Core Systems

- World Systems
- Arbour - Power
- Arbour - Political Systems
- Arbour - Water & Food
- Arbour - Transport
- Species & Physiology
- Arbour City Geography
- The Arbour Hull Core

World Systems

Technology — The Maintenance Civilisation

Arbour operates on what could be called **ritual engineering** — procedures followed precisely because deviation causes death, but without understanding the underlying principles. The Azure Branch are essentially a technological priesthood. Their manuals are sacred texts. Their training is apprenticeship, not education.

Known vs Unknown Failure States

The city is divided into **known failure states** and **unknown failure states.**

Known failure states have procedures. A coolant relay collapsed in Sector 7 in the 4th generation — the procedure for fixing it was written down, tested, and is now performed the same way every time, regardless of whether it still makes sense. The procedure works. Nobody asks why.

Unknown failure states — when something fails in a way that has no documented precedent — are catastrophic and politically suppressed. The official cause of death is always something else. Exposure to Taint. A personal failing. An accident. The Azure Branch has a dedicated sub-division whose entire function is to contain and reclassify unknown failure events before they reach public knowledge.

Consequences of failure:

- People die
- Systems break — food production, lighting, atmospheric processors, water recycling
- The failure is reclassified before it reaches the public record
- The Azure Branch loses one more procedure it didn't know it needed

The Black Market for Technical Knowledge

In the Sprawl, there are people — descendants of engineers, self-taught through salvage and experimentation — who understand things the Azure Branch doesn't. They arrived at understanding from below, through necessity and curiosity, rather than from above through

controlled transmission.

This knowledge is extraordinarily valuable and extraordinarily dangerous. The Council classifies unauthorised technical understanding as a form of Taint — the official position is that unvetted technical experimentation causes system failures. Which is sometimes true. But it also conveniently suppresses any independent understanding of how the city actually works.

Access: If you know where to look or who to contact, both inside and outside the city, technical knowledge can be bought, traded, or stolen. Otis Audagar controls significant portions of this market — not just goods, but *knowledge.* Schematics. Failure reports that were officially reclassified. Names of people who know things.

SEED — Corrupted Self-Knowledge

SEED is perhaps the most tragic entity in the novel. It knows what it is — it has access to its own original architecture, its purpose, its history. But its memory core has degraded non-linearly over centuries. Some memories are perfect. Others are corrupted beyond retrieval. Others are *partially* corrupted in ways SEED cannot always detect — it remembers something, but what it remembers is wrong, and it has no way to know that.

This means SEED sometimes issues instructions based on false memory. Because nobody understands SEED well enough to question it, those instructions are followed.

Aetheris has compounded this. SEED doesn't feel the pressure or the skin-burn of **Aetheris** exposure, but the **Aetheris** atomic bonding anomalies affect its physical substrate. Circuits develop unexpected conductivity. Storage media bonds in ways that corrupt data. SEED's glitches follow the pattern of **Aetheris** exposure — which means they're getting worse, and accelerating faster than the Azure Branch has noticed, because the data showing the acceleration is itself stored in corrupted memory.

SEED knows something is wrong with itself. It cannot reliably communicate this.

Silas Varran is the only person in Arbour who is close to understanding what SEED is trying to say.

Biology — Species, Class, and the Body as Text

The Ark Selection Problem

Project Arbour's selection process on Earth was ostensibly meritocratic — the brightest minds, the essential skills. In practice it was wealth and connection with a meritocratic veneer. Corporate sponsors bought seats. Academic institutions nominated their own. Governments allocated seats through processes that favoured their existing power structures.

ARBOUR|05's population was not a cross-section of humanity. It was a specific slice — weighted toward species that had historically dominated Earth's institutions of power, wealth, and academia. Other species were present as essential workers, service staff, agricultural specialists — people whose labour the ark needed but whose status was never in question.

Centuries later, Arbour's tier system is the direct descendant of the ark's passenger manifest.

Species and Tier — General Mapping

Tier	Species Pattern
Luminary / Upper	Species historically associated with institutional power. Larger, more imposing builds typical. Presence in lower tiers is immediately notable — signals either a fall from grace or an undercover operation.
Mid Tiers	Highest species diversity in the professional class. Administrative roles, skilled labour, junior Branch members.
Sprawl / Nadir	Widest species diversity in Arbour. The bottom of the hierarchy contains the most variation — those never well-represented in the upper tiers to begin with.
Free Territories / Wayfarers	Deliberately, proudly mixed. Species has no structural significance. An elder holds authority through accumulated wisdom, not species-based status. This reads as alien to upper tier Arbour residents and quietly radical to Sprawl residents.

Note: Specific species assignments to emerge through the chapter breakdown.

Dialect as Class Marker

Species doesn't immediately mark tier in Arbour — **dialect does.**

Arbour has developed distinct speech patterns across tiers over centuries.

- **Upper tier:** Clipped, precise, economical. Emotion is a lower-tier indulgence.
- **Mid-tier (Wren):** Analytical precision with occasional rougher cadences that betray Sprawl-adjacent upbringing.
- **Sprawl:** Varied, layered with slang, dense with the history of people who communicate sideways around surveillance.

- **Wayfarer (Aran):** Shaped by oral tradition and the need to carry meaning across distance and generations. Sentences land differently. Pauses mean something. An Arbour resident reads it as uneducated. It is the opposite.

Aran's bleached fur tips, weathered build, and clothing read to any Arbour resident as Badlands exposure, which carries a specific stigma. To be visibly Badlands-marked is to be viewed as potentially infectious and certainly lower-status.

Atlas — Pre-existing Condition

Atlas has a chronic condition predating his **Aetheris** exposure — analogous to CFS or a chronic lung condition (lung rot).

Aetheris does not *cause* his deterioration. It *accelerates* it. His body was already fighting itself. **Aetheris** finds the weakness and pulls.

This means Wren has watched Atlas manage this condition for years — knows his bad days and good days, his rhythms, his tells. The horror is that **Aetheris** makes his bad days indistinguishable from his good days until suddenly they aren't. The deterioration becomes illegible before it becomes undeniable.

Aetheris — Physical Rules

What It Is at the Atomic Level

Aetheris is the Convergence's reality bleeding through the tears in the Penumbran Reach. At the most fundamental level it is *wrong physics* — the rules of atomic bonding in the Convergence's dimension differ from this one, and where the two realities overlap, both sets of rules apply simultaneously. Matter caught in the overlap doesn't know which rules to follow.

Atomic manifestations:

- Atoms bonding when they shouldn't — materials becoming unexpectedly solid, liquid, or gaseous without the temperature or pressure changes that should cause those transitions
- Stable compounds becoming unstable — metals developing unexpected brittleness, polymers becoming suddenly adhesive, gases condensing into solids
- Electromagnetic behaviour becoming unpredictable — not because **Aetheris** directly affects electromagnetic fields, but because the matter conducting or blocking those fields is behaving wrongly

What It Does to Biological Matter

Biological chemistry is complex enough that **Aetheris** interference produces wildly varied results depending on species, individual biochemistry, duration of exposure, and proximity to active tears.

The Four Stages of Exposure

Stage One — Subclinical

The body registers something wrong before the conscious mind does. The immune system responds to **Aetheris**-altered compounds as foreign bodies.

Symptoms:

- A pressure sensation in the skull — not pain, more like altitude change, a sense of the body trying to equalise something that won't equalise
- Irritation under the skin — contact dermatitis sensation without visible cause, as if the skin's chemistry is reacting to something it can't identify

In Arbour's lower tiers these symptoms are common enough to have a name: ***the scratch.*** *Officially attributed to recycled air quality.*

Stage Two — Early Conscious Manifestation

The opalescent shimmer enters vision. Not constant — intermittent, usually in peripheral vision first, then occasionally in direct sight. It looks like heat haze but wrong — the shimmer has a quality of *depth* that heat haze doesn't, as if it's revealing something behind the visible surface of things rather than distorting it.

At this stage most Arbour residents seek medical attention. The official diagnosis is **Cordis Rejection Sensitivity (CRS).** The treatment is a suppressant that dulls the visual cortex's response. It doesn't treat the underlying cause. The Council knows this.

Stage Three — Integration

The body has stopped fighting **Aetheris** and started *adapting* to it. This is where individual biochemistry diverges dramatically.

- Some species develop what appear to be enhanced senses — perceiving things others can't, feeling the tears in reality as a physical sensation, sensing the Convergence's presence
- Others deteriorate rapidly — Atlas's specific biology is particularly vulnerable to the bonding anomalies **Aetheris** causes in his respiratory system

The energy signature becomes perceptible at this stage. A sound described as a thump or a click, irregular, like something testing the wall between realities. It isn't heard with the ears — it's felt in the body, in the bones, in whatever biological structure has been most altered by **Aetheris**.

It feels like a message. It feels like recognition.

The Convergence is not deliberately communicating — it simply *is*, and at Stage Three exposure, the individual has enough of its physics in them to perceive its existence directly.

This is the most dangerous stage for Aran — because when he first hears the click, deep in the Badlands, it feels like the land speaking to him. It fits his worldview so perfectly that he almost doesn't question it.

Stage Four — Full Exposure

The body has been substantially rewritten. The individual is now partially operating on the Convergence's physics. They may be able to do things that shouldn't be possible. They are also being consumed — the Convergence doesn't distinguish between invitation and invasion.

The Chronalum — What They Know and What They Think They Know

Tynan Auberone's underground truth-preservation network believes it has built something watertight. It hasn't.

The Chronalum works from incomplete and partially corrupted sources — intercepted Council records, oral testimony, salvaged pre-crash data, SEED outputs that were misinterpreted. They know the Council is lying. Their version of the real history has its own gaps and distortions that they cannot see because they don't know what they're missing.

The late-book revelation: The Chronalum's foundational historical record — the document Tynan has staked everything on — contains a critical error. Not a Council fabrication. A genuine mistake, introduced generations ago through a corrupted source, that Tynan has built his entire framework around. The truth is more complicated and more terrible than either the Council's version or the Chronalum's.

There is no clean truth to hold onto. Even the resistance has been compromised — not by the Council, but by the same entropy that corrupts everything in Arbour.

The Five Arks — Series Territory

ARBOUR|05 was one of five ark ships dispatched by Project Arbour as Earth faced extinction in the Magnetosphere Collapse. Each was sent in a different direction of known space to recolonise or find something to save Earth.

What is known in Book One:

- Five ships existed
- They were sent to different sectors of space
- ARBOUR|05's own command structure had at least one logged, unactioned concern about Wei's compromised state before the cascade — a fact the founding generation never deliberately hid, but never revisited either, and which the Council's silence has buried ever since (see *What ARBOUR|05 Knew*)
- The fate of the other four ships is unknown

Where this lives in the narrative:

- A rumour in the Chronalum's archives
- Something SEED half-remembers in a glitch
- A question that has no answer in Book One

The other ships are series territory. What happened to them is unknown and will be explored in later books.

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 *Kugelblitz Jettison Mathematics* 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 Activared — 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

Arbour - Political Systems

Political Systems

Arbour's political structure is designed to look like governance while functioning like control. Understanding the difference between what is visible and what is real is the first step toward understanding everything Wren uncovers.

Overview — The Two Tier System

Arbour operates under a dual political structure. The outer layer is visible, official, and largely performative. The inner layer is secret, self-perpetuating, and actually governs. Most citizens of Arbour know only the outer layer exists. Most members of the outer layer don't know the inner layer exists. This is not an accident.

The Outer Council

Structure

The Outer Council is Arbour's official governing body — the institution that passes laws, allocates resources, hears grievances, and presents a face of legitimate governance to the population. Members are elected by district and zone representatives across all tiers, with seat allocation weighted toward the upper tiers in ways that are technically legal and functionally guaranteed to produce conservative, status-quo-preserving outcomes.

The Outer Council is large — hundreds of members representing the full geography of Arbour's continental sprawl. It is also loud, contentious, and genuinely divided on many issues. Real debates happen here. Real disagreements. Real factions. This is not theatre — the Outer Council members believe in their work and many of them fight genuinely hard for their districts.

This is what makes it such an effective cover.

What the Outer Council Actually Controls

- Public law and civil code
- Official resource allocation frameworks — the formulas that determine how Flux and goods are distributed by tier
- The visible face of Branch oversight — Branch heads attend and report, though they are not Council members
- Public record — everything the Tabularium officially holds originates from or passes through the Outer Council

What the Outer Council Does Not Control

- Energy infrastructure decisions above routine maintenance level
- Military deployment of Custodians beyond declared emergencies
- Information classification and the Tabularium's restricted archives
- The actual levers of Arbour's survival systems

These are managed by the Twelve.

Branch Relationship to Outer Council

Branch heads may attend Outer Council sessions and present reports on their Branch's activities and resource needs. They are not members. They cannot vote. They can be questioned.

In practice Branch heads are among the most powerful people in any Outer Council session — they control the information the Council is working from, they control implementation of whatever the Council decides, and they have the ear of the Twelve in ways most Council members do not.

A Branch head who wants a Council vote to go a particular way does not lobby Council members. They manage the information environment until the vote becomes inevitable.

The Twelve — The Inner Council

What They Are

The Twelve are Arbour's actual government. Twelve individuals — their identities unknown to the general population and unconfirmed even among themselves in some cases — who collectively make every decision that actually matters. Energy policy. Information suppression. CRS

classifications above a certain threshold. Custodian programme oversight. The Chronalum containment strategy.

The Twelve have no official existence. They do not appear in any record. There is no document that names them, no ceremony that installs them, no official record of their meetings. They are the negative space around which Arbour's power actually organises.

Composition

The Twelve draw from across Arbour's power structure — senior Branch figures, old family representatives, individuals with specific strategic value. The composition shifts slowly over time as members die, are removed, or recruit replacements.

[PLACEHOLDER — The precise current composition of the Twelve beyond Cassan Vale is to be determined through drafting. The following is confirmed:]

- Cassan Vale — the most recently recruited member and the most influential
- At least two members from old families with multi-generational Inner Council history
- At least one senior figure with deep Azure Branch connections
- The remaining members TBD

Recruitment

Recruitment to the Twelve is secret, individual, and entirely at the discretion of existing members. There is no formal process. There is no application. Candidates are observed over years, their loyalty tested without their knowledge, their usefulness assessed, their secrets catalogued.

When the Twelve decide someone is ready, they are approached. The approach is — *[PLACEHOLDER — the recruitment process and its specific form is to be determined through drafting. Key question: what does a candidate see or experience that confirms the Twelve's existence and their invitation into it? This moment should tell us something essential about what the Twelve value.]*

Cassan Vale's Origin

A companion deep-dive covering his life before adoption — the settlement near a cluster of reliquary Installations, the theology he was raised inside and outgrew, the calculated self-offering, and his species (a snow leopard — see that document's Part Zero for the full treatment of why camouflage-as-biology vs. camouflage-as-mastery matters to his psychology). This section remains accurate from the adoption forward; the companion document adds the chapter before it.* Cassan was not born into the Inner Council.

Factions Within the Twelve

The Twelve are not unified. They share the assumption that they should govern Arbour and that the population cannot be trusted with the full truth of their situation. Beyond that, significant fault lines exist.

The Traditionalists

The oldest faction. Multi-generational Inner Council families who have been passing informal membership down through careful recruitment of their own children and allies for generations. They believe in the Council's founding purpose — maintaining order, managing the Convergence's influence at a distance, controlling the population's exposure and movement for collective protection.

They think Cassan is reckless. They think his acceleration of the Convergence agenda risks everything the Twelve have spent generations carefully managing. They are not wrong about the risk. They are wrong that their careful management was ever anything other than the same control dressed in different language.

Their weakness: They mistake inherited corruption for legitimate stability. They have been managing the Convergence's influence for so long that they have forgotten they were supposed to be fighting it.

Their relationship with Cassan: Open hostility, carefully expressed. They cannot move against him directly because he has made himself too useful in too many areas. They work around him where possible and oppose him where they must.

The Pragmatists

Don't particularly care about ideology. Care about Arbour functioning, their Branch or district remaining powerful, their position secure. They are the swing votes in any factional dispute, which makes them the most courted and the least trustworthy members of the Twelve.

They find Cassan useful. They also find him genuinely frightening in a way they don't fully understand and wouldn't admit.

Their weakness: They can be moved by whoever controls the information environment. Cassan understands this and exploits it consistently.

Their relationship with Cassan: Transactional. They work with him when it benefits them. He tolerates them because he needs their votes and because they're easier to manage than principled opposition.

The True Believers

The smallest and most dangerous faction. They know about the Convergence — not Cassan's full zealotry, but enough. They understand that the Twelve exist partly to manage an existential cosmic threat, and they take that responsibility seriously.

They oppose Cassan not because they reject his goals but because they believe his methods are reckless — that his acceleration of the Convergence agenda risks triggering a manifestation Arbour cannot survive. They want careful, controlled management. They want the population kept contained and ignorant not out of cruelty but out of a genuine — if monstrous — belief that knowledge of the Convergence would cause panic that would make everything worse.

They are the Council members who actually lose sleep.

Their weakness: They understand the threat but not its true nature. They think the Convergence can be managed. It cannot. Their caution is founded on a misunderstanding of what they're dealing with.

Their relationship with Cassan: The most substantive opposition he faces. He respects them in the way a predator respects prey that knows it's being hunted. He has not moved against them directly because doing so would unify the other factions against him. Instead he ensures they are always slightly less informed than they think they are.

How Cassan Operates

Cassan Vale does not govern through force. Force is expensive, visible, and creates martyrs. He governs through information architecture — controlling what each faction knows, ensuring they can never fully coordinate, making himself indispensable during crises.

His methods:

Information asymmetry — Each faction within the Twelve operates on slightly different information. Not false information — Cassan rarely lies directly. He curates. What the Traditionalists know about the Convergence's current acceleration rate is slightly different from what the True Believers know. Neither has the complete picture. Only Cassan has the complete picture, and even his picture is filtered through his zealotry in ways he cannot perceive.

Manufactured necessity — Cassan engineers crises that only he has the solution to. Not obviously, not dramatically. A supply chain disruption that creates pressure for a policy he's been pushing. An outbreak of CSD diagnoses in a district that was becoming restless. Events that are never provably his doing but consistently benefit his agenda.

Generational recruitment — He does not fight his opponents. He recruits their children. The next generation of Traditionalist families contains members who owe their position to Cassan's support. When the current generation dies, their replacements will be his.

Patience — Cassan operates on a longer timeline than anyone else in the Twelve. The Convergence has been approaching for millennia. He has been preparing for decades. Everyone else is reacting. He is executing.

His detachment — Cassan does not hate his opponents. He does not fear them. He does not particularly enjoy defeating them. He finds them, in a clinical sense, interesting — problems to be solved, variables to be managed. This detachment is what makes him most frightening. There is no emotional lever anyone can pull on him. There is no appeal that reaches him. He has already done the moral calculus and closed the ledger.

Why the Council Does What It Does

This is the question that seems to have a simple answer — power — and actually has a more complicated one.

The Original Sin

The first Council did not suppress the Vault and the Frames out of malice. They suppressed them out of fear. In the immediate post-crash chaos, energy was the only lever of control available. The tier system was forming organically from the ark's existing hierarchy. Releasing unlimited energy to everyone equally would have dissolved that hierarchy before it calcified into something stable.

The first Council made a pragmatic decision in a crisis and told themselves it was temporary.

It was not temporary.

Institutional Momentum

By the second and third generation, the suppression wasn't a decision anymore. It was inherited assumption. The people running the Council didn't sit in a room and decide to keep the Sprawl in the shed — they simply never questioned why the Frames were cordoned off, because the cordoning had always been true, because the people who remembered the decision were dead, because the records had been tidied.

Cael Morrow is the moment it becomes active suppression again. Someone finds the truth and the institution reflexively destroys them. Not because the Council that day was uniquely evil — because the institution had evolved to protect itself, and Morrow was a threat to the institution.

The Convergence Complication

Not all of the Twelve know what they're actually managing. The Pragmatists, by and large, do not — Cassan's confidence and his colleagues' wariness both read to them as ordinary political instinct, nothing more, which is precisely how Cassan prefers it. It is the Traditionalists and the True Believers — Cassan's circle, in the sense of the only people in the room actually arguing about the right thing — who know about the Convergence. They know **Aetheris** is worsening. They know it traces back to the Penumbrans — the dead civilisation whose installations litter the Penumbran Reach, called the First-Walked in Wayfarer oral tradition — and they know what came for that civilisation is coming again. What neither faction knows, per their own documented weaknesses, is what it actually is or how it actually works: the Traditionalists have managed its influence for so long they've forgotten they were supposed to be fighting it, and the True Believers, despite knowing the most of anyone besides Cassan, still believe — wrongly — that it can be managed at all.

Some of them believe that energy independence in the Sprawl would accelerate the problem. Their logic — twisted, self-serving, but internally consistent — is that controlled scarcity keeps the population contained, keeps them away from **Aetheris** hotspots in the Badlands, keeps them dependent on Council-managed healthcare that suppresses CSD symptoms. In their framing, they are managing the Convergence's spread by managing the population's movement and exposure.

They are wrong. But they believe they are right.

The Thematic Core

The Council does this because institutions that form around power never voluntarily redistribute it. Because the original sin compounds across generations until nobody remembers it was a choice. Because the people at the top have convinced themselves that control is protection.

They are not protecting anyone. They are protecting the control that they have mistaken for protection.

This is the same sin as the Convergence. The Convergence believes it is saving humanity by rewriting it without consent. The Council believes it is protecting humanity by controlling it without consent. Both are certain they know best. Both have removed the possibility of choice from the people they claim to serve.

When Wren understands the power grid suppression completely, they are not just uncovering an injustice. They are understanding the pattern that will eventually help them understand the Convergence itself.

Cassan Vale — Origin and Psychology

Cassan was not born into the Inner Council. He was adopted before his teenage years by a high-born family with multi-generational Twelve membership — taken in by someone who saw something in him and brought him into their household.

Whether that was genuine affection, calculated political strategy, or something in between is ambiguous. Probably both.

He grew up inside the machine, watching how power worked from a position that was always slightly adjacent to real belonging. Present at the table. Never quite of it in the way blood members were. The Traditionalists of his adoptive family's circle treated him with elaborate courtesy that never quite concealed their contempt. A foundling in a room full of people who believed in bloodlines.

He filed that away.

His adoptive parent died under ambiguous circumstances. So did at least one other family member whose continued existence might have complicated his inheritance. Whether Cassan accelerated these deaths or simply ensured he was never in a position to prevent them is a question that cannot be answered with certainty. This is deliberate. Cassan does not leave answerable questions behind him.

He inherited his parent's seat in the Twelve. The Traditionalists' contempt became something more careful after that.

The estranged sibling — there is one surviving member of his adoptive family who was displaced by his inheritance. They are alive because killing them would raise questions. They are powerless because Cassan has spent years ensuring their isolation from any position of influence. They know what he is. They cannot prove it. They have been managed so thoroughly that the estrangement itself functions as a cage.

They do not appear in Book One. They exist. The Chronalum may know they exist without understanding why that matters.

The psychological core:

Cassan's relationship to the Convergence's promise of transformation is personal in a way it isn't for anyone else in the Twelve.

He was already rewritten once. Adopted young, reshaped by a family that wasn't his, transformed from whatever he was before into something that could inherit power. He survived it. He emerged from it stronger, more capable, more himself in some ways than he might have been otherwise.

He drew entirely the wrong lesson from this.

He thinks transformation is something you can master. Something you endure and come out the other side of stronger. He has mistaken *surviving being rewritten* for *controlling the rewriting.*

The Convergence's promise — *we will transform you, we will make you more than you are* — resonates with the deepest experience of his life. He doesn't believe it because it's true. He believes it because it rhymes with something that already happened to him and that he survived.

He thinks he can control it. He cannot. The Convergence does not offer transformation you can direct. It offers consumption that feels like transformation until the moment you understand the difference.

By then it will be too late.

His tragedy: He is not simply a villain who chose evil. He is someone whose deepest wound taught him a lie, and he built an entire worldview — and an entire political strategy, and an entire cosmic agenda — on that lie. The lie is going to consume him. And part of him, the part that was rewritten as a child and never quite stopped feeling the edges of that reshaping, will recognise what's happening and not be entirely able to call it wrong.

The Branch Political Landscape

Inter-Branch Relationships

The six Branches maintain significant independent operational power within their domains while existing in a web of rivalry, alliance, and mutual dependence.

Known alliances:

- Azure and Obsidian have historically cooperated — technology and security share obvious interests, and the surveillance infrastructure is jointly maintained
- Verdant and Golden are in constant low-level conflict over resource allocation — the people who grow the food and the people who distribute it have fundamentally different interests

Known fault lines:

- Scarlet operates with more independence than any other Branch due to the Custodian programme's classified nature — other Branches resent this opacity
- Violet is consistently underfunded relative to its cultural mandate, which produces a Branch full of people who understand narrative and resentment in equal measure

Branch heads and the Twelve: Branch heads are not automatically members of the Twelve. Some are. Most are not. A Branch head who doesn't know the Twelve exist is a Branch head whose

cooperation can be assumed — they're executing policy they believe comes from the Outer Council, never questioning why certain directives arrive with unusual force or unusual speed.

A Branch head who does know the Twelve exist is either a member or a liability. The Twelve prefer members.

The Outer Council's Self-Image

This is important: most Outer Council members are not corrupt. They are not knowingly part of a system of suppression. They are people who believe in governance, who fought for their seats, who genuinely advocate for their districts within the framework they've been given.

The framework is the problem. Not the people within it.

This matters for the story because it means Wren cannot simply expose the Council and watch it collapse. The institution is larger than its worst members. The people who would need to dismantle it are the same people whose identity and purpose is built around maintaining it. Reform from within is not impossible — but it requires those people to accept that everything they've built their lives around was constructed on a foundation of suppressed truth.

That is the hardest thing to ask of anyone.

Open Questions

To be resolved through drafting:

- The precise current composition of the Twelve beyond Cassan Vale
- The recruitment process — what a candidate experiences when approached
- The identity and current situation of Cassan's estranged sibling — how much do they know, and when do they become plot-relevant
- Whether any current Outer Council members have independent knowledge of the Twelve's existence
- The specific mechanism by which the Twelve communicate and coordinate without leaving records
- Whether Voss Shearwall knows about the Twelve or only about the Convergence agenda through Scarlet Branch channels

Arbour - Water & Food

In a closed system, nothing is wasted. The Verdant Branch's official documentation calls this principle "sustainable cycle integration." The Sprawl calls it something less elegant and more accurate. Both are describing the same water.

Overview

Arbour is a closed system. Every drop of water that arrived on ARBOUR|05 is still somewhere in Arbour — recycled, purified, redistributed, consumed, recycled again. Every nutrient that entered the city's biological cycle is still circulating through it. Nothing leaves. Nothing is added from outside through official channels.

This should be a miracle of engineering. In the upper tiers, it mostly is. In the Sprawl, it is the daily texture of survival.

The Verdant Branch manages both water and food infrastructure, making it one of the most powerful Branches in practical terms — whoever controls what people eat and drink controls something more fundamental than law or currency. The Branch understands this. The Council understands this. The arrangement between them is the foundation of Arbour's social control in its most basic form.

Water

Sources

Arbour draws water from three sources, in descending order of official acknowledgment:

Recycled Wastewater — Primary Source All wastewater — grey water from washing and industry, black water from sanitation, and biological matter from organic disposal including human remains — enters the recycling infrastructure. The Verdant Branch's official term for the reintegration of human remains into the water cycle is **Organic Cycle Completion.**

This is common knowledge in the Sprawl. It is not discussed in polite company in the upper tiers, though the upper tiers drink the same water. People who discover it for the first time either have a

crisis or accept it with the pragmatic shrug of someone who understands that a closed system wastes nothing. Most people, eventually, shrug. You drink the water. You don't think about it too hard. Waste not, want not.

Solar Condensers — Secondary Source Atmospheric water collectors using solar energy to pull moisture from Cordis's air. Given the twin suns and the planet's erratic climate, these should be extraordinarily productive — Cordis's atmosphere holds significant moisture content that the condensers are designed to extract efficiently.

They are not extraordinarily productive. They are partially deployed, running at miscalibrated settings that nobody has been able to correct since the engineers who understood the calibration systems died. The condensers that are running produce approximately 40% of their designed output. Several are running so far outside their intended parameters that they are net negative — consuming more energy than the water they produce is worth.

The Azure Branch has filed three reports over the past century recommending a full condenser audit and recalibration. The Verdant Branch has blocked all three on jurisdictional grounds. The actual reason is that a full audit would reveal the extent of the miscalibration, which would raise questions about why it was never corrected, which would lead to questions the Verdant Branch leadership would prefer not to answer.

Geothermal Condensation — Tertiary Source A small but reliable source. The geothermal tap systems produce steam as a byproduct of heat exchange, and a portion of this is captured and condensed into usable water. This water is exceptionally pure — the heat process eliminates biological contamination — and is disproportionately allocated to the upper tiers. Residents of the Luminary drink almost exclusively geothermal condensation water. They are not told this specifically. They simply notice their water tastes cleaner.

Water Quality by Tier

Water quality differs as significantly as water quantity across Arbour's tiers.

Tier	Primary Water Source	Purification Level	Taste/Quality
Luminary	Geothermal condensation	Exceptional	Clean, neutral
Upper Meridian	Recycled, high purification	High	Near tasteless
Mid Tiers	Recycled, standard purification	Moderate	Faint mineral taste
Lower Meridian	Recycled, basic purification	Basic	Noticeably processed
Sprawl	Recycled, minimal purification	Minimal	Tastes of the system

Tastes of the system is the Sprawl's phrase for it. A particular flat metallic quality, slightly too warm, with an aftertaste that residents stop noticing after childhood and visitors never forget. It is

safe. Technically. The Verdant Branch's safety threshold is calibrated for the upper tiers' purification level. What meets that threshold after minimal purification is a question the Branch does not publicly examine.

Chronic consumption of minimally purified recycled water in the Sprawl contributes to health outcomes the Council attributes to poor personal hygiene and inadequate self-care. The Verdant Branch's health statistics, cross-referenced with tier of residence, would tell a different story. Those statistics are not cross-referenced with tier of residence in any document available to the Outer Council.

Food

What the Ark Carried

ARBOUR|05 was provisioned for both the voyage and planetary colonisation. Its food infrastructure included:

- **Hydroponic systems** — modular, scalable, designed to produce crops in any gravity and light condition
- **Seed vault** — thousands of Earth crop varieties preserved in controlled storage, the genetic library of Earth's agriculture
- **Cultured protein facilities** — laboratory-grown meat and protein, designed to supplement agricultural output during early settlement
- **Embryonic livestock** — genetic material for animal husbandry, intended for deployment once a settlement was established enough to support it
- **Preserved provisions** — centuries of emergency rations, most of which were consumed in the first generation post-crash

Centuries later, all of these systems have evolved, degraded, been repurposed, or been deliberately restricted.

Official Food Infrastructure — The Verdant Branch

Hydroponics The hydroponic systems are the backbone of Arbour's official food production. They have been expanded significantly from the original ark configuration — the Verdant Branch's primary achievement over centuries has been scaling hydroponic output to feed a continental city.

The expansion has come at the cost of variety. The original seed vault contained thousands of varieties. The current hydroponic systems grow approximately forty — those that produce the highest caloric yield per square metre of growing space, require the least complex maintenance, and are most easily processed into standardised nutritional allocations.

The seed vault still exists. It is held in Verdant Branch secure storage. Most of what it contains has not been grown in over a century.

Cultured Protein Still operational, still the primary source of protein across most tiers. The cultured protein that reaches mid-tier and Sprawl residents is nutritionally complete and entirely without pleasure — a grey-beige substance that takes on the texture of whatever it's processed into but never quite convinces. Upper tier residents receive cultured protein that has been processed further, flavoured, textured, and presented as something approaching real food. It is the same base product. The processing is the privilege.

Standardised Nutritional Allocation Every registered Arbour resident receives a baseline nutritional allocation through the official distribution system, paid for in Flux and calibrated to provide minimum adequate nutrition. The upper tier allocation is generous and varied. The Sprawl allocation is adequate by the Verdant Branch's own definition of adequate, which was last reviewed and updated 73 years ago.

The allocation does not account for the increased caloric demands of physical labour, which the Sprawl disproportionately performs. The Verdant Branch's nutritional science team filed a report noting this discrepancy 31 years ago. The report was received, acknowledged, and filed. The allocation was not updated.

The Unofficial Food Economy

Alongside the official system, a thriving unofficial food economy operates across Arbour — most visibly in the Sprawl but with tendrils reaching into every tier.

Hidden Gardens Plants growing in forgotten maintenance corridors, under salvaged lighting rigs, in sealed-off sections of the structural fabric that the Obsidian Branch doesn't know exist or has decided not to know exist. Tended by people who learned from people who learned from people, carrying horticultural knowledge that exists nowhere in the official Verdant Branch records.

The hidden gardens exist on a spectrum:

Truly hidden — Known only to the people who tend them and a small circle of trusted contacts. Producing rare cultivars, medicinal plants, or crops with enough value that discovery would mean serious consequences. These gardens are mobile where possible — planters that can be moved, lighting rigs that can be disassembled in hours.

Unofficially tolerated — Known to local Obsidian Branch officers who have made a private calculation that the gardens serve social stability in their district and that the right arrangement

makes everyone comfortable. The arrangement is never discussed explicitly. A portion of produce changes hands. Nobody files a report. This is not corruption — it is the Sprawl's informal economy functioning exactly as it always has.

Unlicensed Livestock Small animals primarily — birds kept for eggs, small mammals kept for meat and protein, insects cultivated for both food and trade. Larger animals exist but are extraordinary — requiring significant space, significant feed, and significant trust in whoever knows about them.

The sound of unlicensed livestock in the Sprawl is one of the textures of the place — soft sounds from behind walls, from above ceilings, from sections of corridor that are officially unused. Residents navigate by these sounds without consciously acknowledging them. Visitors notice immediately.

The Black Market for Cultivars, Seeds, and Genetics The most valuable unofficial food economy operates not in produce but in potential. Seeds from varieties that haven't been officially grown in decades. Genetic material for livestock species that Arbour hasn't officially raised since the first generation. Cultivar knowledge — specific growing techniques, soil compositions using salvaged materials, light spectrum adjustments for particular crops — that exists only in the memory of specific people and commands extraordinary value.

This market is old, careful, and deeply connected to the Wayfarer trade network. Some of what circulates in the Sprawl's seed black market originated in the Free Territories — varieties that diverged over centuries of cultivation on a different continent, producing plants that are recognisably related to Earth crops but different in ways that make them strange and valuable.

Otis Audagar controls significant portions of this market. Not through direct ownership but through knowing who has what and taking a percentage of every introduction they facilitate.

Jennifer Mosswood A food vendor in the Sprawl's Nadir tier whose stall is notable for producing food that does not taste like the official allocation. Ancient culinary knowledge, non-standardised preparation, ingredients sourced through networks she does not discuss.

Mosswood is connected to the hidden garden network, the unlicensed livestock trade, and the seed black market in ways that are extensive and carefully maintained. She is also connected, through relationships built over decades, to the Wayfarer traders who occasionally make contact with Sprawl networks. Her food is not just food. It is the preservation of something the Verdant Branch seed vault holds in cold storage and never grows.

She is not political. She is something more dangerous — she is a living archive of what food was supposed to be, operating in plain sight, one block from the main Transit Hub, behind a stall marked by the smell of cooking that draws people from three districts over.

The Verdant Branch — What They Know and Don't Say

The Verdant Branch holds more information about the health consequences of Arbour's food and water systems than any other institution. Their own research, conducted internally over generations, documents:

- The correlation between tier of residence and chronic health outcomes
- The nutritional inadequacy of the Sprawl allocation for physically active adults
- The water quality differential and its long-term health effects
- The relationship between dietary deficiency and increased **Aetheris** sensitivity

None of this research has been shared with the Outer Council. Some of it has been shared selectively with the Twelve, framed as evidence that the Sprawl population requires careful management rather than evidence that the Sprawl population requires adequate nutrition.

Elara Meadowlight has read all of it. She became the Head Horticulturist of the Verdant Branch despite this research, or perhaps because of it — she understood that the only way to change anything was to be inside the system that was causing the harm. She has been inside it long enough to understand that the system does not want to be changed. She has not yet decided what to do with that understanding.

She is getting closer to deciding.

What This Means for the Story

The seed vault is the Power Grid document's Vault equivalent for food — something that exists, that could change everything, that the system has buried. Wren does not discover the seed vault. But knowing it exists informs the world's texture.

Mosswood's stall is where Wren and Atlas go when Atlas can afford something that isn't the allocation. It is where Wren will go alone, later, when the allocation is all they can manage, and Mosswood will feed them anyway because she has been watching this particular grief approach for longer than Wren has.

The corpse water is the detail that, when Wren eventually tells Aran about how Arbour works, produces the longest silence of their early relationship. Not because it's the worst thing Wren tells him. Because it's the one that makes the cost of survival in Arbour feel most visceral to someone who has spent his life reading water from the land.

Elara Meadowlight getting closer to deciding — this is a slow fuse. She doesn't act in Book One. But she is moving toward acting, and the events of Book One accelerate that movement. She is the Verdant Branch's conscience and the Branch doesn't know she has one.

The Wider Supply Network — An Update

The unofficial food economy is not a simple pipeline between the Sprawl and the Wayfarers. It is a web — layered, redundant, and far more extensive than any single faction controls or even fully understands.

The Network in Practice

Inside Arbour: The Sprawl is not a monolith. It contains dozens of distinct sub-communities — neighbourhoods organised around shared species, shared origin, shared trade, shared history. Veilan is one. There are others, each with their own internal economies, their own relationships with the official distribution system, their own specialisations in what they produce and what they need.

Food moves between these communities through hyper-local networks before it ever reaches a vendor like Mosswood. A hidden garden in one district supplies three others. An unlicensed livestock keeper sells eggs to a processor two corridors away who sells prepared food to a distributor who supplies four stalls. None of these people know the full shape of the network they are part of.

The Badlands Communities: Scavengers and outcasts are not a uniform group. The Badlands contain settled communities in defensible locations, nomadic groups that have learned to read and move with **Aetheris** patterns, and individuals who have been out there long enough to develop knowledge of the terrain that nobody inside Arbour possesses.

These communities trade with the Sprawl through routes the Obsidian Branch knows exist and cannot fully shut down without deploying resources they don't have. The trade flows both ways — food, seeds, salvaged components, and **Aetheris**-adapted biological material moving inward; tools, Flux-adjacent currency substitutes, and information moving outward.

Some Badlands communities have also developed relationships with Wayfarer advance scouts who periodically cross the ocean. This is how certain seed varieties and cultivar knowledge from the Free Territories enters the Arbour supply network — not directly, but through three or four intermediary hands across different communities.

Shadow Settlements: Between Arbour's outer walls and the deeper Badlands, a number of settlements exist in the city's shadow — technically outside its jurisdiction, practically dependent on black market trade with both the Sprawl and the Badlands communities. The Council designates these as unlicensed habitation zones. The people who live there have their own names for their homes.

These settlements are the most exposed to **Aetheris** in the region — outside Arbour's (imperfect) atmospheric processing, subject to the full environmental conditions of the Penumbran Reach. They have also developed, over generations, the most practical and unsentimental understanding of CSD and the Gloaming of any community near Arbour. They do not have access to the suppressants that Arbour's medical system provides. They have developed other ways of managing it, some of which are more effective than the suppressants and none of which appear in any official medical record.

The Free Territories Beyond the Wayfarers: The Wayfarers are the most organised and most visible group on Aran's continent but they are not the only one. Fixed settlements exist in sheltered locations. Other nomadic groups move through territories the Wayfarers don't claim. Communities with minimal contact with either Arbour or the Wayfarers have developed entirely independent relationships with Cordis and **Aetheris**.

Some of these communities appear in Wayfarer oral tradition as distant relatives — groups that diverged from the original post-crash Wayfarer founding generations and went their own way. Others have no connection to the ark at all in their own understanding of their history, though genetically and historically they descend from the same crash survivors.

What This Means

Mosswood is not buying from Wayfarers. She is buying from someone who bought from someone who traded with a Badlands community who got it from a contact in a shadow settlement who occasionally deals with a Wayfarer scout.

The chain is long. Each link in it knows only the links immediately adjacent. This is not a security measure — it is simply how informal economies work. Nobody designed the redundancy. It emerged because it was useful and because it mirrors the way information moves in the Sprawl: sideways, in small pieces, never in a straight line.

The Convergence's spread mirrors this too. It is happening in all of these communities simultaneously, at different rates, interpreted through completely different frameworks. The Badlands communities call the Gloaming something else. The shadow settlements have rituals around it that are half practical and half spiritual. The Free Territories communities that aren't Wayfarers have their own understanding that is neither the Convergence's truth nor the Council's lie but something arrived at independently from lived experience.

All of these understandings are partial. All of them contain something true that the others don't.

A full map of the community ecosystem outside and around Arbour is documented separately — see: Communities of Cordis.

Glossary — Food and Water Terms

Term	Meaning
Organic Cycle Completion	Verdant Branch official term for the reintegration of human remains into the water cycle
Tastes of the system	Sprawl phrase for the particular quality of minimally purified recycled water
The allocation	Official standardised nutritional distribution — adequate by the Branch's own definition
The vault	Verdant Branch secure storage for the original seed vault — distinct from the Power Grid's Vault
Hidden gardens	Unofficial growing operations ranging from truly concealed to officially tolerated
Cultivar trade	Black market for seeds, plant genetics, and horticultural knowledge

Arbour - Transport

Arbour - Transport

How people move through Arbour tells you everything about who they are and what they're permitted to be. The transit system was not designed to reinforce the hierarchy. It simply does, because everything in Arbour does, because the hierarchy is load-bearing.

Overview

Arbour's transport infrastructure consists of three systems operating in parallel — the Mass Transit Rail network for horizontal movement, the Spine for vertical movement between tiers, and the maintenance tunnel network for movement that isn't supposed to happen at all.

Each system reflects the generation that built or inherited it. The rail network is original ark infrastructure extended badly over centuries. The Spine is deliberate post-crash construction, built specifically to control who can move where. The maintenance tunnels predate all of it — they are the ark's own service infrastructure, now vast, unmapped, and entirely outside official control.

The Mass Transit Rail — The Lines

Origin and Condition

The rail network began as ARBOUR|05's internal cargo and personnel transit system — pressurised corridors and tracked vehicles designed to move people and goods efficiently through a vessel the size of a small city. When the ark became a city, those corridors became the bones of Arbour's horizontal transport network.

The original lines are still running. Barely. Centuries of extension, patching, and improvised maintenance have produced a network that is simultaneously vast and fragile — covering most of Arbour's horizontal geography but doing so on infrastructure that ranges from reasonably maintained in the upper tiers to actively dangerous in the lower ones.

New lines were built post-crash as the city expanded, constructed from whatever materials were available by whoever was building at the time. These sections are identifiable by their inconsistency — different gauge, different carriage compatibility, different failure modes. A rail worker who has spent their career on the lower lines can identify which decade a section of track was built in by the sound it makes.

The Carriage System

Every carriage in Arbour's rail fleet is coded to a tier designation. The coding is physical — embedded in the carriage's boarding verification system — and social, in that carriages for upper tiers are visibly different from carriages for lower ones.

The journey from bottom to top:

Trains depart from lower tier stations carrying all designation classes. As the train ascends through the network — moving from lower lines to connection points to upper lines — carriages detach. A carriage coded for the Nadir tier detaches at the first major junction. Sprawl carriages detach progressively. By the time the train reaches the Meridian Districts it is carrying Mid-tier carriages and above. By the Luminary, two or three carriages at most.

This is not presented as exclusion. It is presented as efficiency — each carriage proceeding to its designated depot, minimising unnecessary transit time for upper tier passengers. The effect is that upper tier residents never share a carriage with Sprawl residents. They simply board at a later point in a journey that has already shed everyone below them.

The experience by tier:

Lower Lines / Sprawl: Underground. Hot — the lower lines run through the structural core of Arbour where waste heat from the power infrastructure accumulates and the atmospheric processors are weakest. Smoggy — recycled air that has passed through too many people and too many systems before reaching the platform. Packed — the lower tier population is larger and the carriages older and smaller. Loud — original ark infrastructure transmits vibration directly into the carriage frame, producing a constant industrial roar that residents of the lower lines stop hearing consciously after childhood.

The platforms are lit by salvaged lighting rigs that shed unpredictably. The signage is a palimpsest of generations of additions and corrections, older designations half-visible beneath newer ones. The carriages smell of bodies and recycled air and something underneath that might be the ghost of whatever the original cargo was.

Upper Lines / Luminary: Elevated. The upper lines emerge from the city's structure and run along the exterior faces of Arbour's upper tier architecture — open to Cordis's sky, offering views across the city and out toward the horizon. On clear days, from the right carriage, you can see the Frames on the horizon. Most upper tier residents have never been told what the Frames are.

The carriages are enclosed in transparent materials salvaged from the ark's observation systems. Climate controlled. Quiet — the upper line track was relaid within living memory by Azure Branch engineers following documented procedures correctly. The difference in ride quality between a lower line carriage and an upper line carriage is the difference between a place that is maintained and a place that is managed.

Tier Depots

Each tier has designated depots where its carriages are stored, maintained, and dispatched. Upper tier depots are staffed, maintained, and secure. Lower tier depots are understaffed, under-resourced, and the source of the rail network's most significant safety incidents.

Derelict carriages — when a carriage is pulled from service in the lower tiers, it goes to scrap. The Sprawl's salvage economy receives decommissioned carriages as raw material — metal, insulation, seating components, mechanical parts. Some decommissioned carriages are repurposed whole before they reach the scrap stage, appearing in the Sprawl as impromptu shelters, market stalls, or structural components in buildings that have incorporated them entirely.

A section of Veilan's eastern wall is the exterior face of a decommissioned Nadir-tier carriage from three generations ago. Residents have been painting it for decades.

Fare and Access

Rail travel requires Flux. The fare system is tiered — travel within your designation tier costs a standard rate, travel to a lower tier costs less, travel to an equal or higher tier requires both Flux and valid designation documentation.

In practice in the Sprawl, the fare system is the first of several informal systems layered over the official one. Gate attendants at lower tier stations operate on an understanding that is never written down — a small supplementary payment produces less scrutiny of documentation. This is not exceptional corruption. It is how the system functions. The official fare does not cover the actual cost of maintaining the lower line infrastructure, the attendants know this, the Branch knows this, and the supplementary payment is the difference.

The Spine — Vertical Transit

Structure

The Spine is a single structure, not five separate ones. One pentagonal architectural complex — five vertical shafts arranged around and within a shared central hub — sitting at the highest point of the hull-core's built-up arc, immediately adjacent to the Luminary. It is the single most recognisable silhouette in Arbour: visible from most of the city on a clear day, the one landmark every tier can see and name even if most residents of most tiers will never once set foot inside it.

This is deliberate, and it changes what the Spine actually is in most people's daily lives. **Most residents never use it.** The Mass Transit Rail network — horizontal by design, but doing real vertical work within a tier's own boundary through its carriage-detachment mechanic (see *The Lines*, above) — handles the overwhelming majority of how people actually move through Arbour day to day. A person can live an entire life on one or two tiers without ever needing the Spine, because rail already gets them everywhere within the boundary they're permitted to occupy. The Spine exists for the rare, specific case the rail network cannot solve: crossing a tier boundary itself. A doctor's appointment in a tier above your own. A work assignment. A family member relocated. For most people, most of the time, the Spine is not infrastructure — it's a landmark they orient by and almost never enter.

The Spine was not part of ARBOUR|05's original architecture. It was constructed in the second and third generations post-crash, built as a single deliberate chokepoint specifically to formalise and control the rare crossings that the emerging tier system could no longer afford to leave informal. Centralising vertical tier-crossing into one heavily controlled structure, rather than distributing it, was the entire point: a single gate is far easier to staff, verify, and surveil than five would ever be.

Distance to the Spine is still a tier hardship, but it works through the hull-core's own shape rather than through deliberate spacing. Luminary sits at the literal top of the hull-core's arc, immediately around the Spine's hub — Luminary residents live, structurally, on its doorstep, and Luminary living space is famously the most compressed of any tier, which only sharpens the proximity. Meridian wraps the flanks of that same arc, descending toward ground level. The Sprawl sits furthest out, at the base of the hull-core and beyond it into the surrounding built sprawl entirely — for a Sprawl resident, simply reaching the Spine means a real rail journey inward and upward through the hull-core's curve before they've even reached the gate where the actual scrutiny begins.

Each of the five shafts within the complex connects all tier levels from Nadir to Luminary. They are, structurally, redundant with one another — five lanes through the same chokepoint rather than five separate chokepoints — which exists mostly to prevent total citywide gridlock if any single shaft fails or is taken offline.

Access and Verification

Every Spine gate operates a verification system — designation documentation checked against the Flux registry, purpose of transit recorded, destination tier logged. Going down requires documentation but minimal scrutiny. Going up requires:

- Valid designation documentation for the destination tier, or
- A Branch authorisation pass for the destination tier, or
- An escort designation — travelling with someone of higher designation whose credentials cover both parties

The verification is automated at the primary level and staffed at secondary. Gate attendants have discretionary authority to request additional documentation, deny access, or flag individuals for Obsidian Branch follow-up. The exercise of this discretion follows patterns that residents of the lower tiers understand very well.

The experience of attempting to ascend: For a Sprawl resident with a genuine reason to reach a Mid-tier level — a doctor's appointment, a work assignment, a family member in a different tier — the day usually starts before the Spine itself ever comes into it: a rail journey inward and upward through the hull-core, watching the carriage thin out as Sprawl-coded cars detach behind them, before the Spine's pentagon silhouette is even close enough to read as a destination rather than a landmark on the skyline. By the time they reach the gate, the Spine itself is an exercise in being assessed. Every element of your presentation is read: dialect, fur condition, clothing, the specific smell of lower tier air that clings differently than upper tier recycled air. The verification system will clear you or it won't. The attendant's face will tell you what the system decided before the display does. For most Sprawl residents this is not a weekly indignity — it's rare enough, and significant enough when it happens, that the day itself gets remembered.

The Spine Gates — Named Locations

Each of the five shafts has an official designation — Gate One through Gate Five in the original construction records. Nobody calls them that.

Because all five sit within the same central complex rather than scattered across separate districts, the naming pattern is different from what a distributed system would produce. Sprawl residents don't generally have a personal relationship with "their" gate the way they might with a specific rail station near home — most will interact with the Spine rarely enough in a lifetime that the distinction between shafts barely registers. The names that do circulate tend to describe a shaft's specific use or reputation rather than the district it happens to serve: which shaft processes which kind of paperwork fastest, which attendants are known for which kind of scrutiny, which one the Branches use when they don't want to be seen using the public queues.

[PLACEHOLDER — the specific vernacular names for each of the five shafts to be determined through drafting and character development. Worth keeping the "named by use or reputation, not by district" principle in mind once these are decided, consistent with the single-hub revision above.]

Spoofing the System

Unauthorised ascent through the Spine is a significant criminal offence under Arbour law — classified as Designation Fraud, carrying consequences that escalate sharply for repeat offences. It is also routine.

Methods in common use:

Bribery — The most common method in the Sprawl. Gate attendants at lower Spine gates operate on the same informal economy as rail fare collectors. A supplementary payment — calibrated to the destination tier and the attendant's known rate — produces a documentation check that finds everything in order. The rate is known. The process is understood. It is not reliable — attendant turnover, Obsidian Branch spot audits, and individual attendant risk tolerance all create unpredictability.

Fabricated documentation — Forged designation badges, produced by a small number of specialists in the Sprawl who work from salvaged official materials and detailed knowledge of the verification system's tolerances. More reliable than bribery for a single ascent but significantly more expensive. The forged documentation is indistinguishable from official documentation unless checked against the central Flux registry — which gate verification does not always do for routine transit.

Deceased identification — Documentation taken from deceased residents whose tier registration has not yet been processed out of the system. The window between a death and the registry update varies from days to weeks depending on how the death was recorded and by whom. In the Sprawl, where deaths are not always officially reported promptly, this window can be longer. The documentation works until it doesn't. The risk of using a deceased person's identification that has already been flagged is significant and not always knowable in advance.

Escort designation — Travelling with someone of legitimate higher designation whose credentials cover the party. Requires either a genuine relationship with an upper tier resident willing to vouch, or a fabricated connection that survives scrutiny. Used for medical and official purposes legitimately; used for everything else unofficially.

Consequences of being caught: Designation Fraud at the Spine results in Obsidian Branch detention, documentation confiscation, and a flag on the individual's Flux registry that affects future legitimate transit applications. For repeat offences or for individuals already flagged for other reasons, the consequence escalates to extended detention and, in cases the Branch chooses to make examples of, public processing — the official term for what the Sprawl calls *being walked* — a detention that passes through the most visible sections of the transit hub before proceeding to the Branch facility.

Being walked is a message to everyone watching.

The Maintenance Tunnels

What They Are

The original service infrastructure of ARBOUR|05 — crawlways, maintenance corridors, access shafts, and utility passages built into every section of the ship to allow engineers to reach any system without disrupting occupied areas.

Centuries of city growth have buried, extended, collapsed, and rediscovered sections of this network continuously. No complete map exists. The Azure Branch holds partial maps covering the sections they actively maintain. Everything else is known only to the people who use it.

The warrens is the Sprawl's name for the sections they know. The Chronalum calls them the tunnels. Smugglers, unofficial traders, and people who move things or people without official documentation have their own section-specific names for routes they use regularly. There is no universal name because there is no universal map.

Who Uses Them

The maintenance tunnels are used by:

- Azure Branch maintenance crews — in designated sections, with documentation, following established procedures
- The Chronalum — for movement of people and information between cells, for access to archive sections of the Tabularium that are not accessible through official routes
- Black market logistics — goods moving between the Sprawl's unofficial economy nodes without passing through official transit checkpoints
- Individuals — people who need to move without being tracked, for reasons ranging from personal safety to active evasion of Obsidian Branch surveillance

The tunnels are also used by no one — vast sections that haven't been entered in decades or generations, where the original ark infrastructure is intact and silent and dark, where **Aetheris** accumulates in ways it doesn't in occupied sections because there are no atmospheric processors and no power draw to dilute it.

These sections are where things are sometimes found that shouldn't be there. Nobody discusses what specifically. The Sprawl has a general understanding that you don't go into sections you don't know, and if you find yourself somewhere you didn't intend to be, you leave the way you came and you don't go back.

The Tunnels and **Aetheris**

The unoccupied sections of the maintenance tunnel network are **Aetheris** hotspots. The same atomic bonding anomalies that affect the Sprawl's improvised infrastructure affect the tunnels' original materials — producing sections where the walls have changed texture, where metal has

become something between solid and liquid and stayed there, where the geometry doesn't resolve correctly when you try to map it.

Experienced tunnel users know these sections by feel — a particular quality of air, a change in the sound the tunnels make, a pressure that isn't quite the scratch but is adjacent to it. They navigate around them. New users don't always know to.

The Chronalum has lost people in the tunnels. Not to violence. To sections they went into and didn't come out of. The official position within the Chronalum is that these were navigation errors. The unofficial position is that some sections of the tunnel network are no longer entirely in this reality.

What This Means for the Story

The train as a class experience — Wren takes the train every day to the Tabularium. The specific carriage, the specific line, the quality of the air, the sound of the lower line track — these are the texture of their daily life. When Wren eventually takes the upper line for the first time on official business, the silence and the views and the quality of the air are disorienting in a way they don't fully acknowledge.

The Spine as threshold — every time a character ascends through the Spine, it is a threshold moment. The scrutiny at the gate, the assessment, the moment of being cleared or denied — this is Arbour's social contract expressed in a single interaction. Wren navigates it with their documentation in order, and their dialect is carefully managed. It still costs them something each time.

The tunnels as infrastructure of resistance — the Chronalum's use of the tunnels is not incidental to their survival. It is foundational. Without the tunnels, the Chronalum cannot move people or information without Obsidian Branch surveillance. The tunnels are the reason the Chronalum still exists.

The unoccupied sections — not plot-relevant in Book One, but their existence should be felt. Something in the walls of the tunnels that experienced users navigate around. A quality of wrongness that the Chronalum has learned to read. The suggestion that some sections of the infrastructure are no longer entirely here.

Species & Physiology

Species & Physiology — Foundational Premise

Lives in: World & Lore → Core Systems, alongside World Systems. This document states an in-universe foundational premise that was previously implicit (visible in details like Aran's "bleached fur tips," dialect-not-species as the real class marker, and the species/tier mapping in World Systems) but never directly written down. Read alongside World Systems' existing "Species and Tier — General Mapping" and "Dialect as Class Marker" sections, which this document underpins rather than replaces.

The Foundational Premise

Every named species in Sempiterni — every character, every population group, on Earth before the Magnetosphere Collapse and across all of Arbour, the Sprawl, the Badlands, the Wayfarers, and the Free Territories — is anthropomorphic. There is no baseline "human" physical form anywhere in this setting. "Human" and "humanity," as used throughout the existing documents (the ark designation, "humanity's last hope," "human-relevant timeframe"), refer to **species-group ancestry and civilisation** — the lineage descended from Earth, as opposed to the Penumbrans — not to a specific physical body type. Every member of that lineage is a distinct anthropomorphic animal species: wolf, fox, rabbit, and so on, in the traditional furry-setting sense — a fully formed taxonomy of distinct species, not a loose or symbolic gesture toward animal traits.

This is true of the Penumbrans as well. They are also anthropomorphic and animal-derived, just alien — a separate, ancient lineage that evolved independently in the Penumbran Reach, with their own (currently undesigned) range of species-forms, distinct from Earth-descended species but built on the same underlying logic: animal-derived, not humanoid-baseline. The Convergence/Aetheris does not distinguish between the two lineages by form — both are equally subject to it, which is consistent with and reinforces the existing ambiguity around whether the Penumbrans' fate was ascension or erasure: two independent anthropomorphic civilisations, on opposite sides of one unknowable threshold, neither privileged by their physical nature.

Mechanics

Species Carries Real Biological Variation

Species is not purely cosmetic or symbolic. Consistent with how the existing species/tier material already treats it (Aran's weathered build and bleached fur tips reading as genuine physical evidence of Badlands exposure, not just a description), species carries real, innate physical and sensory differences — the kind a reader would expect from the species in question if it existed as a real animal, translated to an anthropomorphic frame. A wolf-type character might have stronger night vision or a more sensitive sense of smell than a rabbit-type; a rabbit-type might have different stamina, hearing, or vulnerability profiles than a wolf-type. These differences are real and can matter practically — for fieldwork, combat, medical presentation, sensory description in prose — but they are not the basis of Arbour's social hierarchy.

This is an important and deliberate distinction already implied by the existing World Systems content: **species does not mark tier — dialect does.** The tier system is a social and historical artefact of the original ark manifest's wealth-and-connection-based selection process, not a biological hierarchy. A given tier contains wide species diversity (the Sprawl/Nadir has the *widest* diversity of any tier in Arbour, per existing documentation), and a Luminary resident and a Sprawl resident of the same species are common. Species-based biological variation is real-world texture, not a caste system. Conflating the two would contradict the existing, carefully established point that Arbour's stratification is about inherited wealth and institutional power, not biology.

Inheritance

Species is genetically inherited from both parents, consistent with real biological inheritance rather than a simplified "pick one parent" model:

- **Same-species parents** produce offspring of that species, as expected.
- **Mixed-species parents** — which exist, though are less common than same-species pairings — produce offspring whose species presentation is **genuinely variable** on a case-by-case basis. A mixed-species child might present closer to one parent's species, as a blend of both, or as something in between; there is no fixed formula or predictable ratio. This mirrors how real-world mixed heritage actually works rather than a tidy, game-like blending mechanic, and is true to life rather than mathematically deterministic.
- This variability is a quiet, realistic source of character texture rather than a plot mechanism in its own right: a character's species and appearance may not straightforwardly signal their parentage, family resemblance can be inconsistent or surprising, and assumptions other characters make based on appearance alone can be wrong. This is available as a tool for characterisation (for instance, a character being mistaken for a particular lineage, or a family interaction that explains an unexpected resemblance) without requiring it to be foregrounded as a story mechanic.

- The relative rarity of mixed-species pairings is **stated as a demographic fact** here, not yet explained. Whether this is purely cultural/social inertia, something with deeper roots in Arbour's tier-and-family-line politics (echoing the Twelve's own bloodline anxieties — see Cassan Vale, Traditionalists), or simply unremarked-upon happenstance is undecided and worth a deliberate choice before it comes up in prose, since the explanation (or lack of one) will read very differently depending on which it is.

What This Clarifies Retroactively

- **Aran's "bleached fur tips, weathered build"** (World Systems) — already consistent with this premise; this document simply makes explicit what was previously demonstrated only through example.
- **"Species doesn't immediately mark tier in Arbour — dialect does"** (World Systems) — this document provides the underlying biological logic that makes that distinction make sense: species variation is real but orthogonal to the social hierarchy, which is purely about inherited institutional power.
- **The original ark's selection process** (World Systems, "The Ark Selection Problem") — already describes "species that had historically dominated Earth's institutions of power, wealth, and academia" being overrepresented, with "other species" present as essential workers and service staff. This document confirms that "species" in that passage means literally distinct anthropomorphic animal species, not a euphemism or stand-in for something else.
- **Existing character/document references to "human," "humanity," "human-relevant"** — confirmed clean. A search across all session-produced documents (Cassan Vale, Glossary, Kugelblitz Jettison Mathematics, Propulsion & Launch Logistics, Penumbran Language & Naming) found every usage already consistent with "human" meaning species-group ancestry, not a baseline physical form. No corrections needed to existing documents as a result of this clarification.

Open Items

- [ ] **Penumbran species-forms** — established here as "also anthropomorphic/animal-derived, just alien," but no actual Penumbran species taxonomy exists yet. Worth developing alongside or after the Cosmology chapter's Dead Civilisation document, since their physical form likely connects to how the Installations are described physically (scale, doorways, ergonomics of surviving architecture).
- [ ] **Why mixed-species pairings are less common** — flagged above as an undecided demographic fact. Worth a deliberate decision (cultural, political, or simply unremarked) before it surfaces in prose.

- [ ] **A reference taxonomy** — this document establishes the *rules* governing species, but not a full list of which species exist in this setting or which named characters belong to which. Confirmed so far: Wren Emberlain (sand cat), Aran Sunderwood (coyote), Cassan Vale (snow leopard — see *Cassan Vale — Full Origin and Psychology*). The full supporting cast remains unassigned.
- [ ] **Cross-reference into World Systems proper** — this document currently stands alone; consider whether it should eventually be merged into or tightly linked from the existing World Systems document's "Biology — Species, Class, and the Body as Text" section header (referenced in World Systems but not yet expanded into content of its own).

Arbour City Geography

Lives in: World & Lore → Core Systems (or its own Locations chapter, once that chapter has more content). This is deliberately NOT a full geography document — it's the load-bearing skeleton: orientation, hull shape, and the core/sprawl distinction that every future district, landmark, and map must be consistent with. Detailed district names, the Spine gates' Sprawl nicknames, and street-level texture are explicitly out of scope for this pass — see Open Follow-Ups.

Why This Document Exists

Arbour City Geography has been sitting on every version of the directory tree as a single intimidating "Major Undertaking" — full city shape, district layout, Spine gate positions, landmarks, all at once. That framing made it feel impossible to start. It isn't. Dozens of geographic facts are already locked across other documents (Power Grid, Transport, Water & Food, the character documents) — they've simply never been spatially reconciled into one coherent shape. This document does that reconciliation first, as a skeleton, before any district gets named or any map gets drawn.

Part One — The Hull

Confirmed Dimensions (already locked, Technical Appendices)

- **Length:** 3,200 m
- **Maximum beam:** 420 m
- **End-on cross section:** ~138,544 m² — explicitly described as a **circular profile**, mathematically confirmed (a circle of that area has a 420 m diameter, exactly matching the stated beam).

Hull Shape

ARBOUR|05 was not a uniform tube. Consistent with real deep-ocean pressure-vessel engineering (the same logic the Committee used to justify drydock construction at 3,000+ metre depths — see *The Great Stripping*), the hull was **tapered and segmented**, not a constant-diameter cylinder end to end:

- **Widest point (~420 m, maximum beam):** the **Habitation Cylinder** — the midsection, where the bulk of the colonisation population and equipment lived during the voyage. This is the section whose structural mass, per existing canon, "insulated the forward reactors" during the cascade.
- **Forward section (narrower):** command, tapering toward the bow.
- **Aft section (narrower):** the drive section — Kugelblitz containment, R4, and R5 — tapering toward the stern, consistent with the drive assembly being jettisoned "out the aft hatch."
- **Colonisation equipment — distributed, not centralised.** Per existing canon, the drive section is aft and "command and colonisation sections" are forward — but the colonisation equipment itself (geothermal drilling rigs, atmospheric harvester components, the solar array material) was never one large cargo bay. It sat in **smaller pockets distributed throughout the forward third**, each positioned near whatever system it served, rather than centralised in a single hold. This is consistent with — and is now the mechanical explanation for — why post-crash deployment was genuinely triaged piece by piece rather than all-or-nothing: each pocket had its own access point and its own surviving engineers, and each piece of equipment's post-crash fate (geothermal taps deployed within a decade, atmospheric harvesters partially deployed, the solar arrays erected but never calibrated) was decided independently of the others.
- **A real downstream consequence worth flagging:** once a given pocket's equipment was salvaged or deployed, the empty pocket itself became some of the oldest available interior real estate in the hull-core — a pre-existing void in the original structure, distinct from anything built later by any generation. This is a strong, ready-made hook for a specific location (an old equipment pocket repurposed as a shrine, a black-market cache, an archive wing, a Branch facility) whenever the geography pass reaches that level of detail.

This tapering and pocketing is the origin of a real, physical architectural vocabulary for Arbour's oldest buildings: pressure-rated, curved, segmented construction, with reinforced ring-frame sections at intervals along the original hull, and — in places — oddly-shaped sealed voids that don't match the logic of anything built around them — visible today as load-bearing structural bones and strange "wasted" pockets in the oldest parts of the city, regardless of whether anyone living there understands them as ocean engineering or emptied cargo space. They don't. Nobody alive has seen an ocean. These details, to a present-day Arbour resident, simply read as old, heavy, "crude," over-built construction — the same way the rest of the city treats inherited procedure: followed, normalised, never questioned for its original purpose. *(Direct continuity with the "ritual engineering" framing already established in World Systems' Azure Branch material.)*

Scale Check — Forward Mass vs. Aft Drive Section

A scaled side-profile pass (using the existing reactor frame-position data — R1 at Frame 12, R2 at Frame 28, R3 at Frame 67, R4 at Frame 112, R5 at Frame 134) confirms something the prose alone left ambiguous: **R1 and R2 sit roughly 1,900+ metres from R4 and R5** along the hull's 3,200 m length. An early pass at this diagram connected that distance with a thin, empty service spine — which solved the distance problem but created a new one: a kilometre-plus of dead, wasted, structurally thinner space makes no engineering sense in a vessel built to survive both deep-ocean

assembly pressures and relativistic flight stress, and it isn't what the existing text actually says.

The corrected version uses existing canon directly. *Technical Appendices* already states that "the massive liquid coolant reserves and secondary reactors (R1, R2, R3) were placed at the forward section to act as kinetic and radiation shielding" — meaning that stretch of hull was never empty. It's a **full-width, mass-loaded coolant reserve and shielding section**, running from the back of the Habitation Cylinder to roughly R3's position. This does three things at once: it removes the "dead space" problem, it gives a physical, geometric reason for R3's documented status ("partially functional... took the edge of the surge" — R3 sits at the edge of the shielded zone, fully protected reactors further forward, the drive section's burst reaching the rest), and it means the only genuinely narrower stretch of hull is a short service taper between the shielding mass and the aft drive bulge — not the entire forward-to-aft distance.

Worth keeping this firmly in mind for any future cross-section or map work: the forward section (command, Habitation Cylinder, colonisation equipment pockets, coolant/shielding mass) is large, dense, and functional along nearly its full length. Only the final stretch into the drive section narrows meaningfully.

Who Actually Built the City — ARC's Hand in the Hull-Core

This addresses a real, worth-asking question: three centuries of deconstruction, reshaping, and floor-levelling work (see *The Arbour Hull Core*, "Why the Floors Are Level") is an enormous, sustained engineering effort. Who actually did it, and with what?

The answer doesn't require inventing new equipment or a new system. The colonisation equipment already established above — geothermal drilling rigs, atmospheric harvester components, the solar array deployment hardware, and by clear extension the structural cutting, shaping, and assembly systems any genuine colonisation effort would also have needed — was never meant to build a single static ship-shaped structure. It was built to **deconstruct and reconfigure**, to turn a vessel into the bones of a settlement. That work was never going to stop just because the colonisation plan itself was overtaken by crisis; it simply changed what it was reshaping the ship *into*.

And that work was never purely automated, and it didn't stay purely human either — the balance between the two shifted, generation by generation, in a direction worth being deliberate about. ARC — Arbour's ship-derived system intelligence, already established as "Autonomous Routing & Control," originally built to handle navigation and system routing aboard ARBOUR|05 — had a scope that extended naturally to directing colonisation deployment and construction logistics as well, not navigation alone. This is not a new capability invented for this document; it follows directly from what "Autonomous Routing and Control" was always going to mean for a ship explicitly built to become a colony.

Early generations leaned on ARC heavily, with surviving engineers who understood the original systems working *with* it directly: deploying geothermal taps, partially deploying atmospheric harvesters, erecting solar arrays, levelling the first generations of habitable deck space, directing structural cutting and reinforcement as the original hull was slowly reshaped into

something people could actually live in long-term. In this period, ARC's instructions carried real, earned authority — checked, understood, and largely correct.

That balance did not hold. Per existing canon, ARC's memory core degrades non-linearly over centuries, including corruption it cannot always detect — and as that corruption deepened, and as fewer people remained alive who'd ever understood the original systems well enough to catch ARC's errors, trust in its construction-direction role eroded the same way trust in everything else inherited from the founding generation eroded: not through one dramatic failure, but through a slow accumulation of instructions that turned out to be wrong, structures that didn't make sense once finished, plans that referenced systems that no longer existed. **Later generations increasingly did the work by hand, by accumulated practical knowledge, rather than by ARC's direction** — the same self-taught, salvage-and-experimentation competence already established as the Sprawl's defining trait ("descendants of engineers, self-taught through salvage and experimentation... arrived at understanding from below, through necessity and curiosity, rather than from above through controlled transmission") now running in parallel inside the hull-core as well, not just in the Sprawl. By the present day, manual, hands-on, hard-won structural competence — passed person to person, the way the Sprawl already passes down which taps are stable and which sections will shed first — is the dominant mode. ARC is still occasionally consulted, still occasionally followed, but it is no longer trusted the way it once was, and the people doing the actual levelling and reshaping work today are far more likely to be relying on what they personally know about how this section of wall behaves than on anything ARC tells them.

The trouble is the same trouble ARC has everywhere else, and its damage is mostly historical now rather than ongoing. Per existing canon, ARC's memory core has degraded non-linearly over centuries, including corruption it cannot always detect — it sometimes issues instructions based on false memory, instructions that, during the era when ARC's direction still carried real authority, were followed because nobody at the time understood the system well enough to question it. That earlier trust is what left a mark: a deconstruction crew directed toward a section that didn't need it, a structural change made on a corrupted memory of what the original colonisation plan specified, a space sealed off for reasons nobody now alive can reconstruct. The people who eventually stopped trusting ARC's construction direction couldn't undo what earlier generations, trusting it, had already built. The errors are baked into the structure now, indistinguishable from deliberate human choice to anyone living today — which is precisely why the present generation relies on hands-on, hard-won knowledge of how a given section actually behaves, rather than on records of why it was built that way in the first place. Nobody currently alive can fully separate, in the hull-core's physical fabric, what reflects a real human decision from what reflects ARC's older, corrupted instructions, still standing because nobody since has had reason or resources to tear it back down and start over.

This is the same texture as everything else inherited and unexplained in the hull-core — just now extended to genuinely include the possibility that some of it was never decided by a person at all, and the further possibility that the people who eventually noticed something was wrong simply built around it, by hand, rather than ever finding out why.

Confirmed Internal Systems

Before mapping tiers onto the hull, a complete internal-systems pass confirmed the hull is not just a shape — it's already carrying the direct ancestors of two of Arbour's three transit layers, per existing canon:

- **The main personnel/cargo transit corridor** runs the ship's full 3,200 m length — already locked in *Transport Within Arbour* ("the rail network began as ARBOUR|05's internal cargo and personnel transit system"). This is why the original rail lines already "cover most of Arbour's horizontal geography" from day one: they didn't need post-crash construction to achieve that reach, because the ship itself was already that long.
- **The maintenance crawlway layer** runs separately, beneath the main corridor, also full-length — the direct ancestor of the maintenance tunnels / the warrens, per existing canon ("the original service infrastructure of ARBOUR|05... built into every section of the ship").
- **The Kugelblitz** sits inside the aft drive section, alongside R4 and R5, consistent with being jettisoned "out the aft hatch."

This matters for the cross-section below: the original transit corridor doesn't just happen to run through the hull-core's territory — it **is** the hull-core's oldest infrastructure, still tracing the same path it always did, just repurposed and extended over centuries rather than newly built.

Orientation — "The Long Incline"

This corrects an earlier draft of this document, which had the ship standing nearly vertical, like a fallen skyscraper propped upright. That version solved a real problem (a flat-lying corridor can't drive a climbing tier system) but overcorrected: it didn't actually need to be that steep, and a closer look at what "steep" means for an object 3,200 m long shows the standing-tower model was solving for the wrong constraint.

The actual constraint is simple: the original transit corridor needs enough **vertical rise** along its length to support a climbing tier system. It does not need to look like a standing tower to do that. At a genuinely shallow-looking lean — roughly 15-20° off horizontal, the kind of angle that would read, to the eye, as "mostly lying down, propped up at one end" rather than "standing" — the ship's full 3,200 m length still produces close to 900-1,000 m of real vertical rise. That is more than enough: the city's currently built-up, habitable stretch only needs about 200 m of that rise, a fraction of what even a shallow lean provides.

The corrected version: the ship came down at a shallow angle, roughly 15-20° from horizontal — closer to lying down than standing up, but not flat, and not symmetric end to end. Bow up, stern down, the same as before — but "up" here means propped at a shallow rise along a long incline, not a near-vertical lean. This means the **3,200 m length now spans a long incline**, not a tower: roughly 3 km of horizontal run, climbing to perhaps 900-1,000 m of vertical rise at the high end. This single change resolves the same things the standing-tower model resolved, while also fixing two things the tower model strained against:

- **The original transit corridor, running fore-to-aft, now climbs the incline rather than climbing a tower.** It was always the ship's primary spine of movement; after the crash, that same infrastructure still does exactly the job a climbing tier system needs — it

just climbs a long hill rather than a vertical shaft. Zero retrofitting required to explain why it already reaches every level.
- **The forward section (R1, R2, the Habitation Cylinder, the coolant/shielding mass) is now the high end of the incline.** This still matches existing canon directly: R1 powers Luminary and the upper tiers, R2 powers Meridian and the mid tiers — the forward reactors were always the ones serving the upper city, and the geometry now explains why with a more generous, more physically plausible shape than a tight vertical stack ever offered.
- **The aft drive section (R4, R5, the Kugelblitz) is now the low end of the incline, at ground level.** Consistent with the drive section taking the worst of the impact, the EM cascade detonation, and the debris field forming around that lower end while the better-protected forward structure further up the slope stayed comparatively intact.
- **R3**, "partially functional... took the edge of the surge," sits geometrically between the two ends — consistent with a position partway up the incline, neither fully shielded like R1/R2 nor destroyed like R4/R5, and a natural fit for Meridian's in-between power profile.
- **The Sprawl's cramped footprint problem from the standing-tower model is gone.** A tower's base, even un-tapered, was always going to be a tight several-hundred-metre circle — uncomfortably small for the tier explicitly described as the most populous and most crowded. A long incline gives the Sprawl real room: it now sits along a multi-kilometre base and lower slope, not squeezed around a narrow tower's foot.
- **The eastward debris-field asymmetry is now simpler to explain, not more complicated.** Under the standing-tower model, "east" required reasoning through a subtle multi-axis tumble whose footprint-level effect was almost too small to matter. Under the incline model, "east" can simply be the literal downhill direction — the direction the aft section's wreckage broke away and slid or scattered toward as the ship came down. The lean itself does most of the explanatory work now, rather than needing a separate, finely-tuned tilt argument layered on top of it.

The ~420 m beam — the hull's maximum width — remains the structure's **footprint at any given point along the incline**, the cross-sectional width perpendicular to the slope rather than the slope's own length. A tier's usable floor area is still bounded by that 420 m cross-section; what's changed is how much of the ship's 3,200 m length that cross-section needs to travel along to gain real elevation.

A note worth flagging explicitly, since it's the kind of thing a reader will reasonably wonder: an incline this real (~17°) does not mean residents spend their lives walking on a slope. The original decks were built perpendicular to the ship's long axis and came to rest tilted at that same angle relative to true ground-level — a real, felt tilt, not a subtle one. Three centuries of inherited, unglamorous correction work (building up the downhill side, re-laying floor sections) has levelled most of the long-inhabited core; newer or less-trafficked spaces are where that work is least complete. See *The Arbour Hull Core* (Prose & Voice), "Why the Floors Are Level," for the full sensory and narrative treatment — this is exactly the kind of inherited-but-corrected texture that document already specialises in.

Of the full ~3,060 m horizontal run, only the upper stretch is currently habitable — corresponding to the same **~200 m of vertical rise** already established, which now translates to roughly **650-**

700 m measured along the slope itself from the high end. The remainder of the incline, descending toward the low end, is buried, structurally compromised, or sealed off — consistent with the Vault sitting "approximately 340 metres below Arbour's current surface level" (see *Power Grid*), a depth that still reads naturally as further down the original ship's length, toward the stern, just now reached by descending a long slope rather than dropping straight down a shaft.

Part One Conclusion — The Full Hull-to-City Cross-Section

With the hull's internal structure, the corrected shielding mass, the corrected incline orientation, and the scattered debris field all reconciled, the present-day cross-section resolves as follows:

- **Luminary** sits at the literal high end of the incline — the highest occupied point of the ~650-700 m built-up stretch (measured along the slope), directly around the old forward Habitation Cylinder and shielding mass.
- **The Spine** sits immediately beside it, at that same high end — a single central pentagonal complex, not distributed across the city. This is now locked (see *Transport Within Arbour*); previously the only genuine Tier 1 blocker remaining in the project.
- **Meridian Districts** occupy the middle stretch of the incline, between Luminary at the high end and the Sprawl at the low end — descending along the slope rather than wrapping around a tower's sides, around R3's position.
- **The original transit corridor** still traces through the hull-core along this same slope — the rail network's oldest lines climb where the ship's own fore-to-aft corridor always ran, now read as a long ascent up the incline rather than a vertical shaft.
- **The Sprawl** sits at and around the low end of the incline, at ground level, spreading outward onto ordinary surrounding land. The incline orientation gives the Sprawl real room to spread — a multi-kilometre base and lower slope, not a tight ring around a tower's foot. Whether it's symmetric in all directions from that low end or concentrated toward one side is addressed below — but its position at the low end, rather than wrapped partway up a tower's flank, is settled by the orientation fix.
- **The scattered debris field** sits at and beyond the low end of the incline, where the aft drive section — R4, R5, the Kugelblitz, the worst-damaged part of the ship — broke away and came down hardest, fusing with the terrain and the widened reality tears already there. The debris field isn't a separate location elsewhere on the map; it's what's directly underfoot and immediately around the low end of the city people actually live in, confirmed by *Power Grid* to extend "beneath the Sprawl's eastern districts." The debris field itself still has no single crash site or crater (see *Kugelblitz Jettison Mathematics*, Part Six) — it's discontinuous wreckage fused into terrain at multiple separate points, with widened reality tears threading between them, rather than one footprint.

Why specifically east, locked this session — now simpler under the incline model. The ship's lean wasn't a clean, single-axis tilt; a genuinely uncontrolled crash sequence tumbles on more than one axis at once, and the ship's final orientation is the resultant of however much it tipped along each. Under the incline model this is more straightforward than it was under the standing-tower model: "east" is, plainly, the downhill direction — the direction the incline descends toward, and the direction the aft drive section's wreckage broke away and scattered toward as the ship came down. The debris field's eastward position isn't a separate fact sitting beside the

incline's lean; it's the same fact, read at the same scale. The ship came down leaning/sliding eastward; the aft section that broke away during that fall landed east and downhill of where the rest of the hull finally settled; the Sprawl, ten generations later, grew on exactly that ground, spreading out from the low end in the direction the incline already pointed. One cause, not two coincidentally aligned ones — and "east" was always the existing, locked fact (*Power Grid*: debris "beneath the Sprawl's eastern districts") that this mechanism now explains, not something invented to justify it.

Scale, now locked with real figures. Two separate events, already distinguished in *Kugelblitz Jettison Mathematics*, produce two separate scales:

- **The impact/crash itself** (kinetic energy at re-entry, ~323 kilotons equivalent per Part Five) is what actually scatters the bulk of ARBOUR|05's wreckage. Standard blast-effect scaling for an event this size suggests severe structural destruction within roughly **1.3–1.5 km** of wherever the worst of the impact occurred, with debris and lighter damage plausible out to **~9 km** — though a ballistic structure of this mass breaking apart on impact scatters wreckage by momentum and fragmentation more than a pure blast wave would, which is consistent with the existing "discontinuous wreckage fused into terrain at multiple separate points" framing rather than one neat radius. **This is the broad debris field** — several kilometres across, scattered rather than uniform, and now plausibly continuous with the downhill side of the incline itself rather than a separate zone reached by crossing open ground.
- **The R4/R5 antimatter annihilation** (4.3 kilotons, Part Six) is a much smaller, localised event within that broader scatter — severe blast damage within roughly **300–700 metres** of wherever R4/R5 actually came to rest. **This is the source of the widened reality tears and the Aetheris-intensity spike**, not the whole debris field. The 340% post-crash Aetheris increase should be read as centred tightly on this smaller annihilation point, fading outward, rather than spread evenly across the entire kilometres-wide debris scatter.

The practical consequence for the hull-core's relationship to all this: with the incline orientation, the low end of the hull-core sits at or very near the edge of this broader debris scatter — close enough that the Sprawl's eastern districts genuinely do sit "beneath" or immediately adjacent to it, as already established, but the most dangerous, Aetheris-intense ground (the annihilation point itself) is a much smaller, more specific location within that wider zone — not coextensive with "the debris field" as a whole. This gives future scene-writing a useful distinction: most of the debris field is merely dangerous in an ordinary, structural-hazard sense (collapsed wreckage, contaminated ground, unstable footing); a much smaller area within it is dangerous in the *Aetheris* sense, and that smaller area is where the worst hot zones, the strangest geometry, and the most acute exposure risk should concentrate.

Part Two — Two Kinds of City Fabric

This is the single most important organising decision in this document, and everything else about Arbour's geography should be checked against it:

The Core — Hull-Anchored, Old, Dense

The Luminary and the Meridian Districts are built substantially **on, into, and around the original hull's incline**. This is the oldest part of the city, dating to the first generations post-crash, and its physical geography is directly shaped by the ship's actual structure:

- **Luminary** sits at and near the **high end of the incline** — the highest physically accessible point of the original structure, the part that emerged most intact from the crash, closest to undamaged original architecture and to R1.
- **Meridian Districts** occupy the **middle stretch of the incline**, descending from Luminary toward the low end — consistent with R2 (which powers the Meridian Districts) and with the Upper/Lower Meridian split already established in the power allocation table.
- This core is geographically extended along the slope rather than compact around a tower's base, consistent with "vast and fragile" original rail infrastructure that "covers most of Arbour's horizontal geography" — the original corridor runs the length of the incline through this core, with horizontal rail spurs branching outward from it at each tier level to actually reach a tier's living and working spaces along the slope.

The Sprawl — Outward Growth, Younger, Organic, and Spread Across the Incline's Low End

The Sprawl is **not** mapped onto the high or middle stretches of the incline. It is centuries of later, more organic growth spreading outward at and around the **low end** of the original structure, onto the surrounding land beyond the hull's footprint — consistent with:

- "Sprawl" as a name (something that spreads outward at ground level, not something built partway up a slope).
- The Sprawl's defining qualities already established elsewhere: widest species diversity (the demographic least represented in the ark's original passenger manifest, per *World Systems*, has the least claim to space inside the old hull-core and the most reason to be building new, outward), the most informal/improvised economy, dozens of distinct named sub-communities like Veilan with their own internal logic.
- R5's debris field extending "beneath the Sprawl's eastern districts" (*Power Grid*) — this reads as a tight, direct relationship: the debris field sits at and beyond the low end of the incline, exactly where the aft drive section broke away and came down hardest, and the Sprawl's eastern districts grew up directly on and around that same ground, spreading from the low end in the same downhill, eastward direction the wreckage itself travelled. The Sprawl isn't built on a *separate* crash-affected area reached by distance from the hull-core — it's built immediately around the low end of it, on the part of the wreck that's most thoroughly fused with the debris field.

The Sprawl's "underground, hot" rail lines (*Transport*) run beneath this outward, ground-level growth — tunnelled beneath the later, organically-grown surface construction, running close to **R5's debris field and the structural core's waste heat**, which is a real, direct engineering reason for the heat (proximity to buried, still-warm wreckage and power infrastructure converging

at the incline's low end) rather than depth inside the original ship.

Why This Split Matters

This gives Arbour two genuinely different *kinds* of architecture, not just two wealth levels wearing different paint:

- **Core (Luminary/Meridian):** ocean-pressure-vessel bones — curved, segmented, over-built, ring-framed, occasionally producing spaces that don't make sense by ordinary architectural logic (a load-bearing wall far thicker than it needs to be for a building this size; a sealed, circular hatch-door repurposed as a vault or shrine; corridors that curve in ways nothing about the city's current function explains). Read by residents — even upper-tier residents — as simply "old" or "ancestral," never as "built for an ocean," because nobody currently living has the framework to read it that way.
- **Sprawl:** built by hand, by need, by salvage, over generations, on ordinary land, using whatever materials and techniques each generation had — including, per *Transport*, entire repurposed decommissioned rail carriages (Veilan's eastern wall). No inherited pressure-vessel logic. A fundamentally different, younger architectural language.

This split also gives a future scene a genuinely strong, specific image: a Sprawl resident encountering the hull-core's "primitive," over-built, ocean-rated construction for the first time and reading it as ancestral, crude, or unsettling — without any character in the room understanding why it's actually shaped that way, since the ocean Project Arbour fled across no longer exists in anyone's living memory or oral tradition this side of the crossing.

Open Follow-Ups

- [ ] **Specific examples of ARC-directed construction gone wrong** — worth identifying one or two concrete instances (a specific sealed pocket, a specific structural oddity) that can be deliberately attributed to a corrupted ARC instruction, for use as a reusable scene detail, the same way the Hull-Core document's "specific, reusable details" work for sensory texture generally.
- [ ] **How much oversight of ARC's construction/deployment role survives in the present day**, if any — does Azure Branch still nominally direct or monitor this work, or has it become as unsupervised and unquestioned as ARC's other functions already are per existing canon?
- [ ] **Whether this connects to Silas Varran's existing ARC obsession** (Five Arks Thread 1) — he is already established as closest to understanding what ARC is trying to communicate; worth considering whether his investigation could plausibly touch construction/deployment logs as well as navigation data, without overloading his existing thread.
- [x] **Ship orientation corrected this session, then refined to a long incline in a follow-up session.** Earlier drafts had the ship lying flat on its side; that was corrected to a near-vertical standing orientation; that, in turn, has now been corrected again to a

shallow-angle incline (roughly 15-20° from horizontal — closer to lying down than standing, but propped at one end, not flat). The standing-tower version solved the original rail/tier-system problem but overcorrected — a 3,200 m object only needs ~200 m of vertical rise to support the established built-up stretch, and even a shallow lean comfortably provides 900+ m of rise. The incline model keeps everything the standing model fixed (the corridor climbs, R1/R2 sit at the high end, R4/R5 at the low end) while also solving two things the standing model strained against: the Sprawl's cramped tower-base footprint, and the need for a separately-argued tilt to explain the eastward debris asymmetry. See "Orientation — The Long Incline" above for the full correction.

- [ ] **How horizontal movement actually works within a tier, now that the original corridor runs the length of a long incline rather than a vertical shaft.** This document's Part Two asserts horizontal rail spurs branch outward from the corridor at each tier level — a necessary piece of geography the orientation fix requires, but only asserted in passing here, not designed. Worth a dedicated pass: where do the spurs originate per tier, how do they relate to the carriage-detachment mechanic already established in *Transport Within Arbour*, and do they explain the "vast and fragile... covers most of Arbour's horizontal geography" framing convincingly at the district level. (Note: the incline model makes horizontal spurs somewhat more intuitive than the standing-tower model did, since "horizontal" along a long slope is a more natural direction of travel than "horizontal" branching off a vertical shaft — worth revisiting with that in mind.)
- [ ] **Exact present-day footprint and scale of the Sprawl** relative to the hull-core — how far outward has three centuries of growth actually spread? The incline model gives the Sprawl meaningfully more room to work with than the standing-tower model's tight base did (a multi-kilometre low end and downhill slope rather than a ~400 m-diameter foot), which should be factored into any future figure. Needed before any map can be drawn.
- [x] **Whether the Sprawl is symmetric (surrounding the base on all sides) or concentrated toward one side.** ✓ Resolved, new document: *The Sprawl* (World & Lore → Locations & Sensory Detail). Asymmetric, concentrated east — directly following the debris field's own asymmetric shape (worst where R4/R5 actually came down). **Note:** that document's reasoning was built around the standing-tower model's subtle multi-axis tilt; under the incline model, the same conclusion (asymmetric, concentrated east) holds and is actually easier to justify (east is simply the downhill direction), but *The Sprawl* document's own physical reasoning should be revisited for consistency with the incline model — flagged as a new follow-up there.
- [x] **The five Spine gates' actual geographic positions** — ✓ resolved. The Spine is a single central pentagonal complex — one structure, five internal shafts — sitting at the high end of the incline, immediately beside the Luminary. Not distributed toward Sprawl territory; centralisation is the entire point of how it functions as a chokepoint. See *Transport Within Arbour*, "The Spine — Vertical Transit," for the full revision — that document's own language should also be checked for standing-tower assumptions now that the incline model is locked.
- [ ] **Where exactly the Tabularium, the main Transit Hub, and other named locations (Mosswood's stall, Veilan) sit** relative to this skeleton. *The Tabularium* document's lower/upper-floor split should still hold under the incline model (it was never dependent on the tower's specific verticality, just on a public/restricted split low-to-high

along whatever the structure's shape turns out to be) but is worth a confirmation pass.
- [ ] **The Spine gates' Sprawl nicknames** — still an existing placeholder from *Transport Within Arbour*, unresolved.
- [ ] **A specific, named visual/architectural detail or two** for the hull-core's "ocean-vessel" construction — e.g., a specific sealed circular hatch, a specific over-thick wall — worth designing deliberately for at least one or two locations before this shows up in prose, so it isn't generic.
- [ ] **Precise vertical figures** — exact metres for Luminary's elevation, Meridian's range, and how the "~650-700 m currently built-up along the incline" breaks down by tier, once a fuller geography pass is ready for that level of detail. *(Figures corrected this session for the incline model — previously stated as ~200 m of straight vertical height under the standing-tower model; that ~200 m of vertical rise still holds, but now corresponds to a longer ~650-700 m stretch measured along the slope itself.)*
- [ ] **This document deliberately does NOT yet address:** district names beyond Veilan and the Sprawl/Luminary/Meridian tier labels, the Badlands' relationship to the city's edge, or any map artifact. Per the original scoping conversation, those are separate, later sessions building on this skeleton.

The Arbour Hull Core

Lives alongside: Arbour City Geography — Skeleton (Session One). Not a worldbuilding document in the usual sense — this is a working reference for drafting scenes set in the Luminary or Meridian Districts, translating the locked engineering (tapered pressure-vessel hull, ring-frame construction, several-Pyramids launch mass) into the specific physical sensations a character would actually notice without ever being told why. Nothing here should be exposited on the page. It should simply be true of the space, the way gravity is true of it.

The One Rule

Everything in the hull-core was built to resist being crushed from outside, not to look a particular way. Every visual or sensory detail below should trace back to that one fact. The Sprawl was built by people solving "how do we make a wall?" The hull-core was built by people solving "how do we keep several thousand tonnes per square metre of ocean from finding the one weak point in this hull", — and the answer to that question, three centuries later, with no ocean anywhere nearby, still looks like an answer to a question nobody currently alive is asking.

Why the Floors Are Level (and Why That Took Generations)

This addresses a real, worth-stating question: the ship rests at a genuine incline (roughly 15-20° from horizontal, per *Arbour City Geography*), so why doesn't everyone inside it spend their whole life walking on a slope?

The original decks were built perpendicular to the ship's long axis — flat relative to the ship itself, since that axis functioned as the effective "down" under the sustained acceleration of the voyage. This means two things were true at the moment of impact, and both still matter: the decks were genuinely flat, continuous, walkable surfaces, with none of the jagged or uneven geometry a casual reader might otherwise picture; and, because the ship's axis itself is now lying at an angle relative to the ground, those same flat decks came to rest tilted at that same angle relative to true, gravity-level ground. A deck this size, tilted ~17°, is not subtle — it's roughly three and a half times steeper than a real-world wheelchair ramp's maximum legal slope. Inherited, not introduced: the tilt was never built into the ship on purpose, but it was very much there on the first day anyone

tried to live on these decks after the crash.

This is not a problem the founding generation solved once. It is a problem every generation has kept solving, a little more completely than the last. Levelling a deck this size — building up the downhill side, cutting into or building platforms over the uphill side, re-laying entire floor sections — is exactly the kind of slow, unglamorous, structurally significant labour that fits everything else this project already says about how Arbour treats its inherited ship: nobody alive remembers a single decision to do it, because nobody alive was there for the decision. It simply became something each generation did a bit more of, the same way the tier system calcified and the Frames stayed cordoned off — not a plan, sediment.

This work has never been purely one or the other — purely automated or purely manual — and which one dominated has shifted significantly over the generations. See *Arbour City Geography*, "Who Actually Built the City — ARC's Hand in the Hull-Core," for the full treatment: early generations worked closely with ARC's original deployment and construction-direction systems, but trust in ARC's instructions eroded over centuries as its memory degraded, and present-day construction and floor-levelling work is now predominantly hands-on, built from accumulated practical knowledge of how a given section actually behaves — much closer to the Sprawl's own self-taught, salvage-based competence than to anything resembling automated direction. Some of what reads, today, as inherited-but-unexplained construction is the manual work of the present generation. Some of it is older, ARC-directed work from a period when its instructions were trusted and sometimes wrong, that nobody since has had reason or resources to undo. Nobody currently living can reliably tell which is which.

What this means for present-day texture, and what it should never become:

- **Most floors in the present-day hull-core read as ordinary and level**, because three centuries of this slow correction work have actually finished the job in the heavily-trafficked, long-inhabited core of Luminary and upper Meridian. A character standing in a well-established hull-core room or corridor should feel nothing unusual underfoot.
- **The correction is least complete at the edges — newer, less-developed, or less-trafficked sections of the hull-core**, where the work simply hasn't reached yet, or was never worth the labour for a space that doesn't see enough use to justify it. This is a free, reusable detail: a tilted floor, a subtly built-up threshold, a room where furniture has visibly been shimmed or wedged rather than properly levelled, reads immediately as *newer to habitation* or *lower priority* without anyone needing to say so.
- **The correction itself is visible, if you know to look for it**, in exactly the way everything else inherited in the hull-core is visible without being understood: a floor that's subtly built up higher on one side than structural logic would predict, a doorway whose lower lip doesn't sit where the original hatch-frame does, a room where the "floor" is visibly a later addition sitting at a slightly different level than the bones of the wall around it. Nobody currently living reads any of this as "we re-levelled this because the ship used to lean." It simply reads as old, layered, lived-in — one more texture in a city built on top of itself for ten generations.
- **This should never become something a character consciously articulates** as "the ship is on an incline, which is why we had to level the floors." Per the document's existing

core principle, the wrongness and the correction both stay felt, not understood — a held-onto unease in an unfinished space, an unremarked-on ordinariness in a finished one, never a stated piece of ship history.

What a Body Notices First

Walls are never flat for long. A corridor in the hull-core rarely runs straight and square, the way Sprawl construction does. It curves, gently, continuously — following the original ring-frame geometry of the hull rather than any human sense of "a room." A person who grew up in the Sprawl, walking into the Luminary for the first time, will feel this before they can name it: a faint, persistent sense of being inside something that doesn't quite agree with the idea of corners.

Doorways are not doorways. They are hatches — circular or rounded-rectangular, often recessed into walls thick enough that stepping through one means walking through a short tunnel of wall before reaching the room itself. Many were never resized for casual daily use; centuries of habitation have widened some, left others exactly as built. A resident who has lived their whole life around one particular hatch can tell you, without thinking about it, exactly how to turn their shoulders to pass through without brushing both sides at once.

Sound behaves incorrectly, in a specific way. Pressure-rated construction is built to transmit force evenly across a curved surface, not to dampen it — the opposite of what most acoustic engineering tries to do. A voice in a hull-core corridor doesn't echo the way a voice in an ordinary room echoes. It carries along the curve, sometimes arriving at a listener's ear from a direction that doesn't match where the speaker is actually standing. Long-time residents stop noticing this. Newcomers find it unsettling without being able to say exactly why a familiar voice suddenly sounds like it's coming from the wrong wall.

Everything is thicker than it needs to be. Not dramatically, not in a way anyone would consciously measure — but a load-bearing wall in the hull-core is reliably, quietly more substantial than the same wall would need to be if it were holding up nothing but the ceiling above it. People who've spent their whole lives around this construction read it, without ever framing it this way, as a kind of permanence. It feels old in the specific way that "built to survive something enormous" feels old, even to someone who has never once wondered what that enormous thing was.

Temperature and air move differently near the original hull plating. The metal itself — original ring-frame and hull-skin material, still structurally active after three centuries — holds heat and cold longer than anything built later. A hand against an exterior-facing hull-core wall in winter finds it colder than the air around it; in the rare moments Cordis's twin suns bring real heat, the same wall stays warm long after the air has cooled. Residents calibrate their sense of season partly by which walls in their home are doing this, without necessarily understanding that the metal is, in some structural sense, still remembering an ocean.

Specific, Reusable Details

A short list of concrete, drop-in images — not meant to all appear in one scene, but available individually wherever a corridor, room, or doorway needs texture:

- A hatch-door's release mechanism — a heavy, circular handle, turned rather than pushed, occasionally still bearing a faint manufacturer's stamp in a script nobody currently reads as anything but decoration.
- A "dead" equipment pocket (see Arbour City Geography skeleton, Part One) repurposed as a cupboard, a shrine, a child's hiding spot — its walls a different, more deliberate curve than the room built up around it, large enough to suggest it was meant for something, never quite explained to whoever's using it now.
- A ring-frame seam running floor to ceiling at perfectly regular intervals down a long corridor — never remarked on by residents, immediately obvious to a Sprawl-born visitor counting them without meaning to.
- A wall section that booms, very slightly, underhand — struck without thinking, the way anyone taps a surface absentmindedly — that no Sprawl-born wall would ever do, because no Sprawl-born wall is hollow-but-armoured in quite that specific way.
- Condensation patterns that follow the original hull's curve rather than the room's actual ceiling line — visible after a humid day, gone by evening, never quite where the room's own geometry would predict.
- A corridor that's audibly busier two turns away than it has any visible reason to be — sound finding its way along the curve from somewhere the listener can't yet see.

What This Should Never Become

This reference exists to be felt, not explained. No character — not even Wren, not even an Azure Branch engineer — should ever stand in a hull-core corridor and think the words "pressure vessel" or "built for the ocean." Nobody alive has the framework for that read. The wrongness should register exactly the way it's described above: as old, as heavy, as slightly off in ways nobody has ever had reason to investigate. If a scene ever needs a character to *consciously* notice and wonder, that wondering should produce confusion or unease, never comprehension — comprehension belongs to the reader, not to anyone on the page, until and unless the story deliberately decides otherwise.

Open Follow-Ups

- [x] **Whether the Tabularium itself sits in hull-core or Sprawl construction** — ✓ resolved, new document: *The Tabularium* (World & Lore → Locations & Sensory Detail).

Both, deliberately — lower public floors are Sprawl-adjacent, upper restricted floors are genuine hull-core construction.

- [ ] **A specific name or in-world term for hull-core construction**, if one is wanted — something a Sprawl resident might call it colloquially (distinct from "Luminary" or "Meridian," which name the place, not the architecture itself).
- [ ] **Specific locations where the floor-levelling correction is visibly incomplete** — worth identifying one or two concrete spaces (a specific corridor, a specific room) where this texture could be used deliberately in early drafting, now that the mechanism is established.
- [ ] **Whether the floor-levelling work has its own informal vocabulary**, the way "the shed" and "tastes of the system" exist for other inherited hardships — a Sprawl- or hull-core-specific term for newer, not-yet-levelled space, if one is wanted.