CHAIN // Liminalita Devlog // Table of Contents [−] [×]

Development log entries for Liminalita, a 3D procedural art walking simulator.

Author: Ian Rash **Created:** 2025 **Total Entries:** 4 logs

0 - Project Origins, Gallery Concepts & Spatial Illusions [2025-05-19]

1 - Expanding Exhibits, Threaded Loading & World Architecture [2025-06-06]

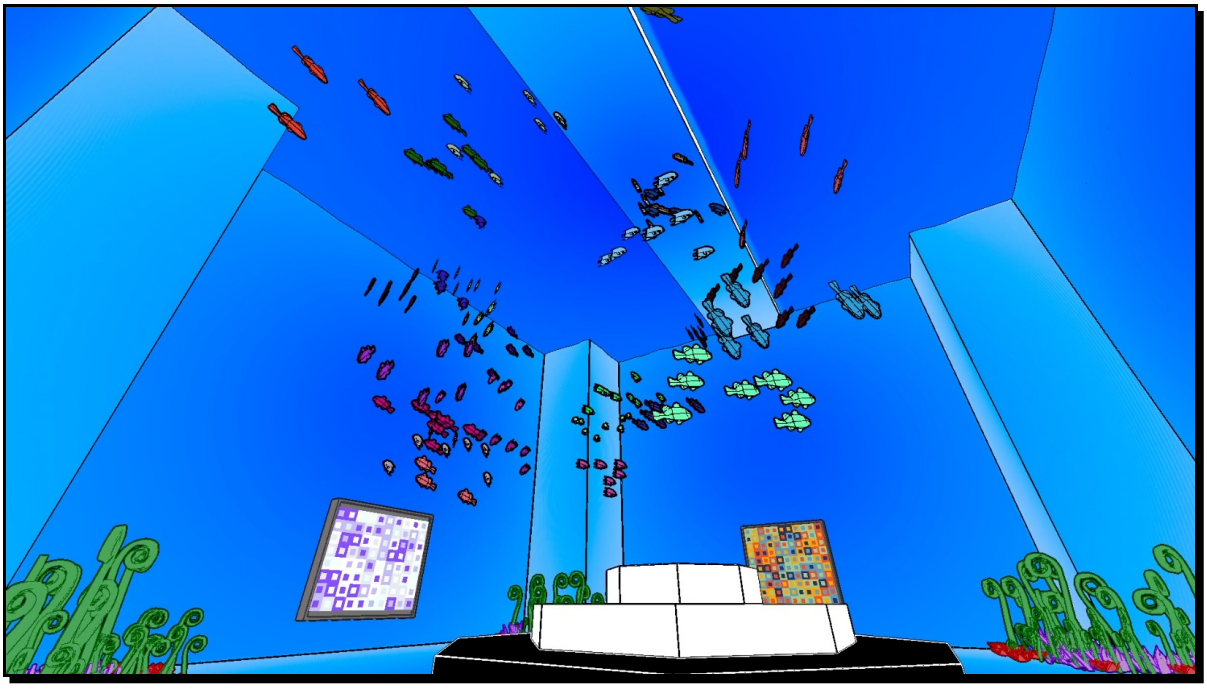
2 - Library of Babel Modeling, Atrium Teleports & Lobby Expansion [2025-06-11]

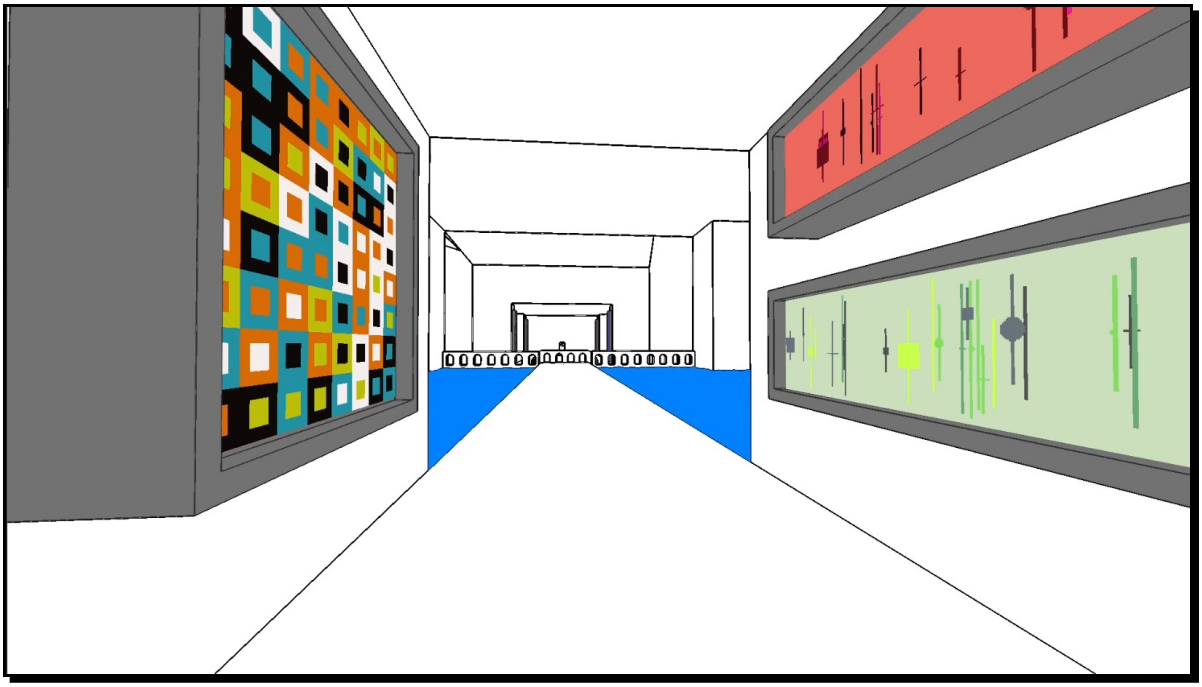
3 - Shader Optimization & Visual Refinements [2025-08-19]

3d Modeling | Game Engine Dev | gdshader | Generative Art | glsl | Godot 4 | Low Poly 3d Modeling | shaders

ENTRY // Liminalita Devlog #0 // Project Origins, Gallery Concepts & Spatial Illusions [−] [×]

Date: 2025-05-19 **Author:** Ian Rash **Index:** #0





Liminalita is a 3D procedural art walking simulator I started designing after Procjam 2021. It was directly inspired by an entry from that jam called *I Don't Get It*—a minimalist walking simulator in a single looping room that stuck with me long after I closed it.

I wanted to explore those ideas more deeply. I've always been drawn to that feeling of wandering in a space that's coherent but impossible—something *Antichamber* did masterfully. Rooms that change behind you, stairs that lead nowhere, and floors that don't act like floors. I wanted Liminalita to live in that same spirit of unreality—less of a game, more of a space you fall into.

Tools & Origins

A few months before starting Liminalita, I picked up Godot for the first time. I used to write Crystal bindings for the raylib library, so game development wasn't totally new to me, but 3D space, shaders, and Godot's scene system were all new territory. Still, Godot made it possible to build this project the way I imagined it.

Early on, I attempted to implement an outline shader for stylized edges. I wanted crisp outlines from far away, but the shader broke down at distance. Someone shared a base for it, which I modified and customized to fit our low-poly rendering pipeline.

Building the Gallery

The game started with a gallery-style lobby area, which has grown into a procedural museum containing several distinct exhibits:

- **Free Exhibit Tour**: A walkable path with procedural paintings, statue rooms, and a small garden—a warm-up to the stranger spaces ahead.
- **Infinite Exhibit**: A square hallway loop that folds in on itself, where paintings subtly shift as you walk. You cannot escape until you turn around and walk back the way you came.

- **Aquarium Exhibit**: A custom water shader creates an immersive underwater gallery. Players fall into the tank and walk among procedurally generated schools of fish. The effect duplicates and offsets an animated fish model along smooth paths with randomized progress.

Spatial Tricks and Illusions

Liminalita is full of intentional mind games and geometric anomalies:

- **The Atrium Room**: As you ascend to the second level, you are quietly teleported back to the ground floor. The illusion is preserved because the room resets out of sight, creating a seamless glitch in spatial logic.
- **The Hilbert Hotel**: Inspired by Hilbert's Infinite Hotel paradox, this is an infinite vertical space where each floor is procedurally generated as you descend. When the player leaves the lobby and looks away, the staircase shifts downward to reveal endless new floors.

Some floors utilize a 3D tilemap mixing randomized layout chunks. Other floors are handcrafted, such as a motel courtyard complete with a swimming pool. * An elevator on every floor allows players to return to the lobby at any time.

Development Videos

I have been documenting the build process in a YouTube devlog series: Devlog Playlist – Liminalita

---

Liminalita isn't a game about winning or solving puzzles. It's about walking, witnessing, and feeling off-kilter in a space where the rules bend and walls rearrange when you aren't looking.

Thanks for following along. — sol.vin

TAGGED SKILLS:

Godot 4 GDShader Shaders 3D Modeling Generative Art

ENTRY // Liminalita Devlog #1 // Expanding Exhibits, Threaded Loading & World Architecture [—] [×]

Date: 2025-06-06 **Author:** Ian Rash **Index:** #1

Infinite S-Gallery

One of the newest additions is a procedurally generated infinite gallery built in an S-shaped pattern. It loops endlessly by repeating room structures, drawing inspiration from *I Don't Get It* (Procjam 2021). The spatial repetition becomes part of the experience—the further you walk, the more uncanny the atmosphere feels.

Check out a short preview video of the work-in-progress: WIP Infinite Gallery Video

---

Hilbert's Hotel

The infinite hotel expansion continues to grow. It is loosely based on Hilbert's Hotel paradox—an infinite space that always has room for one more guest.

Each floor is either procedurally generated or selected from handcrafted layout sets (such as motel courtyards or corporate office spaces). When descending a staircase and looking away, the level geometry quietly shifts beneath you, creating the illusion of endless vertical descent. Elevators on each floor allow the player to return to the main lobby at any time.

Aquarium and Underwater Zones

The aquarium zone has been expanded significantly. Wells, ponds, and fountains scattered across other parts of the game can now be jumped into, teleporting the player into various underwater environments. These areas feed back into an aquarium hub, encouraging exploration across every body of water.

Library of Babel

A major new environment feature under active development is the Library of Babel—a hexagonal, seemingly infinite tower structure filled with randomized books. These books contain generated content ranging from text to surreal imagery and glitched symbols.

Liminal House & Procedural TV

Another addition is the liminal house, designed to resemble a child's sketch of a home. Inside is a procedurally generated television that flips channels between different forms of generative art, with every channel change synthesizing a new visual or sonic piece.

Liminal Neighborhood

I have been modeling an underground liminal neighborhood—strangely buried beneath the earth. While still early in concept, the environment captures an unsettling, surreal atmosphere.

Threaded Level Loading System

I overhauled the backend loading architecture to optimize runtime performance. Levels now stream and load assets asynchronously using threaded loading and staged activation rather than blocking all at once, ensuring smooth transitions across large zones like the hotel and aquarium.

Future Planned Zones

Several concepts are currently in the planning and modeling phase:

- **Decision Gallery**: A gallery where choosing different hallway paths (such as red vs. blue corridors) dynamically influences the exhibit artwork displayed ahead.
- **Surreal Tropical Island**: A transition space and liminal vacation zone.
- **Subterranean Mall**: A courtyard-style mall leading to smaller exhibits styled as individual shops.
- **Supermarket**: Inspired by Omega Mart, featuring playful and surreal products rather than literal realism.
- **Corporate Office**: A sterile office environment with maze-like repetition and absurd corporate messaging.

Thanks again to everyone following the devlogs and testing early builds.

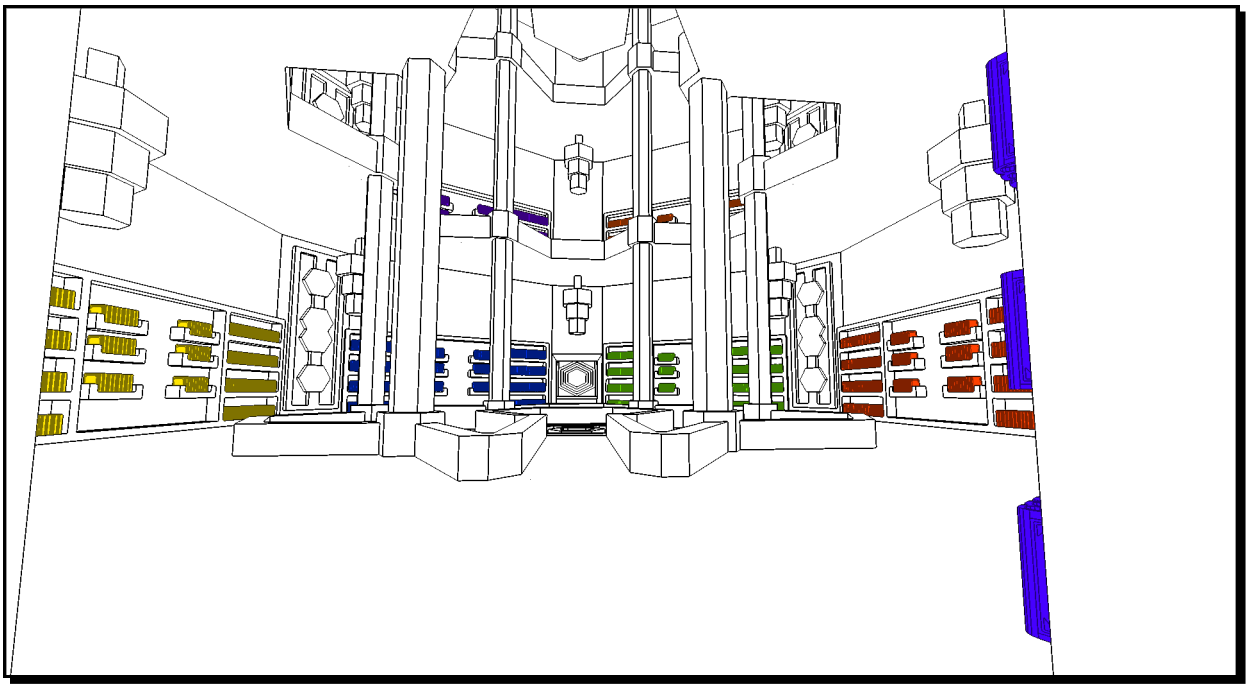
— sol.vin

TAGGED SKILLS:

Godot 4 | Game Engine Development | 3D Modeling

ENTRY // Liminalita Devlog #2 // Library of Babel Modeling, Atrium Teleports & Lobby Expansion [—] [×]

Date: 2025-06-11 **Author:** Ian Rash **Index:** #2



Library of Babel Architecture

The Library of Babel environment is now fully modeled and functional. The hexagonal structural layout is complete and fully walkable in 3D space. Future updates will focus on populating the procedural book text and visual generator content.

Lobby Additions & Sun Room

- Added a new water feature to the main lobby area, connecting visually to the aquarium themes and providing atmospheric motion.
- Completed the sun room—a clean, vibrant architectural space that balances out the muted tones of the main gallery corridors.

Atrium & Aquarium Updates

- Integrated a glass aquarium display tank—a transparent exhibit providing a direct view of procedurally pathing fish.
- Implemented an atrium transfer zone that allows players to teleport across the main atrium level efficiently during exploration.

More updates coming soon, focusing on the procedural book generation system and additional exhibit branches.

— sol.vin

TAGGED SKILLS:

Godot 4 | 3D Modeling | Low Poly 3D Modelling

ENTRY // Liminalita Devlog #3 // Shader Optimization & Visual Refinements [—] [×]

Date: 2025-08-19 **Author:** Ian Rash **Index:** #3

Custom Shader Optimizations

Over the past few weeks, development focused heavily on refactoring and optimizing the custom GLSL and GDShader pipelines across Liminalita.

Key Shader Enhancements

- **Fragment Pass Performance**: Streamlined surface normal map evaluations and screen-space outline calculations, reducing fragment shader instructions and improving framerates in dense room layouts.
- **Material & Palette Batching**: Combined multi-color outline Passes into single-pass materials to eliminate unnecessary render state changes.
- **Water & Transparency Shaders**: Optimized the depth and refraction calculations in the aquarium and pool water shaders for consistent cross-platform performance.

These visual and rendering performance improvements pave the way for upcoming environment expansions and level generation features.

— sol.vin

TAGGED SKILLS:

Godot 4 | GDShader | GLSL | Shaders

+--+
© 2026 Ian Rash - Built with Crystal & Made into a PDF
+--+