

Detection of Latent Damage from Insect Activity in Wooden Structures through the Use of Holographic Subsurface Radar

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Abstract— Worldwide, termites, other insects, and fungi cause damages totaling billions of dollars per year. The common way to detect hidden infestation is by visual inspection, or destructive probing. Acoustics, trained dogs, CO₂ sensors, and infrared have also been used for active colonies. In this study, RASCAN-type holographic radar was used to scan boards with mock-termite-tunnel drill holes, planks with termite damage, and beams with destructively-detected known damage hidden behind plasterboard wall covering. The results were used to interpret scans of structural elements with former infestation. Scanning revealed locations with latent subsurface damage that was missed by prior inspection and remediation.