

Arbour - Power

Arbour — Power Grid

Lives in: World & Lore → Core Systems. Status: revised — R4/R5 status corrected to remove "the Heart" reference, consistent with the scattered debris field framing locked in Kugelblitz Jettison Mathematics (revised). No other changes from the prior version.

The power grid is Arbour's circulatory system. It is also its most carefully maintained lie. Understanding how the city is powered is understanding how the city is controlled.

Overview

Arbour's power infrastructure exists in three distinct layers, built across centuries, each reflecting the knowledge and desperation of the generation that constructed it. No single person in Arbour understands all three layers completely. The Azure Branch understands Layer One well enough to maintain it. Layer Two is partially understood, partially functional, and politically suppressed. Layer Three is improvised, unstable, and the only thing keeping the Sprawl alive.

The Council presents Arbour's energy situation as one of genuine scarcity — a civilisation doing its best with limited resources salvaged from a crashed vessel. This is partially true. It is also a deliberate and multi-generational lie.

Layer One — The Fusion Reactors

What They Are

ARBOUR|05 was powered by five fusion reactors, built with the redundancy philosophy of deep space engineering — if one fails, the others compensate. Each reactor was designed to run for 300 years with scheduled maintenance, because failure in deep space meant death, and the engineers who built ARBOUR|05 understood that completely.

What Survived the Crash

Reactor	Status	Notes
Primary — R1	Fully functional	Powers the Luminary and upper tiers almost exclusively
Secondary — R2	Fully functional	Powers the Meridian Districts and mid tiers
Tertiary — R3	Partially functional	Cannibalised for components over generations. Running at 30% capacity. Unstable.
R4	Destroyed in the EM cascade; residual antimatter fuel detonated on impact	Wreckage is part of the scattered debris field — not a single named site. See <i>Kugelblitz Jettison Mathematics</i> for the full event record.
R5	Destroyed in the EM cascade; residual antimatter fuel detonated on impact	Debris extends beneath the Sprawl's eastern districts — one part of the same scattered field as R4, not radiating from a separate point of origin. Some residents build on ground directly above it.

The Scarcity Problem — Real and Manufactured

Two and a half functional reactors powering a continental city is genuine scarcity. The Council is not lying about that. R1 and R2 between them cannot power all of Arbour at full capacity — choices must be made about who gets power and when.

What the Council is lying about is the existence of supplementary power sources that could ease that scarcity significantly. The rationing is real. The necessity of rationing at this level is not.

Who Controls the Reactors

The Azure Branch's reactor division — officially designated the Continuance Corps — maintains R1, R2, and what remains of R3. Their procedures are passed down through apprenticeship, not education. They know the steps. They do not always know why the steps work.

The Continuance Corps has a classified internal record called the Deviation Log — every instance where a procedure failed or produced unexpected results. This log is the most honest document in Arbour. It is also the most suppressed. Access requires Council clearance that even most Azure Branch members don't hold.

Silas Varran has been trying to access the Deviation Log for three years.

Layer Two — The Colonisation Infrastructure

What It Was Designed For

ARBOUR|05 was not just a transport vessel. It was a civilisation seed — carrying everything humanity would need to establish a self-sustaining settlement on whatever planet they found. The colonisation equipment was designed to be deployed after a controlled landing on a hospitable world, establishing independent energy infrastructure within the first decade of settlement.

The crash changed that. The landing was not controlled. The world was not hospitable. And the engineers who survived were dealing with immediate casualties, structural collapse, Aetheris exposure, and the chaos of Jian Wei's final actions. Colonisation equipment deployment was triaged.

What Was Deployed — Survival Priority

Geothermal Tap Systems Deployed within the first decade post-crash. Cordis's geological instability — a direct consequence of the Penumbran Reach's gravitational forces — means abundant heat close to the surface. The first generation engineers recognised this immediately. Drilling rigs were deployed around the impact zone and heat exchangers installed.

The geothermal taps became Arbour's earliest stable secondary power source. They are still running. The original drill sites are now buried beneath centuries of city growth, somewhere in the deep foundations of the Luminary. The Azure Branch maintains them via access tunnels that do not appear on any map available to the general population.

Current output: approximately 15% of Arbour's total power supply. The Council reports this as 8%.

Atmospheric Energy Harvesters Partially deployed in the first two decades. Enormous turbine structures designed for whatever atmosphere the ark encountered — they work exceptionally well on Cordis, where the erratic weather from the twin suns creates near-constant high-velocity wind at altitude.

The harvesters that were successfully deployed are still running, locked at whatever calibration settings the last engineer who understood them left them at. Some are running optimally by accident. Some are running at 40% of potential because the calibration is wrong and nobody knows

how to fix it.

Current output: approximately 12% of Arbour's total power supply. The Council reports this as 9%.

What Was Never Activated — Forgotten and Suppressed

The Solar Collection Arrays The arrays were designed for precise deployment based on stellar orbital calculations — complex enough that they required dedicated engineering teams and favourable landing conditions. Neither was available post-crash.

They sit now as vast derelict structures on Cordis's surface — enormous skeletal frameworks of collection material spanning hundreds of metres, erected in the early decades by the first generation as temporary staging structures while the engineers figured out deployment. Then the engineers died. Then the structures became landmarks. Then the Council cordoned them off.

Officially: structurally unstable, potentially contaminated by Aetheris exposure, dangerous to approach.

Actually: fully intact, requiring calibration rather than reconstruction, capable of generating approximately 35% of Arbour's current total power consumption if activated. In a twin-sun system with Cordis's atmospheric conditions, potentially significantly more.

The arrays are visible from certain points in the upper Sprawl on clear days — vast dark geometric shapes on the horizon, half-obscured by atmospheric haze. Residents call them the Frames. Children are told they are the bones of something that died in the crash. This is not entirely inaccurate.

The Secondary Fusion Plant The most significant suppressed asset in Arbour's history.

A portable, self-contained fusion plant — smaller than ARBOUR|05's primary reactors but independently operable, designed to bootstrap a colony's energy independence before the larger infrastructure came online. It requires no connection to existing systems. It can be activated by a team of four engineers following a documented procedure.

It is buried.

In the third generation post-crash, a junior Azure Branch engineer named Cael Morrow filed a report noting the secondary plant's location, condition, and potential output. The report concluded that activation would allow significant reduction in power rationing across all tiers, with particular benefit to the lower districts.

Morrow was classified with CRS seventeen days after filing the report. The quarantine record lists complications from Cordis Sensitivity Disorder as the cause of death.

The report exists in the Tabularium under reference number AZ-3-0047-C. It does not appear in any index. It cannot be found by searching subject, author, or date. It can only be found if you already know the reference number.

Wren finds the reference number in a maintenance log that was filed incorrectly forty years ago and never corrected.

The secondary fusion plant is located approximately 340 metres below Arbour's current surface level, in a sealed section of ARBOUR|05's original cargo infrastructure. The access corridor was collapsed and reinforced in the third generation. The Council's internal records refer to this location as the Vault.

The Vault does not appear on any map.

Layer Three — The Improvised Grid

What It Is

Everything built after the original engineers died. Conducted by people following procedures they didn't fully understand, using materials that weren't designed for the purpose, extending systems that were never meant to reach this far or serve this many people.

Layer Three is the Sprawl's entire power infrastructure.

It consists of:

- **Tapped conduits** — illegal connections to Layer One and Layer Two distribution lines running through the structural fabric of Arbour. The Azure Branch knows these exist. Removing them all would cause cascading failures in the structural systems the conduits run alongside. This is an unofficial détente.
- **Salvaged generators** — machinery repurposed from ship components, maintenance equipment, and materials scavenged from the Badlands and the debris field above R5. Maintained by people with no formal training and extraordinary practical knowledge.
- **Shared distribution networks** — informal agreements between Sprawl districts about load sharing, backup power, and emergency protocols. These agreements are more reliable than anything the Council has ever put in writing.

The Shed

Power instability in the Sprawl has a name: the shed.

Load-shedding — scheduled or unscheduled power cuts — is a normal feature of Sprawl life. Not an emergency. Tuesday. Residents structure their days around it. Food is prepared during stable periods and kept warm through shed cycles. Work that requires consistent power is done in the early hours when draw from upper tiers is lower. Children are taught which parts of the district have the most stable taps and which will shed first.

"Power's shed again." "We're in a shed." "Been shedding since yesterday morning."

The shed follows patterns that experienced residents can read — which sectors go down first, how long they stay down, what the warning signs are. An unexpected shed, one that breaks the pattern, is cause for genuine alarm. It means something failed rather than something rationed.

Three unexpected sheds in the same district within a month is the Sprawl's unofficial signal that something in the Layer Three infrastructure is critically compromised. Word travels faster than any official communication.

Aetheris and Layer Three

The improvised wiring and salvaged components of Layer Three are particularly vulnerable to Aetheris interference. The atomic bonding anomalies Aetheris causes affect the conductivity of materials unpredictably — a stable connection becomes a short, an insulator becomes a conductor, a sealed component develops unexpected porosity.

In practice this means:

- Fires. Not common but not rare. The Sprawl has its own fire response networks entirely independent of official services.
- Equipment behaving wrongly in ways that suggest malfunction but aren't repairable because nothing is actually broken in a conventional sense
- Areas of the Sprawl near Aetheris hotspots experiencing chronic power instability that no amount of maintenance resolves
- Occasional inexplicable surges — power flooding into a district at levels the infrastructure wasn't designed for, burning out salvaged equipment that took years to build

Power Allocation by Tier

Tier	Primary Source	Stability	Allocation
Luminary	R1 exclusively	Near total	Unrestricted
Upper Meridian	R1 / R2	High	Generous, minor rationing during peak

Tier	Primary Source	Stability	Allocation
Mid Tiers	R2 / Geothermal	Moderate	Rationed, scheduled cuts during high demand
Lower Meridian	R2 / Atmospheric	Variable	Significant rationing, frequent cuts
Sprawl	Layer Three / tapped	Unstable	The shed. Whatever they can get.

The quality of power differs as much as the quantity. R1 and R2 output is clean, stable, consistent frequency. Layer Three power fluctuates — voltage variations that damage sensitive equipment, frequency instability that affects anything requiring precise timing, brief outages that reset systems mid-operation.

This has health implications that the Council does not acknowledge. Chronic exposure to unstable power — the electromagnetic fluctuations, the fire risk, the equipment failures — compounds Aetheris exposure effects already concentrated in the lower tiers. Residents of the Sprawl age faster. Their equipment fails faster. Their buildings are less safe. The Council attributes all of this to poor personal choices and inadequate maintenance.

What This Means for the Story

The Frames are visible. They are known. What they actually are is not.

The Vault is unknown to everyone outside a small circle within the Council and the senior Continuance Corps.

The geothermal and atmospheric underreporting means the Council has a buffer of approximately 15-20% unreported capacity that it deploys selectively — during crises, during periods of unrest, when it needs to demonstrate benevolence. A sudden improvement in power stability in a troubled district is not generosity. It is politics.

The shed is radicalising in slow motion. People who structure their entire lives around infrastructure failure and then discover that failure was manufactured — that the equipment to prevent it exists and was deliberately buried — do not respond calmly.

Cael Morrow is remembered in the Sprawl. Not by name. As a story. The engineer who found something and disappeared. The story has mutated over seven generations into something more legend than fact. But the shape of it is accurate.

Wren finds the reference number AZ-3-0047-C in a misfiled maintenance log on a Tuesday morning, three weeks into pulling a thread they almost didn't pull.

Glossary — Power Grid Terms

Term	Meaning
The shed	Load-shedding in the Sprawl, scheduled or unscheduled power cuts
The Frames	The derelict solar collection arrays visible on Cordis's surface
The Vault	Council designation for the buried secondary fusion plant location
Continuance Corps	Azure Branch division responsible for reactor maintenance
Deviation Log	Classified Azure Branch record of procedure failures and anomalies
AZ-3-0047-C	Reference number for Cael Morrow's suppressed report on the secondary fusion plant
R1 / R2 / R3	Surviving fusion reactors, in descending order of functionality

Revision #7

Created 2026-06-19 08:18:16 UTC by Amari

Updated 2026-06-21 10:41:10 UTC by Amari