



THE SCREEN GEOMETRY PROBLEM

SVGs scale infinitely across viewports, but without a physical anchor, responsive coordinates drift. On a standard 1440×900 (16:10) canvas, an ungrounded model guesses arbitrary pixel offsets, causing objects to float or clip during browser resizing.

THE ARCHITECTURAL SOLUTION

Locking **288px = 1.00m** turns the 720px wall plane into an exact **2.50m room height**. Viewport responsiveness is preserved via `viewBox="0 0 1440 900"` and `xMidYMid slice`, maintaining immutable human proportions at any display scale.

THE CONVERSION CORE

288px = 1.00 metre

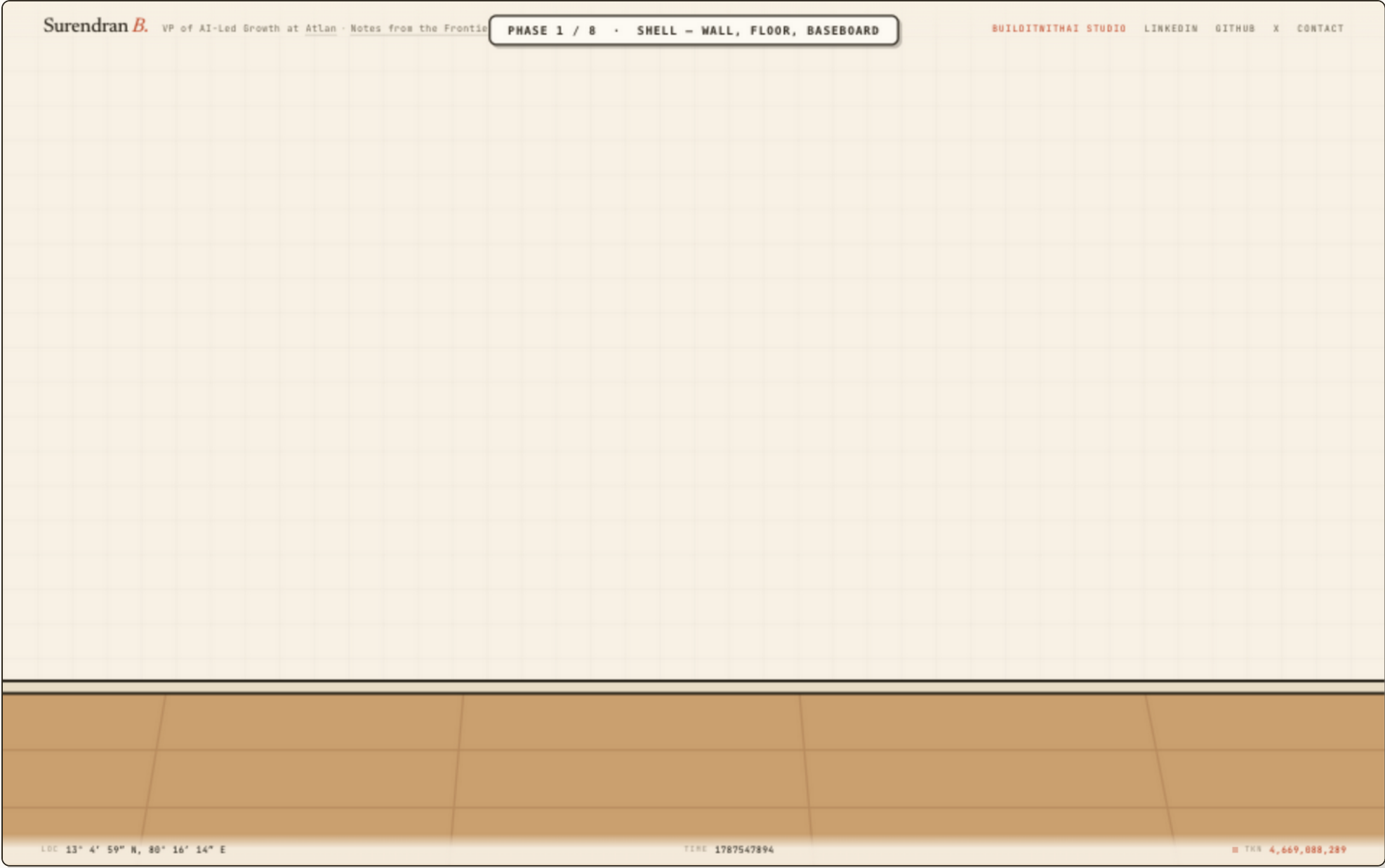
$Y_{\text{object}} = 720 - (\text{Height}_{\text{metres}} \times 288)$

WHY 288 IS THE MASTER RATIO

- **Universal Ceiling:** 720px wall height ÷ 288 = **2.50 metres** (standard studio ceiling).
- **Human Eye Line:** 720 – (1.50m × 288) = **y = 288px** (exactly 1m below ceiling).
- **Sub-Pixel Grid Alignment:** 288 divides evenly by 16 factors (2, 3, 4, 6, 8, 12, 16, 24, 36, 48, 72, 96, 144), ensuring zero antialiasing blur on Retina screens.
- **Deterministic Relational Invariants:** Keeps table surfaces, chair clearances, and wall mountings locked.

ERGONOMIC COORDINATE ANCHORS

OBJECT / DATUM	REAL METRIC	CANVAS OFFSET	EXACT SVG Y
Room Ceiling	2.50 m	720 px from floor	y = 0 px
Wall Clock Center	2.00 m	576 px from floor	y = 144 px
Studio Door Frame Top	1.96 m	564 px from floor	y = 156 px
Thermostat (Eye Level)	1.50 m	432 px from floor	y = 288 px
Window Sill	0.97 m	280 px from floor	y = 440 px
Work Desk Surface	0.75 m (75cm)	216 px (¾ × 288)	y = 504 px
Chair Seat Height	0.45 m (45cm)	130 px	y = 590 px
Floor Origin Line	0.00 m	0 px (Datum)	y = 720 px
Foreground Floor Perspective	-0.625 m	-180 px	y = 900 px



Surendran *B.* VP of AI-Led Growth at Atlan · Notes from the Frontie

PHASE 1 / 8 • SHELL – WALL, FLOOR, BASEBOARD

BUILDITWITHAI STUDIO LINKEDIN GITHUB X CONTACT

LDC 13° 4' 59" N, 80° 16' 14" E

TIRE 1787547894

■ TNR 4,669,888,289

