

## Fire and General Safety Advice Note 9: Powered Wheelchairs, Mobility Scooters and PLEVs

This fire safety advice note provides guidance on the use, storage and charging of electrically powered mobility and transportation equipment on University premises. Items discussed within this advice note include Mobility Scooters, Powered wheelchairs, and Personal Light Electric Vehicles (PLEVs).

Definitions are

### Overview Table

Not permitted inside any University buildings	Permitted inside any University buildings
Class 3 mobility scooters and PLEVs of any kind	<p>Class 2 mobility scooters – but:</p> <p>They must not be parked, stored or charged in any escape routes.</p> <p><i>What about externally parked against cladded buildings - thoughts?</i></p> <p>The use of temporary extension leads and block adaptors for charging mobility scooters is prohibited in all circumstances.</p> <p>The owners of electrically propelled devices such as Powered Wheelchairs and Mobility Scooters should ensure that the related portable chargers are periodically PAT tested in accordance with the manufacturer's instructions.</p> <p>Mobility scooters, e-bikes and LiBs must <b>only be charged</b> in approved locations which are specifically designed for this purpose.</p>
The University will accept no responsibility for any damage or loss to Class 3 Mobility Scooters and PLEVs being used in or around it's premises.	The University will accept no responsibility for any damage or loss to Powered Wheelchairs, Mobility Scooters or Libs being used, charged, parked, or stored on or around its premises.

This protocol should be reviewed in-line with any related University policy, once this becomes available.

### 1. Background

The use of battery powered mobility and general transport equipment is now part of everyday life, with most items being powered by lithium-ion batteries (LiBs). LiBs are generally considered safe,

especially when purchased from reputable sources and used in accordance with manufacturer's instructions. However, LiBs contain flammable materials which when subject to physical damage, overheating, ingress of water or incorrect charging can start a breakdown, causing the battery to issue toxic and flammable gases, with explosive force, and fires which are extremely difficult to extinguish.

Most fires occur when the equipment is being charged and typically attributed to the use of unsafe batteries and chargers. Other common causes of LiB fires relate to battery defects, battery damage and general mistreatment.

The number of incidents occurring across the UK is increasing at a concerning rate, with some Fire Services attending as much as two e-bike/scooter fires per day. As such, it has become necessary for the University to put in place clear guidance and control measures to ensure that the safety of our students, staff, visitors and premises is maintained at all times.

Not all mobility aids are powered by LiBs. However and irrespective of battery type, charging presents the highest risk for any type of battery. Furthermore, BS7671 reg 422.2 states:

*Protected escape routes - Cables or other electrical equipment shall not be installed in a protected escape route unless part of: (i) an essential fire safety or related safety system (ii) general needs lighting (iii) socket-outlets provided for cleaning or maintenance.*

The charging of any such device is not be allowed on escape routes or within protected lobbies/stairs/routes. Where students/staff need mobility aids because of mobility impairment advice should be sought from the Fire Team regarding charging within University buildings.

## **2. Mobility Scooters**

Typically, people who have disabilities or injuries, or older adults who are at increased risk of falling, choose to use mobility scooters. These devices provide several benefits, including more independence, reduced pain, and increased confidence and self-esteem.

However, in addition to the fire hazard related to LiBs (discussed above), mobility scooters can create other health & safety concerns including; potential collision hazard with other people, potential to cause damage to fire doors and other fixtures and fittings, and the potential to carry road dirt into the university environment.

**2.1 Class 2 Mobility Scooters** Class 2 mobility scooters are permitted for use by staff and students within university buildings. They have a maximum speed of 4mph. Class 2 mobility scooters do not need to be registered with the DVLA.



#### Key features of class 2 scooters:

- Small, lightweight and compact.
- Can be used indoors.
- Basic driving controls.
- Some can be dismantled or folded up to fit into a car boot.
- Shorter battery life means they travel shorter distances.

**2.2 Class 3 Mobility Scooters** Class 3 mobility scooters are larger vehicles which can be used on the roads and travel up to 8mph. Class 3 mobility scooters are not permitted inside university buildings. Class 3 mobility scooters must be registered with the DVLA.



#### Key features of class 3 scooters:

- Designed for outdoor use.
- Large and robust.
- Controls for driving on roads: indicators, lights, mirrors, etc.
- Longer battery life and tougher tyres for longer distances.
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- 3. Powered Wheelchairs** - Powered wheelchairs differ significantly from mobility scooters, as they are considered to be a 'medical aid' used for people who require more support than a manual wheelchair can provide.

These devices are typically multi-wheeled and operated by a joystick. They can also be customised to accommodate every form of disability, such as situations where the user may not be able to hold, talk, or directly control the device.



**University Position:** Every effort should be made to accommodate the use of Powered wheelchairs throughout university premises. The safe use, storage and charging of powered wheelchairs should be facilitated through the completion of an accompanying Personal Risk Assessment and/or Personal Emergency Evacuation Plan (PEEP).

The University Fire Safety team should be contacted for assistance with the completion of a PEEP and/or advice to help ensure suitable charging arrangements are in place.

#### 4. Personal Light Electric Vehicles



Personal Light Electric Vehicles (PLEVs) are typically electric vehicles with 2 to 4 wheels, powered by a battery, fuel cell, or hybrid-powered. This includes a wide range of e-scooters, e-skateboards, e-bikes, hoverboards, etc.

The two major issues associated with PLEVs are accidents and fires, both of which have more than quadrupled since 2020 following a surge in popularity of e-scooter and e-bikes in particular.

##### 4.1 Accidents

Figures published by the Department for Transport show that during 2022:

- 11 riders and one pedestrian died in collisions involving these vehicles.
- 1,446 people were injured in e-scooter crashes, including 1,106 riders, 233 pedestrians and 47 cyclists.

##### (i) e-bikes

The legal term for an e-bike is an 'electrically assisted pedal cycle' or 'EAPC.' EAPCs are not required to be registered, taxed or insured and the rider is not required to be a licence holder.

EAPCs must have pedals that can be used to propel it and have a maximum power output of 250 watts, which should not be able to propel the bike when it is travelling more than 15.5mph. Any e-bike capable of exceeding the 15.5mph or 250w limit is considered (by Law) to be a motorcycle or moped and is required to be registered, taxed, and insured. Furthermore, the rider must hold a driving licence and wear a crash helmet.

## (ii) e-scooters

Currently, electric scooters can only be used on private land with the landowner's permission. It is effectively illegal to use them on public roads, on pavements, in cycle lanes and in pedestrian-only areas.

### a. Fires

Fires sparked by faulty e-bikes and e-scooters have injured at least 190 people in the UK and killed eight, as a surge in public enthusiasm for battery-assisted travel has been matched by a quadrupling in blazes since 2020. In Greater Manchester, fires have more than quadrupled from 2020 to 2022.

Fire and electrical experts are warning users against buying batteries from less regulated online marketplaces, which may breach UK safety standards.

When these batteries and chargers fail, they do so with ferocity and because the fires develop so rapidly, the situation can quickly become incredibly serious. Therefore, extra care is advised whenever charging PLEVs.



The battery, which measured approximately 14 x 3.6in, exploded like a 'Roman candle', Patrick would recall later, with shards of metal embedding in their skin, as flames and toxic smoke instantly engulfed the room. As the blazing battery was blocking the door, the couple's only means of escape was to jump 30ft from their second-floor window (pictured: a similar electric bike fire)

**University Position:** PLEVs of any kind are not permitted to be used or charged inside any University buildings. This **also applies to charging of detachable Li Batteries** for e-bikes or e-scooters, which must **only be charged** in approved locations specifically designed for this purpose (see below).

Staff using e-bikes for commuting to/from work should make use of the cycle shelters/lockers/cycle-hub provided. **PLEVs must not be taken into any University premises.**

**University Position:** Staff are not permitted to store or charge any LiB powered transportation equipment within University premises (including detachable batteries, without first obtaining approval/authorisation in writing from the Fire Safety team).

## Summary

- Class 3 mobility scooters **are not permitted** inside any University buildings.
- Class 2 mobility scooters are **permitted** inside any University buildings.
- Class 2 mobility scooters 'when not in use' **must not** be parked or stored in any escape routes.
- PLEVs of any kind **are not permitted** inside any University premises.
- The owners of electrically propelled devices such as Powered Wheelchairs, Mobility Scooters and PLEVs should ensure that the related portable chargers are periodically PAT tested in accordance with the manufacturer's instructions.
- The use of temporary extension leads and block adaptors for charging mobility scooters should be prohibited in all circumstances.
- The University will accept no responsibility for any damage or loss to Powered Wheelchairs, Mobility Scooters and PLEVs being used, charged, parked, or stored on its premises.
- Mobility scooters, e-bikes and LiBs must **only be charged** in approved locations which are specifically designed for this purpose. Such areas should have direct access from outside, provide at least 60 minutes of fire resistance and have a dedicated electrical 'charging circuit' linked so as to be automatically isolated in the event of actuation of the automatic fire detection.

**Most University buildings do not have suitably compliant facilities for the safe charging and storage of Mobility scooters, PLEVs, or indeed PLEV Li batteries. Therefore, such items must not be charged or stored within University premises.**

