ARCHITECTURE
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**SAN FRANCISCO PLANTATION**

This issue's limited edition signed print by Ladd P. Ehlinger is of San Francisco Plantation in Reserve, Louisiana, about thirty miles from New Orleans up the Mississippi River. There are two similar stories as to how the mansion acquired its name, neither of which involves the city of San Francisco or the actual saint.

The original Owner Builder was a French Louisianian by the name of Valsin Marmillion. The family had accumulated enormous sums of money from the sugar business, both in growing the cane and processing it. Valsin's father had built one of the first sugar mills in St. John the Baptist parish (county), where the house is located. The riches that he had accumulated went into the house, so much so, and so opulent a house it was that be was reputed to have remarked that the house was *"Sans Fruscin",* which translates into the vernacular as ,'my last red cent' The other version is that Valsin remarked when construction was finished in 1850: *"Son saintfrusquin. " ("I* have lost my all."). In either case, what he said became anglicized and corrupted into San Francisco, and the meaning is similar in both cases: he spent too much on the house.

Architectural historians disagree as to what the style of San Francisco is. Some have classed it as "Steamboat Gothic", claiming that Valsin Marmillion was inspired by the steamboats that plied the Mississippi River in front of his house. Some have asserted that Marmillion spent a lot of time travelling up and down the river on the Diana, the Reindeer, the Sultana, and the Belle Key, and that his carefree attitude was engendered on these trips that included gaming as well as business, and that he became enamored of the style of these boats, later translating that into his house. Other historians have classed the house as oriental, or Italianate. Ultimately, the house defies classification as it is totally unique.

The design of San Francisco does follow the construction practices of the great houses along the Mississippi though. The ground floor is constructed of brick masonry that is stucco, and originally functioned as the offices and stores of the plantation. It was built in such a way as to survive with little damage in the event the river flooded. The architectural design is simple, plain walls and square brick pillars.

The second level of San Francisco is the main floor containing all of the living areas of the house. The architectural treatment is a little more elaborate to express this function. The walls are *briques entre poteaux* (brick between posts), where the brick is stuccoed, and the posts are expressed. "Me columns are more decorative, being fluted with Corinthian capitals. The gallery wraps both sides of the house with a decorative cast iron balustrade said to be imported from France. 'Me interiors have decorative columns at the entrances to the parlors and drawing rooms, the walls and ceilings of which were painted by the Italian frescoist, Dominique Canova.

The third level of San Francisco is popularly believed to contain a ballroom. It has a huge cantilevered "deck" that shelters the main floor below, and is surrounded by both a balustrade that does not quite match the one below, and shuttered openings. The writer toured the entire building in 1965 and can attest that the third level is merely an attic, with such huge wooden members articulated in a fashion of not quite a rational structure such that many areas of the space do not provide adequate headroom for anything, much less a ballroom. Somehow though, the whole ensemble goes together, even though nothing on the three levels match.

San Francisco was acquired in the recent past by a major petroleum refining company. The land was utilized to construct the refinery, and the company fully restored the plantation house.

## CONGRATULATIONS

To Dana Ehlinger for completing and earning the Certificate for the Huntsville Division of the Corps of Engineer's Value Engineering Course recently. Value Engineering is the analysis of alternative systems, materials and methods of construction to determine which is the most economical way to design a particular project. A job well done!

## LASTLY ABOUT STUCCO

The most recent advances in stucco technology are in the realm of a total elastomeric approach to joints and cracking. These systems are called Exterior Insulation and Finish Systems (EIFS). EIFS systems differ from traditional stucco systems

By virtue of the fact that the surface finish is intended to be a barrier rather that an absorbent, breathing matrix. This barrier has to screen all water from penetrating the system. There is no secondary means of removing any water which does penetrate the EIFS, as occurs in other wall systems, such as brick veneer, that utilize the Rainscreen principle.

In most EIFS products elastomeric (acrylic) polymers are combined with portland cement, the traditional ingredient of stucco, and sand to render a finish that is stronger in tension, flexure and resistance to thermal movement. This acrylic matrix, which also contains colored pigments, is applied as a troweled on finish coat over a base coat that consists solely of portland cement, sand and acrylic polymer. This base coat is applied with a reinforcing mesh composed of nylon or fiberglass by troweling to a substrate of expanded polystyrene insulation board. The expanded polystyrene insulation board is fastened to the structural sub-substrate by adhesives or mechanical attachment (usually screws).

The benefits of EIFS usage are multiple. The expanded polystyrene board and the base/finish coat are extremely light in weight when compared to traditional stucco. This results in a much lighter substrate supporting system and a reduction in cost. The polystyrene provides extra insulation for the building, resulting in energy savings. The polystyrene is also easy to shape providing a low cost means of introducing, complicated architectural moldings. The variety of finish coat colors gives flexibility to the designer. The low cost of the systems gives more building to the Owner for the dollar.

In Europe, where EIFS products were originally developed, the structural sub-substrate consisted of reinforced concrete or concrete unit masonry (CMU), whereas in the U.S., the EIFS is usually applied to a metal or wood structural stud wall system. This is a crucial difference that greatly affects the longevity performance and waterproofing of the EIFS.

Gypsum sheathing board is the surface that is commonly utilized in the stud wall backup systems. This product, while it is somewhat water resistant due to the type of gypsum and the finish paper on the board that it is comprised of, will deteriorate rapidly when left exposed to the weather, and more slowly when intermittently subjected to small amounts of water that are produced by the typical leaks in the EIFS. Delamination of the EIFS polystyrene insulation board component from the gypsum sheathing board, either by adhesive failure or by failure of the paper and/or the gypsum, is the usual result. Use of waterproof adhesives solves the delamination problem caused by adhesive failure. Use of a portland cement based sheathing board solves the delamination problem caused by the failure of the gypsum sheathing board. These solutions should be viewed though as insurance in the event of an inadvertent puncture. There are better solutions to the problem of leaks.

A better way is to design the details of the EIFS to prevent leaks from components that have to penetrate the system, and to use a double base coat of heavier mesh in those areas subject to inadvertent punctures and splits from high stress. Most manufacturers recommend that the ground floor surface. when subject to abuse from users or from the immediate environment, such as from rocks being thrown by lawnmowers, have two layers of mesh applied. They also recommend that two layers of mesh be applied at all outside comer locations to counter thermal structural movement of the substrate supporting the EIFS. Components such as conduits, water lines, downspout fastener straps, electrical meters, signs, etc. should have their attachments to the building designed with proper sealant joints totally around the fasteners.

The most troublesome leaks in EIFS applications have come from poor details advocated by the manufacturers of the systems. The manufacturers recommend that the EIFS may be used as a "cap" to the top of a parapet wall, to take the place of

a metal cap flashing. Also recommended are horizontal control joints without the usual "zee" flashing in the joint, and no sill or head flashings are recommended at windows or head flashings at doors.

Use of a metal cap flashing in lieu of the manufacturers recommendations solves the problem at this location. The horizontal control joints are absolutely necessary in wood stud structures to provide a relief in the EIFS membrane for wood shrinkage in the studs and the horizontal framing members, but the manufacturers recommendation of only a sealant joint is inadequate as there is no backup system when the sealant fails. The insertion of a "zee" flashing here solves the problem. For similar reasons the use of "zee" flashings above windows and doors in the head position solves leak problems in these locations by providing a secondary means of protection, as does the use of a metal sill flashing on the windows.

Two other problems have arisen with EIFS. There have been failures of the perimeter sealants at window and door openings and other penetrations. There have been problems with mildew and algae along with dirt accumulating on the finish surface in environments of high humidity and high rainfall. 'Me polyurethane sealants have been observed to fail the finish coat of the EIFS and to fail in and of themselves by splitting and or decomposing into the original two components comprising the sealant before curing.

Use of a clear acrylic coating or a clear silicone coating compatible with the colored acrylic pigments used in the finish coat of the EIFS solves the former problem somewhat. The clear coating fills the pores of the finish coat and provides additional thickness of finish to prevent a "toehold" for die mildew, algae and dirt to accumulate. Otherwise, the surface has to be frequently cleaned. The clear coating, when containing a mildewcide, extends the interim between cleanings and renewal of the clear coating to acceptable limits for most Owners. Use of silicone sealants solves the latter problem, and application of the sealant prior to application of the finish coat solves the former problem. It should be pointed out that use of polyurethane sealants should be done with extreme caution in those applications where the sealant, is subjected to extreme high temperatures and high humidity. 'Me types of failure previously mentioned can be expected in those applications.

When all of the considerations mentioned above are responded to in the design of the EIFS, the end result is a system that will give the Owner more satisfaction over the long term than the non-polymer traditional cementitious stucco systems.

## SELECTING AN ARCHITECT

Most Owners somewhat fear the task of selecting an Architect or other design professional when the need arises, and justifiably so. If the Owner knew precisely what to do, and how to do it, he wouldn't need the professional. The act of hiring a professional is an irrational act: you are deciding to *trust* someone else, with your: body in the case of the doctor, your teeth in the case of the dentist, your finances in the case of the CPA, your conflict and legal well being in the case of the attorney, and your building in the case of the Architect.

'Mere are rational concerns, however that an Owner can address first, and then there is a rational process whereby the irrational act can occur with safety. The American Institute of Architects (AIA) has several pamphlet publications that address the rational concerns of the Owner and allude to the process of making the irrational rational.

The AIA publication You *and Your* Architect covers in a general way the process that a typical Owner might follow when the need for an Architect arises, and identifies what the Owner and the Architect each do within the relationship. There are two AIA publications titled Building *Relationships. One* is subtitled A guide for *businesses on how to* work *with an* Architect *and* get *the most for* your invest*ment, and* the other is subtitled A guide for institu*tions on* how to work *with an* Architect. The subtitles indicate the different perspective of each publication, the one being oriented toward churches, schools and other eleemosynary entities and the other toward the individual in business interested in a profit. Each guide contains four checklists for the Owner: Getting Organized, Assess *Your Risks, How* To *Select An* Architect, and 20 Questions To Ask *Your* Architect. The first two checklists deal primarily with internal concerns of the Owner that when dealt with, impact the process of selection of the Architect by establishing the Owner's criteria for the project and the selection. The latter two checklists deal with the interrelationship of the Owner with the Architect during the

selection process. These AIA publications provide most of the rational criteria that a typical Owner will need in the selection, and allude to a rational process of accomplishing the irrational act of trusting, but they don't go quite far enough.

Several rational criteria have not been mentioned in these publications which are of paramount importance to an Owner, probably because these are publications of us Architects, and many of us are vulnerable to scrutiny in certain areas. The topics of business or practice stability, business financial capability, business risk, and the standard of care are not covered.

Business or practice stability concerns on the part of the Owner will lead to questions of the prospective Architects such as "How long have you been in business?", "Have you operated continuously or have there been interruptions (gone out of business)?", and "Have you continuously practiced with the same partners?". Obviously; a history of problems in these areas would indicate to an Owner that there may be problems with this Architect that might affect the successful outcome of the project.

Business financial concerns on the part of the Owner may prompt questions such as: "How much operating, capital do r YOU the Architect have?" (can the Architect finance the fee during each phase of his contract?), "Who do you bank with and what is your line of credit?" (same concern as above), and "What is your net worth?" (in the event of a poor job, who makes the Owner whole?).

Business risk concerns on the part of the Owner would lead to question of the Architect such as: "How much general liability, automobile, workers comp, and professional liability (Errors & Omissions or E&O) insurance do you carry?", "How many claims have you had on your E&O insurance over the years and on your current policy?", and "What is your deductible on your E&O policy?"

Standard of care is a legal concept denoting how a profession is practiced within a given geographic area. Owner concerns in this area tie in with the previous area, and would lead to questions such as: "How do you feel you exceed the standard of care for Architects in our area?" and "What do you have in the way of a Quality Assurance Plan implemented in your office?"

Next *Issue:* Making Irrational Processes Rational.