Design Report

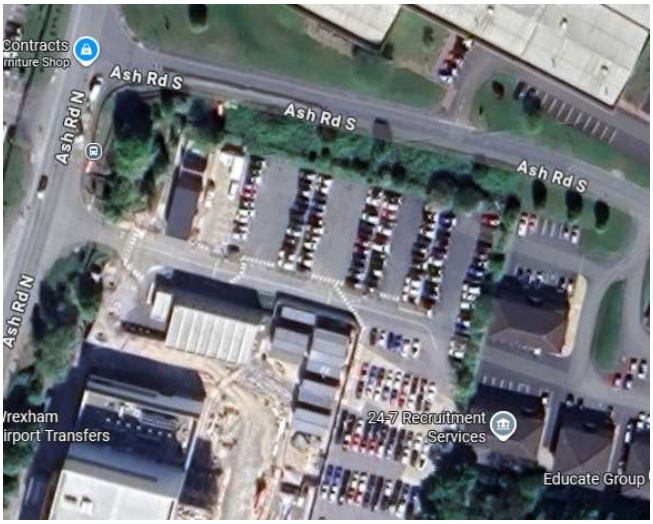
Multi-Storey Car Park Ipsen
Project Name: **Pharmaceuticals Wrexham**

Doc No:	L6723-XX-RP-ME-5002	**Project No:**	L6723
Date:	Tuesday, 04 August 2026	**Revision:**	P01

Title: Planning Report

1.0 Introduction

This Technical Note provides a summary of the Mechanical and Electrical services proposed for the new Multi-Storey Car Park at the Ipsen Pharmaceutical Site Wrexham.





2.0 Building Regulations Compliance

For the car park, there is currently no thermal line and no fixed heating or cooling so they are exempt from SBEM/EPC calculations. Part L (SBEMs) only deal with occupied, conditioned buildings which a car park does not conform to by definition – if any offices or communal areas were to feature, an SBEM assessment would be required but for this specific area only.

A basic part L assessment would be completed to ensure a compliant lighting scheme in relation to the efficacies/efficiencies of the lighting.

3.0 Mechanical

Dry Riser

It is assumed that a dry riser/risers will be required for fire fighting purposes. Fire officer to confirm the requirements.

4.0 Electrical

Low Voltage Power

It is proposed to bring a new 3 phase power supply to the proposed multi storey car via underground ducts from the from a new substation located on site.

The 3-phase power supply will terminate in a suitable TP&N MCCB Board with will be located within an electrical riser. Complete with incoming isolator, surge protection & meter for the out-going supplies.
The MCCB board will feed the following services.

- Lighting & Power distribution board.
- Fire alarm panel.
- Barriers (if required).
- Lifts.

A split load lighting and power distribution board located in an electrical riser will feed the following services

- Lighting
- Cleaners sockets within the stair cores
- Illuminated signage (if required)
- Car counting system (if required)
- CCTV Equipment (if required)
- Access control (if required)

The new TP&N distribution board shall be fitted with the following as a minimum.

- 125A isolating switch
- Surge protection
- RCBO protection to socket circuits

20% spare capacity to be allowed for.



Typical Three Phase Distribution Board

For pricing a Triple Pole 125A isolator shall be allowed for the supply to the new DB.

The cable feeding each distribution board shall be checked for this load. For pricing an 30m of 4C 50mm^2 XLPE/LSF/SWA/LSF plus a separate 25mm^2 earth CPC cable shall be allowed for the supply from the MCCB Board.

Earthing and Bonding shall be provided in accordance with the latest version of BS 7671.

Circuits for sockets and fixed equipment shall utilise RCBOs. Dependant on the finish to the new internal layout it is recommended that Metal Clad accessories with galvanised conduit and trunking be used in stair cores.

Containment

New galvanised steel cable trunking shall be provided for power and lighting circuits. Within the car park using galvanised conduit to run to individual luminaires

Fire alarm cables to be fixed to medium duty galvanised trays within the stair cores.

Drops to low level electrical accessories shall be provided in galvanised steel conduit with adaptable boxes.

All new containment sizes are to be verified by the electrical subcontractor.

All containment that passes through a fire wall shall be provided with a suitably rated fire barrier. The fire stopping is to be provided by the Main Contractor.

Small Power and Data

Lockable cleaners sockets to be allowed for in the stair core 1 per level in a suitable location.
Power supplies either isolator or fused connection units for the following.

- Access control (if required)

- Car counting system and signage
- Illuminated signage (if required)

Accessories shall be surface mounted metalclad via conduit from the metal trunking system.

A data cabinet to be allowed for in the ground floor electrical riser/cupboard with data points for the access control/CCTV wired back to the data cabinet.
The data cabinet to be connected to the existing site network by a fibre. Ipsen Pharmaceuticals to confirm where the fibre can be terminated on the site network.

Power to the lifts are to come from the main MCCB panel and terminated in a suitably rated isolator as the lift specialists requirements. It is assumed that the emergency call system on the lifts will be via GSM sim card installed as part of the lift installation.

Power supplies to EV charging points to be wired from feeder pillars located in locations to be determined.

See drawing No L6723-FUT-XX-XX-63002 for EV Charger Locations

The EV chargers are to be fed via underground ducts and protected by RCBO protective devices fitted to the distribution boards. EV chargers to be located/protected in positions where they cannot be damaged by vehicles.

Lighting, General & Emergency & Controls

New energy efficient LED IP rated anti tamper baton type luminaires complete with 3hr integral emergency battery (as required) to be surface mounted to the soffit to achieve the required lighting levels and uniformity.

New energy efficient led wall mounted bulkhead luminaires to be installed to the stair cores and lobbies complete with 3hr integral emergency batteries as required.

Direction 3hr emergency battery backed exit signs showing the escape routes to be installed. Emergency bulkhead fittings to be installed on all final exits.

Lighting to the top level of the car park via 4m flange mounted lighting columns complete with energy efficient dark sky suitable luminaires. Refer to data sheet for road and car park lighting as Kingfisher Viva City Led luminaire. The lighting columns to be wired from below.

Refer to drawings listed for calculated lighting levels.

L2723-FUT-XX-XX-E-63001
L2723-FUT-XX-XX-E-63002

The lighting columns are to be photocell controlled complete with time clock override.
Luminaires to the lower floors are to be controlled via microwave detectors to ensure the lighting is only switched on when required.

The lighting design to comply with the below requirements for mitigation steps required from the ecology reports.

> "To safeguard suitable bat foraging and commuting habitat, it is recommended that any lighting scheme be designed in accordance with the latest guidance, Bats and Artificial Lighting at Night

(Institute of Lighting Professionals, 2023). A sympathetic lighting regime should be implemented, keeping light levels to a minimum, directing lighting downwards, and avoiding indirect illumination of bat corridors. Narrow spectrum light sources should be used where possible, and lighting should operate only when necessary. Construction works should avoid night-time activity to reduce the need for artificial lighting."

Lighting to be designed inline with IET Guidance Note GN08/23 Bats and Artificial Lighting at Night

Proposed lighting Levels

Space	Lux Level
Entrances/ramps	200
General car parking areas	100-150
Electrical cupboard/riser	200
Stair cores/entrance/exit	150-200
Lift lobbies	200
Roof Level	20 average

All Emergency lighting shall be selected and positioned to ensure compliance with BS 5266.

Testing of emergency lighting shall be provided via emergency test key switches located adjacent to the Supply Distribution Board.

Luminaire:



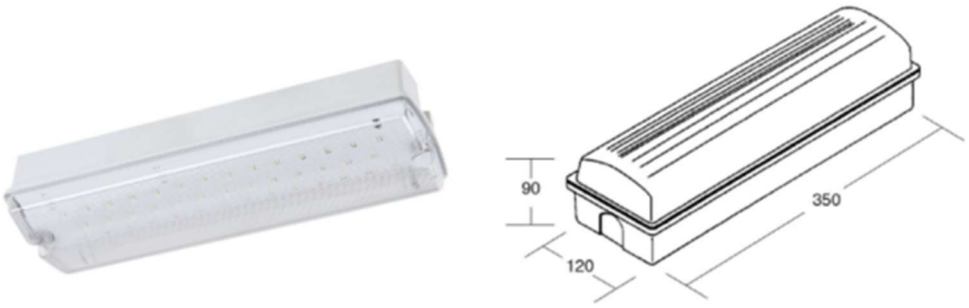
Car Park Lighting



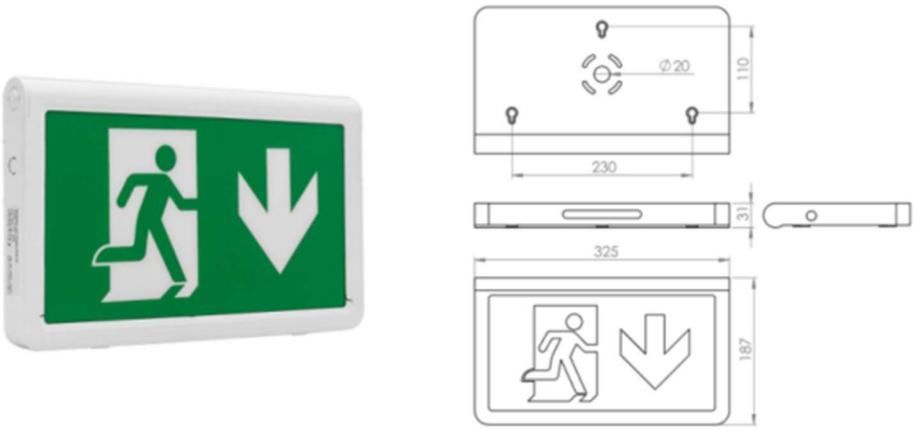
Stair/lift lobby lighting



External Entrance Lighting



Typical Emergency Bulkheads



Exit Signage

Lighting Controls

Lighting within the main car park/stair cores will be controlled via PIR and microwave detectors with key switch override located adjacent to the distribution boards.

New Lighting Controls shall be provided as follows:

- Distribution cupboards – Local Switch
- Stairs/lobbies - PIR
- Roof Level – Photocell/timeclock Override
- Road way – Photocell/timeclock override

Fire Alarm

A new fire alarm system shall be provided to comply with BS 5839-1.
A new fire alarm panel to be installed at the ground floor entrance complete with integral battery backup.
Smoke detectors to the stair cores and lift lobbies with break glasses at all final exits.
Detection to the main car park to be either via beam detection or heat tape.
The site fire alarm specialist to confirm requirements.
Fire alarm interfaces to be installed for the lift to bring the lift to ground floor in the event of a fire alarm activation.
Fire alarm interfaces to be installed to all access control doors (if required) to release the doors in the event of fire alarm activation.
The fire alarm system is to be linked back to the site network.

Security and Access Control

CCTV coverage to the new entrance to the site to view any vehicle/pedestrians entering site.
Car park entrances and lobbies to have CCTV coverage.
Entrance and exits to the car park to have CCTV coverage.

New site entrance to be fitted with key fob reader linked to a barrier to allow access.

The access control strategy to be developed during stage 4 with the client and clients preferred specialist.

Lightning Protection

A new Lightning Protection System shall be provided in accordance with BS 62305. A verified LPS specialist shall complete a Risk Assessment to determine the level of coverage for the building.
The lighting columns on the top level are to be connected to the lightning protection system.

Surge protection devices shall be fitted from distribution boards feeding external equipment i.e. lighting columns.

Car Counting/Illuminated signage

A car counting system is to be installed with sensors located on the entrance and exit of the car park.
Additional sensors can be installed on ramps leading up and down.
Signage displaying the number of free spaces either as a total or per floor installed at the entrance and at the ramps to show available spaces per level.

5.0 Renewables

Photovoltaic panels are to be mounted on the roof of each stair core and wired down the riser to the main MCCB board located within the riser.
The system is to be designed to allow the installation of battery storage at a later date if required.
A maximum of 22 No 400W Panels can be installed on the roof of the 2 No stair cores. This would give a maximum 9.68kW/H peak.

6.0 Summary

This report looks at the M&E services required for the car park to support the planning submission but also give a full overview of the M&E services.

The external lighting has been selected with dark sky optics to protect the surrounding areas from light pollution when the car park is in use. The lighting at roof level will be column mounted fitting mounted at a height of 3m. The lighting columns to be hinged to allow safe maintenance of the luminaires.

7.0 Next Steps

This feasibility report covers the high level services strategy to be adopted for the new Ipsen lane car park. During the next phase of design, the MEP services should be developed further into a suitable level of design and detail to allow for planning applications to be made and also allow for initial costing exercises to be also completed.

Design support would be required for developing the mechanical, electrical and public health systems for the new car park.

During this next phase of design input should be obtained from the Client and end users to ensure all employers requirements are being met. Statutory applications should be made for any new incoming utility connections including power and comms if not available from the existing site.

Design of the services for the next phase shall be completed in line with BSRIA BG/6.