



Mandatory Fire
Safety Instruction



UCL PRINCIPAL CONTRACTOR SITE FIRE SAFETY RISK REVIEW & MITIGATION MEASURES

Principal Contractor (PC) fire safety considerations in shared occupancy project or refurbishments - what you need to know:

 Mandatory	<p>Mandatory - UCL the Client requires that <u>all contractors</u> comply with the Regulatory Reform (Fire Safety) Order 2005 Various considerations are required, and will vary from project-to-project, although primarily the Principal Contractor (PC) must ensure that their activities do no materially worsen existing conditions for UCL occupants, either during works or following completion of works.</p>
	<p>Mandatory - the protection and availability of the Means of Escape (MoE) whilst the premises are occupied, shall not be compromised. This includes the physical protection of routes, floor surfaces, locks & door furniture, emergency & safety lighting etc.</p>
	<p>Mandatory - the <u>maintenance</u> of the building's fire separation and compartmentation to safeguard occupants and escape routes is required at all times. The Principle Contractor's (PC) attention is drawn to the management of fire doors and penetrations of fire compartment walls & floors through demolitions, fabric removals or installations of services, including (but not limited to) electrical & data cabling activities etc.</p>
	<p>Mandatory - UCL requires management of the risks associated with unwanted fire alarms caused by automatic fire detection being contaminated by dust, construction activities or works to the fire alarm system within the site or the immediate project site boundaries etc. The project team is required to put appropriate measures in place in accordance with relevant UCL Technical Notes and liaison with the UCL fire safety team.</p>
	<p>Mandatory (Internal construction site) - any refurbishment (<i>alterations, renovation or repair of an existing building or structure</i>) works or storage areas connected to those works, must not be commenced or undertaken without appropriate fire separation* between site and occupied areas being used by UCL staff, students or visitors (See MI07*). As construction site areas change the fire risk profile (with an anticipated increase in fire growth rate due to storage and inception hazards), an increased standard of fire-resisting construction is required by UCL to control associated risks.</p>
 Prohibited	<p>Mandatory - the Principal Contractor <u>must</u> review, document and implement suitable control measures and arrangements to protect '<i>relevant persons</i>'. These control measures <u>must</u> be in place prior to start works & be continually reviewed & measures updated throughout the works programme. UCL's expectation is that fire risk assessments are dynamic documents and must be updated by the PC throughout the project to account for the situation on site. This is deemed to be a requirement of the Fire Safety Order and not just a UCL requirement.</p>
	<p>Prohibited - <u>Acetylene Cylinders</u> on any construction site at UCL - alternative systems are to be used. This is because of the risk associated with acetylene when involved in a fire incident, which will have serious implications for business continuity. Contractors found using acetylene may be removed from site without warning.</p>
 Acceptable	<p>Prohibited - the storage and use of hazardous goods by PC, which increases the fire-loading or introduces hazardous materials within occupied buildings; including, storage of combustible materials and waste within the site, the use of hazardous materials such as gas cylinders, flammable liquids and hot works etc.</p>
	<p>Health & Safety Construction Plan - the PC must include in the construction safety plan, a fire risk assessment and safety control measures for the work activities and procedures to be adopted on site for the duration of the project.</p> <p>Note - UCL Client requires clear separate fire safety measures identified, mitigation & control measures implemented under phasing and 'day-to-day' works progression as part of the H&S construction plan produced under CDM.</p> <p>UCL will be responsible for managing safety outside of the site boundary.</p>

UCL the Client requires that all contractors through the Principal Contractor comply with the requirements of the Regulatory Reform (Fire Safety) Order 2005 and in particular: **Articles 5(3), 8, 9 & 19.**

1.0. Instructions

- 1.1. **Prior to any construction, refurbishment or installation works by Principal Contractor**, the extent of the building's fire safety arrangements affected by the works must be established. See Table 1.
- 1.2. If the answer to any of the questions on the Table 1 is **YES**, you are then referred to a more detailed summary of considerations to assist at **Annex A**.
- 1.3. These considerations should generate suitable control measures and arrangements to be documented by the **Principal Contractor** to protect all 'relevant persons'¹.

2.0. The Principal Contractor (PC)

- 2.1. UCL requires the **Principal Contractor** to use the information supplied along with other relevant procedures to put in place suitable safety control measures to remove, reduce or mitigate the risk of fire and provide suitable Means of Escape, adequate fire separation from the site and mean of detecting and giving warning in case of fire for the duration of the project. This information is to be kept on site and included in the **safety information on the construction site**. **Note: these documents may be requested by any enforcing authority.**

¹ 'Relevant Person' means under the Fire Safety Order 2005: Any person (including the responsible person) who is, or may be lawfully on UCL's premises; and any person in the immediate vicinity of the premises who is at risk from a fire on UCL's premises - this may include staff, students, visitors or members of the public on the street adjacent to the building;

TABLE 1 - WORKS IDENTIFICATION CHECK SHEET

Use Table 1 below to identify those areas where risk assessment or control measures are likely to be required. Where the answer is **YES** to any of the items below, then the **Principal Contractor** will need to refer to the more detailed guide and explanation at **Annex A to this document**.

PROJECT: _____

(1). Means of Escape (MoE) <i>(The structural means whereby a safe route is provided for persons to travel from any point in a building to a place of safety beyond the building without outside assistance):</i>	
Will the construction works or site compounds make any changes, internally or externally in this or neighbouring building existing escape routes?	YES / No
Are there works in corridors, stair enclosures, lobbies and vestibules used by the building occupants for circulation and forms part of the MoE routes from the building?	YES / No
(2). Fire Compartmentation <i>(To contain the fire within the zone of origin & to provide protection to the rest of the building and its occupants by delaying the spread of fire prior to the arrival of the fire brigade by physical barriers such as fire doors and openings in compartment walls, floors, service ducts & shafts or construction openings etc):</i>	
You will need to maintain clear physical fire separation (hoardings / fences / partitions / doors etc.) between construction site and work activities by contractors, and UCL staff, students or visitors both internally or externally (See MI07 for details)?	YES / No
Will any works be carried out to walls, floors or partitions in corridors, stair enclosures, lobbies, vestibules, service risers or plant rooms, which will be removed, interfere or negating their fire barrier qualities?	YES / No
(3). Fire Alarm Systems <i>(There is a legal duty to ensure that the occupants of the premises have adequate Warning in case of fire (using sounders or bells etc) and adequate means of Raising the fire alarm in case of fire, normally by means of Manual Call Points, but not necessarily by Automatic Fire Detection):</i>	
Will the works interfere with the building's existing fire alarm system - discussions with UCL fire alarm maintenance company (Fisk Fire Protection Ltd) will be required to ensure minimise impact on existing system	YES / No
The existing smoke detectors will need to be changed for construction type Rate of Rise (Painted Red) before any works are carried out (see UCL Fire Safety Technical Note - TN056)?	YES / No
(4). Emergency & Safety Lighting <i>(There is a legal duty to ensure that all occupied premises have adequate illumination of the Means of Escape in the event of a local lighting circuit failure):</i>	
Will the works interfere with the building's existing emergency lighting or normal lighting systems that may affect either general safety or the illuminating the Means of Escape?	YES / No
(5). Safety Signage <i>(Normal circulation and Emergency Signage changes):</i>	
Will the works interfere with the building's existing Means of Escape or normal circulation routes requiring signage to be changed, provided or special instructions to be produced?	YES / No
(6). Fire Fighting Provision <i>(There is a legal duty to ensure that all occupied premises have adequate means of fighting fires):</i>	
Will the works interfere with the building's existing fixed firefighting systems; including the fire hose reels, pumps, dry risers or other (e.g. Inergen/Gas) systems within the building?	YES / No
Will there be obstructions / activities that impact of the fire brigade's access to the building and the site?	YES / No
(7). Hot or Hazardous Works on Site:	
Will there be Hot Works and or Hazardous processes within the site that may affect the occupants?	YES / No
(8). Storage on Site:	
Will there be gas cylinders used or stored on site (particularly flammable gases) or other hazardous materials?	YES / No

A1. Means of Escape *(The structural means whereby a safe route is provided for persons to travel from any point in a building to a place of safety beyond the building without outside assistance)*

- A1.1. **Will the construction works make any changes to the existing escape routes?** *Escape routes during the project works must be suitable and sufficient for the evacuation of all 'relevant persons' in the building. You should also consider and incorporate items identified below into the risk assessment.*
- A1.2. **Will works be carried out in corridors, stair enclosures, lobbies and vestibules, that impact on occupants evacuating from the premises using these routes?** *Identify areas and routes likely to be in conflict with the construction works and the activities of UCL occupants, including general circulation areas. The Principal Contractor will need to arrange to separate, segregate or protect occupant's escape routes during the works.*
- A1.3. **Will new or temporary internal fire escape routes be required because of proposed works?** *Identify the possible need to remove, alter or modify existing escape routes to enable construction works to be completed. UCL Fire Safety Manager can assist with guidance on alternative routes or ways that may assist contractors to maintain the means of escape via other UCL or adjoining premises for instance.*
- A1.4. **Will there be a need for escape routes to pass through the construction site?** *What are the arrangements and procedures for access through construction site in emergencies only?*
- A1.5. **Will there be any changes to the final exits, external escape or circulation routes on leaving the building?** *Identify any final exit doors likely to be affected by the works, ensure suitable arrangements for escape, that there are no conflicts of interests between escape and security etc. Consideration should be given to existing fire escapes discharging from the project area or adjoining premises impact on traffic routes (both pedestrian & vehicular), any en-route hazardous storage, processes, loading, unloading activities, disabled access and egress etc. UCL Fire Safety Manager can provide guidance on alternative routes to assist contractors to maintain the means of escape during the works.*

A2. FIRE COMPARTMENTATION (1). To contain the fire to within the zone of origin and to provide some protection for the rest of the building and its occupants by delaying the spread of fire prior to the arrival of the fire brigade by physical barriers such as fire doors and openings in compartment wall, floors, service ducts & shafts or construction openings etc. (2). As a guide, a minimum of 30 minutes, Fire Resistance (FR30) should be applied during the works to fire doors and temporary openings protect the Means of Escape. In certain circumstances, a higher degree of structural fire compartmentation may be necessary during the construction phase, depending on the risk and/or site activities;

A2.1. Will there be any changes to the existing fire doors? You identify any fire doors that may be affected by the project works. Ensure suitable arrangements are made to protect, maintain the doors and their important function to ensure adequate fire compartmentation between works and occupants. [Please see **Fire Safety Technical Note TN013** (under Fire Doors at www.ucl.ac.uk/fire to assist in correct fire door being specified].

A2.2. Will any existing fire doors be removed? You need to identify any fire doors that need to be removed, then to provide suitable arrangements to maintain adequate fire compartmentation between site and other occupants when removed.

A2.3. Will any existing fire rated walls or partitions be removed, or interfered with (negating their fire barrier qualities)? You need to identify fire partitions and walls that are to be removed by the project works, so that suitable arrangements can be made to maintain adequate fire compartmentation between site and occupants.

A2.4. Fire Spread - fire spread may be a significant risk due to the contractor's activities; therefore, in all cases, construction sites are to be fire separated - see UCL Mandatory Instruction **MI07** on Fire Separation and skips:

Table 2:

Location of Hoarding or Cabin	Fire Rating (for exposure from each side separately)
Internal Location - separating construction or storage areas from occupied areas;	*60 minutes (FR60) fire separation required;
Internal Location - part of a <u>firefighting shaft</u> (stair, lobby, access corridor);	120 minutes (FR120) fire separation required;
External Location - <u>office use</u> , adjacent to escape routes or other buildings;	*30 minutes (FR30) fire separation required;
External Location - <u>storage use</u> , adjacent to other buildings or escape routes;	60 minutes (FR60) fire separation required;
External Location SKIPS* - Skips waste removal located adjacent to buildings (unless located greater than 3m from any structure) then must be fire horded between the skip and the building;	30 minutes (FR30) fire separation required;
External Location - more than 20m from other buildings, escape routes;	No fire separation required;

A3. FIRE ALARM SYSTEMS *(There is a legal duty to ensure that the occupants of the premises have adequate Means of Warning in case of fire (using sounders or bells etc) and adequate Means of Raising the Alarm in case of fire, normally by means of Manual Call Points, but not necessarily by Automatic Fire Detection). **Note:** The 'UCL fire alarm maintenance contractor' – operates as a 'Sub-Contractor' under the control of the main contractor.*

A3.1. Will the construction work interfere with the building's fire alarm system? *The UCL fire alarm maintenance contractor must carry out **all works on a 'live' UCL fire alarm system** in an occupied building. The principal contractor **must ensure** that the fire alarm system is maintained to give adequate warning (sounders) and the ability to raise the alarm (via manual call points & automatic detection as necessary) to occupants in the rest of the building.*

A3.2. Is it likely that the construction work will cause false alarms, due to dust and dirt within the construction site? *Control measures must be introduced and maintained as per UCL fire alarm construction arrangements and standards, i.e.:*

- *Change all smoke detectors in and around the site likely to be effected by dust etc, to rate of rise (heat) detectors,*
- *Seal all openings and gaps around doors, windows or service risers to stop the passage of dust etc migrating into areas where these control measures are not in place,*

Note 1 - Project funds are need to carry out temporary works including changing smoke detector heads at the beginning of the works to heat; and at the end of the works at Practical Completion (or before), to change back to smoke prior to occupation, to the fire alarm system. These arrangements must be with the **UCL Fire Alarm Maintenance Contractor** through the principal contractor.

Note 2 (see **Fire Safety Technical Note TN056**) - under Fire Alarms at www.ucl.ac.uk/fire and ensure that contingencies funds are available to change detector heads through UCL fire alarm contractor.

A3.3. Will it be necessary to maintain or install temporary Automatic Fire Detection? *A system must be in place to provide 'early warning to occupants' of fire or smoke within escape routes. In certain circumstances and for insurances purposes (property protection etc) automatic fire detection will need to be maintained and managed.*

A3.4. Does the existing building fire alarm system need to be maintained during the project? *The principal contractor will need to take such steps to ensure that his works do not detrimentally affect the existing building fire alarm system. Any works on the system (or part of the system) by the project, must include full functional tests to prove the building system continues to operate correctly. Records will need to be kept in respect to any works to the fire alarm system during the project.*

A4. Emergency & Safety Lighting *(There is a legal duty to ensure that all occupied premises have adequate illumination of escape routes and fire safety equipment in the event of a local lighting circuit failure).*

- A4.1. **Will changes interfere with the existing emergency lighting?** *Circulation areas and escape routes from the building may require temporary emergency escape lighting if occupants work outside of 'normal working hours'. If the construction works are scheduled during the winter months, when darkness may fall within the normal occupation times for the building, then illuminated escape routes (with emergency backup lighting) should be considered. [See Fire Safety Technical Note TN021 - under emergency lighting at www.ucl.ac.uk/fire and ensure that contingencies funds are available deal with Advanced Ltd - addressable emergency lighting units where fitted].*
- A4.2. **Will there be a need for safe pedestrian lighting?** *Internal and external areas likely to be used by occupants (including escape routes and circulation areas) should be illuminated with suitable lighting arrangements for general safety.*

A5. Safety Signage

- A5.1. **Will there be changes to the Means of Escape?** *Appropriate signage will need to be provided to clearly mark the escape routes, door furniture (if temporary or out of the ordinary operations) by using signage complying with Health & Safety (Safety Signs & Signals) Regulations 1996 or BS 5544 series.*

A6. Fire Fighting Provision *(There is a legal duty to ensure that occupied premises have adequate means of fighting fires)*

- A6.1. **Does the project works interfere with the existing fixed fire fighting systems including the fixed hose reels/their pumps/break tanks, dry risers or other (e.g. Inergen Gas suppression) systems within the building?** *Procedures must be implemented to ensure that these systems are maintained or, that suitable alternative arrangements are undertaken by the project.*
- A6.2. **Does the project works interfere with portable fire extinguishers.** *Extinguishers provided by UCL are not to be damaged, interfered with or moved from fire points. The existing UCL extinguishers should be removed from the project areas by the UCL Fire Safety Manager and replaced on completion of the works. Contractors should provide their own extinguishers, which are suitable for the risk within the site.*
- A6.3. **Does the project works affect the Fire Brigade's Access?** *Roads, entrances, access and turning points identified or likely to be used by the fire brigade attending an incident at the premises must be maintained free of obstructions and hindrances. If access is made unavailable then alternative arrangements must be made.*

A7. Hot or Hazardous Works on Site

- A7.1. **Will there be Hot Works and/or Hazardous Processes within the site that increases the risks of fire and thereby affect the occupants?** *Suitable assessments of risks and their controls are to be provided by Contractors for Hot Works complete with method statements provided. Competent supervision must be in place during the works. Such systems and procedures must meet or improve UCL's Hot Work Permit Systems or the standard set out in the documentation.*

*The use of **acetylene is prohibited** (by exception) within the site - activities using acetylene should be eliminated and alternative methods of cutting and welding adopted.*

If the use of acetylene is unavoidable and approved by the UCL Fire Safety Manager, cylinders are not to be stored on site kept; and acetylene removed from site as soon as its use is completed.

A8. Storage on Site

- A8.1. **Will there be Gas Cylinders used or stored on site?** *Storage and control measures must be provided, to protect the building's occupants and the fire brigade attending any incident. Such controls and procedures must meet or improve on the standards set out in the documentation at Para 4.2 above.*
- A8.2. **What arrangements will be in place to remove waste materials at the end of each day from within the building?** *All waste materials once outside must be kept away from the building and must not obstruct circulation or escape routes etc. Such controls and procedures must meet or improve on the standards set out in the documentation at Para 4.2 above.*