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Église Sainte-Radegonde de Talmont

Église Sainte-Radegonde de Talmont**,** Talmont-sur-Gironde, France (St. Radegonde Church of Talmont on the Gironde) is this issue's limited edition print of a sketch by Ladd P. Ehlinger, AIA. The view is looking up from the level of the marshes of the estuary of the Gironde river at the chevet where the choir and the altar are on the east end of the church. The west end of the church no longer exists, having been destroyed along with the portion of the stone promontory upon which the church sat, in a storm over a hundred years ago. Most of the nave (main body of the church), the longest leg of the Latin cross plan of the church, fell into the sea. Only one bay of the original nave remains. The base of the church has since been repaired and strengthened by the new stone foundations adding to and repairing the native stone, to function as a bulwark against future storms. The nave was shortened to one bay to reflect the reality of no footprint to restore, and the current entrance is from the north through the north arm of the transept or crossing in the plan of the church.

St. Radegonde is a classic Romanesque style church. The design and construction was originally begun in the mid XI Century, about 1094. Romanesque buildings are characterized by Roman style semi-circular arches that have a thick band of vousoirs (the wedge shaped segments of the arch) with decorative features and sculptures above and below, yet with small windows, as there was caution by the builders not to exceed the limitations of the stone in the openings. The spans on the interior are stone barrel vaulted, with a dome on pendentives (three dimensional wedges in the corners of the square support of the dome to transition to the circular dome). In the sketch, this is only reflected in the large stone box that towers above the chevet and the transept. The roof construction is composed of heavy timber on top of the vaulting, topped with the clay tile roofing. In addition, there are numerous sculptures throughout, and those of the portal entrances depict biblical stories as a means of teaching the bible to an illiterate congregation. There are two staircases leading to a crypt with two levels, the lower of which is an ossuary that is surmounted by a funerary chapel.

Sainte-Radegonde is the French spelling for the Merovingian Queen, Radegunda or Radegundis. The Merovingian period began immediately after the fall of Rome in the 5th and 6th Centuries, and was then succeeded by the Carolingian Kings (Charles the Great). The Merovingians occupied all of present day France, the Netherlands, Belgium, and most of Germany. Radegunda was a Princess of Thuringia, a part of Alemania between the Nektar River and the upper Danube. She was captured by King Chlotar I in 531 in an expedition against the Thungians, and he carried her off to Poitiers, where he married her. Chlotar I complained about her piety and lack of interest in the marriage since she was always ministering to the poor and sick, saying that he may as well have married a nun.

Indeed, Radegunda petitioned the Bishop Medard of Noyon to allow her to become a nun, and the Bishop finally relented, agreeing to her leaving the marriage and doing just that. She subsequently founded the Order of the Holy Cross of Poitiers. Radegunda's piety and holiness so impressed a great many people, that some followed her example and became nuns and priests. An example was the Roman Venantius Fortunatus, who became a priest, and later Bishop of Poitiers. Sainte-Radegonde died August 13, 587, which date is now her feast day in the Catholic Church.

CHANGE

Musing with a current Client recently about CHANGE prompted me to write this article. Change has taken place in the types of architectural work over the years more so in the sense of an iteration between various project types through the years, but the process of how the work is done reflects the most dramatic and permanent change.

All I needed when I opened the doors of my architectural practice on 1 February 1967 was two drafting boards, each made out of a raw solid core 3'-0" x 7'-0" x 1-3/4" thick doors. Mounted on each door/drafting board was a plastic edged parallel rule mounted on cables in lieu of a T-square (it was more accurate and kept parallel lines more easily), and a laminated soft plastic board cover. The door drafting boards were each permanently mounted horizontally at an angle between two other doors oriented vertically, which supported a 4-tube

overhead fluorescent light on a 2 - 2 x 4 strut that gave about 100 foot candles of light on the drafting surfaces. Triangles of plastic, architectural and engineering scales, mechanical pencils, power sharpeners, powered erasers, some plastic drawing templates, metal erasing templates, a slide rule, vellum drafting paper, drafting tape, a Graphic Standards reference book, and a Seelye Design book rounded out the remainder of needs to open the doors.

All this sufficed for about a year in the rented house that we lived in, in the spare bedroom. After moving to a 4-Plex apartment we built and owned with an auxiliary building that functioned as an office building, 3 partners were acquired and additional tools began to be added: a Leroy lettering set (ink pens of various diameters with scribing templates at various sizes to give a precise lettering of titles on drawings; vellum gave way to plastic film, and graphite sometimes gave way to plastic pencils for use on the plastic film; and most importantly, two mechanical adding machines that added feet, inches, and fractions of an inch down to 1/16 th inch, and a mechanical adding machine for the inevitable bookkeeping. A light table drafting board was constructed similar to the drafting boards to allow easier tracing and use of duplicate tracings on Sepia prints.

Then in 1970, we constructed a new office building which also had rentable space. All of the equipment was moved here and more was added: we went into the surveying business to please a large client as one partner was a surveyor, and we acquired a transit and a level along with range poles, tapes, plumb bobs, etc., all of which are antiques now since surveying is all electronic, by laser and satellite on computer. At this time, we acquired an electronic calculator that would add, subtract, multiply, divide, and do square roots. The cost of this calculator was $625 (a lot of money at the time), so expensive that we had to borrow the money from the bank and pay it back over 36 months. I remember that the cost of calculators had dropped so precipitously, that I could buy one for $5.00, less than the last payment on the bank loan.

During this time period in the early 1970s, we were doing FEA (Finite Element Analysis) for complex indeterminate structures on a rented IBM computer owned by a local cabinet manufacturer. We would show up after 5 PM with punched cards of the software, and punched cards of the input data, feed it into the computer to run, which would take all night. We'd come back in the morning to get the results, if any, because if there were any error whatsoever, we'd have to start again from the beginning. It was a frustrating experience, but way faster than doing it by hand (sliderule).

By the end of 1975, the partners were all gone, and we began to use Pin Overlay Drafting (POD) techniques. The plastic film was dimensionally stable in New Orleans' area humidity, and reproduction houses began promoting POD, where registration holes were punched in the upper boundary at the top of the sheets, the sheet placed on a brass strip with pin lugs that the previously punched holes fit over. Then "base sheets" were drawn, of say the floor plan only, then a punched sheet was laid on top, and dimensions were drawn, then another punched sheet was laid on top and notes were made for the drawing. Tracings were produced at the end photographically by combining the correctly sequenced overlays. This was similar to the present day layers in a computer generated drawing. The only downside was when someone not thinking would draw on the base sheet.

Tony Teng (deceased) was a salesman for Wang Computers that used to call on me during the mid 1970s. He found a vendor that wrote structural software, and arranged a demo on a Saturday morning in late 1976. In 45 minutes, I learned the software, and analyzed a rigid structural frame that had taken me 40 man hours to do by hand using the moment distribution technique. I was sold - but had no money to buy it. Then in early 1978, we signed two design contracts for projects that were budgeted at $1.75 M each, which created a bankable loan situation. The computer and the software bundled together was $29 K, an outrageous sum today, but bankable then. I told Tony after getting the bank to commit, that we would buy it - BUT we had to be able to use their demo computer until ours came in, since it took 6 - 8 weeks to deliver. By the time ours arrived at the door, I and an employee had designed the structures for both buildings, and the computer was essentially paid for, though we financed it over 5 years. We also bought Word Processing, Job Cost Accounting, and Real Estate Investment Analysis software as well, and the only thing we were not doing on computer was the drawings. I began writing software that nobody had at the time for designing steel framing bolted and welded connections, and gave a paper on it to the ASCE Structures Congress in 1983.

In 1981, we found some software to do Computer Aided Drafting called Palette that ran on a DEC (Digital Equipment Corporation) mini-computer. So, it was back to the bank to purchase both hardware and software. We also had to develop a data base for this system, which we still use today. The idea was to "atomize" the data into the smallest re-combinable increments, and have every scrap of data reusable and recombinable and multipliable - all functions which computers do well. We required our mechanical and electrical consultant to get the same system, so we were producing entire projects completely on computer by the end of 1981. We began using the technology as a sales tool also, but one competitor colleague told a potential Client we were competing for: "Why, you don't want to retain Ehlinger for this project since he can't even draw! He has to use a computer to draw!" That remark resulted in the creation of this newsletter with prints of the quarterly hand sketches of archetypical buildings.

Prior to 1985, the project types varied from single family custom homes, to tract housing, to small and large multi-family housing, to condominiums, to office buildings, shopping centers, restaurants, historic and other restoration projects, schools and university buildings. Then in 1985, we did a Forensic Project, where we investigated a failure, in this first case of both design and construction, ascribed responsibility for the failure, and designed the "fix", the correction of the failure, and testified in the ensuing litigation. This became a niche market for us, possibly the only new project type to emerge after the beginning.

But the tools that we had pioneered in utilizing computers to execute the work only has gotten more intense. While we still use the software originally developed for the Wang and CAD, we have added many additional packages to the mix over the years, and expect to add more in the future. *Ladd P. Ehlinger, AIA*