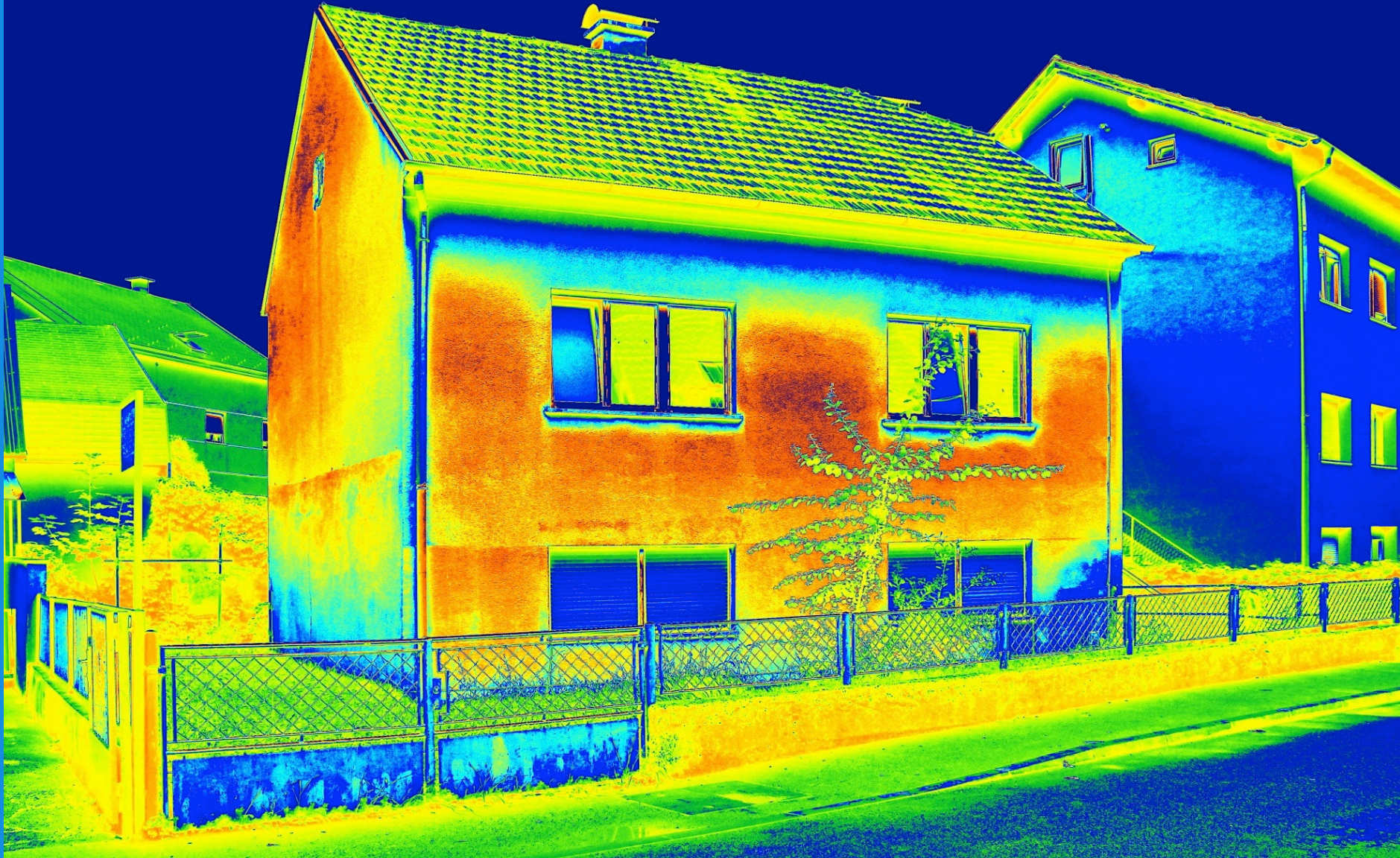



AERIAL DRONE INSPECTIONS WORKSHOP



COMMERCIAL ROOFING COMPONENTS

An aerial photograph of a large commercial building's roof. The roof is made of grey metal panels with visible rivets. Two long, white, cylindrical HVAC units are mounted horizontally across the middle of the roof. Below these units, there is a complex network of yellow-painted pipes and various mechanical components, including what appears to be a large metal structure with multiple vertical supports. The lighting suggests it's daytime, with shadows cast by the equipment.

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COMMON COMMERCIAL MATERIALS

- Modified Bitumen System (MBS)
- Built-Up Roofing (BUR)
- Metal
- Thermoplastic
- EPDM



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MODIFIED BITUMEN SYSTEM (MBS)

- Rolled roofing membrane with polymer modified asphalt and polyester or fiberglass reinforcement



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COMMON TYPES OF ROOF INSPECTIONS

Home Inspection



Chimney/Steeple



Commercial Roofing



Storm Damage / Insurance



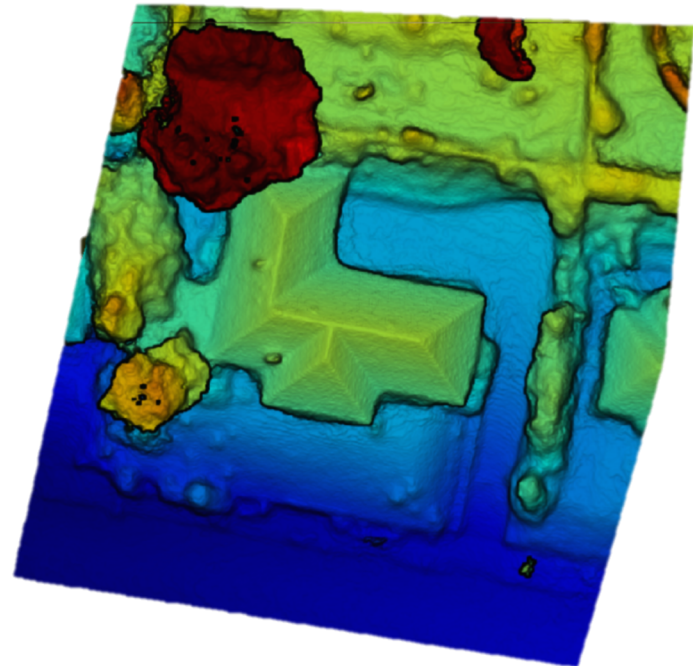
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IMAGERY PRODUCTS

Orthomosaic Map



Digital Terrain Model



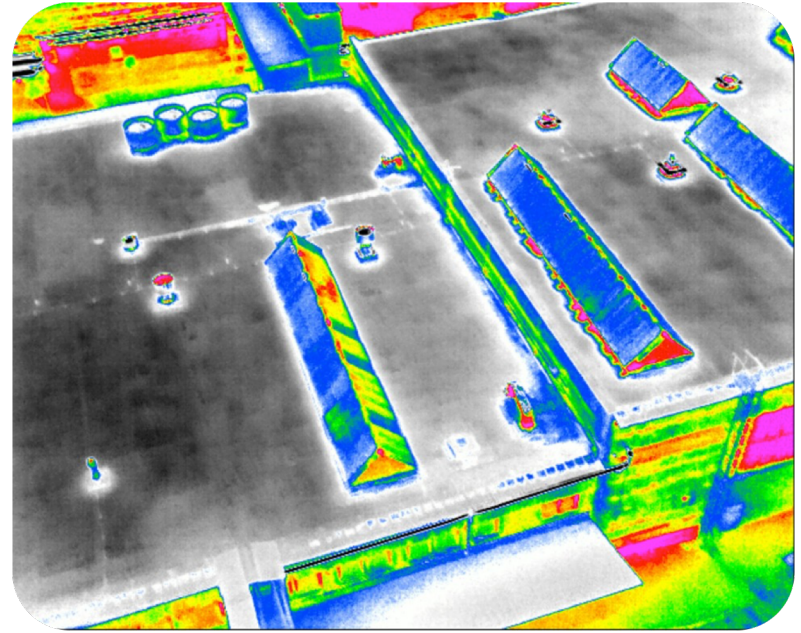
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IMAGERY PRODUCTS

3D Model



Thermal Imagery



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SURFACE DETAIL

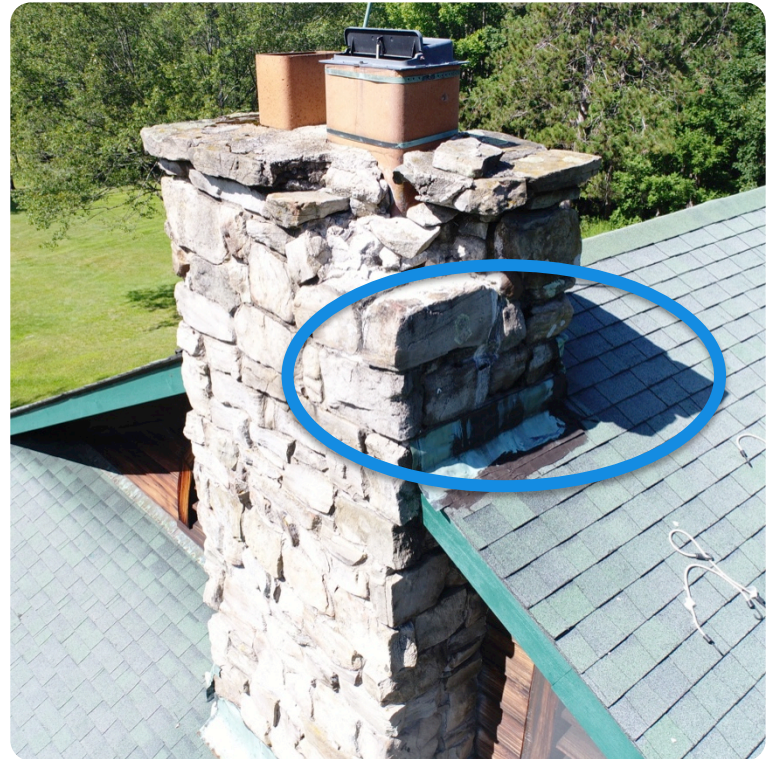
- Simulates the point of view of a person standing on the roof to provide specific detail shots
- Taken between 8' and 15' above the roof based on pilots ability to maintain line of sight



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PURPOSELY OVEREXPOSING IMAGERY

- A useful technique to pull details out of shadows



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WHAT TO DO IN A FLY AWAY SITUATION

- Don't panic!
- Switch immediately to a non-GPS mode (if able), which should allow you to regain control
- Attempt to initiate a Return to Home
- If aircraft remains unresponsive, it will fly to its last known point and land (assuming sufficient battery)

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PREFLIGHT PLANNING ITEMS

- ☒ Airspace / TFRs
- ☒ Weather
- ☒ Site Evaluation
- ☒ Waiver Requirements
- ☐ State / Local Regulations

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FLIGHT PROFILE

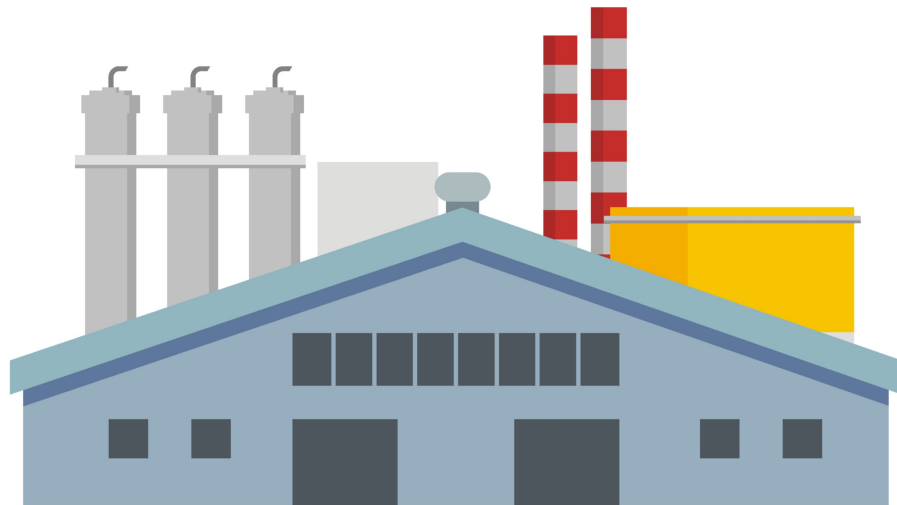
- Adjust flight path as necessary to avoid obstacles and people in the area, as well as to account for wind direction
- Adjust flight altitude as necessary to ensure sufficient clearance from trees/obstacles



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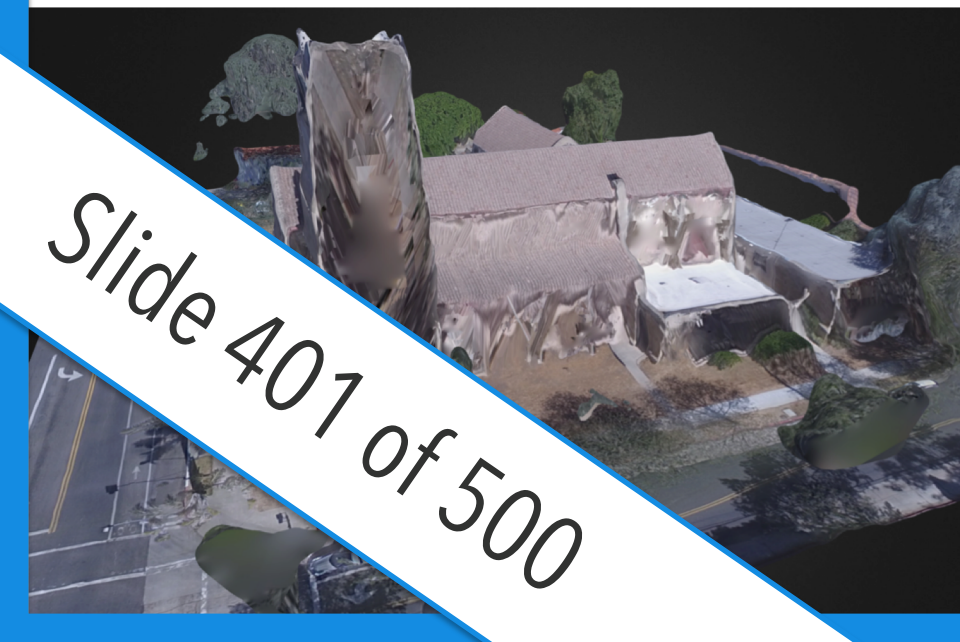
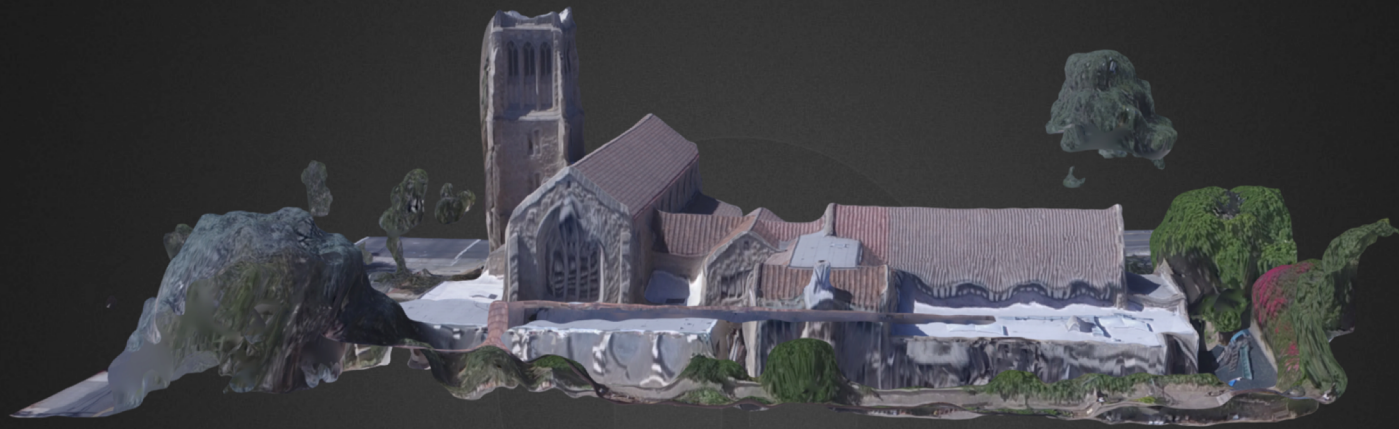
COMMON VO POSITIONS

- Next to the rPIC
- At the corners of the building
- When rPIC positioned on the roof, one or more on sidewalks below

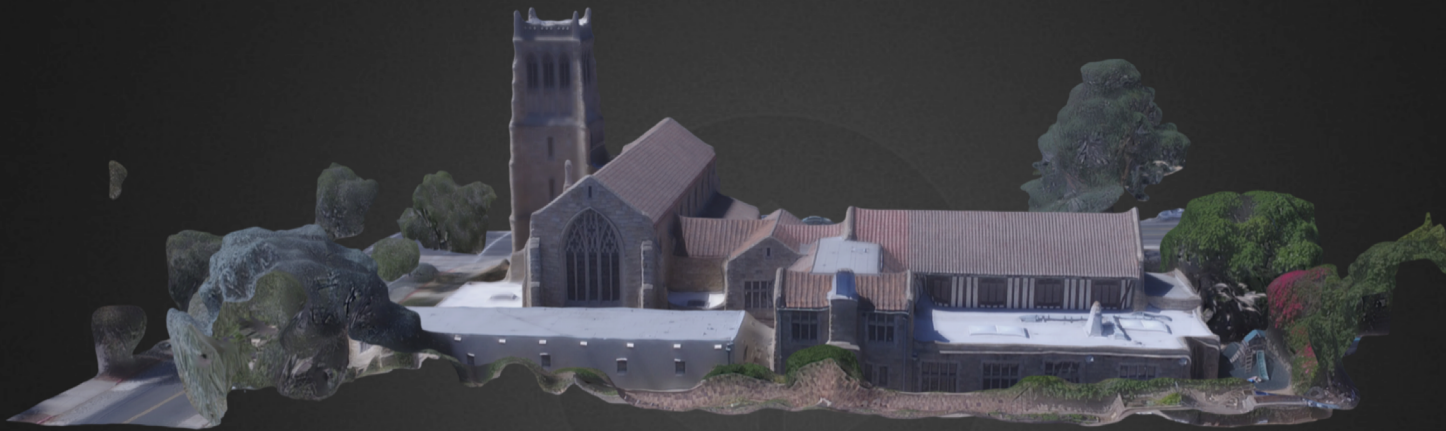


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MODEL PROCESSED WITHOUT OBLIQUES



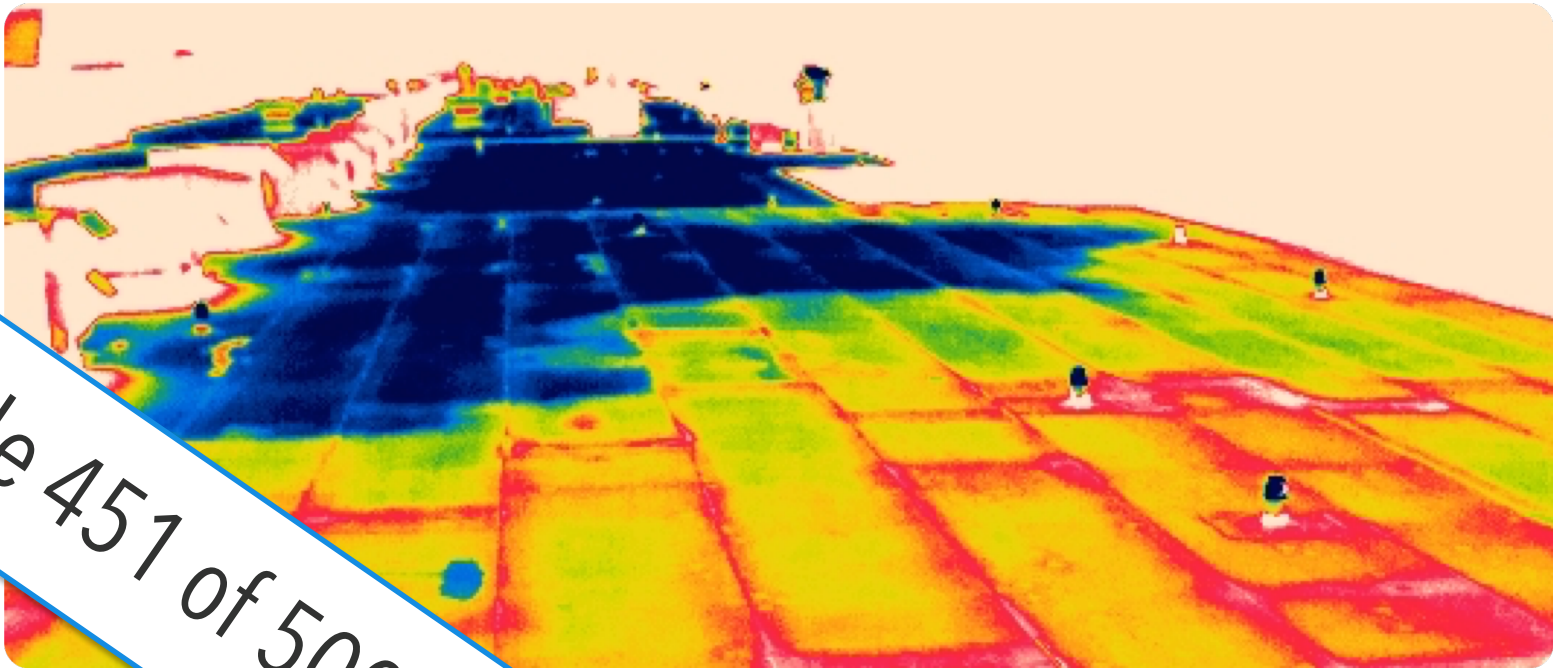
MODEL PROCESSED WITH OBLIQUES



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FLAT ROOF INSPECTIONS

- Thermal imaging is commonly used to check for areas of moisture in insulated flat roof systems



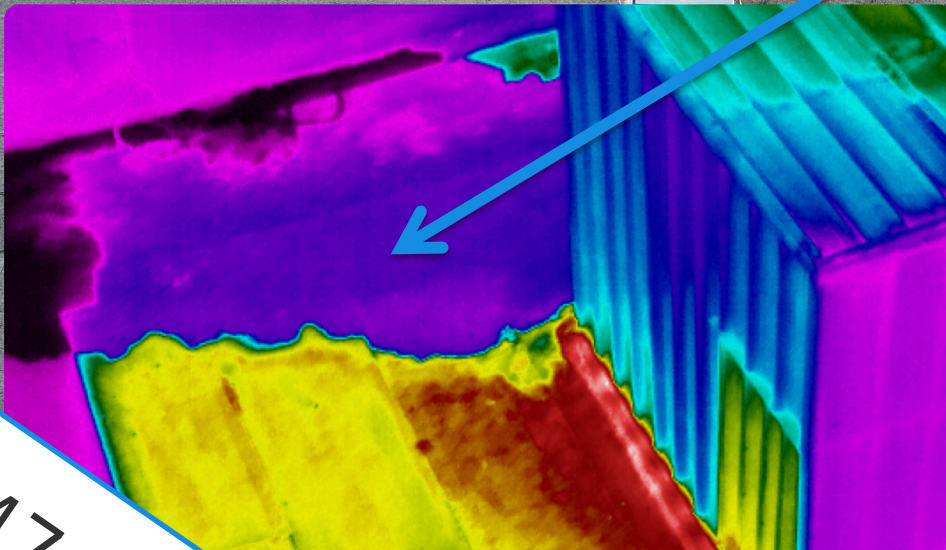
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LIKELY MOISTURE

STANDING WATER



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