GeoVision® product family

Enhance your location analytics with detailed building and landscape data

Introduction

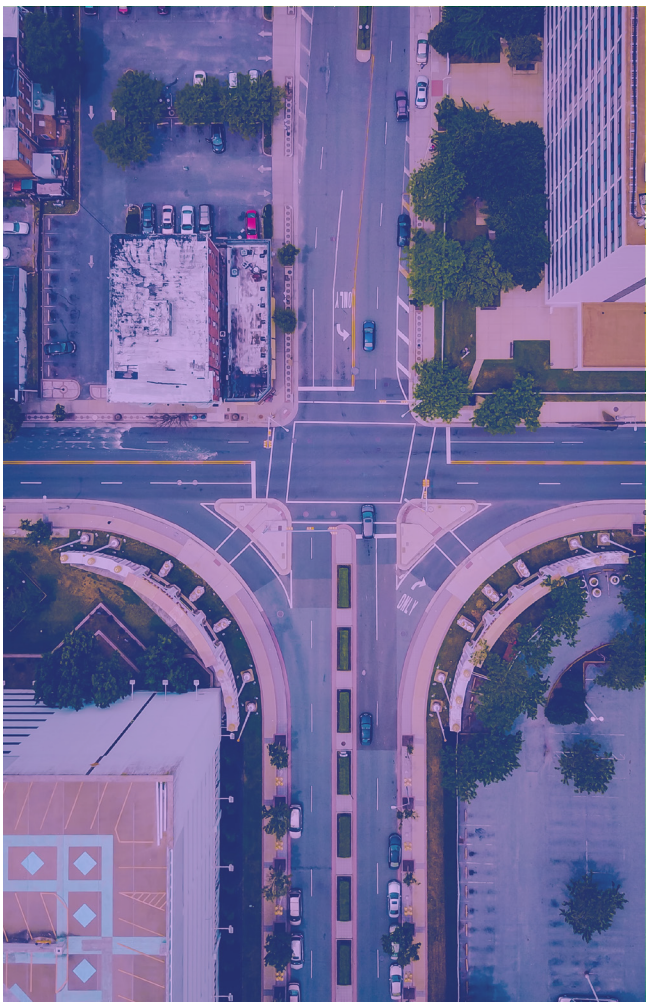
Precisely GeoVision® is an enhanced version of PSMA's Geoscape® product suite, especially designed to simplify and enhance the experience of using this nationally important dataset.

Geoscape is a ground-breaking initiative from PSMA that takes location data to a new level. Using information from satellite imagery and linking this to location data, Geoscape captures the characteristics of a built environment in Australia at a scale that has never been achieved before.

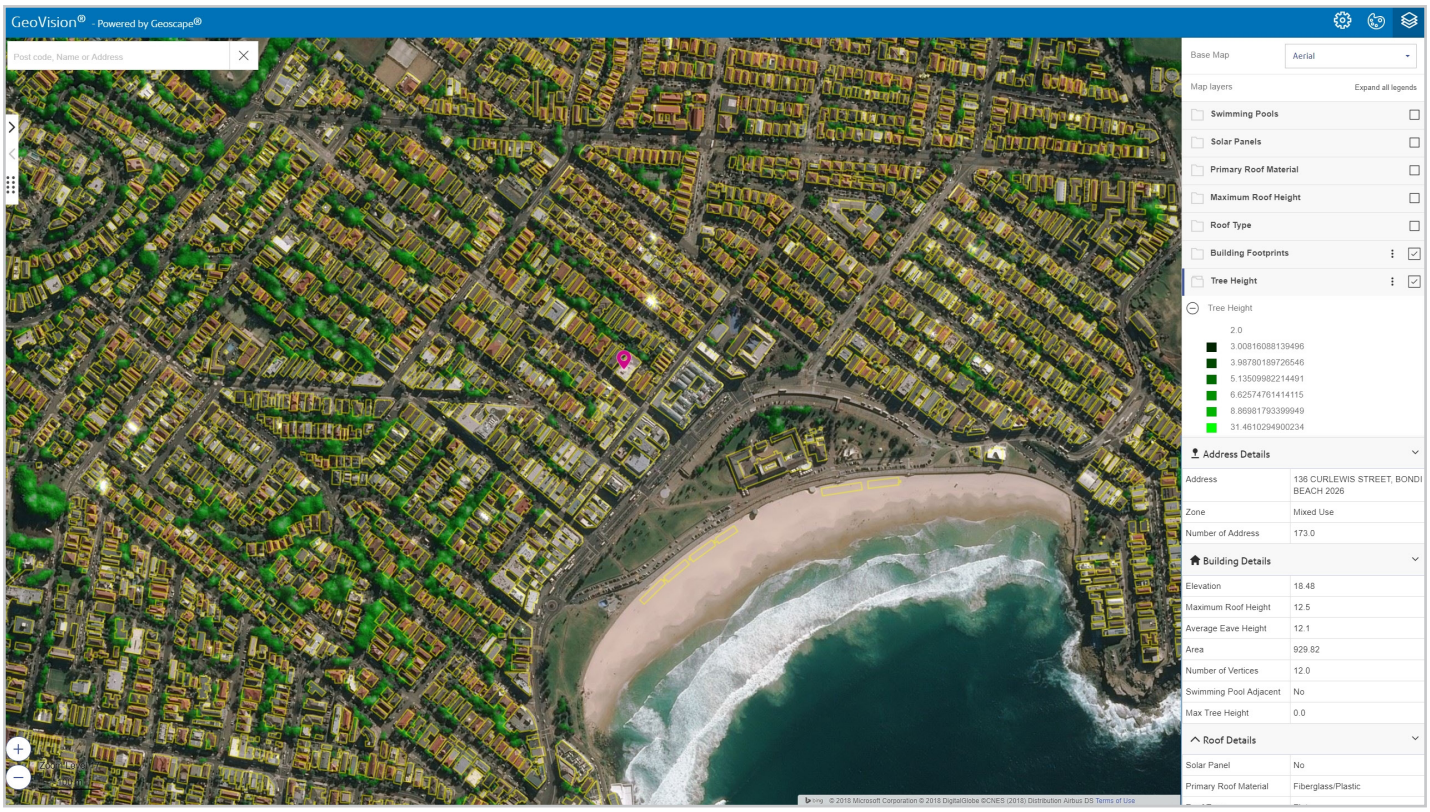
Location characteristics, such as building footprints and heights, land cover, tree heights, rooftop materials, swimming pools and solar panels, are captured and linked to geocoded address and property data.

GeoVision simplifies and enhances the experience of Geoscape. Now, you can get a complete picture of every building at an unprecedented level of accuracy and detail including height and roofing information.

Details of land cover and trees as well as presence of solar panels and swimming pools make GeoVision a critical data resource for many sectors.



GeoVision includes roof height data.



GeoVision includes building footprint data.

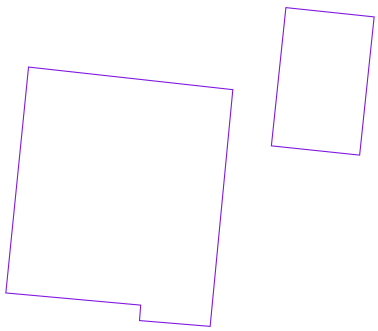
Precisely GeoVision® product family

Product	Available to clients	Content										Coverage		
		Building outlines	Building heights	Building attributes	Location attributes	Swimming pools	Solar panels	Tree heights	Surface cover 2m	Surface cover 30m	Tree risk	Urban	Rural	Remote comms
GeoVision	All	•	•	•	•	•	•	•	•	•		•	•	•
GeoVision Building Foot Prints		•			•							•	•	•
GeoVision 3D Buildings	All	•	•	•	•							•	•	•
GeoVision building Information	All			•	•	•	•					•		•
GeoVision Trees	All							•				•		•
GeoVision Surface Cover	All								•	•		•	•	•
GeoVision Raster	All							•	•	•		•	•	•
GeoVision Solar Panels	All						•					•		•
GeoVision Pools	All					•						•		•
GeoVision Property Risk Value Derivation	Insurance sector service providers who derive a risk rating using GeoVision	•	•	•	•	•	•	•	•	•		•	•	•
GeoVision Tree Risk – Stand-alone	All										•	•		•
GeoVision Tree Risk – Add on	All clients already licenced for GeoVision or Geoscape®				•						•	•		•

GeoVision content description

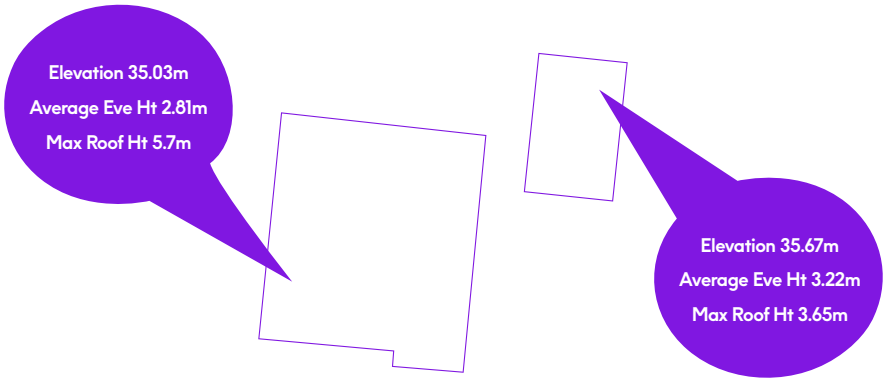
Building outlines

Polygons showing the outline of the roof of each building.



Building heights

Polygons showing the outline of the roof of each building plus height and elevation information.



Building attributes

A textual listing of all of the attributes about buildings.

For Each Building

Building_PID	BLDQLD0009185265
Elevation	35.67
Building Area	51.77
Number_Vertices	4
Rof_Type	Flat
Primar_Roof_Material	Tile
Average_Eve_Height	3.22
Maximum_Roof_Height	3.65
Max_Tree_Height	0.00
Capture_Date	11-11-2016

Location attributes

** Note that the point objects listed below are only provided with GeoVision, GeoVision Building Foot Prints and GeoVision 3D Buildings, NOT GeoVision Building Information. GeoVision Tree Risk includes only the first table.

For Each Building

Building_PID	BLDQLD0008283349
Building_Name	35.67
Search Address	21 Blaxland Way
Locality_Name	Woodridge
Postcode	4114
LGA	Logan City
State_Abbreviation	QLD
State_Code	3
Address_Count	1
Meshblk_2011	30396200000
Meshblk_2016	30396200000
SA1_2011	31106133613
SA1_2016	31106133613
Area_type	DU
Zone	Residential
GNAF_PID	GAQLD155984628
Parcel_ID	103/RP108352

For each parcel and building combination

Location	** Point object at building centroid
Building_PID	BLDQLD0008283349
CAD_PID	QLD31157895
Parcel_ID	201/RP18817
Process_Type_Code	BC01

For each parcel and building combination

Location	** Point object at building centroid
Building_PID	BLDQLD0008283349
Property_PID	QLD1660471
CAD_PID	QLD31157895
Floor_Level	
Process_type_Code	BP01

Location attributes

For each address at a building

Location	** Point object at building centroid
Building_PID	BLDQLD0008283349
GNAF_PID	GAQLD155984628
Building_Name	
Search Address	21 Blaxland Way
Locality_Name	Woodridge
Postcode	4114
State_Abbreviation	QLD
Confidence	2
Reliability	2
Address_Class	P
Meshblk_2011	30396200000
Meshblk_2016	30396200000
SA1_2011	31106133613
SA1_2016	31106133613
Area_type	DU
MeshBlk_Category_2016	Residential
Parcel_ID	103/RP108352

Swimming pools

For each building

Swimming_Pool_Adjacent	Yes

For each pool

Building_PID	BLDQLD0008302764
Swimming_Pool_PID	SWPQLD0003628606
Search_Address	27 PASCOE STREET
Locality_Name	MITCHELTON
Postcode	4053
GNAF_PID	GAQLD155565228

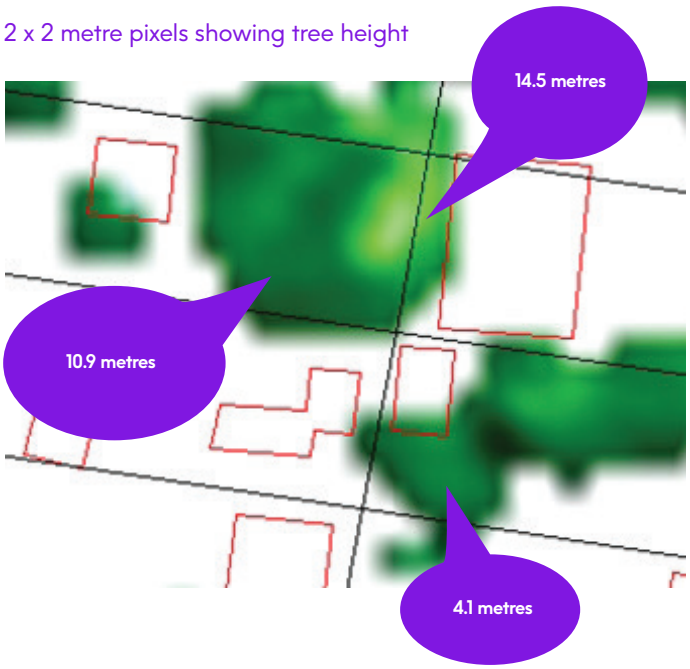
Solar panels

For each building

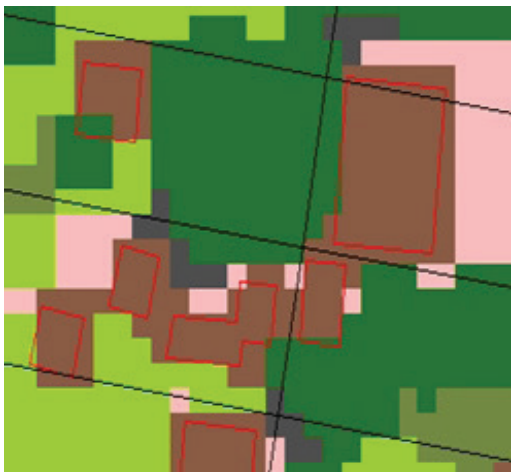
Solar_Panel	Yes
Building_PID	BLDQLD0008302764
Search_Address	27 PASCOE STREET
Locality_Name	MITCHELTON
Postcode	4053
GNAF_PID	GAQLD155565228

Tree Heights

2 x 2 metre pixels showing tree height

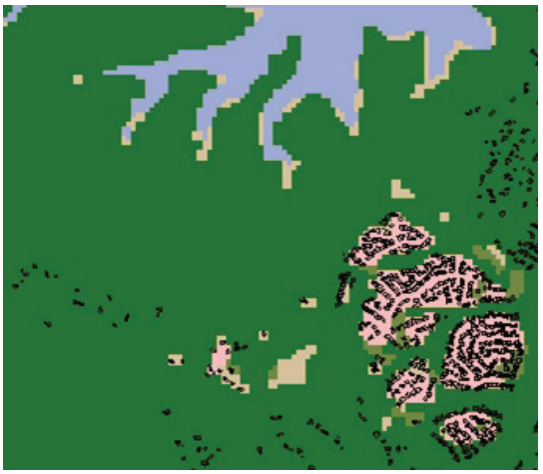


Surface Cover 2m



- Bare earth
- Road and path
- Grass
- Trees
- Unspecified vegetation
- Built-up areas
- Water
- Buildings
- Cloud
- Shadow
- Swimming pool

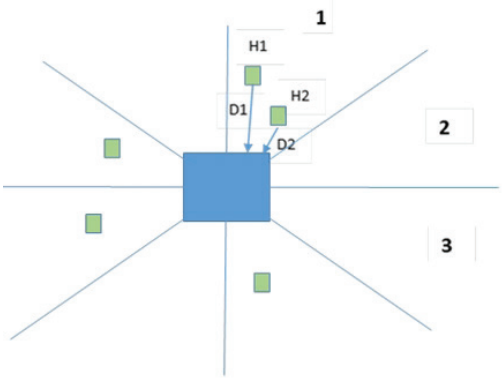
Surface Cover 30m



- Bare earth
- Road and path
- Grass
- Trees
- Unspecified vegetation
- Built-up areas
- Water
- Buildings
- Cloud
- Shadow
- Swimming pool

Tree Risk

Analysed for each building and all Tree Grid cells over 3 metres tall.



Octant 0 contains references all grid cells whose centroids are above the roof.

Octants 1 through 8 represent 8 possible fall directions.

Table 1: Aggregated tree risk factor

For each building:
Building ID
Tree Risk Factor 0 = Σ H Where Height > 3 metres
Tree Risk Factor 1 = Σ H/D Where H/D >1 and Height > 3 metres
Tree Risk Factor 2 = Σ H/D Where H/D >1 and Height > 3 metres
Tree Risk Factor 8 = Σ H/D Where H/D >1 and Height > 3 metres

Note that the numbers 1 – 8 refer to the octant from which the tree would fall to affect the building.

Table 2: Raw tree values

For each affected building:
For Each Tree where H/D >1 and Height > 3 metres:
Building ID
Octant: Values 0..8
Height
Distance (set to 0 for Octant 0)

Example GeoVision use cases by product

Product	Use Cases
GeoVision	• All Applications.
GeoVision Building Foot Prints	• Basic mapping where building outlines give context. • Flood modelling. • Some emergency services applications where only the location of the building on the block is important. • Terrestrial telecommunications or utility applications – running cables or services.
GeoVision 3D Buildings	• Emergency Services applications where location and height of building is important. • Noise modelling. • Flood modelling. • Planning and compliance. • Viewshed analysis.
GeoVision building Information	• Insurance applications where only information about the structure and location are important. • Any application where a map is not required.
GeoVision Trees	• Vegetation management. • Urban planning. • Heat mapping and modelling. • Viewshed analysis.
GeoVision Surface Cover	• Land use planning. • Flood run-off modelling. • Urban heat mapping and modelling.
GeoVision Raster	• For local government clients looking for Trees and Land Cover.
GeoVision Solar Panels	• Solar electric system sales and maintenance. • Emergency services (safety). • Utility companies – solar generating capacity estimation and management. • Policy creation.
GeoVision Pools	• Compliance. • Fire and Emergency. • Pool sales and maintenance.
GeoVision Property Risk Value Derivation	• For consulting/OEM organisations who perform risk modelling on behalf of insurance companies
GeoVision Tree Risk	• For all organisations who are interested in either aggregate or individual building risk based on the proximity and height of trees. • Allows analysis based on high risk wind directions. • Allows the magnitude of the risk to be estimated. • Typical clients in Insurance, Finance, Emergency Services and the Public Sector. • Can be bought as an add on to an existing GeoVision or Geoscape licence OR as a standalone product.

Detailed GeoVision use cases by sector

Title	Description	Local Govt	State Govt	Federal Govt	Insurance	Telco	Banking	Utilities
Reduce aerial imagery costs	All levels of government currently spend significant funds on imagery and LIDAR surveys for various purposes.	Critical	Critical	Critical		Medium		Critical
Checking building compliance	Check to make sure submitted approvals match actual construction.	Critical						
Recording Service connections	Building outlines provide a basis for showing the location of service connections (water, gas, power, communications) to buildings.	High				High		High
Vegetation Management	GeoVision shows the extent and height of vegetation and its proximity to infrastructure. This allows planning for vegetation control measures.	Critical	Critical	Medium		Medium	Medium	Critical
Risk management (flood modelling, fire risk modelling, wind impact assessment)	GeoVision provides information about the size and roof construction of buildings as well as their proximity to vegetation and other buildings. GeoVision also provides elevation information.	Critical	Critical	Medium	Critical			
View shed analysis and visual impact analysis	The height and location of buildings and vegetation allows an assessment to be made on what can be seen from any point or where a feature can be seen from.	High	High					
RF Modelling	RF modelling requires knowledge of the height of objects that interfere with radio transmission as well as information regarding their composition. GeoVision's vegetation and building mapping provides this.		Medium	High		Critical		Medium

Detailed GeoVision use cases by sector (cont'd)

Title	Description	Local Govt	State Govt	Federal Govt	Insurance	Telco	Banking	Utilities
Line of sight assessment	The height and location of buildings and vegetation allows an assessment to be made on whether one point can be seen from another.		Medium	High		Critical		Medium
Market assessment	For businesses providing property maintenance services, GeoVision provides information about buildings, solar installations, swimming pools, roofing material, surfaces and vegetation.				High	High	High	Medium
Network Rollout planning	Supports market assessment and physical network roll out projects.					Critical		High
Asset management	Provides a base for mapping building asset information.	High	High	High		High	High	High
Understand Solar Installed Base	Shows where solar installations are.		High	High				Critical
Portfolio risk exposure assessment	Provides universal base information for assessing portfolio risk across urban, suburban, regional and rural properties.				Critical		High	
Valuations	Provides the basic building sizes, number, roofing information, vegetation location, heights and basic land use for the valuation process.	High	Critical		High		High	
Rural property mapping	GeoVision provides complete building information and general property layout (locations of vegetation and cropping) for all rural properties in Australia.	Medium	High		Medium	Critical	High	High

Detailed GeoVision use cases by sector (cont'd)

Title	Description	Local Govt	State Govt	Federal Govt	Insurance	Telco	Banking	Utilities
Natural disaster impact assessment	Preliminary post event assessment of the likely impact of natural disasters on building infrastructure and vegetation.	Critical	Critical	Critical	Critical			High
Fraud prevention and claims assessment	Use building and vegetation and location information from GeoVision to assist in the reduction of fraudulent claims.				Critical		High	
Emergency management and planning	The ability to undertake an assessment of risks related to buildings and vegetation and the knowledge of the locations of them allows pre event planning for things such as evacuation, allocation of resources and manpower.	Critical	Critical	Critical				High
Security, anti-terrorism, policing	Building and vegetation information allows scenario planning for terrorism and emergency events, by allowing assessment of visibility, obstructions, location and number of affected persons and potential damage to assets.		Critical	Critical				
Town and Services Planning	Effective planning requires a knowledge of the current built environment, this is provided by GeoVision.	Critical	Critical					Critical
Energy assessment (solar potential)	GeoVision provides information about the size and construction of roof as well as impact of other buildings and vegetation creating shade. When combined with climate information, this allows an assessment of solar generating capacity either at an individual building or aggregated level.		High	High				High
Noise impact assessment	Noise impact assessment requires information about buildings, their height and location as well as vegetation and ground surface, this information is available through GeoVision.	Critical	Critical	Medium				
Monitoring urban growth	Monitoring changes in the GeoVision data will provide a very detailed view of urban development.	Medium	Medium	Medium				