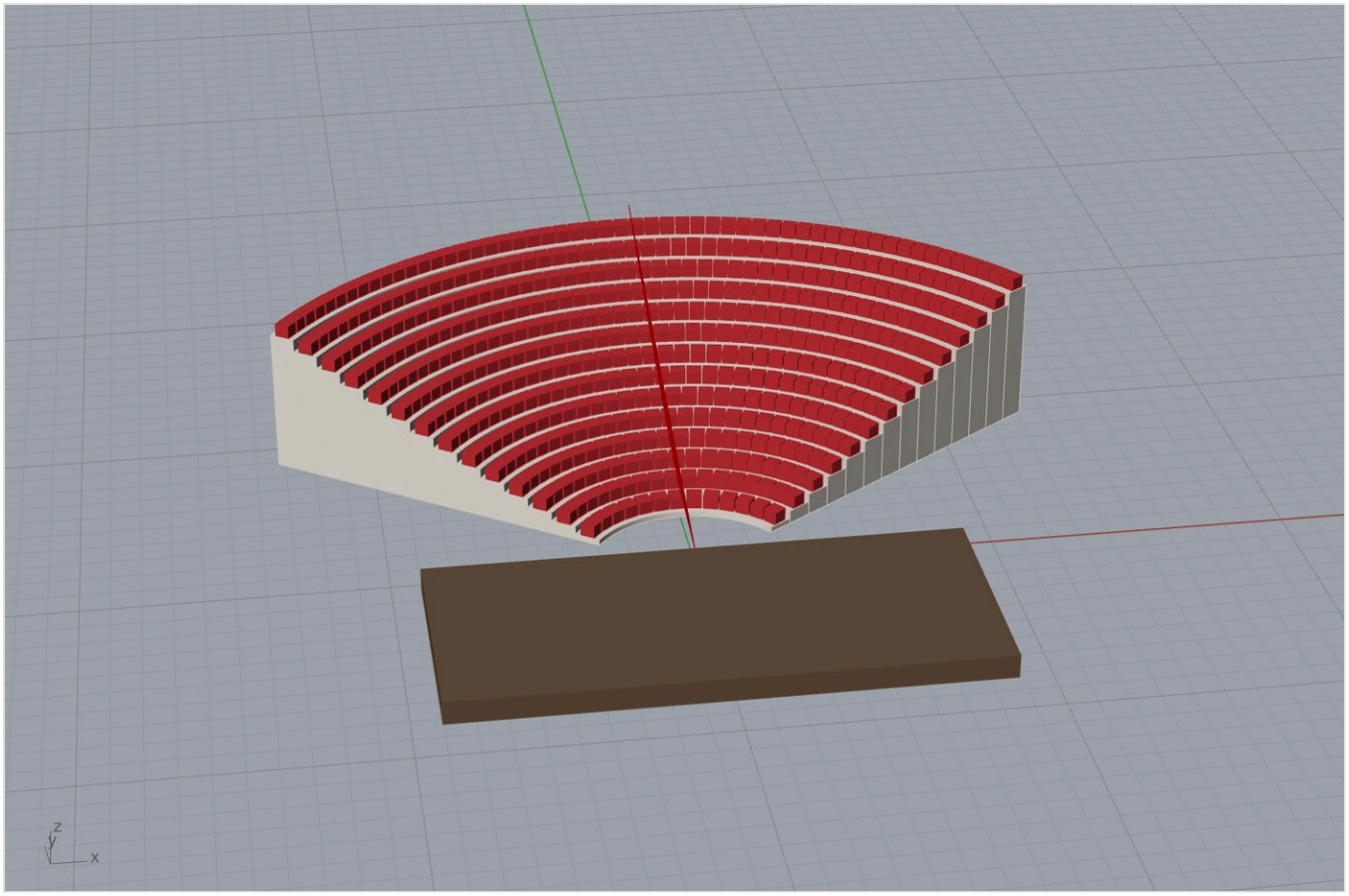
PLANNING

AUDITORIUM SEATING

Raked seating from sightlines (C-value method), tiers and seats



FREE | RHINO 7 · RHINO 8 | NATIVE COMPONENTS ONLY | VERSION 1.0 · NOVEMBER 2026

Rows are raised so that every spectator sees the focal point over the head in front, with the chosen C value. Floor levels are rounded for construction and the real C is recomputed after rounding. Tiers are ring sectors around the focal point and seats are placed on each row arc.

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HOW TO USE

1. Open the file: a 14-row auditorium appears around the origin, which is the focal point.
2. Set rows, row spacing, first-row distance and the seating angle.
3. Set the C value (12 cm is a common target) and how floor levels are rounded.
4. Read 'Seating data': seats, last-row level, real C range, risers and steepest rake.
5. Bake 'Tiers' and 'Seats'.

BAKE

Tiers Seats

GOOD TO KNOW

- The C value is computed in closed form, not by trial: the result matches a row-by-row recursive calculation.
- The rake check uses 35 degrees as limit: check your local code and the seat supplier's data.

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INPUTS

PARAMETER	RANGE	DEFAULT
Rows	3 – 40	14
Row spacing (m)	0.80 – 1.30	0.90
First row distance (m)	2.00 – 15.00	4.00
Eye height seated (m)	1.00 – 1.25	1.12
Focal point height (m)	-1.00 – 2.00	0.60
C value (cm)	6.0 – 15.0	12.0
Round floors up to (cm)	0.5 – 10.0	1.0
Seating angle (deg)	30 – 180	110
Seat width (m)	0.45 – 0.70	0.55

RESULTS AT DEFAULT VALUES

SEATING DATA

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Rows: 14   seats: 474   last row floor: +4.83 m
Real C: 12.7 to 13.3 cm (target 12): OK
Risers 0.280 to 0.440 m, aisle steps up to 3 per row
Steepest rake 26.1 deg (<= 35): OK
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INSIDE THE DEFINITION

STAGES, LEFT TO RIGHT AND TOP TO BOTTOM

1 INPUT

2 SIGHTLINES C-value method in closed form: slope grows by c / D at every row (running sum)

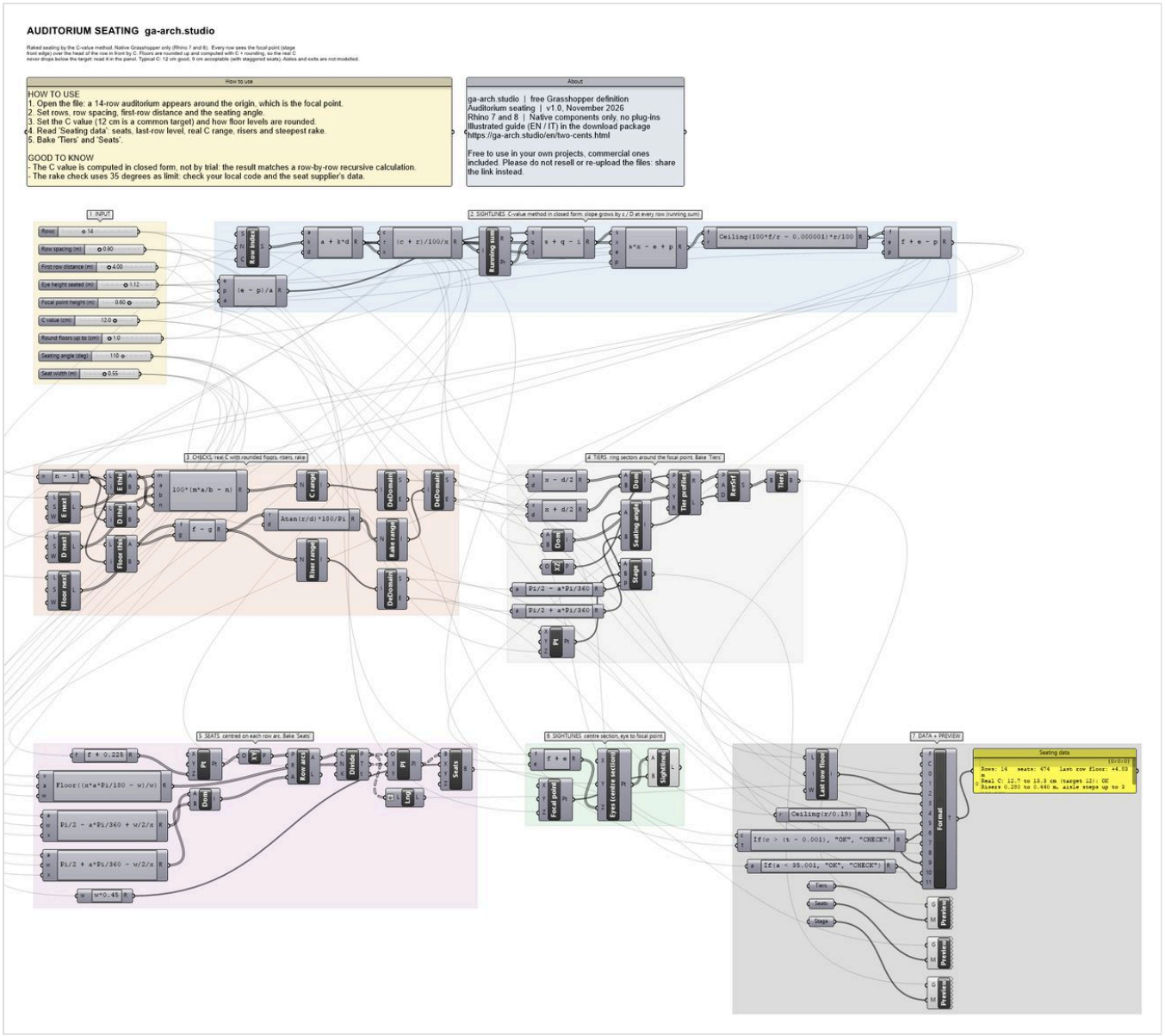
3 CHECKS real C with rounded floors, risers, rake

4 TIERS ring sectors around the focal point. Bake 'Tiers'

5 SEATS centred on each row arc. Bake 'Seats'

6 SIGHTLINES centre section, eye to focal point

7 DATA + PREVIEW



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