

Getting Down to Brass Tacks

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The phrase “getting down to brass tacks” means “focusing on the facts.” It is thought to have originated from store owners’ practice of placing brass tacks on their counter tops a yard apart to permit purchasers to measure their goods. This quaint way of measuring goods has been replaced by a vast state and federal governmental infrastructure led by the U. S. National Institute of Science & Technology Division of Weights and Measures, which intends to “enhance consumer confidence in the marketplace.” This organization, and its state and local counterparts, has greatly enhanced the science of metrology, and helps to assure that the 10.417 gallons of gasoline you just bought were accurately measured. At today’s gas prices, who can stand for any measurement sloppiness at the pump?

The real estate industry has existed outside this regulatory domain. Even though real estate prices range as high as \$500 per square foot, practices for measuring and calculating home sizes and commercial rentable areas remain in the era when brass tacks were used. One measurement criterion in use by the Federal Housing Administration specifies a measurement error of *10 percent* before a Notice of Appraisal Deficiency is issued. While some states have tightened this measurement tolerance for residential properties, no state has statutory measurement tolerances for commercial properties. The Building Owners and Managers Association standard for measuring floor area in office buildings specifies a 2 percent tolerance, but even this can translate into a lot of money. In a five year lease for only 10,000 square feet at \$20 per square foot, a 2% measurement error will cost somebody at least \$20,000.

Three new technologies are now revolutionizing how we measure space and promise to bring real estate into the modern world of measurement. These new technologies are the laser distance meter, computer-aided-drafting (CAD) software, and Adobe Acrobat.

A laser distance meter permits one trained person to quickly measure distances between walls to an accuracy of 1/8” in 300 feet. This reduces the cost of gathering field dimensions by 50 to 80 percent while improving accuracy. In addition, the cost of a professional laser distance meter has fallen from over \$1,500 to under \$400, with a dozen models available in stores and on the Internet. What used to take a day to measure now takes only a few hours.

CAD software allows the metrologist to accurately translate field dimensions into square footages without wrestling with geometric formulas and hundreds of calculations. The CAD operator merely draws boundary lines in the locations indicated by field dimensions and the computer directly calculates square footage, no matter how complex and intricate the floor plan may be. Just as important, the resulting drawings can be plotted and provide graphic documentation of the floor area being measured, an important consideration in case there is ever a dispute over what areas are included in an area calculation. The cost of some CAD software has also fallen to \$800, compared to over \$3,000 not long ago. The major drawback of CAD is that it takes training and experience to use properly.

The newest versions of Adobe Acrobat, the popular Portable Document Format (PDF) with the universally used free reader, make CAD files useful to those lacking CAD software. A CAD file can be easily exported to PDF format that can be made available to anyone via the Web site or e-mail, viewed on-screen and printed. Floor areas can be calculated on-screen by tracing their boundaries. While these calculations are not as accurate as CAD calculations, Acrobat puts a measuring tool in the hands of non-CAD users that is far easier to use.

As use of these new tools spreads throughout the real estate marketplace, all participants will expect more measurement accuracy. Using lasers and CAD, it is not unreasonable to expect measurement accuracy of one quarter of one percent (0.25 percent). Technology has made it possible for us to grow out of the era when brass tacks were used for measuring and into an era when getting down to brass tacks includes knowing the floor areas of buildings to an acceptable level of accuracy.

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