Birmingham Health, Safety & Environment Association

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Newsletter

October 2009

Welcome to Our New Members

We wish to extend a warm welcome to the following members, who have recently joined BHSEA: -

- Fiona Griffiths, Office Services Manager, Family Housing Association (Birmingham) Ltd.
- Enid Huggins, National Sales Manager, Vocam Europe Ltd.
- Bryan Higgins, Health and Safety Leader, West Midlands Police Federation

BHSEA Meeting, 14th September 2009

BHSEA Construction Section Chairman, Gerry Mulholland of Laing O'Rourke, opened the meeting and welcomed Safety Groups UK members from the Morning meeting, hosted by BHSEA. The Secretary read out apologies from Chairman Bob Cole, Dalvindar Masaun and Graham Dunn, and announced the November meeting on Dangerous Substances and Explosive Atmospheres Regulations.

As a preface to this afternoon's meeting, Gerry reported on his conversation today with the Construction Principal Inspector, Mark Dawson, about the HSE Priority for action, as follows: -

- Minor Works on Refurbishment and Roofing jobs. Here, sadly, he reported two fatalities in the West Midlands, attributable to Falls, caused by poor work planning and/or planning.
- Embedding CDM principles into project management.

  We should be covering both of these elements this afternoon!
- Lifting operations
- Block Cutting and control of Respirable Silica Dust

Refurbishment Safety

(Presentations by Andy Chappell, BHSEA Secretary; Geoff Harvey, Faithfull+Gould; Tony Hall, Inspace Partnership; Andrew Hornby, Arcadis-AYH.)

L to R: Andy Chappell, BHSEA Secretary; Geoff Harvey, Faithfull+Gould; Tony Hall, Inspace Partnership; Andrew Hornby, Arcadis-AYH.

As Gerry mentioned, accidents in the Refurbishment Sector of the Construction Industry still feature strongly in the annual statistics and, consequently, are still high on the list of HSE priorities for action. That is why we decided to draw on the experiences of BHSEA members who are closely involved with different aspects of work for a practical insight into causes-of and solutions-to the many problems involved.

Geoff Harvey, of Faithfull+Gould, started this epic matinée production by quoting from Rudyard Kipling's "Just So Stories, in which **"Six honest serving men with the names What and Why and When and How and Where and Who"** taught him all he knew! This was subsequently paraphrased to give us a well-known structure for either Accident Investigation or the development of safe working methods! In today's context, the Five Ws are a crucial framework for the CDM Coordinator, Designers and Clients in general information gathering. The reason **Why** we gather all this information, he added, is so that contractors can allow Adequate Resources (in terms of numbers and competence) to Manage Risk! As to **Where** it will go, he went on, it will be used in the Pre-Construction Pack, the Construction Phase Health and Safety Plan and, ultimately, the Health and Safety File.

As in all other aspects of Construction, he commented, timing is vital and this information is needed **When** the Tender Documents are issued, **before** construction starts, and at the **end** of Construction so that the occupiers can use it as soon as the structure is occupied! Throughout all of this process, it is essential to remember that **What** this information is supposed to contain should just be significant hazards and risks to those in the undertaking or those affected by it!

Regarding **Who** will be involved, Geoff said that this will involve a team of key participants comprising Clients, Designers and CDM Co-ordinators, supplying information and instructions to Tendering Contractors and their supply chain who, in turn, will give similar feedback upwards. The last 'Honest' man named **"How"**, covers the sources of information, such as: -

- Existing Health and Safety Files
- Previous experience of similar work types
- Local Knowledge
- CIRIA Report 166 (Design Guidance)
- Project Information Questionnaires
- Design Team Meetings
- Designers' Risk Reduction Statements
- HSF Outline and Tracking Schedule

In the second presentation, **Andrew Hornby of ARCADIS AYH**, reminded us that a total of 52 of fatalities in 2007/08, occurred in the Refurbishment/Repair/ Maintenance site activities. Building on Geoff Harvey's principles, he went on to emphasise that teamwork was important to: -

- Integrate health and safety into the management of the project
- Encourage everyone involved to work together
- Identify hazards early on
- Improve planning and management from the outset
- Provide information to the right people at he right time

Firstly it is the Client's duty to provide information to designers and contractors to: -

- Increase the cost certainty
- Inform the design
- Encourage co-ordination
- Help planning for construction.

With refurbishment projects, there is likely to be a current business working alongside the construction activity that will need the client to deal with: -

- Segregation of Business operations and construction
- Identification of no-go areas and confined spaces
- Temporary alterations to fire and emergency escape procedures
- Restrictions on parking/access/deliveries
- Operation of any Permit-to-Work systems

The nature of the project is also likely to introduce certain differences to the Pre-Construction Safety Plan that might be devised for a New-build project: -

- Construction site access
- Adjacent land use
- Existing hazardous materials on site
- Existing services

- Ground conditions
- Structural stability
- Asbestos
- Existing H&S File information

Andrew went on to emphasise that the CDM Regulations applied to ALL projects and that it was the duty of Clients on all **Non-domestic projects** to provide adequate information. He also reminded us that, in 2009, **69% of fatalities have been on non-notifiable sites**, which still required competent H & S advice! On **Notifiable** projects, it is mandatory for the Client to ensure that adequate time and resources are provided to complete the project safely. It is also required for him to appoint a CDM Co-ordinator to advise and assist with all the arrangements. It follows that this appointment must be done in a timely way, so that all the appropriate arrangements may be implemented. Where the client is a Domestic Client, he/she does not have any duties under CDM, although all other persons' duties are unaltered and the H & S Risks are often as great as on notifiable projects!
Andrew concluded with a harrowing tale of a refurbishment case study where: -

- There was an inexperienced domestic client
- The project was non-notifiable and there was no competent H & S advice
- The Client made no attempt to assess the competence of the contractors
- The work was in occupied premises
- Information on existing services was non-existent
- Management arrangements were inadequate
- Site communication and co-ordination were pathetic

Andrew took a photograph of this appalling job, which I have printed at the back of this newsletter, for obvious reasons, so as not to shock innocent readers!

Having dealt with the vital principles of planning in the first two sections, we asked **Tony Hall of Inspace Partnerships** to give us a practical insight into a large local contract. For many years, Tony worked for Birmingham City Council Housing Department on refurbishment, repairs and emergency work and is now engaged on the same type of work for Inspace Partnerships in the Ladywood, Erdington, Great Barr and Sutton Coldfield sectors of the City. The immensity of this contract is indicated by the fact that in 2008 – 09 it: -

- Maintained about 21,000 homes
- Carried out c. 90,000 Responsive Repairs (and rising!)
- Maintained and improved aprrox. 2,200 void properties
- Dealt with about 125 Disrepair and Litigation cases.

There are 225 people employed on this contract, utilizing in excess of 100 company vehicles, covering all types of work, such as Electricity, gas, carpentry, plumbing, glazing, roofing, plastering, bricklaying and minor works asbestos removal. It is a 24/7/365 contract!

Tony added that the scope of work was enormous, from garden and house clearance, to major storm damage in emergency situations and gas installations, as illustrated by these photographs.

The Inspace tradesmen carry out a lot of work to isolate services to void premises and have 6 qualified gas engineers, with a team of C & G qualified electricians, who complete this work before anyone else is allowed to enter the building. The Gas engineers install some cooker points and occasionally re-instate gas boilers, but leave day-to-day servicing to other contractors. The electricians also do electrical rewires, remedy unsafe situations and restore illegal connections.

Another important area of work is external work at height, requiring 70 – 100 independent scaffolds per month! They follow the Work at heights Regulations hierarchy of control rigorously and minimise ladder work. The scaffold request process starts with a site visit, during which it is photographed to record, amongst other things, the state of the ground. These details are then entered onto a Scaffold request form, highlighting the type of scaffold, nature of the work and any unusual aspects like satellite dishes and ground obstructions.

The forms are then forwarded to the contractors (NASC approved), who then submits his Risk Assessments and Method Statements for approval by Inspace Health and Safety Section. A variety of equipment has been selected for use on external or internal jobs over the years, as illustrated by these photographs: -

Easi-Deck

MEWP

Staircase Scaffold

They also use a range of non-mechanical equipment, such as tower scaffolds, podiums, hop-ups, ladders(!) and steps. All access equipment is inspected and recorded at 6 monthly intervals. PASMA certificated employees erect the towers and Inspace have recently been accredited to deliver in-house PASMA training.

Almost all the maintained properties were built prior to the year 2000 and Asbestos is a significant problem on day-to-day repairs. Inspace processes have to be robust enough to ensure that work does not disturb asbestos-containing materials. To help with asbestos management, Birmingham City Council gives access to their database containing details for about 70,000 properties, but there are still a significant number, for which there is little, or no, information. This means that tradesmen must be thoroughly trained to recognise when they might be encountering asbestos, by means of Annual refresher sessions and toolbox talks. If they are unsure, they are told to presume material may contain asbestos and to report back to their supervisor before starting work. In support of the Asbestos Management system and other hazards, Inspace operate a "Stop & Assess" scheme that asks tradesmen 10 questions about the work situation they are about to enter. If any answer is "No", then they complete the form and report back to the supervisor.

Lone working is another issue for which Inspace have introduced special control measures, whereby operatives on responsive work receive job instructions by Personal Digital Assistant (PDA). Their vehicles are fitted with a Global Positioning System (GPS) so that the company can detect their location, including out-of-hours and at the weekends, to enhance security. These are also valuable for dealing with Violent & Aggressive Customers, where a risk indicator has been identified by the BC Council,

so that limited customer details and special instructions are stored. Trades people are asked to feedback any aggressive behaviour to their supervisor for adding to the data. PDAs are also used to store risk assessments and COSHH information.

Tony went on to mention the problem of buried services when erecting fence posts, or repairing the services themselves and said that they used a full range of hand and mechanical tools. He continued by saying that Inspace used a "Permit to Dig" system, whereby a trained competent person carries out a buried services search before ground is broken. A Manager then checks and authorises the permit – and closes it daily! He added that they are looking at a "beforeudig" website for additional information before starting any works.

On the matter of general training, Tony outline a very detailed process, starting with formal induction, followed by 9 modular training sessions, supported by annual refresher courses. They also provide a RoSPA Driver Awareness course for young drivers. All managers attend the SMSTS, CDM, Risk Assessment, Method Statement and other management courses, including first aid, scaffold inspection, and mentoring.

Finally, Tony dealt with the management of Sub-Contractors, which all have to be accredited by the contractors Health and Safety Assessment Scheme (CHAS). In addition, they have to have relevant accredited, specialist qualifications for their tasks. But the element that is ***most important*** is the on-job control that is exercised through the **"Work-in-Progress" (WIP)** assessments of Contractors, checking on: -

- Site Safety
- Personal Safety
- Vehicle condition
- Materials
- Plant & Equipment
- Documentation
- PDA status
- Workmanship
- Productivity

The last of the quartet of presentations was by Secretary Andy Chappell, on the subject of Electrical Fatalities. This issue was thrown into the spotlight two years ago, when the number of deaths from electrical causes tripled, from one year to the next. This caused the HSE great concern and it was highlighted in the WWT programme. The most alarming aspect of this was that they occurred mainly in the refurbishment activities and the causes were the "usual culprits" that had cropped up over the years. Because they were not unusual in their nature it is important to remind people that, if they get complacent, a recurrence of this peak can happen again. There is an old saying to the effect that ***"Electricity is a marvellous servant but an unforgiving master"!***

Electric Flash Burns

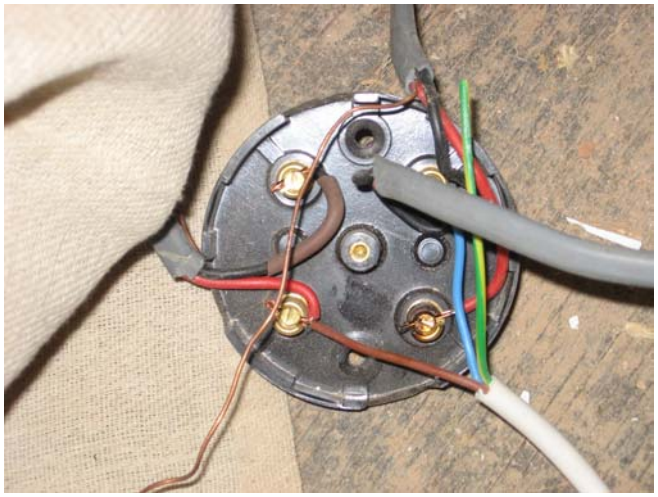
Although the most notable risk from electricity is electrocution, it is

important to remember that electricity can cause horrific burns (internal as well as external, as in this photograph.), can start lethal fires, explosions and cause electric arc and radiation injury.

The physical effects of electricity on the body are dependent on many factors, such as voltage, skin moistness and ambient conditions that all influence the magnitude of the current flowing through the body. The following table gives some idea of that current and the corresponding physical response: -

Milliamps	Physical Response
250	Current necessary to light a 60 watt light bulb is sufficient to kill five people simultaneously
100	Ventricular fibrillation; usually fatal
50	Respiration is affected; victim dies of suffocation
30	Common trip setting for RCDs because anything above this level is dangerous
2	Muscles convulse
1	Perception level

The reported fatalities divided into two broad groups; four internal and six external work activities. Surprisingly, in three out the four internal cases, the victims were electricians. Although electricians are statistically more likely to be working with electricity, they should be expected to display a level of professional skill to prevent accidental contact. The fact that they were killed can only mean that they disobeyed the cardinal rule to work on an **isolated** system and ensure that it remained so. It could be that they deliberately took a decision to "cut corners" and work live, but became complacent and forgot the risk – but we will never know! In one case, this is what the electrician was working near and it is concluded that he knelt on the live conductor in the junction box, whilst simultaneously coming into contact with a copper water pipe underneath the opened floorboards. But – he could easily have isolated that particular circuit on the distribution board AND locked it in the "Off" position with a device costing just £10.



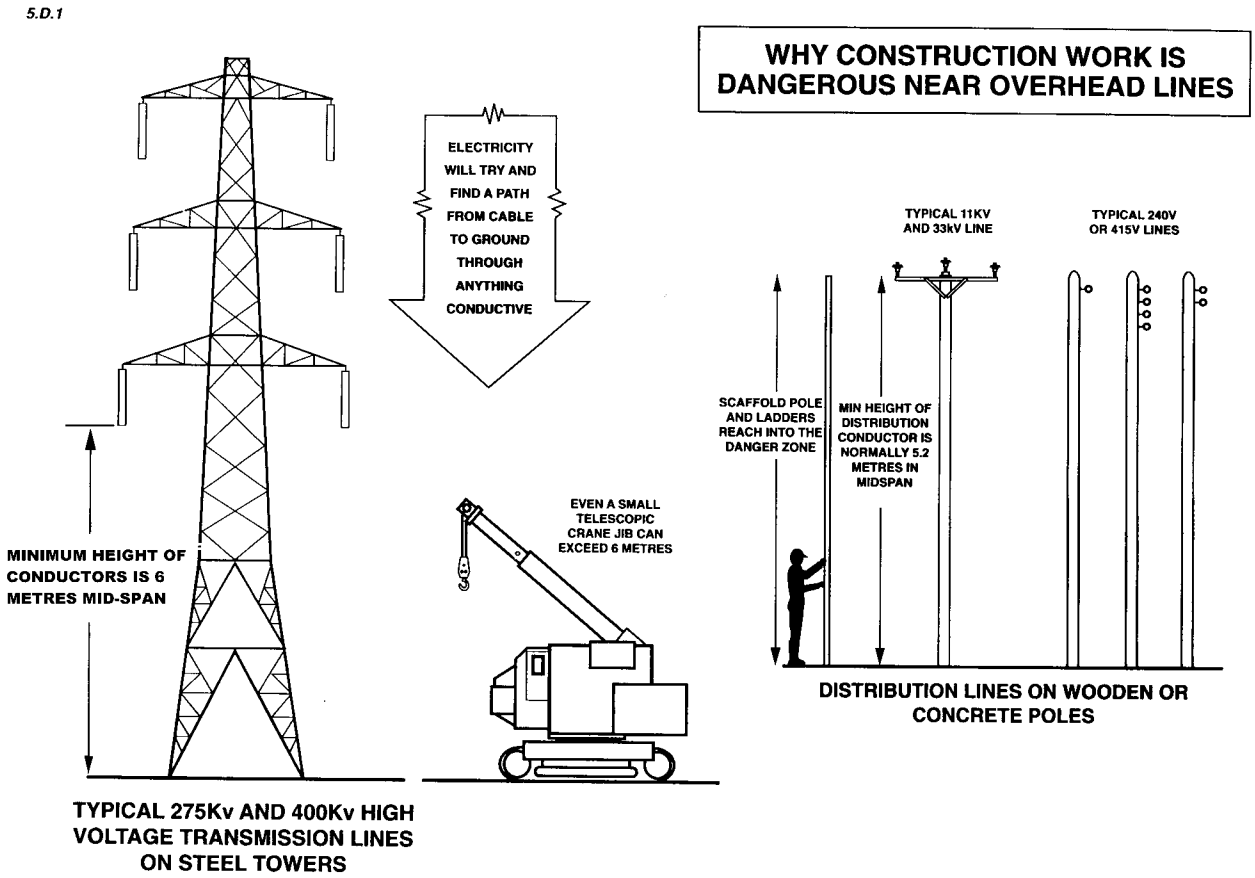
Exposed Electrical Junction Box

The last of the four internal incidents involved a builder who was trying to find a route below floorboards, through an internal wall, for a water pipe. He thought he had found a ready-made hole and tried to force a copper pipe through the gap. As he persisted, the end of the pipe cut through the sheath of a live, 2.5mm, twin and earth power cable that was occupying the same hole, but out of site. The pipe eventually penetrated the red insulation, at the same time that the builder came into contact with

another water pipe and he was electrocuted. That was especially tragic as he had no intention of working on an electrical system but it highlights the need to be aware of possible hazards around you at all times. His early warning was the double 13 Amp socket outlet at the side of the hole in which he was working!

The Striking feature of all the external fatalities is that none of the victims intended to work on an electrical system! The first example of an external fatality was on a roadbuilding project, where a surveyor stood on a fresh mound of earth underneath a HV power line. The ground clearance was reduced sufficiently for his surveying pole to make contact with the overhead conductor OR for the high voltage to arc across. At this point, I ran a short video to illustrate the awful consequences of a 25,000 Volt contact. Although tragic for the dead victim, the aftermath for the bystanders was traumatic in the extreme, because of the incineration of the corpse for some time after the contact was broken. Any workmates would have a very painful reminder for a long time and any manager who put a worker in that position would be even more traumatised.

Again, this was a fatality that occurred to someone who had no intention of working on an electrical system, but it highlights the need to be aware of what is around you and to comply with the Electricity at Work Regulations, when working on OR near electricity! In situations like this it is essential to obtain guidance from the Electricity Company about working clearances and to use the control measures in HSE Guidance Note GS6.



Typical Overhead line Clearances

In the next case, a scaffolder was striking a scaffold, when he came into contact with a faulty external light fitting. No fault of his, but it does pinpoint a shortcoming in electrical system testing and light maintenance and the fact that accidents so often have multiple causes! In a similar case on a farm, a worker was carrying an aluminium ladder that came into contact with an overhead line. Again a case of lack of awareness and the use of the wrong carrying technique! A repeat of this has recently occurred to a migrant worker erecting a temporary greenhouse, so the repeated warning is more than justified!

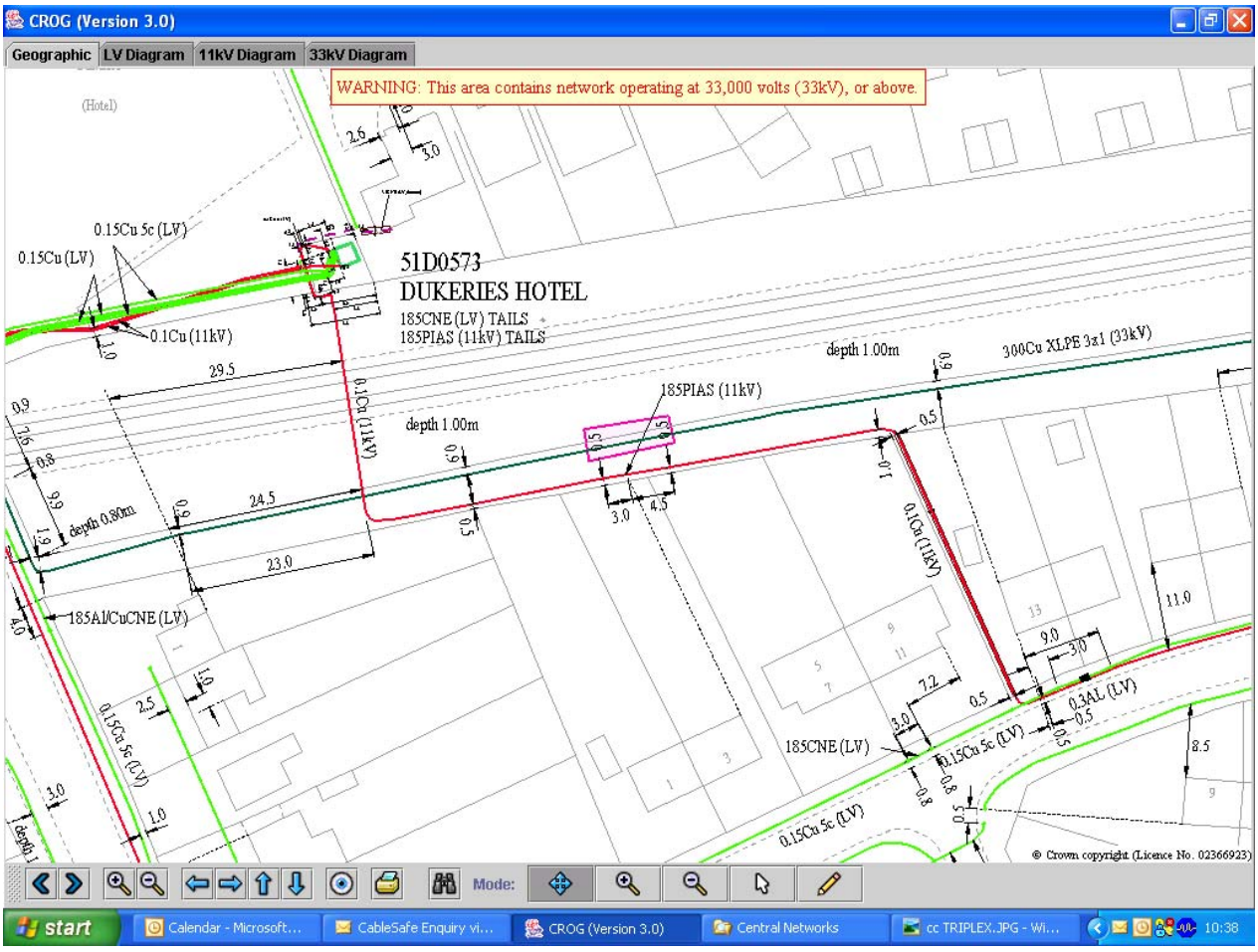
In the next case, there was a double fatality when painters were painting a house. On the day they were killed, they were prevented from gaining access to the rear of the premises, because of a locked gate. When they attempted to gain access from an adjacent field, their aluminium ladder came into contact with an overhead line at the back of the garden. This photograph shows a similar line with protective insulating shrouds fitted by the Electricity Company.

415 Volt line with insulating shrouds

Undereaves Mains system

This type of line can often supply an Undereaves supply like the example in this photograph. Sometimes the joints can be uninsulated – just where they can be touched by any unwary painter or satellite dish fitter!

In the final case a worker was trying to excavate to repair a water leak and struck an underground cable. This job obviously needed more planning, with plans of all services and the use of a cable avoidance tool to double check the plans before digging trial holes with approved safe digging techniques. Plans are now available on CDs for the whole of the West Midlands public electricity system and there are readily accessible helplines, so there is no excuse for not being prepared! There are some useful contact numbers on this link: -
http://2009.energynetworks.org/storage/emergency-contact-nos_090624.pdf



Typical underground electrical system plans. Scale 1:500

Arcadis Case Study

Date of the next Meeting

2.00 pm on Monday 9th November 2009

at the Birmingham Medical Institute

Dangerous Substances and Explosive Atmospheres Regulations

Roy Smith MD and Bill Meath Area Sales Engineer, Denios Ltd.

Dust looks harmless – doesn't it? Not until Denios gets hold, it isn't! This is promised to be a meeting perfectly matched to November to demonstrate the reason why we have DSEAR!

With impressive explosion containment equipment you just know that this meeting will really go with a bang!

Don't forget the buffet lunch at 1.15 pm!