Managing external environments through preventive conservation: The investigation and control of environmentally-caused deterioration of decorative surfaces in the Marlborough Pavilion, Chartwell, Kent

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The Marlborough Pavilion is a small stone building located in the garden of Chartwell, Sir Winston Churchill’s country house in Kent. Open on two sides, the Pavilion’s current decorations have deteriorated since their execution in 1934 and restorations in 1949, 1981 and 1989. As the last restoration was conducted under the original artist’s supervision, it has historic significance, and therefore research was undertaken by the National Trust to investigate the causes of its deterioration, design ways of reducing the rate of damage, and assess the costs and benefits of conservation and restoration. Environmental surveys demonstrated that damage was caused by both the adverse microclimate (condensation) and the penetration of liquid water, the latter successfully addressed by building repairs. Several approaches to controlling the microclimate were tested during winter months, when the deterioration was most active, and the results were monitored. The most successful system involved the use of a temporary modular enclosure with a high level of hygral and thermal buffering, used in conjunction with a mechanical dehumidifier. By using this system in the winter, instances of high and unstable relative humidity and condensation were prevented, and the rate of deterioration was significantly reduced. The costs were no greater than restoration and had the benefit of maintaining the historic significance of the original decorative scheme.