
LIGHTNING PROTECTION IN SCHOOLS

Policy and Guidance

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1.0 INTRODUCTION

- 1.1 Health and safety responsibilities derive from the Health and Safety at Work etc. Act 1974 and associated regulations. Health and safety legislation is enforced by the Health and Safety Executive (HSE). The Health and Safety at Work etc. Act 1974 places overall responsibility for health and safety with the employer. Who this is varies with the type of school.
- For community schools, community special schools, voluntary controlled schools, maintained nursery schools and pupil referral units the employer is the Local Education Authority (LEA).
 - For foundation schools, foundation special schools and voluntary aided schools, the employer is usually the governing body.
- 1.2 Education employers have duties to ensure, so far as is reasonably practicable:
- the health, safety and welfare of teachers and other education staff;
 - the health and safety of pupils in-school and on off-site visits; and
 - the health and safety of visitors to schools, and volunteers involved in any school activity.
- 1.3 Protection against lightning falls within these health and safety responsibilities. This document sets out the LEA's policy for the installation and management of lightning protection for school buildings.

2.0 BACKGROUND

- 2.1 In accordance with BS6651: 1999 "Protection of Structures against Lightning", lightning protection is required:
- a) where large numbers of people congregate;
 - b) where essential public services are concerned;
 - c) where the area is one in which lightning is prevalent;
 - d) where there are very tall or isolated structures;
 - e) where there are structures of historic or cultural importance; and/or
 - f) where there are structures with explosive or flammable contents.
- 2.2 As they fall within category a and b, a risk assessment for lightning protection is recommended for all schools.
- 2.3 When considering the need for lightning protection, an estimation of exposure risk should be taken into account. The probability of a structure or building being struck by lightning in any one year is the product of the "lightning flash density" and the "effective collection area" of the structure. The lightning flash density is the number of flashes to ground per square kilometre per year. This is based on historical data. The effective collection area is the roof area added to the side walls plus the area of quadrants having the radius of the height of the building. A quadrant occurs at each corner of the building.

- 2.4 A risk is then derived from taking this calculation and applying the following 5 correction factors:
- a) Use of structure
 - b) Type of construction
 - c) Contents and consequential effects
 - d) Degree of isolation
 - e) Type of country
- 2.5 In the Spring 2004, Torbay Council's Property Services Team carried out lightning protection risk assessments for all Torbay schools. This identified that a large number of schools require lightning protection on some or all of their buildings. In addition, there are outstanding maintenance requirements for a number of schools where lightning protection is already in place.
- 2.6 The Council has carried out and funded the initial risk assessments for all schools. However, any future risk assessments and maintenance will need to be arranged and funded by either schools or the Council according to which body is arranging and commissioning work.

3.0 LIGHTNING PROTECTION POLICY

3.1 Statement of Intent

It is the policy of Torbay Council to ensure that, as far as is reasonably practicable, lightning protection is installed on school buildings and, once installed, continues to be well maintained.

3.2 Policy Statement

The Council's Lightning Protection Policy for Schools conforms to the Health and Safety at Work Act 1974 and all subsidiary legislation. The Policy will apply to all school buildings, including community, foundation and voluntary aided schools.

3.3 The Council's Policy on lightning protection for schools is:-

- a) To ensure that a risk assessment is undertaken of all Torbay schools to identify priorities for lightning protection installation.
- b) To implement an effective strategy to provide and maintain lightning protection for school buildings.
- c) To regularly review the Lightning Protection in Schools' Policy and Procedures.
- d) To promote awareness of the risks of lightning strikes and the need to install lightning protection.
- e) To ensure that information regarding the need for lightning protection is available to all schools.
- f) To provide adequate resources to ensure the provision of appropriate information.
- g) To provide adequate resources to undertake a programme of high priority works for existing buildings.

4.0 RESPONSIBILITIES

4.1 Torbay Council will be responsible for:-

- The implementation of the Council's Policy.
- Ensuring that all new school buildings funded from the Council's Schools Capital Programme have lightning protection installed.
- Agreeing and resourcing a programme of high priority installations for existing school buildings, as identified by recent risk assessments, from the Schools Capital Repairs & Maintenance Programme.
- Commissioning future risk assessments on any new buildings to be funded from the Council's Capital Programme.
- Informing schools of their responsibilities for maintaining lightning protection.
- Informing schools of their responsibilities for installing lightning protection on any new buildings that are funded from school resources.
- Monitoring progress against the lightning protection risk assessment recommendations.

- 4.2 **School Governing Bodies** will be responsible for:
- Maintaining lightning protection once installed.
 - Installing lightning protection on any new buildings funded from school resources.
 - Commissioning future risk assessments on existing buildings or any new buildings to be funded from school resources.
 - Providing the LEA with regular confirmation that they are carrying out their monitoring responsibilities.
 - Voluntary aided school governing bodies have all the same responsibilities as community and foundation school governing bodies. In addition, VA governing bodies will be responsible for liaising with their Diocese to establish funding for works required for existing buildings and for any new buildings funded through VA capital funding streams.
- 4.3 **The Property Services Team** will be responsible for providing the following services:-
- Undertaking risk assessments as requested (funded by the commissioning body, either schools or the Council/LEA).
 - On request, assessing, reviewing and recommending actions for installation of lightning protection, from both the LEA and schools directly.

5.0 ADVICE

- 5.1 Advice on the requirements of this Policy can be obtained from Josie Medforth, Policy & Planning, Learning & Cultural Services Directorate. Contact tel: (01803) 208279; e-mail: josie.medforth@torbay.gov.uk.

6.0 REVIEW OF POLICY

- 6.1 In line with recommendations of the Health and Safety Executive, on the Management of Health and Safety, this policy and achievement against it will be reviewed annually or when there is any significant change.

ANNEX 1 LIGHTNING PROTECTION RISK ASSESSMENT SAMPLE

RISK ASSESSMENT DATA COLLECTION

Client	
Reference	
School Name	
Building height (average)	m
Overall Building Length	m
Overall Building Width	m

Weighting Factors (Please tick appropriate selection)

A Use of Structure

Houses or comparable	
Houses with outside aerial	
Factories, workshops	
Office blocks, flats, hotels	
Places of assembly	
Schools, hospitals etc.	

B Type of Construction

Steel framed, not metal roof	
RC frame, not metal roof	
Steel or RC frame, metal roof	
Brick or concrete, not metal roof	
Timber frame, not metal roof	
Brick, concrete, timber, metal roof	
Any building with thatched roof	

C Contents or Consequential Effects

Domestic or office buildings	
Industrial buildings, susceptible contents	
Power stations, telephone, radio exchange	
Key industrial plants and historical buildings	
Schools, hospitals etc.	

D Degree of Isolation

Same as surrounding	
Few other buildings of same height	
Isolated structure	

E Type of Country

Flat country	
Hill country	
Mountain country (300m – 900m)	
Mountain country (> 900m)	

**THE RISK OF THE BUILDING BEING STRUCK IS
ACCEPTABLE RISK IS**

**1: #####
1: 100000**

CONCLUSION:

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