

High-Stakes Program Rescue

60 Days Until Launch

ZERO CapEx

\$600K Margin Added (on \$6M Program)

Sampling International was manufacturing a \$6M sample book program on the critical path for Hunter Douglas's 2016 Duette rollout. When a sequestered, client-developed window-cling accessory failed validation 60 days pre-launch, I was tasked with engineering a drop-in solution that fit the locked sample-book geometry and shipped with the books, without impacting launch readiness.

The Context: Strategic Isolation

- **24-Month Parallel Workstream:** Accessory development sequestered from the sample book program.
- **Blind Integration:** Sample book team instructed to “reserve space” for an unvalidated client accessory.
- **Late-Stage Failure:** Client-developed accessory failed production validation 60 days pre-launch.
- **Limited Visibility:** Only a single static rendering was available: no native CAD or specs.

The "Box": Hard System Constraints

- **Immutable Architecture:** Sample book geometry finalized and in mid-production.
- **Fixed Inventory:** 24,000 books already committed; 60+ magnetized swatch decks per book already in production.
- **Zero-CapEx Mandate:** No budget or timeline for new tooling, molds, or machinery.
- **Process Restriction:** Constrained to existing in-house manufacturing processes.
- **Immovable Launch:** Nationwide launch date immovable and imminent.

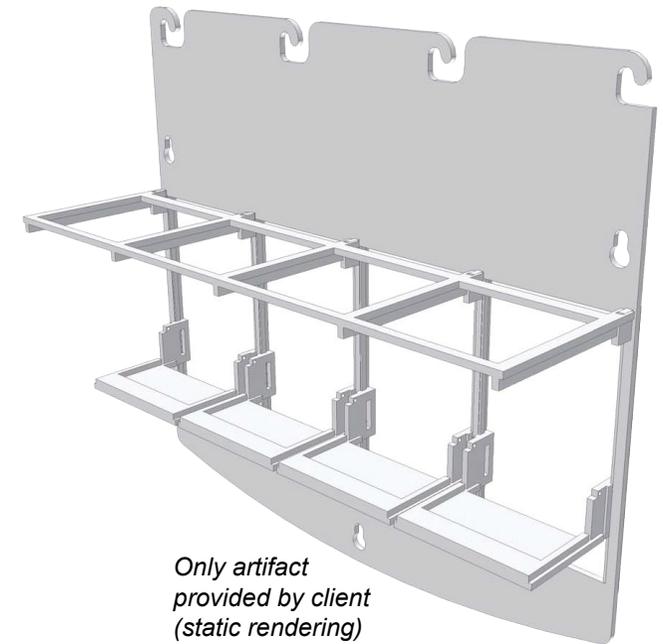
Could a drop-in window-cling solution be engineered, validated, and scaled inside a locked sample-book ecosystem, without delaying launch?

Autopsy of the Failed Architecture

The failure wasn't time-to-design, it was time-to-discover: the concept failed at validation 60 days pre-launch in a locked launch system.

Analysis of the client-developed design revealed structural risks that made it incompatible with the program constraints:

- **Tolerance Dependency:** Multi-part sliding and hinge interfaces demanded tight molded tolerances, making assembly fit unreliable and production yield highly volatile at scale.
- **Cost-Complexity Coupling:** Injection-molded architecture was disproportionately complex and expensive for a simple sampling accessory.
- **Mechanical Exposure:** High part count increased cumulative mechanical failure risk under field handling conditions.
- **Operational Burden:** Multi-step deployment added avoidable user friction.

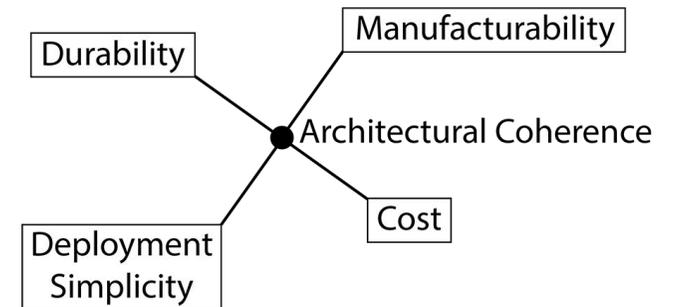


Root Cause: Architectural Misalignment

The architecture prioritized mechanical complexity over systemic balance.

At scale, four forces had to remain in equilibrium.

This design logic was misaligned with the program's real-world constraints.

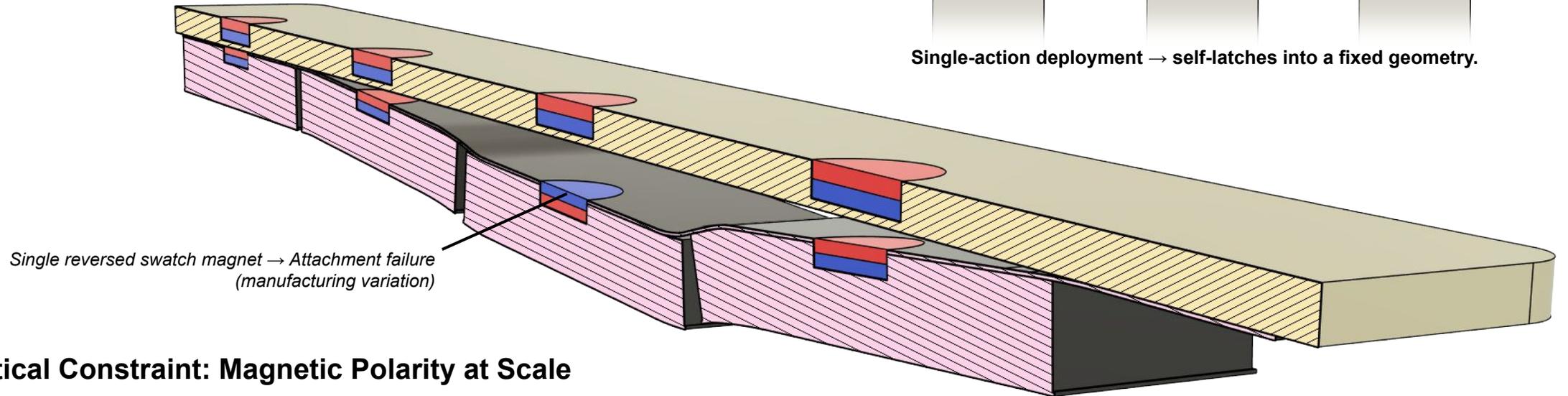
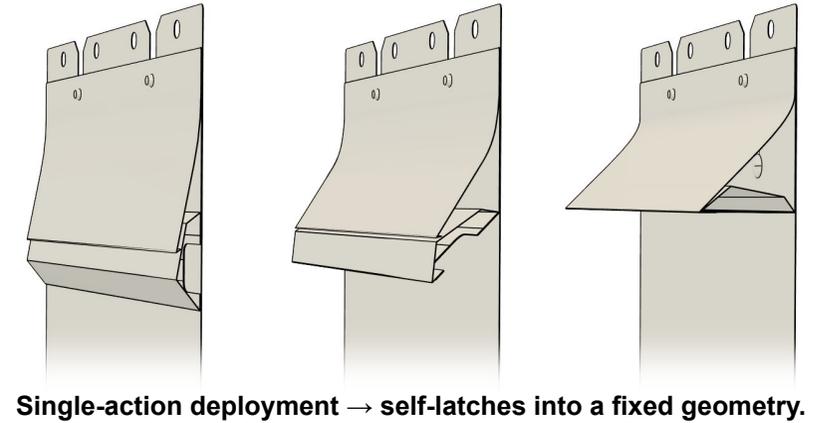


Balance failure — not mechanism failure — caused system collapse.

What I Reframed

Strategic Design Direction

- Aligned materials with existing sample book polysheet ecosystem.
- Prioritized structural geometry over mechanical complexity.
- Leveraged inherent material spring tension.
- Minimized deployment steps.

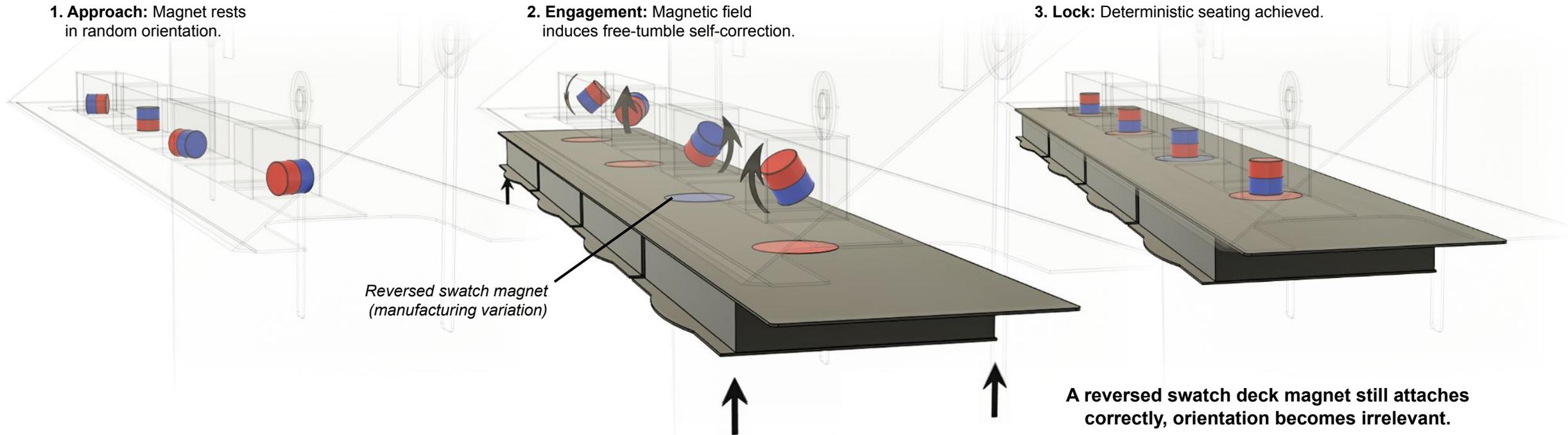


Critical Constraint: Magnetic Polarity at Scale

- Magnetic attachment was the simplest user interaction.
- However, swatch-deck magnet polarity wasn't deterministic across millions of embedded magnets.
- A single reversed magnet is enough to cause attachment failure in the field.

Therefore, the solution had to be polarity-agnostic.

Passive Logic: Correct Attachment Regardless of Polarity



The Breakthrough: Passive Logic

- Engineered a polarity-agnostic, free-tumbling magnet cavity system.
- Enclosed magnets in passive cavities that self-orient on engagement, ensuring reliable attachment regardless of swatch-deck polarity.
- Replaced a multi-part precision mechanism with a passive, self-correcting interaction.

Execution Under Constraint

7 Days
Functional Prototype

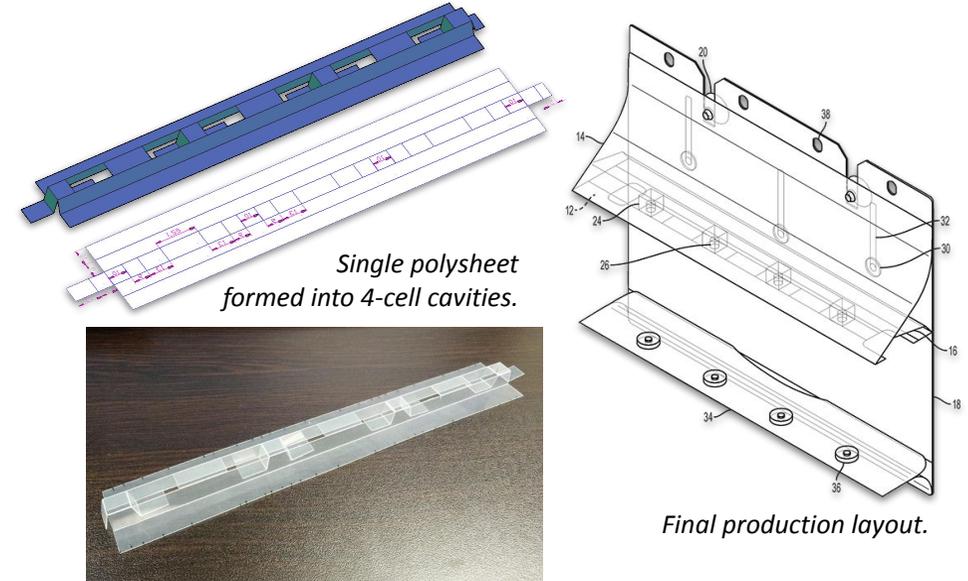
2 Weeks
Production Approved

ZERO
New Tooling / Molds / CapEx

24,000
Units Shipped

Zero-CapEx Execution

- Prototype in **7 days** → production approved in **2 weeks**.
- Aligned existing material workflow. **Zero** new tooling, molds, or new CapEx.
- DFM master pattern returned **1:1 unchanged** after factory engineering review.



Economic Impact

- 24,000 units integrated into flagship Duette launch **without delay**.
- \$768K in incremental revenue.
- **\$600K contribution margin** to Sampling International.

Executive Validation

Hunter Douglas Executive Summit:
Co-President disassembled the Duette window cling in front of 30 affiliate executives.



Final window-cling units shipped with sample books.