RE-VISITING REALITY

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A specifications writer in writing specifications for brick masonry, for example, relies on the information, standards, and instructions received in school, in office OJT, and perhaps through field experience. There is a perceived "right way to do things" and hence a mindset created from all this that drives the architect to include certain principles, directions, prohibitions, and values--and yes, expectations--in the design concept and eventually into the project specifications. In reality, the architect is setting out the best effort to require the best of brick masonry installations.

Problem? Perhaps. An example (not to pick on the masons) for discussion purposes only; similar "glitches", disconnects and "differences" likely exist in aspects of almost all of the other trades and their work:

The bricklayer on the job site is bound through contractual obligations by the specifications written by the architect, in regard to the brick installation. The potential problem occurs in that this skilled trade worker may very well NOT be trained to the same principles, values and standards as the architect--and this is a long standing problem! How in the name of heaven can two people approach the same task, both seeking the same result, but from quite different perspectives? Case in point; Many specifications use a provision similar to this:

> "Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. ***Do not furrow bed joints*** or slush head joints." or...
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> "All bed and head joints shall be ***solidly filled*** with mortar at the time of laying."

But a good deal of hands-on literature, training manuals and instructions indicate that the bricklayer more than likely has been trained, since apprenticeship, in accord with quite different provisions similar to the following:

> "***Furrow*** the mortar with the point of trowel. Divide the mortar cleanly with the trowel; do not scrape it. ***Good furrows*** not only ensure that the bricks are laid evenly, but they also help to squeeze out excess mortar on the sides as the bricks are set in place." or...
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> "This course provides a practical application of introductory brick and block construction. ***Emphasis is placed*** on mixing mortar, using masonry equipment and tools, job preparation, spreading and ***furrowing*** mortar, and dry bonding. Upon completion, the student should be able to demonstrate appropriate practices, including safety in brick and block construction to entry-level standards."

And there is yet another problem when the specifications call for "slight", "light" or "not too deep" furrowing. What is required in each of these, and how are they enforced, since personal, subjective opinion is a major ingredient in assessing each?

Now the problem is basically two-fold--Who is right? What are the ramifications? Is each position and requirement valid, and established good practice for brick laying? Why are the two professions trained and instructed in such different ways, here, and similarly in numerous other instances? How can this all be resolved, if at all?

In most standards for the design and regulation of installing masonry the requirement is that all of the joints be completely filled with mortar. The intent here is to provide a solid mass of masonry (granted many brick are cored or "frogged", but basically their installation is solid, side-to-side; end-to-end). This is the fundamental concept of masonry construction.

To run a furrow down the center of the bed joints is to create a trough-like void, with little if any mortar. This reduces the bond (and hence the overall strength of the wall) of the one brick to the one below, and provides a place where any penetrating moisture or water can collect and create other adverse problems. Basically, this is a degradation of the wall, and in some instances is substandard construction (i.e., non-compliant with the building code), and counter to the contract documents for the project).

Beyond these two questionable factors is the more prickly situation. If furrowing is prohibited by the project specifications, then by contract and subcontract, the brick are to be laid without furrows. But the bricklayers have years of experience after their training, in which they have "automatically" furrowed--it is simply part of their nature in the skill of brick laying. They do this without really thinking--it is that ingrained in their subconscious mind.

If then the specifications are enforced, as written, either work in place is discarded (as non-compliant) or the process and cost of bricklaying is alternated--slowed and more costly, in fact, because the layers must "think" about what they are doing, and overcome the tremendous tendency to simply "do things as they always have". This mentality shows up in many other places, but to stay with masonry, off-setting a panel of face brick from the general plane of the wall will directly increase the unit cost of that work, and the whole of the masonry contract. Again, it is the process of having to "shift gears" in the routine process of laying up a wall, knowing when to stop "regular work" and start and stop "different work".

To extend this thinking, it is safe to say that no list of reference standards utilized in any specification, or even in a building code, is an exact match to the litany of documents used in the training of the trade workers. Do carpenters nail exactly as listed in the code's nailing schedule? Do they "over-nail" using additional fasteners just to make sure?

Is every product or system installed truly in accord with the manufacturer's instructions? Or do the trade workers modify the procedures based on their experience of getting the job done in "another way" which better suits their process based on their experience?

In part, this situation has been included in the impetus to using Construction Managers. By utilizing the "construction mentality and perspective", work can be specified in a manner that meets the requirements of the materials or systems, and the anticipation of the client/owner. That does not necessarily mean giving up more stringent requirements in favor of those that exist as general or accepted practice but which may have questionable aspects.

Does anybody care about this? Does anyone prohibit furrowing and really enforce it? How many walls did you have torn down recently because the joints were furrowed? Isn't it correct to do that, within the authority of the architect as agent of the owner?

If you say it makes no difference, then why not change your specification to allow furrowing, or even furrowing as the contractor may normally do it?

You may argue that we are quibbling over a very small point, but consider what else, like this, may exist in our specs, creating problems! Isn't this part of QA? Isn't QA one of the primary reasons that architects and engineers exist? Isn't this part and parcel of our work and obligations? Isn't this part of our ensuring that our clients get what they are paying for?