



**starfish**  
construction group

# Moisture Mapping

The Smart Way to Survey

# Introduction

Starfish Construction has been helping to shape the built environment for many years. Whether we act on behalf of owners or building surveyors and consultants, we are continually surprised by the volume of requests we receive where the project brief indicates a complete strip back to the deck.



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Accurate diagnosis of a defect is an essential prerequisite to specifying a suitable repair. Understanding whether or not the failure is due to system or detail will assist in selecting a suitable and cost-effective solution without necessarily over specifying or adopting an over-optimistic approach.

*Extract from RICS - Flat Roofing, System Failures and Detail Failures*



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## Complex results presented simply

Following the moisture mapping survey, a detailed report will be produced which will include a roof plan showing the findings. The report will also include photographic evidence and results of the core sample analysis. Where necessary U-Value calculations and Dew point calculations will be undertaken. Finally, if works are required a detailed specification and quotation will be provided, this can sometimes include various options with varying warranties.



When a roofing product manufacturer undertakes a survey and inspection of a flat roof area, they will often recommend a complete strip and replace. These recommendations are usually based on a visual walk around and minimal core sampling, if any. Although this is the most common method to survey a roof, without employing the correct moisture mapping equipment or core sampling, a true picture of the roof condition cannot be ascertained. Starfish Construction would not recommend this as an efficient or cost-effective way to ensure value for money.

Starfish Construction has invested in technical products and training for our surveyors to provide our clients with as much information as possible. We have an in-house capability to undertake Thermography, Drone Thermography, Moisture Mapping and Core Sampling incorporating moisture readings.



## The key to a successful overlay is:

- Correctly identifying the current roof construction
- Determining any moisture present within the existing system and its location
- Calculating the U-Value of the existing roof system
- Calculating the Dew point of the current roof system

## A survey can be carried out in several ways:

- Thermography
- Moisture Mapping
- Core sampling
- Moisture probes





# Why Moisture Mapping

Moisture mapping will help identify where the roof is failing which will allow for an informed decision on the best course of action. Not only will it highlight the areas with zero or minimal issues, but it will also show where there is a complete system failure. In the long term, this can still be a cost-saving and help avoid further damage to the fabric of the building.



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There are many advantages to flat roof construction, but like all roof types, some areas require close monitoring. Any water trapped in the build-up will develop into leaks and degrade the thermal performance.

Emphasis on building performance has never been stronger, with monitoring becoming a significant factor. When your client sells the property, the thermal qualities can help improve saleability and achieve a higher sale price.

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# Moisture and its implications

We talk about flat roofs, but they should never be completely level. A slight incline and the correct size guttering is always the best option to avoid water ponding which can lead to silt deposits on the roof and cause stress in the membrane, especially when the water freezes and then thaws. Our in-house design team can develop a structure which will maximise the performance of the new roof system.



# Trapped moisture can derive from several sources:

- Leaks will wet the insulation, and water may gather in the roof before it appears inside
- Water trapped during construction: rain on the underlay or between the insulation boards of a part-finished roof, if not removed, can become trapped beneath the final layers
- If the insulation is not protected and dry on-site, it can absorb water and transfer this into the roof when laid
- Previous repairs and overlays not correctly prepared prior to installation where lying water has not been completely removed



**A partial strip will help reduce landfill waste and have less impact on the environment.**



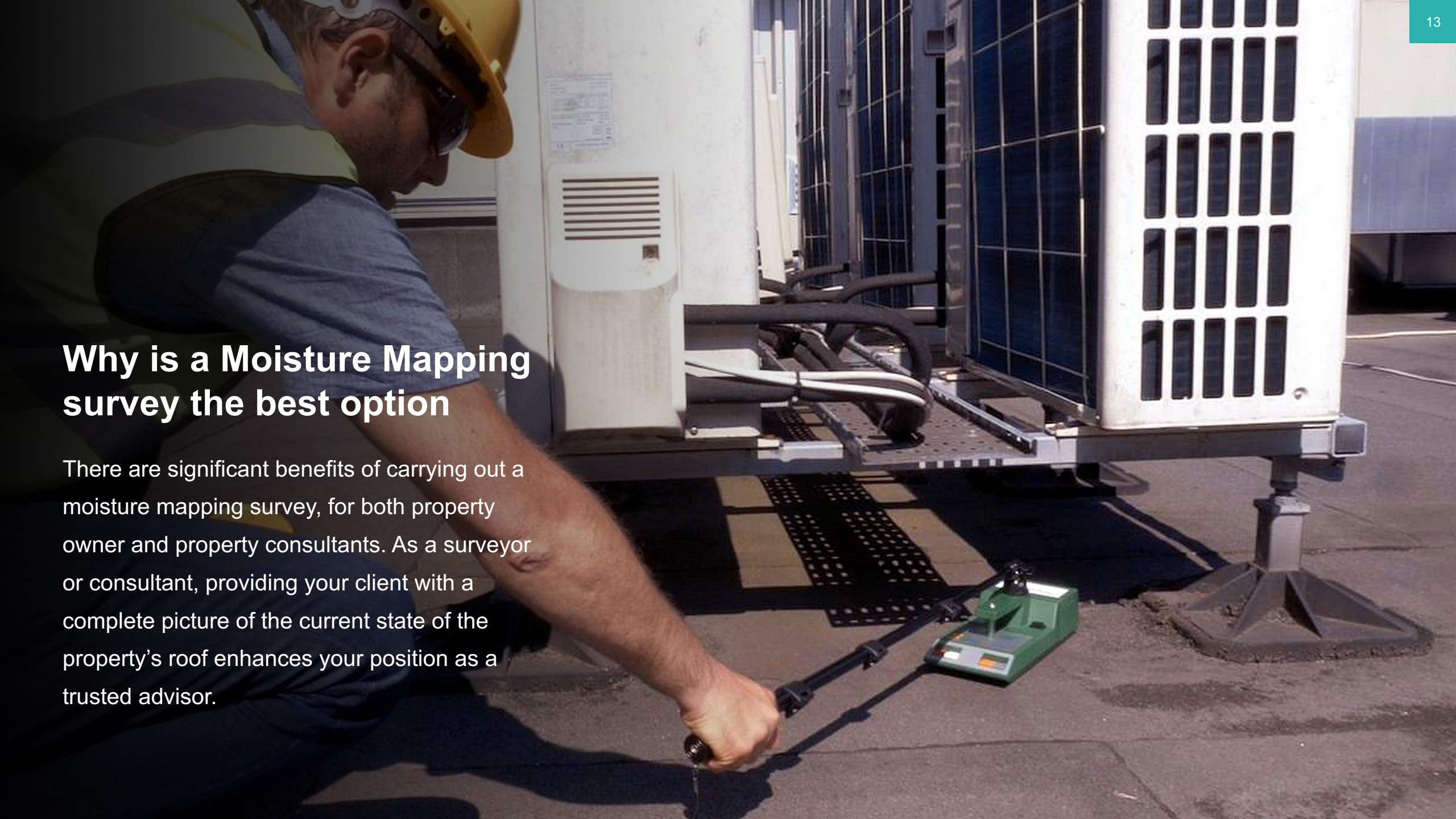
# The roof survey will determine if:

- It can be reliably repaired by stripping out all damaged insulation
- It is possible for vacuum dewatering to refresh the insulation and repairs as required
- A complete overlay or patch repair is required
- It requires an entire strip and replace



## Why is a Moisture Mapping survey the best option

There are significant benefits of carrying out a moisture mapping survey, for both property owner and property consultants. As a surveyor or consultant, providing your client with a complete picture of the current state of the property's roof enhances your position as a trusted advisor.



# Key benefits of a survey:

- Potential cost savings above 60% against a full strip
- Less on-site disruption, dust and noise
- Reduction in waste from roof to ground and less landfill waste
- Reduced risk of water ingress during the works v full strip
- All new system material must comply with current building regulations
- Reduced project completion time
- Providing up to a 30-year single point warranty



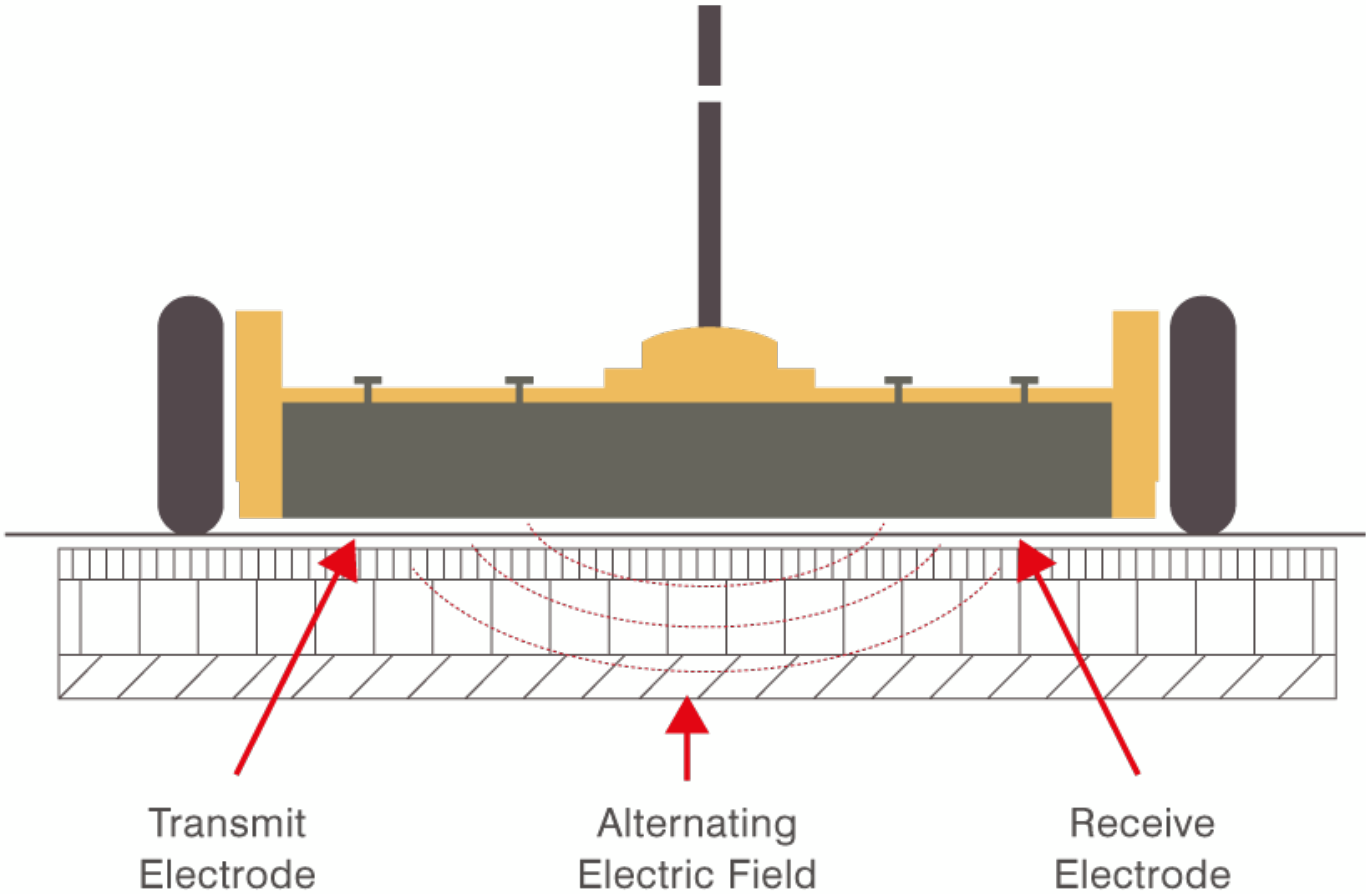
# How the Moisture Scanner works

When insulation becomes damp or wet, its thermal efficiency changes, but so do the electrical properties. The Capacitance Meter change can sense this from above a roofing membrane without penetrating it.

The equipment transmits low-frequency signals from pads on the underside through the membrane and into the insulation or substrate. The machine receives the 'echoes' revealing the impedance of the substrate, and the wetter it is, the more significant the impedance.



# DEC SCANNER





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# Dynamic Construction Solutions

For support with your moisture mapping  
survey please call 0333 016 5399 or email  
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