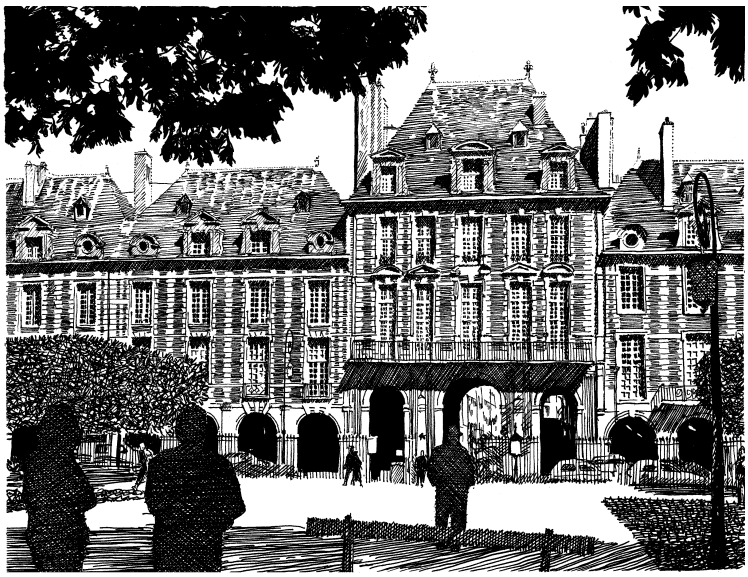
ARCHITECTURE

EHLINGER & ASSOCIATES **THIRD QUARTER 2001**



PLACE DES VOSGES

This issue's limited edition print by Ladd P. Ehlinger, is of a few of the 36 private ***hôtels*** (apartments or ***Maisons***) that surround and surmount the shops behind the arcaded urban square named ***Place des Vosges***. This is the oldest square in Paris. This complex was most likely designed by Claude Chastillion for the King, and is in the French Classical Renaissance style. It was built in 1605-12 during the reign of Henry IV. The King wanted all of the houses built "to a like symmetry", and originally named it ***Place Royale*** or Royal Square. It is 354 feet square and was a center of elegance, courtly parades and festivities, although duels were fought here despite Cardinal Richelieu's ban. After the revolution it was renamed ***Place des Vosges*** after the ***Vosges departement***, the first to pay its taxes.

The Renaissance style in France is usually divided into three periods: Early (1494-1589); Classical (1589-1715); and Late (1715-1830). The French Renaissance style is easily distinguished from the Italian or English Renaissance by the vertical proportions and emphasis, particularly evidenced in the steep roofs, and in the large oversized windows. Decoration is coarse, with much emphasis on rustication of stone elements. Exterior design is usually simple, especially in contrast with the interiors, but great emphasis is placed upon defining and articulating urban and garden spaces with building components. For instance, the pavilion with the taller arches and taller roof to the left of center in the view of the sketch serves as a focal point along that side of the square and an entrance portal from the street that rings the ***Place des Vosges*** square to an intersecting street.

The construction of the ***hôtels*** is of brick with stone quoins at the corners, window and door jambs and intersecting walls, and stone ***chaînes*** that are used in lieu of pilasters between string courses to vertically define the critical visual horizontal limits of architectural elements into wall panels, such as on the taller arched pavilion. The ***chaînes*** are on its corners.

The ***Pavillion du Roi*** (King's Pavilion) was on the south side of the square and balanced by the ***Pavillion de la Reine*** (Queen's Pavilion) on the north. Cardinal Richelieu lived at No. 21 (1615-1627), while the courtesan Marion Delorme lived at No. 11, and Victor Hugo later lived at No. 6, which is now a Museum dedicated to him. In the center of the square is a marble statue of Louis XIII on horseback to replace the one destroyed during the revolution.

A BREATH OF FRESH AIR

In the late 1980's, the standard for fresh air in air conditioned commercial and institutional type buildings was generally increased from 5 CFM (cubic feet per minute) to 15 CFM per person. Fresh air is also sometimes referred to as outside air since this is the source of the fresh air that is drawn into the building. These standards are developed and maintained by ASHRAE (American Society of Heating, Refrigerating, and Air Conditioning Engineers) and are referenced into most of the building codes that deal with air conditioning, such as the Standard Mechanical Code which is used both in North Alabama and South Louisiana. ASHRAE changed the standard in response to complaints from the public involving "sick building syndrome" (SBS) due to off-gassing of solvents used in various materials in the building's construction and finishes such as formaldehyde from plywood and other processed wood products, other types of solvents from paints and adhesives (floor tile, wall covering, laminated plastic surfaces, etc.), and solvents from carpet backing and fibers and other plastic products, particularly vinyl based products. SBS in turn developed because the buildings began to be designed as a closed cooling and ventilation system with the windows inoperative, with esoteric type products being used inside that produced the off-gassing.

E&A is involved in one forensic elementary school project designed in 1988-89 where the designer included the extra fresh air in the HVAC design -- but did not design the HVAC to remove the extra moisture from this outside air. It is unknown why the designer did this. It may have been to save money (it takes a lot more tonnage of cooling to remove the moisture from this air), or it may have been that the designer did not understand that moisture removal was necessary, since this was such a new requirement and

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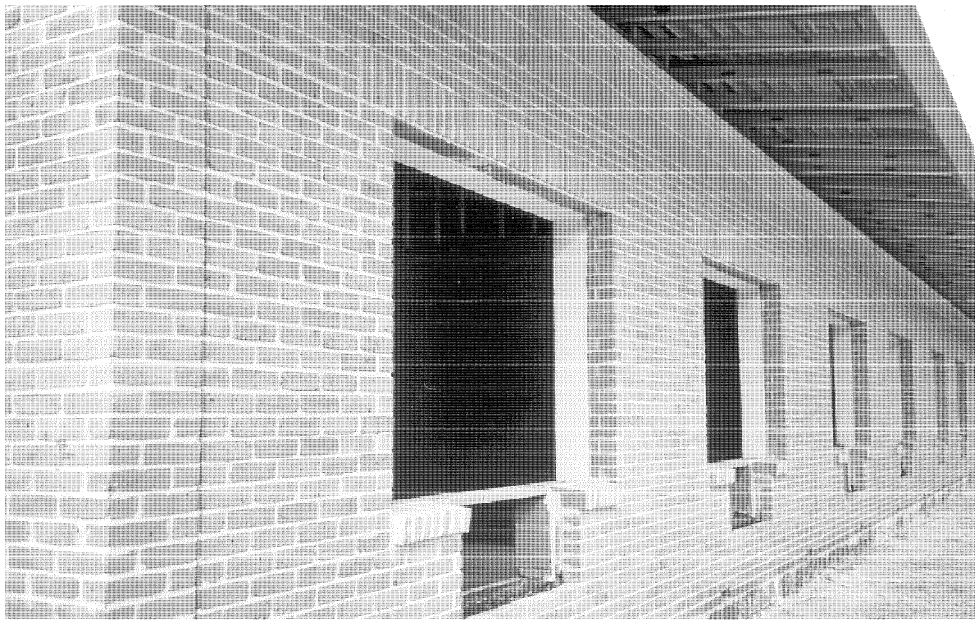
Dual Window with PTAC at Boyet Jr. High School

he was not familiar with the problems the new requirements created. This error produced another type of SBS: interior humidities so high that at times the condensation approached being like rain, mold and mildew on ceiling, floor and wall surfaces, and inside the ducts of the HVAC systems. Complaints were received by the school system of various respiratory ailments, allergies, and skin rashes. The entire interior of this project was cleaned, carpet replaced, walls repainted, new ceiling tiles installed, and ductwork replaced. A fresh air system was designed and installed to remove the moisture from the outside air by chilling it to a temperature below the usable temperature and then reheating the air.

There is another side to the fresh air "coin": many Owners object to the cost of providing this much fresh air when the construction is of traditional materials, such as in schools, and when the usage is not 100% throughout the school day. ASHRAE has an exception to the 15 CFM requirement: if the usage is less than 50% of the portion of the day when the facility is being cooled, then the fresh air requirements may be reduced by 50% to 7.5 CFM per person.

This occurred on an E&A project now under construction for St. Tammany Parish School Board -- a twelve classroom addition to Boyet Jr. High School. When the Owner added up the class change time, recess time, lunch time, and vacancies due to scheduling from when the system is turned on in the morning along with rooms not used, the usage of these classrooms would be slightly less than 50%. E&A's HVAC Engineers, Handlin & Martin, determined this saved approximately 10 tons of air conditioning. In addition, this Owner has a preference for using through-wall HVAC units, commonly called PTACs (Packaged Terminal Air Conditioning units), because of the flexibility and simplicity. When one unit breaks, only that classroom is short some air conditioning (each classroom has two PTACs) and only for a little while since it is easy to slip another unit in its place. A central chiller failure puts the entire building down. PTACs are also easy to manage for energy savings by centrally turning off the power to each unit at a particular time. Even though the individual PTAC energy usage may be slightly higher than for a central chiller, the net result after this type energy management shows that PTACs are cheaper to operate. PTACs also give decentralized control of the temperature to the user. The whole chiller system does not have to be turned on or remain on so that one classroom can be used after hours or during the summer. Finally, the initial cost of the PTACs is significantly less than for a central chiller system.



Rough Openings for Windows and PTACS along One Side of Boyet Jr. High School