

Safe Battery Storage

May 2023



Built to the highest level of storage safety



Compliant with all regulations



Build-to-suit facilities

GLP 



Safe Battery Storage

Facilities built to the highest level of storage safety

Safe battery storage

Demand for electric vehicles is changing the automotive industry and as a consequence, there is accelerating global demand for the supply and safe storage of lithium-ion batteries.

But what if you're not ready? What if your facilities don't incorporate the required safety features and are not equipped to handle the risks associated with storing these batteries at scale? You need a solution that will protect your business as well as the environment that is fully compliant with safety and environmental requirements in addition to building and planning regulations.

Every battery storage facility that GLP designs and builds is unique to the requirements of the customer and is fully compliant with environmental and safety regulations, including insurance company requirements and fire safety standards.

We understand the complexities and unique challenges that these facilities require as well as the storage guidelines that battery manufacturers provide. We integrate all of these requirements into our bespoke design solution ensuring that each facility we build is delivered to the highest standard and is specifically unique to the customer requirements.



Build-to-suit
facilities



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GLP real-life safety

Lithium-ion batteries are heavy, expensive and are sensitive to both temperature and humidity. Batteries need to be stored in a dedicated environment that's purpose-built for the task.

In the United Nations transport regulations, batteries are assigned to a Dangerous Goods Class 9. Early coordination with the local statutory authorities is essential in ensuring that all permitting requirements are met to ensure compliance for safe storage.

Lithium-ion batteries are chemically reactive and can leak or explode when they're not properly stored and transported. That's why it's important to have the right fire safety equipment on hand and to design safe buildings specifically for this function.

A comprehensive approach to fire protection is required and in addition to automatic extinguishing and sprinkling systems, structural and organisational measures must be in place within each building.

GLP is a global leader in logistics real estate with a long heritage and proven track record as a developer, operator and asset owner with one of the largest logistics footprints in the world. We understand how important it is to design safe and secure buildings, specifically to meet these demands and have experience in delivering these facilities across the world.



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Technical highlights

Every building we design and build for battery storage is dedicated to each customer and is unique for every location. We use non-combustible building materials in the building shell to ensure that the buildings are as safe as possible.

We install specialised smoke detection and fire alarms within the warehouse and the storage areas. 24/7 CCTV monitoring ensures that racking is monitored every day and every night. Fire partitions are installed within storage areas according to the building user's requirements and those of their insurance company. Fire walls are rated for up to 3-hour resistance and fire extinguishing water retention is provided with foils installed under the floor slab.

Dedicated air monitoring systems are installed for climate and measuring pollution contaminates, with each building heated and ventilated by air handling units securing controlled temperature between 18 – 30°C.

Due to the heavy weight of batteries, warehouse floors are strengthened to increase loading capability and specialised expansion joints are added to the finished floor slabs and around doorways. Loading doors are optimised for space as well as for safe loading, ensuring that logistics operations are carried out safely and smoothly.

In the event of leakage from batteries, or the activation of fire suppression systems, it is important that adequate environmental protection systems are in place to prevent potentially harmful liquids from entering drainage systems or water courses. GLP design the building and drainage systems accordingly to prevent any environmental incidents from occurring.

We apply rigorous testing methodology to all our materials that are specified and our onsite safety standards are second to none.



Compliant with all regulations



Smoke detection & fire alarms



Temperature sensors



24/7 CCTV monitoring



Fire partitions & composite panels



Air monitoring systems



Strengthened warehouse floors



Increased load capacity to roof



Non-combustible building materials



Sprinklered racks



Shut-off valve to drainage system



Provision for fire water retention



Increase in fire water supply



Built on one retention basin

Technical solution highlights:



Safe Battery Storage — case study

Facilities built to the highest level of storage safety

Elflein E-Mobility Logistik

Stuttgart, Germany

At the Stuttgart-Süd I site, Elflein carries out the logistics handling of lithium-ion batteries, their components and the operation of a test laboratory for a major German car manufacturer. Approximately 50 employees work on site.

The immediate availability of the logistics warehouse, proximity to the automotive production lines and the modern high-performance sprinkler system were the decisive reasons for leasing the building.

Technical solutions deployed:



Smoke detection & fire alarms



Sprinklered racks



Shut-off valve to drainage system



Water container

Facts

Development
Speculative

Location
South of Stuttgart
Germany

Warehouse
28,089 sq m

Offices
561 sq m

Delivery time
May 2019

Customer
Elflein E-Mobility Logistik



Clarios

GLP Mladá Boleslav Park, Czech Republic

Clarios is a global leader in vehicle energy storage solutions and producer of the renowned Varta brand. Clarios supplies batteries to a large number of customers around the world, including BMW, Daimler, Ford, and Renault.

In order to meet increasing demand for electric vehicles and lithium-ion batteries worldwide, Clarios required a new battery storage facility in the Czech Republic. The project is LEED v4 certified, which means it meets the highest sustainability and environmental requirements.

The building is designed according to the standard issued by FM Global insurance company, providing for the HPR (highly protected risk) level of risk protection. The facility complies with Facility Security Requirements under the Standards made by TAPA Transported Asset Protection Association, C level.

- > Use of recycled rain water in the toilets
- > Increased fire resistance of walls to contain and prevent any spread of fire
- > Flaps installed into the dock doors to prevent the leakage of contaminated fire water

Technical solutions deployed:



Smoke detection & fire alarms



Built on one retention basin



Strengthened warehouse floors



Increased load capacity to roof

Facts

Development
Build-to-suit

Location
Mladá Boleslav,
Czech Republic

Warehouse
22,115 sq m

Offices
1,318 sq m

Delivery time
February 2019

Customer
Clarios





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GLP
50 New Bond Street
London WS1 1BJ

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Contact

Trust GLP to build the battery storage facilities that you need.
Talk to one of our team today to find out more about how we build for life.

Florian Wnuck
Head of Business Development – Europe

 florian.wnuck@glp.com
 +33 6 82 57 65 24

Steven Alexander
European Head of Construction

 steven.alexander@glp.com
 +44 7377 325 278

Aleš Růžička
Head of Technical Development – Czech Republic & Slovakia

 ales.ruzicka@glp.com
 +420 226 291 670  +420 778 724 224

Michael Gerke
Head of Development – Germany

 michael.gerke@glp.com
 +49 69 256 129 910  +49 174 307 36 10



eu.glp.com