

Wilkins Safety Group

Weekly Update Newsletter



Welcome to this issue - Friday 16th September 2011 - of our Update Newsletter

Please feel free to forward this newsletter to colleagues and friends.

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Fire controls for construction sites



Why are we looking at this?

Wilkins Safety Group is helping a developer with a project to build seven timber frames houses in a quiet corner of an existing cul-de-sac. The developer was asked by the HSE inspector if they had arranged for any fire risk assessments from a Fire Engineer? These assessments are concerning the potential fire risk to the existing houses next door, especially during the construction phase of the timber framed houses.

The developer pointed out that, whilst no formal fire assessments had been done by a Fire Engineer, the Principal Contractor had proposed very good fire prevention controls. (No hot works, no flammable liquids or gases left out at night etc.)

Sadly though, this did not placate the HSE inspector and she served them with a prohibition notice, preventing them from building timber framed houses until she has received and approved the Fire Engineer's assessments complete with calculations. She did admit that had the construction of the timber framed houses started before she had arrived, she could not have stopped the works.

Consequently we thought we should look at issue of timber framed buildings and consider the pros and cons. We also hope to be able to advise our clients, involved in the construction industry, of the actions they should take to reduce the fire risk of their sites and to avoid crossing swords with the authorities

What is the problem with timber frame?

Use of timber frame building in the UK increased dramatically during the housing boom. Contractors found these were much quicker to erect so they could meet increasing demand and they could also comply with new environmental requirements.

However, a series of fires in recent years on sites, especially where timber frame developments were under construction led the HSE to issue more stringent safety requirements in October 2010.

The main thrust of the requirements is to prevent fires spreading throughout a site, which means contractors must implement a range of temporary fire protection measures during the building phase which could result in increasing costs.

WHAT DO I NEED TO DO?

Legislation requires a suitable and sufficient fire risk assessment to be carried out by a responsible person (the employer or persons in control). So what have you got to look at?

Step 1 Identify the hazards

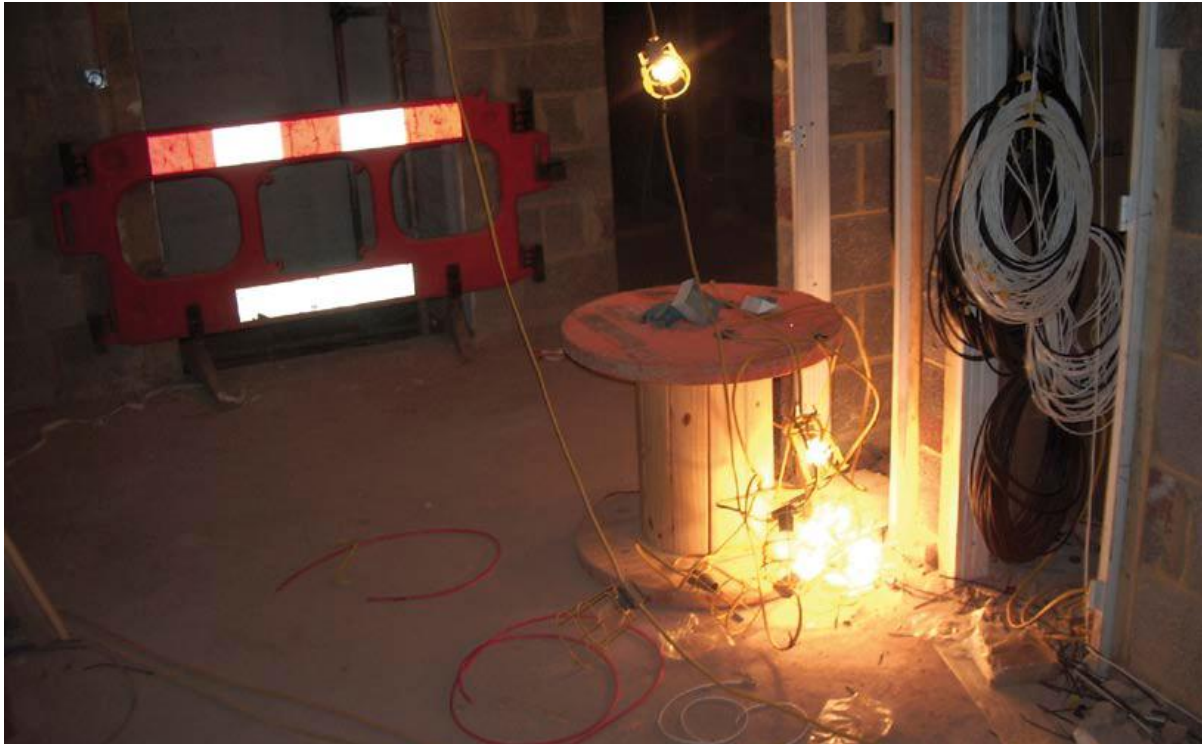
The basic principles which follow are relevant to fire risk assessment in all circumstances. However, it is important to note that there will be different things to consider for new builds compared to the refurbishment of an existing building.

For a new build, your assessment will include its location and proximity to other buildings, the type of construction materials and methods. While completed buildings have the standards of fire protection required by Building Regulations, during construction and before final fire protection is in place the building will be more vulnerable to fire. This vulnerability can often lead to the whole structure being involved in fire with resultant on- and off-site fire spread issues, e.g. the building could be timber framed and more vulnerable to fire before the external finishes are in place. This vulnerability needs to be taken into account early in the design process. In some situations the additional costs entailed in providing adequate controls might make it more cost effective to specify alternative methods or materials from the outset.

For a refurbishment project it will be important to take into account, among other things, the age and construction of the premises, e.g. the building could have a relatively heavy fire load due to lath and plaster ceilings and walls, wooden panelling and floors. There may also have been changes to the fabric of the building that could have significant consequences in a fire.

For a fire to start, three things are needed:

1. a source of ignition;
2. fuel;
3. oxygen.



Identify sources of ignition

You can identify the potential ignition sources prior to and during the construction process by looking for possible sources of heat that could get hot enough to ignite material found on your site. These sources could include:

- smokers' material, e.g. cigarettes, matches and lighters;
- naked flames, e.g. gas- or liquid-fuelled open-flame equipment;
- those deliberately introduced (arson);
- bonfires;
- friction-generated heat from mechanical equipment such as disc cutters;
- static charge from mechanical equipment;

Identify sources of fuel

Anything that burns is fuel for a fire. Many materials which can burn have to be used during construction work. Reducing the quantity of material on site reduces the chances of fire occurring and limits the extent of any fire which should start. Stocks of high fire hazard material should be managed to balance production needs with the need to reduce the risk of fire. Limit the material present at worksites to what is needed for half a day or a single shift and return unused material to the stores when the work is finished. Where combustible or flammable materials have to be used, select the least combustible alternatives. Of course in timber framed houses there is 20% more timber than traditional built houses.

Identify sources of oxygen

The main source of oxygen for a fire is in the air around us. On construction sites this will be natural airflow through doors, windows and other openings. Wind or the 'chimney effect' can also cause increased oxygen to feed the fire.

Ok so I have done my fire risk assessment as above, isn't that enough?

From conception, throughout the design phase and during the construction phase all CDM and FSO duty holders must consider the risks from fire. They should share information, co-operate and execute their legal duties under CDM to ensure all risks from fire are reduced to as low as reasonably practicable.

In most cases, taking the precautions outlined above will control the risk to an acceptable level. Certain build types are more vulnerable to fire during the construction phase and this section deals with the additional precautions which should be taken on sites which present a high risk from fire. In situations where fire spread from a construction site might endanger the lives of people in adjacent properties, and effective precautions to reduce this risk to an acceptable level cannot be identified or implemented, The HSE state that alternative build methods with a lower fire risk must be adopted.

Some methods of construction use technology, composite materials and conventional materials to produce buildings that are often cheaper and quicker to erect or have different properties to traditional buildings. Some of these components are produced off site and then assembled on site, doing away with or reducing the use of many traditional wet trades such as bricklaying, plastering and plumbing.

Timber frame buildings

Timber is an accepted form of construction and has been used as a building material for centuries. Building Regulations require a range of features in finished buildings to meet the high standards of fire protection applied to any other type of structure. The protection of a timber frame from fire is provided by the materials which cover the frame (e.g. plasterboards, plaster skim, tiles in non-combustible frames, appropriate insulating material etc.). However, as with any other building, during the construction phase and before the protective measures in the completed building are installed high standards of control are needed to prevent/control fires and protect people

During the planning phase, careful consideration will need to be given to both the on-site and off-site fire risks. In built-up areas, designers, clients and co-ordinators will need to evaluate the risk to surrounding premises. The risk will be greatest when the structure is erected but the protective measures are not yet installed. This period of maximum vulnerability, during which fire may spread quickly, must be considered in detail and minimised as part of the fire risk assessment. In situations where fire spread from a construction site might endanger the lives of people in adjacent properties, and effective precautions to reduce this risk to an acceptable level cannot be identified or implemented, alternative build methods with a lower fire risk must be adopted. Where sites are close to vulnerable property, such as residential or schools etc., the co-ordinator should discuss the risk with the fire service.

The principal contractor (main contractor on non-notifiable projects) will be in control of the site once the construction phase begins. The significant findings of the fire risk assessment, along with the action taken and the emergency procedures, should be incorporated in the construction phase plan prior to work commencing on site. The plan and precautions will need to remain under review as the project progresses. The principal contractor will need to liaise closely with sub-contractors – particularly the timber frame supplier – to make sure the necessary fire precautions and emergency arrangements are in place and understood before they start work on site.

Dutyholders should give serious consideration to the use of timber and/or materials that have received an appropriate fire protection/retardant treatment for timber buildings. This will

not only provide additional safety during the construction phase, but gives added protection for the completed building

Legal and enforcement responsibilities

Several pieces of legislation govern fire safety for construction sites and construction activities.

The overarching health and safety requirements during construction work, which include fire safety, are provided by the Construction (Design and Management) Regulations 2007.

Other legislation covering fire safety includes:

- The Regulatory Reform (Fire Safety) Order 2005 (FSO) in England and Wales;
- The Fire (Scotland) Act 2005 (FSA) Scotland;
- The Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR);
- Fire Safety (Employee's Capabilities) (England) Regulations 2010. (These Regulations apply in England only. They require that employers must take account of an employee's capabilities as regards fire safety in entrusting tasks to them.)

These make detailed requirements for fire safety, which also apply to construction work of a minor nature, e.g. decorating and maintenance work, and that incidental to the construction activity, e.g. provision of office and welfare facilities (including sleeping accommodation).

What does this mean for those with responsibilities for construction work?

These regulations impose obligations on persons (usually the employer, owner or occupier) as being responsible not only for the safety of employees, but for that of any person lawfully on the site, or in the immediate vicinity, and at risk from a fire on the site. They have the duty to implement and take adequate controls for premises under their control.#

Under CDM, there is a requirement for every contractor carrying out construction work and any person who controls the manner in which this is carried out, to ensure suitable and sufficient steps to ensure the risk of injury from fire or explosion that might arise from such work is prevented or reduced, so far as is reasonably practicable. Such steps to be taken include the provision of adequate measures to enable persons on the construction site to safely and promptly escape from a fire or explosion and reach a place of safety.

The client and other duty holders should provide pre-construction information allowing adequate provision of precautions to be developed. The contractor then has responsibility to ensure that adequate provisions are made.

The HSE have issued a 95 page book entitled **“Fire safety in construction”** As guidance for clients, designers and those managing and carrying out construction work involving significant fire risks.

This can be downloaded from <http://www.hse.gov.uk/pubns/books/hsg168.htm>

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TRAINING COURSES



Have you booked your place on our health and safety training courses yet?

The courses are:

H & S for SME owners/directors – 20th September 2011

This one day course addresses the requirements under the 'Health & safety at Work act 1974' and the 'Management of Health & Safety at Work Regulations 1999' to ensure all organisations are complying with legislation. The session will address the legal requirement of the Employer and the responsibilities necessary to ensure your compliance in the workplace and on site.

Supervising Health and Safety Course – 27/28/29th September 2011

Accidents and illness can result in disability, death or incapacity for work. The supervisor is in an ideal and very responsible position to influence, monitor and train employees. They can also ensure that managers are informed, persuaded, encouraged or pressured into providing for better health and safety standards

Construction Site Health and Safety Awareness – 5th October 2011

Designed to provide Health & Safety Awareness for all those working in construction, this 1 day course provides the elements required to achieve the safety element of the Construction Skills Certification Scheme registration certificate

Asbestos Awareness Half Day Course – 12th October 2011

Asbestos training is a legal requirement If you work on buildings built or refurbished before the year 2000, asbestos could be present. You will need awareness training so you know how to avoid the risks. If you employ these people, you **must** train them

Office Safety Half Day Course – 19th October 2011

In 2001/2002 employers reported 851 major injuries and 2,526 over 3-day injuries in office-based premises. This course has been designed to cover the health and safety requirements

in relation to office premises. It will ensure that delegates gain a full understanding of their legal responsibilities, learn how to prevent accidents and know what is required regarding welfare facilities and fire prevention and control.

Fire Warden Course – 26th October 2011

Fire Marshal or Fire Warden Training is essential to ensure that employees who are designated as a Fire Wardens or Fire Marshals understand their role and their duties within The Regulatory Reform (Fire Safety) Order 2005. Thereby making the workplace a safer environment

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Further details and booking forms available on:

http://www.wilkinssafety.co.uk/training_dates.html.

If you would like to discuss any of the issues highlighted in this newsletter then drop an email to Jon on jon@wilkinssafety.co.uk or call the office **01458 253682**



Your Business is Safer
Your Business is Safer in Our Hands