

MEASUREMENT & FINISH ESTIMATION REPORT

Project: Room 3004-1, Building 84s4
Report date: 2026-08-08

SOURCE DATA

Laser-scan point cloud: 001.e57
Points in scan: 8,424,895; single station, E57 format
Processing: Re-Form scan-to-BIM pipeline (RANSAC segmentation, reference vertical planes, automated finish takeoff)

KEY RESULTS

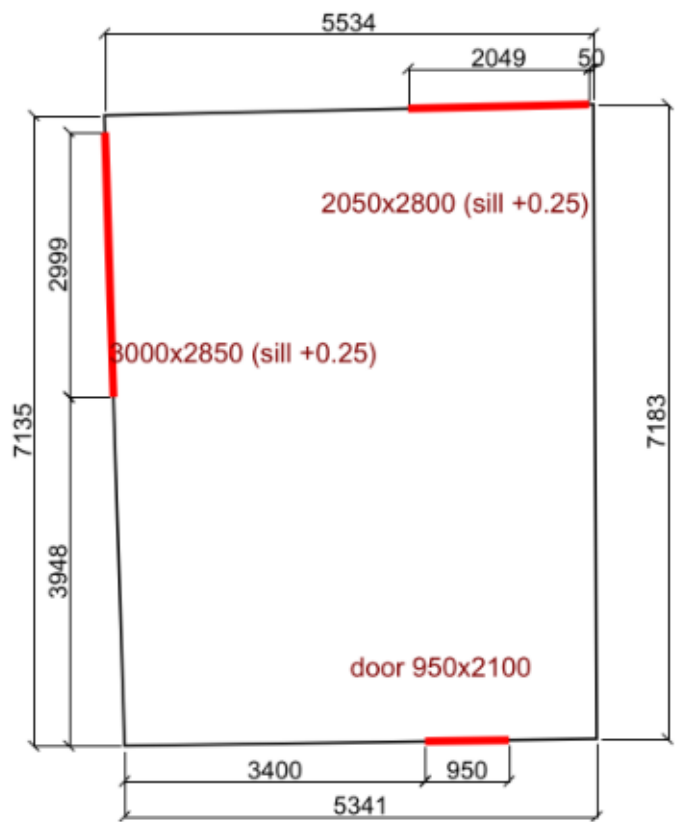
Room (interior): 5342 x 7183 mm (trapezoid)
Clear height: 3472 mm (to underside of deck ribs)
Corner angles: 90.98 / 90.57 / 88.97 / 89.48 deg
Diagonals: 8994 / 8989 mm (difference 5 mm)
Openings: 3

Wall plaster: 70.1 m², 0.72 m³
Bump grinding: 4.17 m²
Floor screed: 38.7 m², 1.51 m³ (top at +39 mm)

Elevation 0.000 is taken at the room floor level.
Wall and slab thicknesses in the model are nominal (scanned from inside).
Plane idealization tolerance: +/-20 mm.
Cost figures use prices as of 2026-08 (costs.json).

Re-Form – scan-to-BIM studio | re-form.ai | hello@re-form.ai

As-built floor plan (DXF: out/plan.dxf)



AS-BUILT FLOOR PLAN: Room 3004-1, Building 84s4
Elevation 0.000 is taken at the floor level. Clear height 3.472 m
Outline shown as a single line along interior faces (scanned from inside).
Plane idealization tolerance: +/-20 mm

Room Geometry

ROOM OUTLINE (per reference vertical planes)

side 1:	5342 mm	corner 1:	90.98 deg
side 2:	7183 mm	corner 2:	90.57 deg
side 3:	5536 mm	corner 3:	88.97 deg
side 4:	7139 mm	corner 4:	89.48 deg

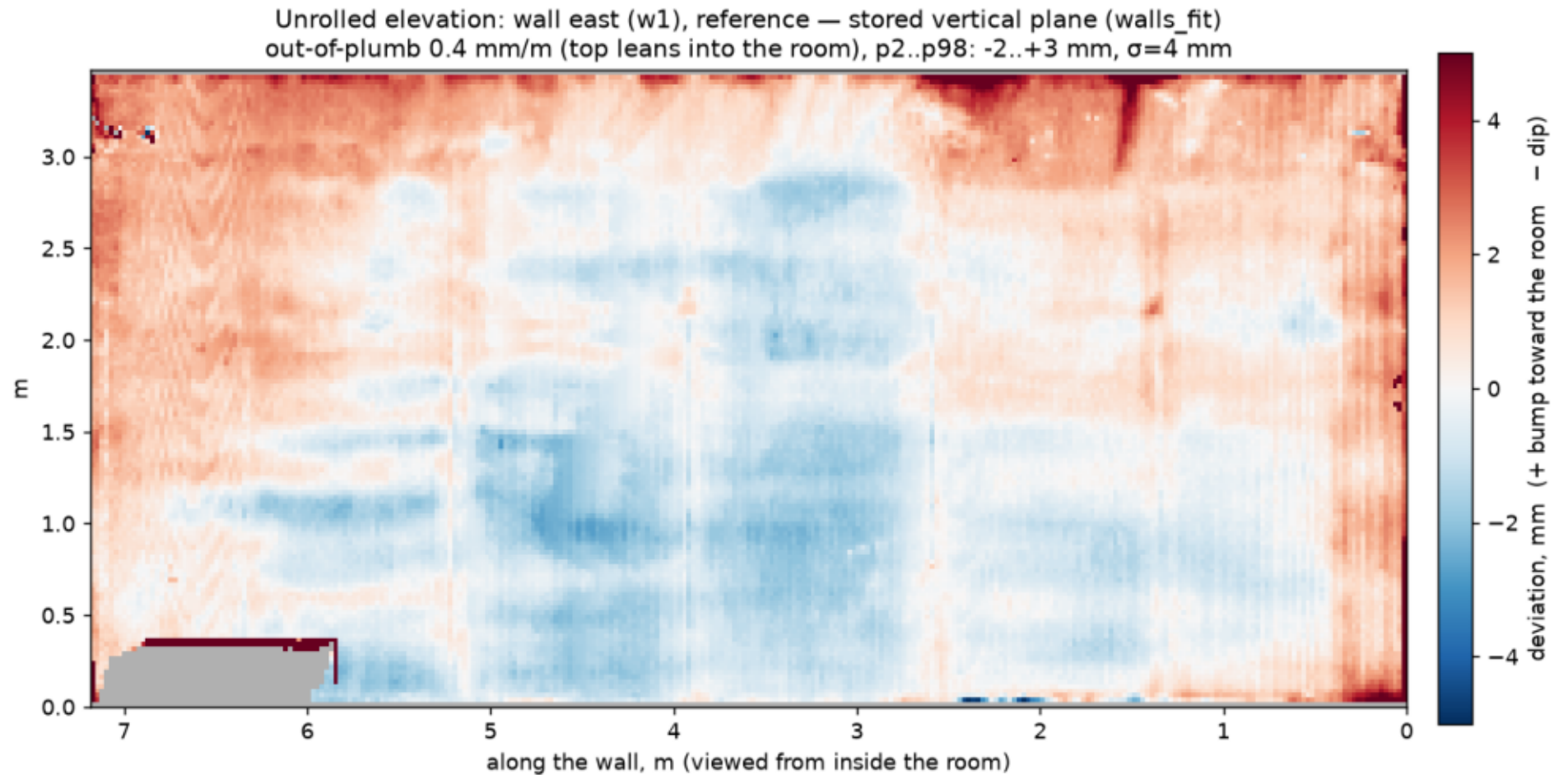
OPENINGS

door	950 x 2100 mm, bottom at +0 mm
opening/window	2050 x 2800 mm, bottom at +250 mm
opening/window	3000 x 2850 mm, bottom at +250 mm

SURFACE DEVIATIONS (reference: ideal vertical/horizontal)

floor: slope	2.4 mm/m, range -10..+10 mm
ceiling (underside of ribs): slope	2.7 mm/m, range -20..+19 mm
wall 1: out-of-plumb	0.4 mm/m, range -2..+3 mm
wall 3: out-of-plumb	0.4 mm/m, range -16..+30 mm
wall 5: out-of-plumb	3.5 mm/m, range -49..+51 mm
wall 6: out-of-plumb	0.6 mm/m, range -11..+55 mm

Wall 1 elevation (unrolled): deviations from ideal vertical (red — bump toward the room, blue — dip)

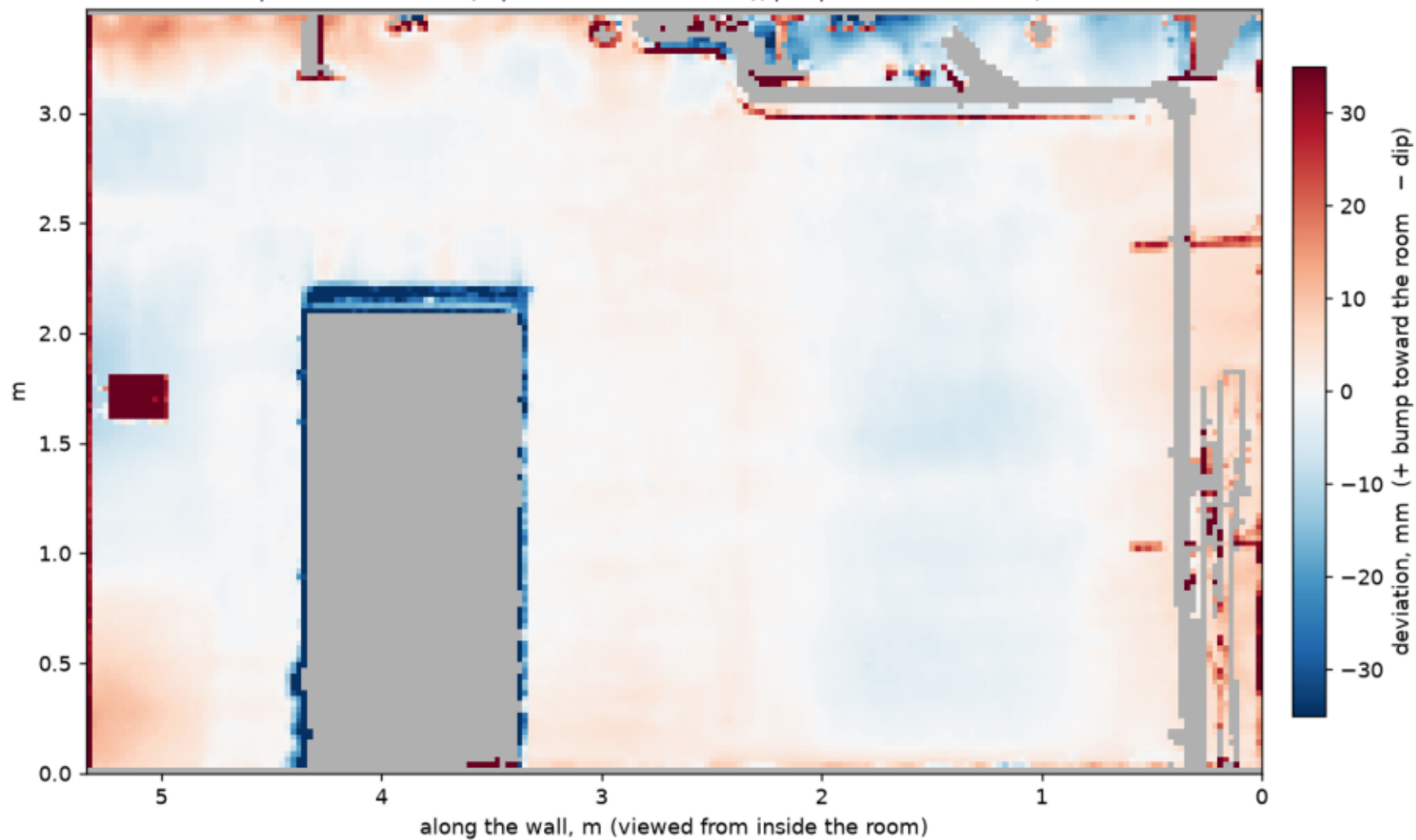


Room 3004-1, Building 84s4 · wall east (w1) · deviations from plane

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Wall 3 elevation (unrolled): deviations from ideal vertical (red — bump toward the room, blue — dip)

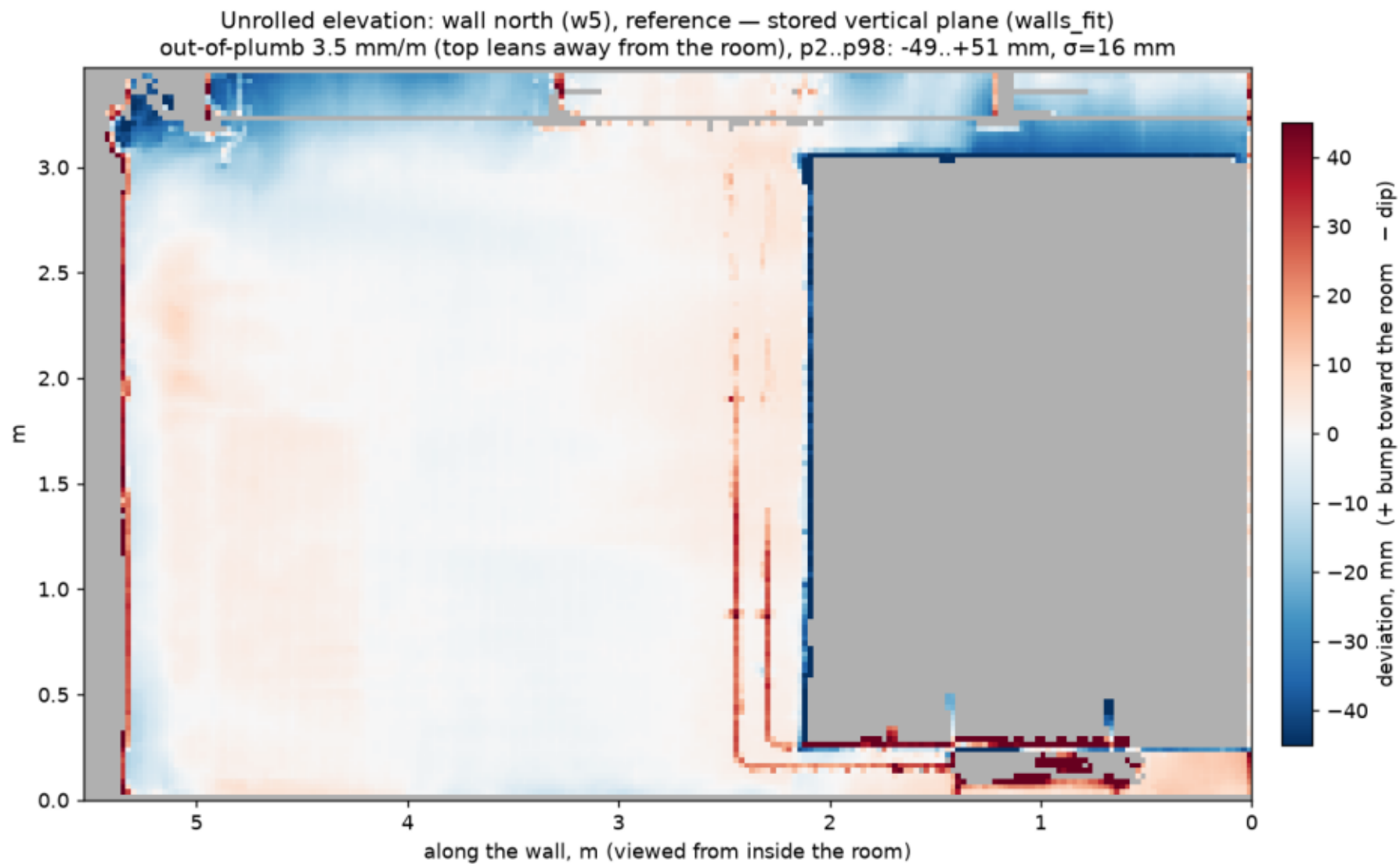
Unrolled elevation: wall south (w3), reference — stored vertical plane (walls_fit)
out-of-plumb 0.4 mm/m (top leans into the room), p2..p98: -16..+30 mm, $\sigma=11$ mm



Room 3004-1, Building 84s4 · wall south (w3) · deviations from plane

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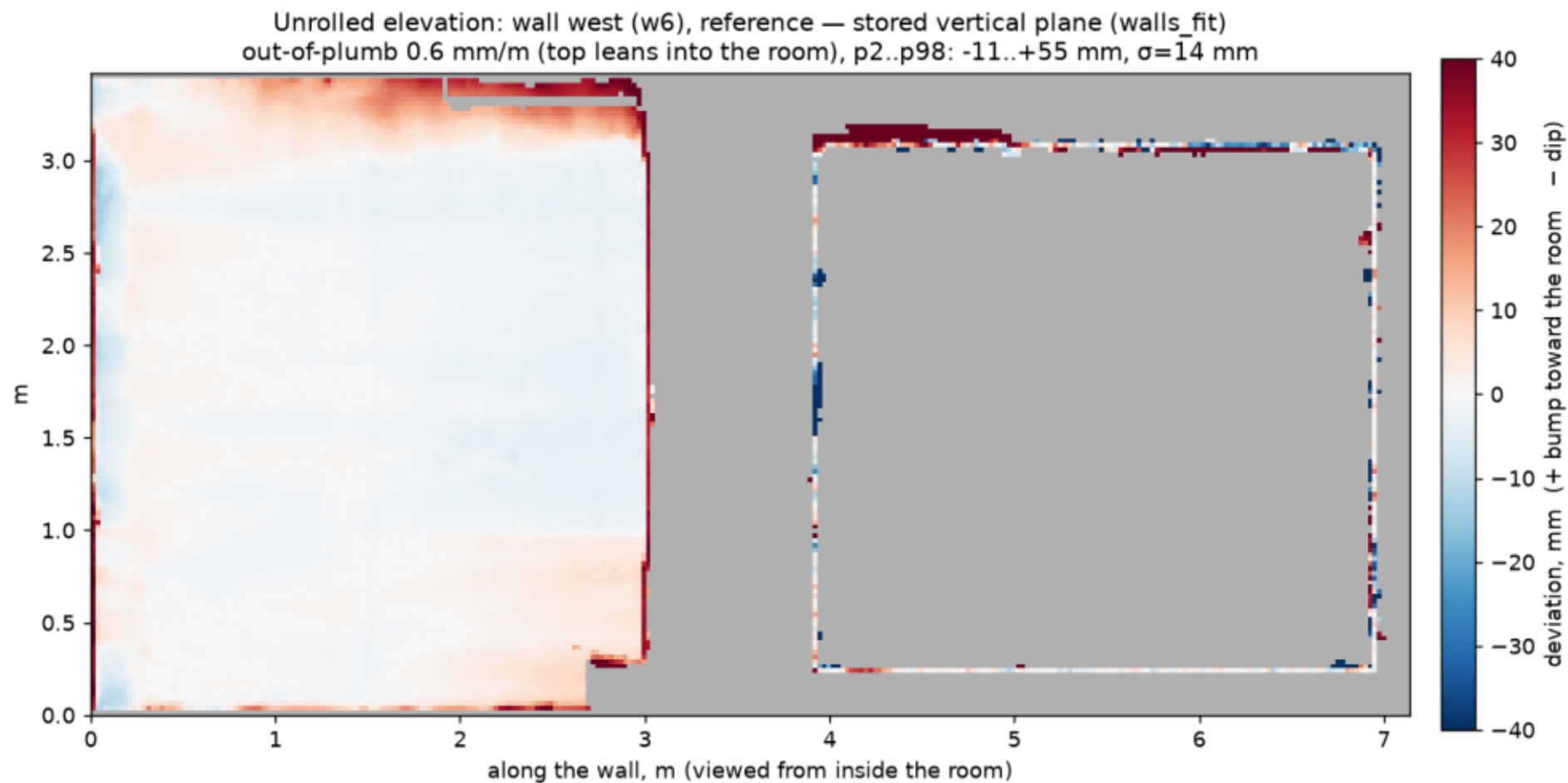
Wall 5 elevation (unrolled): deviations from ideal vertical (red — bump toward the room, blue — dip)



Room 3004-1, Building 84s4 · wall north (w5) · deviations from plane

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Wall 6 elevation (unrolled): deviations from ideal vertical (red — bump toward the room, blue — dip)

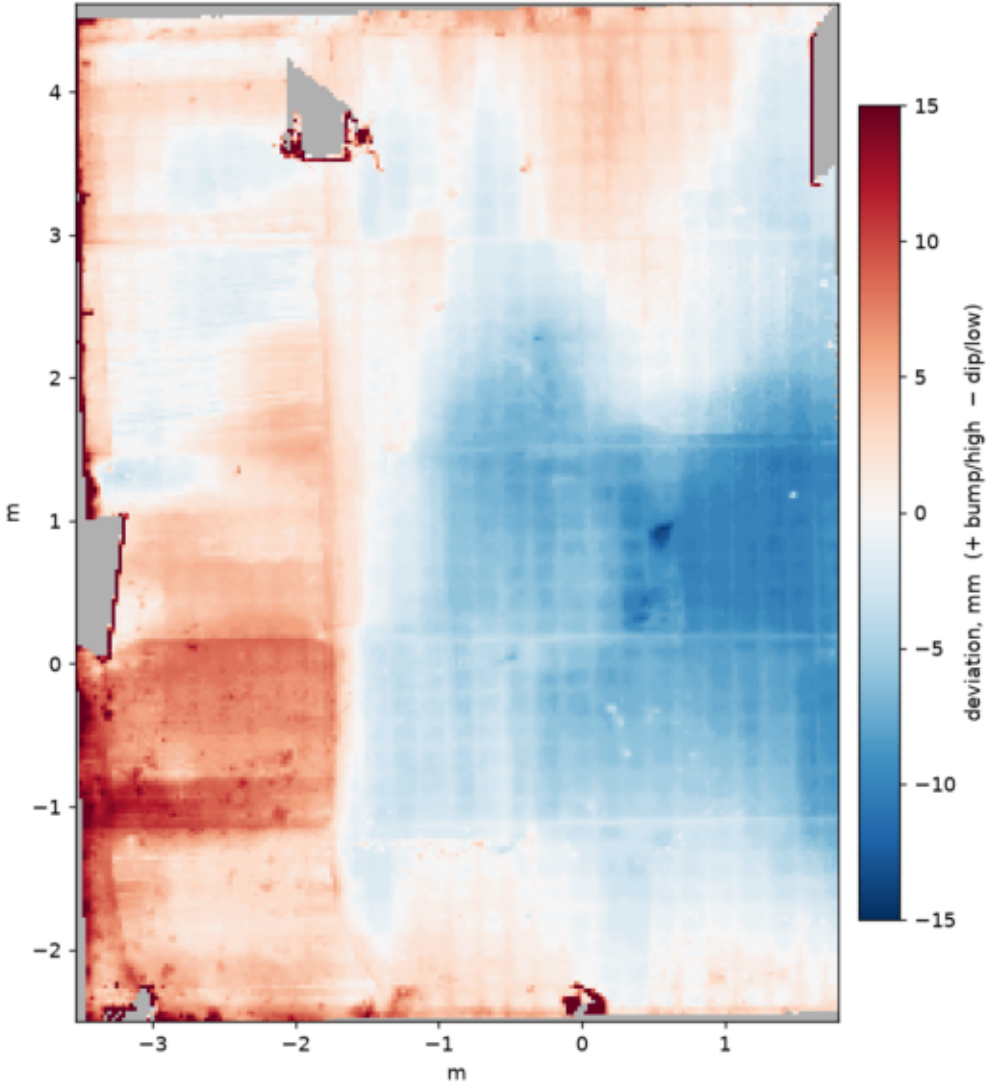


Room 3004-1, Building 84s4 · wall west (w6) · deviations from plane

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Floor deviations from horizontal

Floor map (plan view), reference — ideal horizontal (median elevation)
slope: 2.4 mm/m (rise azimuth 176°), range p2..p98: -10..+10 mm, $\sigma=5$ mm

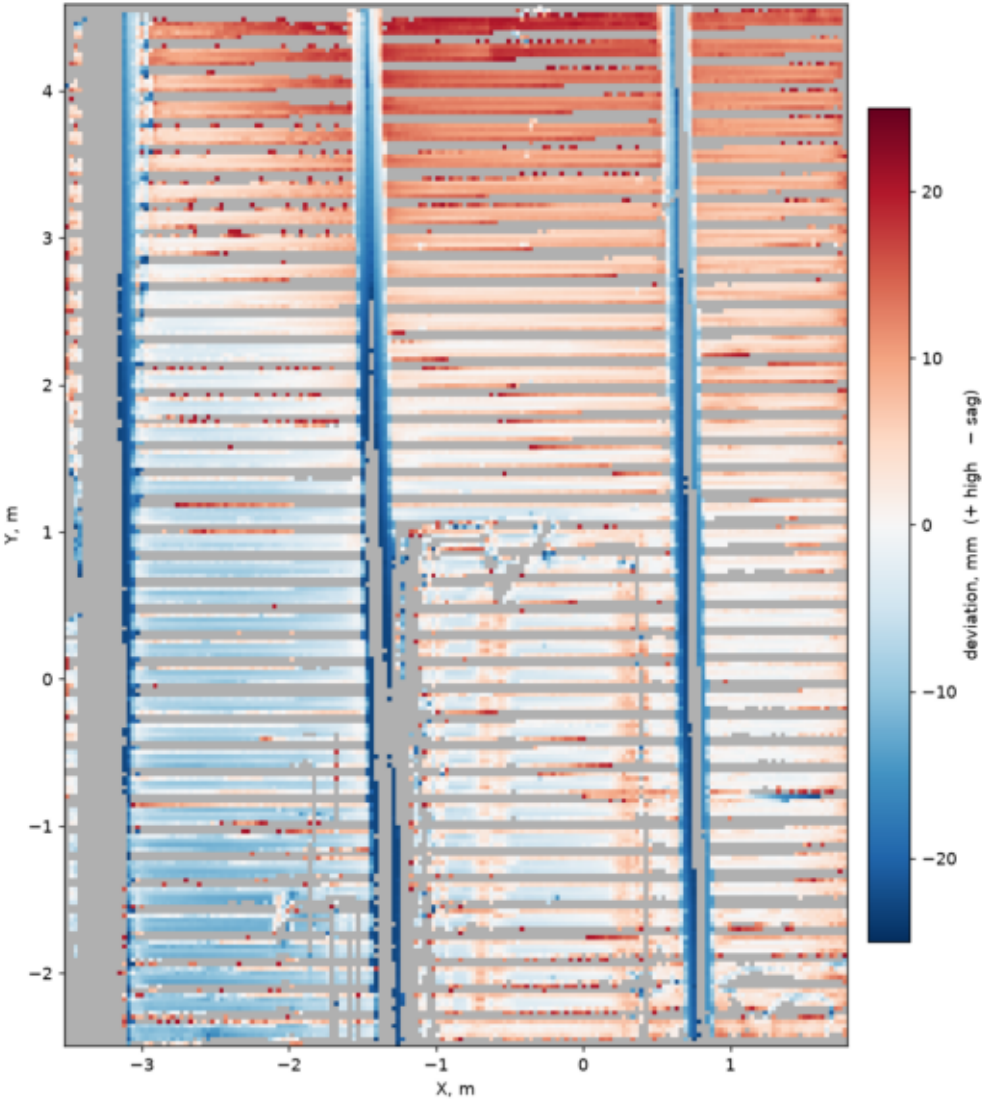


Room 3004-1, Building 84s4 · floor · deviations from plane

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Ceiling deviations (underside of deck ribs)

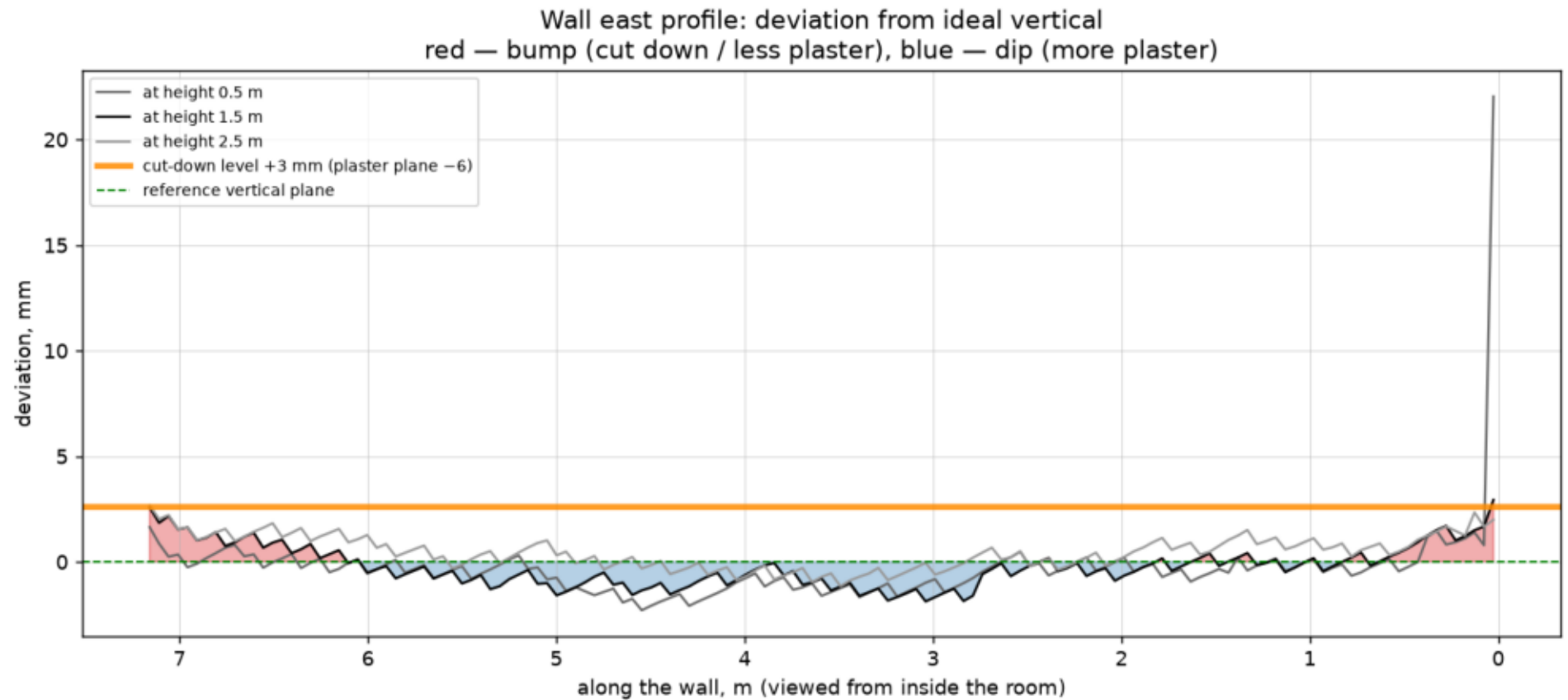
Ceiling at the UNDERSIDE OF DECK RIBS: deviation from ideal horizontal slope 2.7 mm/m (rise azimuth 44°), p2..p98: -20..+19 mm, σ =9 mm. Gray — gaps between ribs



Room 3004-1, Building 84s4 · ceiling · deviations from p2..p98

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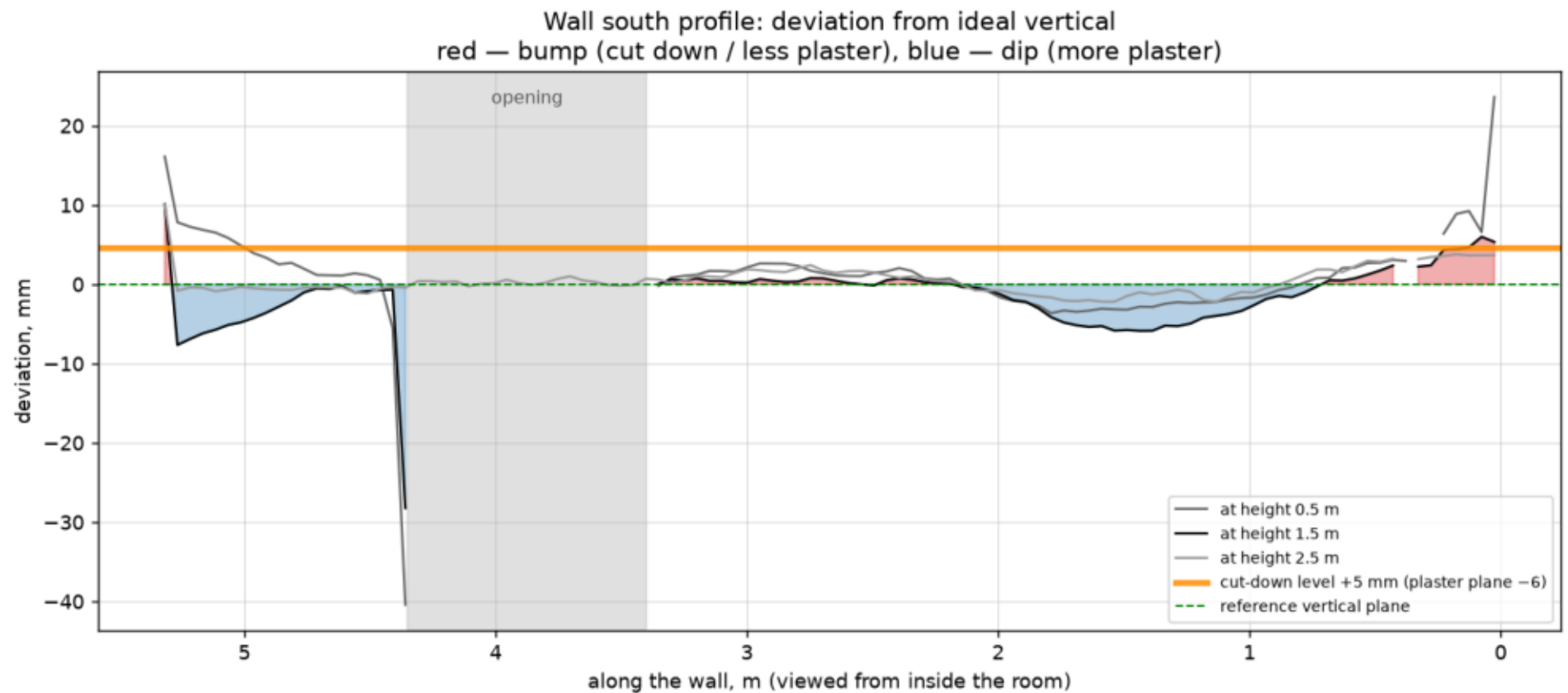
Wall 1 profile: sections at heights 0.5 / 1.5 / 2.5 m



Room 3004-1, Building 84s4 · wall east (w1) · profile

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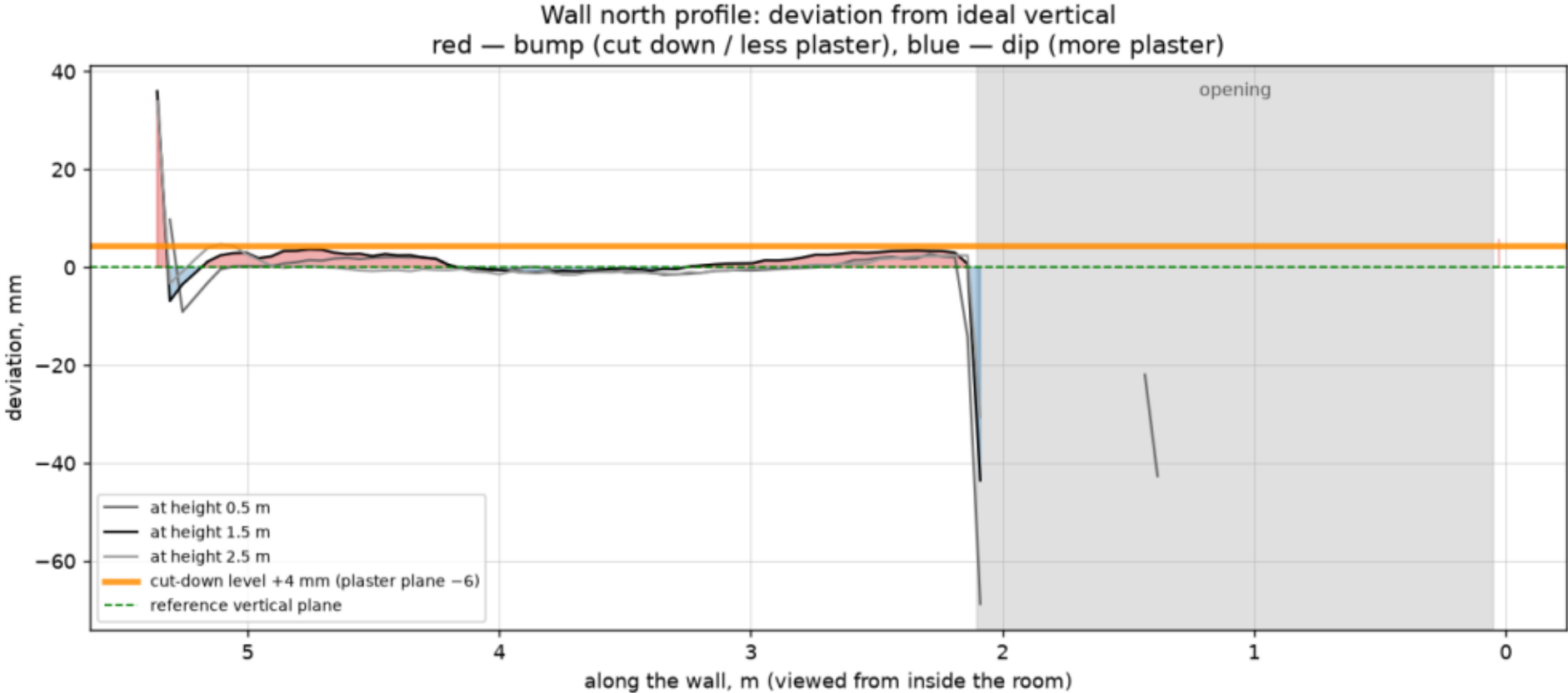
Wall 3 profile: sections at heights 0.5 / 1.5 / 2.5 m



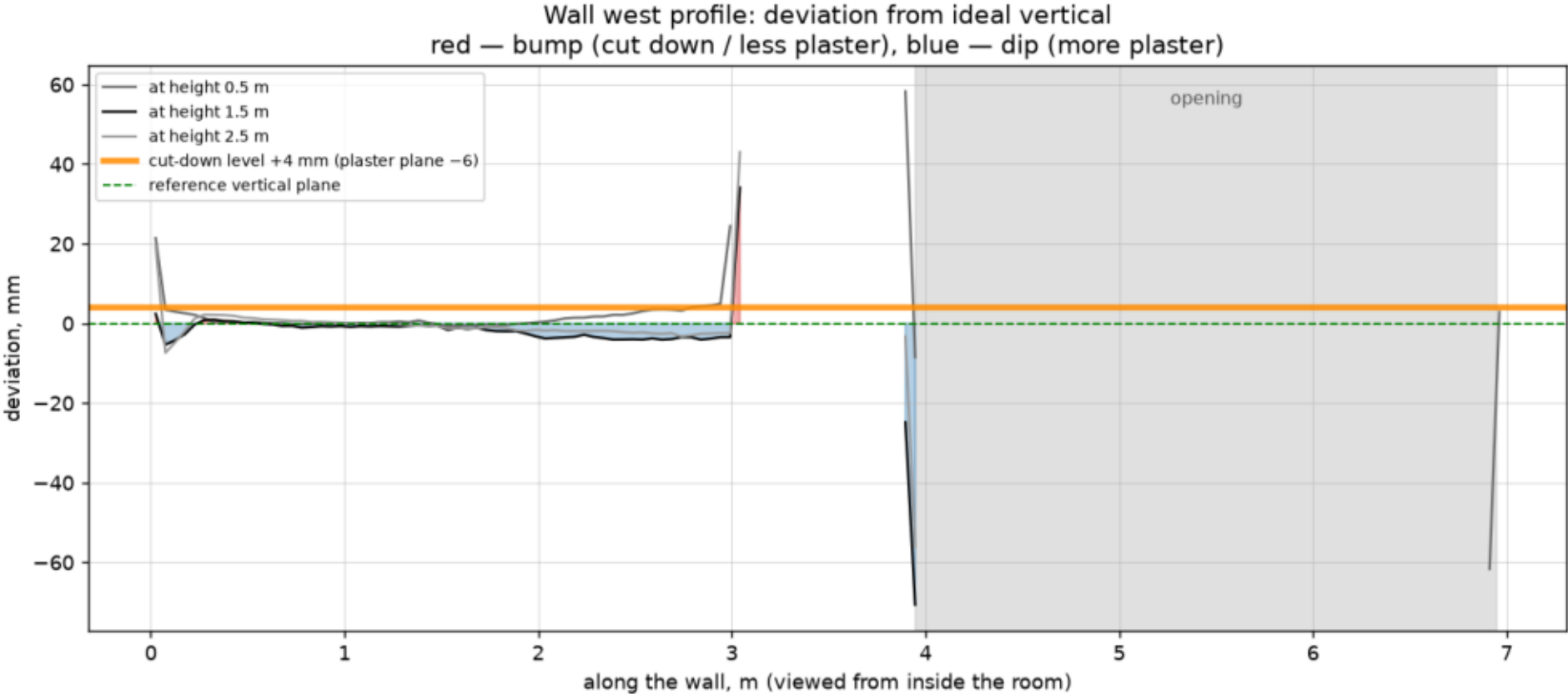
Room 3004-1, Building 84s4 · wall south (w3) · profile

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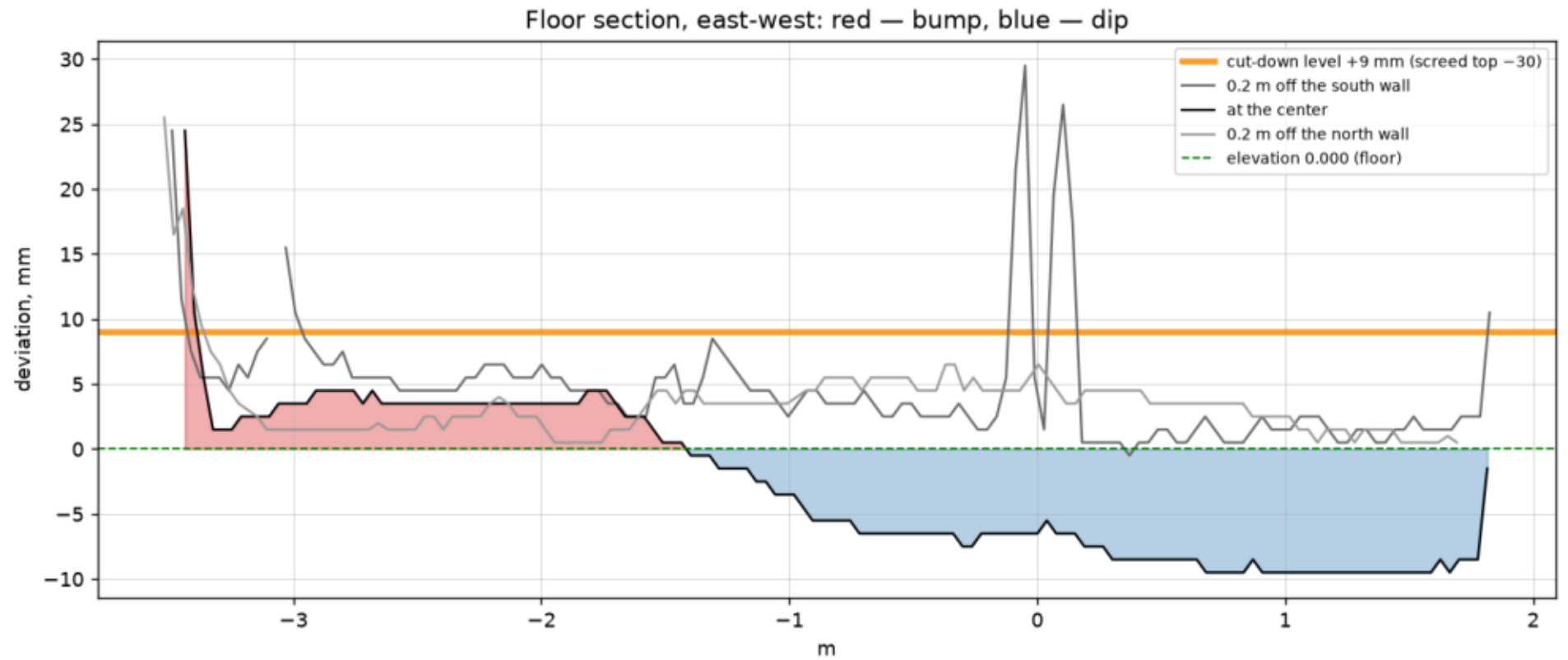
Wall 5 profile: sections at heights 0.5 / 1.5 / 2.5 m



Wall 6 profile: sections at heights 0.5 / 1.5 / 2.5 m



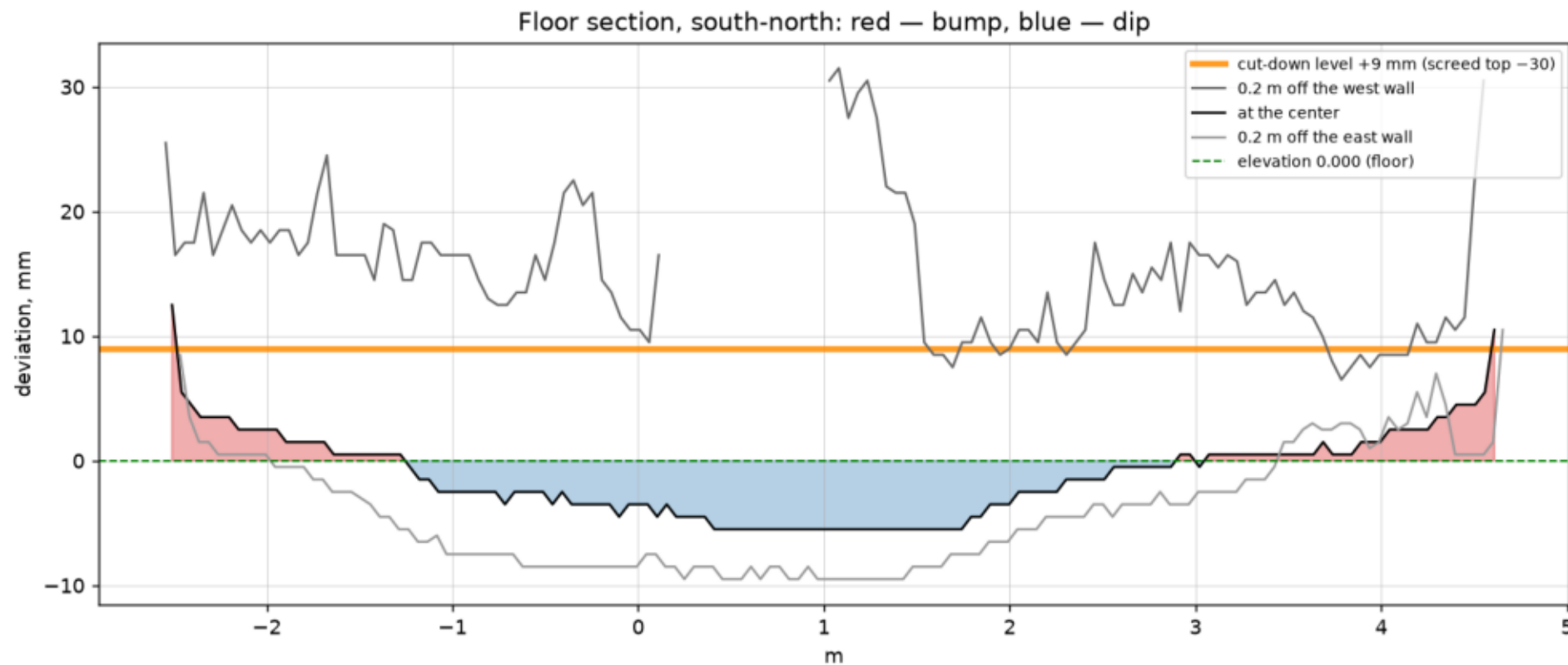
Floor section, east-west (3 strips: along the walls and at the center)



Room 3004-1, Building 84s4 · floor · profile

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Floor section, south-north (3 strips: along the walls and at the center)



Room 3004-1, Building 84s4 · floor · profile

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Wall Plaster

PLASTER TAKEOFF (planes at the economic optimum, min. layer 6 mm)

wall east : plane +8.6 mm, mean 8.4 mm, 24.8 m², 0.209 m³, grinding 0.67 m²
wall south : plane +10.6 mm, mean 11.1 mm, 16.3 m², 0.180 m³, grinding 1.49 m²
wall north : plane +10.5 mm, mean 12.3 mm, 13.3 m², 0.164 m³, grinding 0.79 m²
wall west : plane +10.2 mm, mean 10.4 mm, 15.8 m², 0.164 m³, grinding 1.22 m²

TOTAL: 70.1 m², 0.72 m³, grinding 4.17 m²

Foreign objects on walls (bumps over 60 mm): 0.17 m², excluded from the estimate.
wall south: Site inspection 2026-08-03: protruding duct enclosure left of the door;
sewer riser and small pipes right of the door. Real objects – excluded from the
plaster estimate.

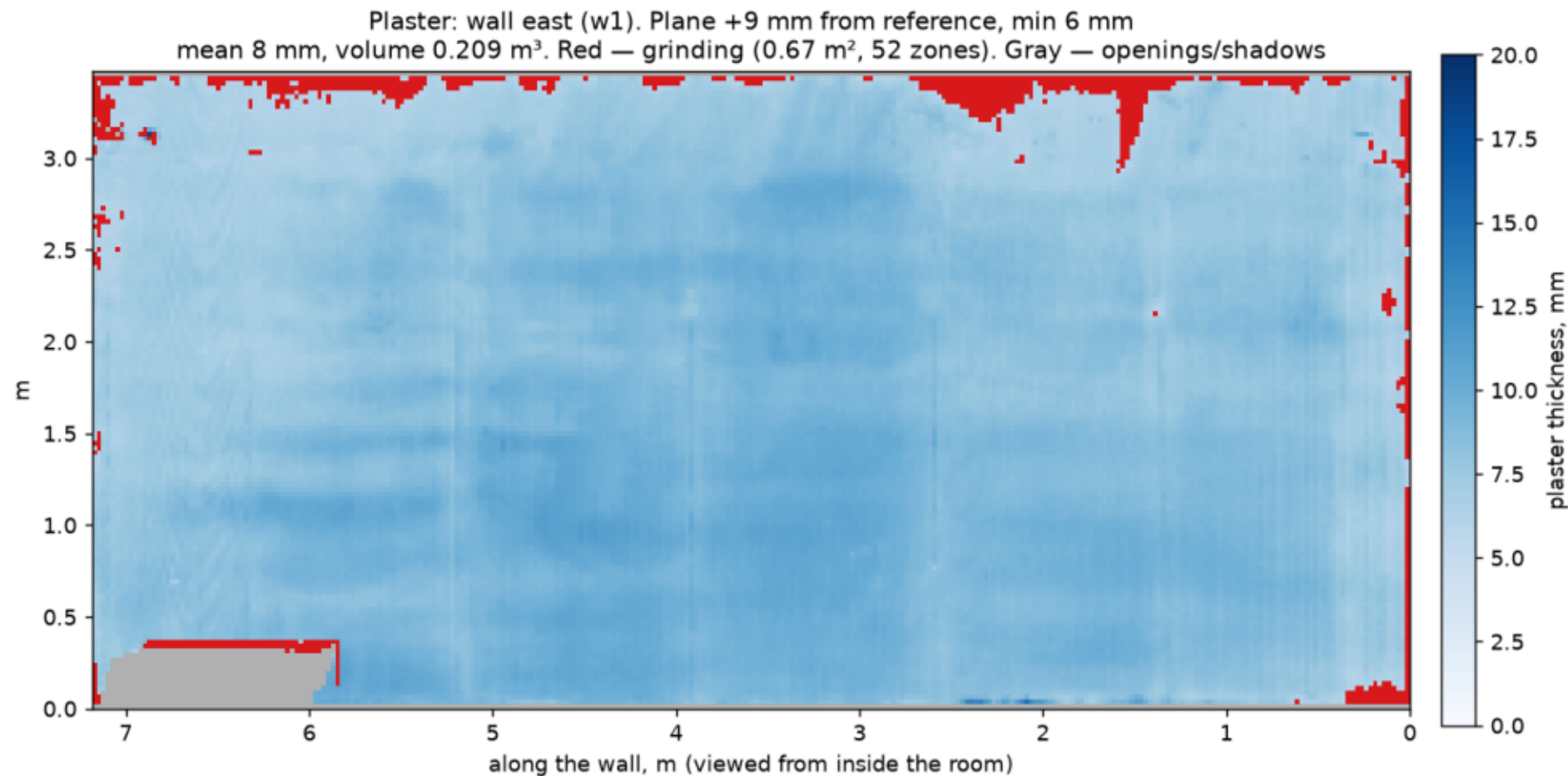
wall north: Site inspection 2026-08-03: heating radiator and pipe runs below the
window.

wall west: Site inspection 2026-08-03: heating radiator and pipe runs below the
window.

Options (volume at different grinding allowances):

wall east : no grinding 1.56 m³ / 2% 0.22 m³ / 5% 0.20 m³
wall south : no grinding 1.07 m³ / 2% 0.35 m³ / 5% 0.23 m³
wall north : no grinding 0.89 m³ / 2% 0.33 m³ / 5% 0.18 m³
wall west : no grinding 1.01 m³ / 2% 0.54 m³ / 5% 0.30 m³

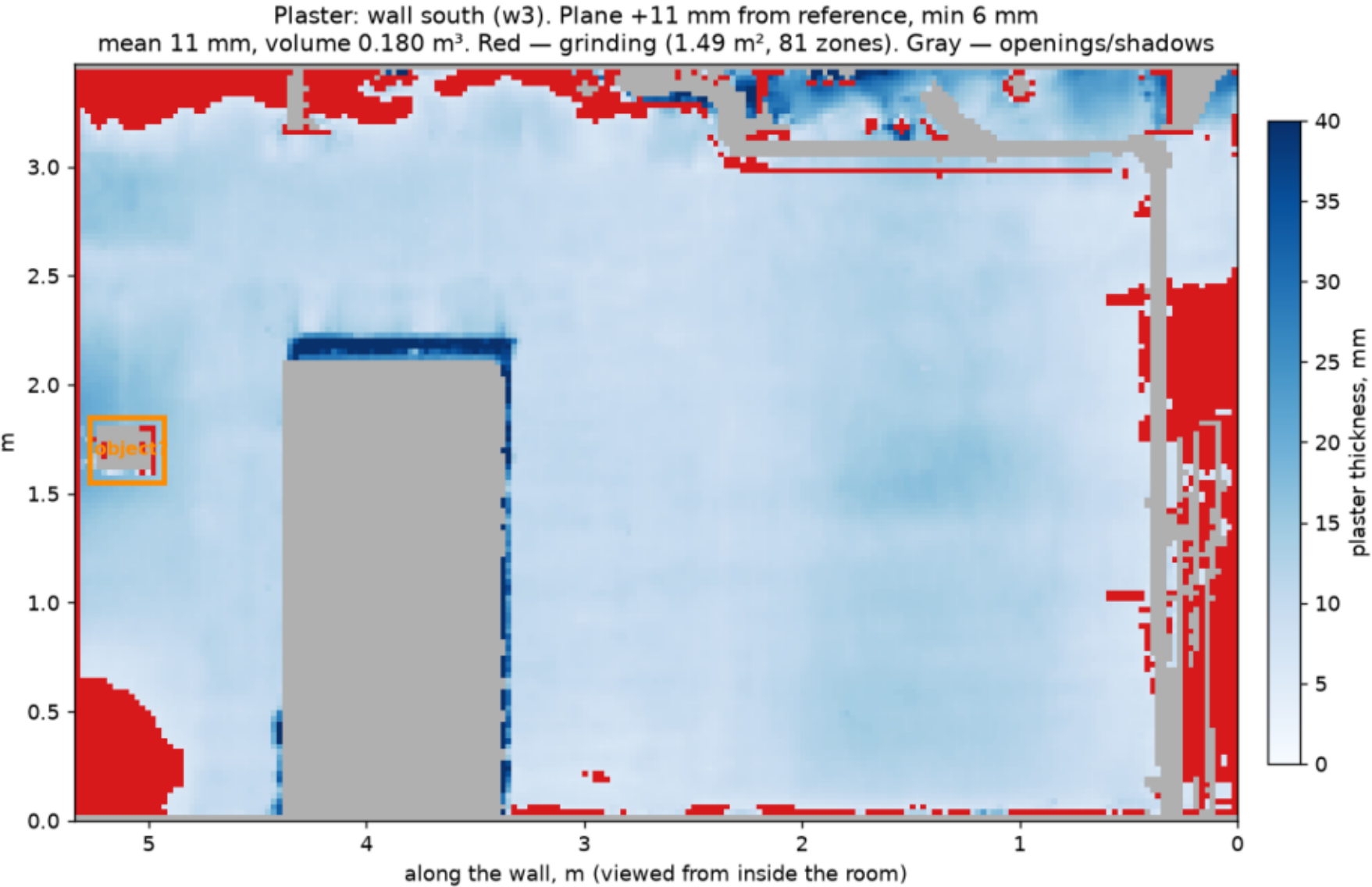
Plaster thickness map, wall 1 (red — grinding zones)



Room 3004-1, Building 84s4 · wall east (w1) · plaster thickness

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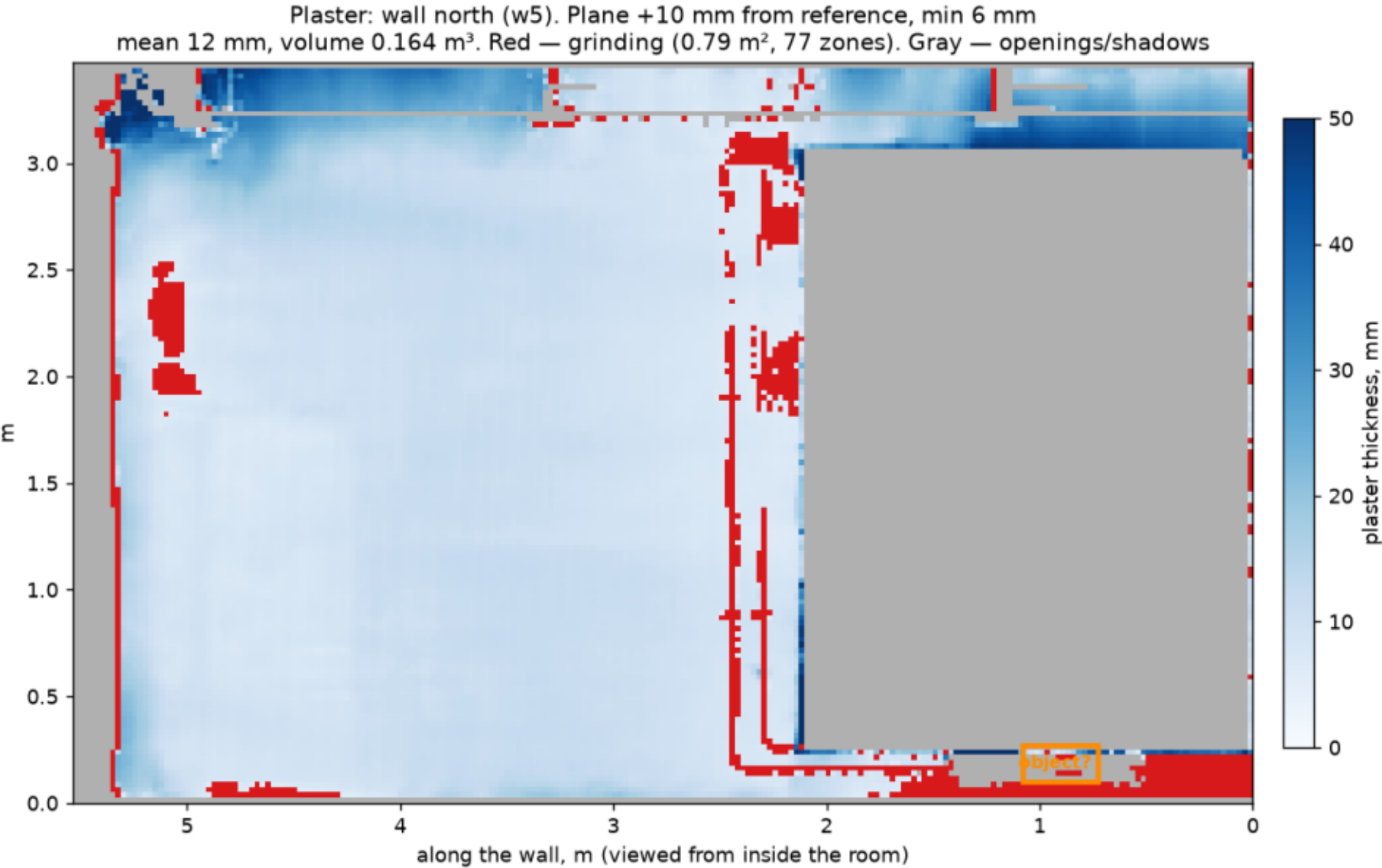
Plaster thickness map, wall 3 (red — grinding zones)



Room 3004-1, Building 84s4 · wall south (w3) · plaster thickness

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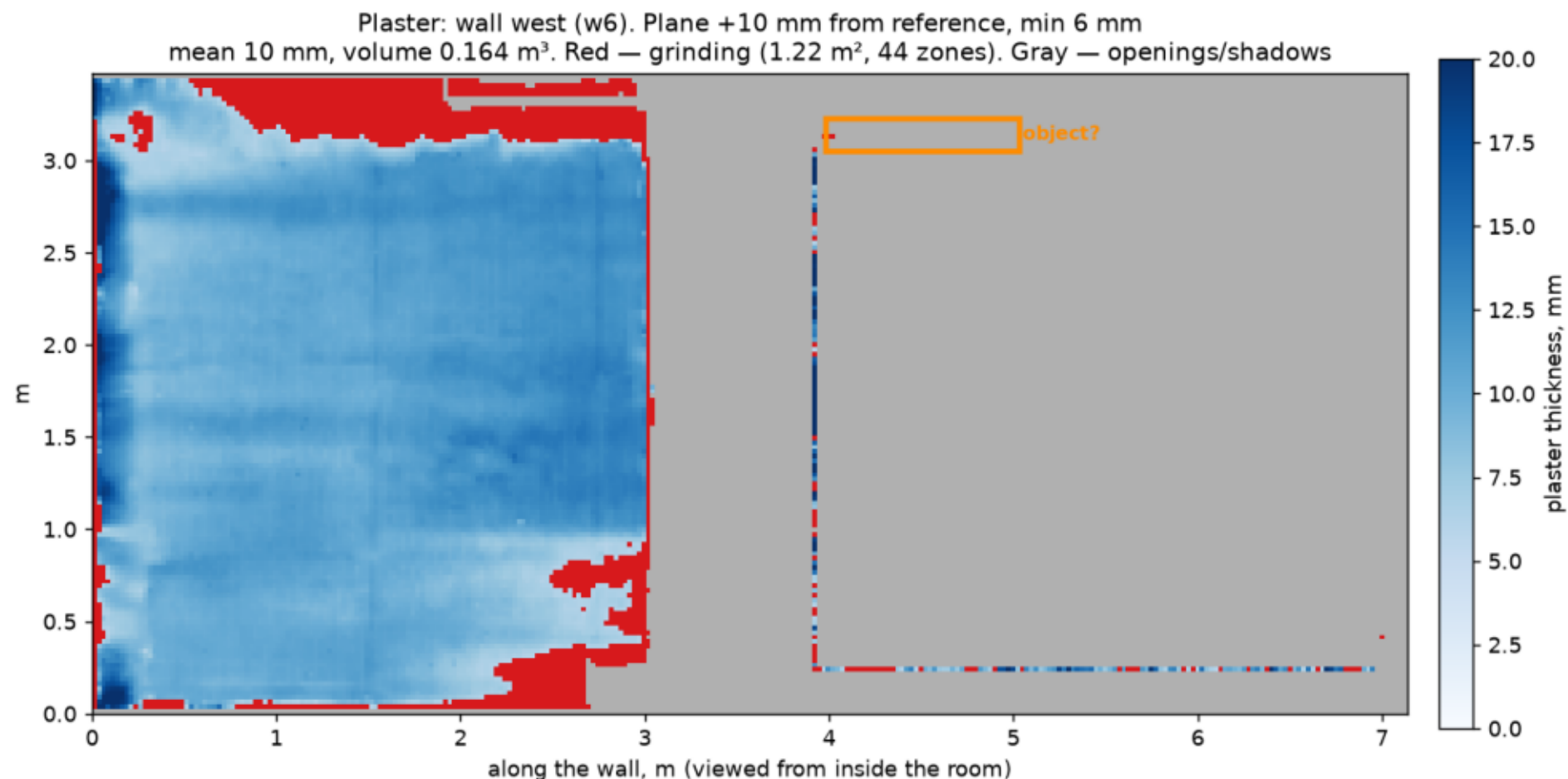
Plaster thickness map, wall 5 (red — grinding zones)



Room 3004-1, Building 84s4 · wall north (w5) · plaster thickness

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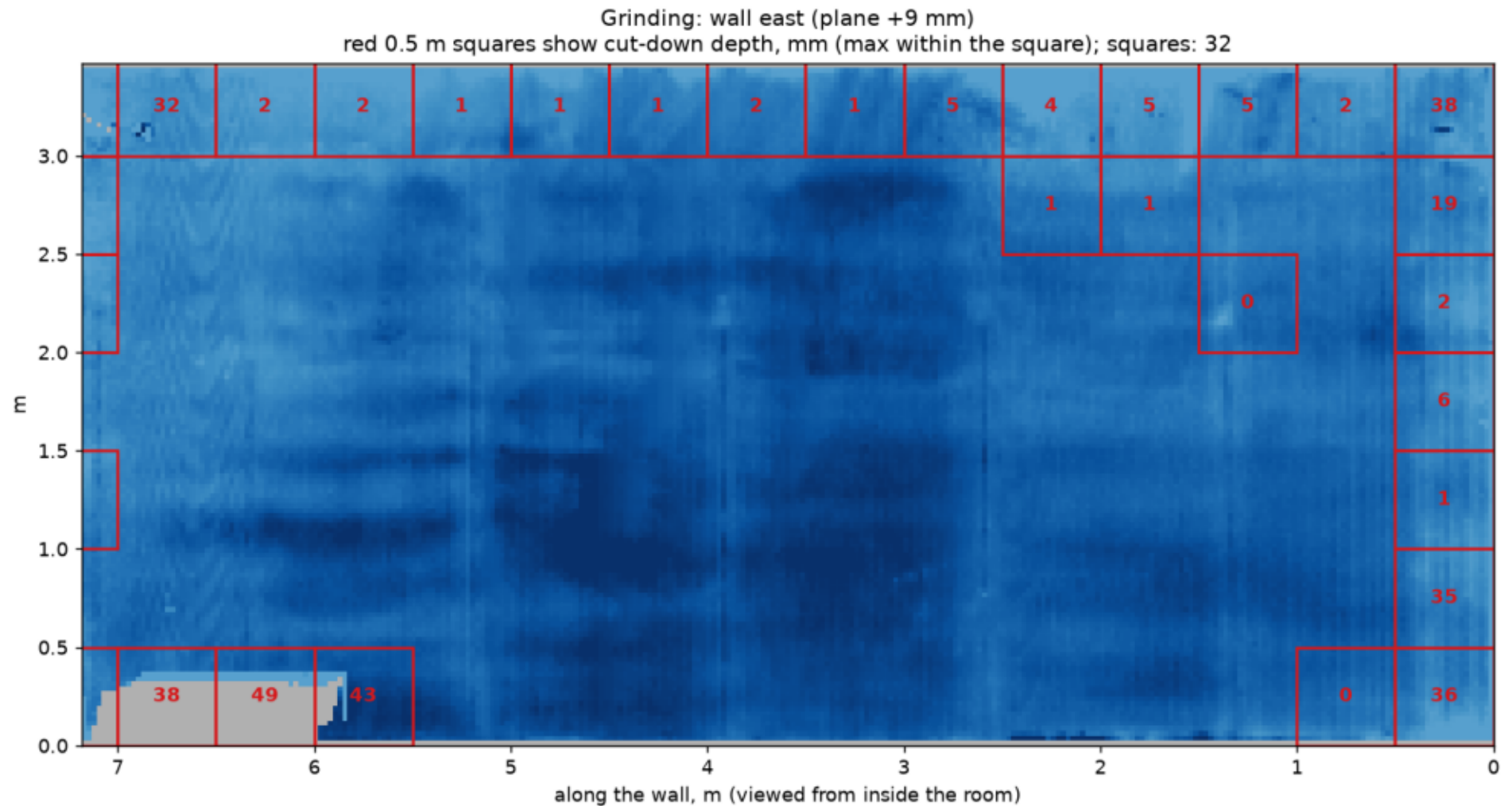
Plaster thickness map, wall 6 (red — grinding zones)



Room 3004-1, Building 84s4 · wall west (w6) · plaster thickness

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Wall 1 grinding: 0.5 m squares with cut-down depth, mm



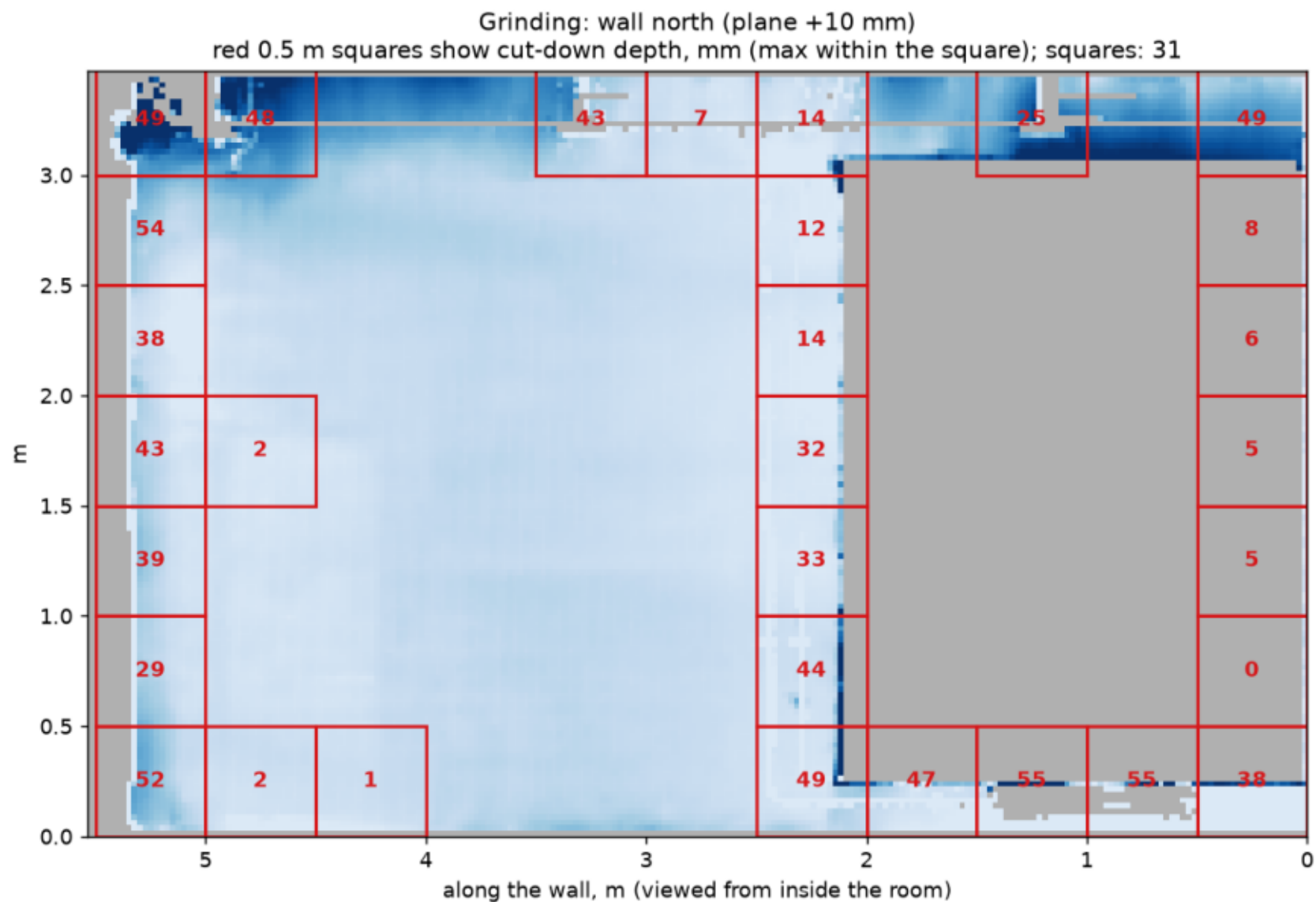
Room 3004-1, Building 84s4 · wall east (w1) · grinding zones

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Grinding: wall south (plane +11 mm)
red 0.5 m squares show cut-down depth, mm (max within the square); squares: 37



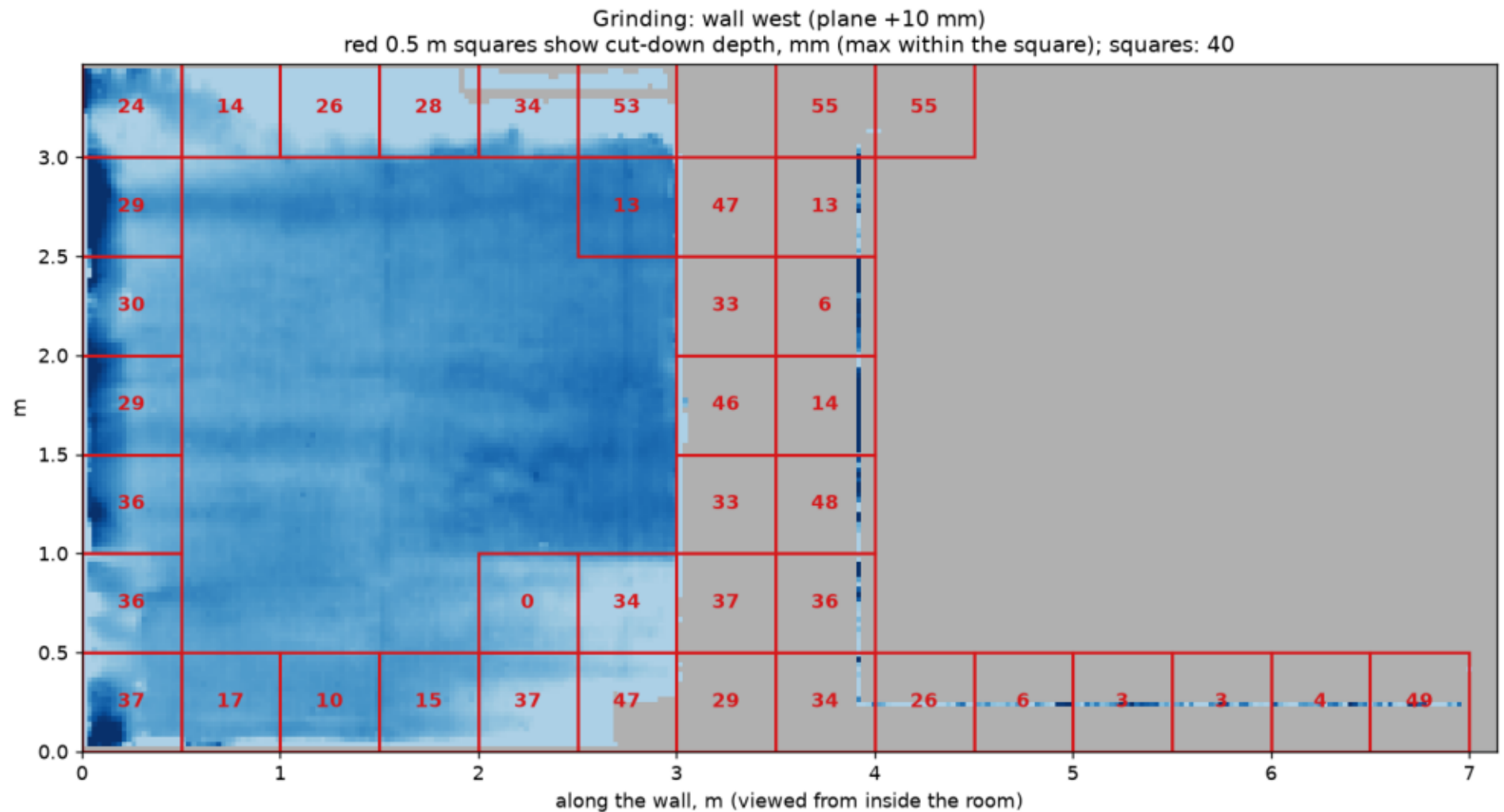
Wall 5 grinding: 0.5 m squares with cut-down depth, mm



Room 3004-1, Building 84s4 · wall north (w5) · grinding zones

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Wall 6 grinding: 0.5 m squares with cut-down depth, mm

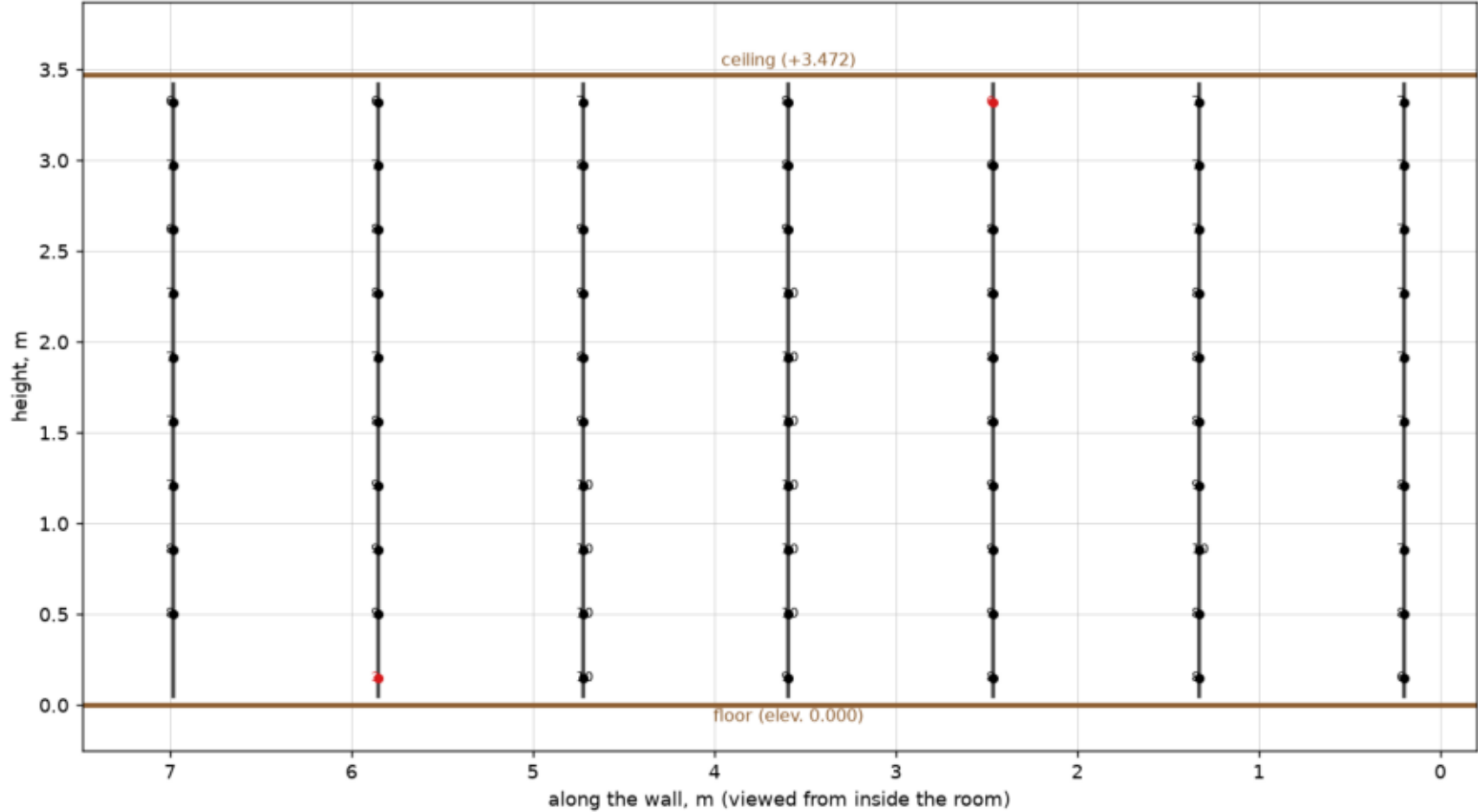


Room 3004-1, Building 84s4 · wall west (w6) · grinding zones

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Plaster beacons (guides), wall 1 (per SP 71.13330 cl. 7.2.10; numbers — mortar bed under the beacon, mm)

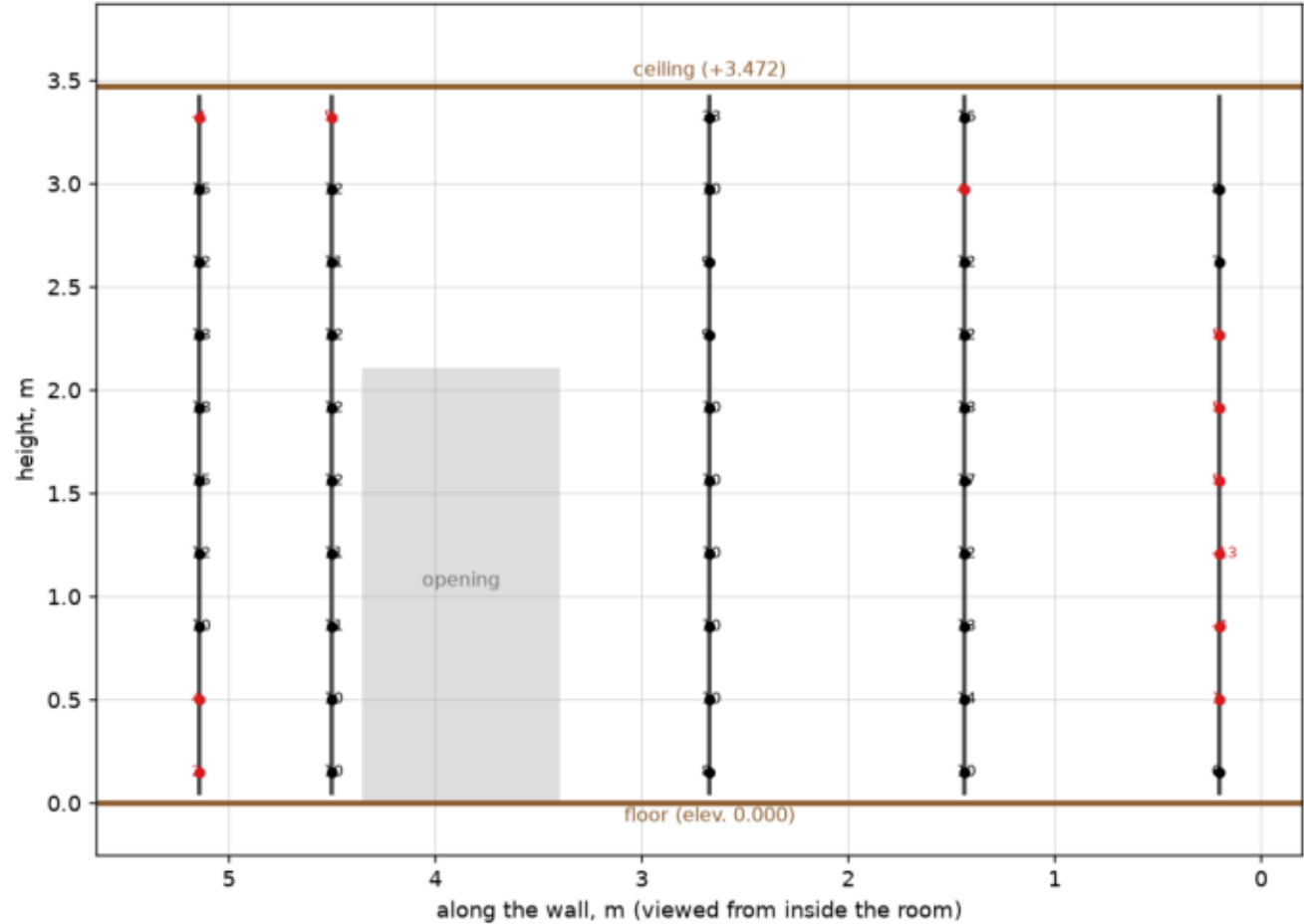
Beacons: wall east (7 pcs, corner offset 0.2 m, spacing ≤ 1.3 m, SP 71.13330 cl. 7.2.10)
numbers at points — beacon-to-wall gap (mortar bed under the beacon), mm; red — less than 6 mm; plaster plane +9 mm from reference



Room 3004-1, Building 84s4 · wall east (w1) · beacons

Plaster beacons (guides), wall 3 (per SP 71.13330 cl. 7.2.10; numbers — mortar bed under the beacon, mm)

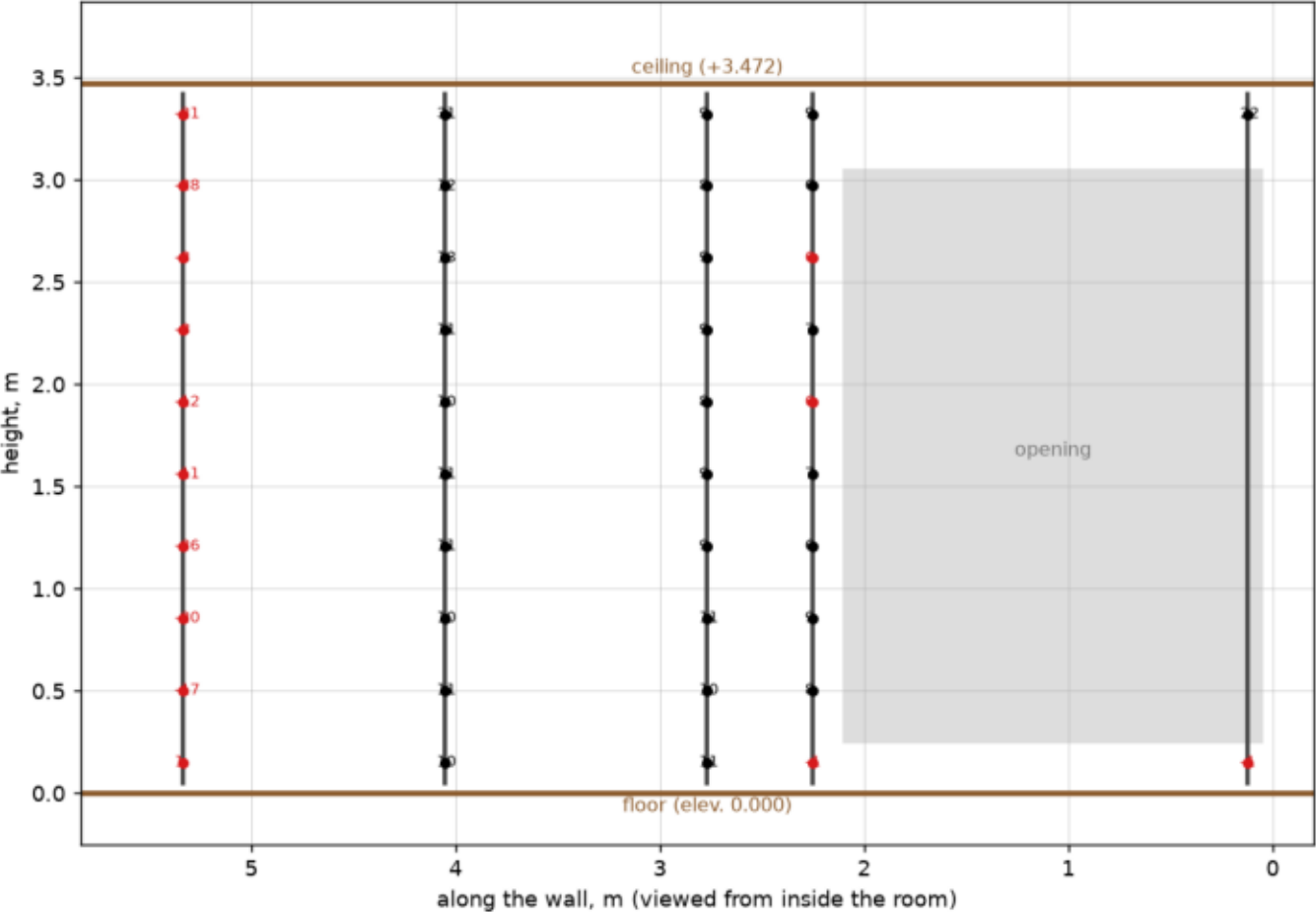
Beacons: wall south (5 pcs, corner offset 0.2 m, spacing ≤ 1.3 m, SP 71.13330 cl. 7.2.10)
numbers at points — beacon-to-wall gap (mortar bed under the beacon), mm; red — less than 6 mm; plaster plane +11 mm from reference



Room 3004-1, Building 84s4 · wall south (w3) · beacons

Plaster beacons (guides), wall 5 (per SP 71.13330 cl. 7.2.10; numbers — mortar bed under the beacon, mm)

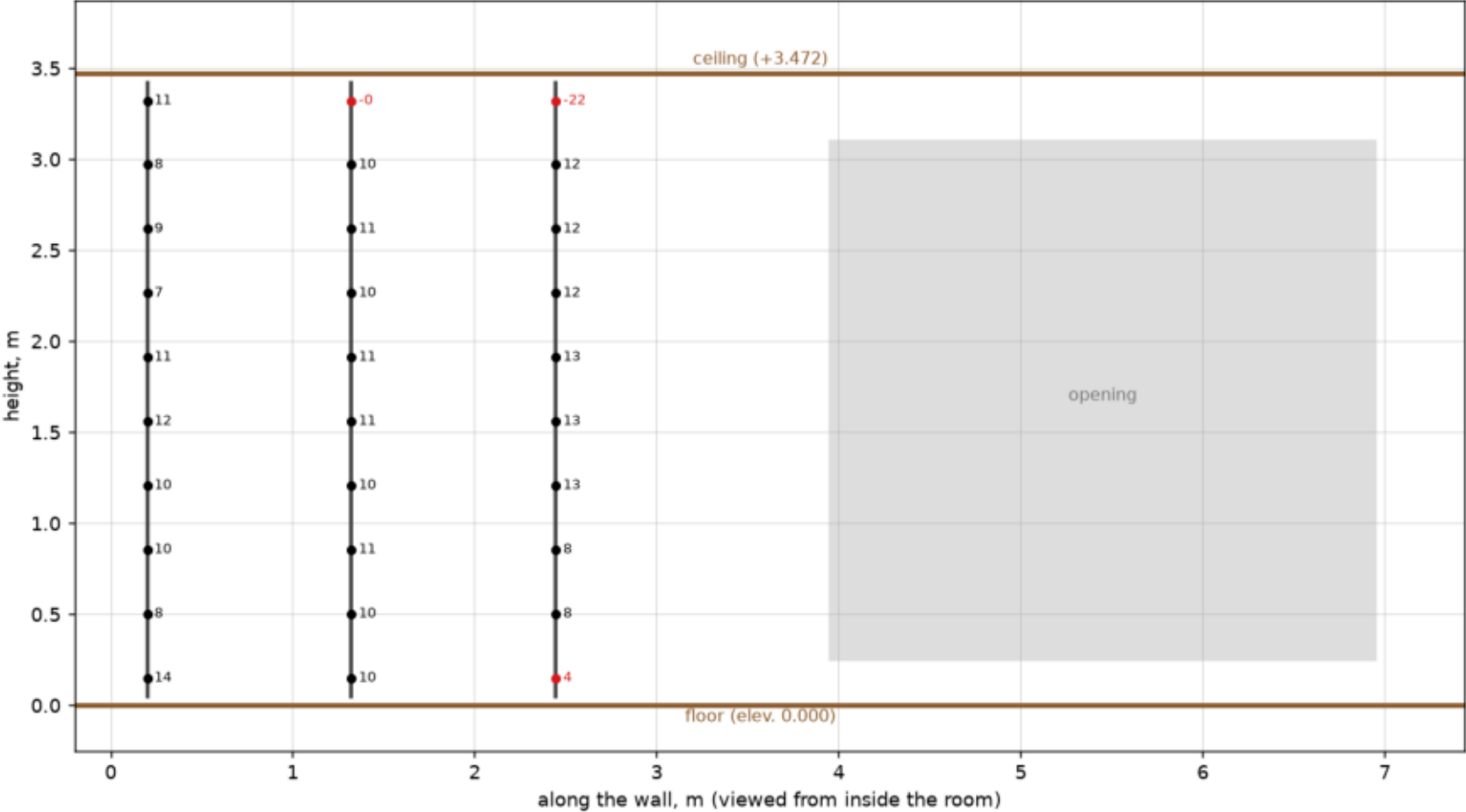
Beacons: wall north (5 pcs, corner offset 0.2 m, spacing ≤ 1.3 m, SP 71.13330 cl. 7.2.10)
numbers at points — beacon-to-wall gap (mortar bed under the beacon), mm; red — less than 6 mm; plaster plane +10 mm from reference



Room 3004-1, Building 84s4 · wall north (w5) · beacons

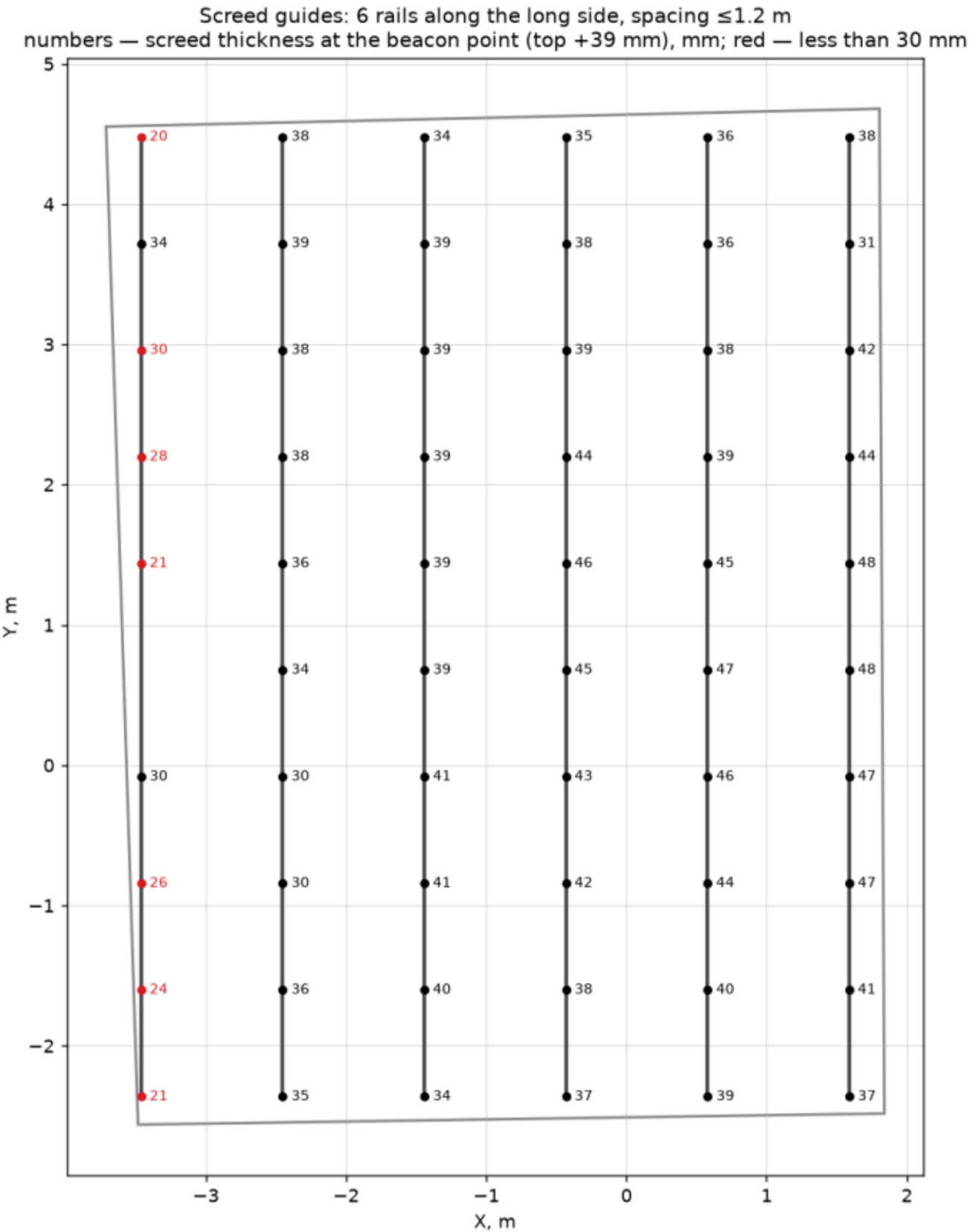
Plaster beacons (guides), wall 6 (per SP 71.13330 cl. 7.2.10; numbers — mortar bed under the beacon, mm)

Beacons: wall west (3 pcs, corner offset 0.2 m, spacing ≤ 1.3 m, SP 71.13330 cl. 7.2.10)
numbers at points — beacon-to-wall gap (mortar bed under the beacon), mm; red — less than 6 mm; plaster plane +10 mm from reference



Room 3004-1, Building 84s4 · wall west (w6) · beacons

Floor screed beacons (numbers — screed thickness at the beacon point, mm)



Room 3004-1, Building 84s4 · floor · beacons

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2-Meter Straightedge Check

2-METER STRAIGHTEDGE CHECK (simulated on the point cloud)

For each surface, the worst straightedge position – the maximum gap – was found. Place a straightedge at the indicated point to verify on site.

wall east:

- 1) gap 3.0 mm (vertical, point 1.51 / 2.75 m)
- 2) gap 3.0 mm (horizontal, point 3.07 / 2.83 m)
- 3) gap 2.9 mm (horizontal, point 4.94 / 1.42 m)
- 4) gap 2.9 mm (horizontal, point 3.47 / 1.92 m)
- 5) gap 2.7 mm (vertical, point 6.22 / 1.09 m)

wall south:

- 1) gap 7.5 mm (horizontal, point 1.27 / 1.72 m)
- 2) gap 5.9 mm (horizontal, point 1.69 / 0.42 m)
- 3) gap 5.4 mm (horizontal, point 1.57 / 2.73 m)
- 4) gap 5.3 mm (horizontal, point 3.40 / 2.33 m)
- 5) gap 3.7 mm (vertical, point 2.82 / 1.04 m)

wall north:

- 1) gap 7.4 mm (horizontal, point 4.72 / 2.83 m)
- 2) gap 6.5 mm (horizontal, point 4.67 / 2.03 m)
- 3) gap 5.2 mm (horizontal, point 3.87 / 1.62 m)
- 4) gap 4.3 mm (horizontal, point 3.57 / 0.72 m)
- 5) gap 3.2 mm (horizontal, point 3.79 / 2.63 m)

wall west:

- 1) gap 5.6 mm (vertical, point 2.42 / 1.50 m)
- 2) gap 4.0 mm (vertical, point 0.51 / 2.75 m)
- 3) gap 4.0 mm (horizontal, point 1.52 / 0.31 m)
- 4) gap 3.5 mm (horizontal, point 1.54 / 2.93 m)
- 5) gap 2.9 mm (vertical, point 0.41 / 0.79 m)

floor:

- 1) gap 19.0 mm (east-west, point -3.27 / -0.01 m)
- 2) gap 16.3 mm (east-west, point -3.12 / 4.50 m)
- 3) gap 15.3 mm (south-north, point 1.66 / 3.30 m)
- 4) gap 14.7 mm (south-north, point -0.04 / -2.21 m)
- 5) gap 13.4 mm (south-north, point -1.64 / 3.45 m)

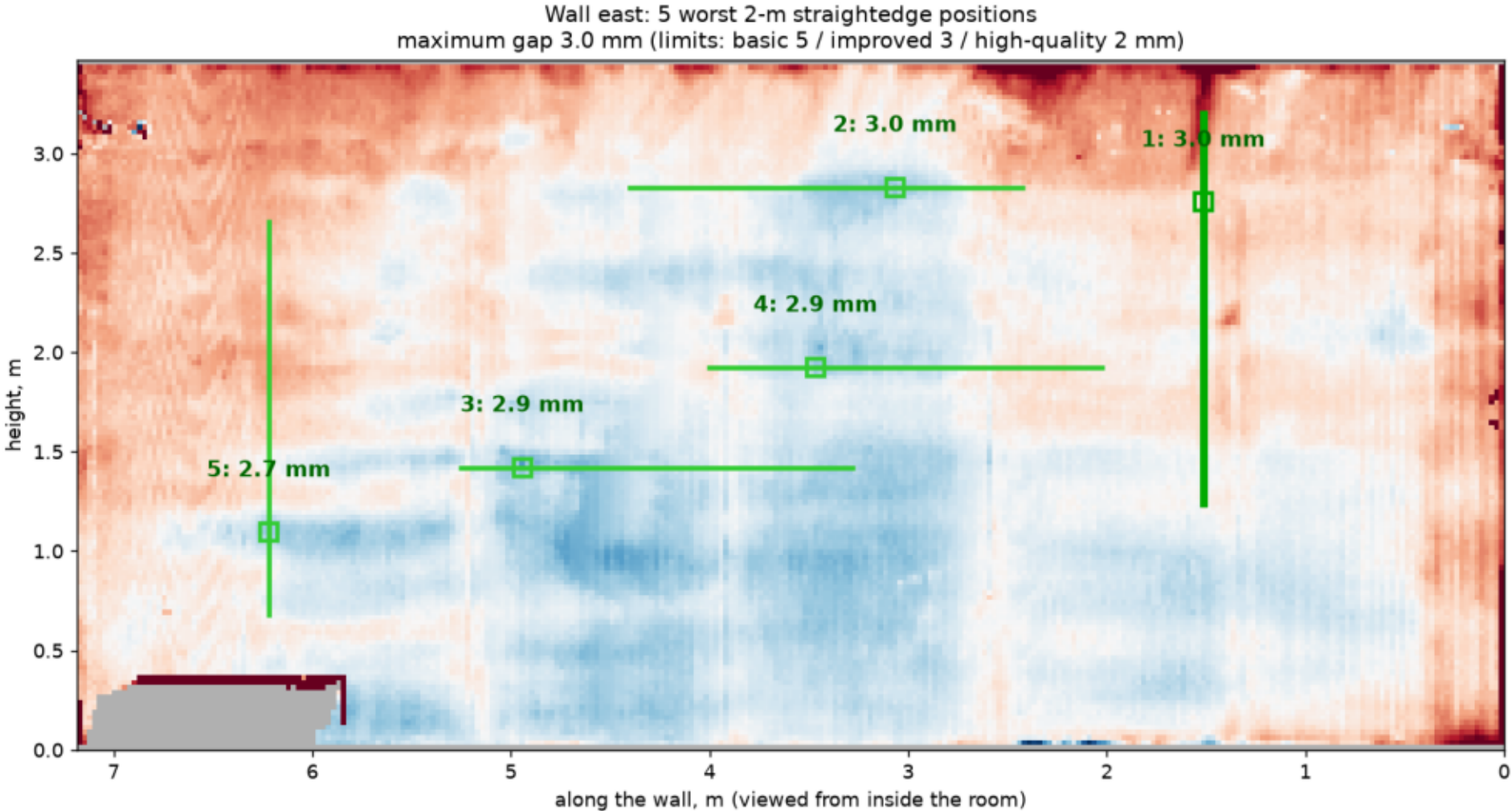
Gap limits (SP 71.13330 / SP 29.13330):

plaster: basic 5 mm, improved 3 mm, high-quality 2 mm

screed: 4 mm under roll flooring, 2 mm under self-leveling toppings

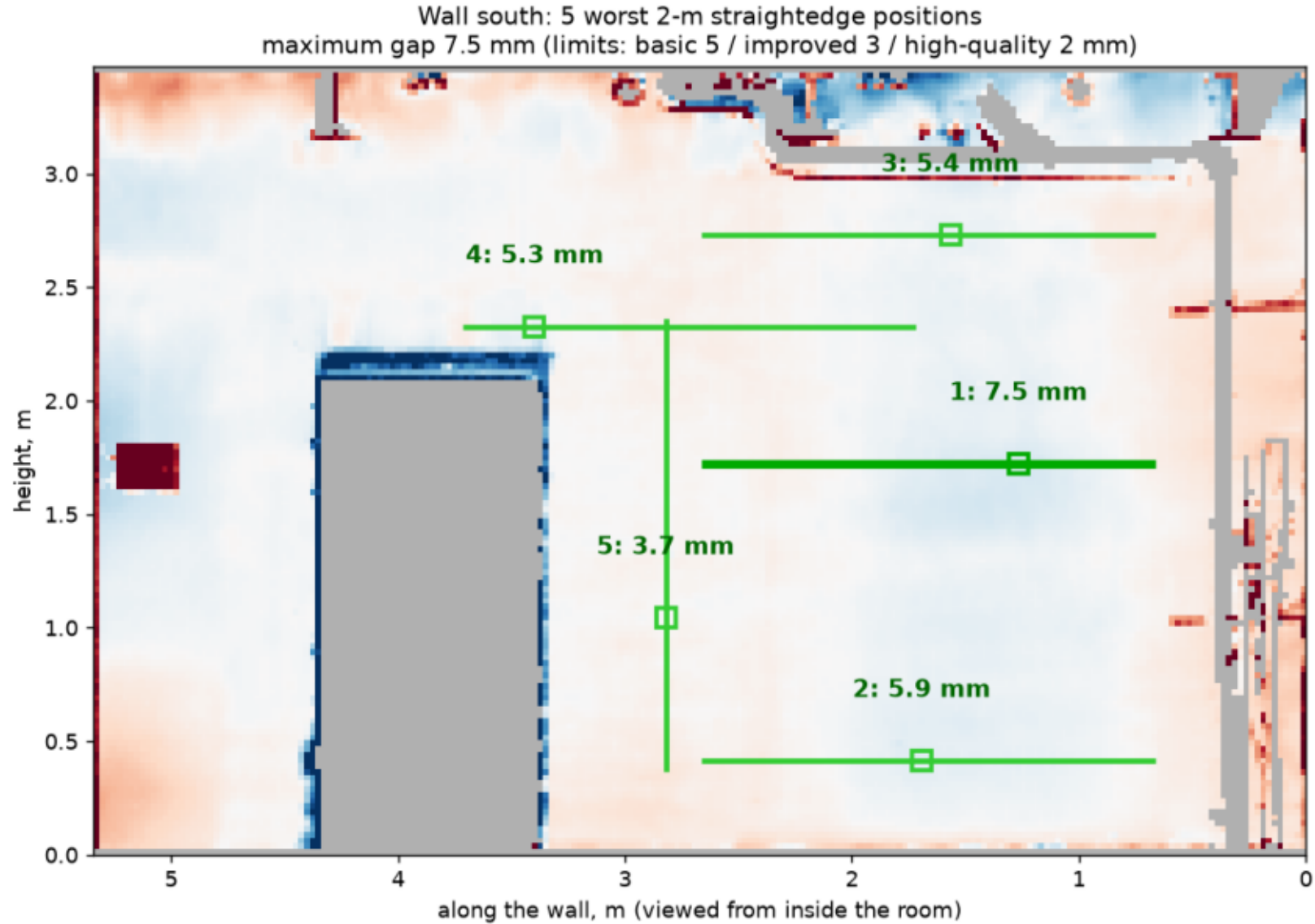
Values are computed on the BARE (pre-finish) surfaces – they justify the plaster and screed thicknesses; this is not a finish acceptance check.

Worst 2-m straightedge position, wall 1 (green line — where to place it)



Room 3004-1, Building 84s4 · wall east (w1) · straightedge check

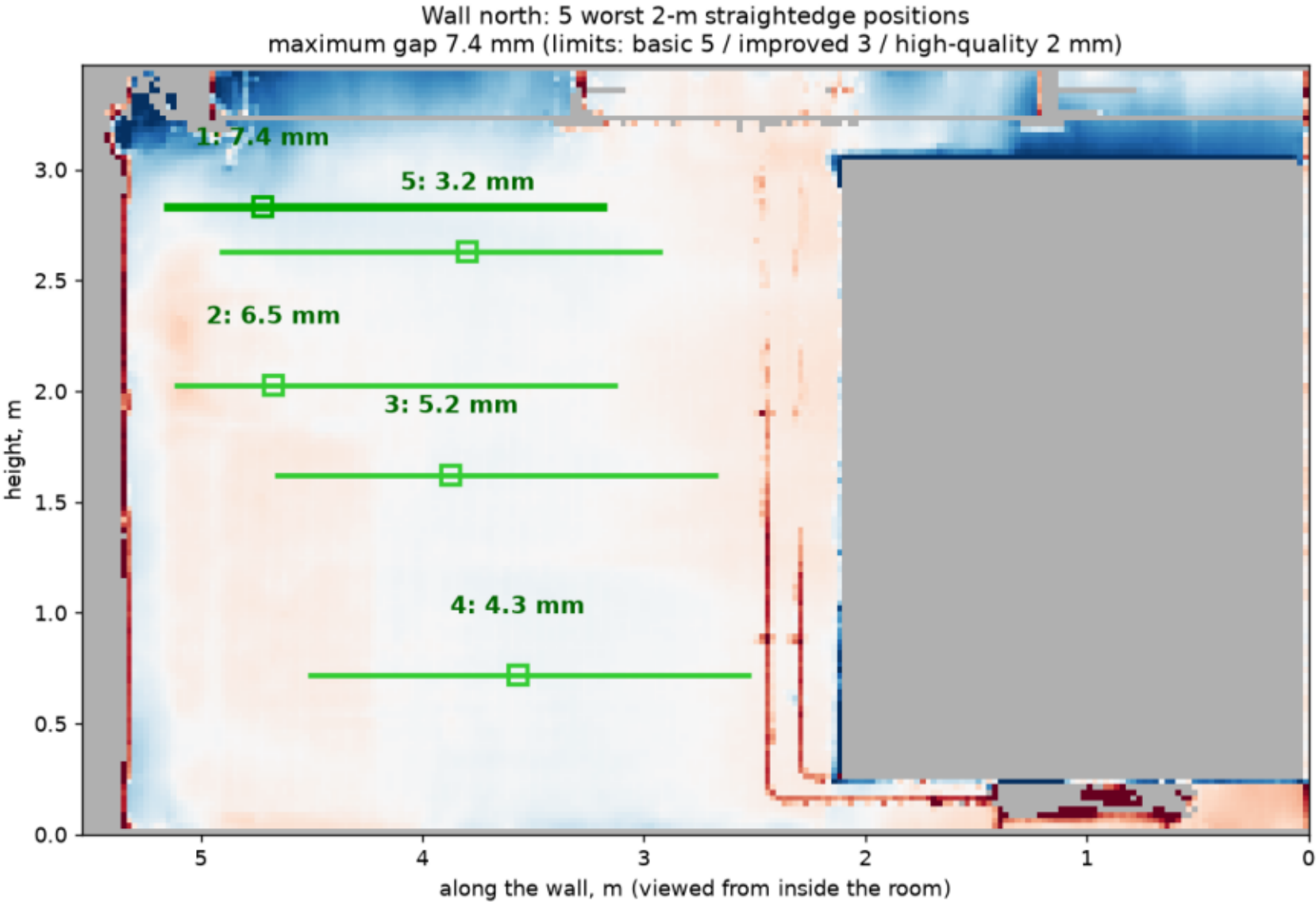
Worst 2-m straightedge position, wall 3 (green line — where to place it)



Room 3004-1, Building 84s4 · wall south (w3) · straightedge check

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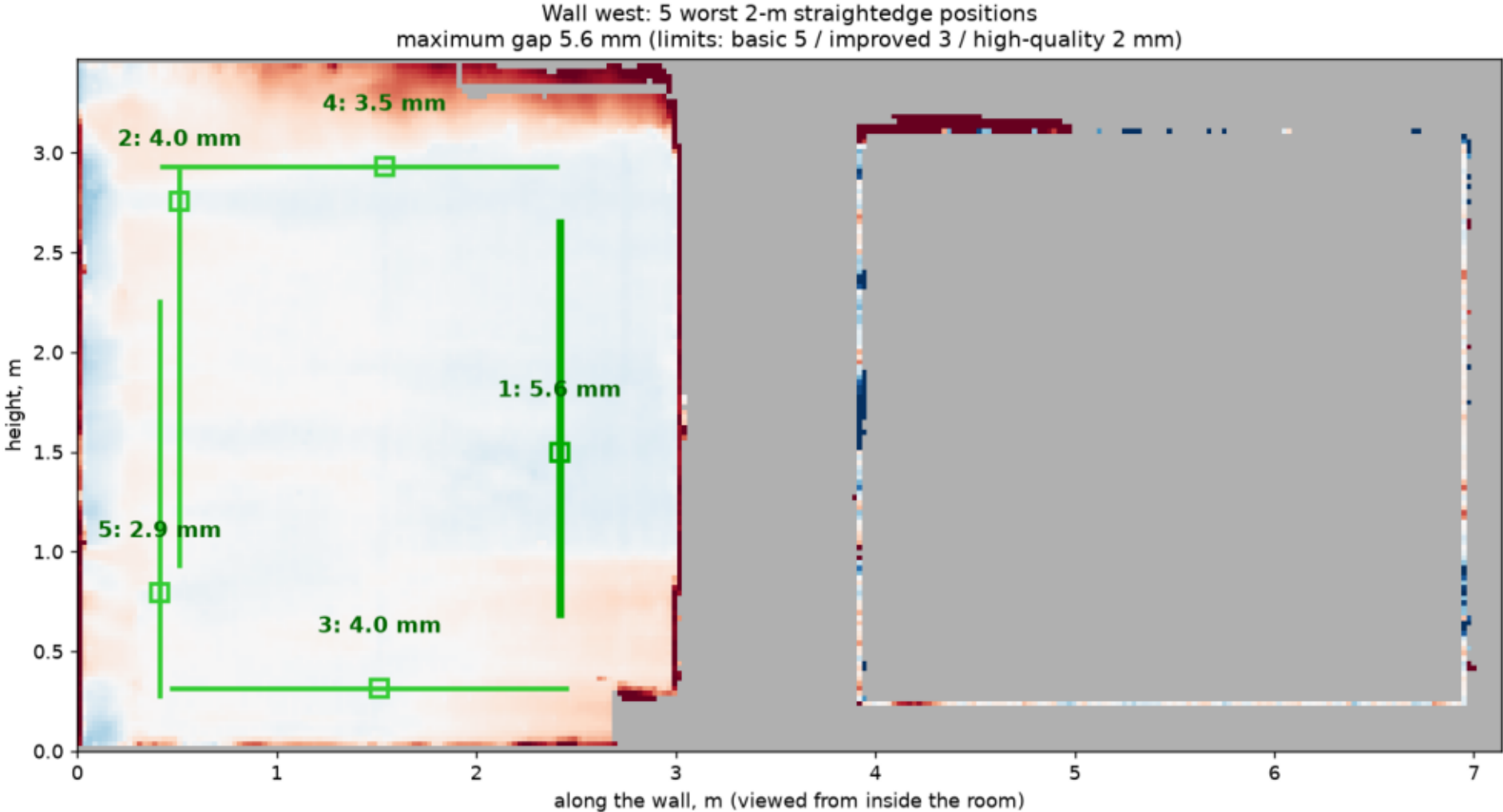
Worst 2-m straightedge position, wall 5 (green line — where to place it)



Room 3004-1, Building 84s4 · wall north (w5) · straightedge check

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Worst 2-m straightedge position, wall 6 (green line — where to place it)



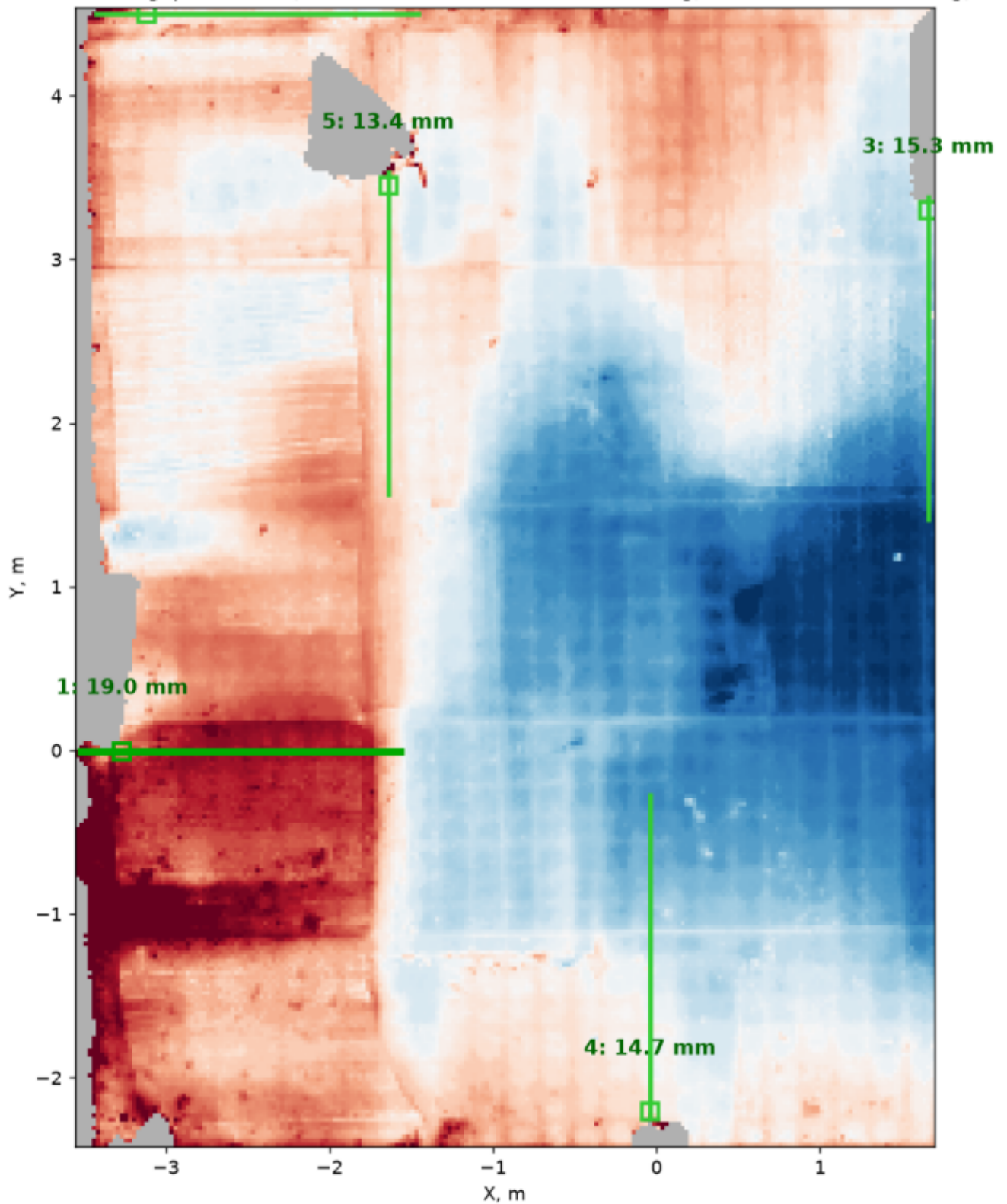
Room 3004-1, Building 84s4 · wall west (w6) · straightedge check

Worst 2-m straightedge position on the floor

2: 16.3 mm

Floor: 5 worst 2-m straightedge positions

maximum gap 19.0 mm (screed limits: 4 mm under roll flooring, 2 mm under self-leveling)



Room 3004-1, Building 84s4 · floor · straightedge · re-form.ai

Bill of Works (mini-estimate)

N	Work item	Unit	Qty	
1	Cut-down / grinding of bumps & buildup	m ²	4.17	(depth up to 55 mm)
2	Priming of walls and reveals	m ²	75.8	
3	Installation of plaster beacons	pcs	20	(69 lin. m)
4	Wall plastering on beacons	m ²	70.1	(volume 0.72 m ³ , avg 10 mm)
5	Plastering of reveals	m ²	5.7	(volume 0.11 m ³)
6	Priming of floor	m ²	38.7	
7	Installation of screed guides	pcs	6	(41 lin. m)
8	Floor screed (top at +39 mm)	m ²	38.7	(volume 1.51 m ³ , avg 39 mm)

MATERIALS (approximate)

Gypsum plaster: 0.83 m³ = ~704 kg = ~23 bags @ 30 kg
Sand-cement mix M300: 1.51 m³ = ~2865 kg = ~57 bags @ 50 kg
Primer: ~14 L (0.12 L/m², 114 m²)
Beacon profile 6 mm: 69 lin. m + screed guide rails 41 lin. m

Refine material consumption per the selected mix brands.

Optimization: Summary

ECONOMIC OPTIMUM OF PLANE POSITIONS

Cost = cutting down high spots (RUB/m² + RUB/(m²·mm))
+ mix (RUB/m³). Prices – costs.json (adjust to your market).

wall east : selected +9 mm (3,413 RUB) / optimum +9 mm (3,284 RUB) / difference 129
wall south : selected +11 mm (3,525 RUB) / optimum +11 mm (3,523 RUB) / difference 2
wall north : selected +10 mm (2,861 RUB) / optimum +10 mm (2,858 RUB) / difference 3
wall west : selected +10 mm (3,239 RUB) / optimum +10 mm (3,234 RUB) / difference 5
screed : selected +39 mm (14,246 RUB) / optimum +38 mm (14,229 RUB) / difference 17

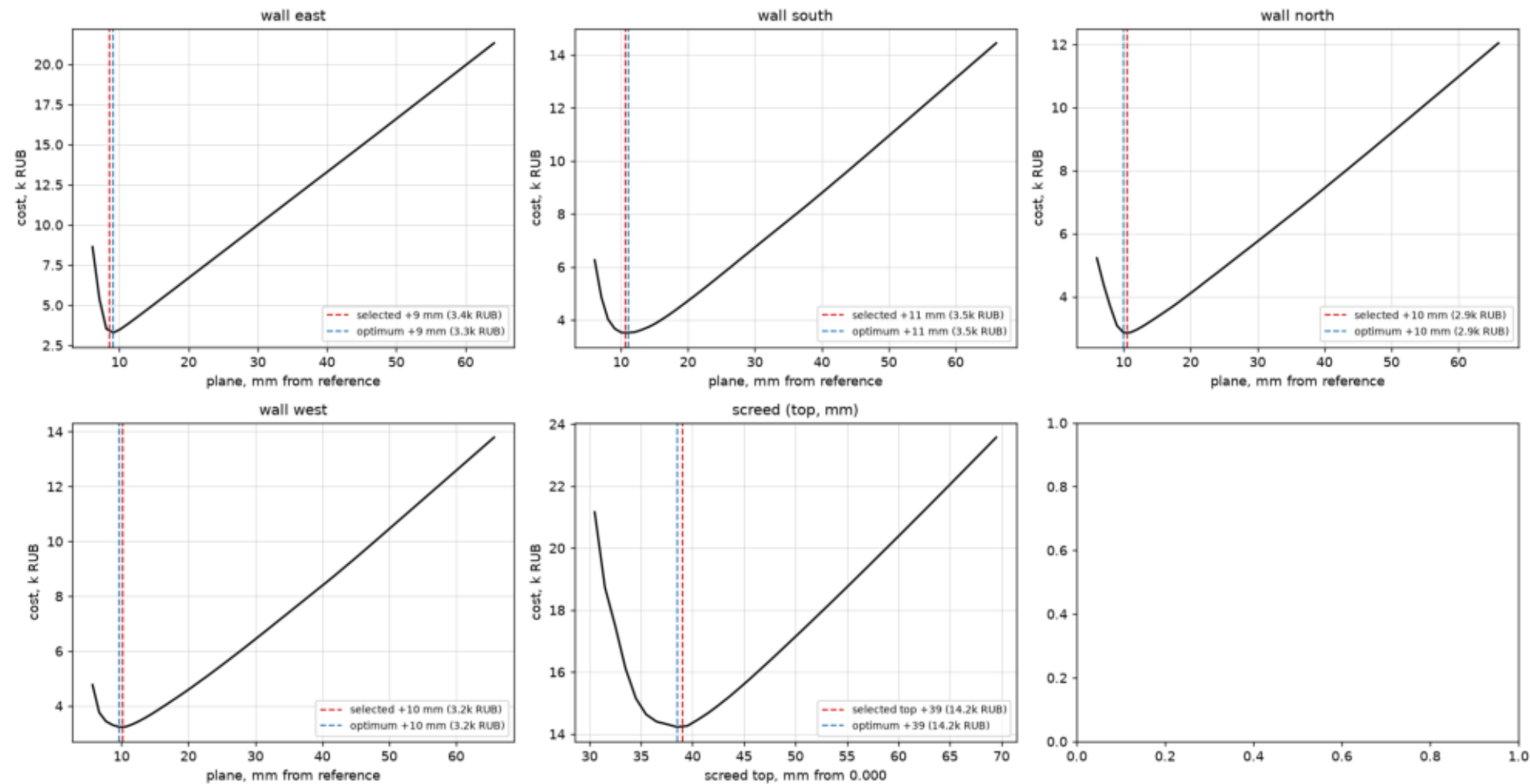
SCREED ALTERNATIVE – SELF-LEVELING UNDERLAYMENT

optimum top: +10 mm (min. layer 5 mm vs 30 mm for sand-cement screed)
mean layer: 10 mm, volume 0.38 m³
cost: 13,200 RUB – CHEAPER than sand-cement screed by 1,028 RUB
(the material costs more, but the thin minimum layer saves volume)

Following pages: millimeter-step tables and cost curves.

Cost curves (red — selected plane, blue — optimum)

Finish cost vs plane position (cutting down high spots + mix; prices from costs.json)



Wall east: cost vs plane position

plane	grinding m ²	depth mm	mix m ³	COST RUB	
6	12.02	1.3	0.160	8,636	
7	5.60	1.3	0.176	5,386	
8	1.50	2.6	0.197	3,525	(selected)
9	0.42	7.4	0.221	3,284	<== MINIMUM (selected)
10	0.20	14.1	0.245	3,496	
11	0.14	18.7	0.270	3,794	
12	0.12	21.5	0.294	4,111	
13	0.10	23.2	0.319	4,433	
14	0.10	23.4	0.344	4,760	
15	0.10	23.0	0.368	5,089	
16	0.10	22.0	0.393	5,419	
17	0.10	21.4	0.418	5,748	
18	0.09	20.5	0.442	6,078	
19	0.09	20.1	0.467	6,406	

Wall south: cost vs plane position

plane	grinding m ²	depth mm	mix m ³	COST RUB	
6	7.59	3.5	0.123	6,262	
7	4.91	4.2	0.133	4,866	
8	3.13	5.4	0.145	4,026	
9	2.23	6.3	0.158	3,674	
10	1.67	7.3	0.173	3,527	(selected)
11	1.35	7.9	0.187	3,523	<== MINIMUM (selected)
12	1.06	8.9	0.202	3,546	
13	0.88	9.7	0.217	3,630	
14	0.71	10.8	0.233	3,732	
15	0.59	12.1	0.248	3,859	
16	0.51	12.9	0.264	4,014	
17	0.44	13.7	0.280	4,181	
18	0.40	14.2	0.296	4,359	
19	0.37	14.3	0.311	4,547	
20	0.34	14.5	0.327	4,736	

Wall north: cost vs plane position

plane	grinding m ²	depth mm	mix m ³	COST RUB	
6	6.00	3.5	0.118	5,223	
7	4.45	3.6	0.126	4,394	
8	3.02	4.0	0.135	3,694	
9	1.65	5.9	0.145	3,082	
10	0.96	8.9	0.157	2,858	<== MINIMUM (selected)
11	0.68	11.4	0.170	2,863	(selected)
12	0.57	12.6	0.182	2,959	
13	0.50	13.3	0.195	3,080	
14	0.45	13.6	0.208	3,215	
15	0.41	13.9	0.221	3,353	
16	0.37	14.3	0.233	3,497	
17	0.33	15.0	0.246	3,640	
18	0.30	15.4	0.259	3,791	
19	0.29	15.2	0.272	3,949	
20	0.28	14.8	0.285	4,111	

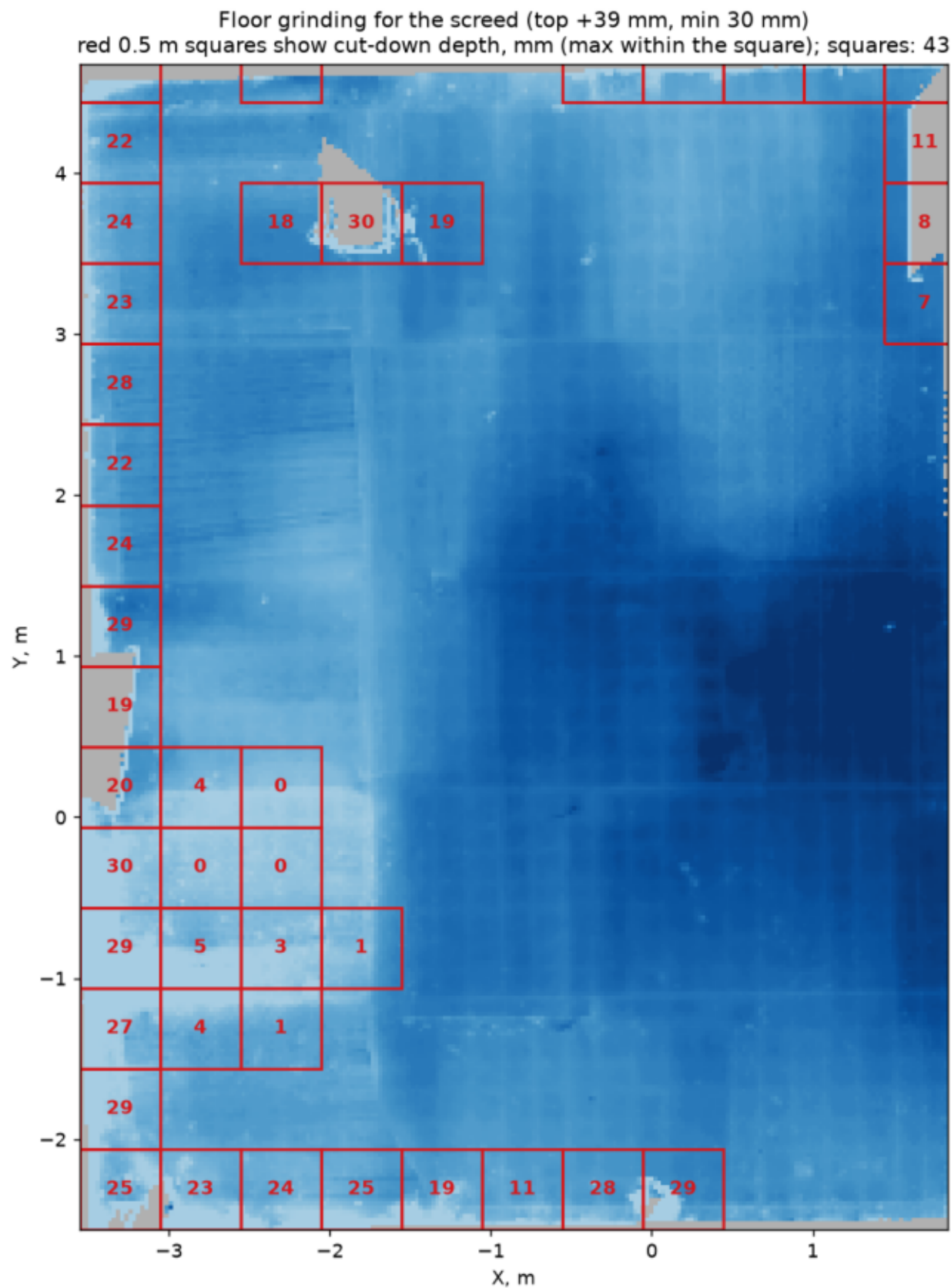
Wall west: cost vs plane position

plane	grinding m ²	depth mm	mix m ³	COST RUB	
6	5.13	4.7	0.110	4,771	
7	3.09	6.6	0.119	3,763	
8	2.28	7.8	0.131	3,442	
9	1.79	8.8	0.144	3,305	
10	1.38	10.2	0.157	3,234	<== MINIMUM (selected)
11	1.10	11.7	0.171	3,244	(selected)
12	0.96	12.4	0.185	3,335	
13	0.85	12.9	0.200	3,450	
14	0.77	13.1	0.214	3,583	
15	0.72	13.1	0.229	3,731	
16	0.67	12.9	0.244	3,887	
17	0.63	12.8	0.259	4,047	
18	0.59	12.6	0.273	4,209	
19	0.55	12.6	0.288	4,371	
20	0.51	12.6	0.303	4,538	

Screed: cost vs top elevation

top	grinding m ²	depth mm	mix m ³	COST RUB	
30	18.73	3.7	1.241	21,161	
32	13.78	3.8	1.263	18,730	
32	11.36	3.5	1.288	17,484	
34	8.26	3.7	1.317	16,115	
34	5.84	4.1	1.349	15,152	
36	4.30	4.3	1.382	14,632	
36	3.35	4.4	1.417	14,402	
38	2.66	4.4	1.453	14,318	
38	1.85	5.2	1.489	14,229	<== MINIMUM (selected)
40	1.26	6.4	1.526	14,263	(selected)
40	1.04	6.7	1.564	14,458	
42	0.85	7.1	1.601	14,675	
42	0.71	7.4	1.639	14,922	
44	0.60	7.8	1.677	15,185	
44	0.52	7.9	1.716	15,467	
46	0.45	7.9	1.754	15,758	
46	0.41	7.8	1.792	16,059	
48	0.37	7.6	1.830	16,364	
48	0.33	7.3	1.869	16,673	

Floor grinding: red 0.5 m squares with cut-down depth, mm



Room 3004-1, Building 84s4 · floor · grinding · re-form.ai

Screed, Reveals & Materials

FLOOR SCREED

Screed top: +39 mm from elevation 0.000
Min. thickness: 30 mm (at the highest point of the floor)
Mean thickness: 39 mm
Area / volume: 38.7 m² / 1.51 m³

REVEALS (bottoms excluded – thresholds and window sills)

wall 3, left jamb : depth 0.30 m, 0.63 m², layer 10 mm [ASSUMED: reveal not captured
wall 3, right jamb: depth 0.30 m, 0.63 m², layer 10 mm [ASSUMED: reveal not captured
wall 3, head : depth 0.30 m, 0.29 m², layer 10 mm [ASSUMED: reveal not captured
wall 5, left jamb : depth 0.32 m, 0.90 m², layer 24 mm
wall 5, right jamb: depth 0.33 m, 0.92 m², layer 24 mm
wall 5, head : depth 0.33 m, 0.67 m², layer 23 mm
wall 6, left jamb : depth 0.21 m, 0.60 m², layer 23 mm
wall 6, right jamb: depth 0.18 m, 0.51 m², layer 22 mm
wall 6, head : depth 0.17 m, 0.50 m², layer 23 mm

TOTAL reveals: 5.7 m², 0.111 m³

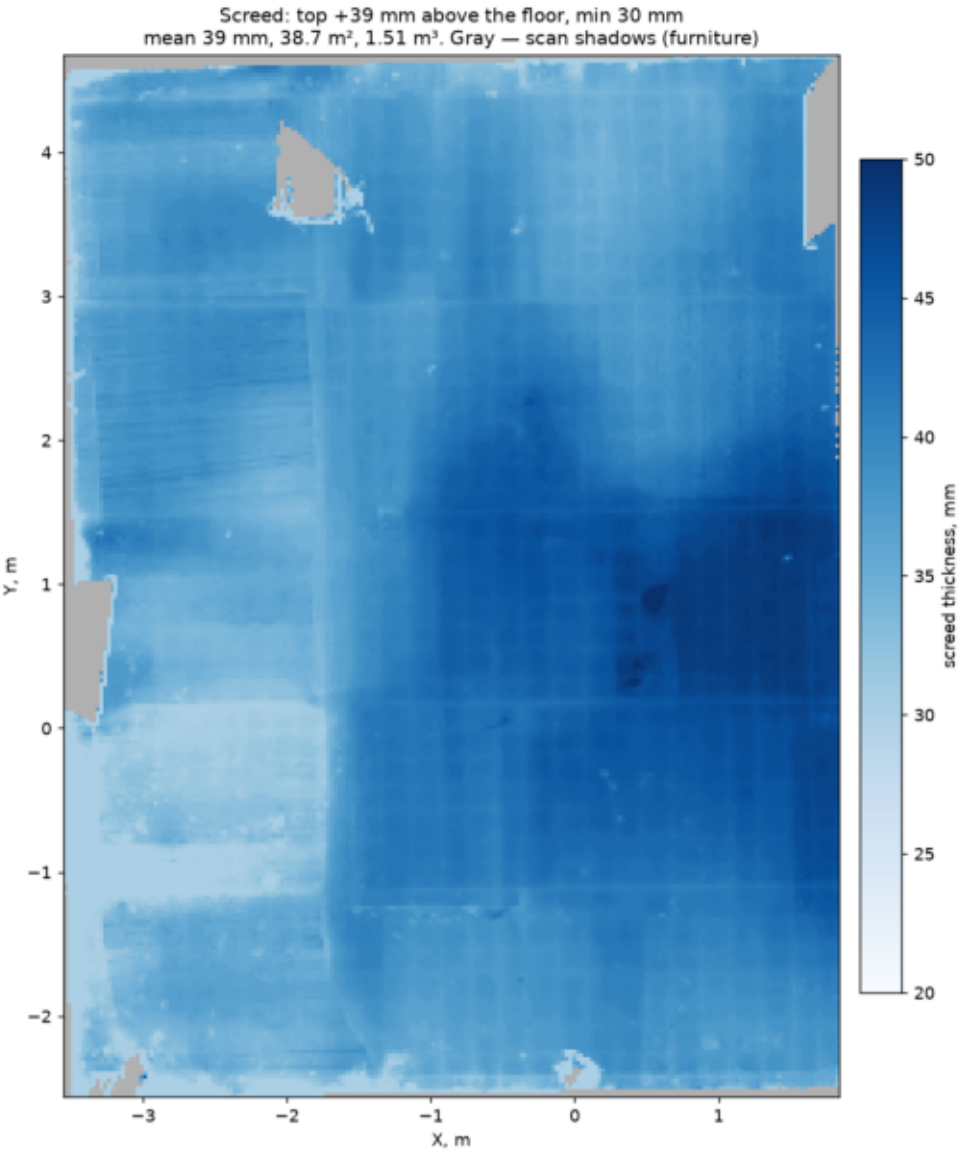
BILL OF MATERIALS (approximate)

Gypsum plaster: 0.83 m³ = ~704 kg (24 bags @ 30 kg)
Sand-cement screed: 1.51 m³ = ~2865 kg of sand-cement mix (58 bags @ 50 kg)
Self-leveling (alt.): 0.38 m³ = ~608 kg (31 bags @ 20 kg) with top at +10 mm

CEILING

Plastering not applicable: profiled steel deck on I-beams; beams project 315-326 mm b
Stretch/suspended ceiling: 38.9 m² ~38.9k RUB turnkey. Elevation options:
a) +2.92 m – below all obstructions (heating pipe runs from +2.95);
b) +3.12 m – at beam soffit, perimeter pipes boxed in (extra work).

Screed thickness map



Room 3004-1, Building 84s4 · floor · plaster thickness **re-form.ai**

Data Coverage & Confidence

DATA COVERAGE (share of area actually captured by the scanner)

Scan shadows (furniture, equipment) are included in the volumes at the surface's mean thickness – an extrapolation, not a measurement.

wall east : 97.1 % MEASURED
wall south : 93.3 % MEASURED
wall north : 90.3 % MEASURED
wall west : 64.8 % LOW COVERAGE
floor screed : 96.8 % MEASURED

REVEALS (by faces):

measured 6, mirrored 0, assumed (field re-measure) 3

overall wall coverage: 87.6 %

Scale: MEASURED ≥ 90 % | PARTIAL 70-90 % | LOW < 70 % – verify low-coverage figures by field measurement before ordering materials.

Appendix: Model Files

IFC models (open in Archicad / Revit):

room.ifc

as-built model (walls, openings, floor, deck)

room_plaster.ifc

outline at the plaster faces

room_finish.ifc

finish model: plaster + reveals + screed

room_compare.ifc

finish model + as-scanned surface meshes

room_exagger10.ifc

as-built + meshes with irregularities exaggerated x10

Drawing: plan.dxf (as-built floor plan, mm)

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Changes Since the Previous Run

Previous run: 04.08.2026

Key figures unchanged.
