

Silverpond and Skand reduce the cost of asset inspection by 80%

Abstract

In 2017, Skand partnered with Silverpond to scale inspection analysis with fast, safe and consistent results. This has led to improved outcomes for Skand's diverse customer base, as well as highlighting the exciting possibilities for machine learning and 3D modelling.

- Reduced the cost for the asset owner from \$0.35/metre to \$0.07/metre
- Decreased the inspection time by 70%
- Increased the total coverage of a traditional inspection from 15% to 100% of the building's surface area

"A really exciting development that has emerged from our partnership with Skand has been the ability to place defects on a 3D model. This is a true innovation in machine learning, and the potential for its application will only increase as we continue to improve the technology."

Jonathan Chang, Silverpond

skand
silverpond

"There's no doubt that the introduction of AI has led to significant improvements in our asset inspection process. Our current focus is on deploying it to create small efficiencies in our human-based workflows, and we are excited to be partnering with Silverpond to achieve this."

Brett Chilton, Skand

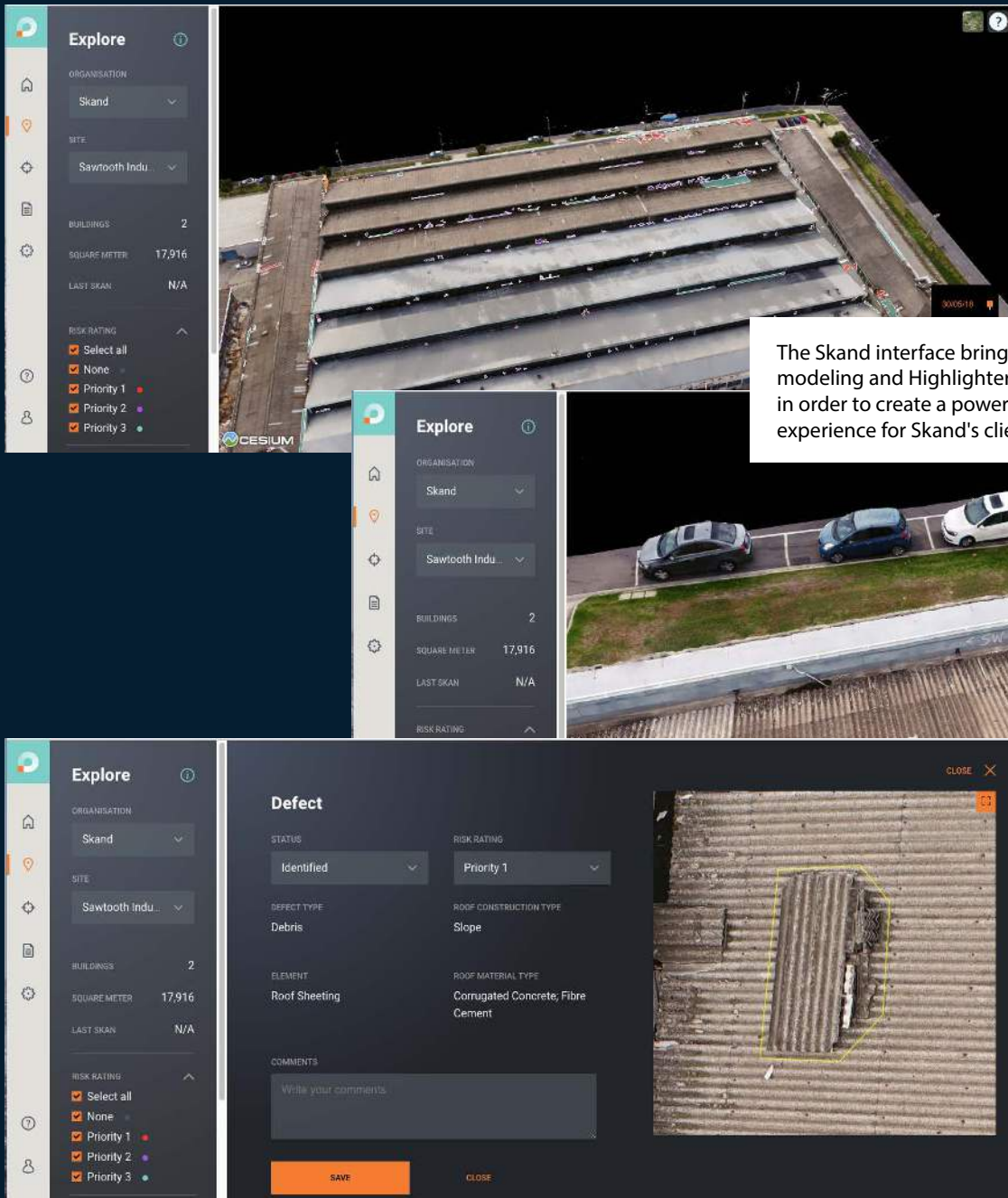
Traditionally, building inspections have been a labour intensive, costly, and dangerous task, involving people accessing roofs and facades to identify defects. Drone technology has improved aspects of the process by enabling the ability to collect a large number of images of a building's roof or facade safely.

However, there are issues with reliability, as an individual still needs to sift through all the images to identify and assess defects. And if the company has multiple sites and buildings, the results are more likely to be inconsistent because so many people are involved in assessing the imagery.

Improving the process

In 2017, Skand, a Melbourne-based aerial asset inspection company, partnered with Silverpond to harness AI to improve the asset inspection process for its customers. By working with Silverpond, Skand aimed to:

- Provide consistent analysis by removing the potential for bias that can occur during manual inspections
- Reduce the turnaround time of data delivery and reporting from weeks to hours
- Reduce the cost per inspection in order to increase the frequency of inspections, leading to an increased asset life cycle



The Skand interface brings together 3D modeling and Highlighter's labeling capabilities in order to create a powerful and user-friendly experience for Skand's clients.

Harnessing 3D modelling and AI

Silverpond and Skand worked together to develop an aerial asset intelligence product which uses a mix of human and machine intelligence to identify defects in buildings. 3D modelling software was used to construct 3D visualisations from aerial photographs.

Large buildings with uniform features can prove difficult for image detection in 2D photographs, so by creating a 3D model of the building, defects can be detected much more easily.

The Silverpond team then used its machine learning tool, Highlighter, to train the software to recognise defects by showing it hundreds of thousands of images. The more images that are used in the training phase, the better the likelihood that the software can recognise defects in a real-world application.

Skand inspectors were trained to identify errors and inconsistencies in the defects identified, creating an important feedback loop that improved the model with each image that was analysed.

Significant improvements in customer outcomes

The large scale of Skand's customer base has meant that they have seen significant benefits from the introduction of AI to their asset inspection process. In the 2017/18 financial year alone, Skand have:



Reduced the cost for the asset owner from \$0.35/metre to \$0.07/metre



Removed the requirement for a rooftop inspection by a person for over 600 buildings



Decreased the inspection time by 70%



Detected over 20,000 defects



Inspected 6.2 million metres of roof



Increased the total coverage of a traditional inspection from 15% to 100% of the building's surface area

Ongoing collaboration to further leverage AI

Skand and Silverpond will continue to work together to extend the capabilities of the technology and introduce new services to Skand's customers. These include using machine learning to:

- Identify rooftop assets and categorise, digitally display, and orientate them in space
- Identify non-compliance or opportunities for improvement in relation to building infrastructure which could lead to incidents (e.g. missing hand rails, non-compliant steps or barriers).



About us

Silverpond is a machine learning and AI company whose goal is to accelerate the adoption of AI. We do this through consulting services, educational workshops, community engagement and through our machine learning product, Highlighter.

To learn more about Highlighter, please contact info@silverpond.com.au

Skand is a Melbourne-based company that specialises in drone-assisted aerial asset inspection. With Skand's sophisticated technology, customers can see the complete picture of their asset, minimising the risks and costs associated with manual inspections.