Solar access pre-check

Hypothetical site in Green Square

Site: about 2,908 m², centred at -33.91309, 151.20874

Trial heights: 25 m, 40 m, 60 m (plain block over the whole site)

Neighbours assessed: apartment buildings within 150 m (12 buildings)

Test date: 21 June (winter solstice), 9am–3pm AEST

Prepared 25 November 2026

Up to 25 m: no neighbouring floor/side is pushed below 2 hours or cut by more than 20%. At 40 m: 7 pushed below 2 h, 1 cut > 20%.

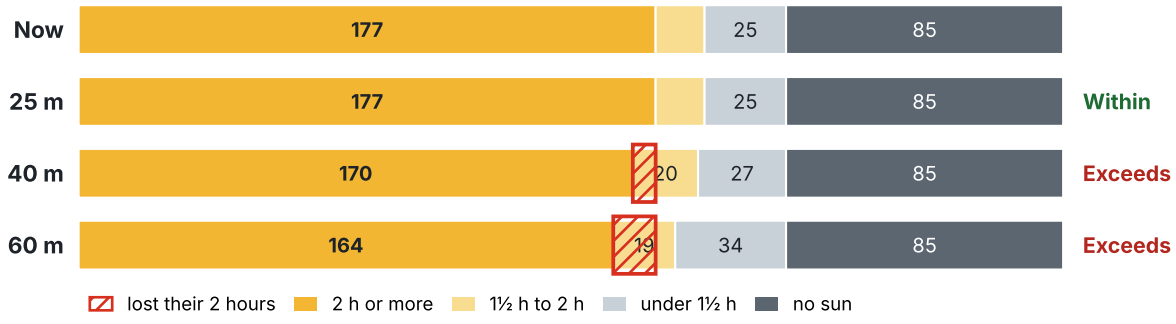
Summary against each control

Trial height	Pushed below 2 h (ADG)	Under 2 h, cut > 20% (ADG / City)	Within 15 min of a line	Buildings affected	Benchmarks (estimate)
25 m	0	0	0	0	Within
40 m	7	1	6	2	Exceeds
60 m	13	1	4	3	Exceeds

Counts are neighbouring floor/sides (one floor of a building, on one side of it). 'Now' is today's buildings, including those on the site; each trial height removes the buildings on the site.

'Within 15 min of a line': ends up within 15 minutes of 2 hours (or 5 points of the 20% cut), so a small error in a height could flip it. 'Within' / 'Exceeds' compares this estimate with the benchmarks; it is not a compliance opinion, and houses and private open space are not tested.

The picture: neighbouring floor/sides by hours of direct sun, 21 June 9am–3pm



All 302 floor/sides of the assessed neighbours, judged by the median window point of each. Outlined in red: floor/sides that get 2 hours today and lose them at that height. Many south-facing sides get no winter sun whatever is built.

What this is, and what it is not

A desktop estimate, before design, of how tall a building on this site could be before neighbouring apartments lose mid-winter sun under the two controls above. It follows the layout of a DA solar access study so that it can be compared with one, but it is not a solar access report, it has not been prepared by an architect or surveyor, and it must not be lodged with a development application or relied on as professional advice. The last page sets out the method and its limits.

© OpenStreetMap contributors (ODbL). Terrain © State of New South Wales (Spatial Services), CC BY 4.0. Building parts: Overture Maps (from OpenStreetMap, ODbL).

Shadow diagrams, 21 June · trial height 25 m

Shadows drawn on flat ground; the hours in the table use the full 3-D test with terrain.

9am · sun 43°, 19° up



10am · sun 30°, 26° up



11am · sun 15°, 31° up



12pm · sun 359°, 33° up



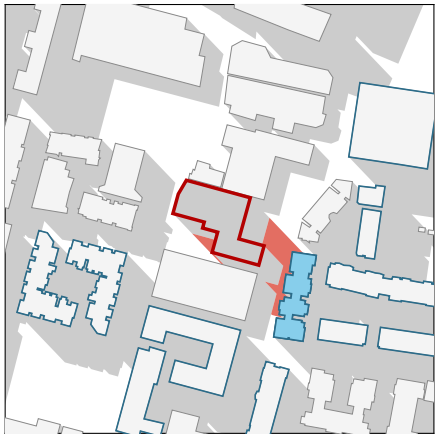
1pm · sun 343°, 31° up



2pm · sun 329°, 26° up



3pm · sun 316°, 18° up



existing shadow
additional shadow
shadow removed
(buildings on site cleared)
neighbouring apartments assessed
...that lose sun at this height
site (trial block)

© OpenStreetMap contributors (ODbL). Terrain © State of New South Wales (Spatial Services), CC BY 4.0. Building parts: Overture Maps (from OpenStreetMap, ODbL).

View from the sun, 21 June · trial height 25 m

Looking along the sun's rays at each hour (orthographic). Every surface you can see is in sun; a neighbouring wall the block hides is in its shadow. Buildings only, drawn on level ground; the hours in the table use the full 3-D test with terrain.



© OpenStreetMap contributors (ODbL). Terrain © State of New South Wales (Spatial Services), CC BY 4.0. Building parts: Overture Maps (from OpenStreetMap, ODbL).

Shadow diagrams, 21 June · trial height 40 m

Shadows drawn on flat ground; the hours in the table use the full 3-D test with terrain.

9am · sun 43°, 19° up



10am · sun 30°, 26° up



11am · sun 15°, 31° up



12pm · sun 359°, 33° up



1pm · sun 343°, 31° up



2pm · sun 329°, 26° up



3pm · sun 316°, 18° up



existing shadow
additional shadow
shadow removed
(buildings on site cleared)
neighbouring apartments assessed
...that lose sun at this height
site (trial block)

© OpenStreetMap contributors (ODbL). Terrain © State of New South Wales (Spatial Services), CC BY 4.0. Building parts: Overture Maps (from OpenStreetMap, ODbL).

View from the sun, 21 June · trial height 40 m

Looking along the sun's rays at each hour (orthographic). Every surface you can see is in sun; a neighbouring wall the block hides is in its shadow. Buildings only, drawn on level ground; the hours in the table use the full 3-D test with terrain.



© OpenStreetMap contributors (ODbL). Terrain © State of New South Wales (Spatial Services), CC BY 4.0. Building parts: Overture Maps (from OpenStreetMap, ODbL).

Shadow diagrams, 21 June · trial height 60 m

Shadows drawn on flat ground; the hours in the table use the full 3-D test with terrain.

9am · sun 43°, 19° up



10am · sun 30°, 26° up



11am · sun 15°, 31° up



12pm · sun 359°, 33° up



1pm · sun 343°, 31° up



2pm · sun 329°, 26° up



3pm · sun 316°, 18° up

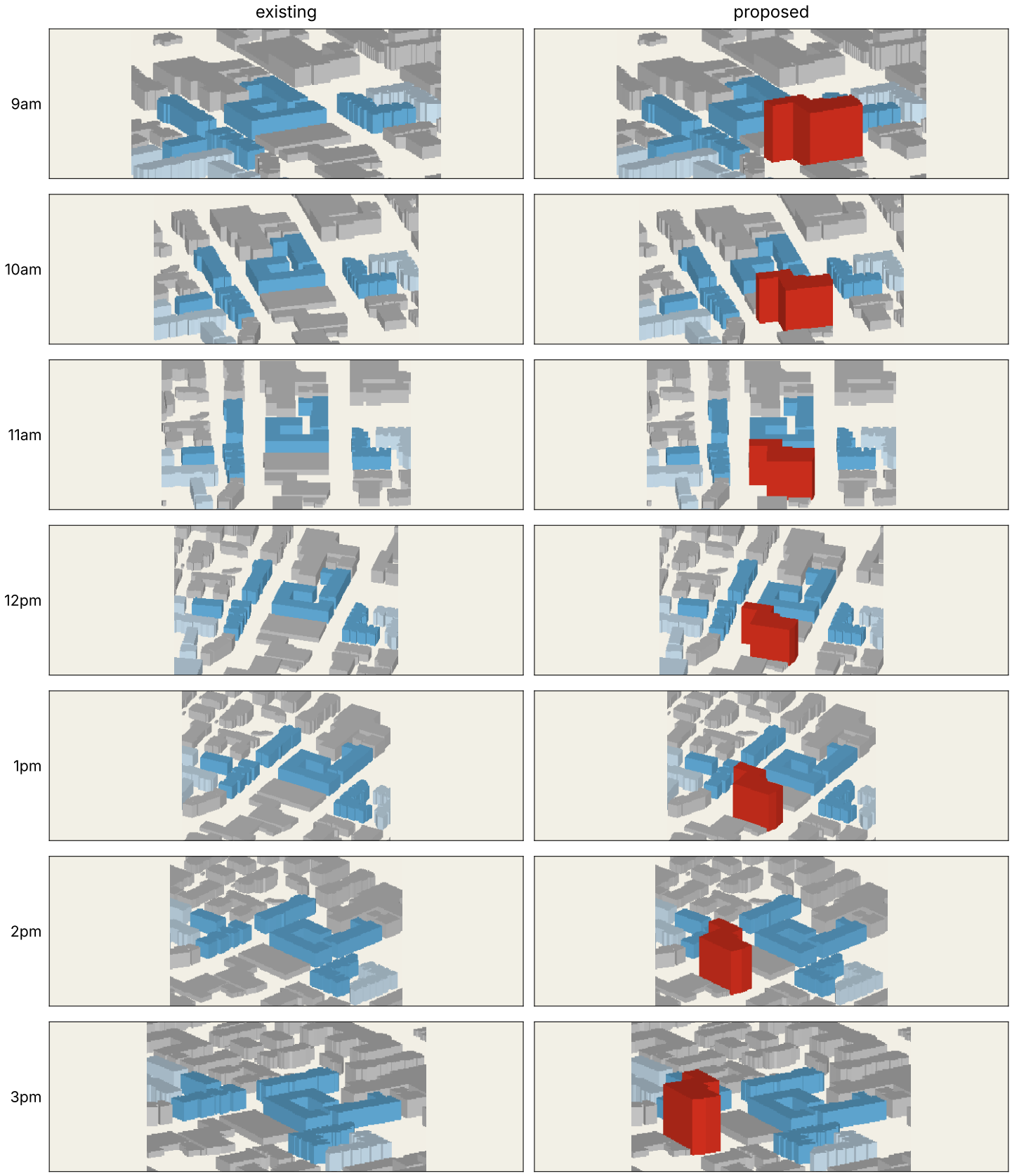


existing shadow
additional shadow
shadow removed
(buildings on site cleared)
neighbouring apartments assessed
...that lose sun at this height
site (trial block)

© OpenStreetMap contributors (ODbL). Terrain © State of New South Wales (Spatial Services), CC BY 4.0. Building parts: Overture Maps (from OpenStreetMap, ODbL).

View from the sun, 21 June · trial height 60 m

Looking along the sun's rays at each hour (orthographic). Every surface you can see is in sun; a neighbouring wall the block hides is in its shadow. Buildings only, drawn on level ground; the hours in the table use the full 3-D test with terrain.



© OpenStreetMap contributors (ODbL). Terrain © State of New South Wales (Spatial Services), CC BY 4.0. Building parts: Overture Maps (from OpenStreetMap, ODbL).

Neighbouring windows: hours of direct sun, 21 June 9am–3pm

Every neighbouring floor/side that loses any sun at a trial height, in hours:minutes, for the median window point of that floor and side.

Building	Floor	Side	Now	25 m	40 m	60 m
Apartments on Confectioners Way, R	1	E	2:00	2:00	1:20 ▲	1:00 ▲
Apartments on Confectioners Way, R	2	E	2:05	2:05	1:35 ▲	1:05 ▲
Apartments on Confectioners Way, R	3	E	2:10	2:10	1:40 ▲	1:10 ▲
Apartments on Confectioners Way, R	4	E	2:10	2:10	1:50 ▲	1:10 ▲
Apartments on Confectioners Way, R	5	E	2:10	2:10	1:55 ▲	1:10 ▲
Genesis 95	1	W	3:30	2:50	1:50 ▲	1:20 ▲
Genesis 95	3	N	1:30	1:30	1:10 ●	1:10 ●
Genesis 95	4	N	2:00	2:00	1:50 ▲	1:40 ▲
Apartments on Confectioners Way, R	6	E	2:10	2:10	2:10	1:20 ▲
Apartments on Dalmeny Avenue, Rose	1	N	2:20	2:20	2:20	1:50 ▲
Genesis 95	2	W	3:30	3:30	2:10	1:20 ▲
Genesis 95	3	W	3:30	3:30	2:30	1:30 ▲
Genesis 95	4	W	3:30	3:30	2:50	1:30 ▲
Genesis 95	5	W	3:30	3:30	2:50	1:40 ▲
Apartments on Confectioners Way, R	3	N	6:00	6:00	5:45	5:45
Apartments on Confectioners Way, R	4	N	6:00	6:00	5:45	5:45
Apartments on Confectioners Way, R	5	N	6:00	6:00	5:55	5:45
Apartments on Confectioners Way, R	6	N	6:00	6:00	6:00	5:45
Genesis 95	1	N	1:10	1:00	1:00	1:00
Genesis 95	2	N	1:10	1:10	1:00	1:00
Genesis 95	5	N	4:20	4:20	4:10	3:00
Vouge 2	1	N	1:05	1:05	1:05	1:00
Vouge 2	3	N	5:50	5:50	5:50	5:40
Vouge 2	4	N	6:00	6:00	6:00	5:55
Vouge 2	4	W	3:10	3:10	3:10	2:45
Vouge 2	5	W	3:30	3:30	3:30	2:45
Zeta	1	N	2:40	2:40	2:40	2:10
Zeta	2	N	6:00	6:00	4:35	3:20
Zeta	3	N	6:00	6:00	5:00	3:55
Zeta	4	N	6:00	6:00	5:50	4:10
Zeta	5	N	6:00	6:00	6:00	4:35
Zeta by Meriton	4	E	1:55	1:55	1:55	1:35

▲ pushed below 2 hours (ADG). ● already under 2 hours and cut by more than 20% (ADG guidance / City of Sydney draft guide).

© OpenStreetMap contributors (ODbL). Terrain © State of New South Wales (Spatial Services), CC BY 4.0. Building parts: Overture Maps (from OpenStreetMap, ODbL).

Controls, assumptions and limits

Controls tested

ADG Objective 3B-2, using the 2-hour benchmark of 4A-1

Neighbouring apartments that get at least 2 hours of direct sun between 9am and 3pm at mid-winter keep at least 2 hours. 4A-1 sets the 2 hours for a building's own apartments (Sydney Metropolitan Area); for neighbours, practice borrows it through 3B-2.

ADG 3B-2 design guidance; City of Sydney draft guide

Where a neighbouring window already gets less than 2 hours, the proposal does not reduce it by more than 20% (City of Sydney 'Minimising overshadowing of neighbouring apartments' documentation guidelines, a draft published in December 2019, step 3).

Assumptions schedule

Test date	21 June (winter solstice), Australian Eastern Standard Time
Hours	9am to 3pm; sun counted every 10 minutes; diagrams every hour
Sun position	NOAA solar equations at the site's latitude and longitude
North	Plans on the MGA / UTM zone 56 grid, north up (grid north, within about 1° of true north)
Proposal	A plain block over the whole site outline at each trial height; buildings now on the site removed
Existing buildings	OpenStreetMap outlines and building parts; heights from OSM, public sources and hand checks
Approved, not built	None added. Buildings approved but not yet built are not in the model
Terrain	NSW 5 m elevation grid in the hours test; diagrams drawn on level ground
Trees	Excluded (ADG and City of Sydney guide)
Neighbours	Apartment buildings within 150 m of the site that have been modelled
Window points	One every 3 m along each wall, 1 m above each floor; a floor/side is judged by its median point
In sun	The ray from the point to the sun is clear and the sun is in front of the wall (a point test; DA reports usually count a sun patch of at least 1 m², so a later report can differ by a few minutes either way)

Limits

- The proposal is a plain block filling the whole site outline at each trial height: an upper bound. A real design with setbacks and a stepped form casts less shadow.
- Neighbouring windows are estimated: one point every 3 m along each wall, 1 m above each floor; a floor/side is judged by its median point. Real window positions, balconies and room layouts are not known.
- Private open space (gardens, courtyards, balconies as outdoor areas) and solar panels are not assessed.
- Only neighbouring buildings mapped as apartments within the stated distance are assessed; houses are not.
- Building heights come from OpenStreetMap and public sources, some estimated; terrain from NSW 5 m elevation data. Trees are excluded, as the ADG and the City's guide require.
- A development application needs a solar access report from the project's architect or a specialist, made from a surveyed 3-D model.

© OpenStreetMap contributors (ODbL). Terrain © State of New South Wales (Spatial Services), CC BY 4.0. Building parts: Overture Maps (from OpenStreetMap, ODbL).