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Academic Project :

HUMIDITY EFFECT OF PRE WAR SHOP BUILDING

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CHAPTER ONE

1.1 INTRODUCTION / OVERVIEW

Humidity is the most prevalent cause of decay in historic buildings. Over a long period of time, the presence of moisture will erode, rot, corrode, and otherwise deteriorate aging building materials. Moisture may come from underground sources and wick up into buildings; it may enter through cracks in deteriorated exterior materials; or it may originate in the interior of the building and migrate through materials. Floods, hurricanes, water from fire fighting operations, or broken and leaking interior plumbing can also greatly accelerate the flow of water into historic buildings with catastrophic results.

Historic buildings must, therefore, be protected both on the outside as well as on the inside from potentially harmful moisture. Exterior surfaces must be properly maintained to prevent water infiltration, and interiors must be monitored and inspected to ensure that condensation and humidity generated on the inside are properly ventilated, managed, or eliminated in the event of an emergency, building owners, managers, and architects should also be aware of temporary protective measures to reduce moisture damage or humidity effect.

1.2 RESEARCH AND PROBLEMS STATEMENT

The effect of moisture on buildings can be seen or experienced both internally and externally in various ways. Major examples of the former include a cold (or hot) damp, uncomfortable environment, excessive heating, cooling and maintenance costs, mold growth, unsightly dark areas on the surface of walls and ceilings, and in the worst case wet and waterlogged areas. A more recent consideration has been an increase in harmful pollutants, causing an unhealthy internal environment.

Some of these may be generated by results of the action of moisture over time on particular materials or material combinations. Externally one can observe physical degradation manifested by cracks and imperfections, masonry spalling, bubbling or peeling of membranes, and painted surfaces. These are supplemented with evidence of rusting and other corrosive effects due to chemical reaction and may be combined with decay and mold growth as a result of biological processes. Some of these effects may be seasonal, while some may be reversible or arrested by appropriate timely actions. However, many are irreversible, often resulting in serious or total deterioration of a material or the component in which it is situated.