



SEASONS GREETINGS

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

ABBEY ST. GEORGES ST. MARTIN DE BOSCHERVILLE NORMANDY, FRANCE

The Abbey St. Georges, located in St. Martin de Boscherville in Normandy, was founded in 1050 by Raoul of Tancarville for the canons regular of St. Augustine, a minor order of monks. The Benedictines of St. Evroult took over the Abbey in the 12th century when their influence in the region was at its zenith. The Abbey is located along the River Seine on the so-called 'Route de la Abbayes', the path of the medieval pilgrims.

During the French Revolution in the 18th century, there was great anger on the part of the populace towards the Catholic Church and in particular towards the monastic orders, especially the Benedictines. Most of their monasteries were destroyed by anarchistic, vandalistic mobs. The monasteries at St. Evroult and at Jumieges along the same Route of the Abbays were destroyed and never rebuilt, although enough remains for them to have become tourist attractions today. The Abbey St. George was con-

verted to the parish church of St. Martin as the Benedictines left in haste, and the building was saved from destruction. The Chapter House, the Cloister, and the other monastic facilities were either destroyed or greatly altered by reduction in size, however.

The French government, the Normandy government, and the local town have recently voted funds to restore the Cloister, Chapter House and other facilities and to further preserve the church.

The Abbey St. Georges was designed and built in the Norman Romanesque style, which is characterized by its plain yet bold geometry with strong vertical proportions, and strong unity of motifs. The church was constructed from 1080 to 1125, except for the vaulting in the nave and transept, which was constructed in the 13th century. This relatively rapid construction time period (for compressive masonry structures) was characteristic of Norman projects and accounts for the unity, cohesiveness, and clarity of the composition, as no architect or style changes occurred.

The facade is plain and simple, being bracketed by the pair of narrow vertical towers, and punctuated by the classical Romanesque entry of multiple circular arches, the archivolt and column capitals of which are geometrical, yet remarkably delicate in carving. It is believed that the carving was done by craftsmen from the Ile-de-France or Chartres region.

The nave (main space) has eight bays with aisles on either side. The vaulting is Gothic, meaning groin type (intersecting barrel vaults) that is very sensitively supported on transverse Romanesque circular arches at each bay node above the columnar supports. This 13th century modification (which probably replaced a wooden vault/truss arrangement for fire safety reasons) respected the original strong geometry of the Romanesque. The nave elevation has a false triforium in lieu of galleries between the aisle arches and the clerestory windows. This triforium has multiple arches that frame deep apsidal niches in the wall that are nested in the attic of the

aisles. The depth of the niches gives very dark contrasting shadows to the bright plane of the wall. A big open gallery supported by a monolithic round column ends both transepts. An umbrella groin vault dominates the crossing, and the apse repeats the vaulting of the nave.

Abbey St. Georges is well worth seeing in its current state and should be quite exciting to visit when the Chapter House, Cloister, gardens and other components are reproduced and/or restored.

WHY SANTA CAN'T...

...come down the chimney is an appropriate discussion for this time of year, especially if the fireplace and chimney ensemble is designed and constructed properly. An improperly designed fireplace/chimney might allow Santa in, but will not 'draw' properly or at all, smoking up the interior if you can get the fire lighted at all, and constitutes a fire hazard. Incidentally, there are recorded instances of people who have become stuck in chimneys when attempting to play Santa or burglar, and some have died before anyone knew they were wedged in the chimney! This is definitely something you should not attempt.

For a fireplace to work properly several aspects of the design have to be in synchronization. The firebox and its opening to the room has to be proportioned properly - width to height to depth with the throat positioned toward the firebox opening to the room such that the smoke and gases are captured before they escape the firebox into the room and they are channeled into the smoke chamber and then the chimney. It is also best that the sides and rear of the firebox are canted to direct this smoke/gas flow from the firebox to the throat as well as reflect the heat of the fire and the radiant heat absorbed by the masonry from the fire into the room.

The throat of the fire box should always be juxtaposed to the smoke chamber so that the smoke/gas effluent from the firebox enters the smoke chamber from the side of the smoke chamber. The

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.

