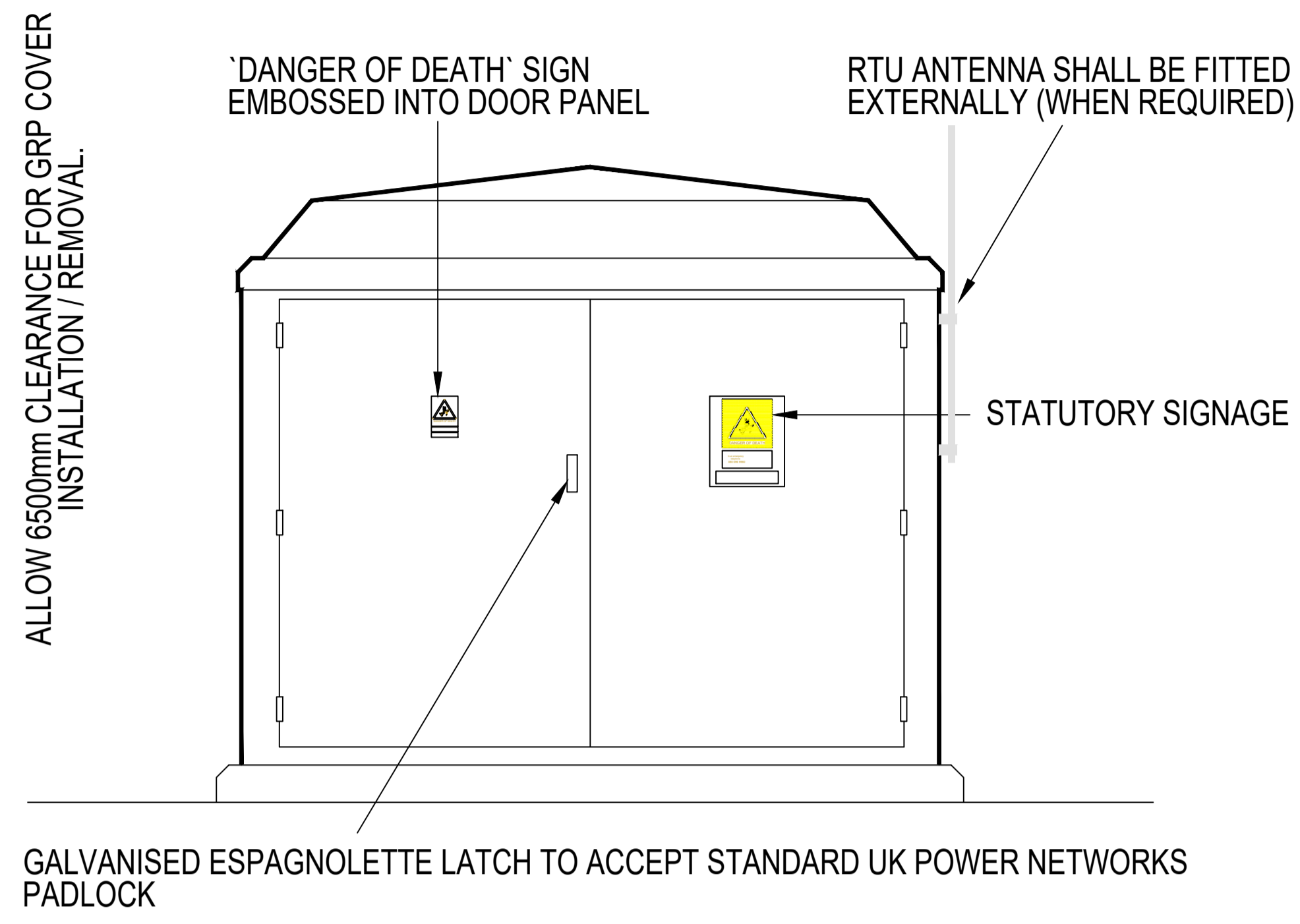
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DRAWING TITLE  
 EV CANOPY DETAIL

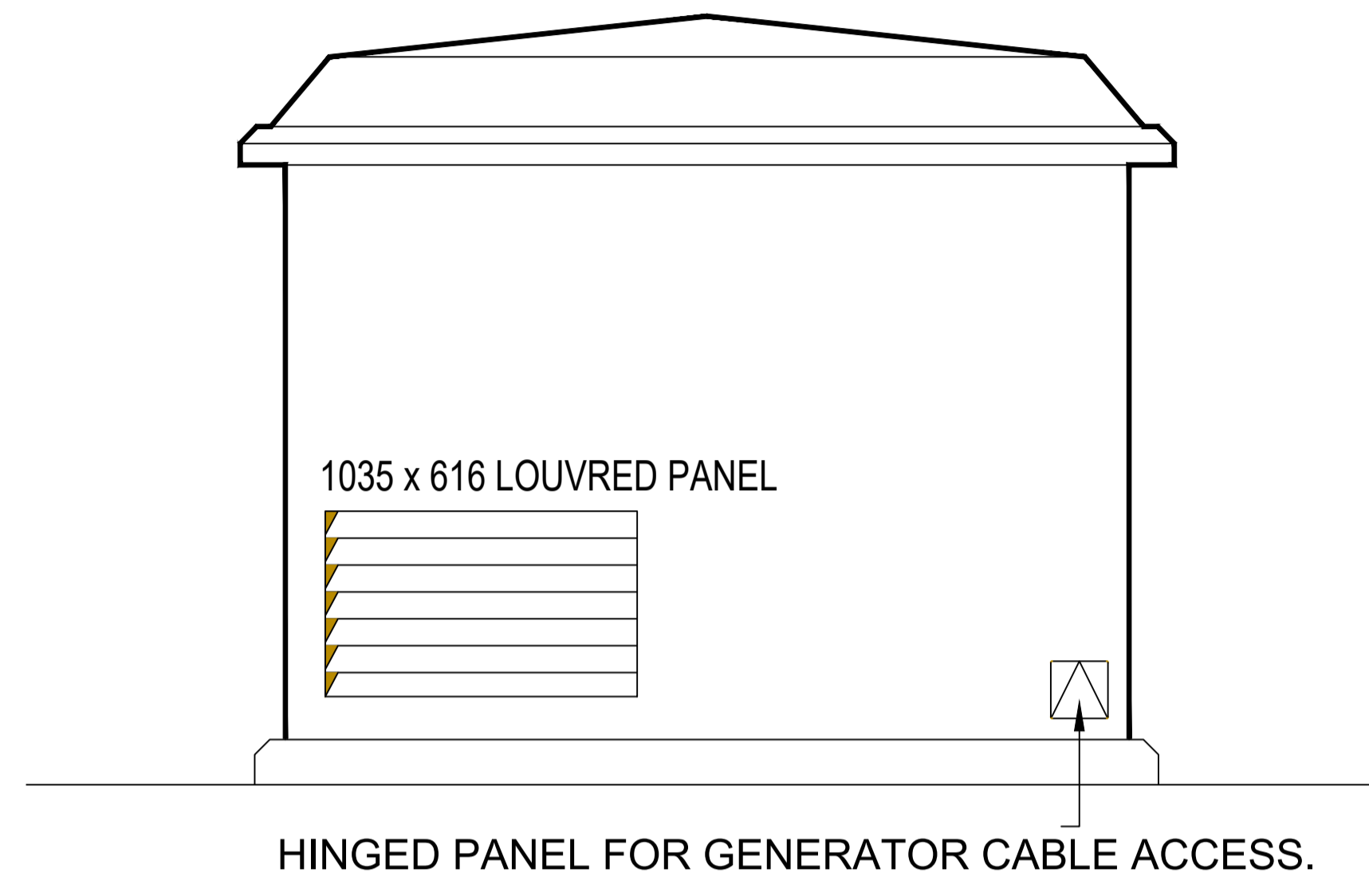
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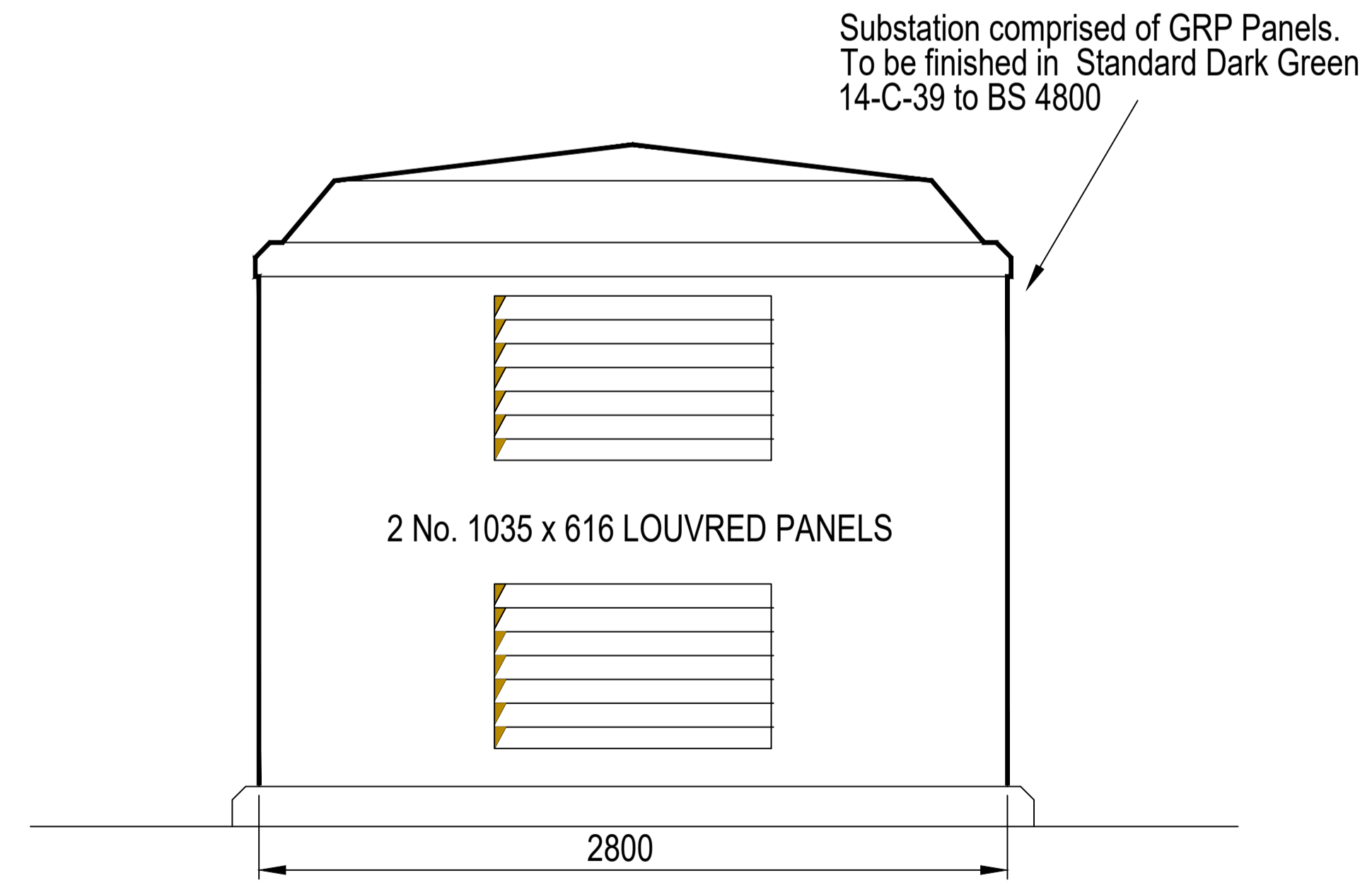
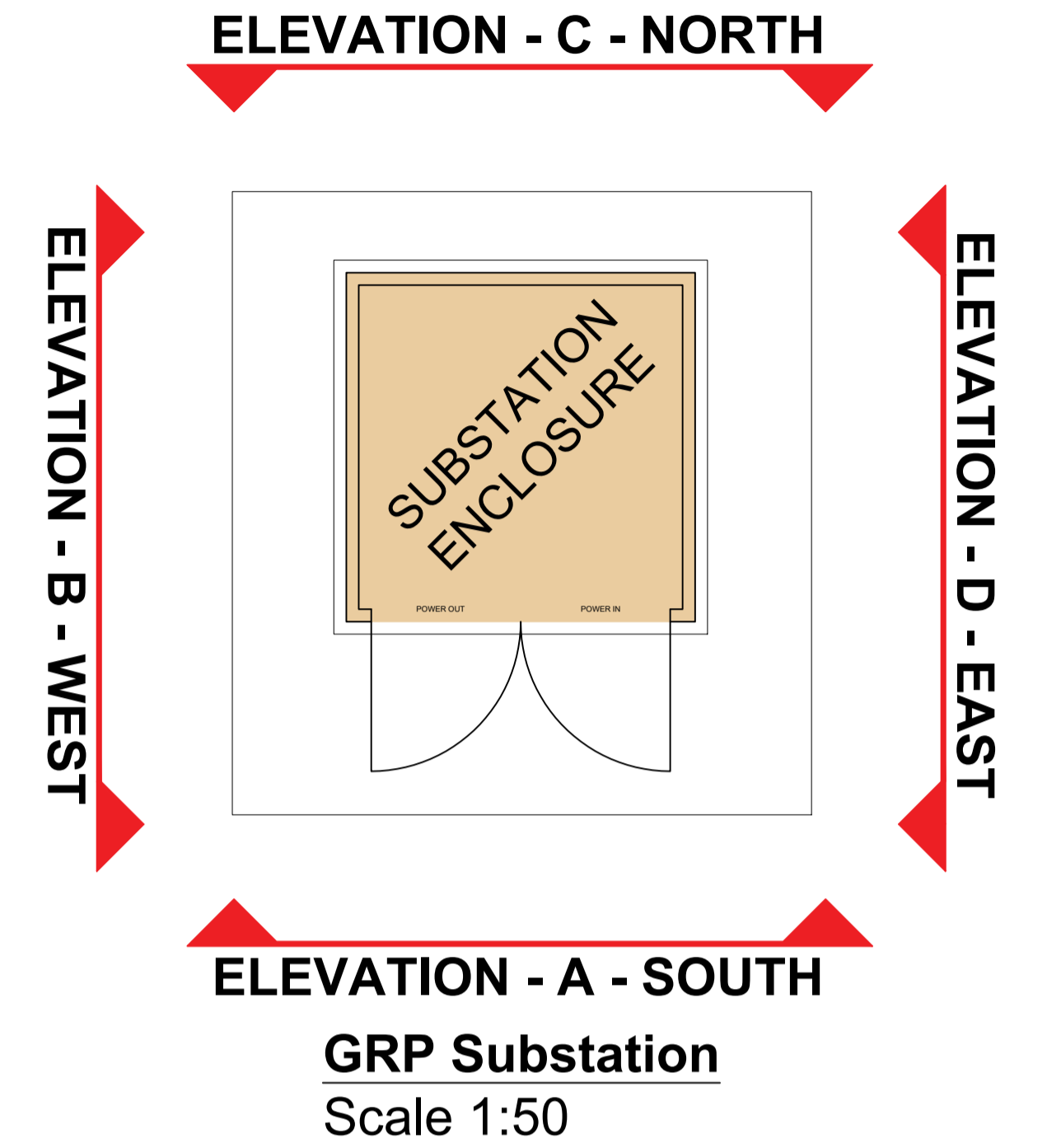
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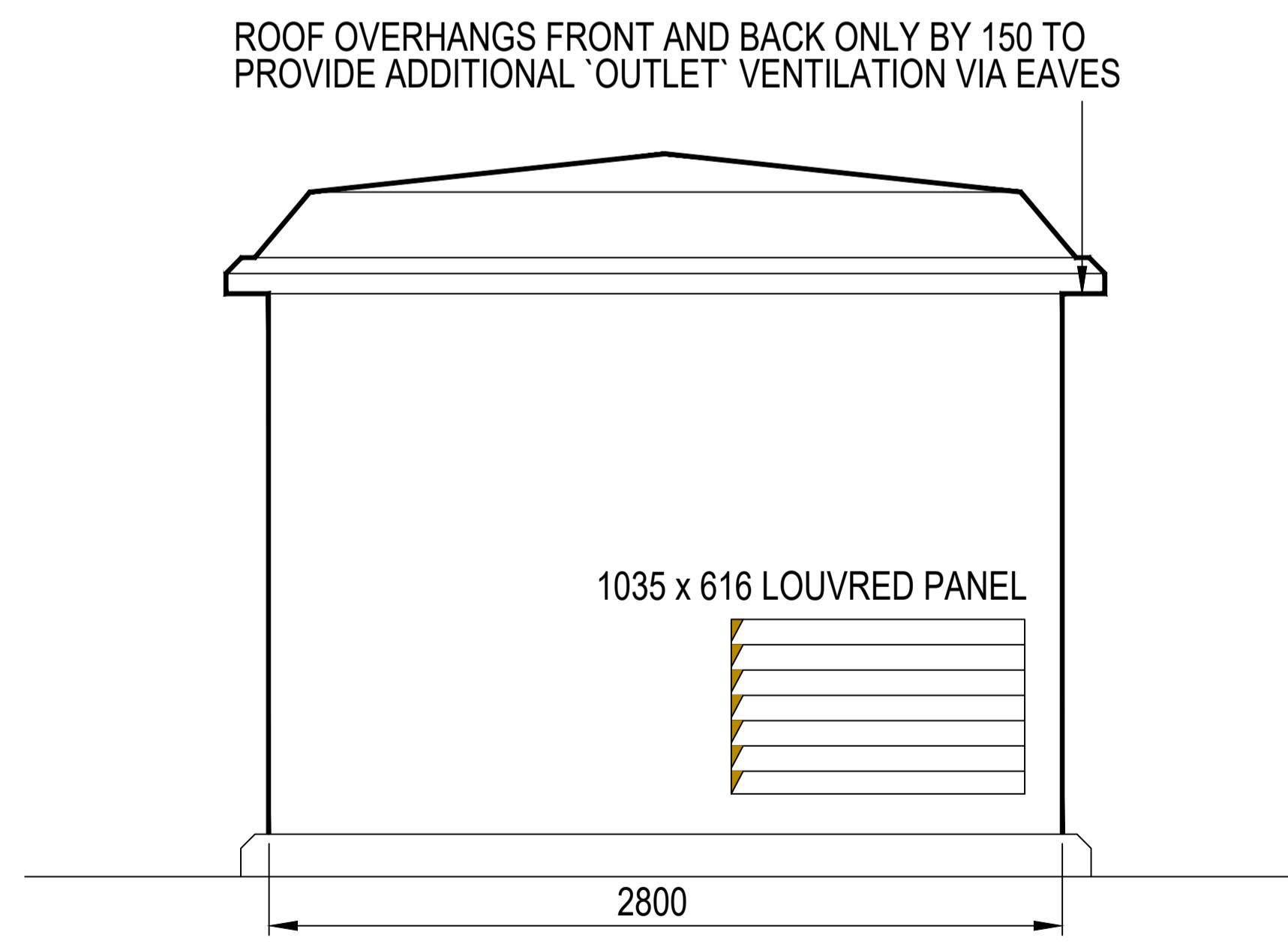
**GRP Substation**  
 Elevation A - South



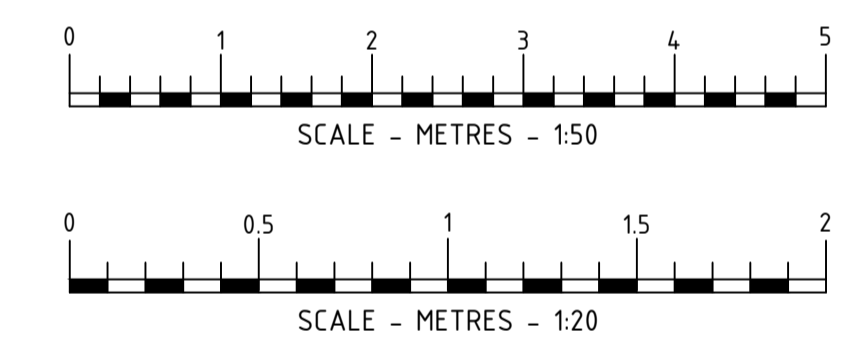
**GRP Substation**  
 Elevation B - West



**GRP Substation**  
 Elevation C - North



**GRP Substation**  
 Elevation D - East



REV	DATE	DESCRIPTION	DRAWN/CHECKED
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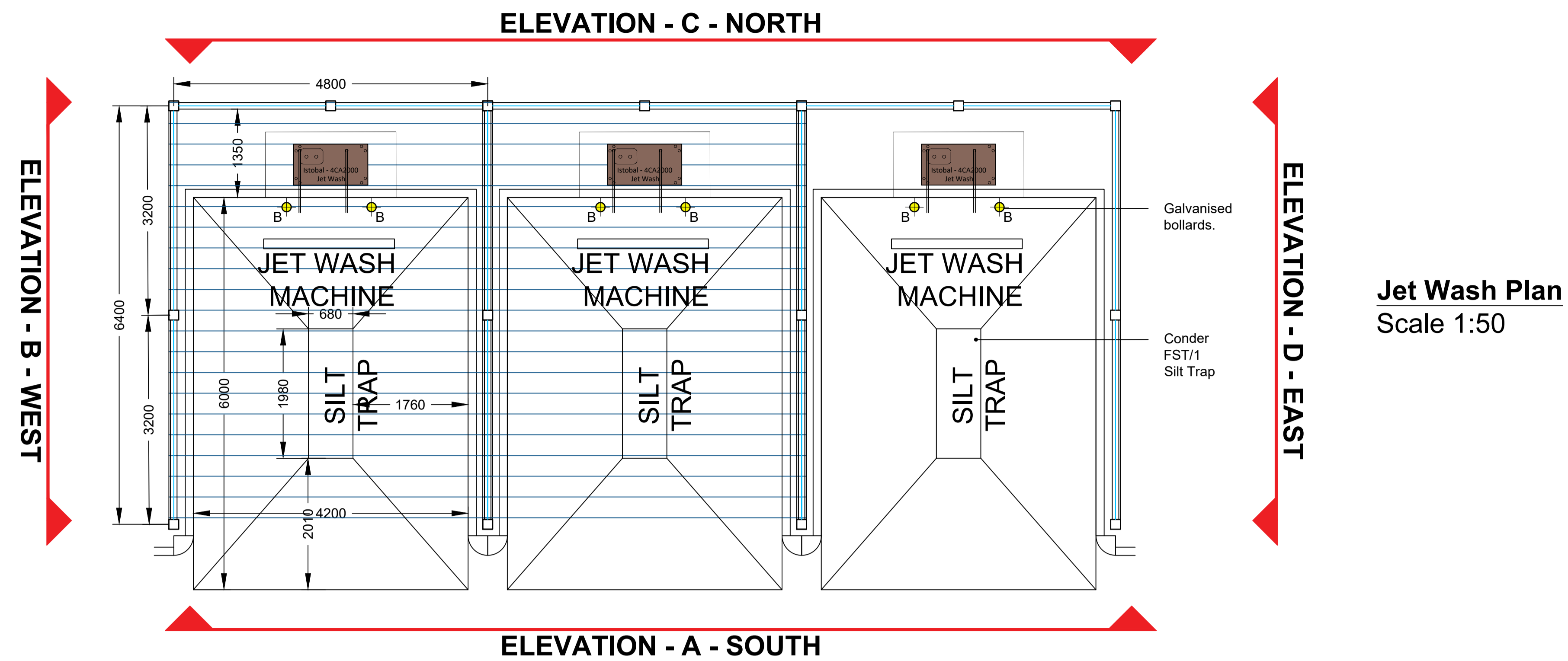
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**DRAWING TITLE**  
 SUBSTATION ELEVATIONS

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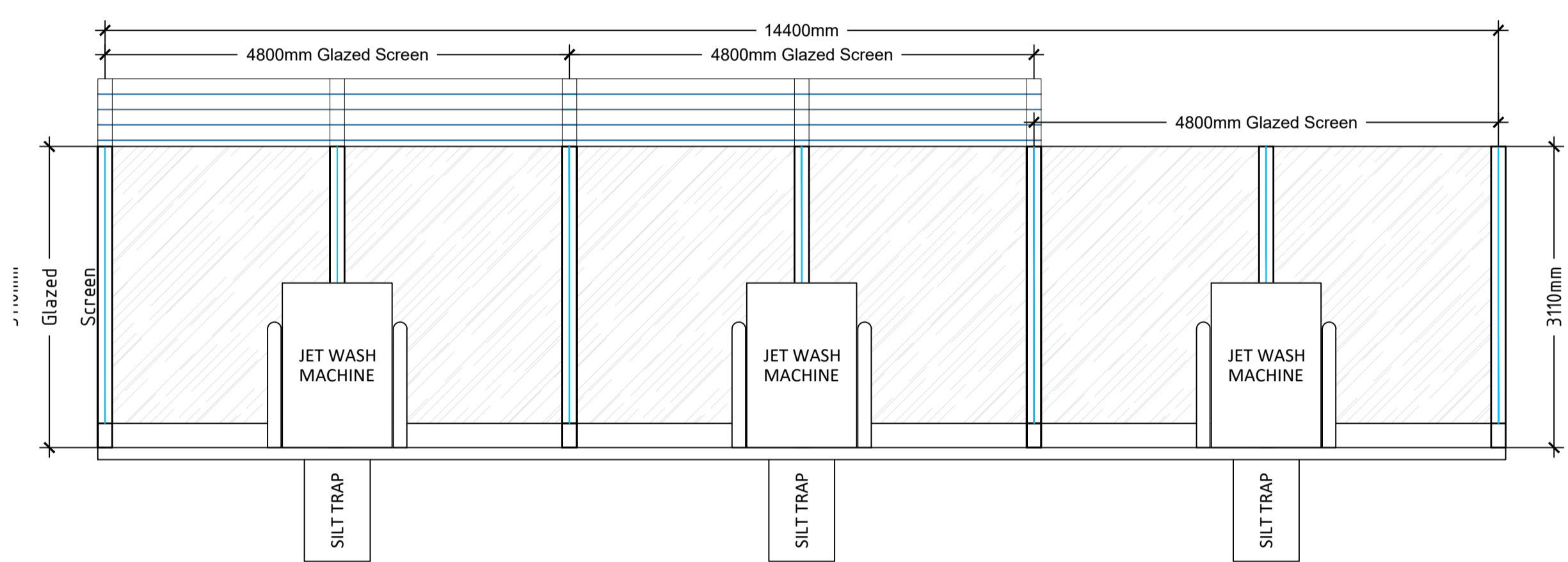
**Jet Wash Plan**  
 Scale 1:50

**Materials**

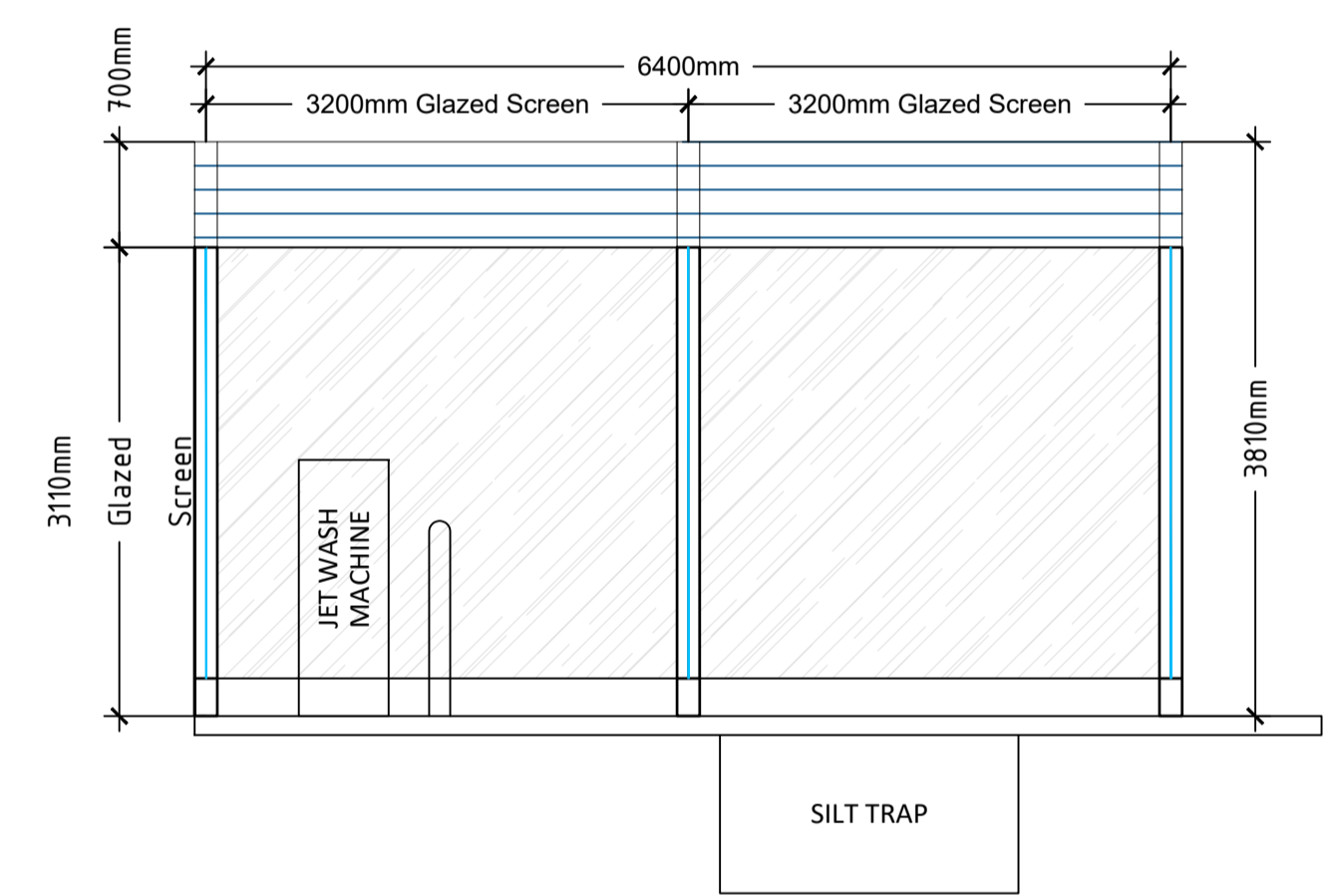
- Structure steel framework with blue RAL 5015 powder coated covering and graphics
- Reinforced glazed canopy top

**Lighting**

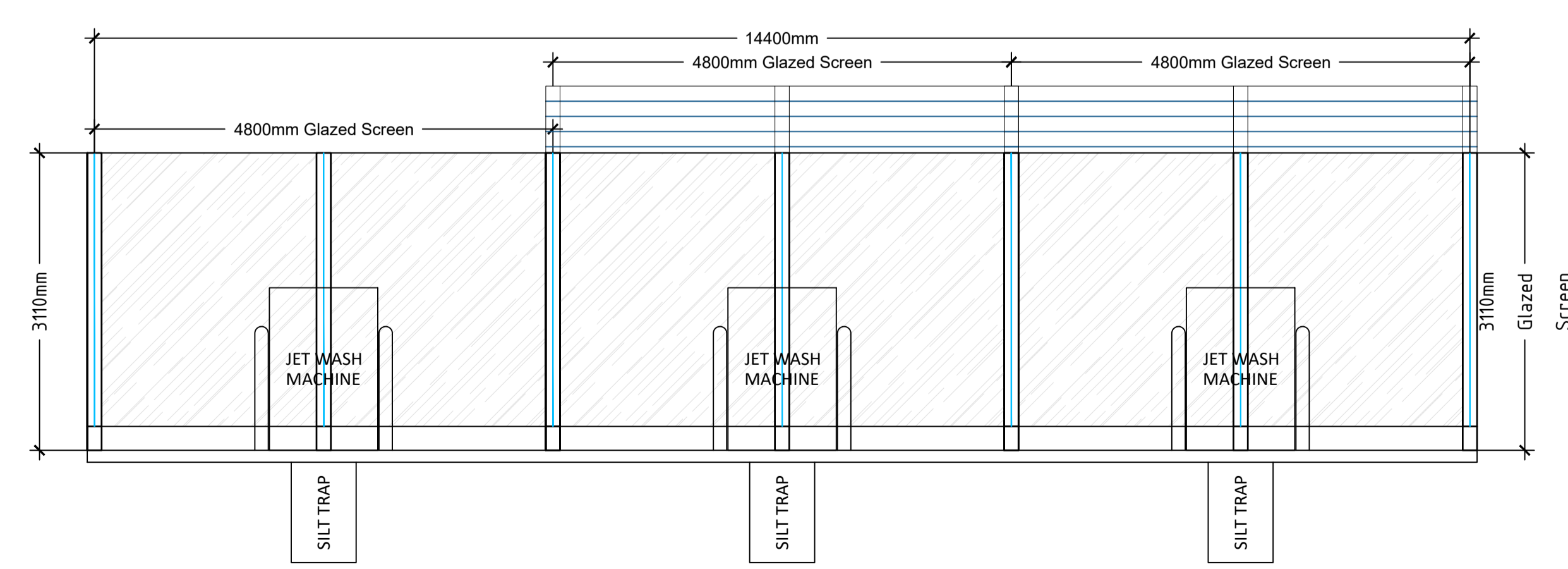
- 4x LED Strip lights to be installed in each covered canopy to achieve 100 lux on each bay



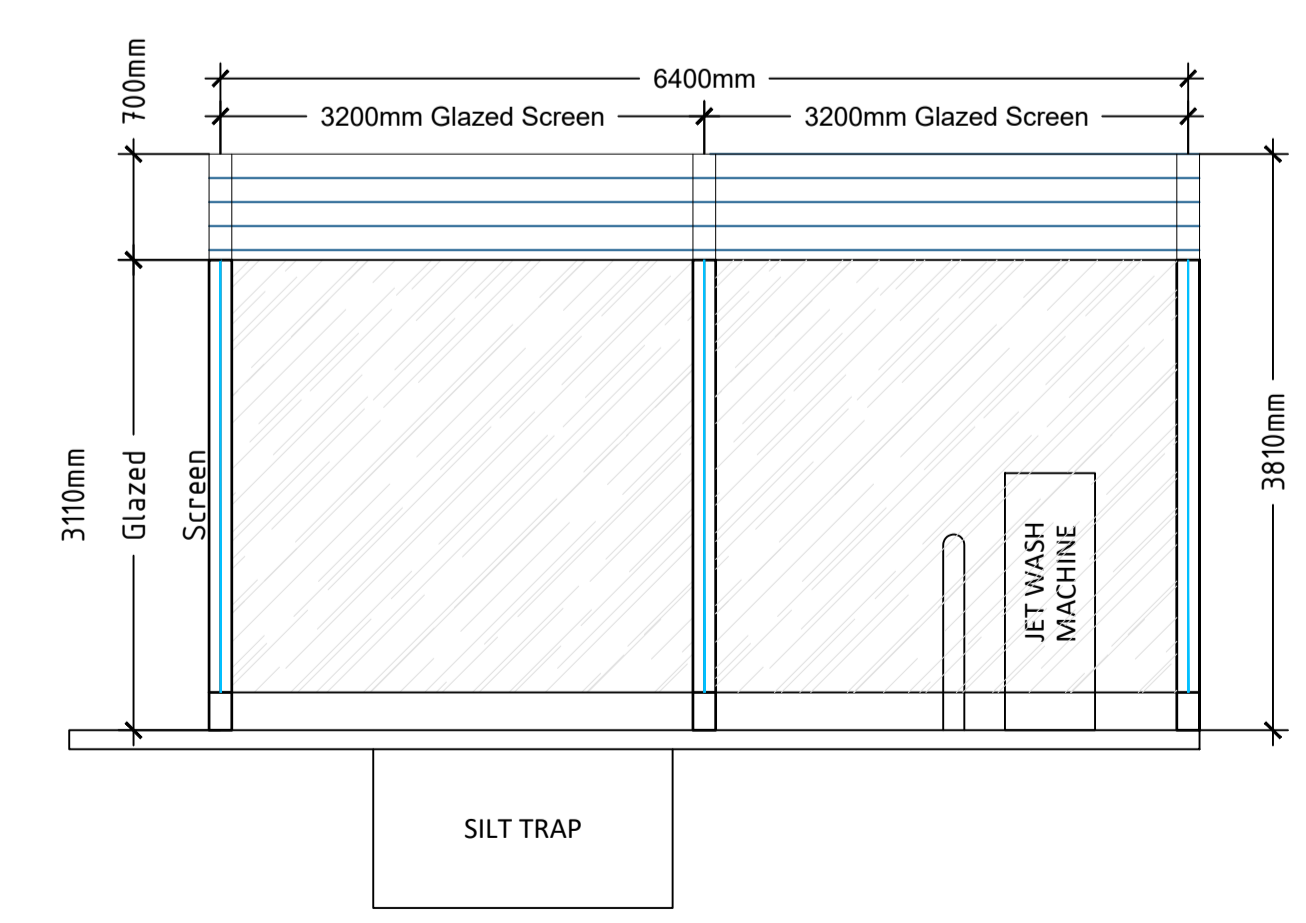
**Jet Wash**  
 Elevation A - South



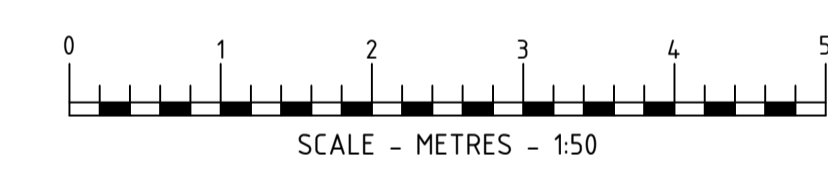
**Jet Wash**  
 Elevation B - West



**Jet Wash**  
 Elevation C - North



**Jet Wash**  
 Elevation D - East



REV	DATE	DESCRIPTION	DRAWN/CHECKED
REVISION NOTES			

**PLANNING**



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PROJECT  
 FS465 - LONDON ROAD SERVICE STATION  
 LONDON ROAD  
 GLOUCESTER, GLOUCESTERSHIRE,  
 GL1 3HB

DRAWING TITLE  
 JET WASH ELEVATIONS

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RRB	13664-P05-FS465	-	

**Date:** 29<sup>th</sup> November 2022  
**Our reference:** CSC1038

Dear Sir/Madam,

**MOTOR FUEL GROUP  
LONDON ROAD SERVICE STATION, LONDON ROAD, GLOUCESTER, GLOUCESTERSHIRE,  
GL1 3HB**

## Introduction

We write on behalf of Motor Fuel Group with regard to the application for the demolition of car wash and associated building and the creation of an EV charging zone and erection of canopy, sub-station enclosure and three jet wash bays at London Road Service Station.

## Site Description

The application site is formed of an existing service station (*Sui Generis*) located at London Road, Gloucester, GL1 3HB. The rail track is to the west of the service station and the site is adjacent to the B4063 London Road to the south. To the north is a large industrial building.

## Background / Proposal

The UK has committed to reducing greenhouse gas emissions by 28% by 2035 and moving to Net Zero by 2050. As part of the Net Zero strategy (October 2021), the UK Government have placed a new emphasis on electric vehicle charging infrastructure in the UK. As part of this drive, it is essential that there is a comprehensive and competitive EV charging network in place. Although difficult to know precisely how much charging will be needed, forecasts suggest that at least 280 to 480,000 public charge points will be needed by 2030 – more than 10 times the current number (around 25,000)<sup>1</sup>. Rapid charging for longer journeys located in areas such as on motorways and in remote areas will be particularly important. At present, it is understood that the uneven spread of EV charging facilities significantly hinders the take-up of electric vehicles, due to potential servicing constraints. En-route charging for longer journeys is deemed crucial to support the switch to EV and reduce concerns about charge 'range anxiety'.

Motor Fuel Group is the UK's largest independent forecourt operator with over 900 sites offering a dual-fuel strategy, convenient retail and 'food to go'. For the abovementioned reasons, Motor Fuel Group are looking to roll-out an extensive supply of EV charging facilities at existing and new service stations across the UK to diversify their existing offer, with the aspiration to make it as easy to charge your vehicle as re-fuelling with petrol or diesel. The aspiration of Motor Fuel Group is to provide access to convenient and affordable charging, regardless of where the driver lives.

The London Road Service Station proposals relate to the demolition of car wash and associated building and the provision of 7 no. electric vehicle charging points, canopy, substation enclosure, three jet wash bays and associated forecourt works.**Key Considerations**

---

<sup>1</sup> Building a comprehensive and competitive electric vehicle charging sector that works for all drivers. Final Report. July 2021



The National Planning Policy Framework (2021) indicates at Paragraph 112 that new development should e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

Motor Fuel Group's proposal to install new EV charging points at London Road Service Station should be considered positively in light of the national context and the demand for the necessary infrastructure to support electric vehicle use across the UK. The proposals would contribute positively to the existing EV charging network, to the benefit of those utilising the strategic highway network surrounding the application site. The proposals will enhance the existing offer at the service station, without compromising the efficient operation of the facility.

The proposals do not raise any concerns regarding adverse impact on amenity / conflict in terms of surrounding land uses. The proposed area will be well-lit and does not raise any concerns from anti-social behaviour / natural surveillance perspective.

In terms of design, the proposed EV charging area has been carefully planned to positively integrate with the existing service station operation. The charging facility offers a modern design approach, which is uncluttered and fit for purpose. The proposals will be Equalities Act compliant, offering dropped kerbs and other associated measures to ensure equal ease of access for all.

## Submission

The application comprises the following information:

- 13664 - BP-1 - 465 Block Plan
- 13664 - LP-1 - 465 Location Plan
- 13664 - P01 - 465 Existing Site Layout
- 13664 - P02 - 465 Proposed Site Layout
- 13664 - P03 - 465 EV Canopy Detail
- 13664 - P04 - 465 Substation Elevations
- 13664 - P05 - 465 Jet Wash Elevations
- Noise Impact Assessment

## Conclusions

The EV charging proposals are considered to positively respond to the local and national planning policy context and the wider UK aspiration to promptly improve the EV charging network. There are no physical environmental or designation constraints which would inhibit the occupation of the site for the proposed use.

Should you have any queries or wish to discuss please don't hesitate to contact us.

Yours faithfully,



**Rahma Dwimunali**  
**Assistant Planner**  
**CarneySweeney**

Encl.



# FS465 LONDON ROAD SERVICE STATION, LONDON ROAD, GLOUCESTER

## FORECOURT REDEVELOPMENT

### **Noise Impact Assessment**

Prepared for: Motor Fuel Group

Client Ref: 020820

SLR Ref: 403.064609.00007  
Version No: 1  
November 2022



## BASIS OF REPORT

This document has been prepared by SLR with reasonable skill, care and diligence, and taking account of the manpower, timescales and resources devoted to it by agreement with Motor Fuel Group (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty.

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### APPENDICES

Appendix 01: Glossary of Terminology

Appendix 02: Drawings and Plant

Appendix 03: Survey Results



## 1.0 Introduction

Motor Fuel Group has appointed SLR Consulting Limited to undertake a noise impact assessment for a proposed development at FS465 London Road Service Station, London Road, Gloucester GL1 3HB (the site).

This document has been prepared to support a prospective planning application within Gloucester City Council (GCC) for the redevelopment of the service station forecourt. This has been proposed to include 7 No. EV charging bays with canopy, 3 No. jet wash bays and new substation to the west of the existing forecourt and sales building.

This report has been prepared to inform noise impacts from the proposed development following the assessment principles of British Standard BS 4142:2014 + A1:2019 *Methods for rating and assessing industrial and commercial sound*. New forecourt equipment has been considered across existing opening times described by 24/7 operations.

This report has been prepared by an acoustician with an excess of 19-years consulting experience, with higher level qualifications in acoustics and corporate membership to the Institute of Acoustics.

Whilst reasonable effort has been made to ensure that this report is easy to understand, it is technical in nature. To assist the reader, a glossary of terminology has been included in **Appendix 01**.

## 2.0 Site Description

The proposed development boundary of London Road Service Station has been noted of nominally 0.14 hectares to the north of the B4063 London Road in Gloucester.

The Site has been noted in the vicinity of existing transport infrastructure as including the elevated section of railway immediately north of Gloucester station and nominally 5 m from the west boundary of the Site. London Road has been noted as an arterial road traffic route in central Gloucester.

### 2.1 Proposed Development

The planned proposal has included for modifications to the west of the existing service station as including provision for 7 No. EV chargers with canopy along the western boundary. A new and enclosed substation of 1500 kVA has been proposed to the north west corner of the Site, adjacent to 3 No. jet washes with associated screens and 2 No. with overhead canopy along the northern boundary.

The proposed forecourt redevelopment is to be facilitated through the removal of existing hand car wash activities, noted along the north boundary of the Site.

### 2.2 Noise Sensitive Receptors

The Site has been noted within a mixed residential and commercial area. Noise sensitive receptors (NSRs) in the immediate vicinity to the proposals have been noted of residential uses to the south and east off London Road. The sales building to the east of the forecourt has been noted under common ownership with the Client and not considered noise sensitive with respect to the proposal as included with the development boundary.

Those NSRs of note within this assessment have been referenced as:

- A. Flats A-D, 10-12 London Road. To the south of the Site and on the opposite side of London Road, residential flats have been noted at first and second floor level above Badham Pharmacy. These would have line-of-sight to the proposals at first floor level but screened to some degree at upper floors, through the form of the forecourt canopy.
- B. Flats 1-2, 14 London Road. Adjacent to NSR A and in similar proximity to the proposals, further residential flats have been noted along London Road at first floor level above Caprinus Pizza.
- C. Flats 1-16, 16 London Road. Noted adjacent to NSR B on the corner of London Road and Great Western Road, this property has been noted to include residential flats from ground to second floor level.
- D. Northgate House, 19 London Road. This property has been noted as a house in multiple occupation, generally screened from the application site by the form of the intervening sales building. Rear facing rooms of this building have been considered possible to have some line-of-sight to the proposals.

All above-listed receptors have been identified within the site plan of Figure 2-1 below.

**Figure 2-1**  
**Location Plan and Identification of NSRs**



## 3.0 Planning and Noise Guidance

### 3.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) was introduced by The Department for Communities and Local Government in March 2012, with the latest revision dated July 2021.

The NPPF defines the Government's planning policies for England and sets out the framework, within which local authorities must prepare their local and neighbourhood plans, reflecting the needs and priorities of their communities. The Government's stated purpose in producing the NPPF was to streamline policy, so the planning process is less restrictive, to give a more easily understood framework for delivering sustainable development.

Under the heading of conserving and enhancing the natural environment and Paragraph 174 e), one aim of the NPPF is *"preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of... noise pollution..."*.

Paragraph 185 requires planning policies and decision to ensure that new development is appropriate for its location. It stipulates a need to account for the likely effects of pollution on health and other matters, requiring the planning process to *"mitigate and reduce to a minimum, potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life"*.

The NPPF acknowledges that there is a host of existing sources of national and international guidance which can be used, in conjunction with the Framework, to inform the production of Local Plans and decision making.

### 3.2 Noise Policy Statement for England

The Noise Policy Statement for England (NPSE) was published in March 2010. It sets out the long-term vision of government noise policy, which is fundamentally to: *"Promote good health and good quality of life through the effective management and control of noise within the context of Government policy on sustainable development"*. The vision is supported by three key aims:

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and reduce to a minimum, other adverse impacts on health; and
- Where possible, contribute to the improvement of health and quality of life.

The NPSE should apply to all forms of noise including environmental noise, neighbour noise and neighbourhood noise but does not apply to noise in the workplace. The NPSE has adopted the following concepts, to help consider whether noise is likely to have "significant adverse" or "adverse" effects on health and quality of life:

SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.

LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected.

NOEL – No Observed Effect Level. This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

*"It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available (Defra, 2010)."*

### 3.3 National Planning Practice Guidance

Revised Planning Practice Guidance was released in March 2014 to support the NPPF and last updated in July 2019. The Guidance stipulates that Local Planning Authorities’ plan making and decision making should take account of the acoustic environment and in doing so consider:

- Whether or not a significant adverse effect is occurring or likely to occur;
- Whether or not an adverse effect is occurring or likely to occur; and
- Whether or not a good standard of amenity can be achieved.

The guidance has also provided the following noise exposure hierarchy table “when noise could be a concern”.

**Table 3-1**  
**Planning Practice Guidance Noise Exposure Hierarchy Table**

Response	Example of Outcomes	Increasing Effect Level	Action
NOEL – No observed effect level			
Not present	No effect	NOEL	No specific measures required
No observed adverse effect level			
Present and not intrusive	Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
LOAEL – Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for sleep disturbance. Affects acoustic character of the area and creates a perceived change in quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
SOAEL – Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

## 3.4 BS 4142:2014 +A1:2019

The British Standard BS 4142:2014 +A1:2019 *Methods for Rating and Assessing Industrial and Commercial Sound* (BS 4142) notably describes methods for rating and assessing sound of an industrial or commercial nature. It has been referenced where required in policy and guidance documents to assess the potential impact of sound of an industrial and/or commercial nature, at existing and proposed noise-sensitive receptor locations within the context of the existing sound environment.

In this assessment, industrial/commercial sources have been present on the Site with respect to proposed development emission, where the onus lies with the developer to mitigate any associated impacts arising from existing and proposed sources of commercial noise.

Certain acoustic features can increase the significance of impact from a comparison of the specific sound level to the background sound level where these features are likely to affect perception and response. Where such features are present at the assessment location, a character correction (or penalty) to the specific sound level is made to obtain the rating level. This can be approached from subjective, objective and reference methods.

- **Tonality:** A correction of 0 dB to + 6 dB for sound ranging from not tonal to prominently tonal.
- **Impulsivity:** A correction of up to + 9 dB can be applied for sound that is impulsive.
- **Intermittency:** A penalty of + 3 dB can be applied if on/off conditions are readily distinctive within the reference time interval over the period of the greatest amount of on-time.
- **Other characteristics:** A penalty of + 3 dB can be applied in the absence of all other defined characteristics, where the specific sound contains a distinctive feature in the residual acoustic environment.
- The rating sound level is equal to the specific sound level if there are no acoustic features present or expected to be present.

The significance of sound depends upon both the margin by which the rating level exceeds the background sound level and the context in which the sound occurs. An initial estimate of the impact of the specific sound is made by subtracting the measured background sound level from the rating level.

- Typically, the greater the difference, the greater the magnitude of the impact;
- A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context; and
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. It is an indication that the specific sound source has a low impact, depending on the context.

BS 4142 has stipulated that context is important when assessing the impact of sound of a commercial and/or industrial nature. Amongst a range of advocated considerations, this can include mitigation, residual sound levels, location and absolute sound levels in the consideration of context.

The scope of BS 4142 recognises that human response to sound can be subjective as affected by many factors, both acoustic and non-acoustic. The significance of its impact can depend on various factors such as the exceedance to the background level, its absolute level, time of day and change in environment, as well as local attitudes to the source of sound and character of the neighbourhood.

## 4.0 Environmental Sound Survey

To establish the prevailing sound climate at the Site, a baseline survey was undertaken over weekday and weekend periods between Friday 11<sup>th</sup> to Friday 18<sup>th</sup> November 2022.

The period of surveying coincided with reasonable measurement conditions for environmental surveying. This has included reference to a local weather station in **Appendix 03** as demonstrating compliance with BS 4142 for most of the time, with an absence of rainfall and average windspeeds below 5 m/s. In the avoidance of doubt, this section has removed any periods of adverse weather conditions as highlighted in **Appendix 03**.

### 4.1 Equipment and Measurements

Sound pressure level measurements were carried out using the following equipment listed in Table 4-1, confirming to Class 1 acoustic accuracy for sound level meters and matched calibrators.

The sound level meters were calibrated before the measurements using the handheld acoustic calibrator and the calibration was checked upon completion of the survey. No significant drift was observed with calibration offsets of  $\leq 0.5$  dB. The calibration chain of equipment has been maintained to traceably to national standards, no greater than one year for sound calibrators and two years for sound level meters.

**Table 4-1**  
**Sound Monitoring Equipment**

Location	Description	Serial No.
Location 1	Cirrus CR:831B Class 1 Sound Level Meter	G303390
	Cirrus CR:511E Acoustic Calibrator	97661

Sound level measurements at Location 1 were viewed to be a directly representative proxy of all overlooking premises to the forecourt. This location was within the corner of the forecourt adjacent to the forecourt sales building. The microphone was located 1.0 m above the fence line of the bin store (2.8 m AGL) and at least 3.5 m from an adjacent wall, as to represent free field conditions.

The monitoring protocol consisted of substantially unattended readings over the survey period with attendance at the start and end of the monitoring periods, covering a nominal week.

The following noise level indices have been reported at 15-minute intervals:

- $L_{Aeq,T}$  – The A-weighted equivalent continuous noise level over the measurement period.
- $L_{A90,T}$  – The A-weighted noise level exceeded for 90% of the measurement period.
- $L_{A10,T}$  – The A-weighted noise level exceeded for 10% of the measurement period.
- $L_{Amax(F)}$  – The maximum A-weighted noise level during the measurement period.

Full survey results describing unattended monitoring periods have been provided for the above-listed metrics within **Appendix 03**.

**Figure 4-1**  
**Monitoring Location**





## 4.2 Sound Climate

The sound climate at the measurement location consisted mainly of constant road traffic movements along the local network, including local traffic of London Road and distant traffic from major routes. Rail traffic was intermittent at the measurement location with proximity to the section of railway north of Gloucester Station. The unattended time history of data recorded has generally reflected an expected, diurnal pattern of these transportation sources.

Existing forecourt activities were present at the time of site attendances, comprising of the arrival and departure of vehicles, as well as filling and associated forecourt activities, as including use of the existing hand carwash area during daytime periods. The service station was understood to be in typical function during the times of assessment as operational over 24-hours.

There was no mechanical plant in the vicinity of the monitoring location such that transportation and existing forecourt activities have been considered to describe the prevailing sound climate.

## 4.3 Residual and Background Sound Levels

The 'typical' background sound levels have been reported in this section in accordance with BS 4142 as established from histograms of the recorded dB  $L_{A90,15min}$  data at Location 1, shown in **Appendix 03**. The measurement location has been used to describe the underlying sound climate at NSRs during proposed operating periods.

In line with Section 8.1.4 of BS 4142, the monitoring duration should reflect the range of background sound levels for the period assessed. In practice, there is no single level for background sound as this is a fluctuating parameter, although a representative value of the period should be used. Note this has not been either the lowest or mean average value of dB  $L_{A90,T}$  according to the assessment standard.

**Table 4-2**  
**Summary of Measured Sound Levels**

Measurement Details				Residual sound level dB $L_{Aeq,15min}$		Background sound level dB $L_{A90,15min}$	
Date Range	Location	Period	Time HH:MM	Range	Typical*	Range	Typical*
Friday 09/11/2022 – Friday 18/11/2022	1	Day	07:00 – 19:00	55 – 75	70	40 – 70	57
		Evening	19:00 – 23:00	58 – 73	62	43 – 57	50
		Night	23:00 – 07:00	48 – 67	56	36 – 54	41

\* Typical values of background sound level have been established from counts of data from Appendix 03. Typical residual sound levels have been equated at times of typical background sound.

## 5.0 Noise Impact Assessment

The impact of noise from the proposed development on the surrounding environment will depend on several factors, including (but not limited to) the time of day, frequency of occurrence and nature of sound source. Development activities will naturally pose greater noise risk where permissible during noise sensitive periods of the evening and night where the likelihood of annoyance or sleep disturbance increases. Human response to noise depends on sociological factors, attitudes and perceptions which can be difficult to define and account for any individual case.

The recognised methodology for assessment has been taken from BS 4142:2014 + A1:2019 *Methods for rating and assessing industrial and commercial sound* which includes consideration of sound from fixed plant installations. The numerical assessment has been provided below for relevant periods of proposed operation, following the definition of specific sound levels.

### 5.1 Plant Sound Power levels

The following input data of Table 5-1 has been summarised from manufacturers data sheets for all plant items provided in **Appendix 02**.

**Table 5-1**  
**Input Data Summary for Noise Modelling**

Type	Detail	Quantity	Sound power level dB $L_{WA}$ re. 1 $\mu$ W	On time	Period
Rapid Charging Point	Alpitronic HYC 150 EV Chargers	7	70	50 %	24 hours
Substation	1500kVA transformer Envico TR7 housing	1	61	100 %	24 hours
Jet wash	Istobal 4CA2000	3	78	50 %	24 hours

The on-time assumptions have been provided on SLR's experience of similar and successful applications for development elsewhere and as not to underpredict the resulting impacts. The on-time assumptions have been made to reflect a realistic in-situ use, but with tendency towards the worst-case.

The upper limit of sound power level for the distribution transformer has been referenced from the Energy Networks Association Technical Specification TS 35-1 (ENA TS 35-1) where a transformer rated 1500 kVA must comply with a standard maximum sound power level of 61 dB  $L_{WA}$ . The housing associated with this transformer has been considered for weather protection only and of no acoustic insertion loss, in the tendency towards a worst-case.

## 5.2 Specific Sound Level Calculations

To understand specific sound levels for the purposes of assessment, a noise model has been created using CadnaA with input sound power level data in **Appendix 02**. All sources have been modelled at their proposed locations and heights shown, and at provided maximum duties.

The modelling process has followed the technical requirements of ISO 9613 Parts 1 and 2, accounting for all plant items at their developed location. The format of calculations has included all noise sources at least 1 m above ground with receptor locations of 1.5 m and +3.0 m per upper floor as appropriate to the receptor, following propagation over mixed ground ( $G = 0.5$ ) with a reflection order of 2.

The on-time for all equipment has been considered in consistent operation, despite the realisation that all plant would not be continuously operational and at maximum capacity during day and night assessment periods. This on-time assumptions have been made to reflect a tendency towards the worst-case to appraise the potential for 24/7 operation of relevant plant items.

The following specific sound levels have been estimated from this process, with results tabulated in Table 5-2 and illustrated in Figure 5-1. Results have highlighted the highest level on the façade, at either ground or upper floor level appropriate to the receptor.

**Table 5-2**  
**Model Outputs of Specific Sound Levels, Highest at Building Façade**

NSR Reference	NSR Street Name	Model Predicted Sound Pressure Level dB $L_{Aeq,T}$
A	10 – 12 London Road	$\leq 38$
B	14 London Road	$\leq 37$
C	Newton House, 16 London Road	$\leq 35$
D	Northgate House, 19 London Road	$\leq 32$

Specific sound levels have been accounted in the worst case to apply as 38 dB  $L_{Aeq,T}$  at NSR A opposite the proposals.

**Figure 5-1**  
**Model Outputs of Specific Sound Levels, Highest dB  $L_{Aeq,T}$  at Building Façades**



## 5.3 BS 4142 Assessment

The following numerical assessments have been provided in accordance with BS 4142 to provide a comparison between the highest-estimated rating sound levels of the proposal against the typical sound levels existing prior to development.

**Table 5-3**  
**BS 4142 Assessment of Proposed Development – Worst Case NSR A**

Results	Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00	Commentary
Residual sound level, dB <i>L<sub>Aeq,T</sub></i>	70	62	56	Representative residual and background sound levels from Location 1 of the assessment as directly representative of NSRs adjacent to the site.
Background sound level, dB <i>L<sub>A90,T</sub></i>	57	50	41	
Reference time interval	1-hour	1-hour	15-min	
Specific sound level, dB <i>L<sub>Aeq,T</sub></i>	38	38	38	Highest off-site values established from Table 5-2 relevant to NSR A or B/C during relevant hours.
Acoustic feature correction, dB	+ 3	+ 3	+ 3	A 3 dB feature correction has been applied to account for a source that could have other sound characteristics inherent to forecourt plant.
Rating level	41	41	41	Specific sound level plus acoustic feature correction.
Excess of rating over background sound level	- 16	- 9	0	
Assessment indicates likelihood of <i>*depending on context</i>	Low Impact*			Where the rating level does not exceed the background sound level this is an indication of low impact, depending on context.
Uncertainty of the assessment	Given the excess of the background sound level over the rating sound level during the day and evening, uncertainty has not been viewed to have any significance to the outcome of the assessment. Uncertainty was otherwise minimised by measuring over an extended periods during suitable weather conditions, at a location directly relevant to the nearest NSRs.			

## 5.4 Context

It has been acknowledged that assessments in Table 5-3 need to be considered in context, following the requirements of BS 4142. The concept of “context” has been notably emphasised in Section 11 of BS 4142 when considering numerical impacts established from applying the standard.

During all operational hours, predictions have provided large differences (of at least 18 dB) between the residual sound level over the specific sound level, such that in context, the ambient sound level should not change by a perceptible degree due to the development. It has subsequently been considered in context that these development activities will be largely indistinguishable for most of the time and masking will be afforded by the residual sound level.

The evening and night have been considered particularly sensitive periods of operation where it would normally be appropriate to consider that residents will likely be resting or sleeping within their homes. During this time, it could be expected that residents may choose to leave windows open, where a level difference of approximately 13 dB would normally be expected inside the dwelling through a partially open window. The worst-case NSR A has not been noted to contain any sound insulation provisions that allow residences to keep windows closed (e.g. mechanical ventilation) therefore an open window assessment has been considered appropriate in context.

Internal ambient noise levels within the worst affected dwellings have been predicted to relate to the residual sound climate where this prevails beyond the specific sound levels of this assessment. In the worst-case operational night time period 23:00 – 07:00 for NSR A, the specific sound level of 38 dB  $L_{Aeq,T}$  compared to the residual sound level of 56 dB  $L_{Aeq,T}$  has presented an imperceptible change in ambient sound level of 0 dB (i.e. 38 + 56 = 56 dB). In combination, the resulting ambient sound level would not change because of the development and comprise mainly of the residual sound from transportation and extraneous activities, rather than that of the development as including new forecourt plant.

Where any industrial or commercial sound remains audible, as might be possible during periods of operation, then it has been considered possible in context for some very minor level of effect. This has been considered relevant for any source character that could have different temporal or spectral characteristics than the prevailing residual climate.

It has been summarised that the assessment of low impact has been reinforced where context has been accounted for in the predictions.

## 5.5 Statement of Uncertainty

Uncertainty has been considered as a limit to the accuracy of any noise assessment, including associated steps of measurement, calculation, or prediction. Factors have been considered to include (but not limited to) the following:

- The inherent accuracy limitation of methodology in Standards and guidance.
- Variability in meteorological conditions.
- The accuracy of sound source input data of a calculation.
- Use of noise modelling software.

It has been a requirement of the assessment standard BS 4142 to minimise uncertainty to a level commensurate with the intention of the assessment objective. Measures taken in this assessment to minimise uncertainty have included:

- Baseline sound levels have been measured over a reasonably long period and therefore provide a good indication of representative background and residual sound levels.
- Baseline sound level measurements undertaken in accordance with recognised Standards, using a tall environmental windshield and during acceptable weather conditions e.g. low wind speeds and precipitation.
- A direct measurement location was used to provide a representative basis for background sound levels at the nearest receiver locations.
- Field calibration checks were undertaken before and after measurements to record very low levels of equipment drift.
- The calculations have been conservative as not to under-predict the resulting impacts.

These measures have been considered to reduce uncertainty to a level considered not to have any significance to the outcome of this assessment.

## 5.6 Predicted Noise Impacts, Planning and Mitigation

The evaluated noise impacts in this report should be considered by the Gloucester City Council mindful of the National Planning Policy Framework and Noise Policy Statement for England that define policy and decision-making requirements for planning and noise.

It has been provided within Section 3.0 of this report, that the NPSE suggests noise levels above the SOAEL should be avoided and that if noise levels fall between the LOAEL and SOAEL all reasonable steps should be taken to minimise and mitigate adverse effects, while considering guiding principles of sustainable development.

The range of noise impacts for the proposed forecourt development have been deemed acceptable with respect to overarching requirements for planning and noise. Resulting impacts with suitable mitigation have been anticipated between the NOEL and LOAEL thresholds of the NPSE.

It is expected that the development sound will have no effect in the environment. In the worst case, it would be largely unnoticeable, or just perceptible during the most noise sensitive periods of assessment. If it is possible for the sound to be audible, it is not expected to cause any change in behaviour or attitude. The development could marginally affect the acoustic character of the area but not to the extent that there is a perceived change in quality of life.

Commensurate measures have been considered to “mitigate and minimise adverse impacts on health and quality of life” which have been included within the detail of this proposal as:

- EV design to include nominal 3.0 m tall screening to rear of each bay, as proposed.
- Jet wash bay to include nominal 3.2 m tall screening and roof, as proposed.

Based on the results of this assessment it has not been viewed commensurate to impose other measures to further reduce the impact of forecourt development proposals, such as the instatement of substation enclosures with known acoustic ratings or usage hour restrictions for any plant item.



## 6.0 Conclusions

An assessment of noise impact has been carried out for a proposed development at London Road Service Station in Gloucester. Environmental sound levels have been taken from a site survey at a location representative of nearest noise sensitive receptors.

A noise impact assessment has been carried out in line with BS 4142 methodology by a suitably qualified acoustician. Cumulative rating sound levels have been predicted at nearest sensitive receptors using noise modelling techniques of all new plant and equipment defined by quantitative noise emissions.

The numerical assessments in Section 5.0 have predicted worst-case rating levels below the representative background sound levels. Predicted noise impacts during 24/7 opening hours have been supported as low when considering the context of the site.

It has been concluded from the findings of this assessment that noise should not present reasonable grounds for planning refusal. The likely acoustic effects have been established below the LOEAL threshold of the NPSE, such that noise would not cause any change in behaviour or attitude or a perceivable change in the quality of life.

---

## APPENDIX 01

### Glossary of Terminology

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0dB (the threshold of hearing) to over 120dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

**Table 01-01**  
**Sound Levels Commonly Found in the Environment**

Sound Level	Location
0 dB(A)	Threshold of hearing
20 to 30 dB(A)	Quiet bedroom at night
30 to 40 dB(A)	Living room during the day
40 to 50 dB(A)	Typical office
50 to 60 dB(A)	Inside a car
60 to 70 dB(A)	Typical high street
70 to 90 dB(A)	Inside factory
100 to 110 dB(A)	Burglar alarm at 1m away
110 to 130 dB(A)	Jet aircraft on take off
140 dB(A)	Threshold of Pain

## Acoustic Terminology

- dB (decibel)**     The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure (of 20  $\mu$ Pa).
- dB(A)**             A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
- $L_{Aeq, T}$**             $L_{Aeq, T}$  is defined as the notional steady sound level which, over a stated period T, would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.
- $L_{A10, T}$  &  $L_{A90}$**      If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The  $L_n$  indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence  $L_{10}$  is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly,  $L_{90}$  is the 'average minimum level' and is often used to describe the background noise. It is common practice to use the  $L_{10}$  index to describe traffic noise.
- $L_{Amax(F)}$**             $L_{Amax(F)}$  is the maximum A-weighted sound pressure level recorded over the period stated.  $L_{Amax}$  is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall  $L_{eq}$  noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.

---

## APPENDIX 02

### Drawings and Plant



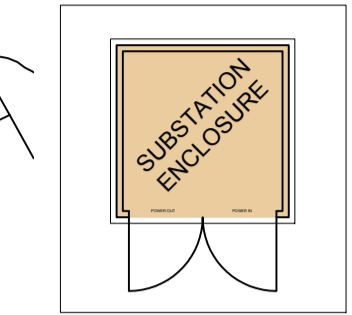
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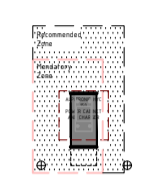
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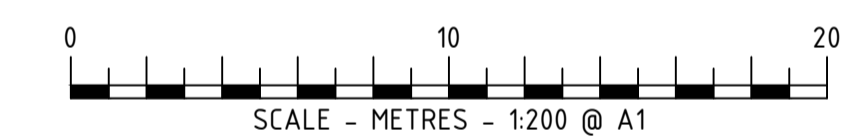
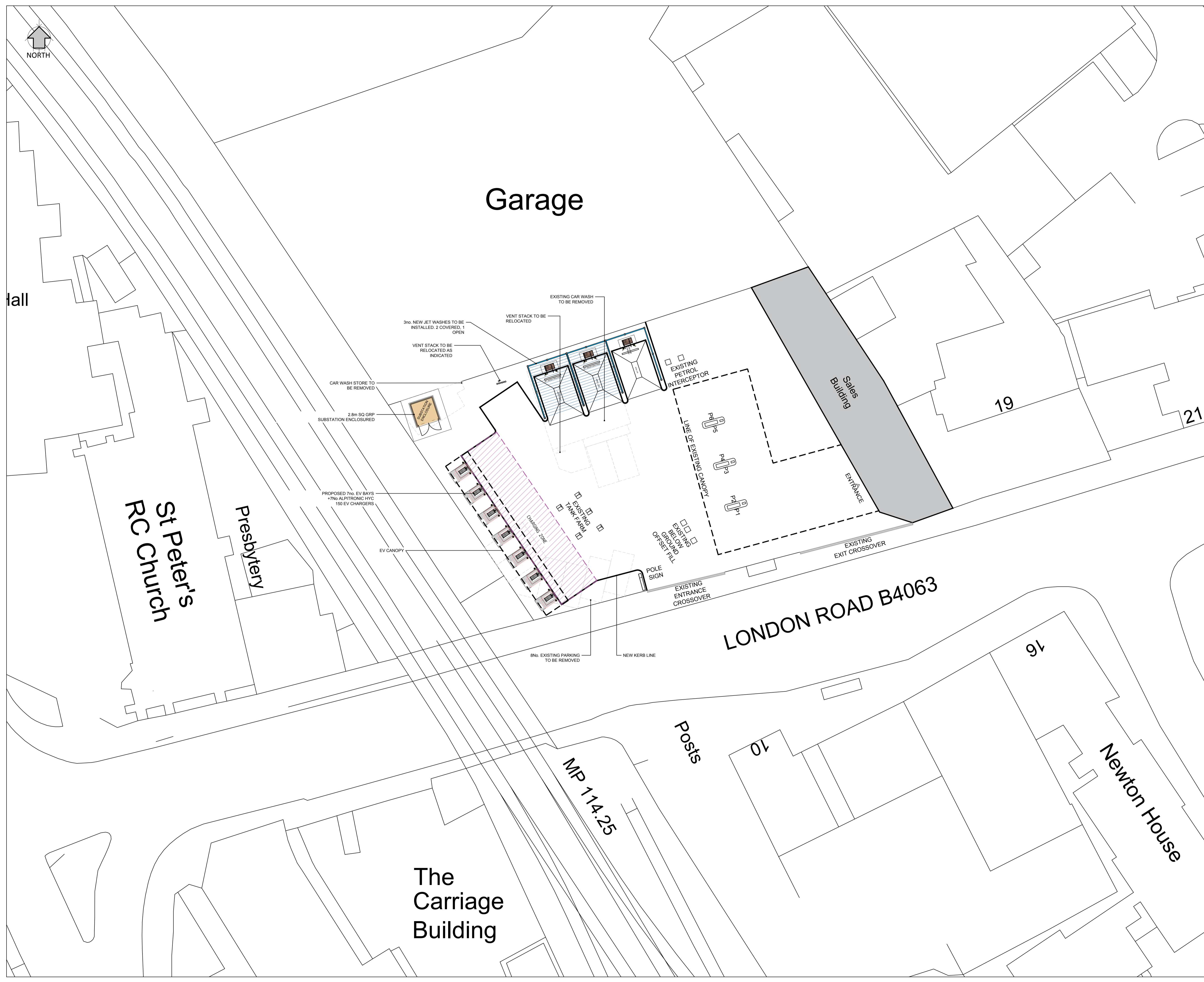
**EV INFRASTRUCTURE**



**DENOTES DNO HV/LV SUBSTATION**  
Typical GRP Enclosure 2.8m x 2.8m  
All to service provider standard details TO ICP DETAILS



**DENOTES CHARGING POST**  
ALPITRONICS HYC 150



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LONDON ROAD  
GLOUCESTER, GLOUCESTERSHIRE,  
GL1 3HB

**DRAWING TITLE**  
PROPOSED SITE LAYOUT

<b>DRAWN BY</b> KM	<b>DATE</b> 15.09.2022	<b>SCALE</b> 1:200	<b>PAPER SIZE</b> A1
<b>CHECKED BY</b> RRB	<b>DRAWING NUMBER</b> 13664-P02-FS465	<b>REV.</b> -	



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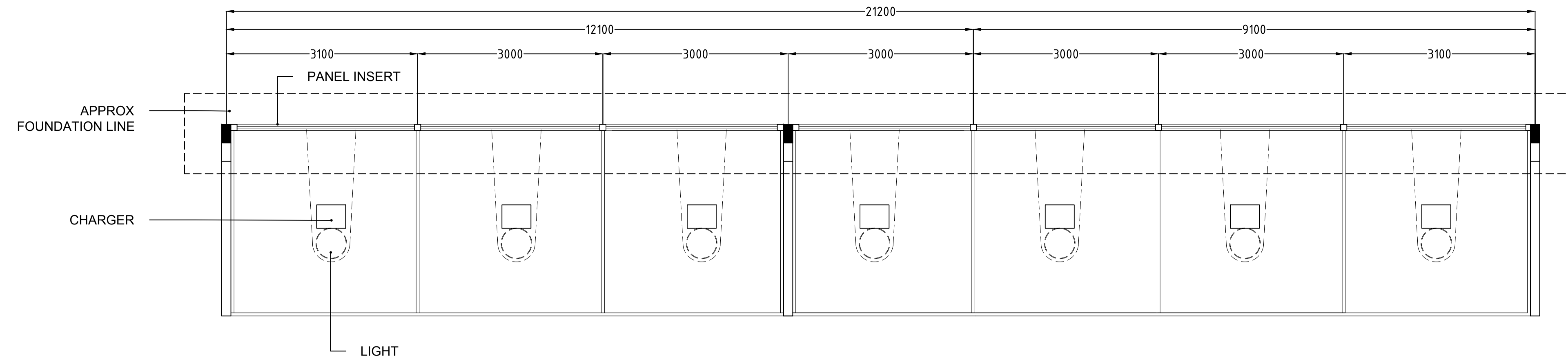
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**Materials**

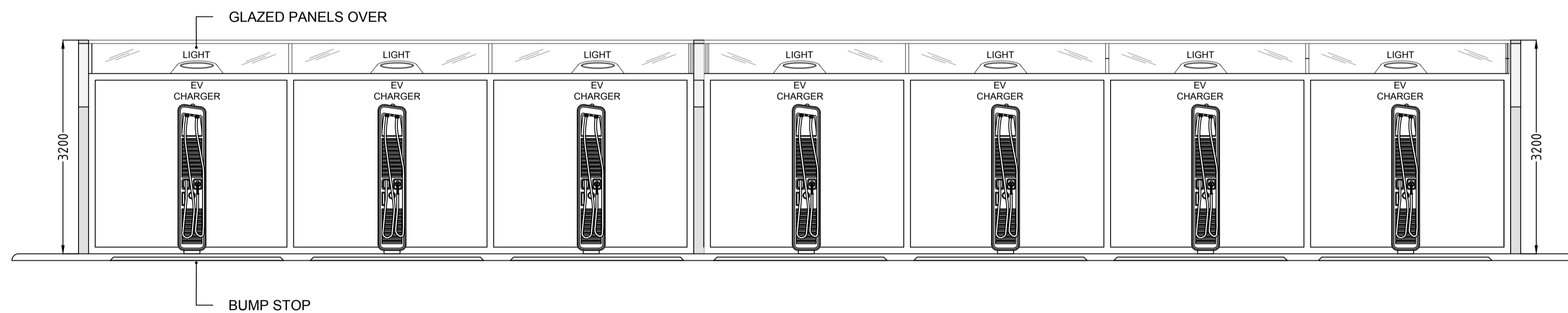
- Powder coated aluminium cladding panels, blue RAL 5015
- Steel frame columns and rafters, powder coated blue RAL 5015
- Glass support beam SHS finished in grey RAL 7016.
- Roof finished in 10mm toughened glass

**Lighting**

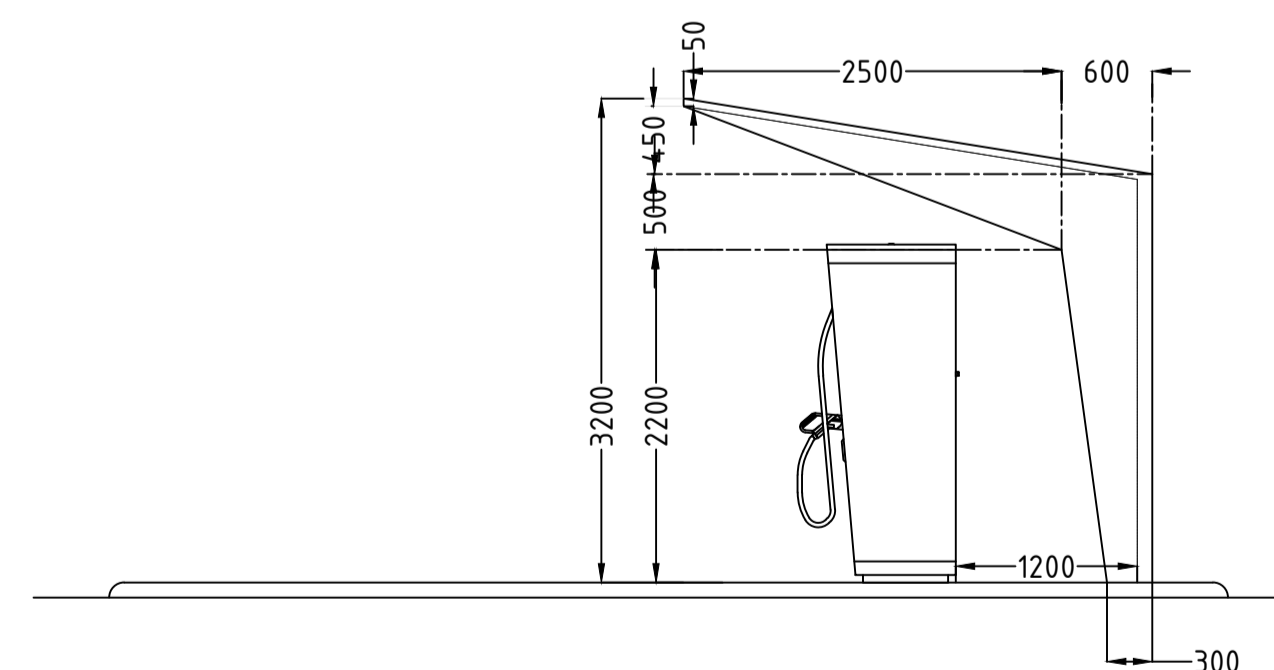
- LED Down lights to achieve 100 lux on each bay



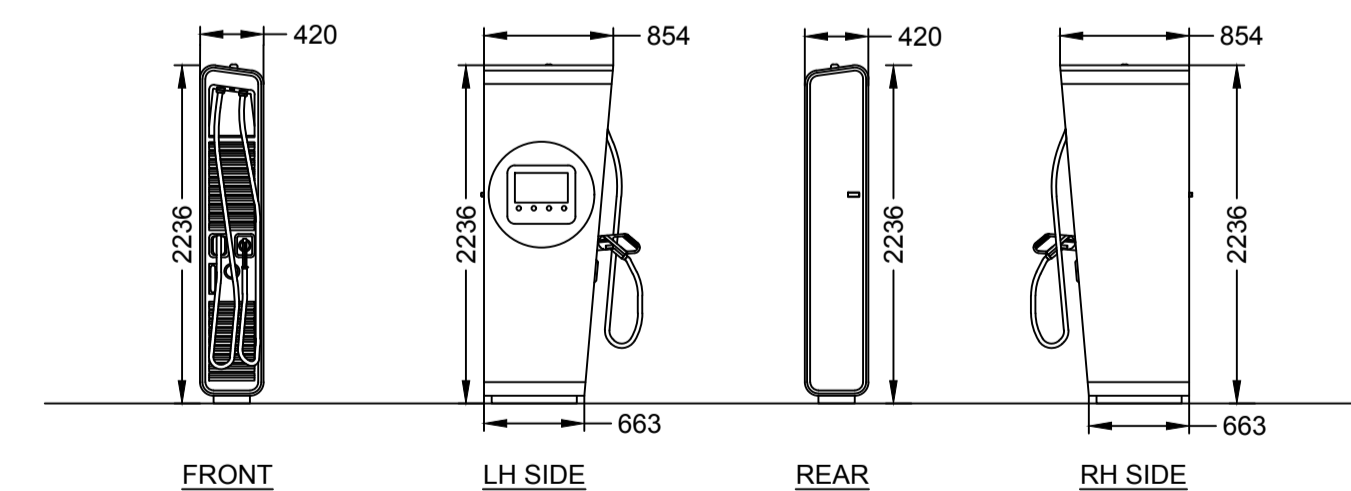
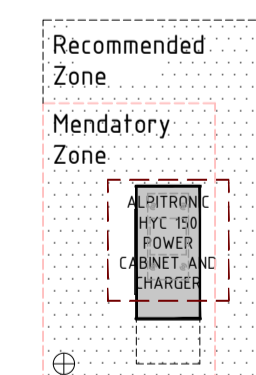
**EV CANOPY - PLAN**  
Scale 1:50



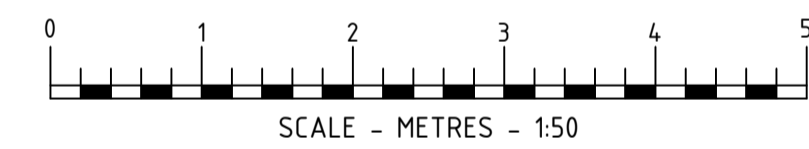
**EV CANOPY - FRONT ELEVATION**  
Scale 1:50



**EV CANOPY - SIDE ELEVATION**  
Scale 1:50



**ALPITRONIC 150 HYC CHARGER**  
Scale 1:50



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DRAWING TITLE  
EV CANOPY DETAIL

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KM	15.09.2022	1:50	A1
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RRB	13664-P03-FS465	-	

# HYC150

75 kW / 150 kW Rapid charging point for electric vehicles

## Key features



\*Details in mm

- Maximum output current up to 500 A
- Full performance from 300 V battery voltage
- Future-proof output voltage range from 150 V to 1000 V
- Highly integrated power electronics in an ultra-compact design
- Option for parallel DC charging
- hypercharger Power-Stack concept enables scalable and retrofittable power levels



## HYC150

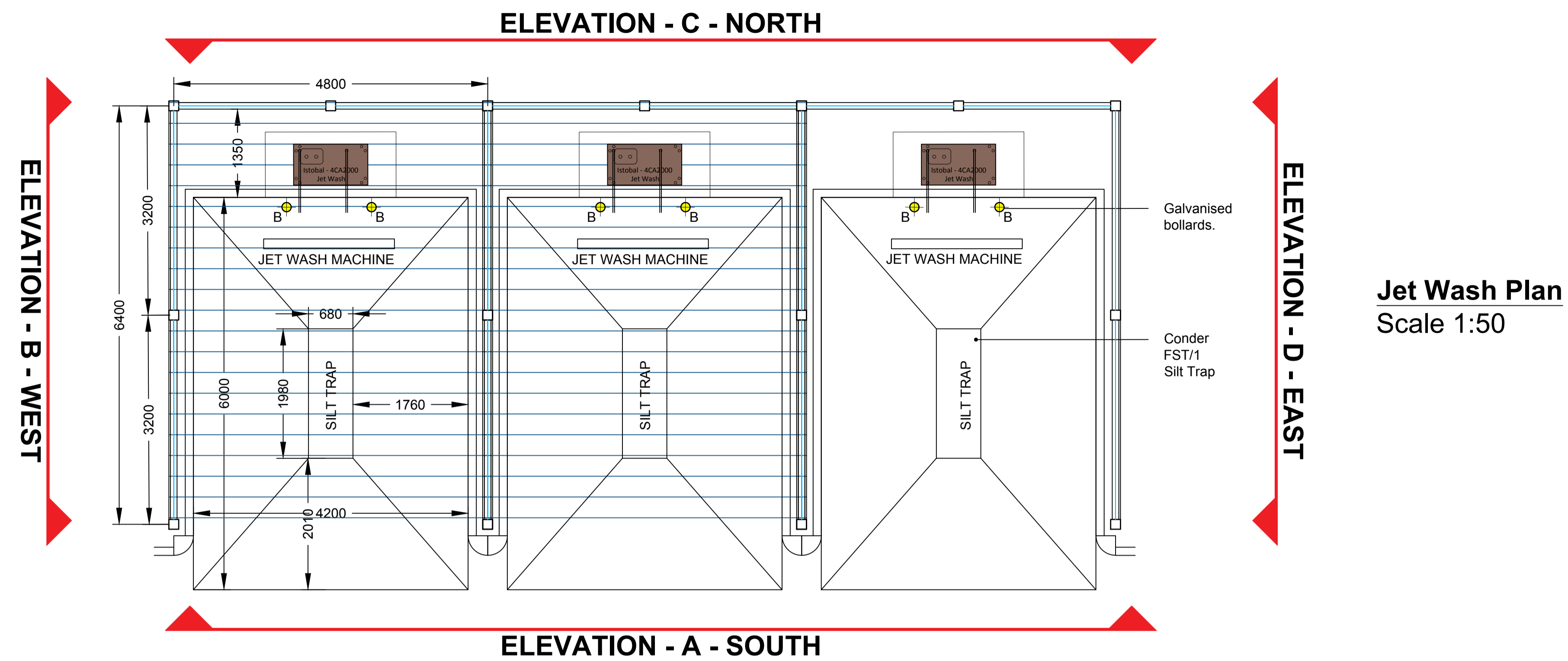
75 kW / 150 kW Rapid charging point for electric vehicles

## Technical data

SYSTEM SPECIFICATIONS	
DC interfaces	CCS2 up to 500 A CHAdeMO up to 200 A
AC interfaces	22 kW AC socket/cable (optional)
Payment system	Choose between different card readers for credit cards or EC cards
Load and charging management	Smart, dynamic allocation of power modules and distribution of charging power to charging points
Environmental conditions, in operation	-30° up to +55° C (derating from 40° C), Operating height ≤ 2,000 m
Environmental conditions, in storage	-40° up to +55° C (1K22*/1Z2/1B1/1C1/1S10/1M10) * Minimum temperature in deviation from the standard
Environmental conditions, under transport	-40° up to +70° C (2K12*/2B1/2C1/2S1/2M4) * Minimum temperature in deviation from the standard
Humidity (in operation, storage)	0% - 95% relative (non-condensing)
Efficiency	>94% at full charge
Protective class	Class I (protective earth connection)
Degree of pollution	Class 3
Noise emission	<62 dB(A) at 1m distance @22° C, at full charging (average value throughout entire charging process) Option to set parameters for Silent Mode (reduction of noise emissions by means of power derating)
Installation location	Indoor and outdoor installation
Type of installation	Floor mounted on plinth or base (optional foundation base in concrete)
Protection rating	IP54
Impact resistance	IK10 in accordance with IEC 62262
Dimensions (H x W x D)	2235 x 420 x 663 mm (footprint)
Weight	325 kg up to 462 kg
Accessibility	optional, barrier-free design for the operating elements and plugs in terms of installation height (1,050 mm each) is possible (in accordance with DIN 18040-3)

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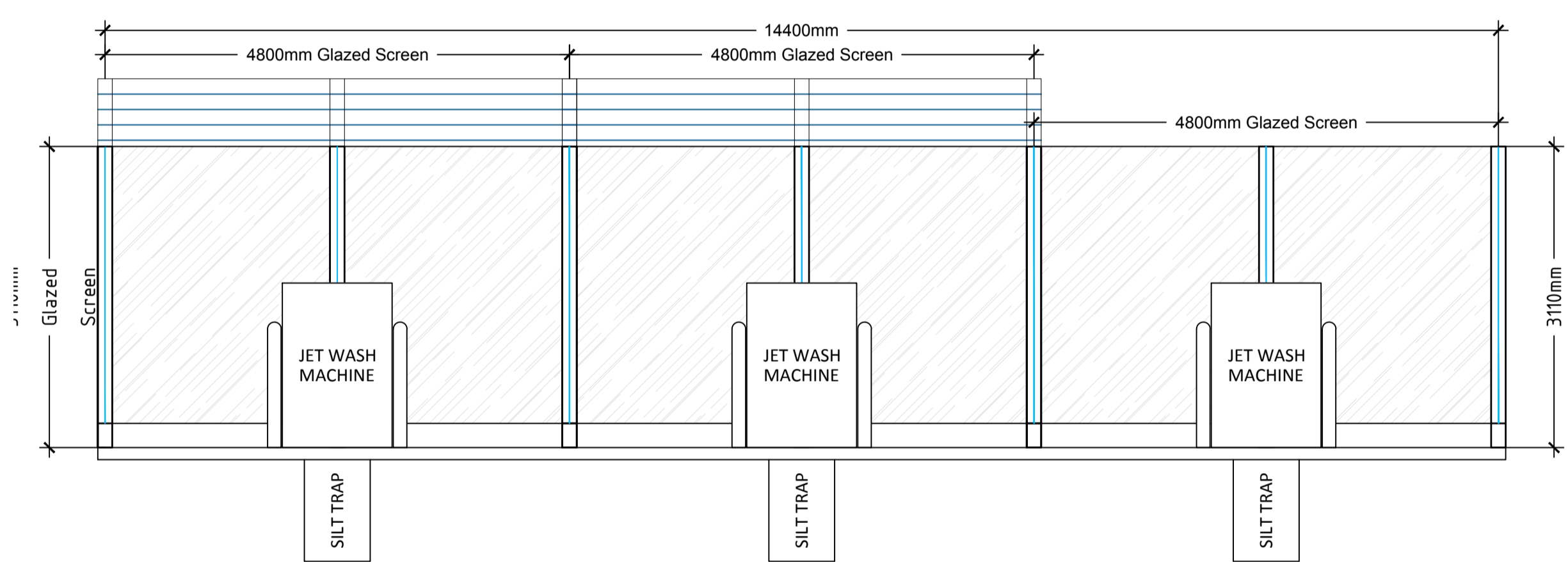
**Jet Wash Plan**  
 Scale 1:50

**Materials**

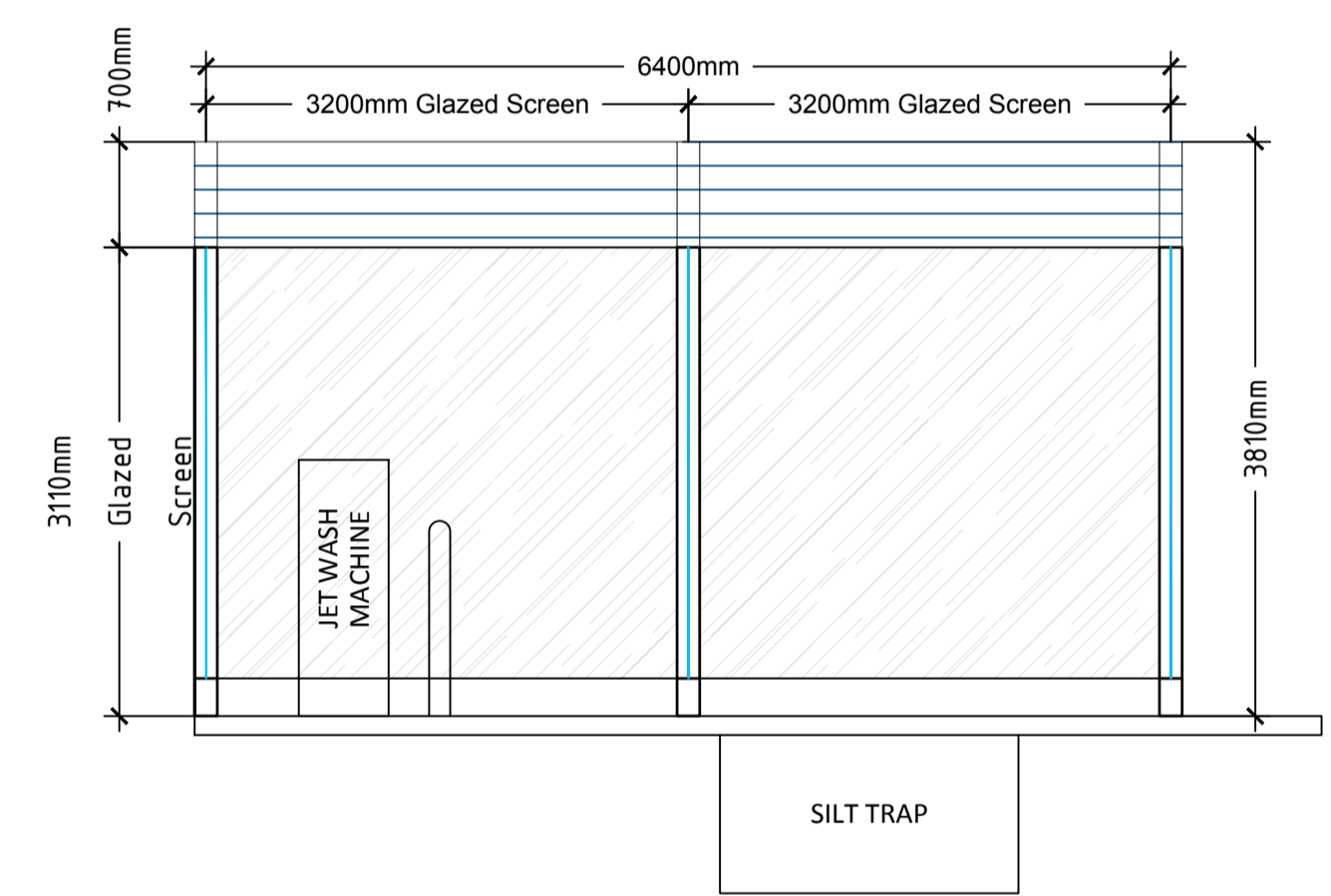
- Structure steel framework with blue RAL 5015 powder coated covering and graphics
- Reinforced glazed canopy top

**Lighting**

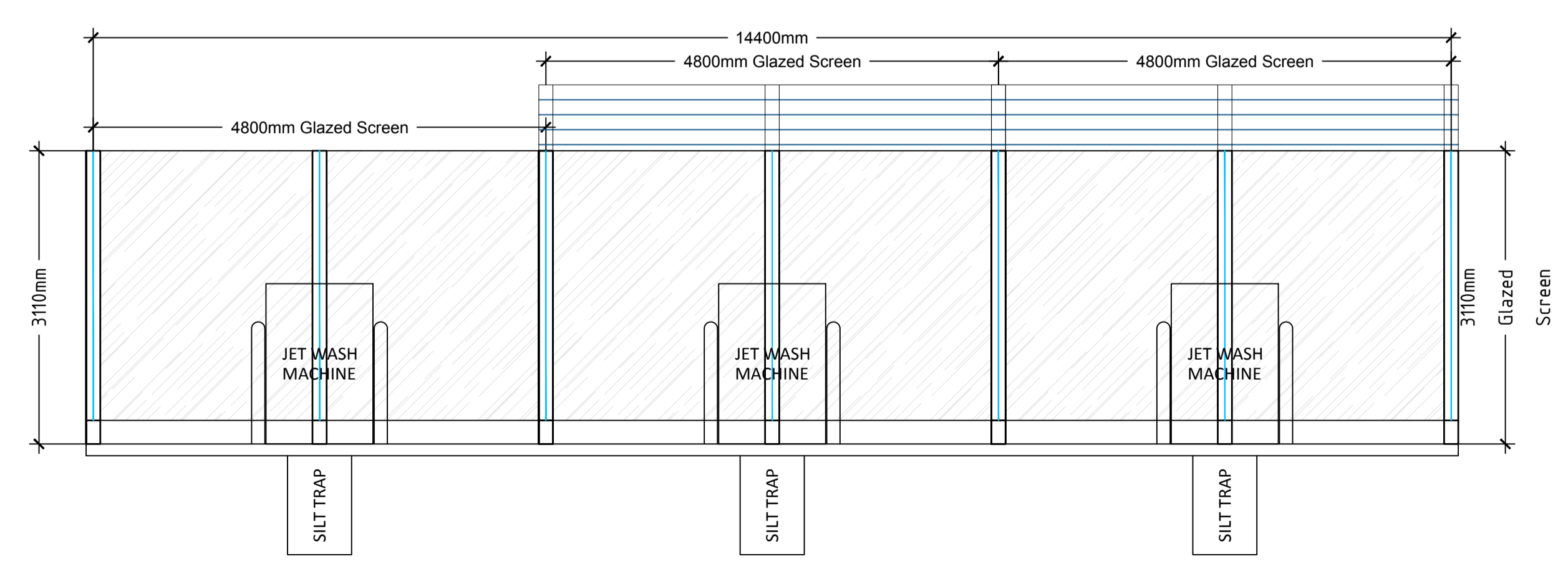
- 4x LED Strip lights to be installed in each covered canopy to achieve 100 lux on each bay



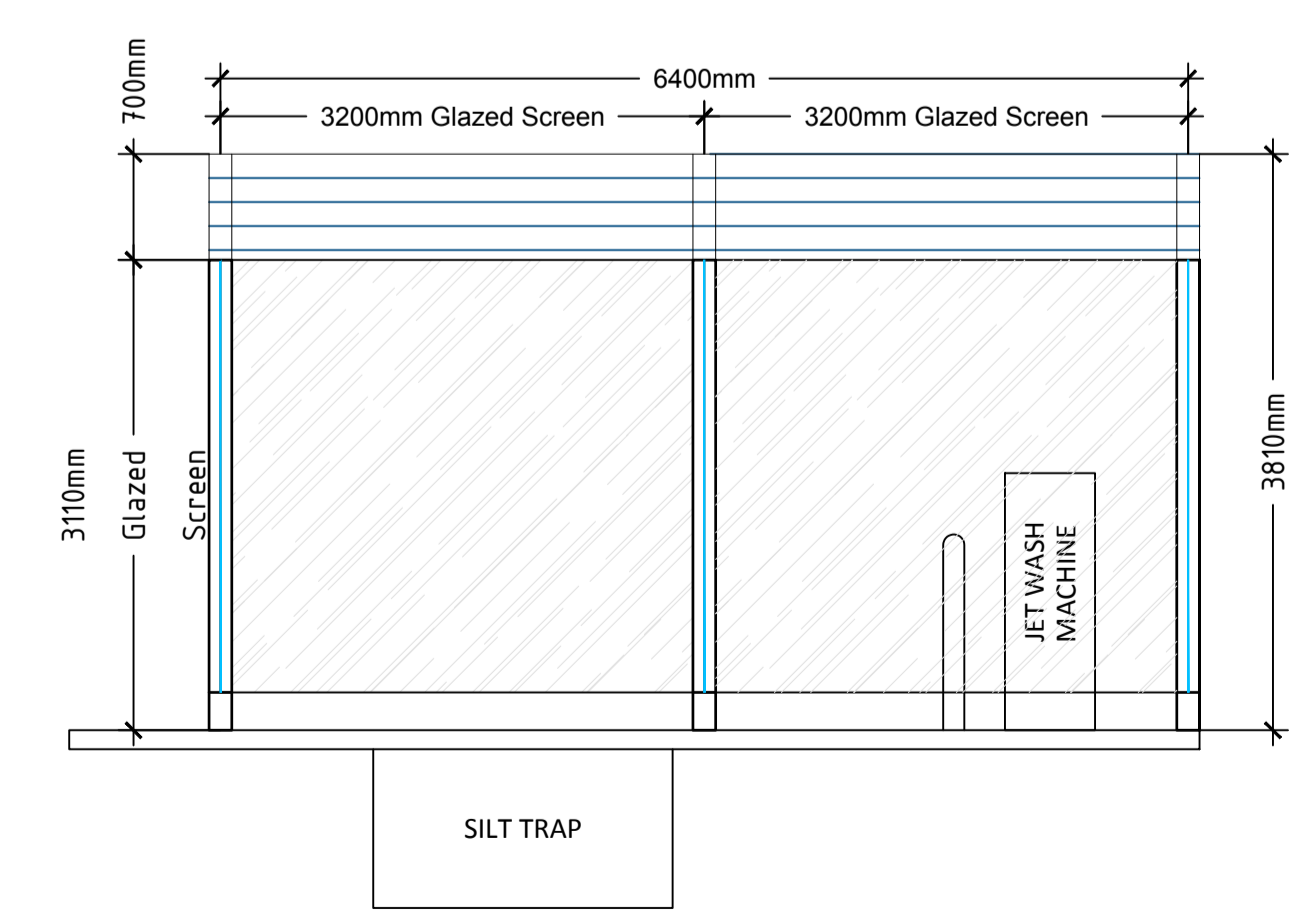
**Jet Wash**  
 Elevation A - South



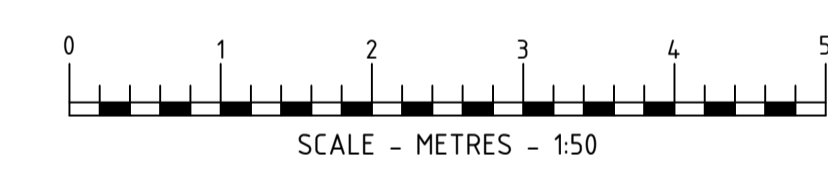
**Jet Wash**  
 Elevation B - West



**Jet Wash**  
 Elevation C - North



**Jet Wash**  
 Elevation D - East



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**JET WASH ELEVATIONS**

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**1 BAY COMPACT JET WASH**  
**MOD. 4CA2000**



Documentación I+D+i V\_03\_19

**ISTOBAL**

**ORIGINAL MANUAL**

**USER GUIDE**



35ZH800B

**GB**

## TECHNICAL SPECIFICATIONS

### NOISE CONTROL

The level of sound pressure with equivalent weighing is less than 70 dB.

### ELECTRICITY SUPPLY

ELECTRICITY CONSUMPTION		
OPTIONS	KW.	AMPS 230V
HIGH PRESSURE PUMPS PER BAY	2.2	9.64
	3	13.2
	4	17.1
HOT WATER ELECTRICAL GENERATOR (2.5 L)	4	26
HOT WATER ELECTRICAL GENERATOR (40 L)	6	26
HEATER 60 W	0.06	0.27

## CONSUMPTION

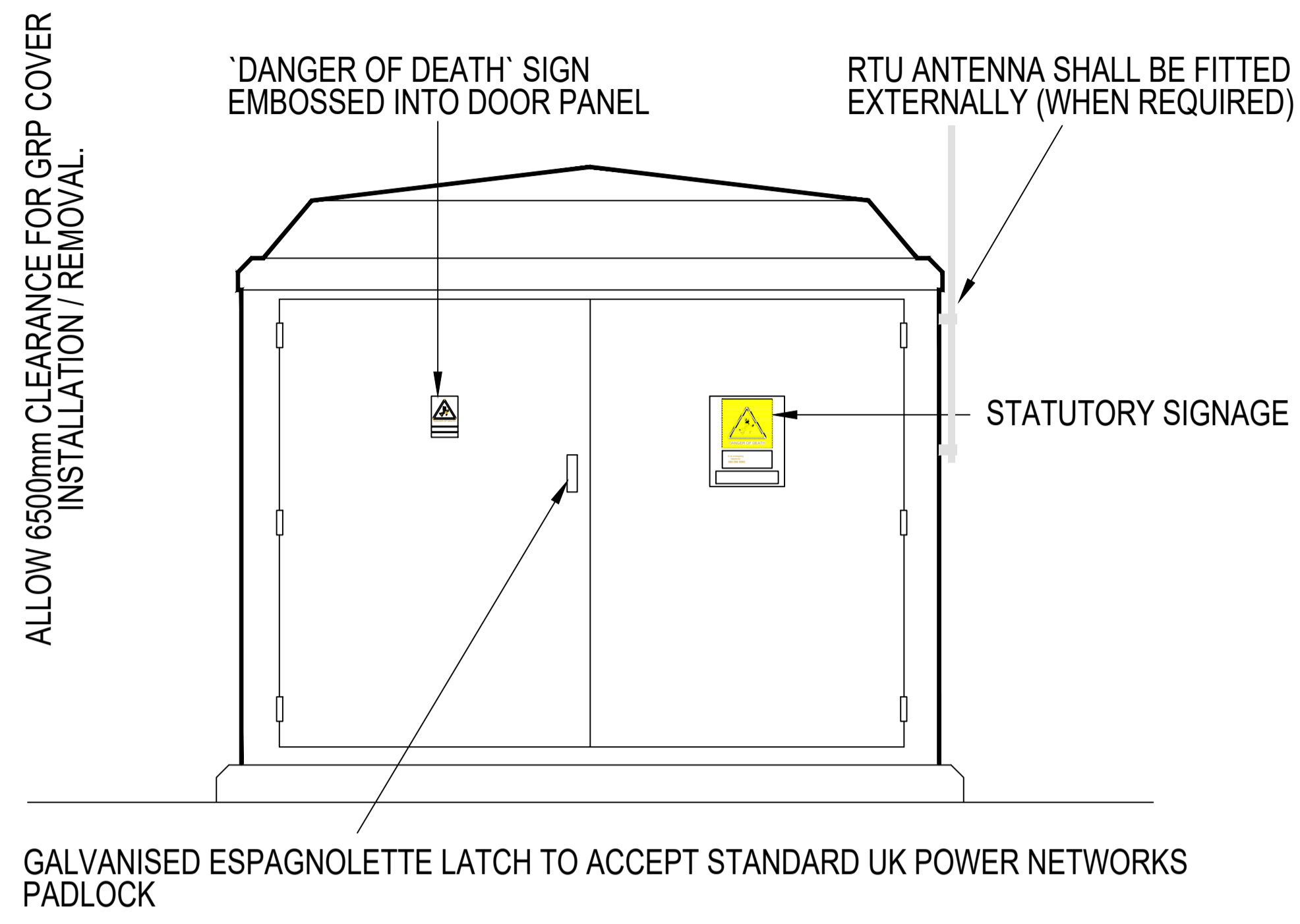
### CONSUMPTION OF PRODUCT

CONSUMPTION OF PRODUCT		
PRODUCT	LITRES/HOUR	WORKING PRESSURE - DOSING PUMP BAR
SHAMPOO	2.1	2.5
WAX		

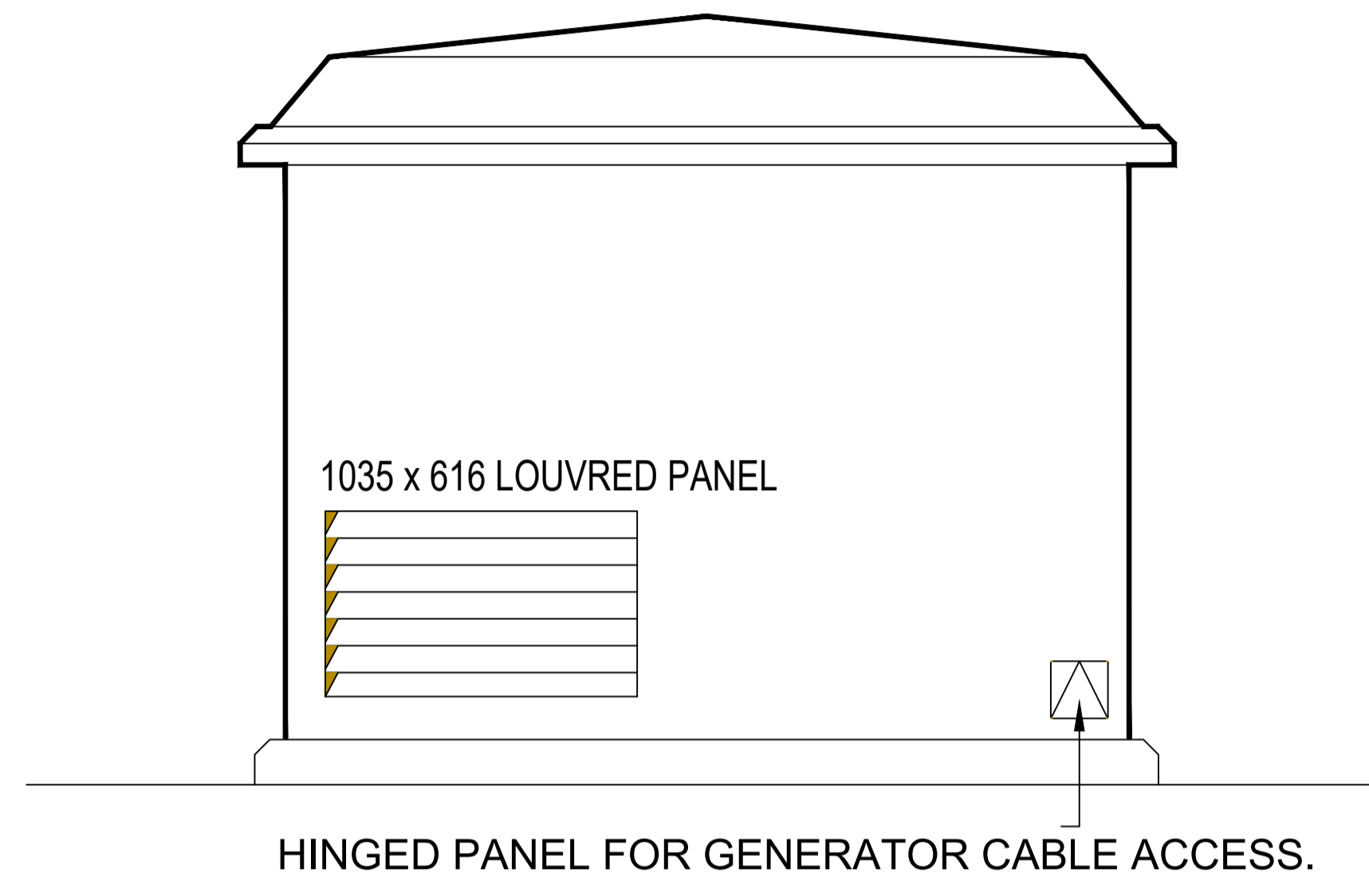
### SALT CONSUMPTION

CONSUMPTION OF SALT														
HARDNESS °HF	15	20	25	30	35	40	45	50	55	60	65	70	75	80
TREATED WATER (M <sup>3</sup> ) BETWEEN REGENERATIONS	5.6	4.2	3.4	2.8	2.4	2.1	1.9	1.7	1.5	1.4	1.29	1.2	1.1	1.1
CONSUMPTION OF SALT (KG/M <sup>3</sup> )	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
If daily volume of softened water is 0.5 m <sup>3</sup>														
Salt consumption per month (kgs)	3.5	4.7	6	7	8.4	8.4	10.5	10.5	10.5	14	14	14	14	14
If daily volume of softened water is 1 m <sup>3</sup>														
Salt consumption per month (kgs)	7	8.4	10.5	14	14	14	21	21	21	21	21	21	21	21
If daily volume of softened water is 1.5 m <sup>3</sup>														
Salt consumption per month (kgs)	10.5	14	14	21	21	21	21	21	21	42	42	42	42	42
If daily volume of softened water is 2 m <sup>3</sup>														
Salt consumption per month (kgs)	14	14	21	21	21	21	42	42	42	42	42	42	42	42

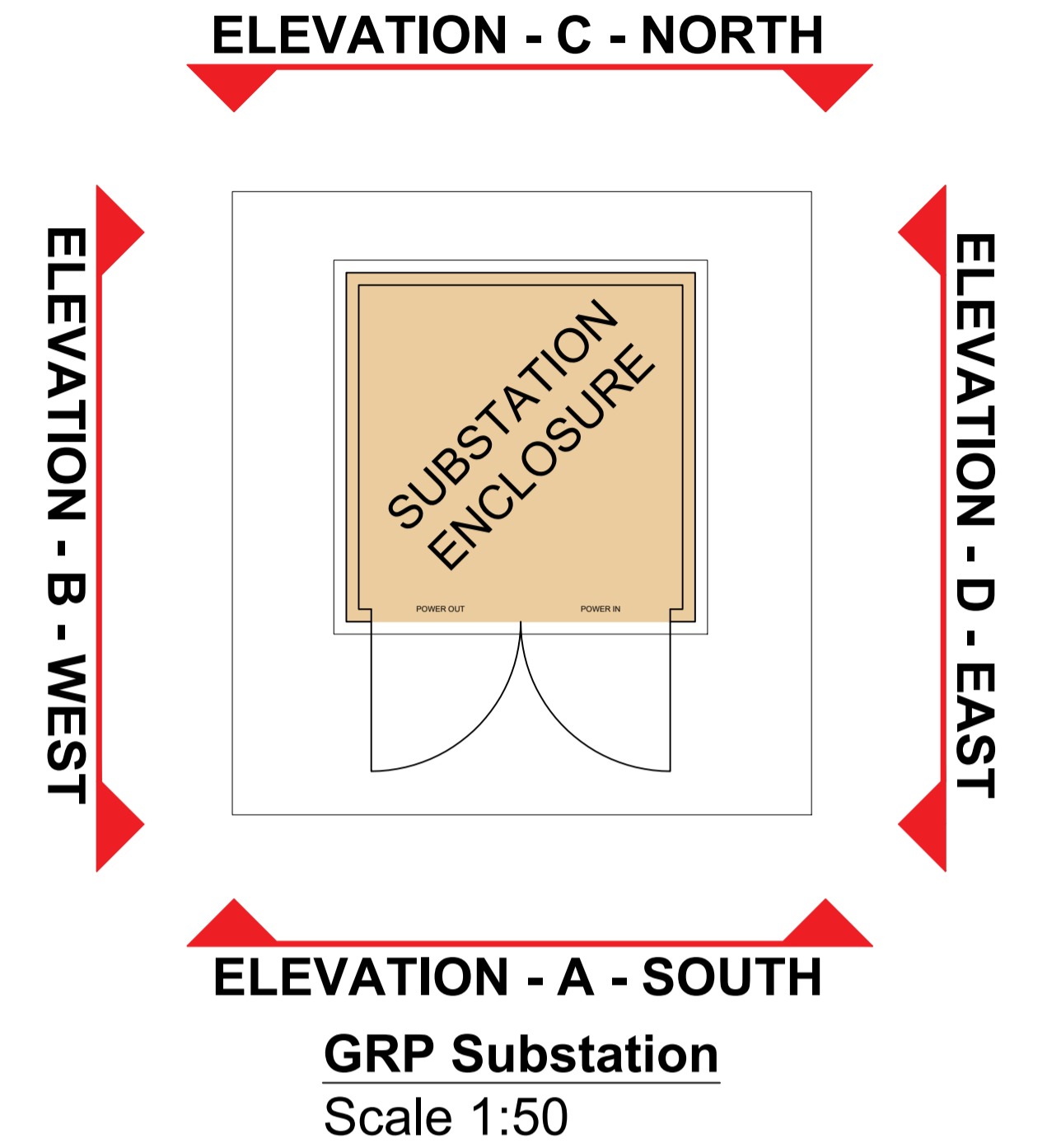
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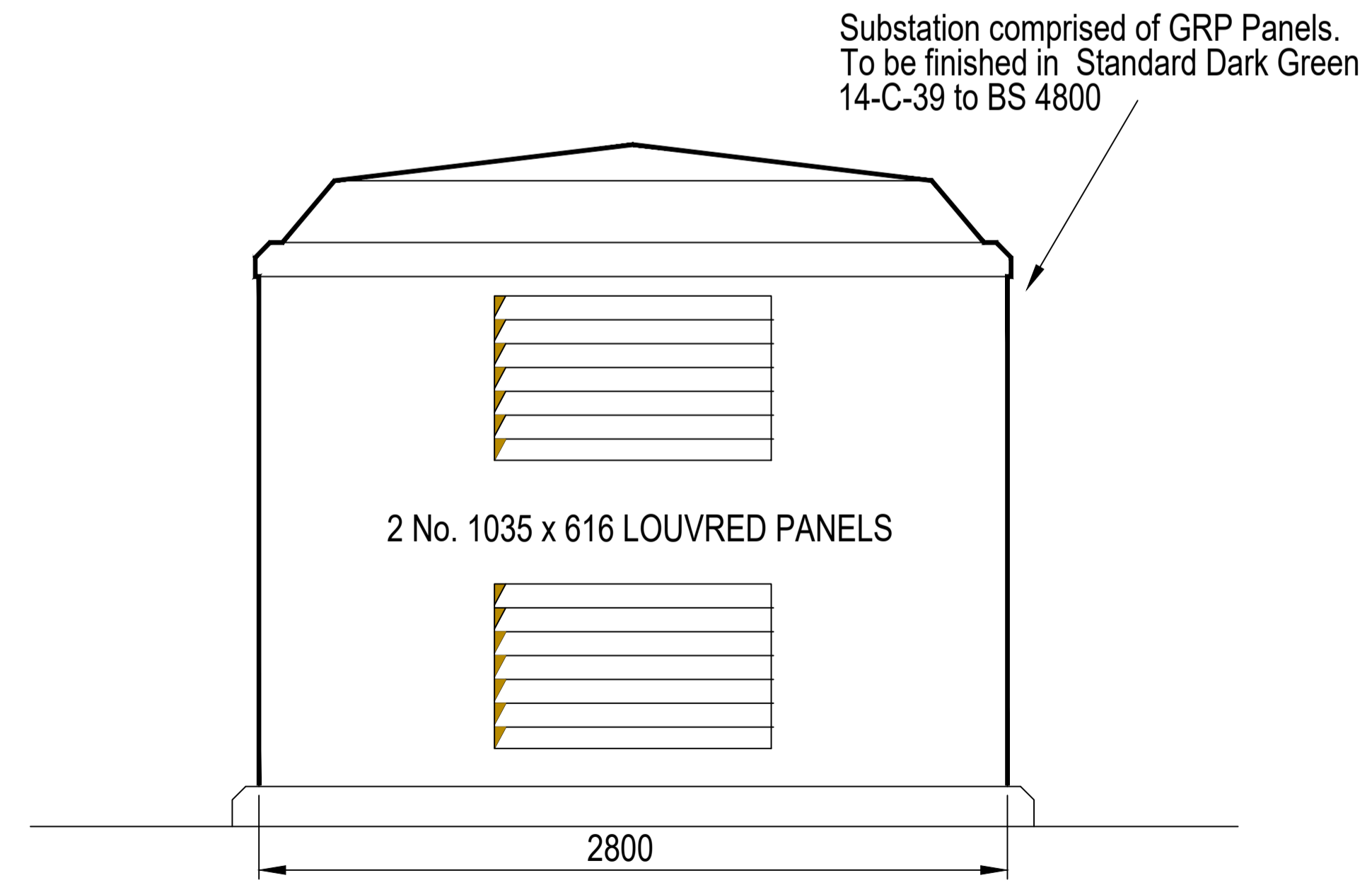
**GRP Substation**  
 Elevation A - South



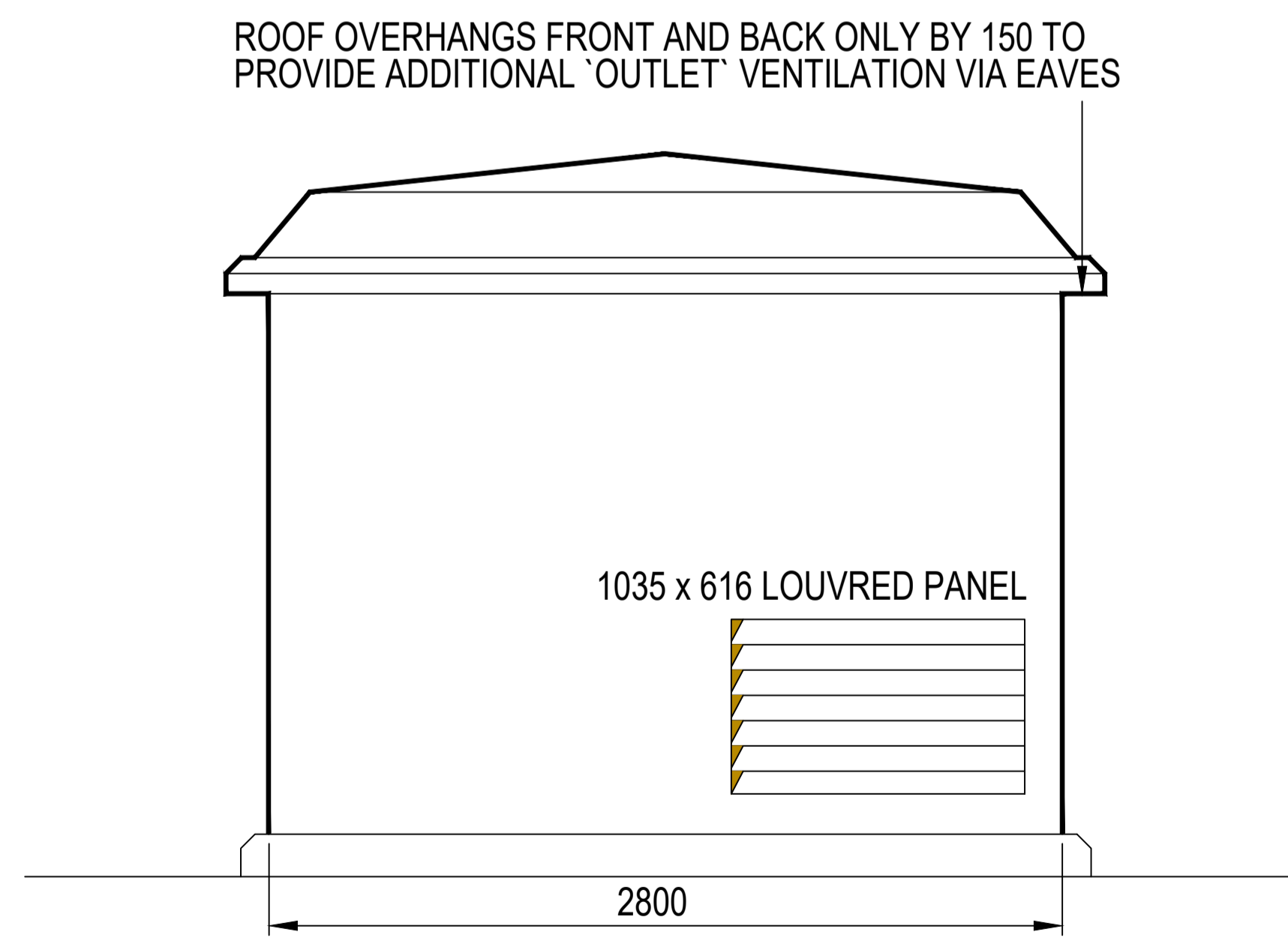
**GRP Substation**  
 Elevation B - West



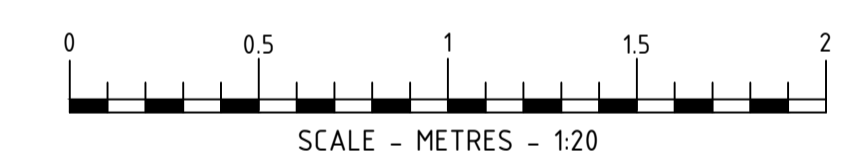
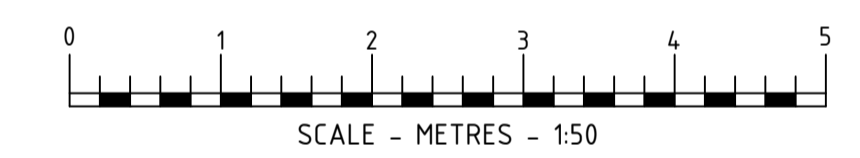
**GRP Substation**  
 Scale 1:50



**GRP Substation**  
 Elevation C - North



**GRP Substation**  
 Elevation D - East



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 SUBSTATION ELEVATIONS

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Voltage Ratio	Type	Phase	Rating (kVA)	Short-Circuit Impedance (%)	Sound Power Level (dBA)
6 600/250 or 11 000/250 or 20 000/250 (2-wire system)	3	Single	16	4.5	45
	3		25	4.5	45
	3		50	4.5	45
6 600/500-250 or 11 000/500-250 or 20 000/500-250 (2- or 3-wire system)	1 3	Single	25	4.5	45
	3		50	4.5	45
6 600/250-0-250 or 11 000/250-0-250 or 20 000/250-0-250 (3-wire system)	1 3	Single	100	4.5	48
6 600/433-250 or 11 000/433-250 or 20 000/433-250	3	Three	25	4.5	45
	1 3		50	4.5	45
	1 3		100	4.75	48
	1 3		200	4.75	52
	1 2 3		315	4.75	54
	1 2 3		500	4.75	56
	1 2 3		800	4.75	58
	1 2 3		1 000	4.75	59
	1 2 3		1 250	5.0	60
	1 2 3		1 500	5.5	61
	1 2 3		2 000	6.0	62
11 000-6 600/433-250 Dual ratio	1	Three	200	4.75	52
	1 2		315	4.75	54
	1 2		500	4.75	56
	1 2		800	4.75	58
	1 2		1 000	4.75	59
	1 2		1 250	5.0	60
	1 2		1 500	5.5	61
	1 2		2 000	6.0	62

**Notes:**

- The numbers 1-3 in the column headed "Type" refer to:
  - 1 – Cable connected transformer
  - 2 – Unit substation transformer
  - 3 – Pole-mounted transformer
- The above no-load secondary voltages are chosen so as to facilitate provision of the following nationally declared low voltages:
  - Three-phase 400/230 V, 4-wire
  - Single-phase 230 V, 2-wire
  - 230-0-230 V, 3-wire
- The above rated primary voltages of 6 600 V, 11 000 V and 20 000 V relate to highest voltage for equipment of 7.2 kV, 12 kV and 24 kV respectively.
- The rated output of dual ratio transformers shall be available when either ratio is in use and on any tapping position.
- The rated power shall be available when low voltage fusegear is mounted directly on transformers and also when high voltage switchgear is directly mounted on unit substation transformers.
- Sound power levels are maximum values.
- The column heading "impedance (%)" refers to the impedance voltage corrected to 75°C expressed as a percentage of normal voltage, and in the case of dual ratio transformers, shall refer to the 11 000 V connection.

**Table 1 - Transformer Details**

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## APPENDIX 03

### Survey Results



**Table 03-01**  
**15-minute Unattended Daytime History Results – Location 1, dB**

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Fri 11/11/2022 14:00	71.3	68.4	72.7	87.4	
Fri 11/11/2022 14:15	67.7	57.5	71.4	77.2	
Fri 11/11/2022 14:30	66.3	56.8	70.3	80.7	
Fri 11/11/2022 14:45	65.7	59.9	69.2	76.9	
Fri 11/11/2022 15:00	69.3	59.4	71.9	82.2	
Fri 11/11/2022 15:15	69.4	61.8	71.0	92.7	
Fri 11/11/2022 15:30	71.8	60.5	71.8	96.3	
Fri 11/11/2022 15:45	70.7	60.5	72.6	89.9	
Fri 11/11/2022 16:00	73.7	63.1	73.1	97.2	
Fri 11/11/2022 16:15	70.2	62.7	71.6	92.6	
Fri 11/11/2022 16:30	72.1	61.7	71.0	99.3	
Fri 11/11/2022 16:45	69.1	61.3	71.9	83.4	
Fri 11/11/2022 17:00	64.3	56.2	68.2	91.7	
Fri 11/11/2022 17:15	67.4	59.7	70.9	80.0	
Fri 11/11/2022 17:30	69.0	56.7	73.1	79.3	
Fri 11/11/2022 17:45	70.9	58.1	70.0	97.1	
Fri 11/11/2022 18:00	72.6	57.3	71.1	96.8	
Fri 11/11/2022 18:15	62.2	56.5	64.6	75.9	
Fri 11/11/2022 18:30	71.4	55.6	73.3	97.6	
Fri 11/11/2022 18:45	66.0	59.1	68.9	81.1	
Fri 11/11/2022 19:00	69.5	55.7	66.0	93.6	
Fri 11/11/2022 19:15	61.5	54.7	64.6	75.5	
Fri 11/11/2022 19:30	62.1	52.0	65.4	79.1	
Fri 11/11/2022 19:45	62.4	51.3	65.1	80.0	
Fri 11/11/2022 20:00	61.6	50.7	64.7	81.2	
Fri 11/11/2022 20:15	61.4	50.2	65.0	71.2	
Fri 11/11/2022 20:30	64.1	53.3	65.2	87.3	
Fri 11/11/2022 20:45	62.0	52.5	65.3	73.2	
Fri 11/11/2022 21:00	60.8	50.4	64.2	72.7	
Fri 11/11/2022 21:15	62.1	53.2	65.3	75.8	
Fri 11/11/2022 21:30	62.0	50.2	64.4	82.3	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Fri 11/11/2022 21:45	70.5	48.2	64.6	97.4	
Fri 11/11/2022 22:00	62.0	47.0	63.8	92.4	
Fri 11/11/2022 22:15	60.3	48.3	64.0	71.8	
Fri 11/11/2022 22:30	59.8	47.7	63.7	80.4	
Fri 11/11/2022 22:45	60.6	46.5	64.0	84.2	
Fri 11/11/2022 23:00	67.3	49.7	65.1	88.0	
Fri 11/11/2022 23:15	59.9	47.0	64.0	69.7	
Fri 11/11/2022 23:30	59.3	47.2	63.7	69.8	
Fri 11/11/2022 23:45	60.0	45.3	63.9	75.4	
Sat 12/11/2022 00:00	60.0	45.1	62.9	85.5	
Sat 12/11/2022 00:15	60.1	46.3	64.0	78.1	
Sat 12/11/2022 00:30	58.8	46.9	63.2	73.2	
Sat 12/11/2022 00:45	56.8	44.1	61.3	72.9	
Sat 12/11/2022 01:00	57.2	46.9	61.6	76.3	
Sat 12/11/2022 01:15	57.5	45.2	62.0	71.2	
Sat 12/11/2022 01:30	59.4	44.8	63.1	76.0	
Sat 12/11/2022 01:45	57.0	43.0	61.4	81.9	
Sat 12/11/2022 02:00	59.2	42.5	62.1	84.5	
Sat 12/11/2022 02:15	54.8	42.3	58.6	69.5	
Sat 12/11/2022 02:30	57.5	42.5	60.6	80.7	
Sat 12/11/2022 02:45	53.6	41.0	57.4	70.4	
Sat 12/11/2022 03:00	54.5	40.1	58.7	73.0	
Sat 12/11/2022 03:15	55.2	39.5	59.7	73.0	
Sat 12/11/2022 03:30	56.4	40.6	59.3	71.8	
Sat 12/11/2022 03:45	54.4	42.3	57.9	73.0	
Sat 12/11/2022 04:00	59.1	42.1	61.9	74.1	
Sat 12/11/2022 04:15	57.0	45.3	60.3	73.7	
Sat 12/11/2022 04:30	55.3	41.4	58.6	73.1	
Sat 12/11/2022 04:45	53.4	41.0	56.2	76.2	
Sat 12/11/2022 05:00	62.5	49.2	64.6	83.3	
Sat 12/11/2022 05:15	63.8	40.5	56.8	97.9	
Sat 12/11/2022 05:30	54.8	40.7	58.4	74.0	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Sat 12/11/2022 05:45	55.3	41.5	58.0	69.6	
Sat 12/11/2022 06:00	54.2	41.2	58.5	70.9	
Sat 12/11/2022 06:15	56.0	43.9	60.2	69.8	
Sat 12/11/2022 06:30	55.4	42.6	59.8	73.5	
Sat 12/11/2022 06:45	58.6	43.2	62.1	84.3	
Sat 12/11/2022 07:00	55.8	41.2	60.1	71.6	
Sat 12/11/2022 07:15	56.7	41.4	61.8	70.1	
Sat 12/11/2022 07:30	59.0	44.5	63.1	71.1	
Sat 12/11/2022 07:45	58.8	44.9	63.5	69.7	
Sat 12/11/2022 08:00	60.3	46.6	64.3	79.9	
Sat 12/11/2022 08:15	60.0	47.5	64.0	75.5	
Sat 12/11/2022 08:30	60.5	47.3	64.8	70.1	
Sat 12/11/2022 08:45	63.5	50.5	66.4	81.0	
Sat 12/11/2022 09:00	70.1	49.6	66.8	96.1	
Sat 12/11/2022 09:15	61.8	49.9	64.8	86.9	
Sat 12/11/2022 09:30	65.8	55.8	68.1	89.7	
Sat 12/11/2022 09:45	67.7	58.0	71.6	78.6	
Sat 12/11/2022 10:00	72.1	70.1	73.1	87.6	
Sat 12/11/2022 10:15	68.4	57.2	72.3	82.5	
Sat 12/11/2022 10:30	69.8	60.4	72.7	84.5	
Sat 12/11/2022 10:45	68.4	61.2	70.7	81.4	
Sat 12/11/2022 11:00	71.4	68.5	72.6	89.8	
Sat 12/11/2022 11:15	68.8	61.9	71.2	86.8	
Sat 12/11/2022 11:30	67.4	58.1	70.4	76.2	
Sat 12/11/2022 11:45	69.2	58.2	71.8	86.3	
Sat 12/11/2022 12:00	73.1	56.2	69.8	97.9	
Sat 12/11/2022 12:15	68.7	59.5	72.2	79.8	
Sat 12/11/2022 12:30	70.8	67.3	72.0	90.2	
Sat 12/11/2022 12:45	72.6	64.1	72.2	96.0	
Sat 12/11/2022 13:00	70.2	64.4	72.4	77.2	
Sat 12/11/2022 13:15	71.1	67.3	73.0	82.2	
Sat 12/11/2022 13:30	70.9	66.9	73.0	87.4	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Sat 12/11/2022 13:45	66.3	57.3	70.1	83.6	
Sat 12/11/2022 14:00	72.2	58.7	71.0	101.1	
Sat 12/11/2022 14:15	65.9	56.9	69.2	75.1	
Sat 12/11/2022 14:30	65.0	57.6	68.2	75.7	
Sat 12/11/2022 14:45	67.9	60.5	70.6	77.7	
Sat 12/11/2022 15:00	71.0	63.6	73.4	76.2	
Sat 12/11/2022 15:15	68.7	62.1	72.2	89.8	
Sat 12/11/2022 15:30	70.6	58.9	71.0	95.0	
Sat 12/11/2022 15:45	70.1	67.9	71.7	79.6	
Sat 12/11/2022 16:00	70.2	57.5	73.4	92.4	
Sat 12/11/2022 16:15	72.7	62.7	72.9	94.9	
Sat 12/11/2022 16:30	71.8	62.4	71.6	97.0	
Sat 12/11/2022 16:45	70.0	61.1	72.5	83.4	
Sat 12/11/2022 17:00	68.7	61.0	72.6	91.7	
Sat 12/11/2022 17:15	68.6	58.2	71.4	81.5	
Sat 12/11/2022 17:30	66.5	57.1	70.1	76.7	
Sat 12/11/2022 17:45	67.3	59.7	70.4	89.8	
Sat 12/11/2022 18:00	64.2	59.9	66.5	84.8	
Sat 12/11/2022 18:15	66.6	57.6	72.0	85.4	
Sat 12/11/2022 18:30	67.8	58.0	72.6	86.0	
Sat 12/11/2022 18:45	70.4	60.8	72.6	96.2	
Sat 12/11/2022 19:00	68.4	54.1	66.2	95.4	
Sat 12/11/2022 19:15	62.1	52.3	65.4	78.1	
Sat 12/11/2022 19:30	63.2	54.5	65.8	80.4	
Sat 12/11/2022 19:45	61.6	53.3	63.9	87.7	
Sat 12/11/2022 20:00	63.4	55.2	66.1	84.6	
Sat 12/11/2022 20:15	63.0	51.0	66.0	81.3	
Sat 12/11/2022 20:30	63.3	50.6	66.3	82.9	
Sat 12/11/2022 20:45	61.5	50.3	65.0	70.8	
Sat 12/11/2022 21:00	63.5	52.6	65.0	89.4	
Sat 12/11/2022 21:15	60.4	49.2	64.2	73.5	
Sat 12/11/2022 21:30	65.2	50.5	65.7	92.9	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Sat 12/11/2022 21:45	61.2	48.5	65.0	80.9	
Sat 12/11/2022 22:00	60.9	51.3	64.4	73.6	
Sat 12/11/2022 22:15	61.2	49.6	64.3	84.6	
Sat 12/11/2022 22:30	61.8	49.3	65.0	79.6	
Sat 12/11/2022 22:45	61.4	50.1	64.5	79.4	
Sat 12/11/2022 23:00	60.1	50.0	63.6	70.8	
Sat 12/11/2022 23:15	59.4	47.3	63.3	73.9	
Sat 12/11/2022 23:30	59.9	48.5	63.8	74.1	
Sat 12/11/2022 23:45	60.5	49.0	64.5	72.4	
Sun 13/11/2022 00:00	60.2	48.2	64.2	77.3	
Sun 13/11/2022 00:15	63.6	48.1	64.1	88.4	
Sun 13/11/2022 00:30	64.0	47.7	64.2	89.8	
Sun 13/11/2022 00:45	58.6	45.0	63.2	70.8	
Sun 13/11/2022 01:00	60.2	46.1	64.6	75.1	
Sun 13/11/2022 01:15	59.9	47.3	64.1	74.2	
Sun 13/11/2022 01:30	58.5	44.6	63.2	81.0	
Sun 13/11/2022 01:45	58.5	43.6	63.4	70.8	
Sun 13/11/2022 02:00	58.8	44.7	63.0	71.0	
Sun 13/11/2022 02:15	59.2	42.9	63.9	71.0	
Sun 13/11/2022 02:30	56.8	43.0	60.9	74.0	
Sun 13/11/2022 02:45	63.2	42.4	62.4	87.2	
Sun 13/11/2022 03:00	59.4	45.0	62.4	85.9	
Sun 13/11/2022 03:15	58.7	45.1	62.5	75.3	
Sun 13/11/2022 03:30	57.1	41.6	61.4	80.5	
Sun 13/11/2022 03:45	57.1	42.7	61.4	73.0	
Sun 13/11/2022 04:00	58.3	44.0	62.8	72.4	
Sun 13/11/2022 04:15	57.2	45.6	61.3	77.3	
Sun 13/11/2022 04:30	57.4	42.7	60.7	71.4	
Sun 13/11/2022 04:45	55.8	42.4	59.3	70.0	
Sun 13/11/2022 05:00	55.8	43.3	59.1	71.9	
Sun 13/11/2022 05:15	56.0	43.7	59.9	71.7	
Sun 13/11/2022 05:30	58.8	46.8	62.6	77.6	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Sun 13/11/2022 05:45	56.0	41.6	59.8	75.7	
Sun 13/11/2022 06:00	56.2	43.2	59.7	71.8	
Sun 13/11/2022 06:15	55.9	41.1	59.3	72.6	
Sun 13/11/2022 06:30	55.7	41.5	60.0	70.4	
Sun 13/11/2022 06:45	52.2	40.7	54.4	70.2	
Sun 13/11/2022 07:00	55.3	40.5	59.6	71.6	
Sun 13/11/2022 07:15	56.3	40.3	60.5	74.2	
Sun 13/11/2022 07:30	58.3	41.5	62.3	74.2	
Sun 13/11/2022 07:45	58.4	44.4	62.9	70.9	
Sun 13/11/2022 08:00	59.4	44.7	63.3	70.5	
Sun 13/11/2022 08:15	62.3	43.0	64.8	78.3	
Sun 13/11/2022 08:30	61.2	46.3	64.8	76.5	
Sun 13/11/2022 08:45	61.5	47.2	64.3	89.5	
Sun 13/11/2022 09:00	60.2	45.2	64.2	85.7	
Sun 13/11/2022 09:15	58.8	46.2	63.1	73.4	
Sun 13/11/2022 09:30	61.2	48.0	64.1	88.6	
Sun 13/11/2022 09:45	62.1	49.2	66.3	74.0	
Sun 13/11/2022 10:00	68.2	55.3	71.1	83.9	
Sun 13/11/2022 10:15	70.5	68.7	72.2	76.3	
Sun 13/11/2022 10:30	70.9	68.5	72.5	91.6	
Sun 13/11/2022 10:45	70.2	60.2	72.5	94.3	
Sun 13/11/2022 11:00	71.1	60.0	72.5	95.6	
Sun 13/11/2022 11:15	68.6	61.7	72.0	80.5	
Sun 13/11/2022 11:30	71.1	64.1	73.3	77.4	
Sun 13/11/2022 11:45	70.7	55.1	72.2	95.4	
Sun 13/11/2022 12:00	69.3	55.9	72.1	88.0	
Sun 13/11/2022 12:15	65.2	54.2	68.9	76.7	
Sun 13/11/2022 12:30	69.8	59.9	72.4	89.5	
Sun 13/11/2022 12:45	70.0	65.7	71.6	85.1	
Sun 13/11/2022 13:00	71.4	63.4	73.3	80.2	
Sun 13/11/2022 13:15	71.1	60.3	73.4	82.4	
Sun 13/11/2022 13:30	70.6	59.0	72.6	95.3	



Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Sun 13/11/2022 13:45	70.7	63.8	72.8	85.8	
Sun 13/11/2022 14:00	70.4	60.5	73.3	76.4	
Sun 13/11/2022 14:15	69.7	61.7	73.0	75.9	
Sun 13/11/2022 14:30	72.6	59.4	74.0	92.3	
Sun 13/11/2022 14:45	65.6	57.9	67.7	87.1	
Sun 13/11/2022 15:00	70.7	62.9	73.5	85.0	
Sun 13/11/2022 15:15	72.0	66.0	74.3	81.2	
Sun 13/11/2022 15:30	67.2	56.8	70.8	77.4	
Sun 13/11/2022 15:45	69.4	58.6	72.5	77.5	
Sun 13/11/2022 16:00	66.1	56.9	69.6	88.4	
Sun 13/11/2022 16:15	69.9	59.8	72.0	88.3	
Sun 13/11/2022 16:30	70.0	62.3	72.7	80.6	
Sun 13/11/2022 16:45	69.9	61.9	71.7	88.8	
Sun 13/11/2022 17:00	70.6	62.0	73.0	77.5	
Sun 13/11/2022 17:15	69.5	60.9	71.7	87.5	
Sun 13/11/2022 17:30	73.0	59.8	71.7	100.3	
Sun 13/11/2022 17:45	71.5	65.3	74.0	80.4	
Sun 13/11/2022 18:00	71.3	54.1	68.9	93.8	
Sun 13/11/2022 18:15	61.9	50.5	64.5	78.9	
Sun 13/11/2022 18:30	59.7	48.2	63.7	70.0	
Sun 13/11/2022 18:45	61.9	49.4	63.8	83.4	
Sun 13/11/2022 19:00	72.6	48.5	64.2	101.0	
Sun 13/11/2022 19:15	60.4	48.9	64.3	74.1	
Sun 13/11/2022 19:30	61.3	50.3	64.4	78.8	
Sun 13/11/2022 19:45	62.1	49.2	64.6	82.1	
Sun 13/11/2022 20:00	67.7	49.3	65.0	94.3	
Sun 13/11/2022 20:15	64.6	50.1	65.1	88.0	
Sun 13/11/2022 20:30	63.7	49.7	64.7	86.8	
Sun 13/11/2022 20:45	61.3	51.9	64.7	74.9	
Sun 13/11/2022 21:00	61.3	48.9	64.2	86.8	
Sun 13/11/2022 21:15	59.6	47.6	63.8	73.7	
Sun 13/11/2022 21:30	60.1	46.7	64.0	70.6	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Sun 13/11/2022 21:45	59.9	45.2	64.0	84.9	
Sun 13/11/2022 22:00	60.8	44.6	64.1	83.8	
Sun 13/11/2022 22:15	63.7	43.7	64.3	89.5	
Sun 13/11/2022 22:30	59.1	44.6	63.7	76.2	
Sun 13/11/2022 22:45	58.8	43.2	62.9	76.3	
Sun 13/11/2022 23:00	58.8	43.1	63.4	71.9	
Sun 13/11/2022 23:15	58.2	41.4	63.3	74.6	
Sun 13/11/2022 23:30	64.6	41.9	62.9	88.2	
Sun 13/11/2022 23:45	60.1	44.2	63.5	79.4	
Mon 14/11/2022 00:00	57.2	44.2	61.2	76.9	
Mon 14/11/2022 00:15	55.4	41.1	60.6	68.8	
Mon 14/11/2022 00:30	56.0	42.7	60.4	72.8	
Mon 14/11/2022 00:45	52.6	40.4	57.3	67.2	
Mon 14/11/2022 01:00	54.3	41.3	58.6	69.6	
Mon 14/11/2022 01:15	52.3	40.3	56.2	69.3	
Mon 14/11/2022 01:30	51.9	39.6	55.1	68.8	
Mon 14/11/2022 01:45	52.4	40.1	55.9	69.6	
Mon 14/11/2022 02:00	53.9	39.0	56.7	71.3	
Mon 14/11/2022 02:15	52.6	37.9	54.4	72.8	
Mon 14/11/2022 02:30	57.7	39.0	59.3	77.3	
Mon 14/11/2022 02:45	51.8	38.4	54.7	71.1	
Mon 14/11/2022 03:00	52.6	38.2	55.4	71.4	
Mon 14/11/2022 03:15	54.8	36.5	59.5	70.8	
Mon 14/11/2022 03:30	54.9	37.2	58.7	78.4	
Mon 14/11/2022 03:45	50.0	38.0	50.2	72.3	
Mon 14/11/2022 04:00	53.7	39.2	56.2	69.9	
Mon 14/11/2022 04:15	50.0	38.6	51.5	68.7	
Mon 14/11/2022 04:30	51.4	38.8	50.9	69.1	
Mon 14/11/2022 04:45	57.0	38.0	53.3	77.3	
Mon 14/11/2022 05:00	49.4	38.7	53.8	73.4	
Mon 14/11/2022 05:15	50.4	39.2	53.7	68.1	
Mon 14/11/2022 05:30	54.1	40.4	57.7	70.5	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Mon 14/11/2022 05:45	52.3	39.1	54.4	69.3	
Mon 14/11/2022 06:00	55.2	39.9	58.7	73.4	
Mon 14/11/2022 06:15	55.6	39.8	60.0	73.8	
Mon 14/11/2022 06:30	58.2	41.9	62.7	72.2	
Mon 14/11/2022 06:45	58.2	41.8	63.0	71.4	
Mon 14/11/2022 07:00	58.5	41.1	63.3	72.1	
Mon 14/11/2022 07:15	60.4	42.4	64.5	76.9	
Mon 14/11/2022 07:30	60.5	44.9	64.8	72.8	
Mon 14/11/2022 07:45	61.6	50.1	65.2	75.1	
Mon 14/11/2022 08:00	63.8	53.6	65.3	86.8	
Mon 14/11/2022 08:15	63.4	53.2	65.0	84.1	
Mon 14/11/2022 08:30	63.3	54.8	65.2	86.1	
Mon 14/11/2022 08:45	62.3	55.4	64.8	77.9	
Mon 14/11/2022 09:00	62.0	53.0	65.0	71.4	
Mon 14/11/2022 09:15	62.2	57.0	64.9	74.2	
Mon 14/11/2022 09:30	62.8	55.8	65.9	79.4	
Mon 14/11/2022 09:45	64.4	56.4	68.2	74.8	
Mon 14/11/2022 10:00	69.2	62.6	70.7	81.1	
Mon 14/11/2022 10:15	70.2	58.0	69.8	93.4	
Mon 14/11/2022 10:30	71.1	57.3	69.8	97.3	
Mon 14/11/2022 10:45	67.4	55.0	69.3	97.5	
Mon 14/11/2022 11:00	69.2	59.0	71.2	94.9	
Mon 14/11/2022 11:15	68.2	59.2	71.2	81.3	
Mon 14/11/2022 11:30	69.5	60.3	72.5	79.2	
Mon 14/11/2022 11:45	70.4	59.8	72.9	92.6	
Mon 14/11/2022 12:00	69.5	57.8	70.6	98.4	
Mon 14/11/2022 12:15	68.9	57.3	71.8	82.9	
Mon 14/11/2022 12:30	70.7	68.6	72.4	90.2	
Mon 14/11/2022 12:45	69.8	63.2	71.3	87.6	
Mon 14/11/2022 13:00	73.6	58.1	71.7	89.9	
Mon 14/11/2022 13:15	66.1	57.4	69.6	84.7	
Mon 14/11/2022 13:30	70.1	60.6	71.7	88.5	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Mon 14/11/2022 13:45	68.8	59.9	70.8	77.0	
Mon 14/11/2022 14:00	69.6	61.6	71.6	89.0	
Mon 14/11/2022 14:15	69.7	65.1	71.3	77.2	
Mon 14/11/2022 14:30	68.3	58.4	72.0	89.9	
Mon 14/11/2022 14:45	70.0	63.0	72.0	89.9	*
Mon 14/11/2022 15:00	69.1	62.2	70.9	78.5	*
Mon 14/11/2022 15:15	70.2	62.4	72.6	93.9	*
Mon 14/11/2022 15:30	66.8	58.5	70.0	80.5	*
Mon 14/11/2022 15:45	68.1	61.7	71.0	77.8	*
Mon 14/11/2022 16:00	70.8	64.3	72.5	85.7	*
Mon 14/11/2022 16:15	70.3	69.0	71.2	92.7	*
Mon 14/11/2022 16:30	67.1	57.6	71.0	76.4	*
Mon 14/11/2022 16:45	67.6	57.4	71.3	82.2	
Mon 14/11/2022 17:00	68.1	59.7	71.5	83.0	
Mon 14/11/2022 17:15	69.6	61.9	71.9	77.9	
Mon 14/11/2022 17:30	69.3	60.4	72.4	77.2	
Mon 14/11/2022 17:45	65.2	54.5	66.0	84.2	
Mon 14/11/2022 18:00	64.9	56.7	65.5	86.3	
Mon 14/11/2022 18:15	62.1	54.7	65.1	76.4	
Mon 14/11/2022 18:30	72.4	59.6	69.9	100.1	
Mon 14/11/2022 18:45	67.8	59.5	71.6	81.5	
Mon 14/11/2022 19:00	64.8	56.9	67.3	80.7	
Mon 14/11/2022 19:15	65.1	55.2	67.3	89.6	
Mon 14/11/2022 19:30	62.5	50.7	65.6	76.2	
Mon 14/11/2022 19:45	62.4	50.1	65.7	70.9	
Mon 14/11/2022 20:00	63.1	53.4	66.0	83.8	
Mon 14/11/2022 20:15	62.3	50.1	65.8	77.0	
Mon 14/11/2022 20:30	62.5	51.5	65.9	79.2	
Mon 14/11/2022 20:45	63.3	52.4	66.3	81.3	
Mon 14/11/2022 21:00	62.5	50.1	66.2	73.3	
Mon 14/11/2022 21:15	62.4	50.1	65.9	75.0	
Mon 14/11/2022 21:30	61.7	47.6	65.5	85.7	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Mon 14/11/2022 21:45	61.7	49.0	65.4	76.5	
Mon 14/11/2022 22:00	61.6	47.1	65.5	78.7	
Mon 14/11/2022 22:15	61.0	48.4	65.1	76.6	
Mon 14/11/2022 22:30	58.1	48.4	61.9	75.8	
Mon 14/11/2022 22:45	58.9	47.3	63.3	72.3	
Mon 14/11/2022 23:00	59.0	46.0	63.4	70.8	
Mon 14/11/2022 23:15	58.3	45.8	62.8	76.6	
Mon 14/11/2022 23:30	59.3	45.8	63.5	76.2	
Mon 14/11/2022 23:45	59.0	45.6	63.0	80.5	
Tue 15/11/2022 00:00	58.0	45.2	62.1	71.1	
Tue 15/11/2022 00:15	56.8	44.8	61.2	73.9	
Tue 15/11/2022 00:30	57.5	44.4	61.7	76.3	
Tue 15/11/2022 00:45	58.7	44.5	63.0	73.4	
Tue 15/11/2022 01:00	56.6	44.0	60.5	82.6	
Tue 15/11/2022 01:15	57.3	45.3	61.4	74.7	
Tue 15/11/2022 01:30	56.7	44.1	60.5	74.5	
Tue 15/11/2022 01:45	55.8	42.3	59.6	76.0	
Tue 15/11/2022 02:00	55.7	42.6	59.0	73.0	
Tue 15/11/2022 02:15	59.4	42.6	57.6	93.6	
Tue 15/11/2022 02:30	54.2	41.1	59.1	74.3	
Tue 15/11/2022 02:45	58.1	41.0	57.9	75.7	
Tue 15/11/2022 03:00	49.3	41.4	50.7	66.6	
Tue 15/11/2022 03:15	57.4	42.1	54.6	77.0	*
Tue 15/11/2022 03:30	55.5	42.3	54.2	75.9	*
Tue 15/11/2022 03:45	53.8	42.7	55.2	75.6	*
Tue 15/11/2022 04:00	51.4	43.2	50.0	69.6	*
Tue 15/11/2022 04:15	54.1	43.3	55.1	71.8	*
Tue 15/11/2022 04:30	54.4	44.2	52.7	85.7	*
Tue 15/11/2022 04:45	59.0	45.5	58.6	79.7	*
Tue 15/11/2022 05:00	53.8	46.1	56.5	68.0	*
Tue 15/11/2022 05:15	54.7	45.9	56.8	72.0	*
Tue 15/11/2022 05:30	57.9	51.3	60.6	72.1	*

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Tue 15/11/2022 05:45	56.7	50.4	59.3	70.9	*
Tue 15/11/2022 06:00	58.7	49.6	62.5	72.2	*
Tue 15/11/2022 06:15	60.1	51.0	64.5	71.6	*
Tue 15/11/2022 06:30	62.6	53.7	67.0	75.7	*
Tue 15/11/2022 06:45	61.8	52.7	66.4	72.8	*
Tue 15/11/2022 07:00	62.7	53.7	66.4	76.9	*
Tue 15/11/2022 07:15	62.6	53.3	67.0	74.5	*
Tue 15/11/2022 07:30	64.2	55.3	68.0	77.9	*
Tue 15/11/2022 07:45	65.3	55.6	68.5	74.2	*
Tue 15/11/2022 08:00	65.9	58.8	68.4	84.9	*
Tue 15/11/2022 08:15	64.8	58.0	67.3	81.6	*
Tue 15/11/2022 08:30	64.8	58.1	67.0	81.4	*
Tue 15/11/2022 08:45	65.2	57.6	67.0	86.2	*
Tue 15/11/2022 09:00	63.8	57.5	66.7	75.5	*
Tue 15/11/2022 09:15	73.6	59.4	67.3	97.5	*
Tue 15/11/2022 09:30	66.1	59.8	68.8	90.1	*
Tue 15/11/2022 09:45	69.2	61.4	71.4	77.5	*
Tue 15/11/2022 10:00	68.7	60.7	71.8	78.0	*
Tue 15/11/2022 10:15	69.0	61.2	72.9	77.5	*
Tue 15/11/2022 10:30	72.9	59.2	72.5	96.1	*
Tue 15/11/2022 10:45	65.6	59.4	68.3	85.3	*
Tue 15/11/2022 11:00	70.5	62.4	72.4	76.9	*
Tue 15/11/2022 11:15	71.7	70.2	73.1	77.7	*
Tue 15/11/2022 11:30	71.2	62.6	73.5	75.9	*
Tue 15/11/2022 11:45	64.0	55.2	66.8	75.1	*
Tue 15/11/2022 12:00	68.6	55.8	68.8	93.3	
Tue 15/11/2022 12:15	62.4	55.0	65.4	80.2	
Tue 15/11/2022 12:30	64.4	56.0	67.7	76.6	
Tue 15/11/2022 12:45	73.6	59.9	73.2	100.9	
Tue 15/11/2022 13:00	62.8	54.7	65.7	71.9	
Tue 15/11/2022 13:15	62.5	54.5	65.5	74.5	
Tue 15/11/2022 13:30	68.5	52.1	66.1	95.2	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Tue 15/11/2022 13:45	63.5	54.7	66.9	73.7	
Tue 15/11/2022 14:00	69.9	57.9	73.1	76.9	
Tue 15/11/2022 14:15	61.0	53.2	64.2	74.7	
Tue 15/11/2022 14:30	62.6	54.2	65.6	81.3	
Tue 15/11/2022 14:45	68.7	58.3	72.1	89.9	
Tue 15/11/2022 15:00	67.3	58.2	70.4	75.8	
Tue 15/11/2022 15:15	67.0	58.9	69.9	80.4	
Tue 15/11/2022 15:30	67.1	56.3	69.6	76.1	
Tue 15/11/2022 15:45	67.8	56.5	71.5	75.0	
Tue 15/11/2022 16:00	70.2	55.8	67.0	97.0	
Tue 15/11/2022 16:15	66.8	56.7	71.1	76.2	*
Tue 15/11/2022 16:30	69.2	60.7	71.4	75.7	*
Tue 15/11/2022 16:45	68.8	58.4	71.3	78.0	*
Tue 15/11/2022 17:00	77.5	63.4	82.8	87.5	*
Tue 15/11/2022 17:15	69.7	55.9	67.2	85.1	*
Tue 15/11/2022 17:30	70.0	57.1	75.3	83.1	*
Tue 15/11/2022 17:45	61.7	54.8	64.2	78.6	*
Tue 15/11/2022 18:00	65.1	54.6	64.1	91.1	*
Tue 15/11/2022 18:15	68.0	57.2	66.7	94.4	*
Tue 15/11/2022 18:30	63.1	55.7	65.1	89.8	*
Tue 15/11/2022 18:45	61.6	54.5	64.4	78.9	
Tue 15/11/2022 19:00	62.4	54.0	65.4	81.1	
Tue 15/11/2022 19:15	62.8	54.5	66.0	72.7	
Tue 15/11/2022 19:30	63.9	54.6	66.5	83.5	
Tue 15/11/2022 19:45	62.5	52.4	65.9	71.9	
Tue 15/11/2022 20:00	62.3	52.4	65.7	76.0	
Tue 15/11/2022 20:15	62.1	51.8	65.4	76.9	
Tue 15/11/2022 20:30	62.1	51.0	65.6	71.3	
Tue 15/11/2022 20:45	62.3	50.5	65.9	78.2	
Tue 15/11/2022 21:00	62.7	52.5	65.4	86.9	
Tue 15/11/2022 21:15	61.2	49.4	65.2	70.4	
Tue 15/11/2022 21:30	61.8	49.3	65.7	75.7	



Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Tue 15/11/2022 21:45	61.4	48.1	65.4	86.1	
Tue 15/11/2022 22:00	60.0	46.5	64.1	71.7	
Tue 15/11/2022 22:15	61.0	47.4	65.3	73.6	
Tue 15/11/2022 22:30	59.8	46.3	64.1	73.6	
Tue 15/11/2022 22:45	62.4	48.0	64.9	92.5	
Tue 15/11/2022 23:00	61.1	47.7	64.8	77.8	
Tue 15/11/2022 23:15	58.5	44.4	63.2	72.9	
Tue 15/11/2022 23:30	57.0	41.9	61.6	71.5	
Tue 15/11/2022 23:45	58.3	43.3	63.0	76.3	
Wed 16/11/2022 00:00	62.3	44.7	64.5	84.0	
Wed 16/11/2022 00:15	57.8	44.0	62.3	71.8	
Wed 16/11/2022 00:30	57.9	43.6	62.1	73.3	
Wed 16/11/2022 00:45	56.1	42.9	60.2	71.8	
Wed 16/11/2022 01:00	55.5	40.2	60.3	70.3	
Wed 16/11/2022 01:15	58.0	42.6	62.4	75.4	
Wed 16/11/2022 01:30	54.8	41.4	59.4	68.9	
Wed 16/11/2022 01:45	52.3	39.9	54.7	68.8	
Wed 16/11/2022 02:00	53.8	40.2	56.4	69.9	
Wed 16/11/2022 02:15	53.7	39.5	55.9	71.4	
Wed 16/11/2022 02:30	50.2	38.4	45.5	71.8	
Wed 16/11/2022 02:45	51.0	39.5	51.1	71.4	
Wed 16/11/2022 03:00	55.3	38.3	59.5	66.7	
Wed 16/11/2022 03:15	61.2	41.4	62.2	82.4	
Wed 16/11/2022 03:30	52.3	38.8	55.9	71.5	
Wed 16/11/2022 03:45	48.2	38.3	46.0	68.3	
Wed 16/11/2022 04:00	49.2	37.9	51.3	68.6	
Wed 16/11/2022 04:15	49.4	38.6	51.2	66.7	
Wed 16/11/2022 04:30	53.3	38.5	55.1	71.9	
Wed 16/11/2022 04:45	49.8	37.1	49.9	68.0	
Wed 16/11/2022 05:00	50.9	38.5	51.8	67.5	
Wed 16/11/2022 05:15	51.8	39.0	55.7	69.9	
Wed 16/11/2022 05:30	58.5	41.3	60.1	77.8	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Wed 16/11/2022 05:45	54.4	41.1	58.5	71.2	
Wed 16/11/2022 06:00	55.8	41.2	59.4	77.3	
Wed 16/11/2022 06:15	55.0	42.2	59.8	69.2	
Wed 16/11/2022 06:30	59.8	45.2	63.8	80.3	
Wed 16/11/2022 06:45	58.4	45.8	63.3	71.0	
Wed 16/11/2022 07:00	57.0	44.5	61.6	72.9	
Wed 16/11/2022 07:15	61.9	47.3	65.2	77.8	
Wed 16/11/2022 07:30	61.4	48.6	64.7	77.1	
Wed 16/11/2022 07:45	62.2	54.5	65.4	72.4	
Wed 16/11/2022 08:00	62.0	53.0	65.1	71.2	
Wed 16/11/2022 08:15	62.4	51.8	65.7	74.0	
Wed 16/11/2022 08:30	62.7	55.1	65.8	75.2	
Wed 16/11/2022 08:45	62.5	56.0	65.4	77.0	
Wed 16/11/2022 09:00	62.9	55.3	65.6	76.4	
Wed 16/11/2022 09:15	62.5	55.5	65.4	81.8	
Wed 16/11/2022 09:30	62.2	54.1	65.1	79.7	
Wed 16/11/2022 09:45	61.8	55.2	64.5	74.1	
Wed 16/11/2022 10:00	61.0	54.1	63.7	79.7	
Wed 16/11/2022 10:15	61.0	52.8	63.9	72.5	
Wed 16/11/2022 10:30	68.3	64.7	70.0	89.7	
Wed 16/11/2022 10:45	71.9	67.8	73.7	86.1	
Wed 16/11/2022 11:00	75.0	68.7	74.4	102.4	
Wed 16/11/2022 11:15	69.5	60.6	71.3	88.6	
Wed 16/11/2022 11:30	71.3	66.1	73.3	87.4	
Wed 16/11/2022 11:45	68.0	60.0	70.6	85.5	
Wed 16/11/2022 12:00	63.0	52.7	64.7	88.7	
Wed 16/11/2022 12:15	64.7	55.8	68.5	75.3	
Wed 16/11/2022 12:30	69.0	62.1	71.6	77.2	
Wed 16/11/2022 12:45	65.3	58.2	68.9	79.3	
Wed 16/11/2022 13:00	66.4	57.8	69.8	73.7	
Wed 16/11/2022 13:15	66.3	57.2	69.9	79.8	
Wed 16/11/2022 13:30	68.5	63.4	70.1	74.5	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Wed 16/11/2022 13:45	68.9	61.0	70.9	84.5	
Wed 16/11/2022 14:00	68.0	59.9	71.6	75.5	
Wed 16/11/2022 14:15	65.3	60.0	67.8	79.6	
Wed 16/11/2022 14:30	68.8	62.4	71.4	81.3	
Wed 16/11/2022 14:45	66.5	59.9	69.3	78.3	
Wed 16/11/2022 15:00	66.6	58.1	70.1	76.9	
Wed 16/11/2022 15:15	66.8	58.9	69.7	86.6	
Wed 16/11/2022 15:30	66.3	57.0	70.0	83.3	
Wed 16/11/2022 15:45	60.3	52.9	63.4	70.3	
Wed 16/11/2022 16:00	62.0	51.6	64.6	77.9	
Wed 16/11/2022 16:15	65.4	55.0	66.5	92.7	
Wed 16/11/2022 16:30	70.1	59.6	72.2	87.5	
Wed 16/11/2022 16:45	68.8	60.2	72.5	78.4	
Wed 16/11/2022 17:00	60.9	54.5	63.7	72.4	
Wed 16/11/2022 17:15	59.9	53.0	62.9	76.7	
Wed 16/11/2022 17:30	59.8	53.2	63.1	71.5	
Wed 16/11/2022 17:45	60.8	53.0	63.7	78.4	
Wed 16/11/2022 18:00	62.5	55.1	63.5	87.9	
Wed 16/11/2022 18:15	65.3	58.2	69.2	75.3	
Wed 16/11/2022 18:30	64.8	58.1	67.9	78.2	*
Wed 16/11/2022 18:45	66.7	54.5	69.2	87.9	*
Wed 16/11/2022 19:00	63.5	55.9	64.9	86.1	*
Wed 16/11/2022 19:15	70.9	54.5	65.4	99.4	*
Wed 16/11/2022 19:30	64.9	57.1	66.9	86.5	*
Wed 16/11/2022 19:45	64.5	57.7	66.6	84.6	*
Wed 16/11/2022 20:00	63.9	57.0	66.8	75.9	*
Wed 16/11/2022 20:15	64.6	54.6	67.4	73.3	*
Wed 16/11/2022 20:30	63.2	51.3	66.6	73.2	*
Wed 16/11/2022 20:45	67.4	55.2	67.6	89.4	*
Wed 16/11/2022 21:00	69.3	53.5	67.2	95.5	*
Wed 16/11/2022 21:15	73.3	54.1	68.4	98.3	*
Wed 16/11/2022 21:30	62.6	52.4	66.4	72.3	*

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Wed 16/11/2022 21:45	63.5	54.3	66.0	87.7	*
Wed 16/11/2022 22:00	64.2	52.1	67.6	87.7	*
Wed 16/11/2022 22:15	63.0	53.1	66.7	74.0	*
Wed 16/11/2022 22:30	60.6	48.9	64.9	71.5	*
Wed 16/11/2022 22:45	63.2	49.2	66.3	86.8	*
Wed 16/11/2022 23:00	61.4	49.1	65.6	71.9	*
Wed 16/11/2022 23:15	61.2	45.9	65.9	75.9	*
Wed 16/11/2022 23:30	59.2	44.0	64.1	74.0	*
Wed 16/11/2022 23:45	59.0	45.0	63.8	72.4	*
Thu 17/11/2022 00:00	59.6	45.6	64.2	72.4	*
Thu 17/11/2022 00:15	58.7	44.1	63.4	72.1	*
Thu 17/11/2022 00:30	57.4	45.8	62.1	72.1	*
Thu 17/11/2022 00:45	60.4	50.1	64.0	79.8	*
Thu 17/11/2022 01:00	58.5	45.1	62.7	72.2	*
Thu 17/11/2022 01:15	57.6	46.2	62.3	72.1	*
Thu 17/11/2022 01:30	58.2	45.1	62.2	73.5	*
Thu 17/11/2022 01:45	56.8	45.0	60.0	77.4	*
Thu 17/11/2022 02:00	58.3	44.0	62.3	75.4	*
Thu 17/11/2022 02:15	57.5	43.6	61.9	72.9	*
Thu 17/11/2022 02:30	56.2	44.9	58.9	73.9	*
Thu 17/11/2022 02:45	53.3	40.8	54.2	71.8	*
Thu 17/11/2022 03:00	57.0	40.8	61.9	71.3	*
Thu 17/11/2022 03:15	54.9	39.6	58.0	71.2	*
Thu 17/11/2022 03:30	53.2	42.4	53.4	71.3	*
Thu 17/11/2022 03:45	53.4	41.3	56.8	70.0	*
Thu 17/11/2022 04:00	53.6	41.3	55.6	71.1	*
Thu 17/11/2022 04:15	60.6	42.8	65.5	77.7	*
Thu 17/11/2022 04:30	59.5	41.1	62.0	79.2	*
Thu 17/11/2022 04:45	55.8	40.8	58.1	73.8	*
Thu 17/11/2022 05:00	55.2	40.1	57.6	72.7	*
Thu 17/11/2022 05:15	56.5	41.4	59.5	72.2	*
Thu 17/11/2022 05:30	55.8	41.7	59.7	72.9	*

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Thu 17/11/2022 05:45	57.7	42.2	62.2	76.4	*
Thu 17/11/2022 06:00	58.0	43.4	62.4	72.0	*
Thu 17/11/2022 06:15	59.8	42.7	64.1	82.3	*
Thu 17/11/2022 06:30	61.2	47.8	65.6	72.7	*
Thu 17/11/2022 06:45	60.2	44.9	65.4	71.3	
Thu 17/11/2022 07:00	60.8	45.5	65.6	73.2	
Thu 17/11/2022 07:15	64.0	48.9	67.2	79.1	
Thu 17/11/2022 07:30	64.2	48.6	66.8	88.9	
Thu 17/11/2022 07:45	65.2	54.9	67.7	82.1	
Thu 17/11/2022 08:00	64.1	53.3	67.1	76.2	
Thu 17/11/2022 08:15	64.2	53.4	67.4	72.5	
Thu 17/11/2022 08:30	64.9	55.6	67.5	86.0	
Thu 17/11/2022 08:45	64.8	59.5	67.2	87.0	
Thu 17/11/2022 09:00	64.6	57.2	67.2	78.8	
Thu 17/11/2022 09:15	64.3	56.0	66.9	80.4	
Thu 17/11/2022 09:30	63.5	56.5	66.4	76.8	
Thu 17/11/2022 09:45	64.0	57.2	66.5	81.4	
Thu 17/11/2022 10:00	68.9	56.7	68.7	96.8	
Thu 17/11/2022 10:15	74.4	55.5	67.0	100.6	
Thu 17/11/2022 10:30	64.4	53.4	67.8	79.3	
Thu 17/11/2022 10:45	71.7	59.7	70.6	97.9	
Thu 17/11/2022 11:00	70.9	69.3	72.3	77.5	
Thu 17/11/2022 11:15	67.0	56.1	70.3	85.7	
Thu 17/11/2022 11:30	69.3	61.2	72.9	77.4	
Thu 17/11/2022 11:45	69.8	57.5	72.9	80.6	
Thu 17/11/2022 12:00	69.3	58.8	72.3	83.0	
Thu 17/11/2022 12:15	66.3	55.6	70.7	85.5	
Thu 17/11/2022 12:30	68.6	57.1	71.7	90.6	
Thu 17/11/2022 12:45	69.7	59.5	70.5	96.0	
Thu 17/11/2022 13:00	66.7	55.7	70.9	78.3	
Thu 17/11/2022 13:15	68.9	61.4	71.6	76.7	
Thu 17/11/2022 13:30	67.2	56.5	71.1	92.4	

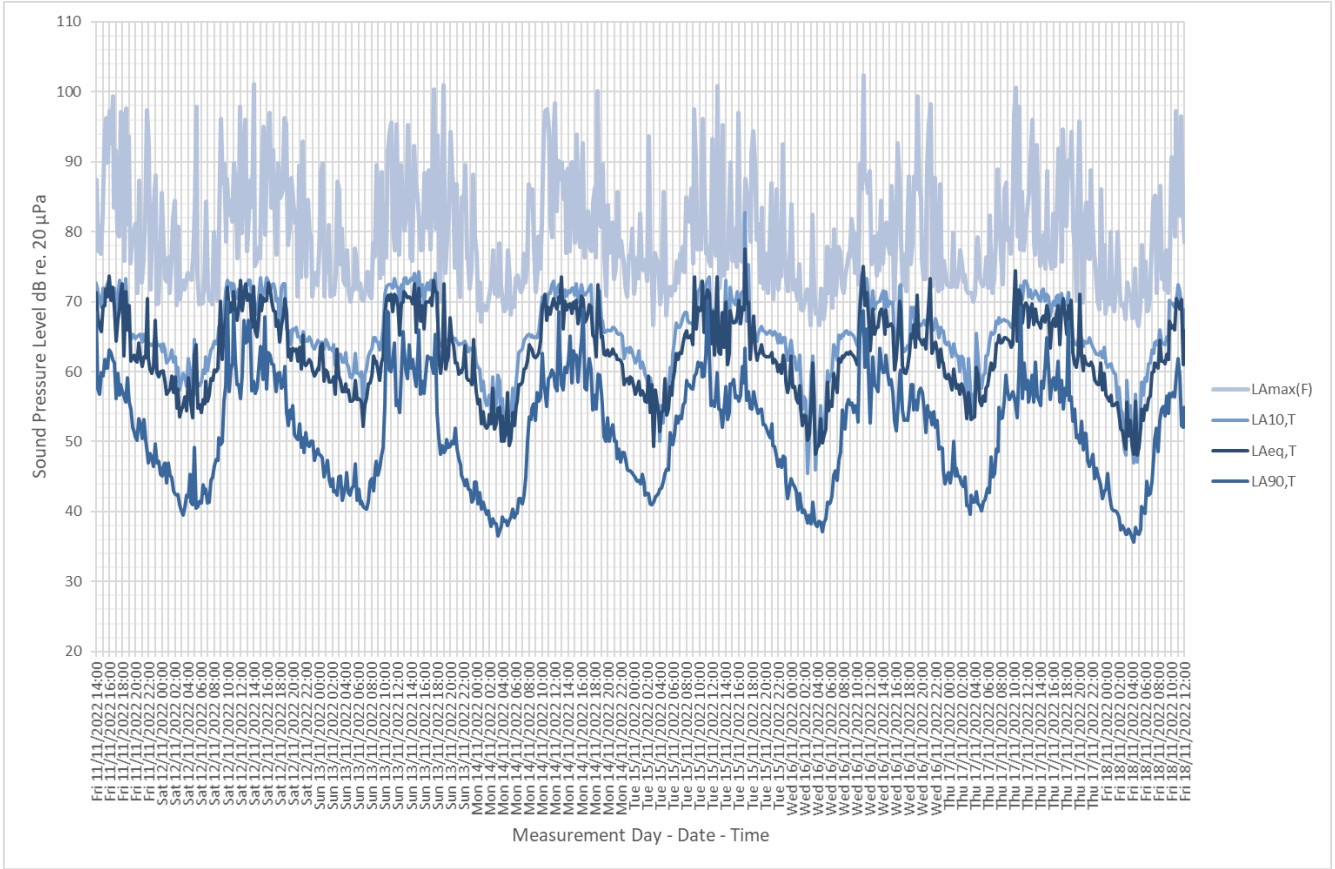
Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Thu 17/11/2022 13:45	66.8	55.9	70.3	81.5	
Thu 17/11/2022 14:00	66.2	55.2	70.1	75.1	
Thu 17/11/2022 14:15	67.5	58.6	71.4	76.4	
Thu 17/11/2022 14:30	68.0	57.6	71.8	79.6	
Thu 17/11/2022 14:45	67.1	60.6	70.1	74.7	
Thu 17/11/2022 15:00	69.4	64.9	71.1	88.7	
Thu 17/11/2022 15:15	68.3	60.6	70.7	76.8	
Thu 17/11/2022 15:30	63.4	56.0	68.0	76.3	
Thu 17/11/2022 15:45	66.9	58.6	69.5	74.8	
Thu 17/11/2022 16:00	67.6	59.1	70.1	82.6	
Thu 17/11/2022 16:15	66.5	57.4	69.5	75.1	
Thu 17/11/2022 16:30	68.2	58.3	70.7	82.3	
Thu 17/11/2022 16:45	69.5	61.5	71.0	91.9	
Thu 17/11/2022 17:00	63.9	55.6	67.7	87.9	
Thu 17/11/2022 17:15	68.8	58.8	71.2	75.7	
Thu 17/11/2022 17:30	70.5	54.6	69.5	94.6	
Thu 17/11/2022 17:45	68.0	57.6	70.0	85.5	
Thu 17/11/2022 18:00	65.4	56.6	69.6	80.8	
Thu 17/11/2022 18:15	69.5	67.2	71.3	90.1	
Thu 17/11/2022 18:30	66.6	55.9	69.7	88.1	
Thu 17/11/2022 18:45	70.2	56.4	69.2	94.2	
Thu 17/11/2022 19:00	62.8	52.9	64.8	80.4	
Thu 17/11/2022 19:15	61.1	54.6	64.0	77.1	
Thu 17/11/2022 19:30	60.6	50.5	63.9	70.2	
Thu 17/11/2022 19:45	62.4	50.9	64.4	84.8	
Thu 17/11/2022 20:00	71.1	49.8	65.3	95.8	
Thu 17/11/2022 20:15	62.3	52.9	64.7	80.8	
Thu 17/11/2022 20:30	60.1	48.8	63.6	69.9	
Thu 17/11/2022 20:45	62.2	51.2	64.4	81.5	
Thu 17/11/2022 21:00	61.3	51.2	64.1	84.2	
Thu 17/11/2022 21:15	61.0	47.3	64.1	76.3	
Thu 17/11/2022 21:30	60.9	46.5	64.8	76.1	

Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Thu 17/11/2022 21:45	61.4	47.2	64.1	88.8	
Thu 17/11/2022 22:00	60.8	48.2	63.5	81.6	
Thu 17/11/2022 22:15	58.9	44.7	63.0	76.8	
Thu 17/11/2022 22:30	58.4	46.2	62.5	74.1	
Thu 17/11/2022 22:45	58.2	45.1	62.5	70.1	
Thu 17/11/2022 23:00	58.1	44.7	62.4	68.9	
Thu 17/11/2022 23:15	61.2	43.7	62.9	86.0	
Thu 17/11/2022 23:30	57.4	41.9	62.0	70.5	
Thu 17/11/2022 23:45	59.8	42.8	63.5	78.1	
Fri 18/11/2022 00:00	56.7	43.2	61.3	68.3	
Fri 18/11/2022 00:15	56.3	45.4	60.6	70.7	
Fri 18/11/2022 00:30	55.8	42.5	61.0	69.6	
Fri 18/11/2022 00:45	56.7	40.9	61.1	79.9	
Fri 18/11/2022 01:00	55.2	40.3	60.5	69.7	
Fri 18/11/2022 01:15	55.1	40.1	59.9	68.7	
Fri 18/11/2022 01:30	55.4	40.1	59.6	72.0	
Fri 18/11/2022 01:45	55.7	39.9	56.2	79.9	
Fri 18/11/2022 02:00	53.9	39.2	57.8	72.8	
Fri 18/11/2022 02:15	51.8	37.4	54.6	70.3	
Fri 18/11/2022 02:30	51.5	38.0	54.0	69.4	
Fri 18/11/2022 02:45	49.8	37.5	49.0	69.6	
Fri 18/11/2022 03:00	49.0	36.7	48.1	67.5	
Fri 18/11/2022 03:15	55.6	36.8	58.8	72.8	
Fri 18/11/2022 03:30	50.8	37.5	54.1	71.3	
Fri 18/11/2022 03:45	53.1	37.0	55.1	71.0	
Fri 18/11/2022 04:00	49.5	36.3	49.5	67.7	
Fri 18/11/2022 04:15	48.2	35.6	46.9	69.4	
Fri 18/11/2022 04:30	55.8	37.8	56.8	74.8	
Fri 18/11/2022 04:45	48.1	36.9	47.1	67.7	
Fri 18/11/2022 05:00	49.2	36.7	50.0	66.5	
Fri 18/11/2022 05:15	52.1	37.5	55.4	69.3	
Fri 18/11/2022 05:30	54.7	40.7	58.5	78.1	



Date and Time	$L_{Aeq,15min}$	$L_{A90,15min}$	$L_{A10,15min}$	$L_{Amax(F)}$	Weather Excl.
Fri 18/11/2022 05:45	53.1	40.1	56.7	70.8	
Fri 18/11/2022 06:00	55.1	39.8	59.1	75.7	
Fri 18/11/2022 06:15	54.5	44.4	58.6	68.7	
Fri 18/11/2022 06:30	56.2	42.4	61.1	68.8	
Fri 18/11/2022 06:45	56.5	42.6	61.3	70.5	
Fri 18/11/2022 07:00	59.9	44.3	63.1	77.4	
Fri 18/11/2022 07:15	60.0	48.0	62.6	84.4	
Fri 18/11/2022 07:30	61.2	50.3	64.1	85.2	
Fri 18/11/2022 07:45	61.0	51.9	64.4	71.3	
Fri 18/11/2022 08:00	60.5	48.6	63.7	80.7	
Fri 18/11/2022 08:15	64.5	53.1	66.0	86.6	
Fri 18/11/2022 08:30	61.5	54.6	64.2	73.3	
Fri 18/11/2022 08:45	61.5	55.0	64.0	76.8	
Fri 18/11/2022 09:00	61.1	53.7	63.9	71.8	
Fri 18/11/2022 09:15	62.5	56.5	65.0	77.3	
Fri 18/11/2022 09:30	61.7	54.0	65.0	71.2	
Fri 18/11/2022 09:45	67.2	56.9	70.2	75.8	
Fri 18/11/2022 10:00	66.2	56.4	69.7	90.6	
Fri 18/11/2022 10:15	66.6	57.0	69.7	88.5	
Fri 18/11/2022 10:30	66.0	56.4	69.2	79.3	
Fri 18/11/2022 10:45	70.5	59.6	70.1	97.2	
Fri 18/11/2022 11:00	69.8	61.9	72.4	85.8	
Fri 18/11/2022 11:15	68.9	59.4	71.5	82.3	
Fri 18/11/2022 11:30	70.3	52.3	69.2	96.5	
Fri 18/11/2022 11:45	61.0	52.1	63.9	83.0	
Fri 18/11/2022 12:00	65.8	54.9	68.8	78.5	

Figure 03-01  
Time History Graph – Location 1, dB



**Figure 03-02**  
**Background Sound Level Histogram – Day, Evening and Night – Location 1, Weather Filtered dB**

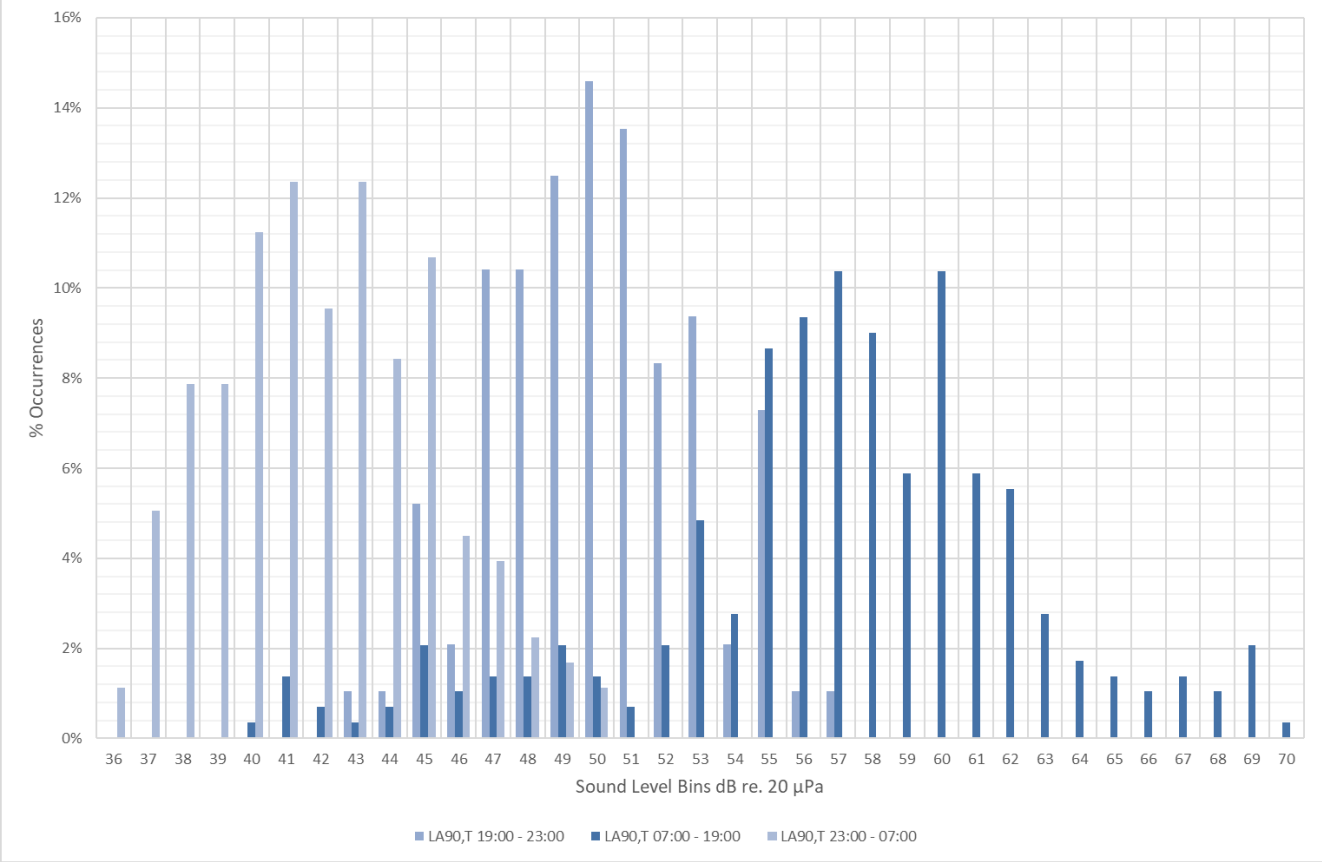
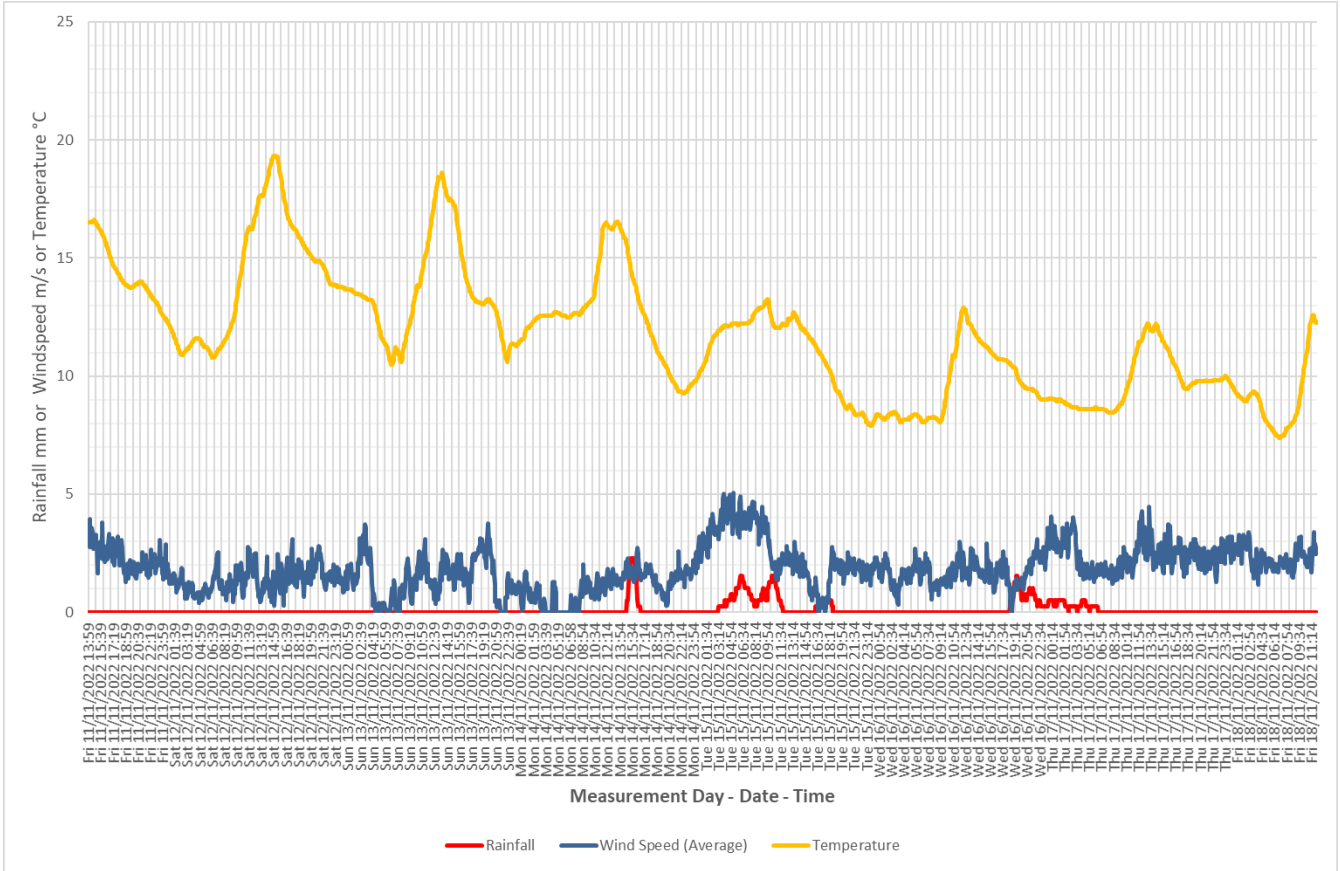


Figure 03-03  
Weather Time History Graph – Source<sup>1</sup>



<sup>1</sup> <https://www.wunderground.com/dashboard/pws/IGLOUCES6/>

## EUROPEAN OFFICES

### United Kingdom

