The Future of the Plastering Craft

By John A. Boland

There is a story told of how a false rumor that famed author Mark Twain had died spread rapidly. When reporters rushed to his home, they found him very much alive. When these reporters expressed their surprise, Mark Twain is reported to have said, “The rumors of my death have been greatly exaggerated.”

For the past two decades, the same type of false rumor that the plastering trade was doomed to extinction has been spread throughout the construction industry as well as the general public. This rumor is just as false as the one in the story about Mark Twain. This article will document that, like Mark Twain, the rumor of the demise of the plastering trade has been “greatly exaggerated.”

What has been happening is that this oldest of all construction crafts has been experiencing an upheaval in materials and methods in a manner almost totally unfamiliar to those in the industry. Throughout the 20th century, the plastering trade has undergone some very traumatic changes. Each time changes have occurred many in the industry, who had become imbued with resistance to any change in their normal routine, were unable to adjust to the changes. Others, who were also unable to either see or accept change, joined the doomsayers who predicted plastering’s early demise. But to ignore past mistakes brings on repetition. So a glance backward is in order before we decide to look to the future.

The first of these revolutionary changes came about with the switch from wood lath and lime mortar to gypsum lath and gypsum mortar. Earlier, the development of metal lath and light iron construction had revolutionized the lathing and plastering craft. Prior to this changeover, even in churches, libraries, courthouses and other public buildings, carpenters fabricated various types of intricate shapes or curves in creating a basic framework upon which lathers could nail their wood lath. With the development of light iron and metal lath construction, the plastering industry could offer to the architect far greater opportunities in design at a considerably lower cost and with the added advantage of fireproof construction. The evidence of this can easily be found in the thousands upon thousands of churches, theaters and other public structures built in the early years of the 20th century.

Lime mortar, however, was not the answer for this advance in construction methods. In its original form it proved a hindrance. To explain why in detail would require more room than is available here and would require extended descriptions of the process of manufacturing lime for plastering purposes. Only one or two facts are important at this point. When lime has been brought to the plasterer in the form of mortar and is applied to the lath, the hardening process through which lime hardens and gains strength is quite slow and requires much time. This process is called carbonation. The lime absorbs carbon dioxide from the surrounding air to achieve strength. Since carbonation occurs on the surface first, the process goes on for long periods and actually gains in strength as the years pass.

Such a lengthy operation might not have bothered Michelangelo, but it obviously did not fit into modern construction needs. So plasterers either added Keene’s cement or Portland cement to the lime mortar so that it would set much faster. Keene’s cement was predominantly used. Keene’s cement is a form of gypsum in which, during the calcining process, all of the trapped water found in the gypsum is driven off. The resulting product is mixed with other additives so that the mortar made with Keene’s cement would usually achieve an overnight set. This resulted in a speeded up plastering process in fireproof construction.

Rumors of the demise of the plastering craft have been “greatly exaggerated.”
In most other types of construction, the time-honored wood lath and lime mortar method of plastering continued as before. The plasterer applied the lime mortar over the wood lath in such buildings and then did not return to apply the finish coat until the lime mortar had hardened sufficiently. From the builder’s viewpoint, the job came to a standstill simply waiting for a material to harden. The builder’s mortgage costs increased and his scheduling was interrupted. Some improvement in the system to fit modern needs was necessary. Why didn’t more jobs have Keene’s cement added to the lime mortar? The answer is because of the resistance to change mentioned earlier.

There was another reason. Manufacturers of gypsum plaster as we know it today were faced with a serious problem: how to make a plaster that would have a uniform set of perhaps 48” x 3/8” size. four to six hours, a plaster that would not be affected by water and sand differences, a plaster that would be uniform in summer heat and winter chill, and yet they had to produce it in sufficient qualities to be used in hundreds of localities by thousands of plasterers every day. The solution to this problem was a very important forward step in the evolutionary process.

Here again there was resistance to change. Old timers believed that there was nothing like lime mortar, and they mistrusted this new “patent plaster.” At the same time the gypsum companies had taken off in a different direction. Experiments were undertaken with a newer form of “factory” plaster. These experiments resulted in many various forms of gypsum board, experiments which are still going on today. The most commonly accepted form of gypsum board during this period was gypsum lath. The form in which hundreds of millions of board feet were produced was in the 16” x 48” x 3/8” size.

What determined this particular size? The answer is wood lath. Wood lath was 48” long x 1-5/8” wide x 3/8” thick. The rule in applying wood lath
was “seven and stagger,” that is seven strips of lath ending on one stud, then move over a stud. Measure an old wood lath job. The “seven and stagger” comes out to 16” x 48” x 3/8”, so one piece of gypsum lath covered what had been traditional for wood lath. Was the 16” x 48” x 3/8” the best size for plastering? Definitely not. Figures A and B show why. But we get back to resistance to change. Larger size board had already been developed, but few lathers wanted to apply it. So lath was made in the size they would handle. However, the seeds of change had been sown and were bringing market forces to bear.

The end of World War II brought these newest developments to the forefront. The nation was faced with a construction boom five times greater than had ever occurred before. The lathing and plastering crafts were faced with a need to train over 50,000 new lathers and plasterers in a short time. The failure of the industry to meet this demand quickly was a most important factor in the advance of gypsum in the large board form. The gypsum companies developed and promoted such products in response to a need that the plastering and lathing industry was failing to fulfill, and because larger sized board is an improvement over the 16” x 48” size which had been accepted as a standard.

Once again, let us look at this through the eyes of the builder. This author recalls working on a 12-apartment building in 1951 in which the builder reported waiting almost five weeks for the lather and plasterer to begin work on his building. When full thick plaster was installed in summer there was no need for heat and windows. But both of these requirements were necessary in colder weather. The finished quality of the plastering was good, but the builder asked himself why he was required to dry out a plastered building prior to the start of laying floors and doing trim work.

Once the trend to drywall started, the switch from gypsum lath and plaster to board and taped joints moved steadily during the decades of the ’50s
and '60s. By the year 1970 much plastering work had been changed to drywall, with the result that the interiors of most of both commercial and residential buildings were converted to wallboard.

During the '60s, some concerned industry persons introduced an improved plaster system which was given the generic name of “plaster veneer.” The veneer system had been widely used in Britain, where it had originated, but in the United States the veneer method ran into the same resistance to change that had marked every improvement in the craft for over a century. As a result, the veneer system which had been introduced both as an improvement and a salvation was sneered at by those in the industry who felt that nothing would ever replace gypsum lath and full thick plaster.

But has drywall with its taped joints been the total solution to the problems of a good quality finish for interior walls and ceilings? The most convincing answer to the question is to be found in a new brochure recently published under the sponsorship of four trade organizations titled “Levels of Gypsum Board Finish.”

The brochure describes five different procedures through which the industry will attempt to deliver a satisfactory product to the final customer. The top level of effort, level five, describes a three-coat application of joint compound over all the seams and then a skim coat of the same compound over the entire surface. The brochure says, “This highest quality finish is the most effective method to provide a uniform surface and minimize the possibility of joint photographing and of fasteners showing through the final decoration.”

Now, however, architects and home builders are beginning to discover that the plastering industry has always possessed a newer, more modern system of gypsum board construction which has eliminated the complaints of previous plastering methods. In some areas of the country the practice of a one-coat veneer application has restored plaster to a majority of inte-
terior finishes. In other areas, the two-coat veneer system has been the preferred method. The basic concept of a plaster veneer system comes down to the following analysis.

First, the veneer base is manufactured in sizes of four feet in width and up to 14 feet in length. This overcomes the problem of all the small pieces of lath and the multitude of seams that result. The board comes in either 1/2", or 5/8" thickness. This means that the majority of the thickness is installed in dry form. This is especially true if 5/8" board is used. If a one-coat veneer application is done over 5/8" board, the total thickness is close to 3/4". If a two-coat veneer system is applied, the wall finish thickness is a minimum of 3/4" but probably more. So the plastering contractor is then able to deliver to the builder a full thick wall, the same as a gypsum lath and plaster installation, except the wet plaster is only a little more than 1/8" thick and the job can be ready for paint the following day.

What are the other advantages of veneer systems over drywall besides speed? The first that comes to mind is durability. In either the one-coat or two-coat method, the plaster used has a high compressive strength. This is particularly true in the base coat of two-coat veneer. These systems are adaptable, in that the builder or architect has a choice of the one-coat or two-coat method. Veneer systems have been proven over the past 30 years, testifying to their permanence. Their adaptability is further demonstrated by their use as a finish for concrete block or concrete.

Veneer base is a specially made form of gypsum board specifically designed to be used with the veneer system. Plasterers are cautioned to use the proper gypsum board, as regular drywall is not intended as a base for plaster and failure could result. Plasterers are also advised to store the veneer board away from sunlight, as the ultraviolet rays can affect the bonding of the plaster to the base.

How do architects and builders view this entire question of taped drywall versus plaster veneer? Architects are becoming more aware of the benefits of the veneer system. On a recently completed school project, the partitions were composed of 6", 18 gauge steel studs on 16" centers, 5/8" type X veneer base, and the two-coat plaster veneer system. The stud cavities were filled with sound deadening insulation. This type of construction is becoming more and more a standard with architects.

The lead paragraph of an article titled “Skim Coat Plaster-The Downfall of Taped Drywall,” which appeared in the February 1987 issue of Progressive Builder magazine, said, “For more than a decade, innovative contractors have been steadily abandoning taped drywall in favor of veneer plaster. Their endorsements have extended in everwidening circles, wiping out the use of drywall in some pockets of the United States. The fact that drywall is slightly less expensive has done little to stem the
tide. The quality of the finished product is incomparable. Skim-coat wins in a landslide of popular opinion.”

What does all of this mean to the plastering contractor, the lather and the plaster? This author is prepared to go out on a limb and predict that by 1996, five years from now, 40% of all interior finish will be plaster veneer in some form. Will the lather, the plasterer and their employers do the work? Only they can answer that. Do the officers of the respective unions have the leadership to provide the trained manpower? Do the employers have the vision to see the future and seize this golden opportunity? This prediction for 1996 remains firm regardless of who does the work.

At this point, the reader may be wondering about the light iron and metal lath type of work which has always been in the upper echelon of the lather’s and plasterer’s skill. I believe that this type of work will remain, although in limited amounts. The system known as plaster veneer replaces drywall, just as drywall replaced gypsum lath and brown mortar. Just as drywall did not replace the skills necessary to complete all of the intricate shapes of a Gothic church, neither will veneer plaster. But the cost of such work in today’s society will limit its usage to certain highly specialized types of jobs.

Will the Portland cement stucco systems and the exterior insulated plaster systems (i.e., exterior insulation and finish systems, or “synthetic stucco”) continue as they are being installed today? I believe so, if only for the reason that these “synthetic stucco” methods have awakened in the architects a new awareness of the ability of the plastering trade to provide finishes for the exterior as well as the interior of most any building.

So to sum up, it is my sincere opinion that plastering stands on the brink of a tremendous revival. The system known as drywall has shortcomings and will never completely replace plaster. Drywall will be around for years yet, because the price of 1/2” board nailed and taped is slightly cheaper than one-coat veneer. For
those for whom the only concern is price, drywall will suffice. For those who desire a better product even though the price will be slightly higher, either a one-coat or two-coat veneer system will be the answer.

What will be fate of those presently a part of the plastering craft? Let me repeat the same questions I asked in an article 14 years ago. Mr. contractor: are you willing to really sell your industry even if you lose money at the outset? Mr. union leader: do you have what it takes to provide the leadership and furnish the employer with a multitude of well trained mechanics? Mr. journeyman: are you willing to open your mind to change and help preserve an age-old industry? Don’t say it can’t be done. That day is here. And these changes will come whether you are in the forefront or bringing up the rear. The answer is up to each one of you.

About the Author:

John Boland began his apprentice ship in March 1937 and became a journeyman plasterer in 1941. He first became an instructor in plastering in 1948 and has been president of the Chicago Plastering Institute since 1972. His experience includes business representative of the Plasterers’ Union from 1953 to 1971 and president of Plasterers’ Union Local #5 from 1978 to 1990. He is father, grandfather, and great grandfather of “all plastering contractors in Chicago.”