

Working from home can be a catalyst for positive change; we can build smarter, **safer** and faster.

By John Rakic; Market disruptor and innovation change agent

Do you find yourself working from home?

Are you involved in construction and building?

Do you deal with passive fire protection?

Do you have problems with fire stopping?

Is your certifier/builder/manager on your back for non-compliance with pipes, cables and services and their correct fire ratings?

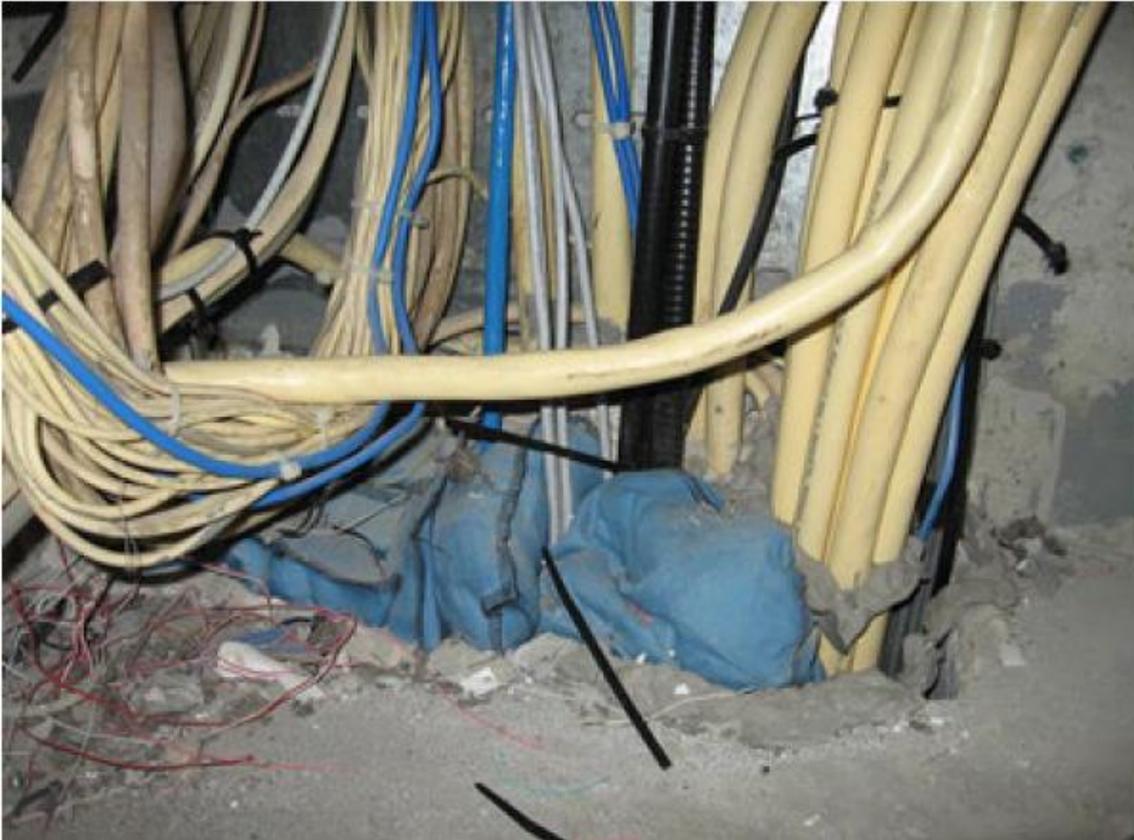
Are you a building services manager?

Are you spending too much money fixing up stuff ups?

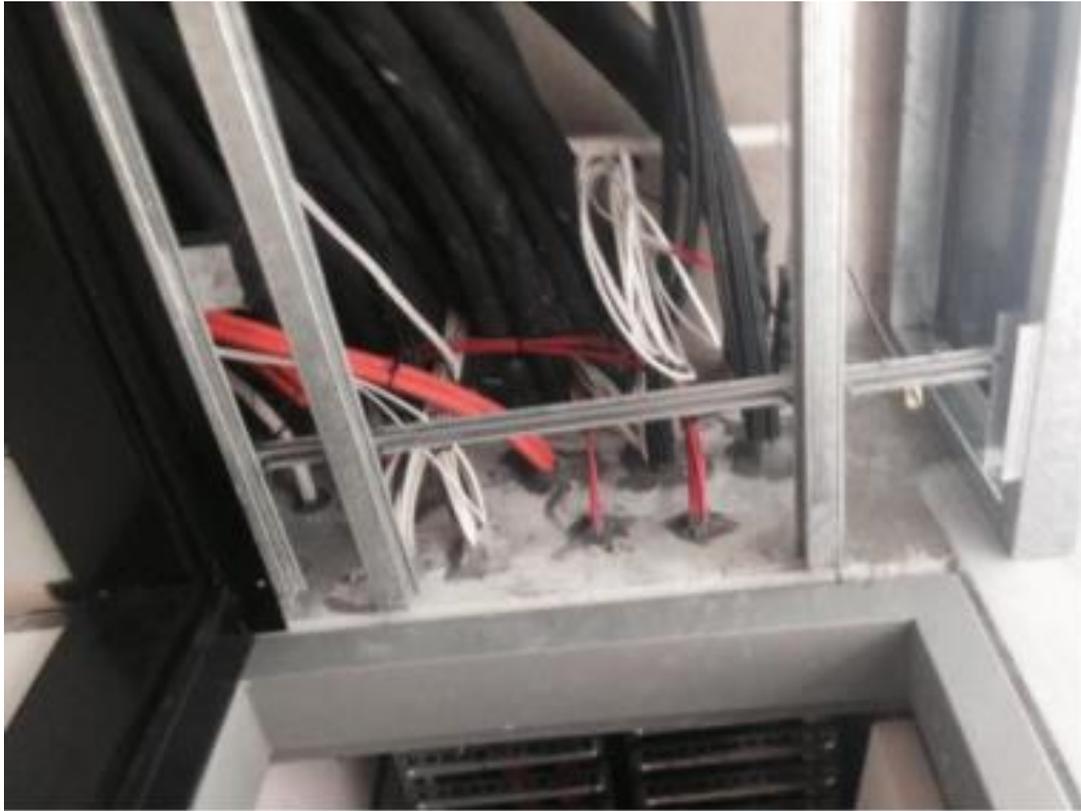
Are you sick of noncompliant fire pillows and fire rated sealants and issues with getting fire test reports accepted?

Are you confused with fire testing and AS1530.4 and AS4072.1 here in Australia?

If you answered yes to some of these; this article is definitely a must read, a must share and a perfect opportunity to use some remote work at home time to review what you have been doing, explore new and proactive measures and implement some change that will help you and the industry improve the ways things are done.



A feeble attempt to firestop an opening in a floor slab; poor design choice with fire pillows shoved in the original opening in the floor slab around some cables. New data cables and conduits have mysteriously appeared; one fire pillow has been easily removed and now with fire pillows as the original choice, new complications exist as fire pillows are not the best solution for conduits and data cables!!!!



Services being run above a fire door in a residential apartment building:

How many holes can we put in Hebel or Plasterboard?

What are the rules relating to proximity of services and openings or holes?

Has this been fire tested?

How close can they all be to each other?

How do we know which fire sealant has been used?

Is the sealant deep enough?

Is the annular gap correct?

Can the fire sealant be used for the services in question?

Do you agree this is a mess?

Do you agree it does not comply?

Sadly, I could put up thousands of these photos and typical scenarios.

At Trafalgar Group we have 5 full time engineers, that painfully and patiently try and advise builders, building owners, certifiers and the like what to do to fix up these types of scenarios.

I know you all can relate to exactly what I am talking about and, sadly some builders are spending millions of hard earned profit on passive fire protection rectification.

So, the million Dollar question is....

HOW DO WE CHANGE THE STATUS QUO?

It can be easier than you might think so read on!

We need a shift in both our thinking, and the way conventional building contracts typically work.

A Shift in our thinking is required

Put bluntly builders (and all stakeholders in our industry) need to wake up; you know you have a problem. If you don't currently, you will when the first annual AS1851 inspection and testing is conducted after you hand over the building with an occupancy certificate. In fairness to some, they are rethinking their approach and have adapted in part.

All builders have services engineers and consultants. Please help them get appropriately trained up and thinking about passive fire protection in a new way; be proactive and design where your opening in fire barriers will go, be sure to document what can go through these openings (that is what services types, quantities and proximity to each other), and specify what fire stopping system will be used. Most important follow it through to ensure it is implemented. Get your Certifier involved early too.

The days are over for a specification like the following:

“Re-establish all openings for services to maintain the required FRL”

If you look and ask for help, it is not too hard to find so called (by me) engineered passive fire protection systems which both improve the visibility & efficacy for compliance, and cater for multiple services types, quantities and the close proximity of different services to each other. All through one opening; no more swiss cheese-looking walls and floor slabs!

Be pro-active with passive fire protection; don't make it an after-thought.



Trafalgar FyreBOX Maxi multi-service transit protecting a glut of services passing through a fire wall. FyreBOX with these types of services have in fact been successfully fire tested and comply with NCC requirements.



YEP IT CAN BE DONE – What a feat of engineering and planning – Why not do the same and cast in Trafalgar FyreBOX CI's during the concrete pour, then routing your services and compliance can be so much more visible and straight forward for you. It's time to educate yourself and make this work contractually for you on your current and upcoming projects.

Is this such a big shift in thinking?

Has this been done before?

Sadly, I have been around long enough personally (and I am most definitely showing my age here). In this context, I can confidently say that experience does count for something.

I remember when we first started to look at using PVC or plastic pipes for plumbing. Yes, for those of you who do not know, we used to use cast-iron, copper, brass and NOT plastic.

The advent of plastic pipes required a new form of fire stopping solution, as plastic pipes, unlike ductile metal pipes, soften and melt quickly in a fire, and the answer in those days came as the FyreCHOKE intumescent fire collar range. The FyreCHOKE name came from the fact that action of the intumescent material expanding when the heat of the fire occurs, meant that the pipes were choked closed as they softened, stopping flames, hot gases and excess smoke spread through the otherwise open opening which would be left if an unprotected pipe was otherwise used.

Australians were pioneers in the adoption of plastic pipes for plumbing in multi-storey developments, and a very early globally pioneers by way of adopting and using FyreCHOKE fire collars. As a matter of fact, there were global patents for FyreCHOKE fire collars in the late 1980's.

Circular holes made to accommodate pipes in floor slabs were also core holed which was a laborious, expensive and time-consuming process.

Enter the cast-in fire collar.

No-one thought it was possible or feasible to co-ordinate to nail a cast-in situ style of FyreCHOKE fire collar to a formwork deck, put a piece of plastic pipe in the fire collar, co-ordinate steel reinforcing and then pour the concrete slab. Removal of the formwork left a cast-in place FyreCHOKE fire collar and no need to drill core holes, or to provide much (if any) additional fire stopping treatment.



A modern day Trafalgar FyreCHOKE CLC cast-in collar.

Of course, the early FyreCHOKE was very different to the current Trafalgar FyreCHOKE shown above, as advancements in intumescent technology and other forms of innovation saw provision for major improvements in cast-in fire collars. For example, allowing for elbows inside the fire collar body and difficult floor waste applications to be solved, originally using the FyreCHOKE and FyreSPRING combination to help with quicker, mechanically assisted closure in the advent of a fire.

Today most plumbing pipes that pass through floor slabs are protected with a cast-in situ fire collar; so it is proof in the pudding that as Australians we can innovate, we can build smarter, quicker and MOST importantly plan so as to achieve a quality and fire safe system solution for plastic plumbing pipes. And they said it couldn't or wouldn't happen when FyreCHOKE was launched!

FyreCHOKE



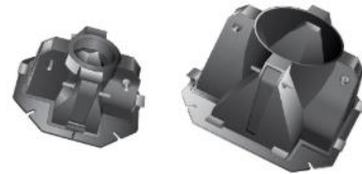
FyreCHOKE Low Cast
Collar

FyreCHOKE



FyreCHOKE High Cast
Collar

FyreCHOKE



FyreCHOKE Floor Waste
Collar

So, I ask myself the question why we don't, or won't, use a similar approach for all other openings for services required to have a fire rating, using innovative and engineered passive fire protection materials and systems, just like we did with FyreCHOKE cast-in fire collars

It's pure madness from my point of view and it took me a long time to realise that buildings are just being built too quickly and it is in fact the contracts between the builder and the service contractors (plumbing, electrical, HVAC&R and the like) which are the impediment to this positive and in my opinion very necessary change.

You MUST change your contractual terms with your trades to solve this problem the most cost effective and sensible way!

So as innovative and progressive Australians, almost 30 years ago, we implemented plastic pipes and pioneered the use of FyreCHOKE cast-in fire collars.

So why can't we or why don't we do the same for other services?

It's not that the products and systems don't exist.

Since 2007, I personally have been promoting and developing another Australian first, what today is known as the FyreBOX range, which started out as a joint venture with a Scottish company looking at protection of cables. Some of you who know me and remember Fire Containment P/L, pre 2009, before my acquisition of "Trafalgar Fire", will remember the Fireclamp cable transits (known as CT120's and CT240's). From 2009 onwards these were known as FyreCLAMPS, taking advantage of the well-known Trafalgar "Fyre" pre-fix. Just like the pioneer that FyreCHOKE was, the FyreCLAMP allowed for construction methods to change. Most people would know FyreFLEX fire sealant, FyrePLUG fire pillows, FyreSET fire mortar as other pioneering solutions to passive fire protection in this now infamous family of products.

FyreBOX was the new name for a range, developed in 2015 and launched in 2016, which introduced the concept of a multi-service box or transit which introduced some innovative, patented variants which **allows for the fire stopping solution to be incorporated before either a slab is poured or before a wall is built.**

Floor slabs

The FyreBOX Cast-In (FyreBOX CI), just like its predecessor, almost 30 years ago, the cast-in FyreCHOKE fire collar, is fixed to the formwork and integrated into steel reinforcing and cast in situ, remaining in place when the formwork is removed.

I am proudly the inventor and my Trafalgar Manufacturing division is the exclusive manufacturer of this solution.

They can be manufactured to suit the thickness of the proposed floor slab, and their overall size can be small or large depending on the quantity and types of services to be routed through the FyreBOX CI.



Walls and shafts

With a clever, two piece clip together solution, the aptly named FyreBOX Slab Mounted (FyreBOX SM), allows builders to mount the FyreBOX SM and their services before a wall is erected. This speeds up construction by allowing services to be run without the impost of the physical barrier of a wall or shaft. This reduces sequencing issues and reliance on other trades, saving time and headaches.

It's clever isn't it; I think so because I thought of it.

This award winning invention is another one of my innovation patents, and I am proudly the inventor and manufacturer of this solution too; right here in Sydney, AUSTRALIA at Trafalgar Manufacturing.



Are these FyreBOX products and systems NEW I hear some of you ask? No, they were developed in 2015 and launched in early 2016.

Fire testing and system augmentation is always ongoing as we continue to add more fire tested and approved services, wall types, floor slabs types etc..

Are they being used now? YES, but builders are struggling to adapt their contracts to cater for these innovative labour saving, compliance friendly, and game changing systems.

I might sound biased towards them for obvious reasons, but I invented the idea and developed and continue to fire test these FyreBOX systems to solve the various problems real world builders and buildings face, and most importantly to help improve the as-built environment, hopefully one day saving the lives of building occupants.

So what is wrong with current commonly used building contracts which are the primary road block to full adaptation of this obvious game changing solution?

The building contracts call for the plumber, electrician, air conditioning, refrigeration, fire and other installer of building services, to make their own holes (openings), reticulate or install their services through these holes, then re-establish or maintain the fire rating where the services pass through the holes in the fire rated walls, service shafts, ceiling or floor slabs.

Most builders who have looked at the FyreBOX CI or FyreBOX SM love the idea, can immediately see the benefits, but say contractually they can't see how it will work, especially where electrical, data, fire, air conditioning, refrigeration, and plumbing services might pass through the same FyreBOX?

Who pays or buys the FyreBOX?

Our contract make the service contractors deal with their own fire stopping.

We don't have an allowance for them.

If we pay for and have the boxes installed, who takes responsibility for the installation, we don't want to? YES, they say this, even though ultimately the whole building and all of its passive fire protection is in reality their still partly their ultimate responsibility. Even if they have an installation certificate for compliance with AS1530.4 & AS4072.1 from a services installer, and the Building Surveyor or Private Certifier has signed off on the whole building.

Those service contractors that do buy and use our FyreBOX products, typically say they want a small one; the reason being in their minds why should I pay for the FyreBOX as the air conditioning contractor for example, if there is room for services like electrical for example to go through it. Why should the electrical contractor get a free ride; no pun intended.

This is a bit like my 8 month old dog, Sergio, chasing his tail; it makes no sense but he keeps doing it.

The solution is staring us all in the face, so please, during these times of working from home and isolating, STOP and think how you can save yourselves as a builder time, money, and have some peace of mind in terms of compliance going forward.

As an architect, building services consultant or engineer, STOP too, and heed the benefits and start to help change things for the better, by investigating, learning, specifying and recommending the use of these engineered passive fire protection systems.

In the meantime, my team at Trafalgar Fire and I will continue to help those do things the “old way”, and solve the mess that is being created by the disorganised and risk passing contractual way we try to fire stop services in our buildings.

Yes, I am in self isolation and instead of watching Netflix, I thought I would try again to get more people seeing what I can see as plain as day.....

Feel free to email me directly on jr@tfire.com.au with your private thoughts

You might find this System selector useful; the Fyrebox Mini and Fyrebox Maxi, do cater for existing services and provide a useful solution for service that are already in place.



Visit www.tfire.com.au and www.fyrebox.com.au or reach out on either technical@tfire.com.au or phone 1800 888714 and ask Trafalgar Fire for help on your upcoming or existing project. We provide on-site support and have an extensive list of approved installers if you want help with installation.

FIREBOX™ System Selector

NEW project – walls
and floors yet to be
constructed.

Walls/floors with
services installed, or
about to be installed.

New Residential
Walls

Floor

Wall/floor
opening size
> 150mm

Wall/floor
opening size
< 150mm

**FYREBOX™
Slab-Mounted**

**FYREBOX™
Cast-in**

**FYREBOX™
Maxi**

**FYREBOX™
Mini**

