SZÉKELY ENGINEERING
EXPLANATIONS & EXAMPLES

A Tale of Three Projects and Two Agencies, as Introduced by a Disaster, *or*, the Government Definition of an Elephant, and Why I Pro-Cert When Possible – Part II

Before I get to the second project (same agency, NYCDOB), let me clarify some points made or alluded to in the last issue.

The DOB bulletin detailing how gas piping could be run in a stair (or public corridor) allowed such if it were separated therefrom by a fire (and if applicable, impact) resistant enclosure of the same rating as that for the stair or corridor on both sides, which means you had to completely enclose the piping – you couldn't run it hard against the inside wall of the stair and then enclose the pipe on three sides.

When I met with the Plans Examiner and Inspector, I'd revised my enclosure detail to show a four-sided double 5/8" gypsum board enclosure per UL X528 (as called out in the riser diagram on another drawing – which was of course, missed during the subsequent Borough Commissioner's Construction Code Determination review as related further on herein) for both the runouts to the apartments as well as the riser. I changed from my originally calling for the runouts to be wrapped in a UL-approved calcium silicate blanket wrap as I'd realized installing such would require the GC and Plumber to be working shoulder to shoulder for the GC to hold the wrap in place while the Plumber installed the split saddle clamps my detail called for to support the wrapped runouts.

I'd thus gone to quite a bit of trouble to develop a detail which allowed a GC to install the prefabricated half of a four-sided enclosure against the wall so the Plumber could then run the gas piping in it, with the GC returning afterwards to install and finish the other prefabricated half of the enclosure.

I had to do all this tap dancing as I could not find rigid calcium silicate pipe covering with a UL-approved 2-hour fire rating, notwithstanding the fact that I used so-approved flat sections of the stuff some decades back for the fire rated covering of black iron kitchen exhaust hood duct in Trump Tower.

I was, therefore, mystified to read that the denial of my Construction Code Determination request was because (among other things) the piping was not enclosed on all four sides – ergo my remark in the last issue about the lack of diligence or competence in NYCDOB plans examiners – the Borough Commissioner's denial even repeated the inspector's absurd assertion that the existing riser might have been installed in violation of Code as related in the last issue.

That is, as sung *Annie Get Your Gun's* protagonist about her "tiny baby brother" in Doin' a What Comes Naturally, all one had to do was look.

Were this not seeing (or not understanding) of things plainly shown on plans a sometime occurrence, it wouldn't rate a mention, but such is not the case, and the cherry on top was my later discovery that the clay tile wall separating the stair enclosure (which had wire glass windows in its exterior building wall) from the dwelling units had no fire rating whatsoever.

Have I made the statement in earlier issues of this newsletter that you can't make this stuff up?

OK, having beat that to death, let's move on to the second project in this tale of bureaucratic bumbling.

So a cellar (three walls) which had formerly been the basement (as defined by the remaining wall) of a retail establishment in Washington Heights was to be converted in a Senior Citizens Center, where the now substantially higher continuous population occupancy necessitated a substantial amount of air conditioning in addition to all else attendant to a change in occupancy.

I came up with a peak load of 25.2 tons, to be served by ducted fan/coils in the space and two multi-zone 10 ton variable refrigerant flow condensing units sitting on an expanded metal grating platform at grade, 9-10 feet above the alleyway outside, and attached to, the basement wall.

At the direction of the project's Architect, the job was filed for standard NYCDOB plans examination – when I was a young newly-minted Professional Engineer, I counted such as a useful check against my having done something stupid, but sad experience has long since disabused me of that notion and forced me to run headlong into Professional Certification of my projects when given the choice.

I mean, even if a reviewer were no more capable than I, the extra pair of eyes looking over my plans could be nothing but salutary, right? At least that's what I had thought, but it presupposes the eyes are attached to an engaged brain.

I dunno, maybe if all I did all day long was look at plans prepared by others, I might become somewhat bored and thus less attentive than I should be – and then there's the question of attitude. I mean, if a Plans Examiner can't find something wrong with a set of plans, what's his/her *raison d'être*.

Actually, at the very beginning of my career in the construction industry, I was an estimator and did nothing but look at the plans and specifications of others – *hundreds* of others, and I was never bored; maybe it ***is*** all about attitude.

OK, so anyway, after the first set of DOB objections the filing representative informed me that the Plans Examiner confessed to being a bit shaky when examining mechanical engineering plans, and informed the entire design team, that she had a reputation among the community of filing reps for being "difficult".

Oh joy.

As those of you who have been receiving my missives for some time are aware, I am not a "go along to get along" sort of person, to the extent that I have spent much of my professional life shooting myself in my foot.

But now that I am older and somewhat less obstreperous, after this Plans Examiner objected to where I located the condensing units because they blocked the alleyway (which I suppose would have been true if you were 11 feet tall, though even an 11-footer could've crouched a bit to pass under the platform), I agreed to the Architect's request to relocate the condensing units to the roof of a new stairway that the project's program added to the building adjacent to the existing stairwell to allow the latter to be converted to an elevator shaft for a new elevator.

Oh boy oh boy! Now that I relocated the condensing units, the examiner had something to chew on which was more in line with her experience as an Architect. Now there were zoning issues to be addressed on the Architectural plans (not my problem!), and I now had run the refrigerant lines between the condensing units and fan/coil units through the stairwell in order to get to them.

Uh-oh – my problem.

Last issue, I pointed out there are reasons for keeping utilities out of a stair, other than the unique "hazards" posed by gas piping, among which are obstruction of an exit path which may be caused by such (on that job there were already domestic water risers in the stairs, equally or more obstructive than the enclosed gas piping proposed in my plans).

So even though this was refrigerant rather than gas piping, I called for it to be enclosed by 2-hour fire rated construction so as to separate it topologically from the stair. Not only that it was on the ceiling, and thus could not possibly have been obstructive of the exit path.

But wait, there's more! I had originally called for the lines to be run within the ceiling construction of the top floor of the stairwell so as to not be within the stair in the first place, but either the condensing units were installed later in the project so as to preclude such, or the examiner simply missed it – which seems more likely, as even after I'd changed the plans to include the 2-hour enclosure on the ceiling, her objection was, wait for it – that the lines were run in the stairwell. (??!!?!)

Well, I guess they would've been additionally obstructive to the same 11-footer who couldn't get under the platform in the alleyway.

The absolute *pièce de résistance* of this sorry affair was the DOB Commissioner's response to an e-mail I sent complaining that out of control plans examiners were either incompetent or inattentive, where she told me my concerns did not allow me " . . . to use such language . . .", I guess, as "incompetent" or "inattentive", since that was the extent of the language used. Maybe my real sin was in also saying in that email "It's not a plan examiner's place to tell a design professional how to show information on a plan." as that was the substance of the examiner's last set of objections, those which stirred me to write the email in the first place. Part III to come.