

## ENERGY PITFALLS AND INTERPRETIVE OPPORTUNITIES IN REGIONAL HOUSE MUSEUMS

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### Summary

Developing an historic property into a house museum involves a complex relationship between the curatorial approach and eventual energy consumption. Two house museums in New Orleans demonstrate the costs and benefits of using climate-responsive architectural features in their interpretive programs.

"Living in New Orleans reminds me of trying to swim in molasses or ride a bicycle in the sand: you sweat a lot; if you work real hard you might get somewhere; but mostly you get real tired so you stop and have a drink."

(Leslie Smith, singer)

For buildings as well as people, the climate of New Orleans poses a difficult problem. Potential passive responses to the summer's heat and humidity are few, while the comfortable transitional seasons make one wish there were no buildings at all. Contrary to popular belief, the winters are cold and damp enough to cause high heating bills in houses designed for summer conditions. (Fig. 1)

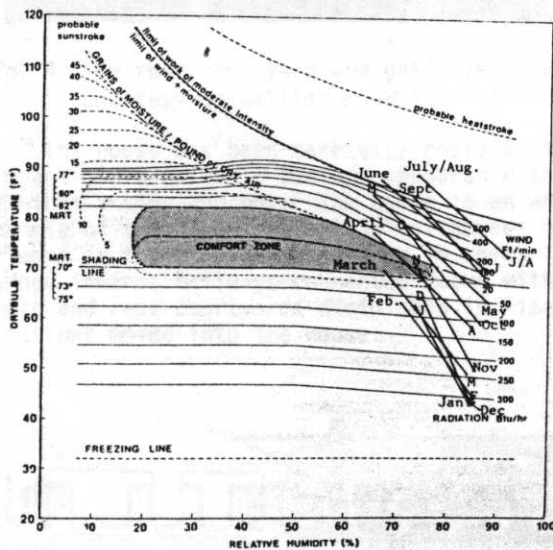


Fig. 1 New Orleans climate data plotted on Olgyay's Bioclimatic Chart.

With architecture students from Tulane University we have researched the climate responsive design and performance of six historical houses in the New Orleans area: Destrahan Plantation (1790, wings added 1810, remodeled 1840); the Masson House, an early Creole cottage (1805); Sun Oak, a Creole cottage in Greek Revival style (1836); Oak Alley Plantation (1939); Gallier House (1857); and the Twitchell House, a wood frame shotgun (1890). Our findings confirm that until the mid-twentieth century houses were designed to maximize the thermal comfort of the occupants by recognizing the changing climatic conditions outside. A wide range of architectural and lifestyle-related strategies were incorporated into designs of many styles. These were relied on for thermal comfort rather than the mechanical systems and fossil fuels which are used today.

Developing an historic property in the New Orleans area as a house museum, therefore, involves a set of decisions with significant implications for energy consumption. Two basic approaches - the conservatorial and the interpretive - are exemplified by two of the houses studied: Gallier House and Destrahan Plantation, both currently operating as house museums. A comparison of the two illustrates the complexity of the relationship between energy use and the assumed role of a house museum.

### Gallier House

Designed in 1857 by the local architect James Gallier, Jr., this early Victorian is located on Royal Street in the French Quarter of New Orleans.

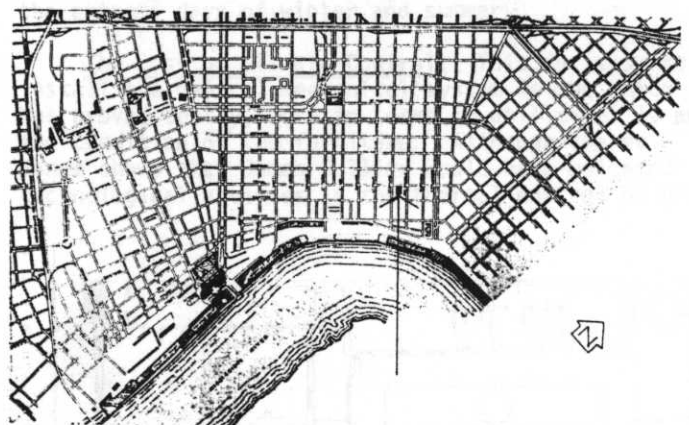


Fig. 2 Location of Gallier House in the French Quarter, New Orleans, Louisiana

The two story house has carriage access to a courtyard behind with flanking slave quarters to the northeast (Figs. 3 & 4), and served as Gallier's own residence as well as a showcase of his talents for potential clients.

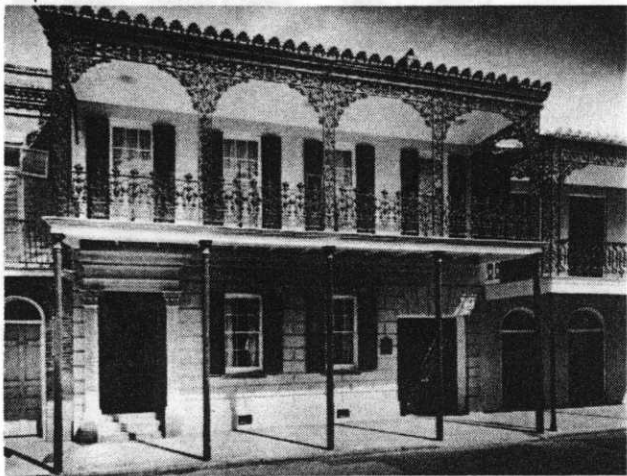


Fig. 3 The Royal Street elevation of Gallier House (Photo courtesy of Gallier House)



Fig. 4 The rear courtyard and galleries (Photo courtesy of Gallier House)

The house has been carefully restored to the elegant mid-nineteenth century appearance and furnishings inside and out. The house is an early example of the "Americanization" of houses in New Orleans in the nineteenth century in which the homes turned inward; hallways connected rooms within the house and rear courtyards diminished in size as the functions moved into the house.

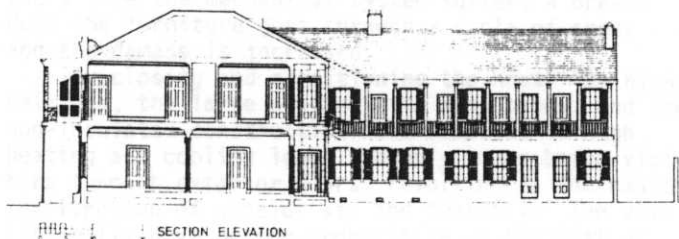


Fig. 5 Section through main house and courtyard

In establishing the direction of the museum, the accurate restoration and preservation of the extensive decorative arts and furnishings were identified as a priority. Part of this decision of the 1960's was to install a mechanical system to control the humidity as well as the air temperature within the house. The system operates in two zones: the main house and the service wing. The adjacent site provides administration and exhibit spaces, a gift shop and parking for staff and visitors, thus allowing the Gallier House to be restored throughout.

Winter and Summer Dress. As part of the emphasis on the interpretive role of the decorative arts, the museum has developed a program of changing the house from "winter dress" to "summer dress" (Figs. 7 & 8) as the seasons change, much as the original occupants of this and other New Orleans houses did until the turn of the century. The heavy drapes and wool carpets which retain warmth in the winter are taken up and replaced with sheer curtains on the windows and grass mats on the floors. The upholstered furniture is covered with light muslin slip covers and mosquito nets are hung over the beds. The chandeliers and mirrors are draped with netting to prevent discoloration from flies. Rocking chairs are moved onto the galleries and the awning on the courtyard galleries are lowered for shade. Potions are mixed and set out on the galleries for mosquito control. The visitors can thus begin to understand the power of the changing climate in the daily lives of those who lived in the city before air conditioning.

In part, the extensive change from winter to summer dress is possible because the fabrics and the wallcoverings are protected from exposure to the seasonal changes in temperature and humidity and from the dirt and soot which would otherwise be carried into the house through open windows. The museum has calculated they would have to hire at least one additional staff member to clean and to operate the awnings, shutters and windows if the house were not kept closed and conditioned. The fabric, carpet and wallpaper reproductions would also require periodical replacement costing a great deal.

Additional benefits from the decision to totally condition the house are increased security and control over access to individual rooms. The thermal comfort is welcomed by both staff and visitors on the extreme days of winter and summer.

The Cost of Climate Control. This decision to install the central mechanical system is one which has proved costly, both in terms of utility bills and the condition of the furniture. Although the evidence shows that James Gallier would have welcomed technological advances in the thermal control of his

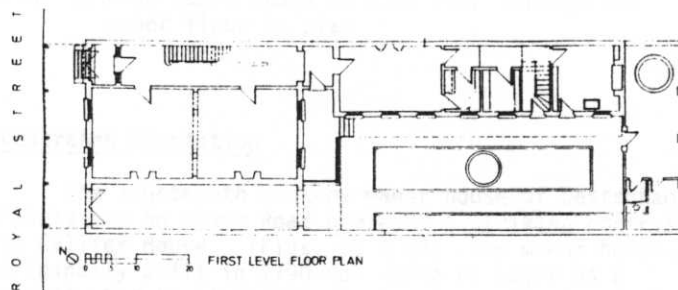


Fig. 6 Plan of ground level with courtyard

