

NZ Building Outlines

Title

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Creator

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Description

This dataset provides current outlines of buildings within mainland New Zealand captured from the latest aerial imagery. A building outline is a 2D representation of the roof outline of a building which has been classified from LINZ aerial imagery using a combination of automated and manual processes to extract and refine a building roof outline. Building outlines observed in aerial imagery larger than or equal to 10 square meters are captured in this dataset, and may include structures such as garages and large sheds.

Data vintage This dataset shows the most recent set of building outlines extracted from the LINZ aerial imagery available on the LINZ Data Service. Current coverage includes nearly all regions of New Zealand, except parts of rural Auckland, remote parts of Bay of Plenty, Tasman and the Southern Alps, as well as Fiordland, Stewart Island and the Chatham Islands. This dataset will be updated and expanded as new aerial imagery becomes available. Since aerial imagery is flown only every few years in each region of the country, building outlines only reflect those buildings observed at the date of this aerial imagery capture, and may not reflect buildings constructed after this time period. Please refer to the [NZ Building Outlines Data Dictionary](<https://nz-buildings.readthedocs.io/en/latest/introduction.html>) for detailed metadata and information about this dataset.

Related building outlines data [NZ Building Outlines (All Sources)](<https://data.linz.govt.nz/layer/101292>) - contains all combinations of building outlines from multiple years of imagery that have existed since the beginning of this dataset, and the dates when each building outline existed in the associated aerial imagery. [NZ Building Outlines Lifecycle] (<https://data.linz.govt.nz/table/101291>) - is related to the dataset above and stores the relationship between building outlines when one building is split into two or more building outlines, or when multiple building outlines are merged into a single outline.

APIs and web services This dataset is available via ArcGIS Online and ArcGIS REST services, as well as our standard APIs. [LDS APIs and OGC web services](<https://data.linz.govt.nz/layer/101290/webservices/>) [ArcGIS Online map services] (<https://basedatanz.maps.arcgis.com/home/item.html?id=c2e9e61f55a245978c0bd64558553101>) [ArcGIS REST API](<https://services7.arcgis.com/jl87xPT7G1AGV8Uo/arcgis/rest/services/>)

Source

Source imagery Resolution of the aerial imagery used for building outline capture ranges from 7.5cm pixel resolution (0.075m GSD) to 50cm pixel resolution (0.5m GSD). The source imagery is linked via the capture_source_id attribute of building outlines to the imagery_survey_id of NZ Imagery Surveys. Using this link, additional attributes can be connected to building outlines - for example the dates that the imagery was captured and the accuracy / ground sample distance of the imagery used. The NZ Imagery Surveys data dictionary is here: <https://nz-imagery-surveys.readthedocs.io/en/latest/index.html>

Accuracy Specification: The Building Outlines contain spatial detail reflective of the visible characteristics of building outlines as seen from the source aerial imagery. The building outlines were created by both an automated and manual method of feature extraction. Outlines are captured in full where they are partially occluded by vegetation or require additional viewer interpretation, and squared off at 90 degrees if the corner angles are between 80-100 degrees.

The following criteria were used for capturing buildings as building outlines:

- Buildings under construction, caravans, caravan trailers, house boats, shipping containers and other mobile structures are not captured as building outlines.
- Primary building structures are captured as separate building outline polygons when the roofs are separate from nearby building roof structures.
- Building extensions, sunrooms, balconies, patios and annexes are captured as part of the primary building outline structure if they exist as part of multi-level buildings and if sufficient imagery resolution allows this determination.
- Permanent building structures such as sheds and greenhouses >10sq meters, not attached to a primary building structure, are captured as a separate building outlines.
- Adjoining townhouses are not captured as separate structures, but rather as joined primary structures.
- Adjoining commercial buildings are captured as separate building

outlines when rooflines allow delineation. • Hay bales and silage are not captured as building outlines. • Building outline polygons captured will be greater than 10 square meters. An exception to this is in national parks, conservation areas, and wildlife areas where small structures such as huts, bivies and shelters are included as building outlines to address safety concerns in remote locations • Water tanks are captured as building outlines when their area is at least 20 square metres (or 5 meters in diameter).

****Valid Geometry:**** A building outline polygon is considered to have valid geometry if; • It does not overlap with other building outline polygons; • It does not contain any spikes along edges; • It does not contain duplicate nodes; • It does not contain lines that are intersected with each other; • It can contain polygons with interior rings (holes); • It does not contain polygons with multiple exterior rings;

****Attribution:**** ****Source Imagery**** The source imagery is linked via the capture_source_id attribute of building outlines to the imagery_survey_id of [NZ Imagery Survey Index] (<https://data.linz.govt.nz/layer/95677>). Using this link, additional attributes can be connected to building outlines - for example the dates that the imagery was captured and the accuracy / ground sample distance of the imagery used. ****Name and Use**** Name and Use attributes have been added for the following buildings: - Hospitals based on Ministry of Health and NationalMap data - Schools based on Ministry of Education and NationalMap data - Supermarkets based on supermarket company information as they existed in 2020 An [NZ Facilities](<https://data.linz.govt.nz/layer/105588>) dataset was created to help attribute some of the building name and use attributes above, and to provide an indication of the extents of these facilities. ****Suburbs and Localities**** The suburb_locality attribute provides the suburb or locality name as sourced from [NZ Localities](<https://data.linz.govt.nz/layer/104830>) (an NZ Fire Service owned dataset). A derived suburb or locality name may not be the official geographic name for the geographic area that a building occupies. The attributed name may refer to suburbs, localities, islands and parks / reserves. Water features such as coastal bays, lakes and inland bays are not included. If a building outline intersects two localities, the locality with larger area of intersection is used for that feature. For building outlines on water and not within any locality, the nearest locality is used for that feature.

Coverage

-45.617748954 169.464567685 -36.4328794158 177.987399509

Identifier

<https://data.linz.govt.nz/layer/101290-nz-building-outlines/>

Type

vector

Language

eng

Subject

imageryBaseMapsEarthCover

Subject

structure