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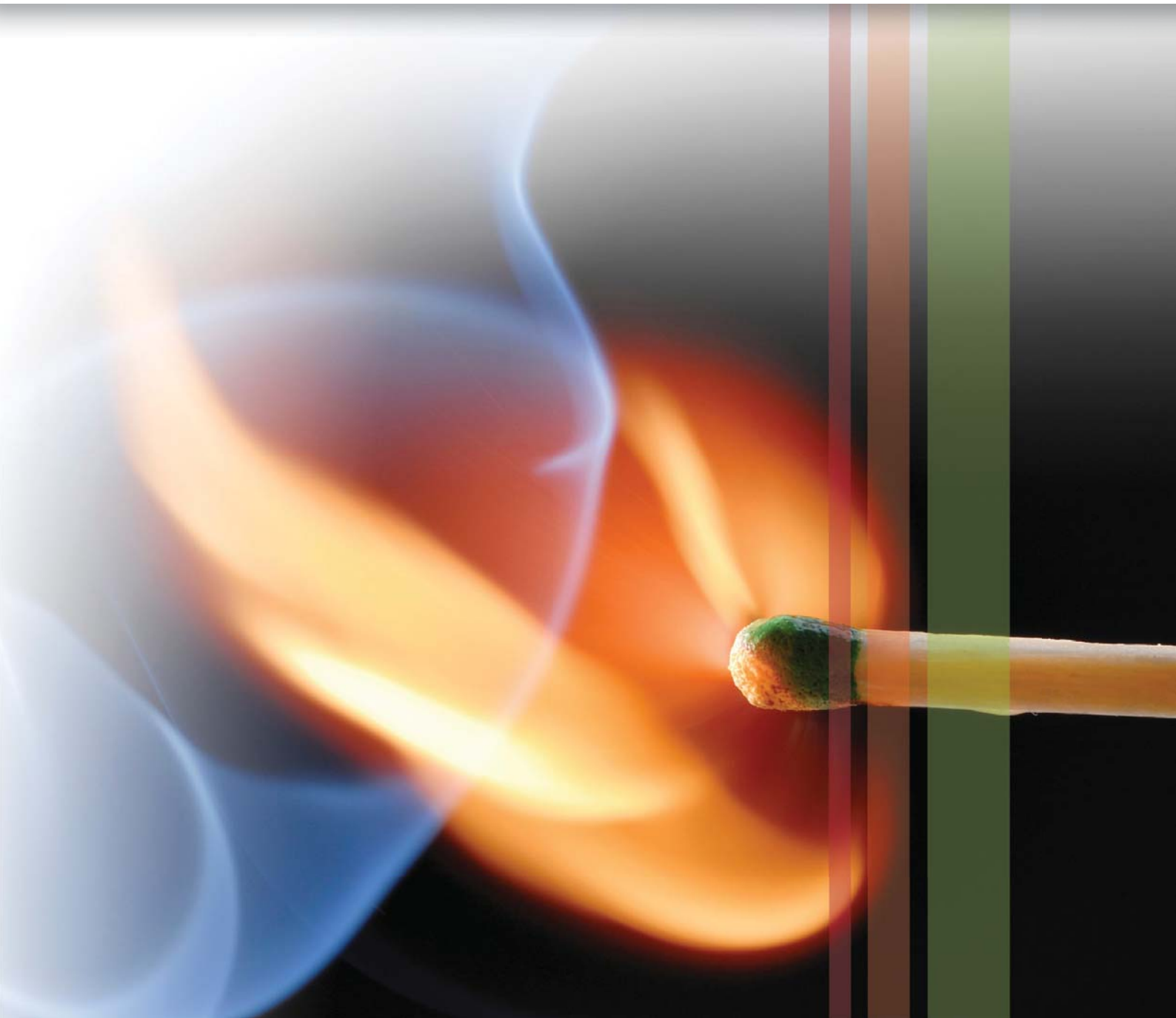
Managing Fire Safety in Commercial and Residential Premises

Minimising losses / maximising business benefits / avoiding corporate and personal liability



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James Truscott

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For over 10 years Cardinus has supplied innovative on-site survey/ assessment, training and consultancy safety solutions to some of the world's largest organizations…protecting people, property and businesses. Throughout that time we have gathered a wealth of information from customers and colleagues including research, case studies, articles and testimonials.

This report is based on the views and experiences of our specialist consultants, which we feel, will have applications for your organization as you seek to reduce injuries, reduce costs and protect your property assets.

The report will help you to view claims objectively and provide some different perspectives relating to how fire safety can be 'marketed' to management, employees, tenants and others responsible for the ownership and/or management of property.

In particular, I hope that the report will provide some 'ammunition' for those of you seeking budget approval for fire safety and fire protection programmes.

I would like to thank the contributors for their help in producing this report.

If you have any questions or comments please do not hesitate to contact me.

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About the author

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Barry Holt is the Head of Health and Safety Consulting with Cardinus Ltd part of the THB Group. He has over 30 years experience in providing environment, health & safety consulting services and training to a wide range of commercial, industrial and public organizations in most European countries, the Middle East, USA & Far East. Prior to joining Cardinus in January 2009 he was Regional Director, Europe with the National Safety Council, USA and a senior consultant in the Business Risk Practice at Willis and Principle Consultant at Norwich Union Risk Services.

He is also involved in the academic field, being a visiting lecturer in health & safety and risk management on MSc programs at University College, London and formerly at Imperial College, London. For 4 years he was external examiner on the postgraduate programs in the Centre for Hazard & Risk Management, University of Loughborough. Barry was a member of the Project Board for a 3 year Government funded research project to identify key factors influencing risk perception in construction projects. This was carried out by University College, London & the University of Manchester Business School.

His clients have included major blue chip organizations, particularly in the engineering, chemical, petroleum, food & drink, pharmaceutical and mining industries including Royal Mail Group, Shire Pharmaceuticals, Siemens, Phillip Morris, Kraft Foods, Kuwait Petroleum Corporation, ILO, BP Chemicals & Eastern Petrochemicals (Saudi Arabia). He has written numerous articles in journals and has contributed to two books on risk management in construction projects. He has also spoken at many events including the NSC Congress and a UN Environment Program conference at the Royal Society in London.

He has a BSc (Eng) in Metallurgy from Imperial College, London and is an Associate of the Royal School of Mines, a Chartered Member of the Institution of Occupational Safety & Health and a Member of the International Institute of Risk and Safety Management. Barry was formerly a Director of the Institute of Risk Management and was their Chief Examiner in Risk Analysis and Chairman of their Examinations Committee.

Background

Fire is probably the most likely catastrophic risk to which we are exposed; this exposure can occur not only in the workplace but also in the home. When a fire occurs, not only does it pose a major threat to life but it can destroy property and cause major business loss, or in many cases, failure.

To give an indication of the scale of the problem, in 2006, UK fire and rescue services attended a total of 426,000 fires, (Fire statistics, United Kingdom, 2006). 79% were external, e.g. vehicle, refuse or grass, and the remaining 89,460 fires were in business premises or within private dwellings (including blocks of flats or multi-tenanted buildings).

If we consider the direct impact on people, these fires resulted in 491 deaths, which was the lowest since 1959 and continued the downward trend since the peak of 1,096 deaths in 1979. The majority of these fire related deaths occurred in private dwellings with groups with the highest fatality rates being the elderly (80+), males and those living in Scotland. Also in 2006, non-fatal casualties resulting from fire fell for the seventh successive year to 13,800 with the northwest region having the highest casualty rate. In addition, casualties involving fire fighters dropped to 350, although there have recently been some high profile incidents in which fire fighters have been killed or injured such as the fire in a block of flats which occurred earlier this year in south-east London.

The data relating to the causes of fires show that in dwellings, 80%+ of fires were started accidentally, while in non-dwellings this figure was 60%. This suggests that a large number were, or could have been started deliberately. As a result of the fires in properties other than dwellings 37 people were killed and 1,500 injured, representing rates of 1 death and 40 injuries per 1,000 fires.

The consequences, for both organisations and individuals can be serious. Apart from loss of life and the destruction of property, failure to comply with regulatory requirements can lead to fines, imprisonment and disqualification. This applies to directors, managers and company secretaries.

Causes of fire

A fire is a chemical reaction between a fuel and oxygen, which is exothermic and generates sufficient energy to become self-sustaining. Although it generates energy it needs an ignition source to provide heat energy to start the reaction. The process is often represented as the 'Fire Triangle'.

Legal requirements relating to fire safety

Legislation has been in place in the United Kingdom for many years to ensure the need for fire protection measures related to various premises is recognised and implemented to protect those people who may be involved or affected by a fire incident at those premises.

The Regulatory Reform Order (Fire Safety) 2005, commonly called the RRO or FSO, came into force on October 1st 2006 replacing over 70 previous items of fire safety legislation. The Order applies in England and Wales.

In Scotland the similar relevant legislation is in two parts; Part 3 of the Fire (Scotland) Act 2005 and the Fire Safety (Scotland) Regulations 2006.

In Northern Ireland the applicable legislation is Part 3 of the Fire and Rescue Services (Northern Ireland) Order 2006. This is still subject to commencement orders, expected during this year 2009.

The order says that fire risks must be managed in non-domestic premises (including the common parts of blocks of flats) and therefore applies to fire safety, i.e. the safety of people within premises, generally a building but not always. It replaces the previous requirement for a fire certificate, which was issued by the fire authority, and these are no longer valid, although perhaps useful as a starting point for the FRA.

This **legislation has changed very recently** and the mechanism at the heart of it is the **requirement for a Fire Risk Assessment (FRA) for each property**. The onus for **producing the FRA rests with the relevant 'Responsible Person',** a role defined in the new legislation as:

- A person who has control over a premises or part of a premises
- An Owner or Managing Agent for premises or shared parts of premises
- An Occupier in premises such as those used by the self-employed or voluntary organisations if they have control of all or part of the premises
- An Employer at those parts of a building used by staff and visitors

In many instances the **'Responsible Person'** will be obvious and it may be that a number of people will have some responsibility. **It is the 'Responsible Person' that carries the legal responsibility for the FRA** and must, as far as reasonably practicable, make sure that everyone on the premises, or nearby, can safely escape in the event of a fire. Everyone includes employees, occupiers, visitors or members of the public.

If the **'Responsible Person'** does not have sufficient training or knowledge **he must appoint a 'Competent Person' to carry out a Fire Risk Assessment** and regularly review the property exposures with regard to the FSO.

The 'competent person' is defined in as:

- Someone who has sufficient training, experience, knowledge or other qualities to enable them to carry out a measure correctly.

In order to comply with the legislation, you should appoint a 'Competent Person' to:

- Carry out a Fire Risk Assessment identifying any possible dangers and risks;
- Consider who may be especially at risk;
- Provide advice on removal or reduction from fire as far as is reasonably possible and provide general fire precautions to deal with any possible risk left.

The 'Responsible Person' has overall responsibility and should:

- Take other measures to ensure protection is provided if flammable or explosive materials are used or stored;
- Create a plan to deal with any emergency and formally record events/findings;
- Review any subsequent events/findings wherever incidents or exercises are encountered.

The assessment should be reviewed on a suitable and sufficient basis in conjunction with your 'Competent Person.'

This legislation is applicable to virtually all premises with the exception of private homes although where such homes are in a block or building the legislation applies to the common use areas of those blocks/ buildings.

Case Law:

As this is relatively new legislation, the body of case law is relatively limited but is increasing. Recent examples of prosecutions under the Regulatory Reform (Fire Safety) Order 2005 in England include Shell, a care home provider and a property manager, all receiving substantial fines.

1) "Shell International Limited was fined £300,000 and ordered to pay £45,000 in costs after pleading guilty to three breaches of the Regulatory Reform (Fire Safety) Order 2005 in England and Wales – the largest fine imposed under the legislation to date.

London Fire Brigade prosecuted Shell following two small fires in the space of three weeks at its office complex in central London. In the first incident, on 19 December 2006, around 40 people evacuated the building and some 20 firefighters attended. In the second, on 5 January 2007, cutting equipment set fire to insulation material.

A resulting inspection carried out by the brigade in January 2007 identified extensive breaches, including blocked escape routes and fire exits, defective fire doors and excessive fire loading. The fire loading had been dramatically increased because of refurbishments taking place on upper floors.

The brigade served a prohibition notice on the company, restricting public and staff access to the Shell Tower and basement levels of the complex. The notice was lifted three days later after the company remedied the fire safety failings.

It was also found that Shell's fire risk assessment for the site had not been reviewed or updated since March 2003. According to the brigade, the condition of the general fire precautions within the Shell Tower had deteriorated for more than three years, with the matters identified by the 2003 fire risk assessment getting worse.

In mitigation, Shell apologised for the shortcomings and said it had taken immediate action to put things right. An independent review of fire safety plans and the condition of the building had also been carried out, it said."

2) A Healthcare Company was ordered to pay out £100,000 after pleading guilty to charges relating to inadequate fire safety standards at one of its care homes.

The case was mounted by Surrey Fire and Rescue Service after a boiler room fire at Norfolk House in Weybridge in January 2007. The investigation found that the fire started as a result of accumulated general rubbish and storage in the boiler room over a period of time.

Staff had not been instructed in the findings of the fire risk assessment, which had identified that the boiler room was a high fire risk area that should not be used as a store. In addition, the company did not have an adequate system in place for reviewing fire safety arrangements at the home."

3) A property management company was ordered to pay over £25,000 in fines and costs after pleading guilty to serious breaches of fire safety legislation following a prosecution brought by the London Fire Brigade.

The company admitted guilt on seven contraventions of the Regulatory Reform (Fire Safety) Order 2005. The case was held on Wednesday 17 June 2009.

The prosecution followed a fire on 14 November 2007 at a house converted into flats. The fire started under the stairs due to an overload of the electrical systems. Inspecting officers visited the premises the following day and found several fire safety failings. These included no means of detecting fire in the building and fire doors were not properly maintained. The faults with the fire doors meant that if a fire broke out in the stairwell of the premises, the only likely available exit on the first floor was the windows.

Assistant Commissioner for Fire Safety Regulation Steve Turek said: "I urge landlords, business owners and employers to take their fire safety responsibilities very seriously. All premises owners and operators must make themselves aware of the regulations, to undertake a fire safety risk assessment, which is now mandatory and act upon its findings."

4) Two landlords of bedsit accommodation in north London have been sentenced to six months' imprisonment and ordered to pay £5000 costs each for breaching fire safety legislation. The prosecution followed a fire on 31 March 2007 at a house converted into bedsits.

The landlords were sentenced on Friday 12 June 2009, after previously pleading guilty to several breaches of the Regulatory Reform (Fire Safety) Order 2005. These included inadequate fire detection systems, a lack of proper fire doors for bedrooms or for the communal kitchen, no emergency lighting in the building's stairway, a lack of fire fighting equipment such as a fire extinguisher or fire blankets, and no fire risk assessment available for inspection.

A further inspection was arranged where an enforcement notice was issued, explaining that the breaches needed to be dealt with. But after further contact with the co-owners and further inspections over a number of months, inspecting officers found that no remedial work had been completed.

"This is our second prosecution resulting in a custodial sentence and again sends out a strong message to landlords and building owners," said Brian Coleman, chairman of the London Fire and Emergency Planning Authority. "Our role is to keep Londoners safe, and where we see that you are not taking your legal fire safety responsibilities seriously, we will take action."

5) A property manager in west London was fined £5,600 and ordered to pay substantial costs after being found guilty of seven breaches of the Order.

The case related to a fire at a house converted into flats in Hayes in September 2007. Two residents were hurt as they escaped by jumping from a first-floor window.

The court heard that the property manager did not own the premises, but was managing it for his uncle and was responsible for maintenance and repairs.

The offences included failing to properly assess the fire risks, and failing to provide a smoke alarm and ensure the escape route was protected by fire-resistant doors.

The cost of fire to UK business

The International Association has collected data on fire losses over the last 25 years for the Study of Insurance Economics, (the Geneva Association). Initially this represented thirteen countries but has now expanded to fifteen although certain countries have dropped out. However, of the countries participating in the 2008 survey, eight of these have formed the core and have participated in all studies.

From the 2008 data, (World Fire Statistics No. 24, October 2008), the mean direct fire loss for the eight core countries represents 0.16% of gross domestic product, a reduction from 0.28% in 1983. It was also noted that all eight countries show a fall. In addition, the mean fire insurance administration cost fell from 0.13% of GDP to 0.08%, again with every country registering a fall. However, these reductions were offset by a mean rise in fire protection costs for building from 0.22% of GDP to 0.28%. In this example, six of the eight core countries experienced a fall.

If we consider the direct loss figures for the UK, the figures, for the period 2003-5, were:

2003	£1.55 bn
2004	£1.30 bn
2005	£1.90 bn

These figures represent 0.13% of GDP over the period. By comparison, the lowest average was from the Czech Republic with 0.07% GDP and the highest was from Austria at 0.26%. The US figures showed a rate of 0.10% of GDP. These figures take into account only the losses resulting from fires and explosions resulting from fire. They do not include isolated explosions.

The costs of indirect fire losses have also been reviewed and those for the UK over the same period show an average figure equivalent to 0.009% of GDP.

These figures only relate directly to the business risk. In addition we need to consider the personal impact in terms of death and injury that has been discussed above. Also there is a societal cost. This results from the cost to central and local government of providing fire and emergency services and from the costs of dealing with the medical costs resulting from treatment of victims.

How do we manage the risks and minimise costs?

The Fire Risk Assessment

It is the duty of the 'Responsible Person' to ensure the FSO is complied with.

To this end, a 'Competent Person' should carry out the site Fire Risk Assessment.

One means of producing the Fire Risk Assessment basically involves five steps:

1. Identify the Fire Hazards
2. Consider the people who may be at risk if a fire occurs
3. Evaluate the risks of fire, assess existing fire safety measures and act if improvements can be made
4. Record, assess, plan and train
5. Complete a periodic Review

In practice, the 'Competent Person' typically carries out an on-site visit at which steps 1-3 above are completed and an assessment recorded. The 'Responsible Person' will then act on the fire risk assessment report provided by the 'Competent Person' in order to do everything 'reasonably practicable' to protect people from harm, as required by the legislation. This should also include appropriate training and communication of relevant information as shown below.

The fire risk assessment should identify an appropriate period for review, which would depend upon the level of risk assessed. In the event of any changes that might affect the assessment, it should be reviewed immediately.

Factors involved in developing an assessment include identifying:

- What ignition sources are present
- What fuels or combustible materials are present
- What can assist the spread of fire, e.g. surface spread of flame, voids, etc
- What fire separation is provided
- What means of detecting a fire and the raising of an alarm or warning are available
- Assessment of all routes and means of escape
- Emergency and evacuation procedures, review them and where none exist produce suitable procedures
- Review any or all fire systems including fire fighting equipment
- The regular training of staff and wardens
- How visitors and, where appropriate, the public are effectively informed noting particularly how the disabled are provided for

The assessment is required to be "suitable & sufficient", i.e. if there is a high likelihood and/or severity of a fire incident the assessment must be developed in greater depth and detail. Although there is no single standard form for a fire risk assessment there is a Publicly Available Specification, PAS 79: 2007 published by the British Standards Institution, which includes guidance and a standardised methodology for carrying out assessments.

Getting management buy-in

The intention of the FSO has been to simplify fire safety legislation resulting in the reduction of the number of enforcing authorities businesses have to deal with. For example the Health and Safety Executive (HSE) no longer have any responsibility for premises under the Fire Certificate (Special Premises) Regulations 1976, which were revoked in October 2006.

The FSO removed the need for businesses to seek a fire certificate, replacing this with the duty of the "responsible person" to provide, and keep up to date, a Fire Risk Assessment with associated provisions to minimise the risk from fire to life and property.

While direct costs to business have been demonstrated above, there is further cost in the form of loss of business resulting in loss of profit for the organisation. This includes a number of distinct elements including:

- Loss of revenue as a result of the inability to fulfill orders
- Loss of rental income
- Loss of market share as customers move to other suppliers
- Additional costs of keeping production running, e.g. alternative facilities, suppliers etc
- Cost of restoring production to pre-incident levels
- Retaining the workforce or recruiting new workers
- Cost of regaining market share

In many cases a business which has suffered a major fire never fully recovers and many fail completely; this is in spite of being able to insure against the cost of both property damage and business interruption resulting from a fire.

In one case with which one of the authors was concerned, a major fire destroyed a facility where a key component of the company's major product was made. This supplied three other group factories. Following the fire alternative suppliers for this component were identified in the Far East and it was subsequently found to be more economic to import these rather than reinstate the manufacturing facility. As a result the factory was never rebuilt with the loss of over 200 jobs.

Economic benefits of a good fire safety programme

As we have discussed there are three main areas of cost, which, if we can reduce them, provide an incentive for an effective fire safety programme.

- Societal costs
- Personal costs
- Business costs

For any business the personal cost in terms of deaths and injury, resulting from fire will also have an impact both indirect, in terms of morale, and direct in terms of the need to replace, retrain employees who may have been killed or seriously injured. For property owners and managers there is also the potential for personal injury claims from tenants. Furthermore, failure to manage the risk could result, as we have seen, in prosecution with fines or other penalties not being covered by any insurance.

While the immediate costs of a fire to the business such as property damage or business interruption are usually insured, insurance premiums reflect, among other factors, the loss experience of an organisation.

Therefore, an organisation that manages the risks from fire well is likely to see lower premiums than less well managed businesses, which may even find it difficult to buy insurance if the risk is perceived as too great. Unlike Employers' Liability insurance, which is a statutory requirement, property insurance is not and there is less pressure on insurers to provide the cover. The indirect and sometimes uninsured costs would also include the time of managers in investigating the fire and bringing the business back to its pre-incident levels.

Over and above these costs there is the societal risk which as we have seen can be a significant proportion of gross domestic product. In other words almost 1% of all the UK earnings may be going to pay for the cost of our fire incidents.

Where to get help

Help and advice for the production of an FRA may be sought from Cardinus through our UK-wide team of Competent People.

www.cardinus.com

Further advice can also be provided by the local fire and rescue authority or via the internet; some websites are suggested below. However no one from these sources of advice can produce a specific Fire Risk Assessment.

Some helpful websites and guides are suggested as follows:

www.communities.gov.uk/fire/firesafety/firesafetylaw
www.communities.gov.uk/documents/fire/pdf/144647.pdf
www.hse.gov.uk/pubns/indg163.pdf

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