

Leicestershire County Council

Policy & Guidance

Policy on Use of Sprinkler Systems

December 2022 (Issue 5.0)

Document Control

Control Details:

Document Location: F:\Property Services\Service Mgmt and Administration\Services\Regulatory Compliance
Production Software: Microsoft Word 10
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Document Amendment Record:

Issue	Amendment Detail	Author	Date	Approved
1.0	Original version following consultation with Leicestershire Fire & Rescue Service, Insurers, Health Safety & Wellbeing Service.	Steve Linnett	June 2018	Graham Read
2.0	Review process and amendments made following initial year of operational use.	Steve Linnett	October 2019	Steve Grant
3.0	Annual review process and changes to reflect SCIP programme requirements.	Steve Linnett	December 2020	Steve Grant
4.0	Annual review	Steve Linnett	December 2021	Steve Grant
5.0	Annual review	Steve Linnett	December 2022	Steve Grant

Contents

Contents	3
Policy Introduction	4
Related Legislation	4
Related Policies	4
Policy Scope	5
Procedure / Process	5
1. Background	5
2. LCC Schools	6
3. Other LCC Buildings	7
4. The Planning Process	7
5. Financial Implications	8
6. LCC Sprinkler Risk Assessment Tool	8
7. Conclusions	9
Document Review	9
Further Reading / Related Information	10

Policy Introduction

This policy provides general information on sprinkler systems, including current practices and legislative requirements. It also sets out the County Council's approach to the use of sprinkler systems within its existing building estate and in newly constructed buildings.

Related Legislation & Guidance

Building Bulletin 100 : Design for Fire Safety in Schools

Building Regulations 2010. Approved Document B: Fire safety

Regulatory Reform (Fire Safety) Order 2005

Fire Safety Act (2021)

BS 9251:2014 Fire Sprinkler Systems for Domestic and Residential Occupancies – Code of Practice

BS EN 12845 Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance.

BS 8458: 2015 Fixed fire protection systems - residential and domestic water mist systems - code of practice for design and installation

BS8489-1: 2016 Fixed fire protection systems – Industrial commercial water mist systems - code of practice for design and installation

Related Policies

This policy is linked and should be read in conjunction with the following corporate policies:

LCC Operational Policy and Guidance: Fire Safety. 2017

Policy Scope

1. The scope of this policy covers the County Council's existing building estate, proposed refurbishment of existing buildings, new stand-alone buildings on existing sites and specifically the construction of new schools and other types of buildings. Any exemptions are only permissible with the prior approval of the Corporate Management Team (CMT).
2. The policy must be applied to all Local Authority maintained schools and Leicestershire Academy schools where the County Council owns the freehold of the building or land. This reflects the County Councils responsibility to safeguard the health, safety and well-being of Leicestershire pupils.
3. The freehold owners of all other types of Leicestershire schools/ educational establishments (including those vested in the Church of England or Catholic Diocese or held under any Trust) will be encouraged to adopt this policy in the interests of maintaining the health, safety and well-being of all pupils and occupants.
4. The policy must also be complied with when external agencies carry out construction projects in County Council owned buildings or assets such as Leicestershire Academy schools.

Procedure / Process

1. Background

- 1.1 The County Council has a statutory responsibility to consider the overall fire safety strategy of a building when construction projects are planned. This has included an assessment of whether installing sprinkler systems are appropriate and in line with best practice guidance and legislative requirements.
- 1.2 A fire sprinkler system is an active fire protection measure consisting of a water supply system under suitable pressure and flow rate to feed a piped system connected with fire sprinkler heads.
- 1.3 It is widely recognised that the use of sprinklers in ceilings is a good way of preventing fire spread and assisting in safely evacuating the building. However sprinklers are not the only solution and might not always be the most effective means of reducing risk from fire. For example, fire can start and spread through roof voids and the existence of (downward) water sprinklers in the ceilings might not prevent the spread of fire if the system is not adequately designed.

- 1.4 The usage of the existing or proposed building will affect the choice of active fire protection (AFP) measures employed. In some cases water is completely the wrong means of tackling fire. For example, IT Data Centre's with electrical equipment and wiring will have an alternative gas fire suppression system specified.
- 1.5 There are also alternative types of water based fire suppression system such as water mist systems. Traditionally water mist systems were aimed more towards a specific fire hazard or were concentrated upon a specific area within a building. There is more available data and evidence regarding the effectiveness of sprinkler systems in protecting all fire hazards within a building. Where required by this policy, sprinkler systems will be installed.
- 1.6 The County Council and organisations such as the National Fire Chiefs Council (NFCC) recognise that sprinkler systems can reduce the risk to life and significantly reduce the degree of damage caused by fire. Sprinkler protection can also sometimes be used as a compensatory feature and be balanced towards both life and property protection. There are no mandatory requirements from an insurance perspective although the County Council's current insurer is insistent that sprinklers should be installed in all new build schools. There are some cost benefits through deletion of the deductible/policy excess and the inclusion of sprinkler leakage cover.

2. Schools

- 2.1 Building Bulletin 100 (Department for Education (DfE) publication) provides guidance on the use of sprinklers within school buildings. Although there is a strong preference for the installation of sprinklers in new school buildings, BB100 acknowledges that there are certain exceptions where for example, it does not represent value for money.
- 2.2 To assist local authorities and project design teams in assessing the levels of risk and the appropriateness of installing sprinklers, the DfE developed two practical aids as part of BB100 guidance. The first is an interactive fire risk assessment tool. DfE expects that this risk analysis tool will always be carried out and new schools being planned that score medium or high risk using the risk analysis tool will have sprinklers installed. The second tool is a cost benefit analysis tool. This tool helps users decide whether sprinklers represent good value for money. The County Council's approach will be that if the risk assessment tool indicates that a sprinkler system should be installed this will automatically override the cost benefit analysis result.
- 2.3 Although the expectation to install sprinklers in new schools was made clear in BB100, the measure was not made compulsory under current legislation. In 2017 approximately only 30% of new build schools were fitted with sprinklers.
- 2.4 It should be noted that Leicestershire Fire and Rescue Services have adopted a "call challenge" policy whereby they might not automatically respond to a fire alarm

activation until a fire has been confirmed by someone on the premises. This means (particularly for schools in rural locations) there might be a delay in the response by the fire service outside of the normal school day. In these circumstances, sprinkler installations may prevent the spread of fire although this is more likely to be a property protection consideration.

- 2.5 The County Council recognises its overall responsibility to safeguard the health, safety and welfare of its employees, pupils and visitors to its schools. Protection of life from the risk of fire will always be the top priority. The County Council will ensure that fire prevention measures as well as firefighting and emergency evacuation procedures are appropriate and robust in all of its schools.

3. Other LCC Buildings

- 3.1 In all other types of building the requirement for the installation of sprinklers is not mandatory under Part B of the Building Regulations (2010). There is however a requirement to install sprinklers in certain types of building such as residential flats over a height of 30metres (following legislative change this requirement will be reduced to 11m as of the end of November 2020). Similarly, large single storey industrial or storage buildings over 20,000m² must have sprinklers fitted.
- 3.3 Fitting sprinklers can reduce the need for, and extent of, other fire protection measures employed as part of the overall fire safety strategy. This is still in full compliance with the requirements of Part B of the Building Regulations (2010). For example, the installation of sprinklers can allow buildings to be built closer together. This is a major benefit where space is limited on a site. Other requirements such as minimum escape travel distances may also be extended and certain requirements in respect of access for the fire service may be relaxed.
- 3.4 Although there is currently no legal requirement to do so in England, Part B of the Building Regulations does make reference to the benefits of installing sprinklers in residential care homes. In these types of buildings there is already a higher standard required in having a fire detection and alarm system to 'L1' standard – (whole of the building covered by automatic detectors apart from minor exceptions). Recognition of the additional risks posed by the type of building and its occupants is a key part of the existing regulatory framework around fire risk assessment.
- 3.5 The guidance issued to interpret the Building Regulations now recognises the benefits of installing sprinklers to protect life. Following the Grenfell tower fire it is anticipated that future legislation will call for the increased use of sprinklers in buildings.

4. Planning Process

- 4.1 The installation of sprinkler water storage tanks will be subject to planning approval and in certain circumstances this may present an issue. Any refusal from the planning authority for these installations will have to be addressed on a case by case basis. The County Council has no direct role in applying or assessing compliance with the requirements of the Building Regulations. This control regime falls under the jurisdiction of District Councils.

5. Financial Implications

- 5.1 The installation of sprinkler systems does add an additional cost as well as ongoing maintenance liabilities. However where required by this policy the costs of installing sprinklers should be budgeted for as part of the project and an appropriate maintenance regime put in place.
- 5.2 The majority of costs for the installation of sprinklers relate to the water storage facility that delivers the required amount of water to the sprinkler heads over the required period of time. The storage of water is a result of the water supply authority not being able to guarantee the required mains water supply pressure.
- 5.3 Maintenance costs will vary depending upon the size, type and age of the system installed. Annual maintenance cost increases should also be planned for over time. Generally it is accepted from an insurance perspective that buildings with sprinklers will benefit from reduced insurance premiums however in the case of the County Council, with a large property portfolio, the benefit would be deletion of the deductible/policy excess and the inclusion of sprinkler leakage cover.
- 5.4 It is expected that additional capital funds may be required to retrofit sprinklers where existing buildings have been risk assessed and the installation of sprinklers has been deemed appropriate. It should be noted however that the existing building estate already has fire protection measures in place that comply with current regulatory requirements. In addition, the County Council continues to carry out regular fire safety inspections and fire risk assessment reviews of all buildings it retains responsibility for.

6. LCC's Sprinkler Risk Assessment Tool

The County Council has developed Sprinkler risk assessment tools based upon Building Bulletin 100's version. LCC Sprinkler risk assessment tools include more detailed guidance on each scoring category to establish a more consistent approach. To gain access to the relevant LCC Sprinkler risk assessment tool for your type of building please contact the LCC Property Services Regulatory Compliance Team via the Property Services Helpdesk tel: 0116 3055000 or email:-

RegulatoryCompliance@leics.gov.uk

All completed Sprinkler risk assessments must be submitted to the Regulatory Compliance Team for review prior to sign off by the relevant County Council Group/Committee.

7. Conclusions and requirements of the policy

7.1 How fire prevention and fire safety measures are best addressed in building design is a matter for careful consideration and assessment. This process requires consultation and input from appropriate professionals including architects, surveyors, insurers, fire engineers and fire officers. It is however widely acknowledged that the use of sprinklers can be an effective measure in protecting both life and property. To prevent ambiguity and uncertainty the policy of the County Council to install sprinkler systems in schools and other buildings will be as follows:

- All new school builds will have sprinklers fitted.
- Where new build school projects are designed, commissioned and managed by a third party agency the terms of this policy must be complied with when carrying out construction projects in Leicestershire schools.
- All complete refurbishment of existing school building projects will have sprinklers fitted. Where individual blocks on an existing school site are to be fully refurbished they will be risk assessed using LCC's sprinkler risk assessment tool.
- Extensions and/ or refurbishments to an existing main school block that extend to more than 50% of the original footprint, will have sprinklers fitted.
- All new stand alone classroom blocks on school sites will have sprinklers fitted where the main block of the school already benefits from sprinkler protection.
- All complete refurbishments and new builds with a residential function will have sprinklers fitted. Where refurbishments of an existing building (with a residential function) extend to more than 50% of its original footprint, sprinklers will be fitted. *
- All other extensions and new blocks on any existing site will be risk assessed using LCC's sprinkler risk assessment tool.
- Existing buildings within the County Council's portfolio will be risk assessed (on a priority basis) against the LCC sprinkler risk assessment tool to determine the appropriateness of retro fitting sprinklers.

* The Social Care Investment Plan (SCIP) involves the acquisition of residential housing stock for specialist service user placements in Leicestershire. Due to these specific circumstances and the type of residential property involved, a separate version of the sprinkler risk assessment tool has been developed. Appropriate guidance and support is available (contact the Regulatory Compliance Team) for

those completing the tool given the specialist nature of fire safety in this area. The policy requirements for SCIP properties will be as follows: -

- All newly acquired SCIP residential properties of three storeys and above will have sprinklers fitted.
- All complete refurbishments and new build SCIP residential properties will have sprinklers fitted. Where refurbishments of an existing building extend to more than 50% of its original footprint, sprinklers will be fitted.
- All other newly acquired SCIP residential properties will be risk assessed using LCC's SCIP sprinkler risk assessment tool. Risk assessments will need to be reviewed dependent on changing resident service user needs.
- Completed SCIP sprinkler risk assessments should be submitted for review in accordance with the procedure outlined in Section 6.0 above.

8 Document review

- 8.1 This document will be reviewed annually, or whenever a change to legislation relating to fire safety is enacted. Legislative change is continuing following the various reviews into the Grenfell Tower fire tragedy such as Dame Judith Hackitt's review of Building Regulations and Fire Safety.

Further Reading / Related Information

BB 100 – Department of Education Website Document

Building Regulations 2010. Approved Document B: Fire safety

Regulatory Reform (Fire Safety) Order 2005

Fire Safety Act (2021)

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