MODELLAZIONE OpenHBIM PER LA VALUTAZIONE DEL DEGRADO E LA SCELTA DEGLI INTERVENTI DI MANUTENZIONE DEL PATRIMONIO CULTURALE

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Abstract
Conservation programming is crucial for proactive cultural heritage preservation, emphasizing materiality and historical depth. Effective management relies on detailed information encompassing building conditions, materials, structure, and environmental factors. Current procedures are often disparate and complex but Building Information Modeling for Heritage Buildings (HBIM) provides a standardized data management approach. The Industry Foundation Classes (IFC) ISO standard serves as an open, interoperable format for information exchange. An OpenHBIM methodology is presented, based on BIM models enriched using IfcOpenShell (a collection of IFC based python libraries) for modeling surface degradation in cultural heritage buildings. Adaptive families are used for representing the degradation patterns. Considering both geometric and informative aspects of a room in Villa Venier Contarini (VE), the approach offers insights into the total affected area and thematic categorization of decay, aiding in the development of a maintenance strategy, based on the severity of degradation. This methodology can effectively inform preservation decisions and suggest the prioritization for interventions, indicating that restoration is needed. The generality of the approach makes it suitable for a broader application in cultural heritage conservation.

Keywords: *decay mapping, IFC, HBIM, conservation, maintenance programs cultural heritage*