

URBAN AIR MOBILITY INFRASTRUCTURE

StilPOD. Landing infrastructure, reimagined.

How origami-engineered aluminium modules redefine vertiport economics — from million-dollar concrete installations to deployable, circular infrastructure.

-81%

CO₂E VS.
CONCRETE

Hours

NOT MONTHS
TO INSTALL

100%

REUSABLE
ACROSS SITES

\$10B

VERTIPORT MARKET
BY 2032

The infrastructure problem holding back urban air mobility.

Every eVTOL and drone corridor in the world ends at the same bottleneck: a landing platform. Building one today means concrete, welding, months of groundwork, and a cost structure built for airports — not the distributed, scalable infrastructure that urban air mobility actually demands.

StilPOD is a modular vertiport platform built on Stilfold's patented curved-bending technology. Structural strength is derived from geometry rather than mass, producing a flat-pack platform in recycled aluminium that installs without concrete foundations, deploys in hours, and recovers for reuse across multiple sites.

This whitepaper presents the technical case, economic model, and commercial implications of the solution — and makes the argument that StilPOD is not merely a cheaper landing platform, but a new infrastructure category, built for the pace at which urban air mobility will actually scale.

STILPOD AT A GLANCE

500 mm Modular unit 4 modules per m ² , repeats indefinitely	12 t MTOW capacity Heavy VTOL and helicopter rated	< 8 hrs Install time Tool-free, no specialist labour	100% Reversible Demount and redeploy on a new site
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A \$10 billion market waiting for standard infrastructure.

The vertiport and drone port market is projected to grow from \$643 million in 2023 to \$7.8 billion by 2030, with total market value potentially reaching \$10 billion by 2032. EASA classifies eVTOL vehicles as certified aircraft, with requirements comparable to traditionally manned aircraft — creating regulatory demand for designated, standardised landing structures at scale.

The market has been waiting for standardisation. Until now, building a landing platform — whether for a helicopter or a heavy cargo drone — has meant site-cast concrete, on-site welding, and months of groundwork. Every platform becomes a unique construction project with high cost as a consequence, particularly at hard-to-reach locations.

MARKET SIZE PROJECTIONS

\$643M 2023 actual Global vertiport market	\$7.8B 2030 projection +12× growth in seven years	\$10B 2032 estimate Total addressable market
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The fundamental market insight: The air mobility sector is not short of vehicles, operators, or routes. It is short of certified, affordable, rapidly deployable ground infrastructure. That gap is the StilPOD opportunity.

Structural strength from geometry, not mass.

Stifold's patented curved-bending process shapes metal sheet through a wheel of variable force, producing curved geometries impossible with conventional bending. Where traditional infrastructure adds mass to achieve load capacity, this approach encodes stiffness into form.

Each 500×500 mm module distributes point loads radially across an adjacent network of arches, turning the floor grid itself into a structural system. Four modules form one square metre; the same unit repeats from a single-pad configuration to a full 16×16 m vertiport without any design modification.



FIG. 01 PHYSICAL DEMONSTRATOR – FOUR MODULES PER SQUARE METRE

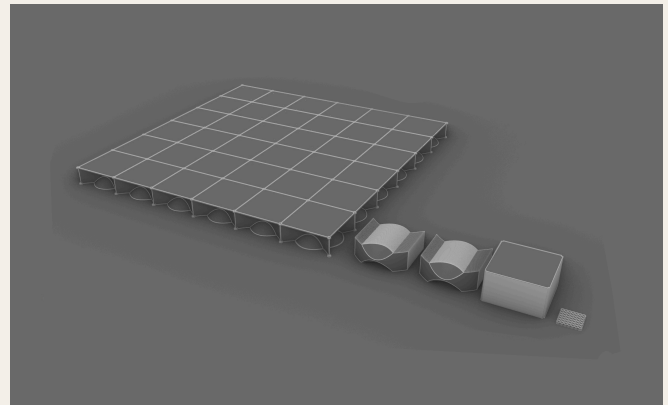


FIG. 02 MODULE REPETITION – UNIT TO FULL PLATFORM

Validated under FEM analysis. Stress analysis of the assembled module network demonstrates that external loads distribute efficiently across adjacent arch structures. The architecture improves with scale: peak stresses in a multi-module configuration are lower than in single-unit testing, confirming the geometry-first design principle.

A new category, not a cheaper version.

Existing vertiport platforms are priced at \$0.5–1 million for ground-based solutions and up to \$15 million for floating alternatives. StilPOD is not a discount alternative to these — it is a different product category, with three compounding advantages that conventional infrastructure cannot replicate at any price.

Layer 1 — Built like a product, priced like one

Concrete vertiports are construction projects: site-specific design, specialist labour, months of groundwork, permanent commitment. StilPOD is an industrial product: standardised modules, repeatable manufacturing economics, tool-free installation. The cost structure follows industrial logic rather than construction logic — predictable, batch-scalable, and durable at scale.

Layer 2 — The elevated-floor advantage

A concrete pad requires cast-in conduits for power, charging, and safety systems — planned in advance, executed by specialist labour, impossible to change after installation. StilPOD's elevated floor enables electrical, data, charging, and safety services to be routed and upgraded beneath the deck without excavation. Future-proofing is built in by design, not bolted on as cost.

Layer 3 — A reusable asset, not a sunk cost

Full demountability transforms the asset class itself. The platform recovers for redeployment, retains residual value, and enables business models — leasing, event deployments, humanitarian response, defence field operations — that are structurally impossible with permanent construction. The asset depreciates against a residual value, not to zero.

The category insight: Concrete vertiports treat ground infrastructure as a fixed cost on a balance sheet. StilPOD treats it as a deployable, recoverable, upgradeable operating asset. The financial implications run through every line of an operator's economics.

Three structural advantages that define the category.

01 / Logistics

Ships like cargo.

Modules fit standard shipping containers for sea or air freight. Certified landing platforms deliver to archipelagos, disaster zones, or military bases identically to standard cargo.

02 / Scalability

Built to grow.

Operators begin with a single module and scale to multi-pad nodes with charging as traffic grows — without demolition or new groundwork. The 500×500 mm unit repeats indefinitely.

03 / Dual-use

Civil and defence.

Rapid-deploy, low-signature, fully relocatable platforms align with both military mobility and humanitarian corridor requirements. One product, two markets.

Sustainability — 81% lower carbon vs. concrete

A cradle-to-gate Life Cycle Analysis for a 16 m² platform shows that StilPOD's recycled-aluminium construction generates approximately 81% lower CO₂ equivalents in the material phase than a conventional reinforced concrete pad — and this excludes the additional transport, casting, and on-site installation emissions inherent in concrete that have no equivalent in the flat-pack model.

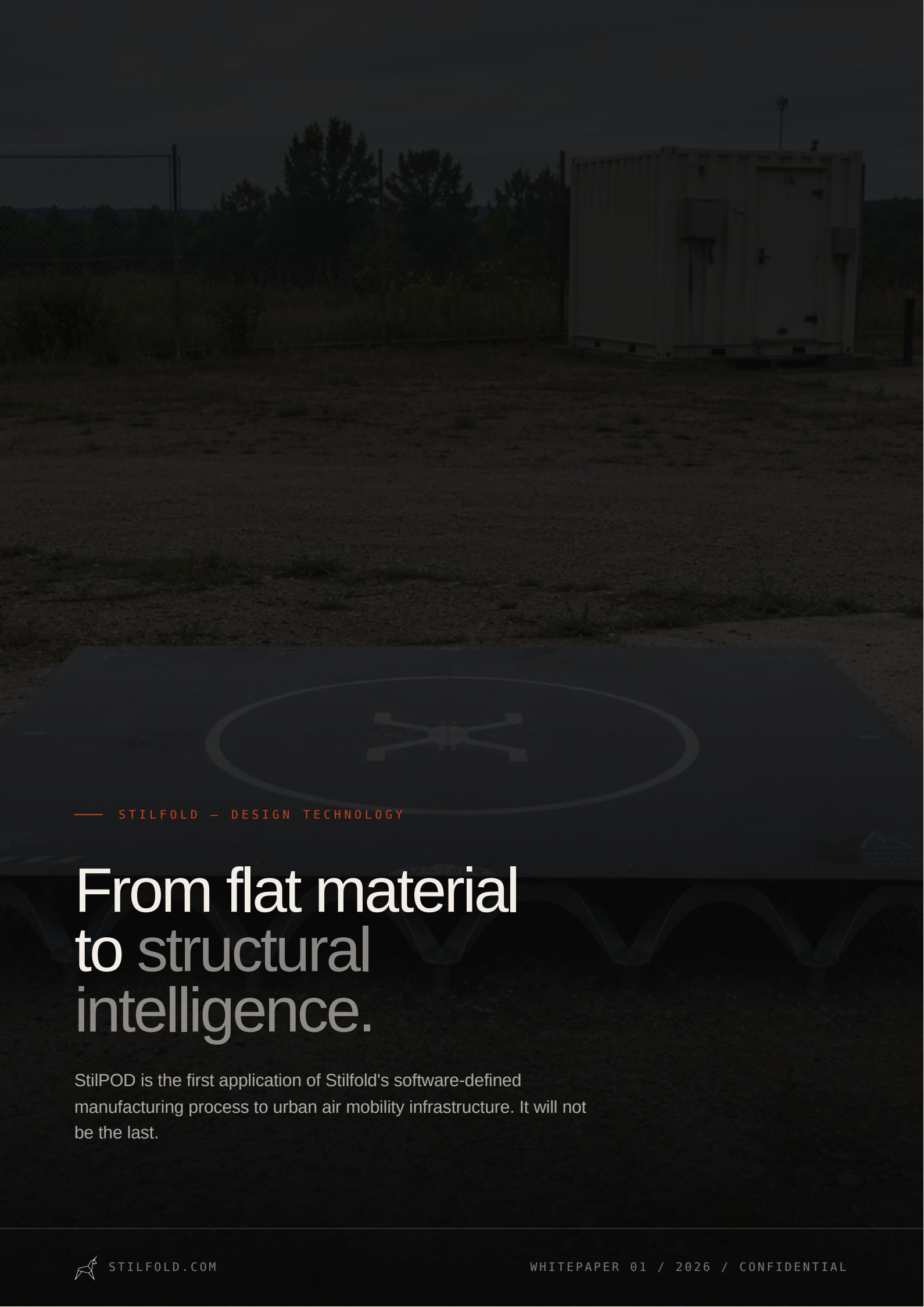
CARBON COMPARISON — 16 M² PLATFORM, CRADLE-TO-GATE

~226 kg

CO₂e — StilPOD
Recycled aluminium + ACP top layer
Material phase, cradle-to-gate

~1,200 kg

CO₂e — Concrete
7,800 kg material incl. reinforcement
Excludes transport & installation



— STILFOLD — DESIGN TECHNOLOGY

From flat material to structural intelligence.

StilPOD is the first application of Stilfold's software-defined manufacturing process to urban air mobility infrastructure. It will not be the last.