

Building Atmospheric Moisture Diagnostics: Environmental Monitoring and Data Collection

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Abstract : Efficient mould remediation and accurate moisture diagnostics leading to condensation and mould growth in dwellings are largely untapped. Number of factors are contributing to the rising trend of excessive moisture in homes mainly linked with modern living, increased levels of occupation and rising fuel costs, as well as making homes more energy efficient. Environmental monitoring by means of data collection through loggers sensors and survey forms has been performed in a range of buildings from different UK regions. Air and surface temperature and relative humidity values of residential areas affected by condensation and/or mould issues were recorded. Additional measurements were taken through different trials changing type, location, and position of loggers. In some instances, IR thermal images and ventilation rates have also been acquired. Results have been interpreted together with environmental key parameters by processing and connecting data from loggers and survey questionnaires, both in buildings with and without moisture issues. Monitoring exercises carried out during Winter and Spring time show the importance of developing and following accurate protocols for guidance to obtain consistent, repeatable and comparable results and to improve the performance of environmental monitoring. A model and a protocol are being developed to build a diagnostic tool with the goal of performing a simple but precise residential atmospheric moisture diagnostics to distinguish the cause entailing condensation and mould generation, i.e., ventilation, insulation or heating systems issue. This research shows the relevance of monitoring and processing environmental data to assign moisture risk levels and determine the origin of condensation or mould when dealing with a building atmospheric moisture excess.

Keywords : environmental monitoring, atmospheric moisture, protocols, mould

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