



SEASONS GREETINGS

The staff of Ehlinger & Associates extend Seasons Greetings to all of our friends who receive the Newsletter. Merry Christmas, Happy Hanukah and Happy New Year!

E & A FEATURE ARCHITECT

EMANUEL L. SMITH, licensed architect and CADD specialist with E&A, was born in New Orleans, but grew up on a farm in St. Francisville, La. (cotton, potatoes and corn).

He attended Southern University in Baton Rouge and worked his way through college as a bonded agent for Wells Fargo and later as a guard at Angola State Prison. He graduated in 1979 with a Bachelor of Architecture degree.

He has experience with several firms in the New Orleans area and has participated in the production of several major projects including the new Meridien Hotel and VA Medical Center.

Emanuel was recently certified by the National Council of Architectural Registration Boards and with the certificate is in the process of applying for an Alabama architectural license. He is looking forward to greater participation in the activities at E&A's Huntsville office.

LA SAINTE CHAPELLE

This issue's signed limited edition print is of La Sainte Chapelle, Paris, France. La Sainte Chapelle was built by St. Louis, King of France, in the thirteenth century to house the Sacred Crown of Thorns obtained by St. Louis from Baudoin, Emperor of Constantinople. St. Louis had a hobby of acquiring sacred relics, and the cost of acquisition and their enshrinement exceeded the cost of the chapel by two and one half times. The other purpose of La Sainte Chapelle was to provide a place to worship for the Royal Family and Court, along with the servants of the Court within the Palais du Roi on the Ile de la Cité. In the sixteenth century, the king at that time moved the royal palace to the Louvre, and the Palais du Roi became the Palais du Parlement, the seat of the highest royal court of justice. Since the revolution, it has retained that function as the Palais de Justice.

Gothic architecture in France began c. 1150 and lasted to c. 1550. It is commonly divided by historians into three periods: (1.) "Primaire" (twelfth century), sometimes called "a' lancettes", is distinguished by pointed arches and geometric tracery windows; (2.) "Secondaire" (thirteenth century) or "Rayonnet", a period characterized by Rose Windows and circular insets within windows with wheel tracery; and (3.) "Tertiaire" (fourteenth, fifteenth, and part of the sixteenth centuries) or "Flamboyant", from the flame-like shapes of the window tracery.

La Sainte Chapelle was designed by Jean de Chelles and Pierre de Montreuil. It was started in 1243 and was built in record time, less than thirty-three months, but was only consecrated in 1248. This occurred at the time that Notre Dame, the cathedral of Paris, was under construction. This building is of the "Rayonnet" period, with the exception of the west rose window shown in the print, which was rebuilt in the fifteenth century, and is thus

"Flamboyant".

This chapel is an architecturally seminal building in several ways. It was one of the earliest gothic buildings to display this pure of a clarity in execution of gothic concepts of space and form, where the walls have been eliminated entirely, being replaced by buttresses and stained glass to express by modulated light the infinity of space and thus God. It also served as the model for chapels, which came to be built more frequently as independent structures, and as infills in the chevets and side bays of the large cathedrals during this period.

La Sainte Chapelle is actually two chapels. The servants' chapel is on the ground level and the court's chapel is on the second level. While occupying and defining the same structure, these two spaces essentially do not communicate. While the architects did not use flying buttresses, they very cleverly used the added columns which define aisles of the structure of the first level to both reduce the span of the floor of the second level and provide some additional lateral bracing to the thrust of the main vaults being borne by the buttresses. The lower chapel forms the base for the upper chapel. This can be seen in the transverse section, and the 1/2 floor plans on the reverse of the newsletter.

The lower vaults span 23' and rise 23' with side aisles of 6' each, while the upper vaults span 35' with a height of approximately 65'. The proportions of the plan and elevations are very sensitive with great feeling. The front porch projects forward of the basic four bay plan with apse. The buttresses rise with finesse and delicacy providing the only support of the main vaults, while the facades are simple and bold. The 50' high by 15' wide stained glass windows enhance the lightness of the structure, almost to an appearance of fragility.

The reliquary for which the chapel was built used to stand in the middle of the apse on a platform beneath the vault. Two winding staircases lead to it. The one on

bottom of the throat should be directly below the top of the throat in a vertical direction. There are premanufactured metal dampers that form the throat properly, while allowing a closure of the throat when there is no fire to stop outside air entry.

The throat or damper vertical opening is rather small for most residential fireplaces such that even if Santa made it down the flue to the smoke chamber, he couldn't fit through the throat/damper opening, even if Santa were skinny.

This throat positioning fosters a draft upward on one side of the combined smoke chamber and flue of the smoke/gases, and a downward draft on the other side of the flue of the cold air initially in the flue, and later of the outside air. The bottom of the smoke chamber should have a smoke shelf, the lowest point of which is lower than the lowest point of the throat, that is curved to turn the cold air and mix it into the hot smoke/gases effluent at an angle such that the direction of the draft is upward. The

smoke chamber is like a vertical funnel and collects the smoke/gases from the throat and channels them to the flue.

The flue should be proportioned in size, width and depth and total height, to the firebox to contain all of the smoke/gases that the particular size firebox will emit. The flue sizes of most residential fireplaces are such that Santa will get stuck in them - 12"x16" or 16"x16" or 16"x20" - especially a fat Santa. The height in particular of the flue is important to stabilize the simultaneous upward and downward drafts within the flue.

The top of the flue as it exits the chimney should be slightly higher than the chimney, and the chimney should have a slope downward to the outside edge. It is best if there is a metal cap. This directs rainwater away from the flue opening. It is also best to have a roof above the top of the flue at a height equal to the largest flue dimension to prevent rain from entering the flue directly. Where the chimney passes through the roof system, there should be a stepped

through-flashing, which is like a metal roof within the chimney, to prevent water which saturates the portion of the chimney above the roof from draining down below the roof into the building.

When all of this criteria is not followed, Santa may have a better chance of getting down the chimney, but there will be major problems with the fireplace system. If the throat opens directly upward partially or in full to the smoke chamber and flue, the fireplace will belch smoke back into the room, and heavy rains may come in as well, because the smoke chamber floor, when constructed properly, stops any stray rainfall that breaches the roof from entering. If there is no roof or no stepped through flashing, water migration through the chimney will promote leaks and rot of wood framing.

It is a mystery to the writer how the myth of Santa coming down the chimney ever got started, particularly knowing all of the above, plus if there is a fire going, the chimney is not a practical point of entry anyway. If anyone knows, we would like to hear from you.

