West Lancashire Freemasons

PROVINCIAL GRAND LODGE OF WEST LANCASHIRE

Masonic Halls

Part 2 – Practical Examples

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Practical Approach

- Get the regular maintenance tasks underway: eg
  - Weekly Fire Alarm test;
  - Monthly Fire Door and Emergency Lighting (visual checks);
  - Six monthly formal checks by specialist contractors for Fire Alarm, Emergency Lighting, Disability Lift and Intruder Alarm;
  - Annual Fire extinguisher maintenance; Gas Boiler servicing;
  - **Keep records, eg Fire System Logbook; Maintenance Certificates etc;**
  - Set up an off-site document archive, eg a Dropbox or Google drive for records.
- Use Risk Assessments to identify gaps, weaknesses and non-compliances.
- Prioritise 'issues' using various factors such as:
  - Timescale, Cost, Ease of implementation, resources;
  - Level of non-compliance and risk of doing nothing;
  - Is 'project' within our capabilities or 'too big for us?'

Improvement Process

- Install ‘new’ things that need less maintenance than ‘old’ things,
  - Eg. The integrity of wooden doors reduces over time and unless regularly treated they can warp, swell etc;
  - Eg. Routers become obsolete or un-supported leaving them vulnerable;
  - Eg. Gas water heater needs specialist annual service but electric water heater doesn’t.
- Change fluorescent strip lights for LED equivalents
  - Reduces maintenance and more energy efficient (30% - 50% typically);
  - Removes need to work at height - ie no more changing fluorescent tubes;
  - More environmentally friendly - fluorescent tubes contain mercury;
  - Better consistency of light, retains output light level for many years.
- Makes things a ‘bit better’ on a task-by-task basis.

Ex 1 – Firefighter Safety

- 8 Fire Fighter killed due to cable entanglement between Harrow Court fire (Hertfordshire 2005) and Shirley Towers fire (Southampton 2010).
- Cables now to be adequately supported by non-combustible fixings to prevent premature collapse throughout entire installation (18th Ed – BS7671) as well as protected escape routes (17th).
- FSO – includes unlimited fines and prison. Typical fines £20k-£250k.

Shirley Towers – Southampton 2010. Twi firefighters killed due to cable entanglement.

Ex 2 – Fire Exit vs Security Door

Door from Bar to Outside

- Keyless operation needed to comply as a Fire Exit;
- Nearest alternative Fire Exit is over 20m + 3 doors;
- Stockroom – Insurer wants high security and not just a Crash Bar. (Some Crash Bars are rated for High Security).

Issues

- The door (1980's) isn't certified to a modern standard;
- Insurance specify 45mm thick doors, but 'only' 6mm of metal so theoretically 'non-compliant';
- The lock is an obscure size and doesn't comply to BS6321, but it protected by 6mm metal without external access;
- The bolt is bent (due to door warping) and the lock is difficult to operate.

Solution

- Produce Door Design Justification Report to demonstrate to the Insurer that door is adequate even though not of an “approved type”;
- Finesse the door to fit properly (Sledge Hammer and muscles required);
- Fit a Heavy Duty keyless exit mechanism (for compliance with fire regulations);
- Add a big handle to close door easily;
- Monitor lock bolt from Intruder Alarm.

‘Compromise solution’ to meet both Insurance and Fire Officer requirements

Ex 3 – Fire Alarm Upgrade

Old System

- Manual call points only;
- **Reliant on a human to initiate alarm**;
- No automatic smoke or heat detectors;
- What happens when building unoccupied?
- Equipment obsolete (not easy to add remote monitoring due to age).

Solution

- Modern ‘Conventional’ fire alarm panel installed – fully compliant with latest Standards;
- Automatic smoke (and heat) detectors added throughout;
- Remote monitoring added via Intruder Alarm;
- Building plans located just below panel – Fire Service require this;
- Pre-condition for Local Authority approval of building as a Wedding Venue.

Ex 4 – Intruders and the Kitchen Door

Old wooden door – Inward Opening, with Lock and Key

- 1960's Door, over clad and painted;
- Opens inwards not compliant as a Fire Exit; key lock; bolts; poor hygiene; broken window above. Old & Worn.
- Attacked after Sportsman's dinner.
- Alarm 'Tampered' but still activated
- Intruders left immediately.

Solution

- Install a Metal LPS1175 SR2 door;
- Outward opening with Crash Bar operation. Illuminated Exit Box;
- Better space usage;
- ‘Impossible’ to kick in;
- Has a total mass of about 130kg;
- Over panel with purge extractor;
- Has stay open option for ventilation;
- Kitchen staff, Insurers and Fire Officer all pleased with improvement.

Improved Compliance with Security Assessment and Fire Assessment

Additional Consequences

Insurance pre-conditions – all external doors must

✓ Be a minimum of 45mm thick.

× Have a BS3621 deadlock or a multi-point lock mechanism.

× Must be fitted with an Intruder Alarm door contact.

Identified a Non-Compliant External Basement Door

- The door only gives access to a cellar and **Not** to the building;
- It could give shelter from extreme cold or access to copper pipes;
- A new compliant deadlock and alarm contact were installed;
- Added signage that the door is alarmed to reduce temptation;
- Easier and safer to fix the problem and demonstrate compliance than Risk that an Insurer may refuse payment.

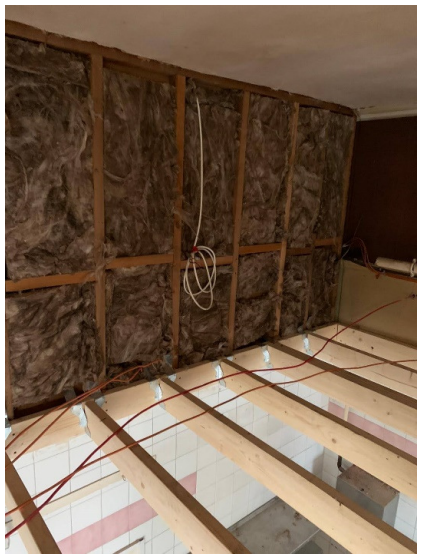
Ex 5 – Kitchen Ceiling

False ceiling 20+ years old.

- Unsafe 3”x2” structure could collapse when cleaning extract ductwork;
- Plaster board not fireproof;
- Lack of Fire Barrier above ceiling to adjacent corridor;
- Badly positioned Emergency Light;
- Extensive debris above ceiling;
- Use of ladders (on slippery Kitchen floor).

Solution

- New 6” x 2” structure (all debris removed);
- Double Fireproof skimmed plasterboard;
- Installed loft ladder and crawl boards;
- New brighter LED Lighting (71% energy saving and easier to keep clean);
- Relocate Emergency Light – better location;
- Rockwool fire barrier to corridor with fireproof plasterboard.



A more useable Kitchen – improved Fire compliance; Less Maintenance; Work at Height risk removed; No Risk of Collapse; improved energy efficiency.
One job with multiple benefits

Ex 6 – Stairlift (LOLER Regs. Apply)

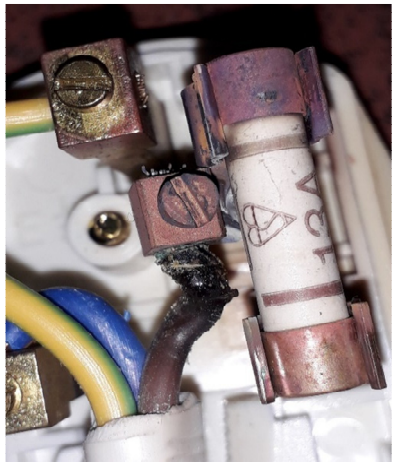
- Examination, Inspection, Maintenance and Testing (EIM&T) required every 6 months under LOLER regulations;
- Competent Person to issue Certificate of EIM&T;
- Retain certificate as evidence of compliance with LOLER.

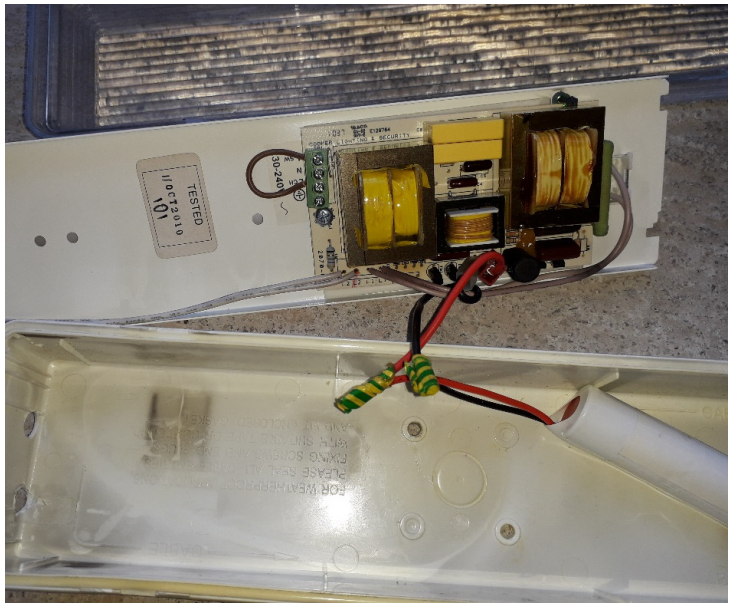
Ex 7 – PAT Testing

- No specific legislation **MANDATING** need for electrical PAT Testing;
- You need to ensure that electrical equipment is safe to use:
  - Health and Safety at Work Act of 1974;
  - The Electricity at Work Regulations of 1989;
  - The Provision and Use of Work Equipment Regulations of 1998;
  - The Management of Health and Safety at Work Regulations of 1999;
- PAT Testing is one such way, that can provide you with:
  - An inventory of equipment in your building;
  - A test result for each item of equipment.

PAT testing does NOT guarantee that the equipment is safe.

How did these Pass ?





A simple visual inspection determined these were NOT safe.

Alternative Approach to PAT testing

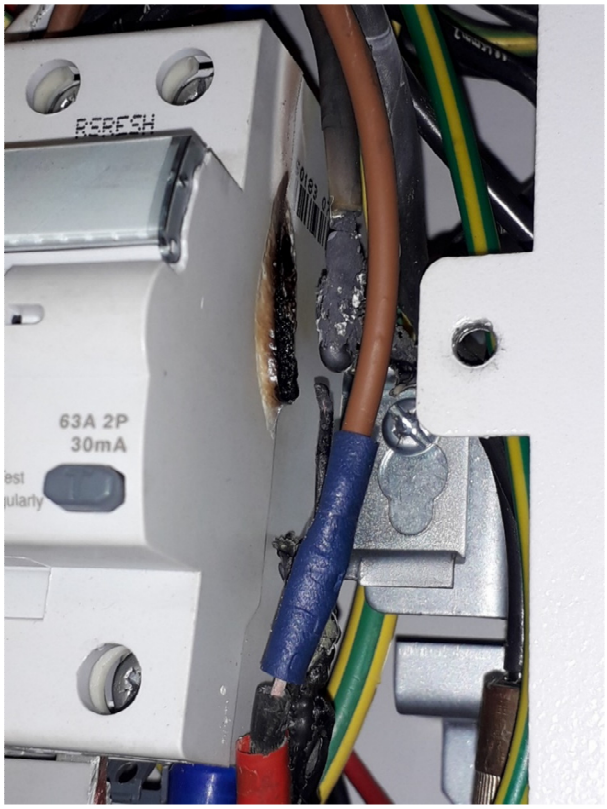
- Make a register of all portable apparatus;
- All items need some visual inspection;
- Low power devices, eg Computer leads and phone chargers could just be visually inspected (3A-5A);
- PAT test high power leads, eg 10A-13A:
  - Kettles & Toasters;
  - Extension leads;
  - Portable oil filled heaters;
- Keep records of dates of inspection, fuse size, condition etc;
- Quarantine (and dispose of) any un-safe equipment.

Ex 8 – Fire after EICR Repairs (2017)

SWITCHBOARD REPLACED AND UPGRADED

- Cable ‘tails’ extended on MICC Cables;
- Use of 2 off 3kW Oil Filled Heaters;
- High load on a circuit combined with use of wrong crimps caused overheating;
- Staff reported a funny smell but couldn’t locate;
- Circuit stopped working.

THIS WAS A NEAR MISS THAT COULD HAVE LEAD TO A SERIOUS FIRE



Ex 9 – Central Battery EM Lights

- Poor Lighting levels from the 24V EM Lights;
- Obsolete and unsupported equipment;
- Poor electrical efficiency;
- Time clock used to switch ON/OFF;
- Difficulty finding contractors to maintain;
- High cost of new central batteries;
- Failure of battery sets causes total failure of Emergency Lighting system.
- Removed old system and replace ALL fittings with individual 240V battery backed LED units;
- Select maintained/non-maintained individually based on actual location/usage.

Ex 10 – Kitchen Water Heater

Kitchen Gas Powered HW Supply

- Obsolete water heater – new circuit board £600;
- On demand system with limited HW flow rate;
- Takes 3-5min to fill a sink.

Electrical Replacement

- Electric storage heater (100 Litre stored capacity and smart control learns usage pattern);
- Fills sink in <60 seconds – faster for kitchen staff;
- Decommission a Gas service in the kitchen;
- Save cost of yearly service visit, reduce building risk…

Ex 11 – Fluorescent lights vs LEDs

Traditional Fluorescent Tube – Batten Lights

- Fluorescent lamps fail and the units are low energy efficiency;
- Ongoing maintenance, often at height;
- Disposal of tubes which contain traces of heavy metals like mercury.

- **LED replacement lights**
- Typical energy saving in range from 30% to 80%;
- Less long term maintenance and removes need to regularly work at height;
- Reduced environmental impact;
- Higher light levels and more consistent light output for longer;
- Better lighting near doorways, stairs and other hazardous areas.

Summary

- Its not rocket science, but does need some blood, sweat and tears;
- Apply systematic and logical approach, tackle a bit at a time;
- Adopt an evidential approach, be objective, and realistic;
- See problems from multiple angles to develop a ‘full’ understanding;
- Choose your experts wisely;
- Ensure ‘Due Diligence’ is completed, ie check things out, ask questions;
- Form your own conclusions based on evidence, don’t just accept everything your told. Some people will give their ‘expert’ opinion which in is **NOT** based on facts, evidence, experience or qualifications.