

## “From The Drawing Board”

### The Weight of Water

I recently moved my home-office into a house that was built in 1914. It's a great big, old (Victorian era) house that has five fireplaces, three and a half bathrooms, stained glass, hard-wood floors, beautiful wood trim and coffered ceilings. It sits on a big yard among other similar houses in a nice (quiet) residential section of a city (several nice restaurants and stores are within walking distance). But don't let my immodest description of this place fool you; this house needs work – I moved in knowing it. Aside from some of the “curios” that the previous ninety-one years occupants left behind (such as track lighting from the fifties, sixties, **and** the seventies; along with a bare florescent light fixture that have all been crudely attached to the beautiful wood trim of the coffered ceilings); the things that need to be repaired (I had the good fortune of having a solid week of driving rain beginning on the day after I moved in – helping me locate all of the leaks in the roof); and the things that I want to renovate (where do I begin?), I love this house. In between unpacking, working on my client's projects, and (in spite of my recent viewing of the movie “The Money-Pit”) I've already started various repair/renovation projects with (calculated) enthusiasm.

As a means of *repairing* the sagging coffered ceiling in my office, I began *renovating* the master bathroom. I know that sounds like an odd means to an end, but the bathroom is directly above my office; and the bathroom has a bow in its floor that directly corresponds to the droop in the ceiling of the office. My office is located in a spacious room that has no columns that would help support the weight of the marble-slab shower, the large pedestal sink, the toilet, and the six foot long cast-iron soaking tub located in the bathroom above. After some investigation, thinking, and consulting with old home “experts,” I concluded that there were probably cracked floor joists (structural beams that support the floor as well as ceiling of the room below) that likely had notches cut into them to accommodate the plumbing lines which run between the floor and the ceiling; and that, along with the weight of everything, along with the leaks over the years (evident via the water stains in the ceiling in my office) had caused the joists to fail – and also made me consider wearing a hard hat whenever I'm in the office. I devised a plan – remove the fixtures; tear out the old floor tile (mostly cork – not recommended for a wet area); remove the three to four inch thick concrete sub-floor (generally less than one and a half inch thick plywood and cement board for tiled areas in homes constructed today) replace or repair the sagging floor joists; lay down a new plywood (with cement board on top of that – for the new stone tile floor) sub-floor; install the floor tiles; put the fixtures back in place (including the shower – if the marble slab doesn't break); then nail the wood coffers back into place. Voila – a new bathroom and a non-droopy ceiling!

To date, I have removed everything in the bathroom according to plan. The tub (which must weigh at least five hundred pounds – *empty*) was the first thing to come out. Once the tub was out, I immediately looked at the ceiling in my office and was happy to see that it was flatter. It took another two days to remove the rest of the fixtures and the eight inches (not three or four) of concrete. Again, I was happy to discover that (aside from

some minor rot caused by the leaks) none of the joists were notched or cracked; and the ceiling is currently nice and flat. I'm now looking forward to putting the bathroom back together. And I'm also anxious to get the dumpster full of concrete out of my driveway.

I can't count the number of times that I've recently thought of the saying: "they don't build them like that any more." They sure don't! I'll never know if the original architect, builder, or owners ever suspected that the floor system was inadequate for all of the weight it was supporting. Steel beams were for sky-scrapers (not houses) back then, and engineered lumber (laminated beams, wooden I joists, etc) was not yet invented – they did the best with what they had (perhaps holding their breath that it would work). I plan to have a structural engineer review my plan for "beefing up" the floor framing system, so that it will safely support everything, including the weight of the water in my six foot long tub.

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