Aegis Station Population Dossier – Draft Overview

Title:

From Skyscrapers to Sky Cities: Population Scaling for Aegis Station

Section 1: Introduction

Aegis Station isn't just a space station—it's an orbital city. This dossier explores what kind of population it can realistically support, not through cramming bunks or rationing water, but with Earthlike comfort in mind: real plumbing, open space, private quarters, and greenery under artificial gravity.

Section 2: Baseline Metrics (1g Version)

Metric	Value
Ring radius	350 m
Tube radius	50 m
Tube cross-sectional area	~6,940 m^2
Ring circumference	~2,199 m
Usable floor levels per ring	~10
Usable floor area per ring	~7,000,000 m^2
Total across 3 rings	~21,000,000 m^2
Usable pressurized volume	~45,000,000 m^3

Section 3: Comfort-Oriented Population Estimates

Standard	m^2 per person	Pop per ring	Total Pop
ISS-style efficient	~50	~140,000	~420,000
Urban apartment density	~75	~93,000	~280,000
Comfortable space habitat	~100	~70,000	~210,000
Luxury-class living	~150	~47,000	~141,000

Recommendation:
Design for **~200,000 full-time residents**, with expansion capacity beyond 300,000.

Section 4: Comparison to Earth Icons

Burj Khalifa is the tallest human-made structure on Earth. It rises 828 meters tall, holds ~3,000 people, and contains ~309,000 m^2 of floor space.

Aegis Station (1 ring):

- ~7 million m^2 of floorspace
- ~15 million m^3 of internal volume
- If unwrapped as a vertical tube: **~2.2 km tall**
- That's **3× taller**, **20× the volume**, and **25× the occupancy**—and you've got **three of them**

Section 5: Psychological and Spatial Design

- Artificial gravity (1g) stabilizes biological rhythms
- Low population density preserves personal space
- Generous green zones and "outdoor" decks near the top (0.86g)
- Full plumbing, privacy, recreation—designed for long-term comfort

Section 6: Conclusion

Aegis Station supports not just survival—but **civilization**. Its population density is closer to **a well-planned terrestrial city** than to any past spacecraft or station. With space to walk, think, grow, and breathe, it becomes the first true home beyond Earth.