Photosensitive Epilepsy and Strobe Lighting use within Sage Gateshead

Epilepsy

This is a brief introduction to photosensitive epilepsy and why it is of concern to the Technical Department of Sage Gateshead.

Epilepsy is a neurological disorder characterised by recurrent episodes (ranging from several times a day to once in several years) of convulsive seizures, impaired consciousness, abnormal behaviour, and other disturbances produced by uncontrolled electrical discharges from nerve cells in the brain. Trauma to the head, brain tumour, chemical imbalances, and other factors may be associated with epilepsy, but in most cases the cause is unknown. \(^1\)

Although Epilepsy and its control and potential employment discrimination within the workplace is a concern within Sage Gateshead, the technical department is primarily concerned with a specific form of the condition - Photosensitive Epilepsy. Photosensitive Epilepsy means being sensitive or susceptible to flashing or flickering lights, but only when the flashes or flickers occur at a certain frequency. \(^2\)

The flickering lights in question can be anything from the flicker of a TV screen, light through trees being passed at speed in a vehicle, strongly striped or geometric patterns or, of specific concern to the Technical Department, flashing or strobe lighting. According to research published by the HSE 1 in 10,000 of the population have this type of Epilepsy; this is only 4-5% of the entire population who have Epilepsy. This can be further divided into smaller sensitivity percentages. In 1971 the results of research into this sensitivity were as follows:

- 96% were sensitive to 15-20 flickers per second (fps),
- 65% to 10 fps,
- 42% to 8 fps,
- 25% to 6 fps,
- but only 5% to 4 fps.

As a direct result of this Greater London Council banned the use of flickers over 4 fps. This is something that is controllable within Sage Gateshead.

Other Types of Epileptic Trigger within The Sage Gateshead

Lighting effects are not the only concern within Sage Gateshead. The most common trigger of Photosensitive Epilepsy is Television screens. Within the Concourse all monitors being used are LCD, which does not flicker, thus eliminating the likelihood of triggers.

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Controlling Lighting Effects

According to the publication Epilepsy at your fingertips, by Brian Chappel and Pamela Crawford, the limited information available often “leads to unnecessary restrictions being placed on people.” The use of strobe lighting, and any lighting effect that produces a flicker, can be controlled in a number of ways.

- Reducing the rate at which the light flashes, making the maximum rate at which a light can flash 4Hz will significantly reduce the likelihood of a seizure. This is the guideline published within the Event Safety Guide by the HSE. If the mirror ball is controlled by a motor that rotates at \( \frac{1}{2} \) rotation per minute the amount of flashes will be at an acceptable level.

- Reduce the contrast between the flash and ambient lighting, this will also be beneficial with the use of flame flicker effects and mirror balls. If the difference between the flash level and the ambient lighting is less than 60% it removes the likelihood of a seizure.

- Positioning of the light source – the higher the light source and further it is from the public the less likelihood of a seizure. Within the HSE leaflet Disco Lights and Flicker Sensitive Epilepsy they state that:
  
  - This frequency should only apply to the combined flicker rates on any group of lights which can be directly gazed at. Indirect illumination of the eyes from flickering lights at an angle to the line of sight is not a trigger for photosensitive epilepsy.

First Aid and Epilepsy

Within Sage Gateshead there are a number of personnel qualified within First Aid. As part of this they will have received training in aiding an individual who is having a ‘grand mal’ and a ‘petit mal’. If someone is having a seizure consult with the nearest first aid location notices (if you are unable to locate your nearest sign then go to Box Office, Security or the General office) and seek assistance, another thing to do is try to clear the area.

Seizures do not necessarily mean that they individual needs attention from a paramedic, however there will be certain circumstances that this type of medical attention will be required:

- If a second or third seizure occurs without regaining consciousness.
• If the convulsive part of the seizure is lasting longer than usual, especially if it lasts longer than ten minutes.

• If injuries have been received as a result of the seizure, e.g. cuts requiring stitches, or the head of the individual struck the floor (this is a concern with regards to the concourse as the floor is particularly hard).

• If the cause of the seizure is unknown.

• If for any reason there is cause for concern either during or after the seizure.

Having a general policy for calling the paramedics just because someone is having a seizure is not appropriate as the individual can find this more stressful and can become agitated.

Before implementing this policy it would be beneficial to obtain the advice of the Epilepsy Organisation (www.epilepsy.org.uk) as to what their guidelines are. An affiliation with St John’s Ambulance will assist with large scale events to assist in the treatment of any casualty or Epileptic sufferer.