Calculating Tree Risk with GeoVision® from Precisely

For insurers, arborists, emergency service personnel and more

Overview

Every year the combination of trees and weather cause significant structural damage to buildings in Australia. The major factors contributing to the risk posed by each tree is its health, species, proximity to the building, direction from the tree to the building and the height of the tree. Precisely GeoVision provides reliable information regarding the height of trees and their proximity and direction to buildings. This information has been analysed and summarised to create the GeoVision Tree Risk data product.

Who would use GeoVision Tree Risk data

The following agile stories give examples of possible uses for the Tree Risk data.

As an insurance actuary

I need to assess the aggregate risk to my portfolio of tree damage during either specific or generalised wind events over a select geographic region in order to report the overall risk to re-insurers and shareholders.

As an insurance actuary

I need to assess the risk of tree fall during weather events to individual buildings where Tree Risk is a function of three factors: the height of the tree; the distance from the building; and the direction from the tree to the building so that I can calculate premiums and maintain the profit margins of the portfolio.

As an insurance agent or government representative

I need to assess the risk of tree fall during weather events to individual buildings where tree risk is a function of three factors: the height of the tree; the distance from the building; and the direction from the tree to the building so that I can provide this information to property owners as a preventative measure.

As an arborist

I want to identify properties where the risk of tree fall damage is high to focus my marketing and sales efforts to improve profits.

As an emergency services manager

I need to gauge the response required for a forecast storm event. I need to assess the potential number of affected properties and the likely cumulative impact.

How is Tree Risk data built?

GeoVision® contains both the outlines of the buildings and a 2 x 2 metre grid file of tree heights in urban areas.

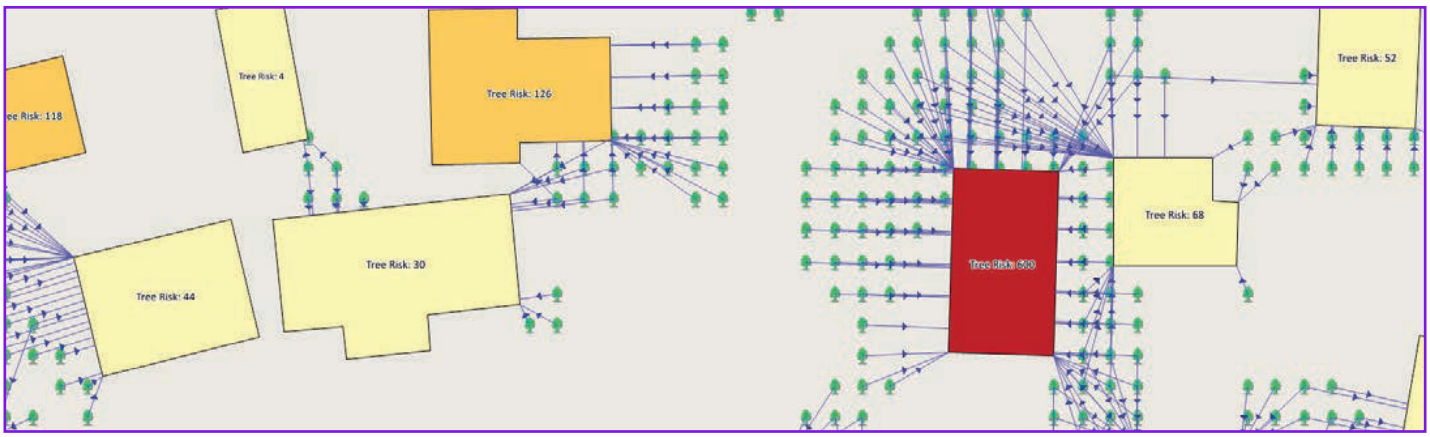
GeoVision includes building footprint and tree information.

The Precisely process inspects every building to determine if there is a tree grid cell within falling distance, that is, it is taller than the distance from the building. The process then calculates the distance to each building and the direction from the tree to each building.

The model takes into account that one tree might be able to affect more than one building. The directions are then divided up into 8 octants North North East, East North East, East South East, South South East etc. to make it easier to align with wind directions that may pose a risk.

What comes in the GeoVision Tree Risk data package?

GeoVision Tree Risk may be used as a standalone product or in conjunction with an existing full GeoVision licence.



Calculating tree distance and direction to buildings.

GeoVision Tree Risk Contains:

- An identifier for every urban building that may be impacted by tree fall with 9 aggregated risk factors — one for overhanging branches with the remaining eight being for each directional octant.
- An identifier for every urban building which may be affected by trees plus the height, direction and octant for every tree grid cell that may impact that building.
- A table that allows each building to be linked to a property, parcel or address for those clients who do not have access to GeoVision.