CAN PASSIVE LOCK-IN THERMOGRAPHY DETECT INTERNAL DEFECTS AND LOCATE MOISTURE IN MASONRY STRUCTURES?

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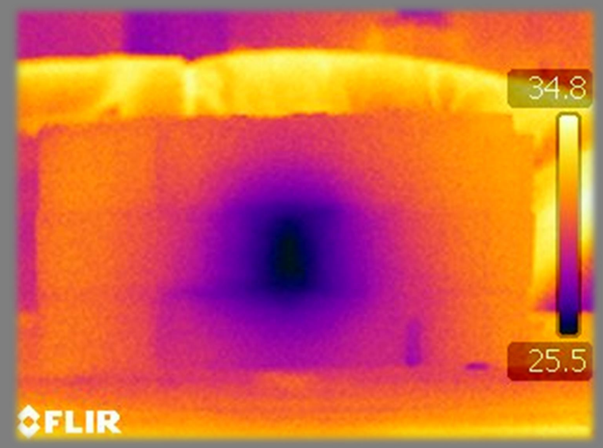
This study made a practical assessment as to whether it is possible to use a passive lock-in method of thermographic imaging in order to detect internal defects and moisture mapping in masonry structures. Essentially it asked the question as to whether passive thermographic techniques can exploit and/or optimise thermographic imaging results. Previous research had been conducted on passive thermographic techniques, but less focused on specific practical applications of the technique.

Why is this topic relevant?

A more effective means to survey for internal defects and moisture in masonry construction is necessary to facilitate effective remedial repairs which are often hampered by the lack of information that can be made conveniently available. This is important because these issues have the potential to threaten up to an estimated 120,000 masonry arch structures which are in current service in the UK's transportation network today.

What were the results?

Whilst the passive lock-in thermographic technique shows potential to be implemented for such use; it is clear that obtaining accurate results in the practical assessment of masonry structures is inundated with potential difficulties. Future study would need to analyse in greater detail external effects on imaging results (predominantly weather conditions) and the effective use of pixel processing software; in order that the technique could become a reliable method for professionals to implement for means of



Moisture here is clearly visible

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