

# Smarter Building Inspections

*for safer and more efficient way to find potential problems*

Drone technology paired with AI



## Challenge

Traditional building inspections of roofs, high walls, and solar panels often require scaffolding or cherry pickers. These methods are time-consuming, expensive, and can be dangerous for inspectors. Additionally, manually inspecting large solar panel installations is laborious and prone to human error.

### A drive towards greater sustainability

- 01 Environmental Conservation**  
Reducing energy waste through early detection of solar panel issues.
- 02 Resource Consumption Reduction**  
Extending building lifespan with proactive maintenance, minimizing need for rebuilds.
- 03 Resource Optimisation**  
Lowering inspection costs, freeing up resources for sustainable upgrades.

## Solution

Drone technology paired with AI from NEC is transforming building inspections. Drones provide a safe and efficient way to capture high-resolution images of hard-to-reach areas like roofs and high walls. These images are then analyzed by NEC's advanced AI algorithms to identify potential problems, such as:

- **Roof deterioration:** The AI can detect cracks, leaks, and missing shingles with high accuracy, allowing for timely repairs and preventing further damage.
- **High wall defects:** Drones capture detailed images of high walls, revealing cracks, spalling, and other structural issues. This eliminates the need for inspectors to work at unsafe heights.
- **Solar panel inefficiency:** NEC's infrared camera-equipped drones capture thermal images of solar panels. The AI analyzes these images to pinpoint damaged or underperforming cells. This allows for targeted maintenance and ensures optimal solar energy production, making it ideal even for mega buildings like solar power plants.

## Benefits

AI-powered drones offer several key benefits for building inspections:

- **Increased safety:** Drones eliminate the need for inspectors to work at dangerous heights, reducing the risk of accidents.
- **Faster inspections:** Drones can capture comprehensive data in a fraction of the time required for traditional methods.
- **Cost savings:** Drones offer a more cost-effective solution compared to scaffolding or cherry pickers.
- **Improved accuracy:** AI-powered analysis ensures consistent and accurate detection of building defects and solar panel issues.
- **Preventive maintenance:** Early detection of problems allows for timely repairs, extending the lifespan of buildings and solar installations.

### More info

[https://sg.nec.com/en\\_SG/solutions/vci](https://sg.nec.com/en_SG/solutions/vci)

