Panelized Systems that Attract Architectural Attention . . . And What You Need to Sell Them!

By G. Stanton Mason, AIA

Success in any business dealing with architects, sophisticated developers, and building owners requires an in-depth knowledge of systems that are available in the marketplace as well as an understanding of new trends and technologies within the industry. The panelization business is certainly no exception. Those who wish to become panel fabricators or expand their existing business must be armed with the fullest information as to systems that are available in a changing marketplace. And perhaps, most importantly, what it takes from a business standpoint to succeed in today’s cost-competitive environment.

Panelization of EIFS Systems . . .

The exterior insulation and finish industry (EIFS) was founded by Frank Morsilli with the concept of a lightweight, low-cost exterior wall system that would combine a high level of energy-efficiency with inherent design flexibility. Panelization of Dryvit Outsulation over light gauge steel framing began a decade ago. The key to continued growth has been a strong commitment to service and the development of new products geared toward rapidly changing markets. As an example, within the past year, Dryvit has established a separate department for prefabrication services to assist architects and contractors in the panelization of its products. New research facilities are in operation, greatly facilitating development of new products.

Meadows Office Complex, Rutherford, NJ. An example of the speed that panelization with Outsulation® brings to cost-effective construction; it took just 36 days to complete and erect the panels for this 11-story office complex.
Certainly no methods of prefabricated construction have been more in evidence or widely accepted than those within the EIFS industry. Max Jensen, president of Pacific Construction Systems, a leading Dryvit panelization contractor in the Northwest with a large, modern, panelization plant, attributes this growth to a number of factors.

“Architects have been through the education process with panelization of exterior insulation and finish systems. They have accepted the whole ‘lighter’ concept and are presently more receptive to designing structures that lend themselves to these methods of construction. Architects like proven products and concepts,” he continues. “When you have successful, completed projects to show, be it in the exterior insulation or any other panelization system, the sell is certainly easier.”

Pacific Construction which offers a wide range of services to architects and builders has long since passed that hurdle, with numerous building projects throughout the Northeast.

Pacific’s panel plant manager, Jerry Jensen, considers panelization the most technically demanding end of the business. “We must be able to deal with potential water infiltration and building dynamics, as well as intangibles, like wind and weather. We think of panels as an upgrade,” he adds. “By fabricating within a closed environment, we can control the quality, leading to a consistently superior installation. Architects have shown they appreciate the quality control factor.”

Both men agree that the growth of panelization and the increase in numbers of systems available has been facilitated by the new technology available to panel plant operations. More sophisticated equipment like elaborate bridge cranes and overhead machinery create a more efficient operation using less floor space. The result is a superior quality end product.

No one can dispute another important factor that has brought many new firms throughout the country into the panelization fold. To run a successful business, it’s important to keep your workers working. This is especially important in parts of the country where adverse climatic conditions are a factor. A successful panel plant operation offers the capability of year round production. No one can rain on your

About the Author: An architect by profession, Stan Mason’s involvement with the design and engineering of panelization of light gauge steel framing goes back many years. He has been an industry consultant, a leader at AWCI’S Associated Collegiate School of Architecture Seminar held at the Wharton School, and presently heads the new Prefabrication Services Department of Dryvit Systems, Inc.
“No one wants to spend time or money on a tower crane to hoist a panel that won’t fit when it’s delivered to the job site.”

parade. Perhaps there is nothing more essential than keeping good craftsmen on the payroll.

The variety of products and systems available to today’s panelization contractor is nearly endless. Not every panel contractor is geared to handle these systems, but as the present day architect begins to design more and more projects with panelization in mind, it’s up to each panel contractor to be aware of what’s available in the marketplace and be up-to-date on new panelization approaches. The art of panelization has been advanced through the imaginative blending of materials, the use of thinner natural stone veneers and aggregates, and innovative panelization technology. Let’s look at some of the newest panelization methods and systems available today:

Granite Clad Glass Fiber Reinforced Concrete . . .

GFRC of Texas ranks as the largest supplier of glass fiber reinforced concrete wall panels in the country. In business only since 1982, it produces nearly 5,000 square feet of panels daily in its 40,000 sq. ft. Hutchins, Texas facility, by spraying concrete and chopped glass fiber into forms of the desired shape and size. Utilizing steel studs and a foundation of glass fiber reinforced concrete, GFRC of Texas has successfully prefabricated panels with Italian granite veneer for a look that is attracting a lot of attention within the architectural community. Granite slabs, 2.5 centimeters thick, are mechanically anchored with epoxy plugs to the GFRC foundation in a maximum module size of 8’ x 15’. Panelization with granite is simply an extension of what typically can be done with these methods of panelization,” notes Curt Johnson, GFRC president. “And while pre-fab granite is less costly than handset granite,” he adds that there are other benefits as well. “Our prefabricated granite panels weigh 1/10th of other granite panelization methods and, of course, this results in labor savings in installation.

The 26-story Renaissance building in Phoenix, Arizona, is testimony to the company’s expertise in high-rise granite prefabrication. “There was no one else qualified to do high-rise granite in Phoenix,” says Curt. Growth for this unusual granite prefabrication method will come from some very demanding marketplaces according to Johnson. “Granite with GFRC will be instrumental in seismic areas in the future.”

Exsulation®—A Dryvit Owens-Corning Technology Advance . . .

Recent technological advances in panelization products from Dryvit® System, Inc. are also attracting interest in the EIFS field of construction. As a pioneer of the exterior wall insulation and finish system industry here in the United States, Dryvit has been instrumental in the growth of panelization, with its Dryvit® Outsulation® system. Recently the company launched
Exsulation® under the Dryvit umbrella, a system that will contribute substantially to the EIFS future in specifically targeted markets.

Incorporating advances from both Dryvit Systems, Inc. and Owens-Coming Fiberglas, Exsulation combines Owens-Coming Glas-Lath® a one-step fiberglass insulation board with factory-bonded fiberglass mesh, with a new Dryvit 100% acrylic polymer base coat called Genesis™, and a broad range of Dryvit finish options.

Peter R. Payne, Dryvit’s General Manager of New Business Development, says that Exsulation is ideally suited for panelization in projects of up to three stories. The 4' x 8' Glas-Lath boards function as their own substrate and are easily mechanically fastened directly over open wood or steel framing, reducing time, labor and material costs during the panelization process. Because the fiberglass mesh is an integral part of the Glas-Lath board, the Genesis base coat which is mixed with Portland cement can be applied immediately and a Dryvit finish coat can go on the next day. Glas-Lath boards are available in 1", 1½" and 2" thicknesses. The system is suitable for use on any wall surface that will accept mechanical fasteners.

Payne sees the market for this new Dryvit system in areas where architects or builders are seeking a luxury look on a limited budget. Specifically, he cites residential, light commercial and industrial situations, and stresses that metal buildings, both new and retrofit, are also prime targets for the cost-competitive Exsulation system.

Exsulation lends itself to a variety of finishes . . . from the traditional Dryvit finish coats in a variety of textures used with the Outsulation system, to the company’s newly unveiled aggregate offering, Carrara, a marble-chip composite finish coat, Dryvit’s answer to the growing interest in the granite and marble look. Either way, Exsulation opens new market opportunities for panel contractors in the expanding luxury-at-a-price arena.

Cygnus, Inc., a small firm in Denver, Colorado, has had some interesting successes with its Cygnus Panel System since 1983, when it completed its first project in Portland, Oregon.

The Cygnus Panel System combines tile, granite or marble cladding with a steel framed diaphragm, using inert structural silicone as a molecular bonding agent.

“Not a lot of companies are aware of us,” says Joanne Fanganello, Vice President of Cygnus, mentioning as well some of the difficulties the company faced in bringing their new system to market only four years ago. “We didn’t anticipate that the industry was so large, or that there were so many different systems and products available to the architect and
“builder”, said Fanganello. “Getting their attention was no easy matter.” “Acceptance of silicone as a structural material was our second major hurdle,” she adds, noting that many in the field simply overlook the fact that silicone has been holding glass in high-rise buildings for the past twenty years.

Cygnus markets its panel system through a network of panel fabricators who are selected for their visibility in the community and for their ability to market systems. Thirty-five projects throughout the U.S. have utilized the CPS™ System, and at present, 8-10 are under construction with granite cladding.

Cygnus believes its CPS panel is significantly cost-competitive with traditional truss systems. The use of thinner natural stone materials makes a marked difference. CPS uses granite that is 1.5 to 2.0 centimeters thick, notes Fanganello. “This can result in savings of 30% on the cost of granite when compared to the granite costs for a traditional truss system.

The CPS steel stud frame weighs in at approximately 4 pounds per square foot. Clad with 3/4” granite veneer it totals approximately 12 pounds per square foot.

The company cites some other significant features of the CPS System, compared with traditional truss systems, especially as they relate to granite. With 2” thick granite held in position by a bolt or screwed into a grid on a building, the attachment point is the weakest point in the granite. Granite-clad CPS panels utilize beads of silicone at 6” intervals to bond the granite to the steel substrate. In this way, the granite is neither damaged or point loaded.

After an initial struggle for recognition of our system-laden industry, CPS believes there is opportunity for growth. Increasing interest in thinner, natural stone materials like granite, and an increased awareness of silicone as a bonding agent, should provide new opportunities for this panel system.

—— Thin Shell Cement System . . .

A survey of the latest panelization advances would not be complete without mention of another system attracting attention.

Design Cast West, a subsidiary of E.F. Brady Co., in California, has developed an unusual system they call “Thin Shell Cement.” Utilizing 1¼” conventional hard rock cement and truss tee subpurlins, they’ve come up with something that closely resembles precast concrete with some very definite cost and weight savings. Now marketed through E.F. Brady Co., this thin shell cement system weighs about 25% less a square foot than conventional precast. According to the firm, savings are $2.00 a square foot over conventional precast concrete. Maximum panel size is 125 sq. feet.

A spokesman for the company notes that in certain cases, precast concrete could be more economical.
shapes like sloped tops and returned edges, must be executed as separate pieces with the thin shell cement methods, while with precast concrete, they can be done as one piece.

Thin shell cement panelization is already in use on a number of structures, mostly banks, commercial buildings and hospitals, nearly all located in California. The largest project was a 27-story high-rise condominium in San Diego that utilized 3300 panels for a total of 250,000 square feet of thin shell cement.

Guidelines to Success in Panelization . . .

To be a successful panelization contractor in today’s marketplace, you must be able to compete effectively in the obviously price sensitive environment we are experiencing around the country. While no one thing can guarantee your success, there are certain established guidelines that are accepted procedures and can certainly enhance your chances in this growing field.

Efficiency of Organization . . .

It is critical that today’s panelization contractor develop a professional office and field staff to work effectively to get the job done within the cost and time constraints established. This means you have to look at every aspect of your operation to make sure it flows smoothly from processing paperwork to collecting retention and everything in between.

With the higher degree of sophistication on the technical end of the business comes the need for a more sophisticated work force to balance the scale.

Staff...

Things are changing. We are in the marketing business whether you like it or not. And, I for one, prefer to deal with it effectively. So should you. The old days of having only an estimator, one person who “does it all,” are over. You need a staff of people who must be able to represent your organization and become marketing tools for you. You need assistance in both getting the
jobs and in maintaining architect and professional contacts.

“You’ve got to hire good people” is a common response from successful contractors. You can’t have an encyclopedia salesman selling today’s high technology high performance products. Today’s salespeople have got to have technical knowledge and an ability to communicate essential information to architects and building designers. Amen, I say to that.

**Markets . . .**

The major players in the development of a project will often negotiate jobs with panel contractors. It’s important that you become aware of who these major players are in your market. And that you sell yourself and your company to them. In many instances, you’ll find them at real estate firms with design/build capability, construction management firms, and, of course, building owners. You have to identify them, sell yourself and your company effectively to them . . . and then deliver. It isn’t easy. You have to be willing to work hard and to associate yourself with people of similar philosophy.

**Professional Attitude . . .**

Given the litigious climate we in the construction field are facing today, this may be the most important factor on which your success rides. The trend is towards performance specifications and turnkey contracts where you, as a panel contractor, are responsible for everything. You’ve got to dot your “i’s” and cross your “t’s,” particularly where panelization is concerned. My advice is to become associated with a reputable structural engineering firm to assist you in the development of shop drawings and engineering materials for these systems.

Time and money spent in these areas in the early stages of any project will pay handsome dividends down the road. Again, efficiency and emphasis on planning. You want to be paying your fabrication personnel to build panels according to your shop drawings. Problems that can be resolved in early planning stages will save you money later. No one wants to spend time or money on a tower crane to hoist a panel that won’t fit when it’s delivered to the job site. Planning!

Architects are professionals. They respect other professionals. Panelization contractors who are willing to make a strong commitment to professionalism within their organization will be pleasantly surprised by the reception they will get from architects and architectural firms. If you’ve done your homework, you will command respect. And respect from people who will be coming to you for answers.

A professional attitude goes a long way to avoiding adversarial relationships that are counterproductive to all of us. And when people come to you for the answers, you will get your share of the work. And then some.