# *Should cabling be getting the Shaft?*

As a cabling infrastructure designer and RCDD, I've often wondered "Is there not a better way to run riser backbone cabling in a building?"  Well, if you're like me, this question might have kept you up nights trying to figure out a better mousetrap.  I'm the type of person that is always looking for a better way to do things.  I just can't help myself (much to the chagrin of family and friends).

So, when working recently with one of our clients to help them better manage their riser pathways in multi-tenant office buildings I happened on what just might be that solution.  After many years of guessing or using the worst case fire rating of a telecommunications room (TR) wall or floor, I sold this client on the idea of bringing in a codes expert.  I've been around long enough to know that the only person to use in Ottawa is Judy Jeske, Sr. Codes Consultant with Morrison Hershfield, a specialty engineering company with offices across Canada.

I met with Judy and asked her to review the TRs and typical floor plate of the buildings and to give me a report that clearly stated what the fire rating was on all walls, floor and ceiling.  With the report in hand, we then created a diagram of each closet with the fire ratings clearly posted, laminated each diagram and posted them in the TRs. It was while talking with Judy about the mess we find in most core holes, and how many are so overfilled that doing a adequate fire-rating job was next to impossible that she gave me the idea.  I asked Judy what my alternatives were to fire-rating the core holes.  I said, "The ideal would be to have multiple open slots with ladder or basket tray attached to the walls to support the vertical cables".  But, I asked "How would you fire rate that?" Judy thought for a moment and said (and I paraphrase), "Well, the easiest thing would be to make the rooms part of a fire-rated shaft."  Basically, just ensure that 2-hour rated doors are used in the TRs, and make sure that all walls are rated to 2 hours.  What is created is a vertical shaft that requires no fire-stopping between floors, only when exiting the shaft horizontally (see Figure 1).

Oh, the fire-rated shaft.  Now, this topic may not get your engine revved up, but for me a solution to one of the biggest headaches for telecommunications designers and building operators would really be a coup.  As I said before, I like to think outside the box because sometimes that is where the best ideas come from.  Look at a problem from a different angle and stop doing things the same old way when times and market conditions have changed.  I'm sure I'm not the first to think of this,
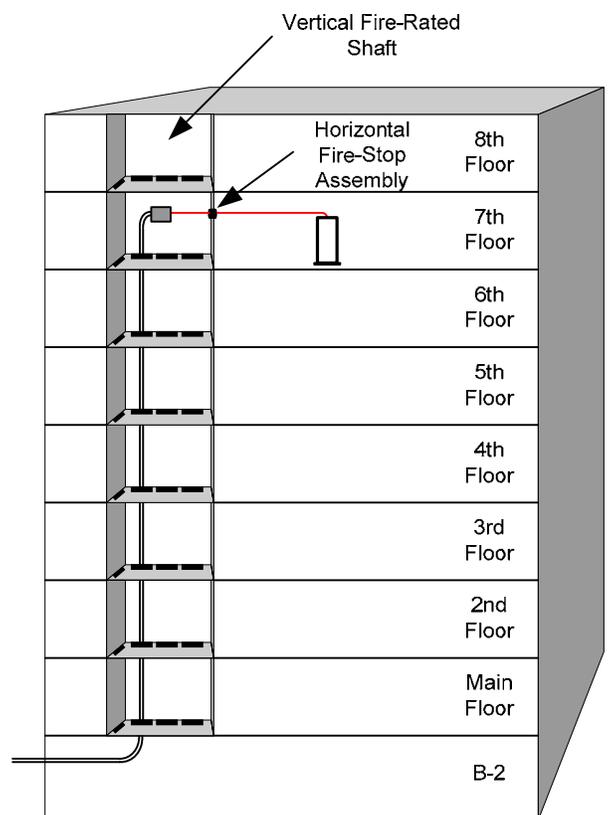


**Figure 1 - Fire-Rate Shaft Concept**

but I'd sure like more people to talk about it and start implementing it.  Why?  I thought you'd never ask:

1) A fire-rated shaft for low-voltage cabling would not require any, and I repeat the word **any** fire-stop when installing cabling vertically from TR to TR.

2) A fire-rated shaft with slots along the walls would most likely mean never having to do core-hole drilling in a TR again!
3) A fire-rated shaft would only require fire-stop when exiting the TR horizontally through one of the four walls.  Most new and innovative mechanical assemblies address horizontal wall penetrations.  Need a new hole in one of the walls?  No problem, because it probably means no X-rays and no structural engineers.

4) Slots have much greater capacity than sleeves, which is becoming an issue as more and more carriers want access to tenants on each floor.

5) Slots can be assigned to each carrier or type of cabling for better management and control.

6) Why not run all low-voltage cabling within this vertical shaft, and help solve the very same problem with HCAC, security and access control cabling.

7) Go back to point number one and make yourself smile all over again.

As cabling designers we need to communicate these issues and solutions to architects and engineers whenever and wherever possible.  Also, talk to your clients when they are contemplating a new building and get them on your side.  You'll need champions at every turn when you ask people to change something they've been doing the same way for ever and ever.  But things have changed.  Telco monopolies are gone and multiple service providers now must have a way to get cabling to any floor in a building.  This now means finding a way to manage multiple types and diameters of cables through core holes that were never meant to accommodate this.  And, more importantly it means having to fire-stop core holes with variations that are too many and complex for manufactures of fire-stop assemblies to test.  For building owners and property managers, that's a liability nightmare.

There has to be a better way so why not give cabling the "*fire-rated shaft*" for a change?

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