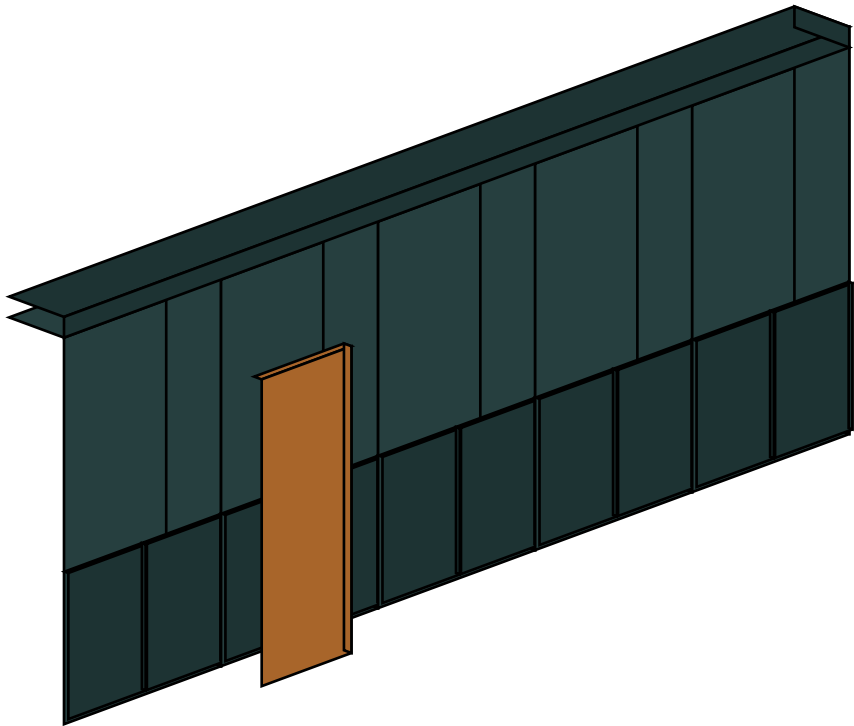


M1: 3D Isometric Overview

DEL-006 | REV A | STEP neutral CAD | MODEL UNITS: mm

Origin: lower-front-left of prototype BILLY core. Axes: X width left-to-right, Y depth front-to-back, Z vertical. STEP coordinates are millimetres.



Legend

- Teal solids** construction/envelope solids and prototype trim
- Dark rail** rolling ladder rail proxy, field verify anchoring
- Wood proxy** rolling ladder body proxy
- No wall/room** actual substrate and services excluded

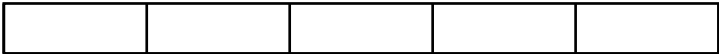
Validation Snapshot

Protocol: AP214; declared length unit: SI_UNIT(.MILLI.,METRE.).
Raw bbox mm: X 0.00..4000.50; Y -375.92..285.75; Z 0.00..2495.55.
Physical bbox: 157.50 in x 26.05 in x 98.25 in.
Metric bbox: 4000.5 mm x 661.7 mm x 2495.6 mm.
Saved solids: 100 B-rep solids; products: 101 including root.
Neutral STEP contains importable B-rep solids; native parametric history is not preserved.

Prototype model only. Field execution requires site measurement, substrate/anchoring verification, and finish test patch.

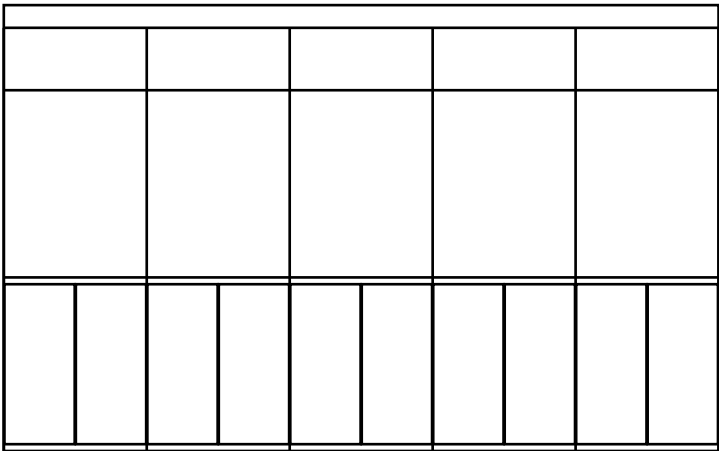
M2: Orthographic Views + Section

Top / Plan View



Depth 11.00" (279 mm) DIM-002; ladder proxy projects forward

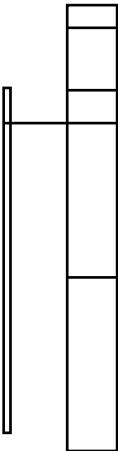
Front View



Height incl. crown/filler: 98.25" (2496 mm)

Overall width 157.50" (4000 mm) DIM-006
Views are coordinated to the STEP model and show facade, depth, crown/filler, shelf zones, lower doors, and ladder proxy projection. Final wall substrate, fasteners, and structural anchorage are excluded.

Side / Cutaway



Shelf zones, depth, rail, and ladder proxy

M3: Component Schedule + Visibility Proof

DEL-006 | REV A | STEP neutral CAD | MODEL UNITS: mm

Component / Material Schedule

ID	Name	Qty	Representation	Material / Finish	Evidence
PROD-001	IKEA BILLY bookcase envelope with shelves	5	manufacturer envelope + simplified construction solids	paper foil/fiberboard proxy	sourced dimensions
PROD-002	IKEA BILLY height extension envelope	5	manufacturer envelope + simplified construction solids	paper foil proxy	sourced dimensions
PROD-003	IKEA OXBERG lower door	10	manufacturer envelope solid	paper foil/fiberboard proxy	sourced dimensions
PROD-004	Amerock Davenport knob	10	cylindrical product envelope	champagne-bronze proxy	sourced dimensions/simplified
CMP-001	custom face/crown/shelf-front trim	1	prototype construction solids	painted millwork	prototype assumption
CMP-002	rolling ladder/rail	1	prototype proxy with exact cylinder rail	wood/metal proxy	prototype assumption

M4: Visibility Proof Matrix

PDF Visibility Proof Matrix

Class	Visible In	Review Basis
BILLY core + shelves	M1, M2 front/section	five bays visible as repeated solids
Height extensions	M1, M2 front	upper zone above core bookcase height
OXBERG doors	M1, M2 front	ten lower door solids
Knobs	STEP audit + schedule	small hardware envelope counted in STEP analytic audit
Trim/crown	M1, M2	front trim and crown/filler zone
Ladder/rail proxy	M1, M2 plan/section	forward projection and rail/rung proxy

Saved STEP Entity Inventory

Entity	Count
PRODUCT	101
MANIFOLD_SOLID_BREP	100
CLOSED_SHELL	100
ADVANCED_FACE	540
CIRCLE	80
CYLINDRICAL_SURFACE	20
POLYLINE	0
LINE	2980

Bounding Box / Unit Check

Declared length unit: SI_UNIT(MILLI.,METRE.); scale to millimetres: 1.0.
Raw coordinate bbox: X 0.00..4000.50, Y -375.92..285.75, Z 0.00..2495.55.
Physical bbox: 157.50 in x 26.05 in x 98.25 in.
Metric bbox: 4000.5 mm x 661.7 mm x 2495.6 mm.
X and Z match approved library-wall envelope plus prototype crown/filler. Y includes the forward ladder proxy projection; bookcase depth remains DIM-002.

Analytic Geometry Register / Saved STEP Audit

AG ID	Feature	Required physical value	Saved STEP entity	Found	Result
AG-001	Knob cylinders	Dia 1.25" (32 mm)	CYLINDRICAL_SURFACE / CIRCLE	10	PASS
AG-002	Rolling ladder rail	Dia 1.25" (32 mm)	CYLINDRICAL_SURFACE / CIRCLE	1	PASS
AG-003	Ladder rungs	Dia 1.10" (28 mm)	CYLINDRICAL_SURFACE / CIRCLE	7	PASS
AG-004	Ladder wheel proxies	Dia 3.60" (91 mm)	CYLINDRICAL_SURFACE / CIRCLE	2	PASS

Assumptions / Proxies / Field Verify

- BILLY/OXBERG represented by verified outer envelopes and simplified construction solids.
- Ladder and crown/filler are prototype proxies; final mounting and site fit remain field verified.
- No room, wall, wiring, structural substrate, fasteners, or exact manufacturer-native geometry is claimed.
- Finish is represented as a material class only; adhesion/durability requires test patch and cure time.
- Common STEP-capable apps include Fusion, SolidWorks, FreeCAD, Rhino, Onshape, and Inventor.

Validation result: PASS for importable B-rep solids, STEP unit consistency, and required analytic cylinders. Field execution remains unverified.