The Design, Installation, Commissioning and Maintenance of Fire Detection and Fire Alarm System in Domestic Premises
A Guide to BS 5839-6:2013

Colin S. Todd

BS 5839-6:2013 is the current code of practice that makes recommendations for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic premises. The 2013 edition of the code of practice has been extended in scope to include all parts of sheltered housing.

Compliance with BS 5839-6 is very commonly required throughout the UK by building control bodies, fire and rescue authorities and other authorities who may enforce provisions for fire safety in certain occupancies.

This new book, fully revised and updated in its third edition, is the comprehensive guide to BS 5839-6:2013. Based on in-depth experience of developing this code of practice as well as its use in the field, this book provides full background explanation and discusses the practical application of its recommendations.

About the author

Colin S. Todd is a leading specialist in fire detection and fire alarm systems and has been a significant player in the development of this important code of practice. He sits on several national fire technical committees and has drafted numerous codes and standards on behalf of BSI and other leading bodies. His published works include: A Comprehensive Guide to Fire Safety; A Guide to BS 5839-1; A Guide to BS 5839-8 (co-author) and PMS 79.
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Colin S. Todd
Dedicated to my three children, Keith, Jayne and Fiona. 
Along with love to Karen, with a special mention of the cats of Hutton Roof.
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About the author

Colin Todd MSc, FIFireE, FBEng, MIRM, MSFPE, C.Phys, FInstP, C.Eng, FIET, graduated from Edinburgh University with an honours degree in Physics. He then undertook a one-year Master’s degree in Fire Safety Engineering, developing a specific interest in quantitative assessment of risk, mathematical modelling and systems engineering.

In 1975, he joined the captive insurance company of Unilever Ltd. As a member of the risk management section, he carried out regular fire surveys of Unilever premises and was responsible for providing in-house advice on loss prevention matters. He later joined the technical department of the Fire Offices’ Committee (FOC), which dealt with the preparation of codes and standards on fire protection and approvals of fire protection equipment. With the FOC he specialised in electrical matters, and was responsible for assessing the suitability of fire alarm equipment for FOC approval. During this time he represented the FOC on national committees including those of the BSI. (The FOC was later incorporated into the Loss Prevention Council and, subsequently, the Building Research Establishment.)

Colin Todd is a chartered engineer and a Fellow of the Institution of Engineering and Technology (formerly the Institution of Electrical Engineers), the Institute of Physics, the Association of Building Engineers and the Institution of Fire Engineers. He is a corporate member of the Institute of Risk Management and the Society of Fire Protection Engineers. He is also a standards associate of the British Standards Society.

As the final President of the UK Chapter of the Society of Fire Protection Engineers, he was instrumental in the merger between that organization and the Society of Fire Safety Engineers to form the Institute of Fire Safety, which subsequently became the Engineering Council Division of the Institution of Fire Engineers (IFE) (now the Registrants’ Group of the Institution).

He is a previous member of the Board of the Division and the Division’s Membership Committee, which for many years he chaired. The Division
was empowered to award engineering qualifications, including chartered engineer, to suitably qualified fire safety engineers. He is also a previous member of the IFE Board, where he held the responsibility for technical issues. He serves on a number of British Standards Committees, including those concerned with fire detection and fire alarm systems. He also represents the Confederation of British Industry on an expert group of the Loss Prevention Certification Board that is responsible for the development of approval schemes for all aspects of automatic fire alarm equipment.

Colin is also experienced in assessment of fire alarm contractors’ competence in fire alarm work, acting on behalf of certification bodies. He also acts as a technical expert for the United Kingdom Accreditation Service (UKAS), in the accreditation of certification bodies that certificate fire alarm contractors under the relevant industry certification schemes.

Colin’s consulting practice, C.S. Todd & Associates Ltd, is independently certificated by the National Security Inspectorate (NSI) for the design and verification of fire detection and alarm systems under the British Approvals for Fire Equipment (BAFE) SP203 Scheme for fire alarm specialists. The practice was the first independent consulting practice to receive this certification.
Preface

This book gives an insight into the thinking behind the BS code of practice for the design, installation and maintenance of fire detection and alarm systems in dwellings (BS 5839-6). The need for the book does not arise from any deficiencies in the Code; it arises from the fact that users of the Code often wish to know why particular clauses have been put into the Code.

Achieving a suitable design for occupancies such as houses in multiple occupation and sheltered housing requires a detailed understanding of fire protection principles. Even in relatively small dwellings a number of engineering judgements have to be made. This book aids specifiers, designers and installers in making those judgements.

In 1994, the author of the book, Colin Todd, was contracted by the British Standards Institution to write the first draft of BS 5839-6. Subsequently, in 2003, he was contracted to draft the first major revision of the Code, which was published as the 2004 version. He is a member of the BSI technical committee responsible for the Code, being the Institution of Fire Engineers’ representative on the committee. Because of this, he was party to all the discussions that led to the current (2013) edition, and, indeed, he drafted much of the new text for that edition. He is thus ably qualified to expand on and explain the content of the Code. The interpretations given in this guide are, of course, Colin Todd’s but, naturally, they benefit from Colin’s close involvement in the development of the Code.

J. Naar
Chairman, BSI Technical Committee FSH/12,
Fire Detection and Alarm Systems
1. Introduction

The aim of this book is to provide guidance on what, at the time of writing, is a newly revised version of BS 5839-6. The new (2013) edition supersedes the earlier (2004) version, and incorporates major changes, particularly in respect of sheltered housing.

The Code, which, as one part of the BS 5839 suite of codes and standards, bears the generic heading ‘Fire detection and fire alarm systems for buildings’, is entitled ‘Code of practice for the design, installation and maintenance of fire detection and fire alarm systems in dwellings’. As such, it is to this Code that designers, suppliers, installers, regulatory authorities and consultants will turn in order to obtain guidance on good practice in respect of the provision of automatic fire detection in any type of dwelling, from a small flat to a stately home.

To many of us in the fire engineering profession, the design of fire precautions in most dwellings may lack the engineering challenge of the design of fire safety in more complex occupancies. However, it is easy to forget that the vast majority of fire deaths in the United Kingdom still occur in dwellings. Whether this is because of the attention to fire precautions that goes into the design of non-domestic buildings, leaving dwellings as something of a forgotten and final frontier for fire engineering, or whether it is simply the greater inherent risk associated with dwellings and their occupants, is a moot point; I suspect a bit of both.

However, there is no uncertainty in the benefit of domestic fire detection to the safety of life from fire. Indeed, I believe it would be no exaggeration to say that the domestic smoke detector is one of the greatest success stories in the last half century of fire protection, such has been the impact on loss of life. It is unfortunate that the media have never seemed to consider this success to be of major interest to the general public; perhaps success is less newsworthy than gloom and doom! Even in these days when every item of expenditure seems to come under the most stringent scrutiny, I believe that expenditure to date on domestic smoke detection can be shown to be cost
effective in terms of lives saved, given typical figures quoted for the value of a human life.

So domestic fire detection is successful and here to stay, but does it really warrant a comprehensive engineering code of practice, particularly as many ‘systems’ in dwellings still comprise nothing more than battery-operated smoke alarms installed by the occupier. The background to the production of BS 5839-6 will be examined more closely in the next chapter. Suffice to say at this stage that not only is the Code warranted, but that support for legislation, particularly building regulations, with a detailed and definitive code of practice is actually essential. Moreover, although we tend to think of a house (or dwelling) as a simple three- or four-bedroom house at most, I would suggest that Windsor Castle and Buckingham Palace are houses (possibly in multiple occupation)! Indeed, case law abounds as to what, in law, actually constitutes a house and a house in multiple occupation (HMO). Happily, in using the code of practice, it will rarely, if ever, be necessary to engage in such pedantry, albeit that it can be a source of substantial income for the legal profession.

Particular occupancies, such as sheltered housing, HMOs and large mansions all require a relatively detailed understanding of fire protection principles if the fire detection systems installed in them are to be suitably designed. However, even in relatively small dwellings, there are a number of engineering judgements to be made in respect of the form of protection that is to be provided. For example, will battery-operated smoke alarms be sufficiently reliable? Unfortunately, it is now the case that deaths are occurring in dwellings protected by such devices, from which batteries have been removed because of an inability to pay for replacements, frequent false alarms and ‘borrowing’ the batteries for use in other household appliances or toys. If we use mains-operated smoke alarms, should we connect them on their own circuit or is it acceptable to connect them on, say, an existing lighting circuit? How many smoke alarms or smoke detectors do we actually need in any case? Is it sufficient to install them just in the hallways and landings or might we need them in some rooms as well? There is a need to address such questions in some detail as domestic fire detection is now the norm rather than an unusual accessory, and these matters are fully considered in the Code.

As the author of both the first draft of BS 5839-6, and the draft of the 2004 version, it might be argued that I failed to draft a sufficiently simple code of practice if a guide, such as this, to the Code is warranted! In fact, I believe that the Code should, for most circumstances, prove simple and straightforward to use. Some may argue that the Code, at first reading, seems rather complicated for something as simple as dwellings. However, this is a result of the very comprehensive nature of the Code and the
consequent need to provide guidance on both life safety and property protection in the very wide range of buildings that may constitute dwellings of one kind or another. It is also necessary for the Code to acknowledge the numerous different forms of fire detection ‘system’ that are currently available, ranging from one or more battery-operated smoke alarms to comprehensive new technology systems of the type described in BS 5839-1. As in the case of any British Standard, the Code does not hypothesise on what might become available, but merely reflects on what is offered on the marketplace today and the recognized good practices that are associated with the different types of equipment.

Given that it is then necessary to ‘match’ system type to application – for example limiting the use of the simpler systems to smaller and lower risk properties – the Code at first sight may seem something of a cultural shock, bearing in mind that other available guidance is restricted to a few basic design requirements in the guidance that supports building regulations and a guide to householders produced by the Government. However, I hope that when it comes to applying the Code to any particular dwelling, using any particular type of fire detection installation, the Code should provide simple and definitive advice.

Even so, since BS 5839-6 effectively takes domestic fire detection a step forward and introduces new standards for the protection of dwellings by automatic fire detection, I hope that this guide will provide some insight into its recommendations and help to ensure that the philosophy behind the recommendations is accurately implemented in future installations.

However, as a code of practice, it is accepted that, in some circumstances, variations from the recommendations of the Code may be appropriate; the Code itself caters for such variations. As experience in the use of the Code grows and any anomalies come to light, amendments may be necessary. If users of the Code consider that an amendment to a code or standard may be necessary, or that some clarification may be required, it is always worthwhile writing to the BSI committee responsible for its production, in this case committee FSH/12/1. My experience of BSI committees is that all such comments, whether from a major installer, a small electrical contractor, a single independent consultant or whoever, are always given serious consideration, and it is from such comments that codes of practice sometimes develop and keep pace with custom and practice.

Obviously, this guide is not a substitute for the Code itself, but should be read in conjunction with the Code. The guide should not be regarded as offering any final authoritative interpretation on any recommendations

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of the Code, although I hope that the opinions expressed are an accurate
reflection of the committee’s intent when the Code was published. If it is
essential to obtain a definitive interpretation, such as in the event of a
dispute, advice may be sought from BSI, who will refer the matter to the
relevant committee. Ultimately, the final arbiter in such a dispute can,
however, only be the Courts. Hopefully, BS 5839-6 will prove sufficiently
unambiguous that such disputes will be extremely rare.

As discussed in the next chapter, domestic fire detection has made a
significant impact on fire deaths in dwellings, which account for around
80% of all fire deaths. It is relatively cheap in relation to the enhancement
in life safety it can provide. It can protect those in society who are most
vulnerable to fire, namely the elderly and the very young. Personally, as
a parent, I was always reluctant to permit my children to stay overnight
with friends unless the house has smoke alarms, particularly if I know that
members of the family are likely to smoke.

However, if the full potential of this important form of fire protection is
to be realized, long-term reliability and continued use must be ensured by
proper system design, appropriate installation practices and the avoidance
of unnecessary false alarms. The new version of BS 5839-6 will go a long
way towards achievement of this objective. As recently as ten years ago,
a family saved from fire by the early warning from a smoke alarm was
newsworthy. Hopefully, by the time BS 5839-6 is ready for its next revision,
the death of a family due to the absence of properly designed and installed
fire detection will be sufficiently unusual to be equally newsworthy.
3. Scope of BS 5839-6

The recommendations of BS 5839-6 basically apply to any form of fire detection installed in any premises that would, in common parlance (as opposed to a strict legal context), be described as a house or dwelling, with the possible exception of some houses that are converted into hostel-type accommodation, and in sheltered housing schemes. There will certainly be very few, if any, forms of conventional single-family (or ‘single-household’) accommodation that do not come within the scope of the Code, whether or not such units are independent, or part of larger premises. Moreover, unlike many British Standards, which are clearly not intended to be retrospective, this Code gives guidance on the protection of existing, as well as new, dwellings. However, nowhere does the Code suggest that existing fire detection and alarm systems in dwellings should be upgraded. It is more the case, therefore, that the retrospective nature of the Code relates to new fire detection systems for existing dwellings.

The ‘systems’ covered by the Code

Let us consider first though the forms of fire detection to which the Code applies. Before we actually open the Code to read it, the use of the term ‘fire detection and fire alarm systems’ in the title might, at first, mislead us; we might think that the Code applies only to ‘systems’ in the sense that the term is used in BS 5839-1, i.e. systems comprising control and indicating equipment, fire detectors and independent alarm sounders. In fact, nothing could be further from the truth, as is implied, if not expressly stated, in the Foreword to the Code, which explains that BS 5839-1 does not provide recommendations for fire detection and fire alarm systems in dwellings.

However, the very first clause of BS 5839-6 removes any ambiguity. Clause 1 (Scope) advises that the ‘systems’ covered by the Code range from...
a single self-contained smoke alarm (which could be battery-operated) to complete systems of the type to which BS 5839-1 applies. Moreover, lest it be thought that the application of the word ‘system’ to a single battery-operated smoke alarm is something of a contradiction, it should be pointed out that the term ‘fire detection and fire alarm system’ is defined in clause 3 (Definitions). The definition for the purpose of BS 5839-6 is a:

‘system that comprises a means for automatically detecting one of the characteristic phenomena of fire and a means for providing a warning to occupants.’

A note to the definition makes it clear that this definition is intended to include ‘systems’ that comprise one or more smoke alarms as well as, of course, the ‘systems’ to which the term is more commonly applied.

An important point to note from clause 1 is that the recommendations of the Code may be applied to the fire detection part of a combined fire/intruder alarm system or a fire/social alarm system. (Social alarm systems are alarm systems installed in the homes of elderly and disabled people to enable them to summon help in an emergency.) This is important to note because we may well see much greater use of such integrated systems, particularly those integrating fire and intruder detection, in the future. This will, arguably, be a very good thing because it could potentially enable us to have slightly more sophisticated domestic fire detection systems, with a higher degree of monitoring and control, on the back of the intruder alarm system that occupiers will much more readily install. After all, the public perceive burglary as a much greater risk than fire and, in the sense of the greater chance of occurrence, they are probably correct in this perception. Intruder alarm systems are no longer an accessory of the large houses of the rich – just count the bell boxes in any typical row of back to backs in any large town. Because of the mass market, the cost of control panels has dropped considerably.

Unfortunately, the public perception of fire risk is unlikely to create a mass market for domestic fire alarm control panels (although such a panel is described in an Annex to BS 5839-6). However, fire detection as a value added facility in an intruder alarm system is likely to prove more attractive, with no need for separate control panels, and the possibility, should it be desirable, for remote transmission of fire alarm signals to an alarm company monitoring centre. Such integration is not entirely without certain technical obstacles, owing to the differences between this Code and those dealing with intruder alarm systems. These will be considered in a later chapter, but they are not insurmountable; the basic philosophy should, however, be that the integrity of the fire detection and alarm
arrangements should not, as a result of the integration, be reduced below the standards advocated by BS 5839-6.

The Code does not specifically refer, in the scope, to integration of fire detection with other types of alarm system, but presumably this would be equally acceptable, subject to similar safeguards to protect the integrity of the fire detection arrangements. In the very long term, we may see systems in which, for example, any permutation from the following could be provided:

- fire detection
- intruder detection
- carbon monoxide gas detection (a growth area in the UK)
- social alarm provisions.

In high-tech homes of the future, the fire detection might even be integrated with building control and monitoring systems.

**The properties covered by the Code**

Now, turning to the types of premises that come within the scope of the Code, clause 1 indicates that these include, but presumably are not restricted to, the following:

- bungalows
- multi-storey houses
- individual flats
- individual maisonettes
- mobile homes
- premises used as sheltered housing
- HMOs comprising several self-contained single-family dwelling units
- NHS ‘supported living’ housing in the community (e.g. for mentally ill people)
- permanently moored boats used solely as residential premises.

**Individual Flats, maisonettes and sheltered housing**

In the case of flats and maisonettes used for general housing, the Code makes it quite clear that its recommendations only apply to the individual dwelling units and not to any communal parts. This is because, in the case of blocks
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of flats and maisonettes, compliance with building regulations necessitates that each dwelling unit is constructed as a fire resisting enclosure. The implications of this are that, in the event of a fire in, say, a single flat within a block of flats, every other flat should usually be a place of relative safety, and complete evacuation of the block will not normally be necessary, even if, when the door of the flat with the fire is opened, some smoke enters the communal escape routes. The escape routes themselves should, of course, be sterile areas, devoid of any combustible materials. Thus, in the event of a fire, all residents, other than those in a dwelling in which fire starts, should be safe to remain within their own flat. This is normally described as a ‘stay put’ policy. If there is a need for further residents to evacuate, this is then initiated by the fire and rescue service.

Therefore, fire detection systems are not normally installed throughout the communal areas of flats and maisonettes. (The only occasional exceptions might be old blocks of flats with insufficient compartmentation to support a ‘stay put’ policy.) Indeed, a communal fire alarm system in a block of flats can actually result in a certain amount of danger to occupants, by causing unnecessary evacuation, perhaps, in the case of an actual fire, into a smoke-filled corridor or staircase. A further practical consideration is that, unless there is a 24 hour concierge or similar arrangement, there may be no responsible person to take charge of the system, silence and reset alarms or investigate alarm conditions.

Thus, although BS 5839-6 does not specifically recommend against the installation of a fire detection and alarm system in the communal parts of flats and maisonettes (but BS 9991\(^4\) does recommend against this), it excludes any such system from its scope. Most people who die from fires in blocks of flats and maisonettes do so because of a fire in their own dwelling. Avoidance of these deaths can be achieved simply by installation of smoke alarms in the flats or maisonettes (and this is precisely what BS 5839-6 recommends in a later clause).

In the case of sheltered housing, logic might dictate that a similar situation applies. In sheltered housing, each flat is designed as a fire-resisting ‘box’ in exactly the same way as a flat in a general needs block of flats. In very simple sheltered housing blocks with no communal facilities, architecturally, the building is more or less indistinguishable from a general needs block of flats, and then there is no need for a communal fire alarm system. However, more commonly nowadays, sheltered housing is often provided with various communal facilities, such as laundries and lounges; the common parts may also be less sterile than those of a general needs block to provide a more

\(^4\) BS 9991:2011, *Code of practice for fire safety in the design, management and use of residential buildings.*
homely environment by the provision of items, such as tables or chairs. In addition, there is often an office for a warden or scheme manager.

Accordingly, it is commonly appropriate for a communal fire alarm system to be provided in modern sheltered housing. In addition, for reasons discussed later in this guide, in sheltered housing, it is recognized practice for fire alarm signals (both from the flats themselves and, where there is a communal system, from the common parts) to be transmitted automatically to an alarm receiving centre. In the 1995 and 2004 editions of BS 5839-6, any fire alarm system within the common parts of sheltered housing was outside the scope of the standard. The system would have been covered by BS 5839-1. However, in the 2013 edition, there was a major change in the scope of BS 5839-6 (and a corresponding change in the scope of BS 5839-1). In the 2013 edition, the fire alarm systems in both the flats themselves and all common areas (to the extent that a system is necessary in the common parts) falls within the scope of BS 5839-6, and any system within the common parts no longer lies within the scope of BS 5839-1 (though the Grade A system will be one to which the vast majority of the recommendations of BS 5839-1 applies). This change was made in 2013 as a result of recognition by the BSI technical committee of the change in the nature of sheltered housing over recent years and the lack of consistent guidance in other codes of practice and guidance documents. In this current guide, a new chapter on sheltered housing has been included to explain the background to this change of scope in BS 5839-6, and to explain the philosophy behind the associated recommendations incorporated in the 2013 edition.

Houses in multiple occupation

In the case of houses in multiple occupation, a different situation pertains. These properties are usually large single-family houses that have been converted for multiple occupation. (If the property were purpose built for multiple occupation in the form of numerous single-family dwelling units, it would, of course, more likely be regarded as a block of flats and not an HMO.) The integrity of fire resisting barriers may not, in practice, be such that each unit of accommodation can be treated as a place of safety. Therefore, the house must be treated as a single protected premises. Accordingly, where the Code applies to an HMO, the entire premises, and their fire detection requirements, are addressed by the Code.

However, not all HMOs come within the scope of the Code. It is often convenient to divide HMOs into two distinct categories, namely those comprising a number of self-contained dwellings and those of the hostel type. It was found convenient to recognize this distinction in BS 5839-6, not least because the range of premises that can be regarded as an HMO...
are quite wide, and the limits are not well defined. (A good lawyer can happily while away many an hour proving or disproving that a property is an HMO!) Premises that are clearly HMOs, or are normally treated (rightly or wrongly) by some authorities as HMOs, include houses sub-divided into flats, youth hostels, hostels for homeless people, homes for women who have suffered domestic violence, houses shared by students, and student hostels within a university campus.

Clearly, some of the examples given above are not similar in nature to properties that we generally think of as a house; some may actually be purpose built for their present use and may never even have started life as a large single-family home. For those at one end of the range, the hostel-like properties, BS 5839-1 appears to give adequate advice on fire detection and alarm systems. Indeed, there may only be a fine dividing line between some of these premises and conventional hotels, for which BS 5839-1 is ideal. Since there is no easy line to draw between one property of the hostel type and another, BS 5839-6 excludes all HMOs of the hostel type from its scope.

However, HMOs comprising properties in which people live in self-contained single-family flats or maisonettes are within the scope of the Code. Many of these properties have some readily identifiable factors that are common to flats (e.g. the need to provide warning to occupants in the event of a fire in their own accommodation, the relatively long-term occupation by occupiers of dwelling units, the potential absence of inter-relations between occupants of different independent living units, the absence of supervision, the absence of anyone to take charge in the event of a fire warning, etc.), while retaining some factors that would also have been relevant to the original house prior to its sub-division (e.g. the need to provide warning before fire affects the communal escape routes). The likely absence of supervision, and of a responsible person to monitor the alarm system and take charge in the event of an alarm signal, alone give rise to special considerations in the design of fire detection and alarm systems. In the case of properties of this type, BS 5839-1 may not, therefore, always provide sufficient guidance.

It is appreciated that circumstances will arise in which it is not entirely clear as to whether a house should be regarded as a hostel or as a number of self-contained dwellings. This can sometimes arise in the case of certain student accommodation. However, in most cases, simple common sense will dictate which description is more appropriate and, therefore, whether the appropriate code of practice is Part 1 or Part 6 of BS 5839. In any case, the same dilemma can arise in the more broad application of fire legislation to such premises, and so difficulties of interpretation are not, therefore, unique to fire detection and alarm considerations.
In providing technical guidance, however, BS 5839-6 tends to regard houses shared by not more than six residents, living together as a single household, as equivalent to a single-family dwelling house, in that the recommendations of the Code for single-family dwellings also apply to these dwellings. A classic example of such a dwelling is one shared by students. However, even where care is provided to some of the six residents, the Code treats the premises as a dwelling (as opposed to, say, a residential care home, for which, clearly, the recommendations of BS 5839-1 would generally be more appropriate). The same approach is adopted to single-family dwellings with long-term lodgers, as research has tended to indicate that the risk to the occupants from fire is not significantly different from that in any typical single-family dwelling house.

The above interpretation of the scope of the Code is also reflected in clause 3, in which a dwelling is defined, for the purpose of interpreting BS 5839-6, as a:

‘unit of residential accommodation occupied (whether or not as a sole or main residence):

a) by a single person or by people living together as a family; or

b) by not more than six residents living together as a single household, including a household where care is provided for residents; or

c) by persons who do not live together as a family, but who live in self-contained single-family flats, maisonettes or bedsits within the unit.’

**NHS supported living in the community**

The description ‘NHS supported living in the community’ coincides with the description in the title of a document published by the Department of Health in England and Wales giving guidance on fire precautions in such properties. It applies to community-based premises providing ‘supported living’ for people who have learning difficulties or mental illness, including those with physical handicap. These properties might be regarded as akin to an HMO, but, in view of the special fire problems associated with the occupants’ disabilities, it is appropriate to follow the tailor-made and detailed guidance contained in the Department of Health document, Health Technical Memorandum 88 (HTM 88), one of the suite of documents dealing with fire safety in health care premises published under the generic title Firecode. (In fact, HTM 88 advises that, although such premises do...
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not constitute an HMO, the standards advocated in HTM 88 would meet requirements for HMOs, imposed by local authorities.)

HTM 88 technically applies only to properties with no accommodation on a floor more than two floors above the ground or access level. HTM 88 also assumes that the premises will be occupied by no more than six residents. However, BS 5839-6 does give guidance on fire detection and alarm systems for larger properties of the same nature. The guidance in the Code on the standard of protection afforded to properties within the scope of HTM 88 is broadly consistent with the guidance in HTM 88. For properties outside the scope of HTM 88 a higher standard of system is recommended by BS 5839-6.

Mobile homes and other forms of dwelling

For the purpose of BS 5839-6, a mobile home is defined as a:

‘transportable unit of living accommodation that does not meet the requirements for construction and use of road vehicles but that retains means for mobility.’

This somewhat convoluted description is based on definitions within other British Standards relevant to such accommodation.

It should be noted, however, that the Code excludes caravans from its scope. Other premises excluded from the scope include hostels and communal parts of blocks of flats or maisonettes (as already discussed), and boats (other than permanently moored boats used solely as residential premises).

Scope of protection: life and property

Most of the recommendations of the Code are concerned principally with the protection of life. However, the Code does also address property protection. This was possibly a little controversial when the first (1995) version of the Code was released for public comment. At that time, BSI requested particular comment on whether it should include recommendations for property protection. The general consensus was that it should do so. Consideration was given to pulling all such recommendations together into one section, but, in practice, this is probably not necessary, as recommendations specific only to property protection are not extensive. Moreover, for protection of large properties, the Code advocates that the
fire detection and alarm installations should conform to the relevant recommendations of BS 5839-1.

**Use of BS 5839-6 systems in workplaces**

When the Code was first published in 1995, there was no intention that its recommendations should be applied to places of work (other than, perhaps, in the case of someone working from their home). However, without any real reference to the BSI Committee responsible for the Code, others produced guidance on fire protection of small workplaces that makes reference to the use of BS 5839-6 systems.

Philosophically, there must, of course, be some very small workplaces, in which one or two interlinked smoke alarms might be satisfactory – perhaps as a means of warning to the occupants of a small, cellular office that there is a fire in an outer office, through which they must pass to escape. If the premises are so small that no electrical fire alarm system is necessary (because word of mouth would, otherwise, be a suitable means of warning in the event of fire), it might be unreasonable to expect a complete fire alarm system to be installed for the above purpose. (Even then, arguably to satisfy the Health and Safety (Safety Signs and Signals) Regulations 1996, which, effectively, require that fire alarm systems in workplaces require a standby power supply, the smoke alarm(s) would need to be mains-operated with a standby battery or capacitor.)

The problem with formal recognition of BS 5839-6 systems for use in workplaces is that it becomes something of a ‘thin end of the wedge’. There is serious potential for employers to then install smoke alarms or other forms of BS 5839-6 systems as a cheap, sub-standard alternative in premises that unequivocally require a proper fire alarm system complying with BS 5839-1. (The author has even encountered the use of domestic smoke alarms in part of a large warehouse!). To avoid this situation, BS 5839-6 excludes from its scope any premises used for purposes other than as a dwelling, such as small shops, factories or similar premises used solely as a place of work. Given this exclusion with BS 5839-6, it would seem inappropriate for any other guidance document to advocate the use of BS 5839-6 systems in workplaces, or for specifications for fire detection systems in workplaces to call for compliance with BS 5839-6. It is thus the responsibility of any party proposing the use of smoke alarms, for example, to justify their use; it is likely that such applications will be very limited.
For whom is the Code intended?

When reading BS 5839-6, it is worth remembering that its recommendations, which deal with many quite complex and engineering-related matters, are not intended for the householder. Clause 1 makes clear that they are intended for architects and other building professionals, enforcing authorities, contractors and others responsible for implementing fire precautions in dwellings. However, those writing guidance for householders in the form of, say, instructions provided with smoke alarms should take account of the Code’s recommendations (particularly clause 24 which deals with user instructions) in their guidance. There will still, of course, be a need for documents such as the Government’s ‘Smoke Alarms in the Home’, which give simple guidance to householders. It may be necessary, nevertheless, for such documents to be updated to take account of the Code’s recommendations.