

# Building a World in Orbit: Construction & Deployment of Aegis Station

*Modular. Redundant. Ready from day one.*

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## I. Overview

Aegis Station is not built all at once. It's deployed in **phases**, ring by ring, with the ability to begin operations long before full completion. This approach spreads cost, reduces risk, and accelerates value.

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## II. Assembly in Three Stages

### Stage 1: Launch & LEO Assembly

- Ring segments and core structures launched dry via heavy-lift vehicles
- Assembly in low Earth orbit (LEO) using robotic and crew operations
- No water mass launched from Earth—only dry components
- Each ring is constructed independently to avoid schedule bottlenecks

### Stage 2: Transfer to Lunar Orbit

- Fully assembled ring modules towed to lunar orbit by high-efficiency electric or hybrid tugs
- Central hub remains non-rotating throughout
- Spin-up occurs only after safe orbital placement

### Stage 3: Shielding with Lunar Water

- Shielding begins immediately on arrival in lunar orbit
  - Fleet of tankers delivers water directly into shield reservoirs built into each ring's outer hull
  - Rings are shielded one at a time—but may begin partial operation once lower decks are protected
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## III. Phased Ring Activation

Each ring is a self-contained system:

- Independent life support, power, thermal, and crew subsystems
- Physically isolated for fault tolerance
- Operationally independent from other rings

This allows Ring A to:

- Activate ahead of Rings B and C
- Host initial crew for science, construction, and pilot operations
- Serve as a testbed while expansion continues in parallel

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## IV. Shielding Operations & Timeline

- **Per-ring shielding volume:** ~550,000 tons
- **Fleet capacity:** 30 tankers delivering 900 tons/day
- **Time to fill each ring:** ~1.6 years
- Shielding can proceed in parallel across rings
- Partial shielding enables early deck-level protection and phased activation

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## V. Cost Breakdown (Phase 1–3)

Component	Estimated Cost
Launch + dry mass to LEO	~\$300B
Tug transfers to lunar orbit	~\$10–30B
Lunar water sourcing + fill	~\$250B
<b>Total Construction Phase</b>	<b>~\$560B</b>

Includes:

- Station dry mass (~120,000 tons)
- Shielding mass (~1.65 million tons)
- All transfer, tug, and fill operations

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## VI. Operational Timeline

Year	Milestone
1	Launch of dry modules begins
2	Ring A assembled in LEO
3	Ring A moved to lunar orbit

<b>Year</b>	<b>Milestone</b>
4	Ring A begins shielding + early ops
5	Ring A partial shield; Ring B begins
6	Ring B arrives, shielding begins
7–8	Ring C in LEO, crew scaling
10	All rings fully shielded and active

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## **VII. Why This Works**

- Modular deployment spreads schedule and cost
- Ring A delivers value from year 4 onward
- Failures are isolated—no single point of station-wide risk
- Shielding is integrated, flexible, and scalable
- A station that works from the ground up—even if it's in orbit