GDST

GIRLS' DAY SCHOOL TRUST

GDST Fire Safety Strategy

July 2018

Contents

Revision History

This document shall be reviewed annually as part of the fire safety management review to ensure that it remains current with latest philosophies for overall fire engineering and the latest legislation, guidelines, codes of practice and best practice sources. The following table details the revision history of this report:

Revision	**Issue date**	**Reason for issue**
1.0	31/03/2016	Initial issue
2.0	30 January 2018	Updating section 4.4 - Fire Risk Assessment
3.0	19 February 2018	Updating definition of ‘Competent Person’
4.0	9 April 2018	Updating section 4.4 - Fire Risk Assessment – Reviews of Fire RAs
5.0	2 July 2018	Further clarification in section 4.1 - self-closing fire doors

1. Introduction

The Girls Day School Trust (GDST) recognises the significant risk posed by fire.

This Fire Safety Strategy sets out the GDST's overall approach to meeting its Fire Safety / Fire Risk Management Policy. It provides a Compliance Statement, sets out the Trust's main fire safety aims and objectives, outlines the key components of the fire safety strategy and gives an overview of fire safety management responsibilities.

The GDST Fire Safety Policy and detailed guidance on how to manage the risks associated with fire, including Fire Safety Risk Assessments, Emergency Action Plans and procedures for checking and testing fire safety equipment and systems is documented in the Health and Safety section of Oracle.

This Strategy applies to all GDST schools, academies. It also applies to Trust Office and all other GDST buildings e.g. Boughrood Field Study Centre, Putney Boat House.

2. Compliance Statement

The GDST is committed to complying with the requirements of the Regulatory Reform (Fire Safety) Order 2005 (the Order) and the guidance issued under Article 50 of the Order, notably the Fire Safety Risk Assessment guides for 'Educational Premises' and 'Sleeping Accommodation' produced by HM Government (CLG).

3. Fire Safety Strategy Aims and Objectives

This Fire Safety Strategy provides the overall fire safety philosophy to be implemented across the GDST Estate. All buildings fall under the Regulatory Reform (Fire Safety) Order 2005 ('the Order') and the requirements therein.

The **strategic aims** are:

- To meet the requirements of the GDST Fire Safety/Fire Risk Management Policy
- For the GDST Estate to be fully compliant with the word and spirit of applicable UK fire safety legislation as soon as reasonably practicable.
- To ensure reasonable and appropriate standards of fire safety for employees, students, contractors and visitors to the GDST Estate.
- To protect the GDST Estate against the effects of fire.
- To minimise the potential impact of fire to business continuity.
- To minimise the environmental impact of a fire.
- Provide sufficient guidance and training to staff to undertake their roles.

The **strategic objectives** are the prevention of fire, protection of life and property in the event of a fire, and intervention if a fire occurs.

Prevention Objectives:

- Mitigating the effects of fire by proper design, construction, arrangement and use of buildings.
- Maintaining a suitable and sufficient Fire Risk Assessment process.
- Appointing competent persons to assist in carrying out fire prevention measures and allocating responsibilities to Key Duty Holders.
- Carrying out regular inspections of all premises to identify fire hazards and risks.
- Providing relevant fire safety information and training, including regular fire drills to persons occupying, working in and visiting all GDST premises.
- Ensuring all fire safety and electrical and mechanical equipment is regularly maintained, serviced, checked, tested and inspected to ensure it is good working order and appropriate records made and held on-site.
- Employing processes to ensure flammable products are substituted for less flammable products where appropriate.
- Managing specific risks that increase the risk of fire, e.g. hot work

Protection objectives:

- Providing compartmentation and separation to limit the spread of fire throughout buildings and to protect escape routes.
- Providing an appropriately designed and correctly installed fully automatic fire alarm system, where appropriate, to detect fire.
- Providing sufficient means for giving warning to warn building occupants that a fire is occurring and the requirement to evacuate the premises safely.
- Providing appropriate fire safety signage and fire escape signs to assist occupants to find a safe route from the building.
- Providing a suitable emergency lighting system.
- Providing first aid fire-fighting equipment to enable the occupants of the building to secure their means of escape by first aid fire-fighting if required.
- Implementing management procedures to provide a plan for the safe evacuation of the occupants of the building and monitoring these plans to ensure their effectiveness.
- Conducting audits of emergency routes and exits by the appropriate competent persons.

Intervention Objectives:

- Assisting with the evacuation of occupants from the building, including anyone who requires assistance, e.g. young children or people with a mobility disability.

- Meeting, guiding and liaising with the responding staff from the local authority fire & rescue service.

- Facilitating familiarisation visits for the Local Authority Fire & Rescue Service and ensuring they are aware of the location of hazardous and prescribed materials, e.g. radioactive sources, concentrated chemicals and highly flammable substances.

- Conducting regular fire safety drills / exercises.

4. Key Components of the Fire Safety Strategy

4.1 Fire Protection

The GDST will provide effective fire protection to all its buildings through a mixture of passive and active fire protection measures, as required to meet the Building Regulations applicable to each building considering its date of construction, and the findings of the Fire Safety Risk Assessment. Additional protection may also be provided to heritage buildings for property preservation, where this is deemed appropriate.

- **Compartmentation** – The primary objective is for the protection of life, property and business continuity by containing the spread of fire and smoke. Compartmentation and separation will be provided to limit the spread of fire throughout the buildings. Where necessary, engineered solutions will be provided to control smoke within the buildings in order to maintain the escape routes and to protect buildings.

- **Detection** - To ensure reasonable and appropriate standards of fire safety for employees, students, contractors and visitors to all GDST premises, the detection standards are:

    - An L1 system for sleeping accommodation and areas of exceptionally high fire risk, e.g. oil tank rooms.
    - An L2 system in all new builds and all major refurbishments
    - An L3 system for all other existing buildings, unless particularly low risk where an L4 system is acceptable.
    - An L5 system, if appropriate to the use of the building

- Where **alarm systems** are being upgraded, systems that can be multi-functional, e.g. can be programmed with different alarm sounds for different types of emergencies, should be installed. New systems should be ‘open protocol’, i.e. not tied to any specific manufacturer or maintainer.

- **Emergency lighting** – coverage should be in accordance with BS 5266. Where this is not currently the case, this is the GDST’s objective. Testing of the system should also be in accordance with the current British Standard, currently BS 5266. All testing should be recorded and maintained on file.

- **Locks** on external fire exit doors are to be easily openable in case of emergency, e.g. by the use of a 'push bar' or 'push pad'. External fire exit doors must be easy to use and, where necessary, interlocked with fire alarm and access control systems.

- Where **self-closing fire doors** are required to be held open for operational reasons, then a hold open device which, on actuation of the fire alarm enables the door to close fully into the frame, may be used. Doors in high fire risk areas, and leading directly onto and on 'primary escape routes' (e.g. staircases, dead end corridors etc.) must be fitted with a 'mag-log' or 'free-swing' type device connected to the fire alarm system. For doors not on 'primary escape routes', then 'Dorgard' or similar type devices may be used.

- **Signage** will be installed in accordance with the Health and Safety (Safety Signs & Signals) Regulations 1996.

- **Coats and bags** should not be stored on fire exit routes, unless two direction escape is available to a place of relative safety within the corridor / stairwells

- **Staircase enclosures** should be maintained free of furniture and storage of combustible items at all times.

- **Displays** on corridors and circulation spaces should be of limited combustibility and not constitute more than $1m^2$ in every $5m^2$ of wall space.

4.2 Evacuation

Each school should aim to ensure that all buildings can be fully evacuated within **2.5 minutes** where there is no sleeping on the premises, and within **ten minutes** where persons are sleeping on the premises.

All buildings within the GDST Estate have designated and protected primary and secondary escape routes ending in a place of safety, the designated assembly points. Escape routes will be adequately signposted and covered by emergency lighting. Building specific details are recorded on the fire record drawings held at each school.

It is the responsibility of each school to ensure sufficient coverage of fire evacuation marshals across all their school buildings.

4.3 Fire Fighting

GDST staff, where suitably trained and if it is safe to do so, may use portable fire-fighting equipment to tackle a small fire.

The GDST have no intention of installing wide-spread sprinkler systems in their buildings.

4.4 Fire Safety Risk Assessment

All occupied buildings in the GDST Estate will be the subject of a regular Fire Safety Risk Assessment by Fire Risk Consultants approved by Trust Office Estates and Health and Safety departments. The frequency will be on a risk-based approach:

- Annually for boarding houses and school buildings with integral occupied staff or pupil residential accommodation;
- Biennially for the majority of other school buildings, including detached residential accommodation for staff;
- Triennially for lower risk premises, e.g. Trust Office.

The fire safety risk assessments includes a site survey by a competent person who conducts a review of each building on the site to:

- Compare standards with existing Fire RA and current requirements as set down in the Regulatory Reform (Fire Safety) Order 2005,
- Establish its fire risk profile, considering its structural form, occupancy and use,
- Assess the integrity, stability and suitability of passive fire precautions, e.g. compartmentation and fire escape routes,
- Assess the suitability and efficiency of active fire precautions, e.g. alarm systems, emergency lighting and emergency fire fighting equipment,
- Assess the suitability and effectiveness of fire safety management arrangements including maintenance regimes, evacuation routines and local fire safety competencies

The fire risk assessment report considers life safety requirements, property protection and corporate governance issues, however it is a snap-shot of the conditions, provisions and activities observed at the time of the site visit, so it does **not** include items such as:

- Full survey of alarm system and emergency lighting coverage
- Full testing of the fire alarm and emergency lighting system
- Full survey of the provision and condition of fire doors and door furniture (locking and opening devices)
- Full survey of the condition of any external fire escapes and staircases.
- Full survey of the provision and condition of fire-fighting equipment, e.g. fire extinguishers
- Full survey of the provision of fire safety signage
- Invasive testing of building fabric
- A full review of fire safety compartmentation

Following the site survey a report will be produced that includes:

- Significant Findings
- Summary of the Fire Risk Assessment
- Significant fire hazards
    - Sources of ignition
    - Combustible materials
    - People at risk
    - Other factors

- Managing the fire hazards – Action Plan
    - Compliance with fire safety legislation
    - Means of escape
    - Compartmentation
    - Fire detection and alarm system
    - Fire fighting equipment
    - Emergency escape lighting
    - Fire safety signs & notices
    - Emergency plans & evacuation procedures
    - Staff training
    - Housekeeping & other control measures
    - Electrical & gas factors
    - Record keeping
    - Protection from threat of arson
- Photographs

It is the responsibility of each school to:

- Ensure all recommendations in their fire risk assessment report are implemented within a timescale that has due regard to the fire risk,
- Implement a management plan to mitigate the fire safety risks in the time period before the recommendations are completed, and
- Update the fire risk assessment action plan as the recommendations are completed.

Review of Fire Risk Assessment (04/18)

The Fire Risk Assessments for all buildings falling into the biennial or triennial categories will be reviewed in-house at least annually, and will particularly consider:

- Changes to the use of the building, activities taking place in the building, or the way the activities are organised, including the introduction of new equipment.
- Alterations to the building(s), including the internal layout.
- The introduction, change of use or increase in the storage of hazardous substances.
- The failure of fire precautions, e.g. fire detection and alarm systems or sprinkler systems.
- Significant changes to the type and quantity and/or method of storage of combustible materials.
- Significant changes in the occupancy levels.
- A significant change in the mobility level or other factors influencing the response of students, visitors or staff in an emergency.
- Changes to the management of the organisation.

4.5 Fire Safety Training

It is the responsibility of each school to regularly provide fire safety information, briefings and training, to all school building occupants, users and affected persons, appropriate to

their role and reason for being on the school premises, This includes undertaking regular fire evacuation drills.

Type of Training	Staff	Time Scale	Refresher Frequency
Induction – Basic fire safety & prevention training and familiarisation with school's fire exits, fire drill and emergency evacuation procedures (In-house training)	All staff and contractors who are on site on a regular basis	First day	
Refresher on school's emergency evacuation procedures (In-house training)	All staff and contractors who are on site on a regular basis		Annually
Fire safety and fire prevention (In-house training)	All staff and contractors who are on site on a regular basis	First term	Annually
Fire safety - testing of alarms, call points & emergency lighting and checks on fire safety equipment (e.g. fire extinguishers) and features (e.g. fire doors and escapes routes) (In-house training)	Premises / Facilities Manager and Premises staff	As soon as given the role	As and when new equipment or procedures are introduced
Firefighting - use of extinguishers & fire blankets (Practical training)	DFO, premises team, fire marshals, catering staff, science staff, art dept. staff, DT dept. staff, food technology dept. staff, boarding staff	As soon as given the role	5 years
Fire Safety for Fire Marshalls (Half day course)	Nominated staff	As soon as given the role	

4.6 Events Management

It is the responsibility of each school to Schools to ensure all events occurring on school premises are appropriately assessed, managed and follow the correct procedures for fire safety. Events include, but are not limited to: Open days, Sports days, Parent's evenings, Drama productions, Concerts and musical events, Exhibitions, Speech day, Careers fairs, Summer fetes and Christmas fairs, Bonfires and firework displays, Dinners and BBQs, School sleepovers, Discos and balls, Quiz nights, etc.

5. Management Responsibilities

1. Trustees and Chief Executive

The Council and Board of Trustees and have ultimate responsibility for fire safety in GDST schools, whilst the Academy Trust Board has ultimate responsibility in the GDST

academies. They have delegated the operational implementation to the Chief Executive Officer.

2. **Director of Estates**
   The Director of Estates is responsible for ensuring that completed alterations and centrally funded works comply with this strategy and statutory requirements

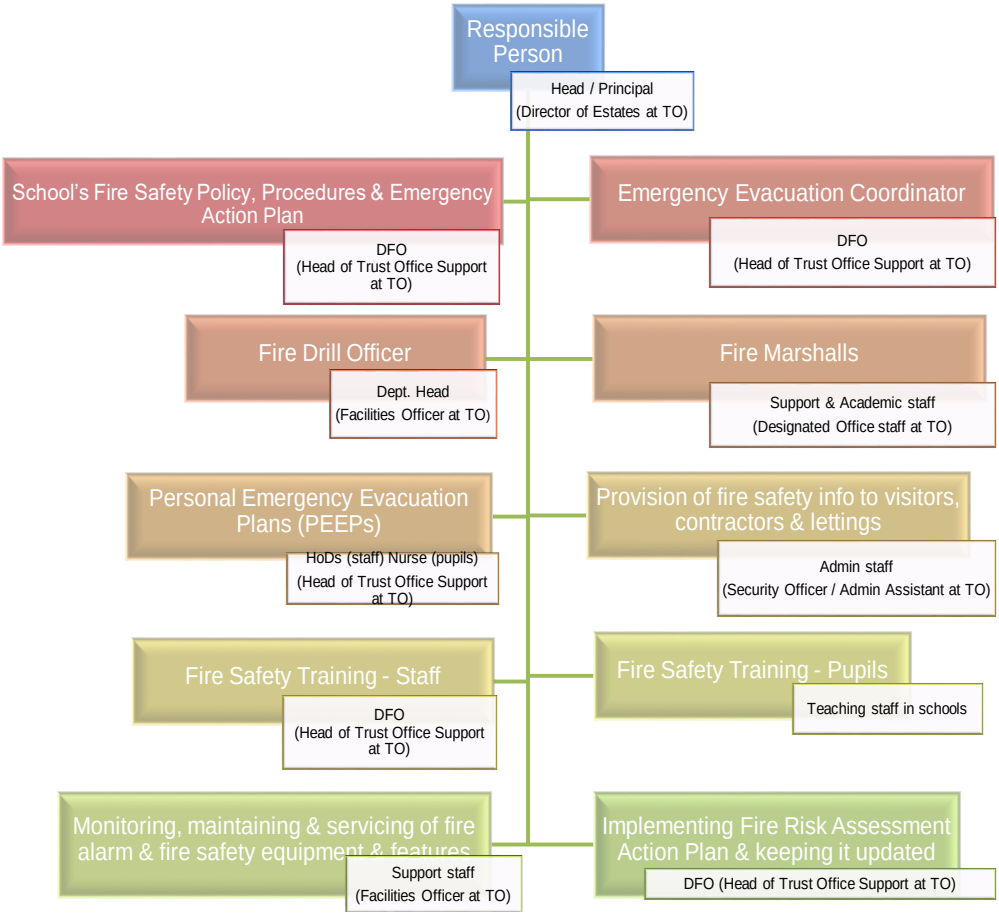
3. **Head of Health & Safety**
   The Head of Health & Safety advises on general fire safety procedures and functions; organises the Fire Safety Risk Assessments and provides the CEO with assurance that the schools are complying, or otherwise, with this strategy, statutory requirements and fire safety procedures.

4. **Head Teacher / Principal**
   The Head Teacher / Principal has overall responsibility for fire safety within their school premises. They may delegate key roles to school staff to ensure fire safety standards are met and must liaise with the relevant staff at Trust Office.

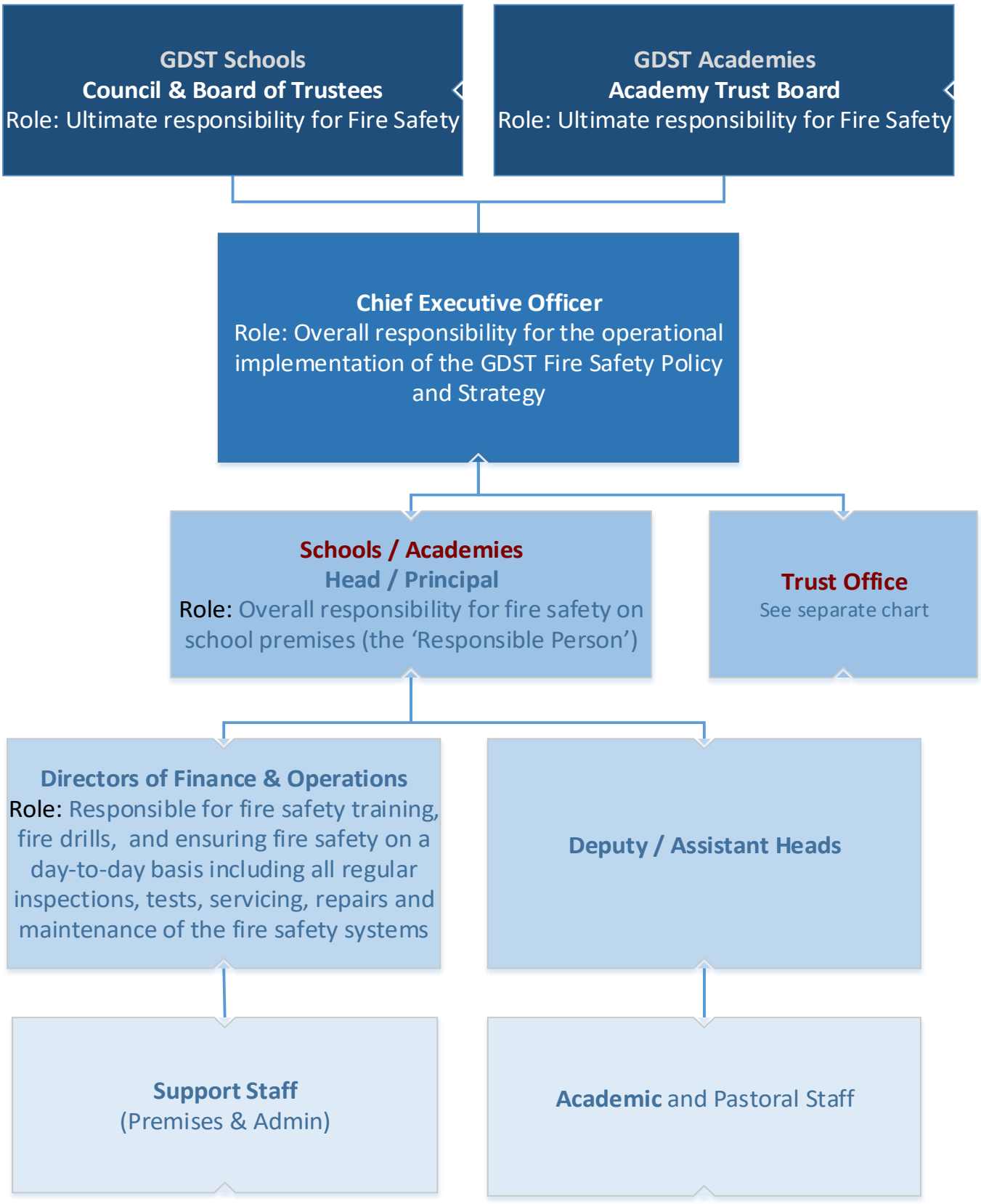
5. **Director of Finance and Operations (DFO)**
   The DFO has responsibility for all aspects of site management in relation to fire safety within their school premises, including fire safety training, delegated maintenance, small improvement works, facilities management and ensuring the site and all its facilities are checked, tested, inspected, serviced and maintained in good working order and that appropriate records are kept. The DFO may delegate key roles to the school facilities staff.

6. **All Individuals – Staff, Pupils, Contractors, Visitors**
   All staff and persons occupying, using or visiting GDST schools, academies and Trust Office have a duty of care to themselves and each other and a responsibility for reporting fire safety hazards. They must comply with all fire safety arrangements; refrain from interfering with or misusing fire safety processes or equipment; and inform an appropriate person, e.g. their line manager, form teacher, or DFO of any personal fire safety requirements and any observed deficiencies with existing fire safety precautions at the school or in Trust Office. Staff and persons bringing visitors onto GDST premises are responsible for their safety and are required to provide salient fire safety information to their guests.

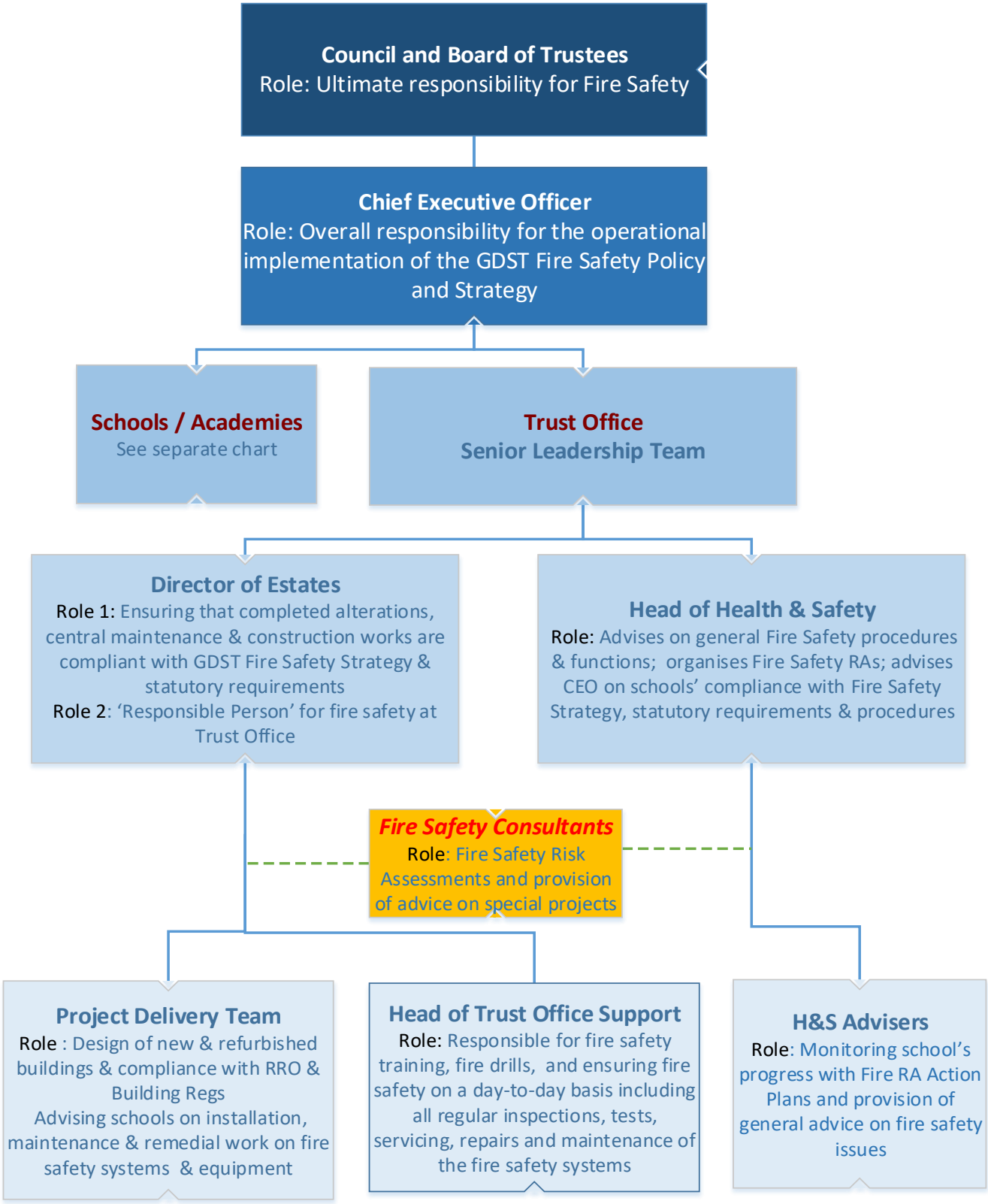
Roles & Responsibility for Fire Safety Schools, Academies and Trust Office



Fire Safety: Reporting Lines, Principle Roles and Responsibilities of Staff in GDST Schools and Academies



Fire Safety: Reporting Lines, Principle Roles and Responsibilities of Staff in Trust Office



Annex A – Legal Requirements and Best Practice Standards

As of January 2015, the legal requirements and best practice standards listed below apply to all fire safety work undertaken on the GDST Estate. The standards should be viewed as the minimum requirement that must be applied to all relevant fire related work on the GDST Estate. The list is not exhaustive and should not be taken as so.

Any fire equipment or fire related structure that is to be fitted or built on the GDST Estate, must be designed, installed, commissioned, handed over and maintained in accordance with relevant and current legislation, British Standards, codes of practice, guidelines and standards.

The legal requirements and best practice standards listed below separates life safety from property protection but note that all elements have to operate simultaneously during any emergency to provide effective detection and protection for the occupants and the buildings.

All fire related equipment; whether it is automatic fire detection, emergency lighting, fire compartmentation, signage or other equipment, shall be compatible with the existing systems and be consistent for all buildings.

LEGISLATION:

- **Regulatory Reform (Fire Safety) Order 2005**
- Children Act 1989
- The Building Regulations 2010
- Management of Health and Safety at Work Regulations 1999
- Workplace (Health, Safety and Welfare) Regulations 1992
- Health and Safety (Safety Signs and Signals) Regulations 1996
- Disability and Equality Act 2010
- The Electricity at Work Regulations 1989
- The Gas Safety (Installation & Use) Regulations 1998
- The Furniture and Furnishings (Fire) (Safety) Regulations 1988

STANDARDS:

Life Safety:

- BB100 – Design for fire safety in schools

- Automatic Fire Detection:
  - BS 5839 Fire Detection and Alarm Systems for Buildings
    - Part 1: 2002 - Code of Practice for System Design, Installation, Commissioning and Maintenance (amendment 1: 2005)
  - BS EN 54 Fire Detection and Fire Alarm Systems
    - Part 1: 1996 - Introduction
    - Part 2: 1998 - Control and Indicating Equipment
    - Part 3: 2001 - Sounders
    - Part 4: 1998 - Power Supply Equipment
    - Part 5: 2001 - Heat Detectors and Point Detectors

  - Part 7: 2001 - Smoke Detectors, Point Detectors Using Scattered Light, Transmitted Light or Ionization
  - Part 10: 2002 - Flame Detectors and Point Detectors
  - Part 11: 2001 - Manual Call Points

- Audible Warning / Voice Alarm:
  - BS 5839-8:2008 Fire Detection and Fire Alarm Systems for Buildings. Code of Practice for the Design, Installation, Commissioning and Maintenance of Voice Alarm Systems

- Signage:
  - BS 5499: Fire Safety Signs, Notices and Graphic Symbols
    - Part 1: Specification for fire safety signs
    - Part 4: Code of Practice for escape route signs
    - Part 5: Signs with specific safety meanings

- First Aid Fire Fighting Equipment, Fire Extinguishers, Hose reels
  - BS 5306 Fire Extinguishing Installations and Equipment on Premises
    - Part 0: 1986 - Guide for the Selection of Installed Systems and Other Equipment
    - Part 3: 2003 - Code of Practice for the Inspection and Maintenance of Portable Fire Extinguishers
    - Part 8: 2000 - Code of Practice for the Selection and Installation of Portable Fire Extinguishers
  - BS 7273 Code of Practice for the Operation of Fire Protection Measures
  - BS 7863 Recommendations for Colour Coding to Indicate the Extinguishing Media Contained in Portable Fire Extinguishers
  - -BS EN 3 Portable Fire Extinguishers
  - -BS EN 671 Fixed Firefighting Systems - Hose Systems
  - -BS EN 1568 Fire Extinguishing Media - Foam Concentrates
  - -BS EN 1866 Mobile Fire Extinguishers
  - -BS EN 1869 Fire Blankets

- Emergency Lighting:
  - BS EN 1838: Lighting Applications: Emergency Lighting
  - BS 5266: Emergency Lighting Part 1: 1999 Code of Practice for the Emergency Lighting of Premises other than Cinemas and Certain other Specified Premises Used for Entertainment

- Evacuation Lifts / Refuge:
  - Equalities and Disabilities Act 2010
  - Approved Document M: Access and Facilities for Disabled People
  - BS5839 Part 9 - Fire detection and fire alarm systems for buildings – Code of practice for emergency voice communication systems.

- Fire Safety Management:
  - BS 9999: Code of practice for fire safety in the design, management and use of buildings.
  - In accordance with the procedures contained in the Fire Risk Management Team Fire Safety Strategy.

Property Protection:

- Automatic Fire Detection
  - Details as indicated in Life Safety above

- First Aid Fire Fighting Equipment, Fire Extinguishers, Hose reels
  - Details as indicated in Life Safety above

- Fire Compartmentation
  - Approved Document B: Fire Safety or alternatively approved under Building Control but in agreement with fire engineering standards.

- Sprinklers/ Fire Suppression Systems
  - BS 5306 Fire Extinguishing Installations and Equipment on Premises
    - Part 2: 1990 - Specification for Sprinkler Systems
    - Part 4: 2001 - Specification for Carbon Dioxide Systems
    - Part 1: 2000 - Electrical Actuation of Gaseous Total Flooding Extinguishing Systems
    - Part 3: 2000 - Electrical Actuation of Pre-action Sprinkler Systems
  - BS EN 12094 Fixed Firefighting Systems - Components for Gas Extinguishing Systems
  - BS EN 12259 Fixed Firefighting Systems - Components for Sprinkler and Water Spray Systems
  - BS EN 12416 Fixed Firefighting Systems - Powder Systems.
  - BS EN 12845 Fixed Firefighting Systems - Automatic Sprinkler Systems

- Fire Fighter Mains
  - Approved Document B: Fire Safety

- Fire Fighter Access
  - Approved Document B: Fire Safety

- Business Continuity
  - In accordance with the business resilience plans from GDST.

- Fire Safety Management
  - BS 9999: Code of practice for fire safety in the design, management and use of buildings.
  - In accordance with the procedures contained in the Fire Safety Strategic Plan

Furniture and soft furnishing requirements are covered by BS 7176 Fire Safety of Non-Domestic Furniture, and BS 5867-2:2008 Fabrics for curtains, drapes and window blinds. Flammabililty requirements. Specification

Annex B – Glossary

This brief glossary will aid the understanding and application of this strategy

Access room	A room through which the only escape route from an inner room passes.
Alternative escape route	Escape routes sufficiently separated by either direction and space, or by fire-resisting construction to ensure that one is still available
Automatic fire-detection (AFD) system	A means of automatically detecting the products of a fire and sending a signal to a fire warning system. The design and installation should conform to BS 5839-1.
Combustible material	A substance that can be burned
Competent person	A person with relevant training, experience, knowledge and the requisite tools, equipment and information to enable them to properly assist in undertaking the preventive and protective measures.
Emergency (escape) lighting	Lighting provided to illuminate escape routes that will function if the normal lighting fails.
Final exit	An exit from a building where people can continue to disperse in safety and where they are no longer at danger from fire and/or smoke.
Fire compartment	A building, or part of a building, constructed to prevent the spread of fire to or from another part of the same building or an adjoining building. A fire resisting wall or floor separates one fire compartment from another.
Fire door	A door or shutter, together with its frame and furniture, provided for the passage of people, air or goods which, when closed, is intended to restrict the passage of fire and/or smoke to a predictable level of performance.
Fire-resistance	The ability of a component or construction of a building to satisfy, for a stated period of time, some or all of the appropriate criteria of relevant standards. (Generally described as 30 minutes fire resisting or 60 minutes fire-resisting.) See BS EN 1363-1, BS 476-7 and associated standards for further information.
Fire safety strategy	A number of planned and co-ordinated arrangements designed to reduce the risk of fire and to ensure the safety of people if there is a fire.
Flammable material	Easily ignited and capable of burning rapidly.
Highly flammable	Generally liquids with a flashpoint of below 21°C. (The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP) give more detailed guidance.)
Inner room	A room from which escape is possible only by passing through another room (the access room).
Key Duty Holder	A person with specific fire-related duties e.g. the Fire Drill Officer, Emergency Evacuation Coordinator and Fire Marshals

Levels of Protection	Fire alarm systems for the protection of **life**: • An **L4 system** just provides automatic detection on escape routes and in circulation areas. • An **L3 system** is designed to give early warning to everyone. Detectors are provided on all escape routes and all rooms leading onto the escape routes in order that people in the rooms can be alerted to the danger and escape safely before the corridor becomes smoke logged. • An **L2 system** is designed for the protection of life. Automatic detectors are installed in escape routes, rooms adjoining escape routes and high risk rooms e.g. kitchens, boiler rooms or areas with a large amount of combustibles, or rooms where the risk to people is particularly increased. • An **L1 system** is designed for the protection of life. It provides protection throughout the whole building. Automatic detectors are installed in all areas, including roof spaces and voids, with the aim of providing the earliest possible warning. • An **L5 system** is 'custom designed' and relate to some special requirement that cannot be covered by any other category e.g. computer server rooms may be protected with an extinguishing system triggered by automatic detection.
Means of escape	Route(s) provided to ensure safe egress from premises or other locations to a place of total safety.
Place of reasonable safety	A place within a building or structure where, for a limited period of time, people will have some protection from the effects of fire and smoke. This place, usually a corridor or stairway, will normally have a minimum of 30 minutes fire resistance and allow people to continue their escape to a place of total safety.
Place of total safety	A place, away from the premises, in which people are at no immediate danger from the effects of a fire.
Responsible person	The person(s) ultimately responsible for fire safety as defined in the Regulatory Reform (Fire Safety) Order 2005.
Vision panel	A transparent panel in a wall or door of an inner room enabling the occupant to become aware of a fire in the access area during the early stages.
Voice alarm system	Alarm sounders with pre-recorded voice messages to instruct building occupants depending on the nature of the emergency.