Rez∞™
infinite

Ladies and Gentlemen, open your eyes.
Go to Synaesthesia.

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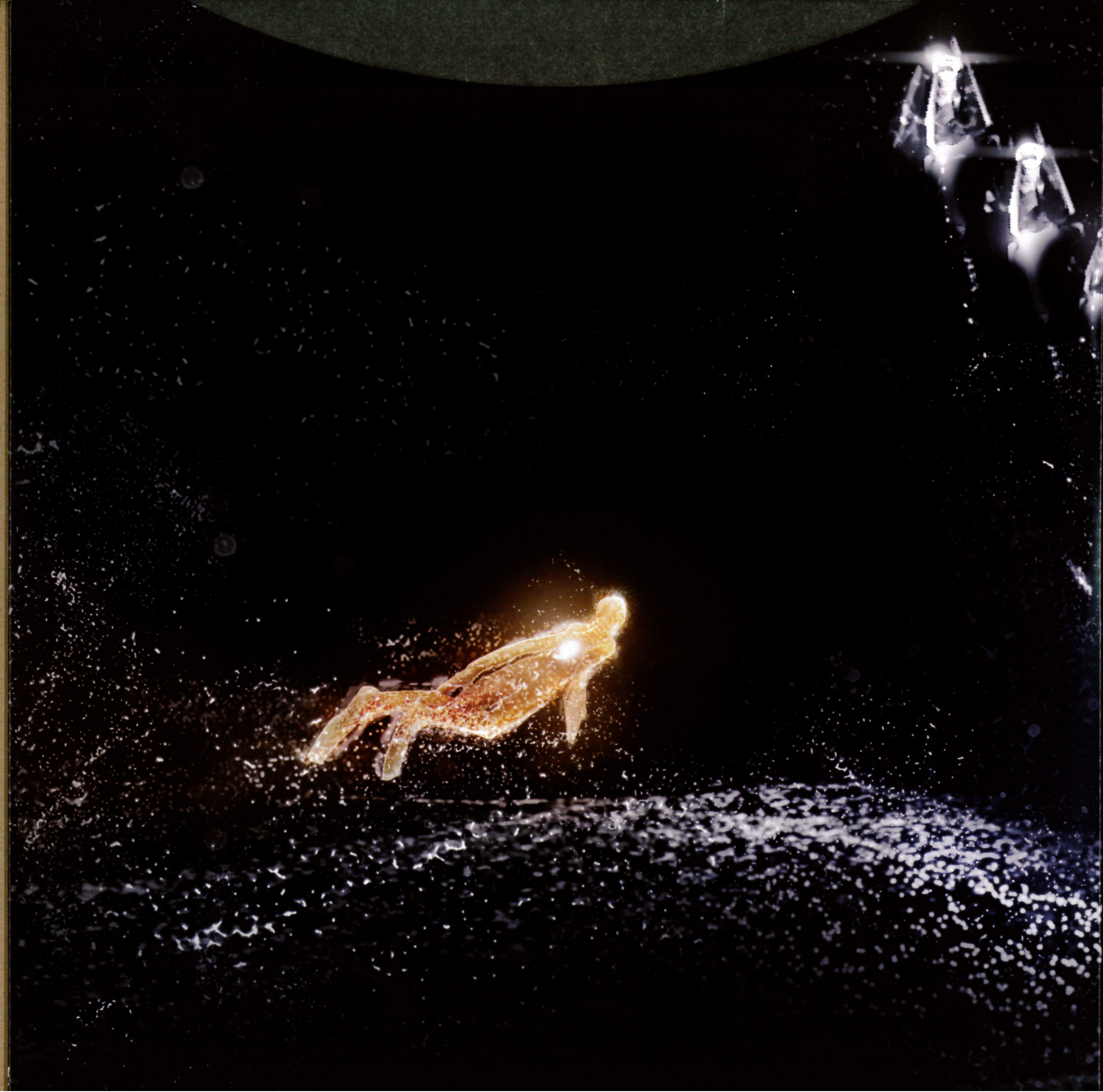

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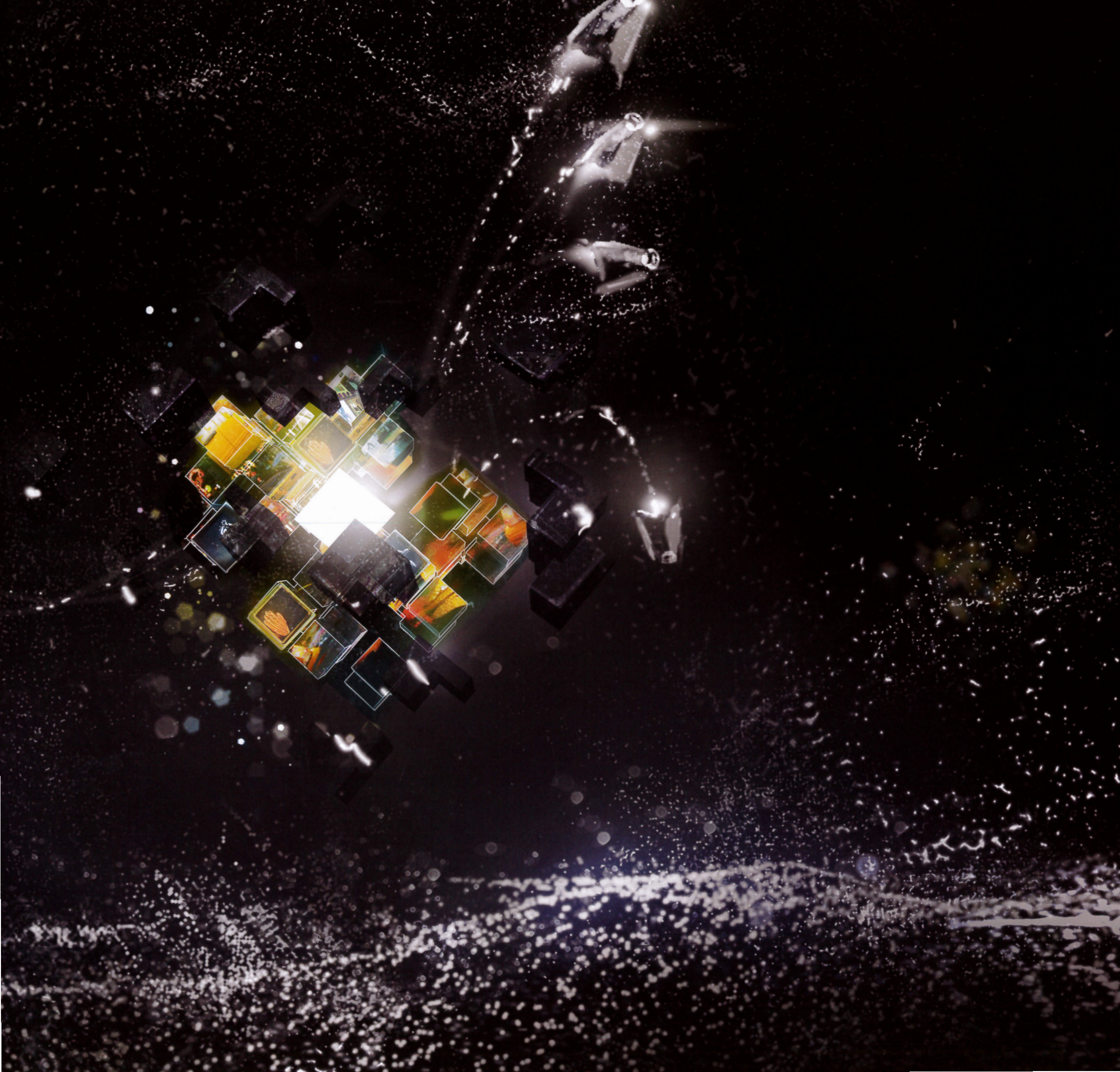
Rez Infinite / Area X



Rez™

06... _prelude
12... _Area_1
20... _Area_2
28... _Area_3
36... _Area_4
44... _Area_5
50... _Area_X
60... _synesthesia

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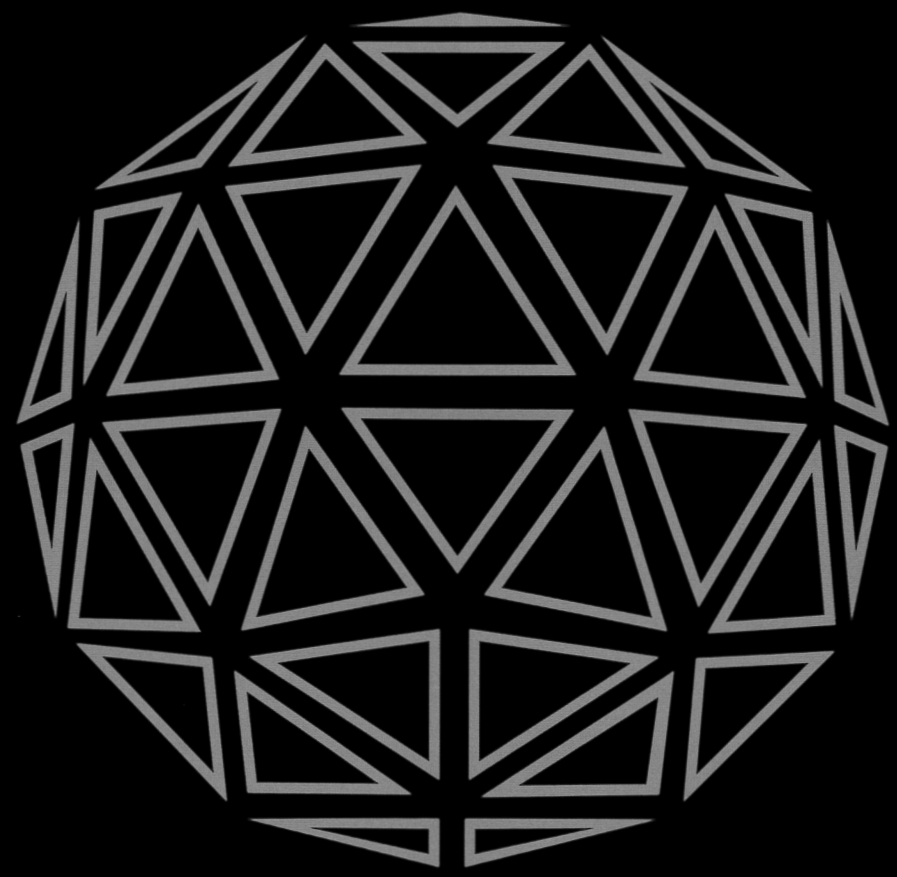


Player Form 01

In the cool darkness of the desert night, Tetsuya Mizuguchi felt alone.

Miles from civilization, a billion distinct stars puncturing the black overhead, the conflict between man and nature was cast in stark relief. He had come here to escape, but instead found himself contemplating an important decision. A decision that would determine the remainder of his career, and his legacy as a game designer.

"I was so sensitive then," he recalls. "My senses were so sharp."

As he zeroed in on this feeling — this acute sense of loneliness — he heard music in the distance. And, setting aside the decision for now, he left his campsite, and headed toward it.

He wandered through the cold and dark, hearing mostly the sound of crunching sand and salt beneath his feet, listening as the music came into focus in his mind. There were lights, too, he noticed. He walked on, closer and closer, until finally the silence and darkness gave way to music and light once and for all. Mizuguchi was no longer alone.

"The feeling is like getting warm," he says of his journey into sound. "Like an energy in the black.

"It feels... safe."

–

It was the late summer of 1998, and Mizuguchi was in Black Rock Desert, Nevada, at a festival known as Burning Man.

Today, Burning Man is an annual Mad Max-esque party of over 60,000 revelers, and beacon to Hollywood and Silicon Valley elite. But back then, during Mizuguchi's first of five visits to "Black Rock City," Burning Man more closely resembled the festival as it was originally conceived: a sacred gathering of artists, musicians, wayfarers, and aging hippies. A temporary, alternative civilization, borne from the mind's eye of its inhabitants.

"I wondered: 'Should I pursue this passion — this little kernel of an idea that I've always had inside my head?'" Mizuguchi recalls. "Nothing like it existed at the time. I was afraid people wouldn't get it."

He had spent the better part of the previous decade working for SEGA, learning how to make games, turning out a number of arcade racing cabinets. But that kernel of an idea — an idea that would become a game called *Rez* — only grew louder in his mind.

Like music in the desert; like energy in the black.

"Burning Man had a big impact on the beginning of *Rez*," he says. "It's not an ordinary game."

For a time, he even wanted to open the game exactly like his Burning Man experience. "I wanted to start *Rez* in total darkness. And no sounds. But if I say it like that, everyone says, 'You're so crazy. From nothing?' The marketing people said to me, 'Who would buy that?'" He conceded that they might have a point.

Still, the feeling inside of him remained.

To create a new kind of experience, he needed to think about games in a new way. He was obsessed with recreating that feeling: Of emerging into and synchronizing with music as you would approaching it from a distance.

Darkness into sounds.

Sounds into music.

Music into visuals.

All of it developing a rhythm and becoming "synesthesia."

That word — *synesthesia* — is one that Mizuguchi often references when talking about his games. Synesthesia is a neurological phenomenon, in which one form of sensory stimulation involuntarily leads to another. A song evokes colors. A painting recalls music. It's a phenomenon each of us knows, but for Mizuguchi, it's something more.

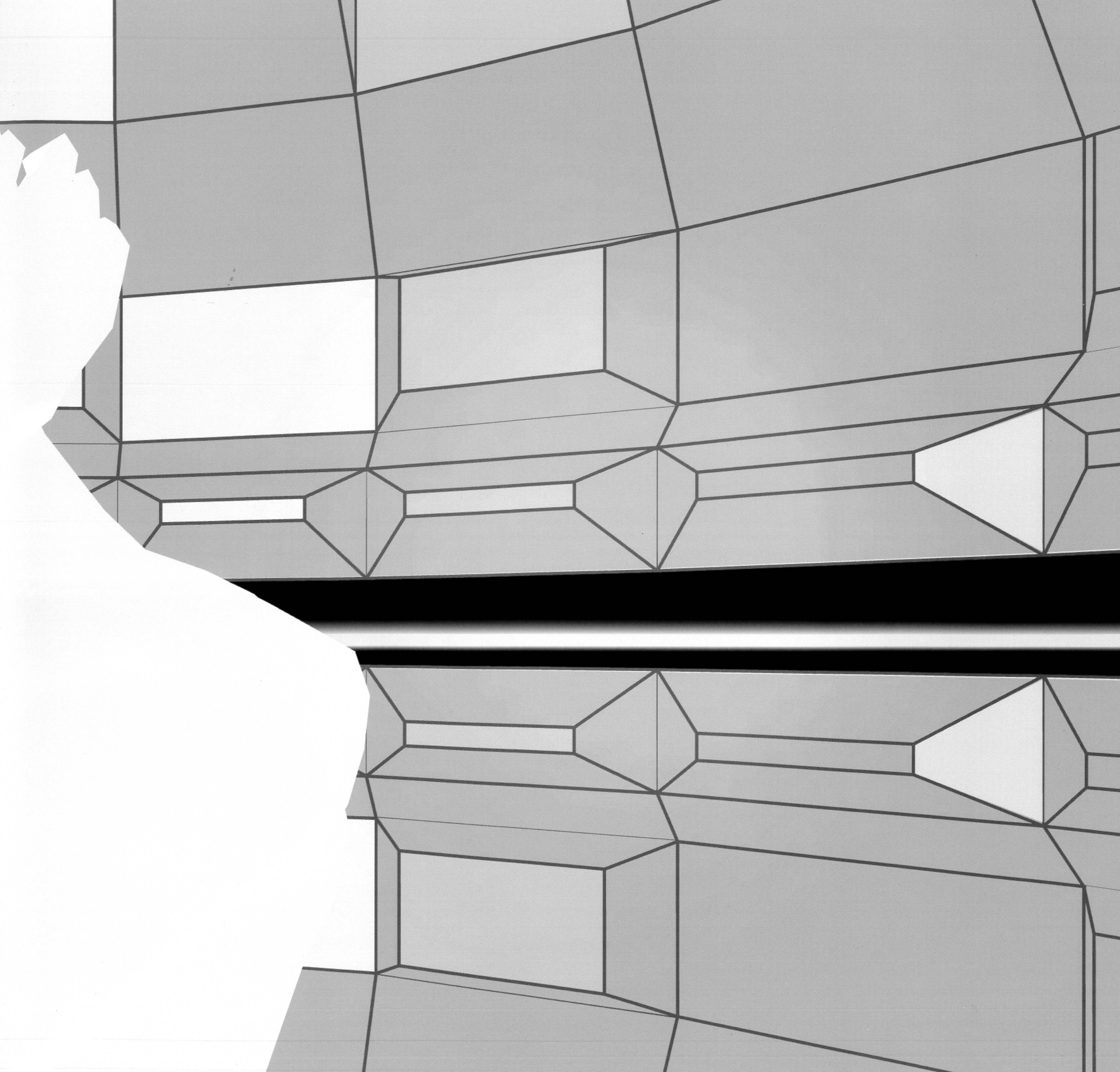
It's a philosophy.

"I was throwing around the word synesthesia before a lot of us even knew or fully understood what that even was. We were doing a lot of experimenting and trying to find out how we can synchronize the visuals and audio to find that kind of 'Ah ha' moment," he says of the early days of *Rez*. He adds, however, that "anyone can synchronize a visual output and an audio output. But it would be very plain, because anyone can do it."

To achieve synesthesia — a true blending of audio and visual and gameplay — *Rez* would need to be something more. He didn't know how, or what it would look like. He didn't even have a team. But as he danced that night, Mizuguchi knew his decision had been made. He left his past work behind, and headed into the dark unknown... where *Rez* awaited.

"Do I pursue this passion, and this idea—this little kernel of an idea that I've always had inside my head?"

Burning Man
Black Rock City, NV
Photo by Galen Oakes
galenoakesphoto.com



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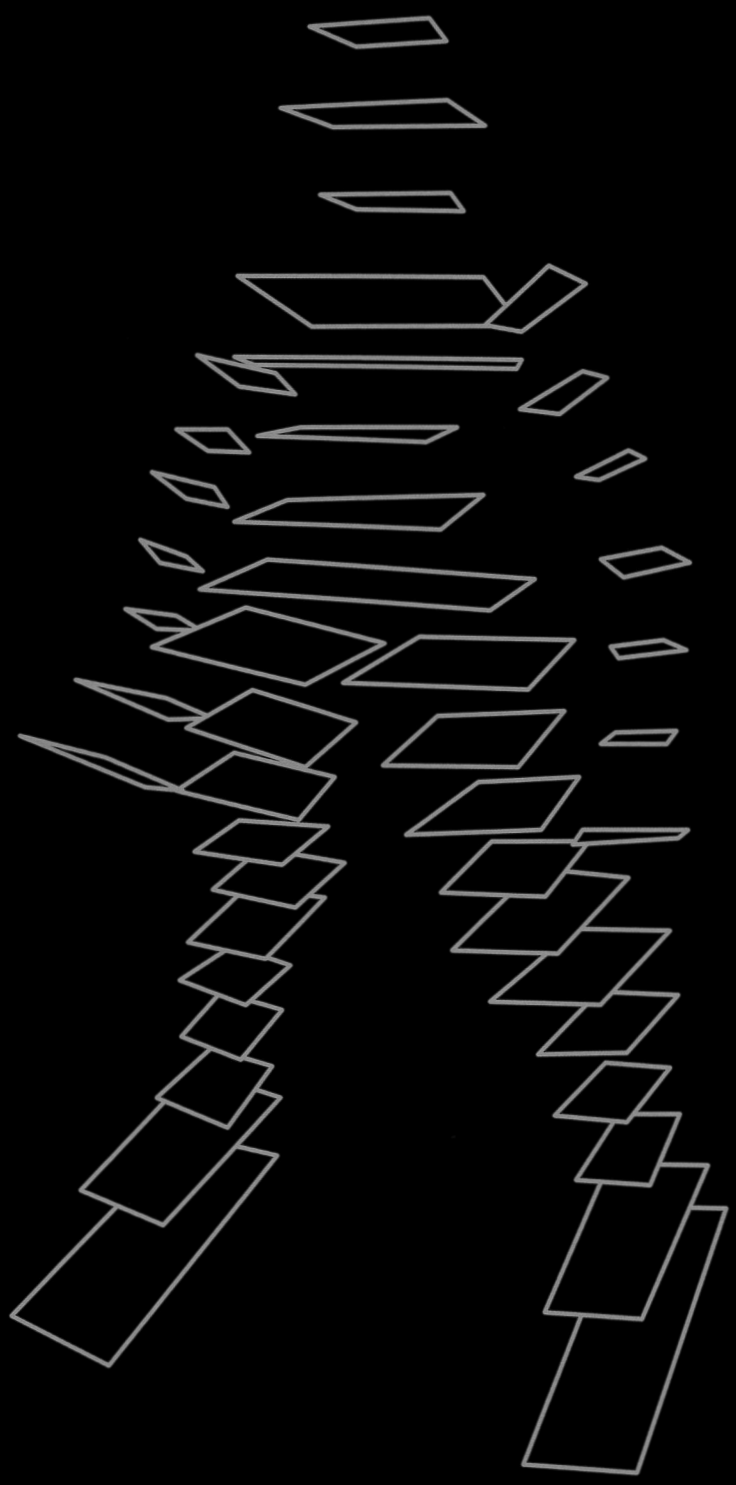


Player Form 02

Tetsuya Mizuguchi — or "Miz," as he's known by his contemporaries — didn't always aspire to make games. But his interest in synesthesia can be traced back to his childhood, before he had ever heard the word.

His first aspiration was to become a music video director. Growing up in the '80s and the era of MTV, music videos were an exciting new artistic form, and an early example of the audio-video melding Miz would spend his career attempting to define. At Nihon University College of Art, he studied media aesthetics — the very concept of exploring how ideas and emotions can be conveyed through entertainment. But when he graduated in 1990, Miz already sensed that music videos had passed him by.

"I was starting to feel it might not be as new and fresh a media form for me to pursue," he recalls. There were so many quality music videos being produced, the mine felt excavated. "At that time, games felt more shiny than music videos. We still had an opportunity to let that game diamond shine."

It wasn't clear to him then that games were his future, but they kept finding ways to call to him. That year, he flew himself from Tokyo to Austin, Texas, for the first ever International Virtual Reality Conference, long before the actualization of VR as we know it, or the VR that *Rez* would attempt to emulate.

"I arrived to find out there were only twenty people," he laughs. Still, it was another breadcrumb on the trail. "There were a lot of connecting pieces, connecting dots. A natural flow that lead me to games."

Later that year, Mizuguchi had an interview at SEGA for a job in "Research Aesthetics," a rather practical application of his college degree. At the time, SEGA was still predominantly an arcade developer. The company had only recently released its second entrant into the home console market, the SEGA Genesis (a follow-up to its floundering predecessor, the SEGA Master System), and was another year away from the introduction of its iconic mascot, Sonic the Hedgehog. And yet even then, employed at one of the largest and most influential video game companies in history, on the precipice of its heyday, Miz did not consider himself a game developer.

"It's not a game," he says of his first SEGA release.

The "non-game" was an arcade ride experience called *Megalopolis*. It utilized SEGA's own AS-1 hydraulic system to simulate movement. Inside the hydraulic car, 3D graphics took users on a high speed police chase through a futuristic Tokyo skyline. The product was not a success — perhaps due to the size of the hydraulic car, or the lack of playability — but it was the start of something for Mizuguchi. Even this failed "attraction" reflected his sensibilities, with more than one layer of sensory stimulation at play: A video screen, inside a moving car, synced with sound.

Perhaps more importantly, Miz had found a team. Several members of the *Megalopolis* development team moved on together to work on something new. This time, it would be a game.

"There were a lot of connecting pieces, connecting dots. A natural flow that lead me to games."

- Tetsuya Mizuguchi

Megalopolis (1994; Arcade)

SEGA had recently finished development on a new 3D graphics processing unit (GPU) called the Sega Model 2. The key advancement over the Model 1 and other 3D GPUs at the time was that it enabled programmers to paint individual polygons with bitmap images, rather than single monotone colors. This, along with other texturing capabilities, meant that 3D graphics could start to look 3D, rather than like clunky blocks. The Model 2 would lead to games like *Virtua Fighter 2*, *The House of the Dead*, and *Dead or Alive*. Arcade games were changing in a big way.

For Mizuguchi, it lead to racing games. This first project with his new team was *SEGA Rally Championship*.

"At the time, all of our programmers, all our engineers, all our artists, we only had the know-how to work in 2D," he says. "Transitioning from 2D to 3D basically meant we had to do a major overhaul with all aspects of work. We didn't have any mentors or guidance, really. There was no one there who would come in and tell us what to do. We just had to learn it on our own."

They learned quickly. It took the 12-man team only a year to finish *SEGA Rally*.

"In that year, we learned how to make a game," Miz says. "We also learned how to make a fun game."

With that first game under their belts, Miz and his team got faster — and better. Over the next few years, they would produce several more racing games, iterating and innovating. Attempting to keep up with the increasingly competitive arcade market.

But, like the fifth lap on a familiar course, Mizuguchi could sense the road ahead for racing games — and for him and his team.

"Basically the future I saw at that time was *Gran Turismo*," Miz says. "It was going to be much more engineering focused." Racing games, like many games at that time, were striving for realism and technical prowess.

"My interest just wasn't there."

While researching cars in Europe for *SEGA Rally Championship 2*, Mizuguchi took some time off. He and some friends traveled to Zurich, Switzerland for Street Parade, the largest "techno-parade" of its kind, dedicated to electronic music, DJs, and massive crowds of people taking in the vibrations through their ears, skin, and teeth.

"It was in this massive arena with over 100,000 people, and just this one DJ in this booth," Mizuguchi says. "And I guess you could call what they were doing dancing? But it wasn't really, to me, people dancing. It was this massive movement of human bodies."

And as those 100,000 bodies swayed and throbbed to the beat, Mizuguchi realized: This is it. *This* is the kind of feeling I want to create in games.

It was time for a change.

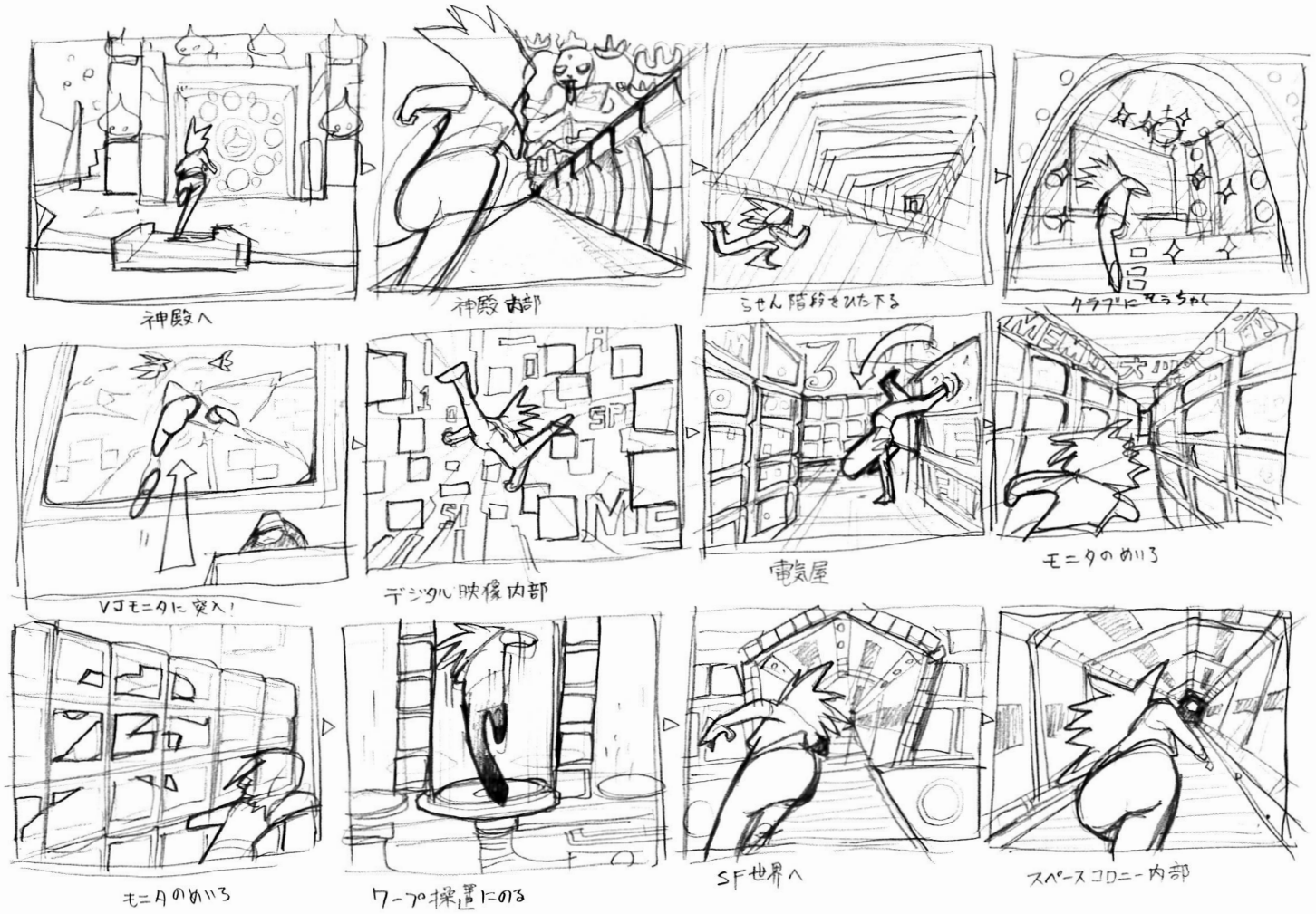
_space

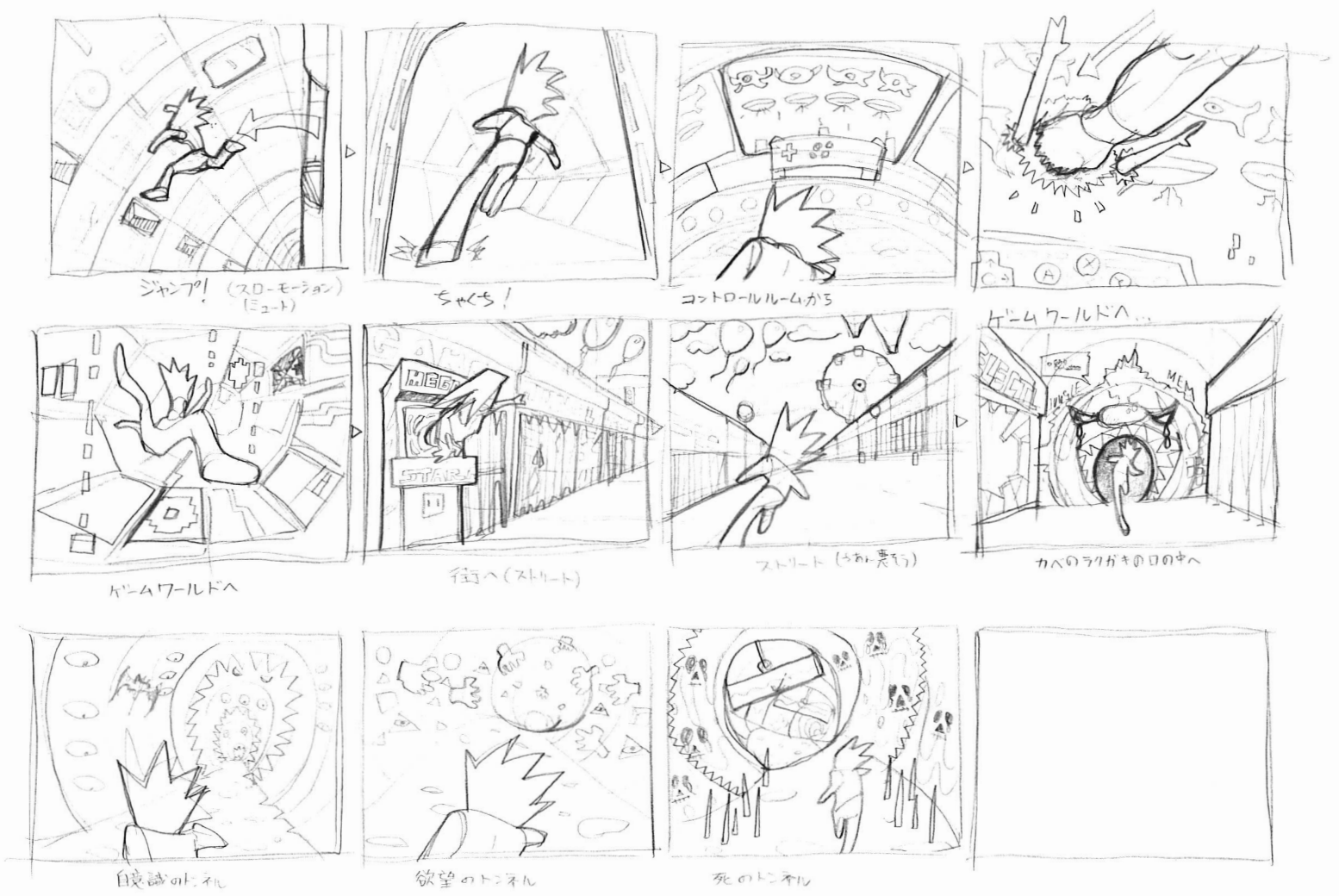
From the outside, SEGA Headquarters is unremarkable. A steel and glass office building surrounded by other steel and glass office buildings and a few warehouses. If not for the telltale blue-lettered logo at its entrance, it wouldn't warrant a second glance. The same could be said for any of the buildings in Haneda, the industrial neighborhood in Ota, Tokyo, where it stands.

"There's a ramen shop, a mini mart, one family restaurant. It's kind of soul-crushing," says Jake Kazdal, founder of indie developer 17-Bit, who worked as an artist on *Rez*. "It's kind of amazing that all that cool stuff came out of SEGA in that environment."

That environment was where Mizuguchi had worked for over a half decade. And inside, something new was brewing: SEGA's next (and last) flagship console, Dreamcast.

In 1998, Shoichiro Irimajiri, SEGA's first new president in 15 years, came to Mizuguchi with a request. He wanted Mizuguchi to lead a new consumer software division for Dreamcast games that would reach gamers outside of their traditional audience. Teenage girls, musicians, non-gamers, artists — anybody they and the rest of the gaming industry had yet to reach.





Exploratory storyboard frames, sketched while the dev team was still conceptualizing possible gameplay styles for Rez. Pictured here: the player avatar traversing a series of eclectic environments, from a night club to an electronics shop.

“If you walk around Shibuya, it’s a cross section for all kinds of art, culture, fashion — everything.”

- Tetsuya Mizuguchi

Shinjuku, Tokyo
Photo by Liam Wong
Instagram: @liamwon9

locked
locked

"The Dreamcast had its own agenda," Mizuguchi says. "They told me that we needed to hit the reset button. Start from scratch."

It was an exciting, but daunting, proposition. It was a chance to make the games that had always been floating in the back of his mind — a chance to explore the role of music and synesthesia in games. But it also meant leaving racing games and his old team behind. He didn't have much choice about that. The formation of a new consumer software division was a company order straight from the top. But as for the what, the whom, the how and the where, Mizuguchi would have complete control. And it was over "the where" that he had concerns.

"Geographically and environmentally that area does not scream, or even whisper, creative. It's just not that type of neighborhood," Mizuguchi says of Haneda. "So I felt that environmentally this was not an area that we could come to and have a team and feel like building something that was very creative."
At the time, Dreamcast preparations were at full throttle. Regular meetings on business, console development, and marketing were being held in an otherwise unoccupied building in Shibuya, Tokyo. The ward of Shibuya stands in stark contrast to Haneda and Ota. Towering buildings, neon lights, businesses and businesspeople — but also artists, galleries and diversity. It's Times Square by way of Brooklyn.

The meetings were held in this empty Shibuya office building because it was owned by CSK Holdings, SEGA's parent company. Mizuguchi sensed an opportunity.

"It naturally provided me with ammo to say, 'If we are going to come up with games that are unique, original, and unexpected, this is the better place for us to be," he says. "If the mission was really to form something brand new, surrounding yourself with a brand new environment only made sense."

Halfway through development on *SEGA Rally Championship 2*, Mizuguchi would leave Haneda and his former team for good. After a quick trip stateside for Burning Man, Mizuguchi would return home, and make the move.

_time

When Mizuguchi returned to work, he took a different train. He traveled to a different neighborhood, in a different ward. He arrived at an empty building, rose to an empty floor, and arrived at an empty office.

No one from his previous teams had come with him.

No one from SEGA was around to greet him.

Building *Rez* would begin as he first envisioned it out there in the desert: with nothing. "I was very worried. Very nervous," Mizuguchi says of that first day. "But I did it."

He credits this opportunity, and this move, with nearly every challenge and opportunity he would face the rest of his career.

And he wasn't alone for long.

With one project already in development (Space Channel 5) and another on the horizon, Mizuguchi began building a new team. It would be small at first — just him and a few others. Eventually, he would add young artists, like Kazdal, a young American who worked for Boss Game Studios near Redmond, Washington at the time. Programmers, like Osamu Kodera, who would become a collaborator of Mizuguchi's for years to come. Game designers, like Katsuhiko Yamada, and art director, Katsumi Yokota, who came to *Rez* internally after working on the Panzer Dragoon series.

United Game Artists™

United Game Artists logo

But Mizuguchi was resolved to look for employees outside of the traditional channels as well.

"Based on our mission to create brand new, never-seen-and-done-before unique experiences, I knew we needed people with different sensibilities and backgrounds — they needed to be not too far away, but not too close to games," Mizuguchi says.

Before the project had even begun, Shibuya proved to be the ideal incubator for such collaborators.

"If you walk around Shibuya, it's a cross section for all kinds of art, culture, fashion — everything," Mizuguchi says. Knowing music would be the soul of the game, Miz and his first several employees approached their new home as an opportunity for research, regularly going out to

exhibitions, clubs, and DJ sets.

Eventually this research lead him to a music video collective — a group of "VJs" who called themselves Mommy's Endorphin Machine. Their live melding of visuals and music shared an obvious philosophical link with what Mizuguchi envisioned for *Rez*. Moreover, the embers of his first passion — music videos — were stoked. He hired several of the VJs to join him (including *Rez* director Jun Kobayashi), despite not having any game development experience.

"They didn't have any game experience," Mizuguchi says. "But as VJs they had talent. I'd like to think that this was sort of a rare audition process. Thinking about what each person can bring to the team, how they can contribute, personalities, the synergy between the guys — I spent a lot of time on that."

Within a year, what began as Mizuguchi sitting alone in an office grew to a team of 40. Within two years, they were nearly 60. The burgeoning consumer division became its own company, with an appropriate name: United Game Artists, or UGA.

But before the team ballooned and began building *Rez* in earnest, Mizuguchi had an important question to answer: *What is this thing?*

"It was one of those things where because it's so new, like when you have your own idea and it's forming in your own mind, when you have to explain that to new members or a team, who we have no work history or work experience or team experience, it's like you want to get across your point and communicate to them what you're trying to do, but it takes a long time for them to understand it at the same level and... interpret it in the way that I want them to interpret it," Mizuguchi says.

Mizuguchi takes full responsibility for this. Back then, *Rez* was known as "K Project." And the idea behind *K Project* was less of an idea, and more of a feeling.

"What we wanted to make was a game where the more you play, the more it gave you this "good feeling." And it just kind of escalated that feeling the longer you played," Mizuguchi explains. "And that's something very easy to say in words, but if you really think about it, it's a very deep concept, but at the same time, a very primitive concept, too."

As Mizuguchi handpicked his team, the first year was spent experimenting.

What would a game built at the altar of synesthesia play like?
How could that "good feeling" be achieved?
What did it *look* like?
How did it sound?

Early visual iterations had a heavy hip hop pastiche. Others had a more organic vibe, envisioning life as it bubbled up from the ocean and walked ashore. But before any single take could get too far, Mizuguchi reigned his team back in. He was worried that, at least in the beginning, a distinct visual or audio style — too many "decorations," as he puts it — would have too strong an influence, and pull the team away from the underlying concept. Without that "good feeling" he described to each new team member, the rest of the game was moot.

"I wanted them to give me something that was very pure and primitive," Mizuguchi says. "Now that I think about it, I think our designers were probably very confused about what I wanted them to do. I restricted them from doing a lot of work."

"I wanted them to give me something that was very pure and primitive."

- Tetsuya Mizuguchi

"The very first time I came in contact with the project it was literally just a square cube that you would shoot and it would destroy," Kodera recalls. "At the moment of that contact, it was synchronized with sound. And that was it. There was no other element.

"In a way, the impression that I had was, 'Oh wow, so if this is all we have we can go in any direction that we'd like.'"

Which is exactly as Mizuguchi had intended. Except for one small problem.

"There were other rhythm action games, whether it was tapping to the rhythm or pressing the button to the rhythm or the buttons that were coming to you on screen, those types of rhythm action games existed," Mizuguchi says. "But in the way that we were wanting to, really, really wanting to make that happen, it wasn't really happening, no matter how hard we tried.

"Basically, we were kind of stuck."

Just when it seemed *K Project* was headed nowhere, and their great year of experimentation would be for naught, sound designer Ebizo Tanuma returned from a personal vacation to Africa... and he had something to show the team.

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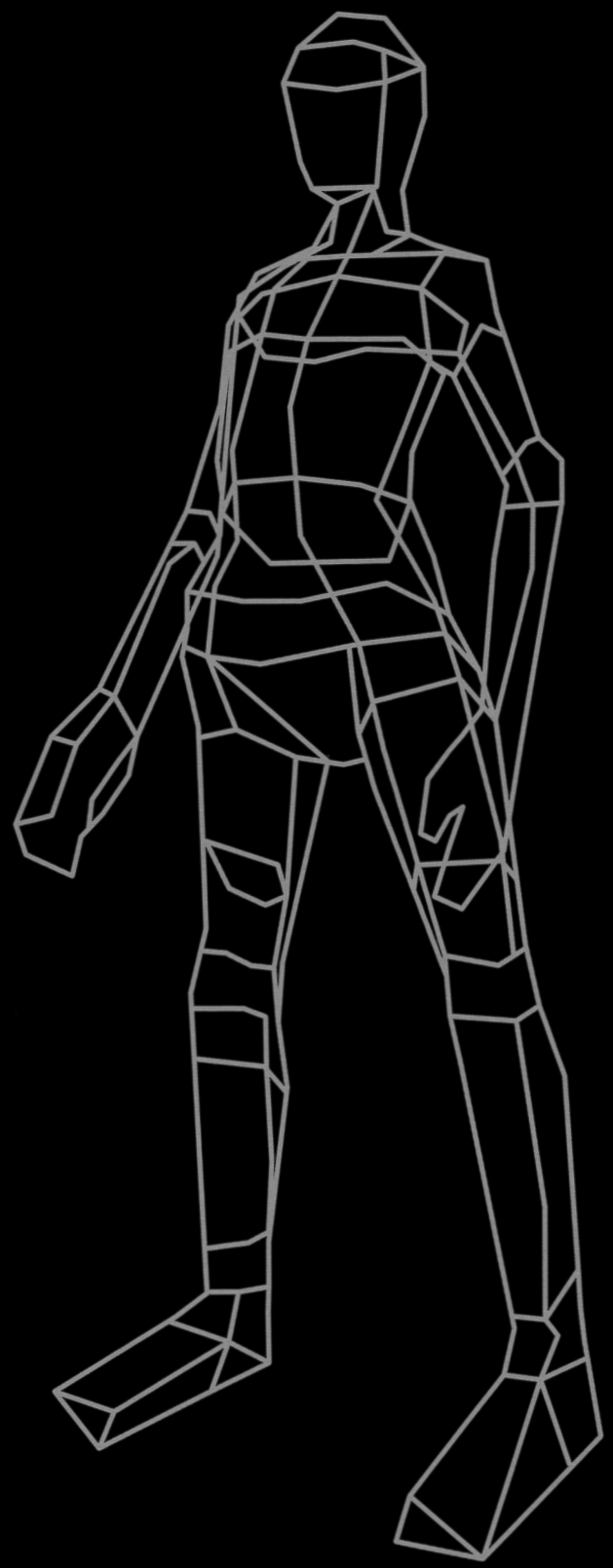


Player Form 03

At first, there is nothing.

Five or six people, sitting outside a cafe after closing time, winding down the day. It is dark, but not yet time for sleep. There are still conversations to be had, ideas to contemplate, and songs to sing.

After a few minutes of laughter and idle chatter, someone begins to tap a bottle against the table. A simple rhythm. The release of anxiety? The backbeat of a song heard earlier that day? An impulse, in any case, one that could end as soon as it began.

But then, without need for instruction or permission, someone else grabs an empty plate. *Tappa-taps* it against his palm.

The next person begins to clap.

Everyone around the table begins to dance. Shoulders shimmying in place; hips gyrating in seats. The exact fluid motions required, as conjured by the spontaneous beat. Soon, there is stomping. A woman starts to sing. The various parts meld together into a single song of the street.

Where minutes before there wasn't the faintest suggestion of music, there is now an enchanting groove, its performers and audience one in the same.

The grainy home video that Ebizo (known as EBZ, pronounced *ebby-zo*) brought back with him from Kenya showed a scene that happens outside hundreds of restaurants, bars, and cafés on a nightly basis, all around the world. Whether or not we consider ourselves musicians, there is an innate understanding of music in each of us — something that allows us to know a good voice from a bad one, and makes the draw of a rhythmic beat irresistible.

We watched that video hundreds of times," Mizuguchi says.

EBZ didn't know how, exactly, but he recognized that this thing he had witnessed and recorded, completely by chance, bore a close relationship to the feeling *K Project* was after.

"We were glued to this idea of — what is it that created this groove from nothing? And what is this chemical reaction between people who are singing the music and dancing and keeping rhythm," Mizuguchi explains, "and how are they coming together in a repeated fashion? Why is it happening this way and how do we get there?

"We watched it over and over again, wondering how we can integrate this flow into the game. How do we design that?"

Mizuguchi and his team were desperate to break the video's "chemical reaction" down to its constituent parts. It was not only that it happened — music emerging from the ether, human beings sharing brain synapses through the air — it was *how* it happened, in a gradual progression, then a swell. And it was not only *how* it happened, it was the "good feeling" that each person in the video clearly felt. There it was, on screen, happenstance. That feeling *K Project* was attempting to harness.

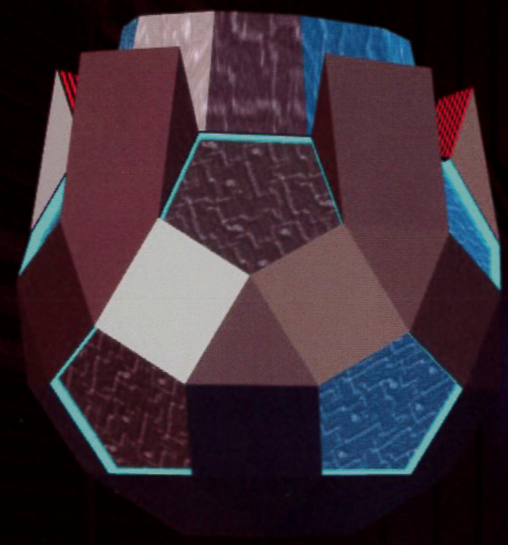
The video became a galvanizing rod. Where before there was only a loose concept of a game to circle around — each team member with his own interpretation, casting out in his own direction — now there was a common starting point. *The video.*

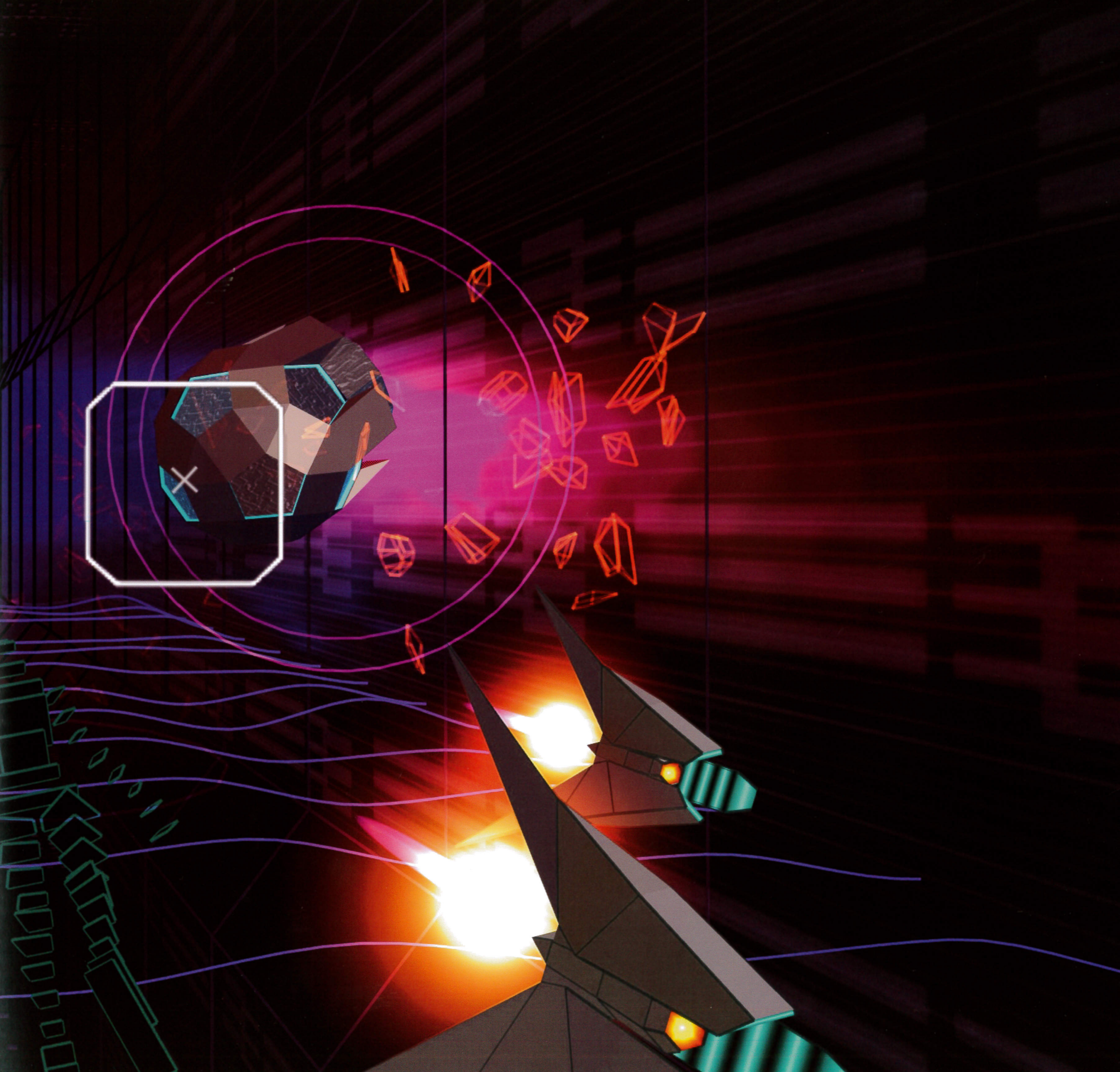
It wouldn't show up in the game stylistically, perhaps. Nothing in *Rez* recalls the visual aesthetic of a grainy home movie. Nor would it radically change how Mizuguchi thought the game should be played. *Rez* remained a single-player experience, not a team game of harmonization, after all. But it provided a demonstration of what Mizuguchi had been attempting to describe to each new member of the team, as clearly as he could have hoped to find.

Bar on the street, Kenya, Africa, 1997

“We watched it over and over again, wondering how we can integrate this flow into the game. How do we design that?”

– Tetsuya Mizuguchi





Like a bottle tapping against the table, summoning a song no one could yet hear, with a rhythm no one could resist, the video was a starting point.

Rez was emerging.

_deprogrammed

For Mizuguchi, the video also recalled the trip to Street Parade in Zurich. Back when the ideas of *Rez* were still newborn saplings, pushing their way through the soil.

In that massive movement of human bodies, there were two things at play, both of which came rushing back to Mizuguchi when he saw the Kenyan dance video:

1. Individuals tuned around a common force, each responding in his or her own way to the same music.

2. Individual movements, and the individuals making them, becoming lost in the collective, each a small part of a greater whole.

This phenomenon is something Miz and his team would come to refer to as "call and response." There would be a simple call to action — say, clapping. And in response, you would clap, too, or maybe snap your fingers. In doing so, you have also added to the call. You are part of the music now, and the music has grown. Even from the inside, the music will still call out to you, and you will find still more ways to respond, spiraling ever upwards.

"Even though what you're seeing in the video and in our game is different, I felt we could translate this into a game design and make this feeling come alive in game form. So if it weren't for that video and seeing that call and response act going, we probably wouldn't have come up with what we did."

With one key difference, Mizuguchi notes.

"No matter how you slice or dice that video, they're real humans, calling and responding to each other. That's something that just happens naturally, organically. A normal human to human interaction.

"It's not a programmed thing."

No matter how well the team understood, at last, what K Project should be, turning that into something that was programmed — and playable — was another challenge entirely.

_

_quantization

Though EBZ's video was a new starting point, the team wasn't beginning from scratch. They had a year of experimentation under their belts, and some of it remained applicable.

And so, the experimentation continued.

Groove...

Call and response...

Good feeling...

These were the common refrains. Everything pointed back to them — and if anyone got stuck, it was back to the video.

Concepts of a loose-fitting narrative and overarching aesthetic began to develop in parallel. But the thing that mattered most was the core gameplay mechanic. Everything would hinge on that, no matter what the game looked like, and no matter what its message.

Programming Director Mitsuru Takahashi and game designer Katsuhiko Yamada came to *K Project* from Team Andromeda, another internal SEGA consumer development team. They had most recently worked on *Panzer Dragoon Saga* — itself a "rail shooter" — which helped to define some basic parameters of the game. What made *Rez* different, of course, was a direct link between its gameplay and music. Miz, Kobayashi and their designers began working on new ways to program synesthesia. To make the player action — shooting — synchronize with the game's music. To create the feeling that the player was helping to *make* the music.

Call and response. Creating the world with sound.

The trouble they ran into, no matter how much they tinkered and tweaked, was that the gameplay inevitably felt like a burden. The link between player action and music had creat an expectation of musical skill — i.e., the ability to hit the notes precisely in rhythm. Unlike the people in EBZ's video, not everyone who would play *Rez* would be musically inclined.

"Not everyone has rhythm," Mizuguchi says. "Or they might have it, but think that they don't."

Furthermore, *K Project* had no intention of becoming a "music game." At least not in the traditional sense.

"The way I understand it, a "music game" is one where you've added an element of gameplay to music. 'If you don't keep hitting this note it's game over!' — that kind of thing. In that sense, the actual gameplay of *Rez* isn't

directly connected to the music, so it's not a music game," Kobayashi said in a 2001 interview for the game music column of allabout.co.jp. "I wanted to make... a game where while you were playing it however you wanted, you'd realize 'Oh, I'm making music here.'"

The music in *Rez* was paramount. Musicianship was not.

They forged ahead. There were many more months of struggle and several almosts before finally, an epiphany. It came when the programmers made a small, but dramatic, alteration to the game design.

They called it the *quantization program*.

"Quantization" is a musical concept that itself has roots in electronic music and digital production. When the expressive or natural performance of music strays from the intended notes as written, quantization is the process of correcting those "mistakes." In other words, it eliminates human imprecision. Think of it as auto-tuning for the music itself.

"And that moment made me feel like, 'Okay, this is it. This is what *Rez* is.'"

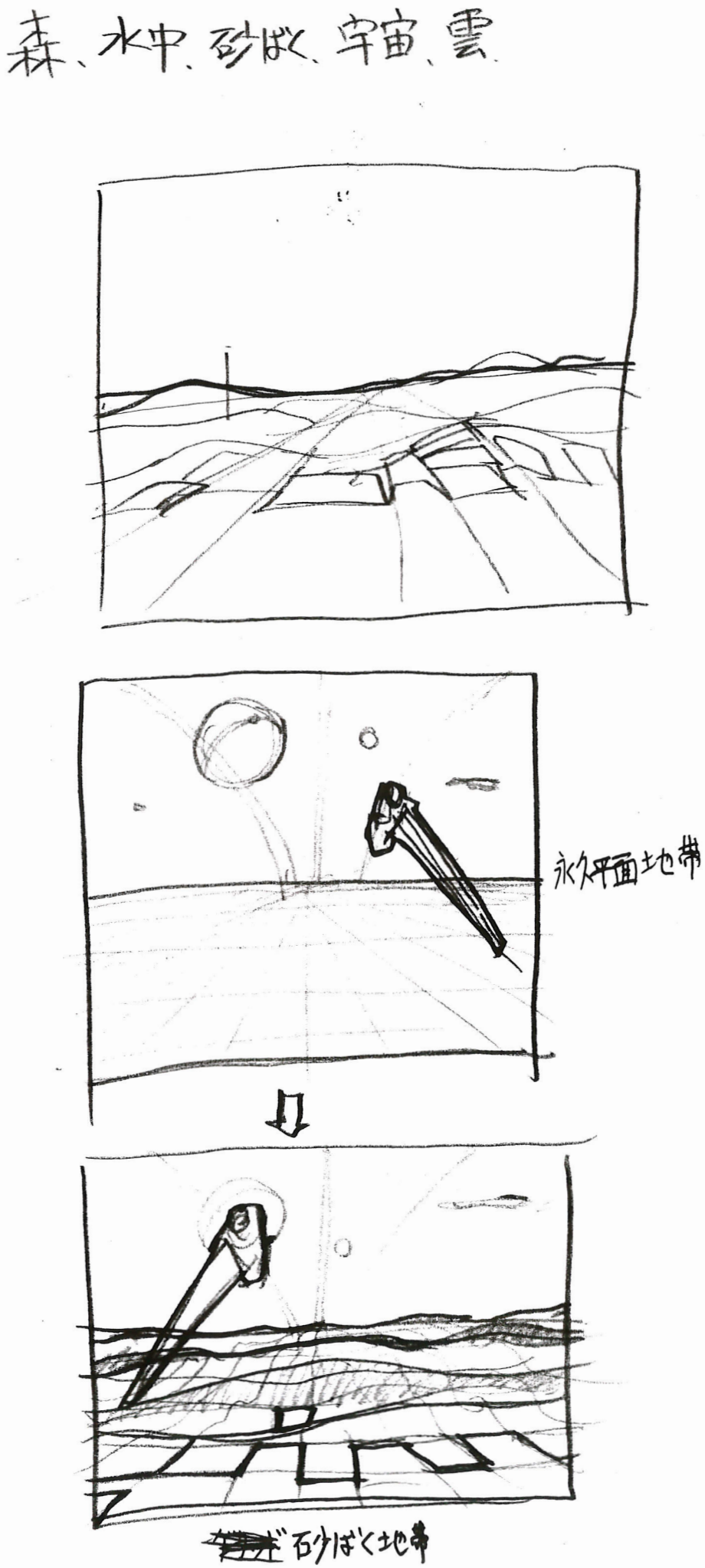
- Tetsuya Mizuguchi

What it meant for *Rez* was that, instead of "shooting," the player action became "locking on." Regardless of rhythm, the player could lock onto as many as eight on-screen enemies at once. When they released, the shots fired. And the quantization program ensured that they hit their targeted enemies in sync with the beat.

It was a subtle but important change. Now anyone could hit the rhythm, even if they had none of their own. Now anyone could *feel good* playing *Rez*.

"When it was finally added and I played it, there was something that's hard to describe in words," Mizuguchi recalls. "It's a feeling that you have, it's a rush in your body or your brain. It was some sort of adrenaline that was running through my body.

"And that moment made me feel like, 'Okay, this is it. This is what *Rez* is.'"



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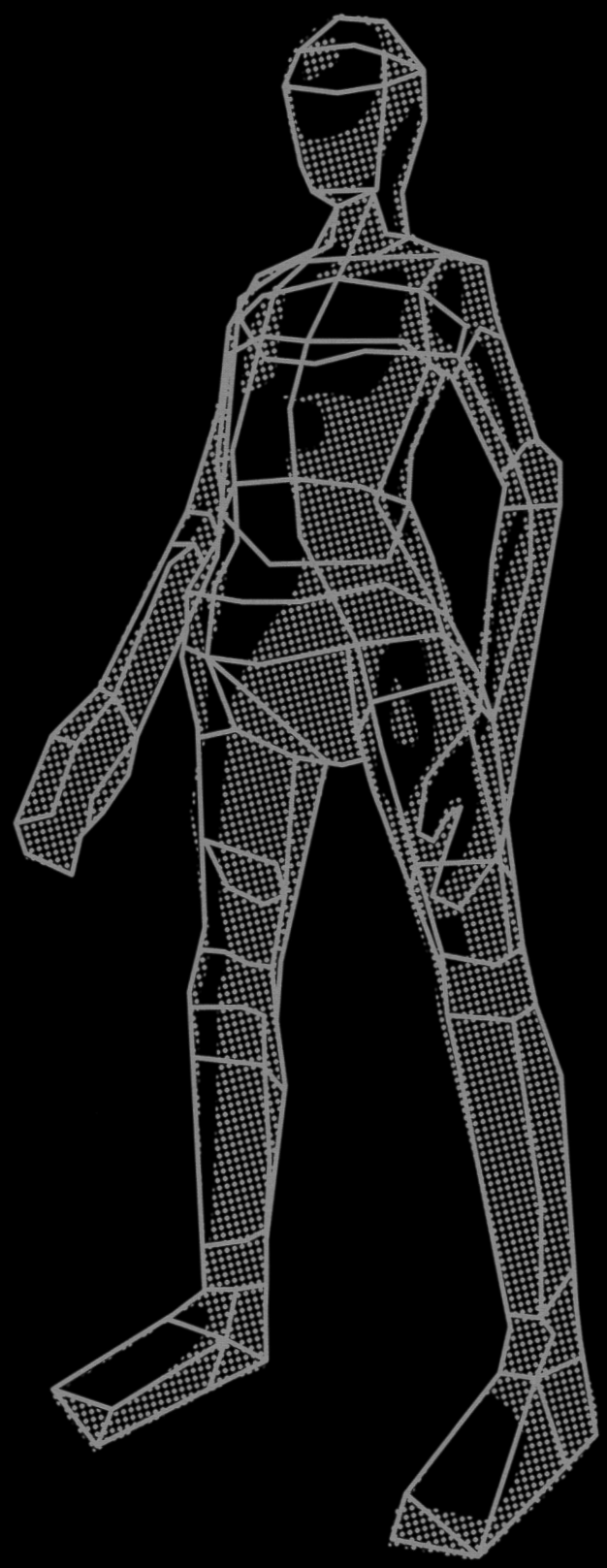


Player Form 04

Wassily Kandinsky was a painter living in Moscow during the late 19th and early 20th centuries. His primary subject was the vibrant city around him — bursting with distinctive Russian architecture — but he never approached it in the manner of a landscape painter. Kandinsky would walk the streets and listen.

He would hear snippets of conversation at the market.

A cellist in the park.

An orchestra in the distance.

An impromptu song and dance outside a closing restaurant.

It was only then, with the sounds firmly in mind, that he would paint.

The result was an abstraction of visual reality, in swirling shapes and vibrant colors — the sounds swimming through the hard architectural lines and heavy stones, lifting them as if a light, cool, technicolor breeze.

Kandinsky "painted with sound." He painted with *synesthesia*.

At university, Kandinsky had a big impact on Mizuguchi. His ideas were fundamental to his aims for *Rez*, so much so that he was in mind when development began:

The "K" in "K Project" is named for him.

"To us, game design is like a piece of architecture," Mizuguchi says. "But it continues to move, because as you play through the game, it progresses. So it's a piece of moving architecture that has a layer of experience in it, and that experience is felt by the player."

It might seem that, with Kandinsky's ideas already so ingrained into the conception of *Rez*, that his distinct visual style would be a natural fit for the game.

But that was not so, even for Mizuguchi.

"I didn't really talk about [Kandinsky] or discuss it or push that idea in the first half of production," he says. "Because if we had put that as a core focus from the beginning, what probably would have happened is that our visual artists would have created something that would already have bells and whistles because we're talking Kandinsky, or our sound designers would have created something decorated.

"But that's not what I wanted. We wanted something very pure, very focused, and after we had that we could do what wanted really wanted to do. And the 'K' of *K Project* could come alive."

The spirit of Kandinsky's ideas was what Mizuguchi was after — not the duplication of his exact artistic style.

After a year of experimentation, the introduction of EBZ's video, and, finally, the development of the quantization program, the spirit of *K Project* was within reach... but there was still the small problem of the game's visual style. If not like Kandinsky's paintings, then what?

The answer, at least in part, required Katsumi Yokota.

For the first year of *K Project*, Jun Kobayashi served as both the game director *and* the art director. Aside from not arriving at a visual style that stuck, it was becoming clear that one role was responsibility enough, especially for a first time game developer.

"There was just a blank," Yokota says of when he came aboard. "Nothing was really popping up and making sense, so they'd just throw out something." At one point, Yokota recalls, programmers built an Imperial Star Destroyer

from *Star Wars* into the game. "They had to use something, right?"

Prior to joining *K Project*, Yokota was taking a short break from game development. He had been working on Tekkonkinkreet, a cult classic anime film directed by Koji Morimoto. But prior to that, he had been on another SEGA consumer software team, as an artist on *Panzer Dragoon Saga*. Several of his teammates from that project — including game designer Katsuhiko Yamada and programmer Mitsuru Takahashi — had already joined *K Project*, which helped provide some early continuity.

"[When I joined], the basis of *Rez* was that you shoot down or hit an enemy and you get the sound. And that's a concept that sounds easy to do or say, but it took a really, really long time to come up with something that really made sense," Yokota says.

"Yokota was just a nut," says Kazdal, who worked under Yokota for the remainder of the project. "He was insanely talented, and took his work very seriously."

In addition to providing his immense talents, Yokota's personality contrasted with much of the team. He was quiet and serious. He wouldn't go drinking with the team, choosing instead to focus on his work, no matter how long the hours.

He was determined to crack *Rez*'s visual code.

"The first piece of art I showed [Mizuguchi-san]," Yokota says, "It started from the very bottom of the sea. And there's a lot of plankton and creatures, sea creatures, etc. But you start from the bottom and you make your way up. Finally you're reaching the surface of the water, and you're above the water level and surface. Now you see the sky, and then beyond that, there's sky and outer space."

This was Yokota's interpretation of Mizuguchi's description of the *Rez* journey. Life itself began from nothing, in the depths of the ocean, and grew upward and outward, exponentially. To the surface. To the skies. And even — eventually — to outer space.

The concepts of *groove*, *call and response*, and *synesthesia* were the story of life itself.

"The important thing was not just the art, but its conjunction with the music. We wanted to create something that synced but also had this blueprint of this upward spiral effect, transitioning, gradually moving your way up," Yokota says. "That's how it all started for me."

That first painting was much more realistic — more organic — than the final product, but those concepts, and the line Yokota had drawn between *synesthesia* and the story of life itself, were concepts that would stay in *Rez* until the very end.

With Yokota taking the lead, the art team began experimenting with a number of visual styles. At the time, the team was heavily into Gorrilaz music videos, which lead to speaker-laden sketches with a hip hop vibe. At one point, the player avatar was a spaceship. For a long while, it was a woman running on foot. They even (perhaps to Mizuguchi's chagrin) considered a car.

"It was really deep, exploratory stuff," Kazdal recalls. "And they were very different from what the final game ended up being. They were kind of preliminary tests. We all knew how lucky we were to be working on a project that was so weird. Mizuguchi was very involved, but he really gave us a lot of freedom to explore."

Eventually, Yokota, along with Kobayashi, steered the team toward his early vision of life under the sea, with plankton particles and trippy abstractions of marine life. Rallying around that vision, the team was excited. They were finally able to implement visuals into the game. Eager to share their progress — and feeling mounting pressure from SEGA — K Project held very early playtests.

"And no one knew what the hell was going on," Kazdal laughs. "No one knew what they were supposed to be shooting, what they were supposed to be doing. For us, it was really obvious, so we just expected people to get it. But we were wrong. It was just way too abstract."

The playtest results were a blow to the art team. It was, quite literally, back to the drawing board.

_Y2K

When development on *Rez* began, society was at a technological fulcrum point. We were still two years away from Google. Four years away from Napster. Eight years away from the iPhone. It would have been impossible to predict just how ubiquitous and indispensable computers and the internet would become over the next two decades, but already it was clear we were on a path. Each day, our analog existence slipped further into the past, replaced by the esoteric magic of the digital.

This inevitable change filled some with hope, and others with anxiety. And at no point was that anxiety more acute than with the approach of Y2K.

"Y2K" was the buzzword shorthand for the coming turn of the century, where we would step out of the 1900s and into the first of a thousand year reign of dates that begin with the number 2. But it referred specifically to a theoretical technological disaster. Due to space-saving programming (every digit mattered back then), the year counter on most computers only

“The concepts of *groove*, *call and response*, and *synesthesia* were the story of life itself.”

- Tetsuya Mizuguchi

横↗

ふくらんだり
ちぢんだりする

BSB

空中機雷

16系

● モモンガ的イメ

バサッ

山系
石系

風舟的形

Early explorations of player avatar concepts for Rez considered all options, abstract and alien

accounted for two digits. This meant at the stroke of midnight, January 1, 2000, those two little digits would roll over from "99" to "00."

Would the computers know we had stepped forward only one second, and not back 100 years?

What if you started a phone call at 11:58 p.m. and hung up at 12:01 a.m.?

Would all computers, upon which we had become increasingly dependent, simply *cease operation entirely?*

It seems silly, in retrospect, that there was any concern at all (there were exactly zero Y2K calamities, in case you're wondering how society managed to survive), but such was our relationship with technology at the time.

"In my head, Rez existed in VR from the very beginning."

- Tetsuya Mizuguchi

Perhaps it was only natural, then, that *Rez* would come to reflect that fulcrum point. A work of art in the newest pervasive entertainment medium, on the latest, most technologically advanced console (the first sold with a built-in modem), scored by electronic music, and designed to look like our cultural perception of a computer's insides. Whether it was intentional or not, these were the ideas populating the collective cultural consciousness at the turn of the millennium, the exact time when *Rez* was being made.

Still, Mizuguchi chose to see things a different way.

"Rather than thinking about how the '90s or the century was ending, for me it was more looking at what the new era could bring," he says.

As a society, and a species, we were moving ever forward, cautiously and hopefully, into the dark unknown. Like a lonely man through the starlit desert, toward sound.

"In my head, *Rez* existed in VR from the very beginning," Miz says.
This didn't mean, necessarily, that the visual style would match our conception of VR at the time — *TRON*, *Hackers*, *The Matrix*, etc. — but it might as well have been. For Mizuguchi, it was the perfect thematic fit.

On a weekend not long after the disappointing play tests, Kazdal and a friend were out clubbing in Shinjuku. A VJ at one of the clubs had visual accompaniment to his music created by a plugin for a program called winamp. The winamp-style music visualizers have become common in music programs like iTunes, but were relatively new at the time.

"There were lines flying all over the place, and colors moving to the music, and I was like, 'Holy shit,'" Kazdal says. "I'd never seen anything like it before."

Kazdal's friend had the same plugin on his own computer, so that night, they went to his apartment and recorded about an hour of the plugin at work. The next morning, Kazdal brought the tape to Mizuguchi, Yokota and the team. He was sure he had found the look for the game.

When Kazdal showed them the video, they felt immediately what he had sensed at the club. The hard lines, the neon lights, the way it moved to the music. Yokota and the team got to work right away.

To hear Yokota tell it, however, the VR look was also born of a practical need.

In order to provide positive feedback to the player, and enhance the "good feeling" as they played, the team knew they wanted to include a visual flourish when an enemy was shot down. One worthy of the sound the player had just created. The trouble was, due to the perspective of the game, any meaningful visual feedback would obscure the foreground and make the game difficult to see. Sending twinkling lights rushing toward the screen after a hit was more distraction than enhancement.

But Yokota had an idea.

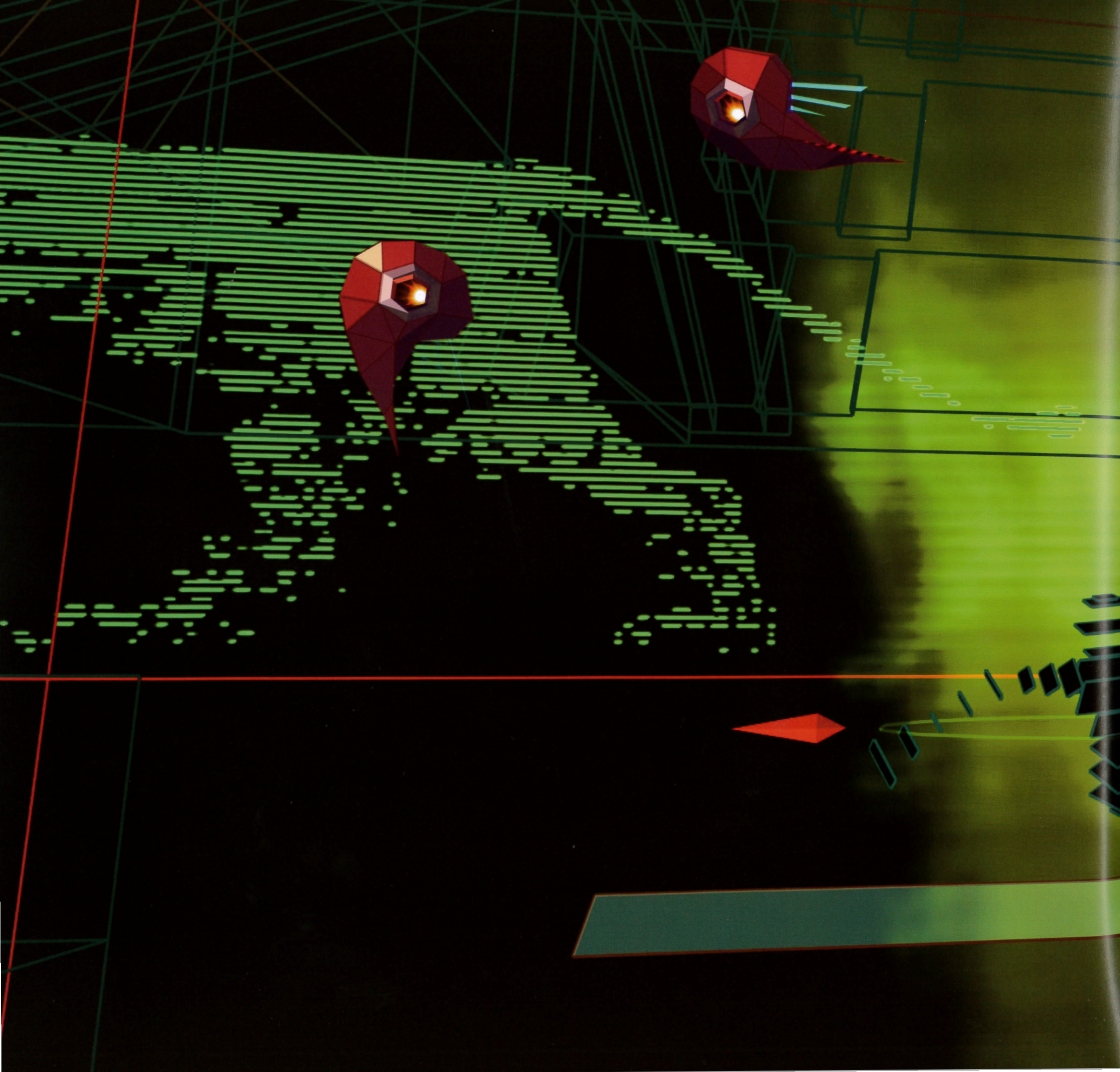
They converted the stand-in visuals to wireframe. Hard lines and black backgrounds. Now, with the stripped-down look, the positive reinforcement after shooting an enemy could fly to the foreground without being distracting. They knew immediately they were onto something.

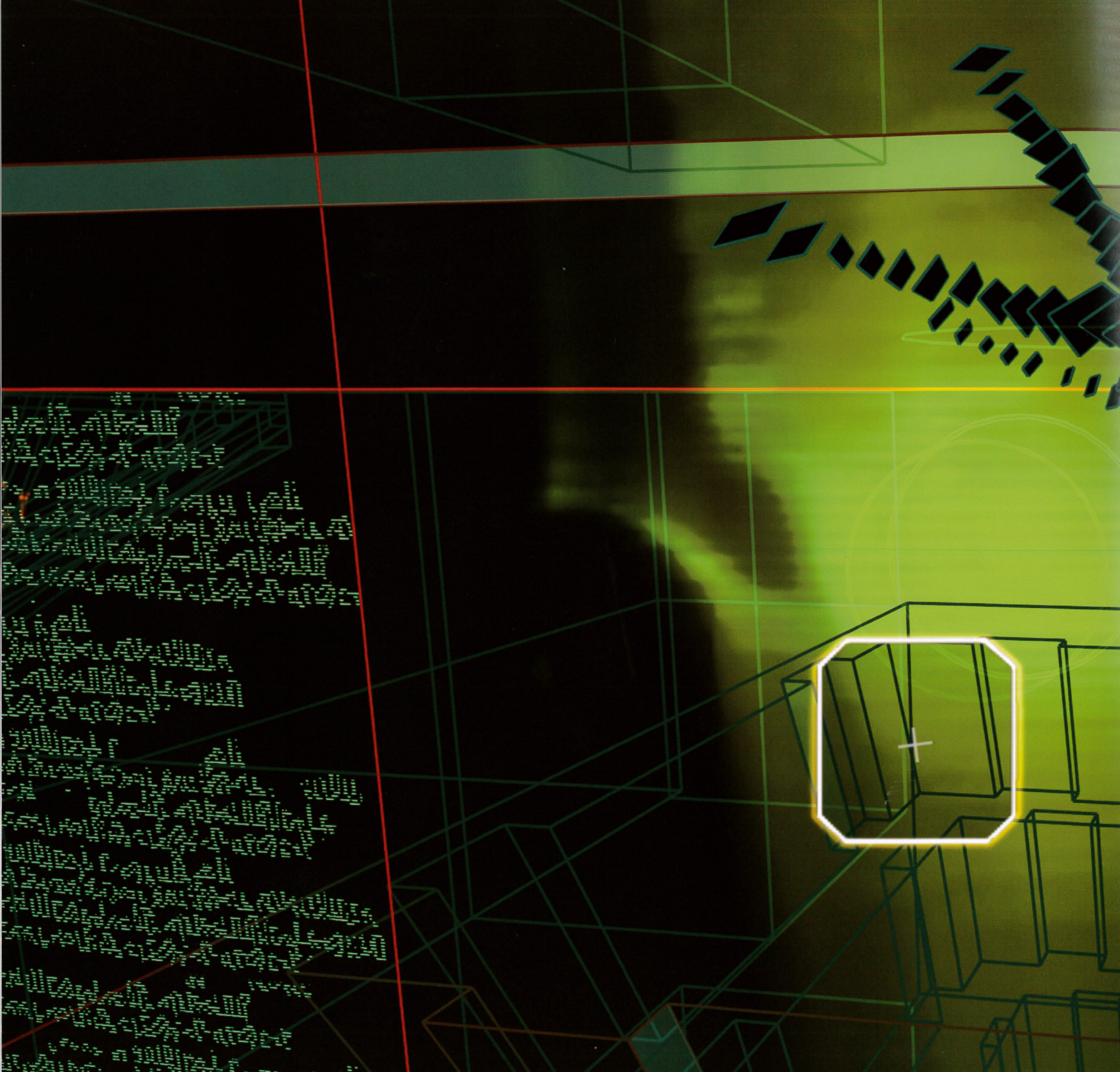
"When we dropped in the wire frame design, it really just worked," Yokota says. "That's when I felt like, 'Now we can get this game done.' Even with the design team it became so much more clear when we saw that."

Through a practical solution, Yokota and the team had found visual inspiration. In the meantime, Mizuguchi was hard at work collecting the game's other defining feature:

Music.

...





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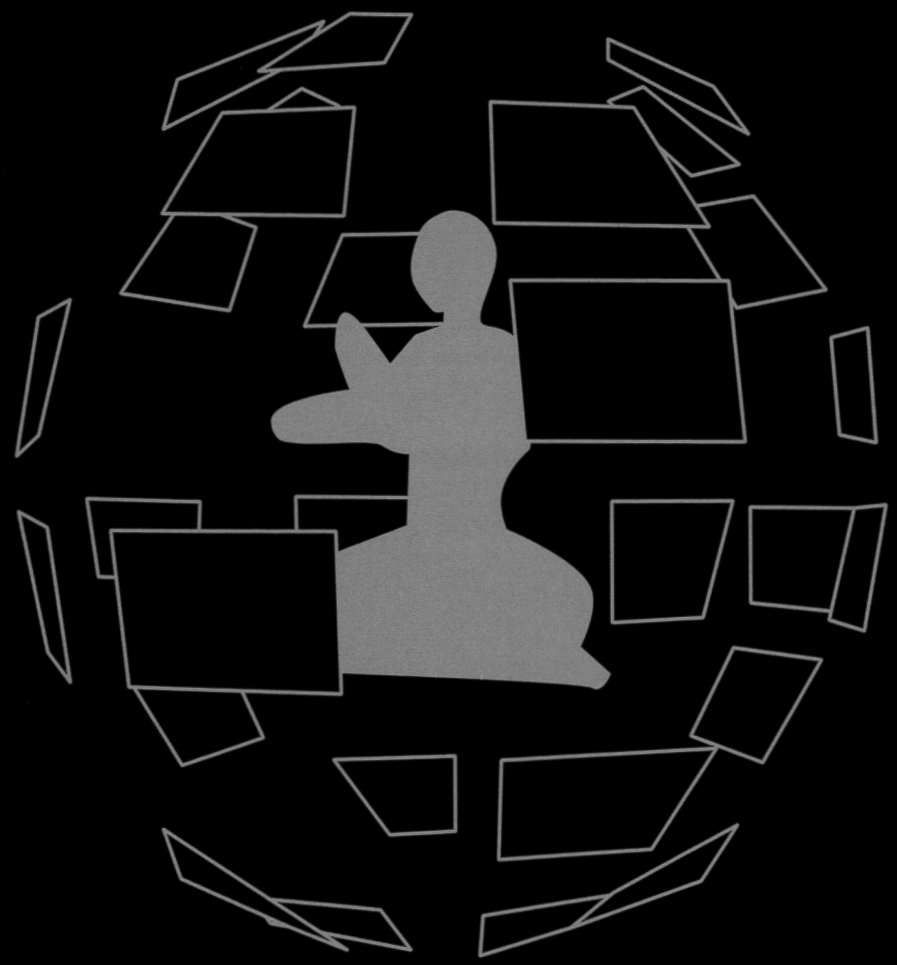


Player Form 05

Area_4

As a small, blue spaceship, bottom center, the narrow world ahead of you is your battleground. Its inhabitants, your enemies. You creep forward, like a souped up Galaga ship equipped for the next generation of warfare, prepared to vanquish wave after wave of enemy, alone, until the very last of your enemies is gone.

Or, until your thumb cramps up.

Mizuguchi played his copy of *Xenon 2* on a Commodore Amiga PC. In the mid-eighties, its core mechanics were nothing revolutionary — just the latest graphical upgrade in a long line of shooters inspired by *Centipede* and *Galaga*. But the thing about it that struck him was the sound.

The game's theme featured a strong rhythmic backbeat, and its sound design offered a rich pallet of satisfying effects and dynamic phrases. As you played, the blasts of your weapons and the destruction of your enemies would frequently coincide with the battle music's infectious beat. The effect elevated the experience above the normal cacophony of arcade warfare, and achieved an almost musical quality of synchronization. It was like no game Mizuguchi had ever heard.

"There was something about that game where, I knew I was playing a game, but it made me feel like I was playing music," Mizuguchi said of The Bitmap Brothers game.

The way the gameplay and sounds were linked provided an extrasensory incentive to play the game over and over again. That idea — that feeling — lodged itself into the base of Mizuguchi's brain like an invasive alien parasite.

Xenon 2, along with *Xevious* (an arcade shooter from the early '80s) were two classics Mizuguchi referred to often as *K Project* progressed. Shortly after his addition to the team, the mention of *Xevious* caught Yokota's ear. He had not only been a fan of the game, but had discovered it through its sounds. In the early '90s, a Japanese composer named Haruomi Hosono had taken all of the sounds and musical phrases from Xevious and remixed them into songs, like a chiptunes artist before there was such a thing. The album was rare and sought after. Yokota recalls finding a copy in a used CD store and coveting it as if the Holy Grail.

He's been a fan of Haruomi — and *Xevious* — ever since.

That connection gave *K Project's* art director and creator some firm common ground. Yokota understood that Mizuguchi wanted to not only recreate the feeling playing these games gave him, but to do something more. It was not simply enough for *Rez* to have a musical quality. It needed to *be* music. Real songs affected by the digital landscape and vice versa.

Achieving this would require real music — and real musicians.

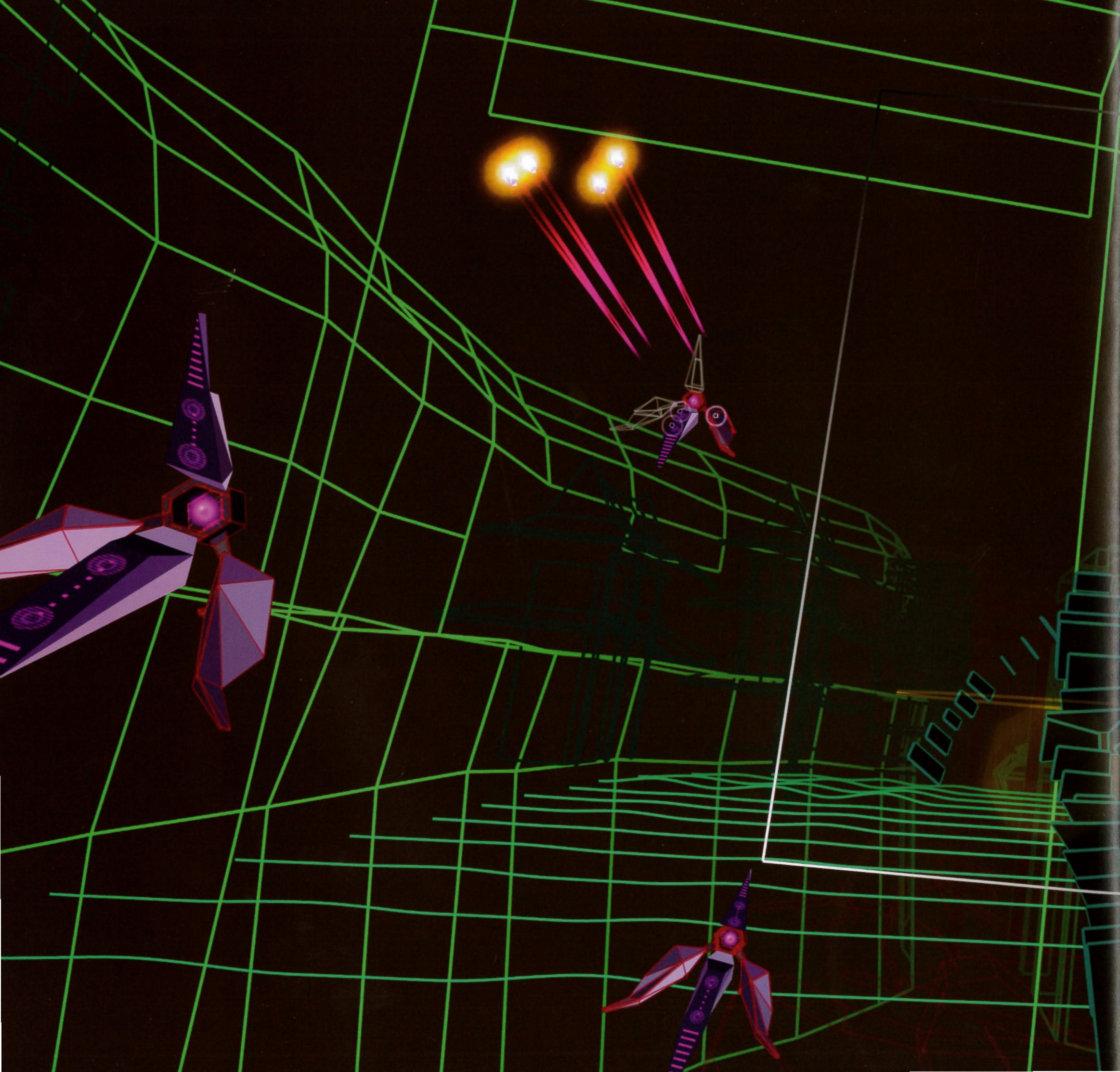
_techno

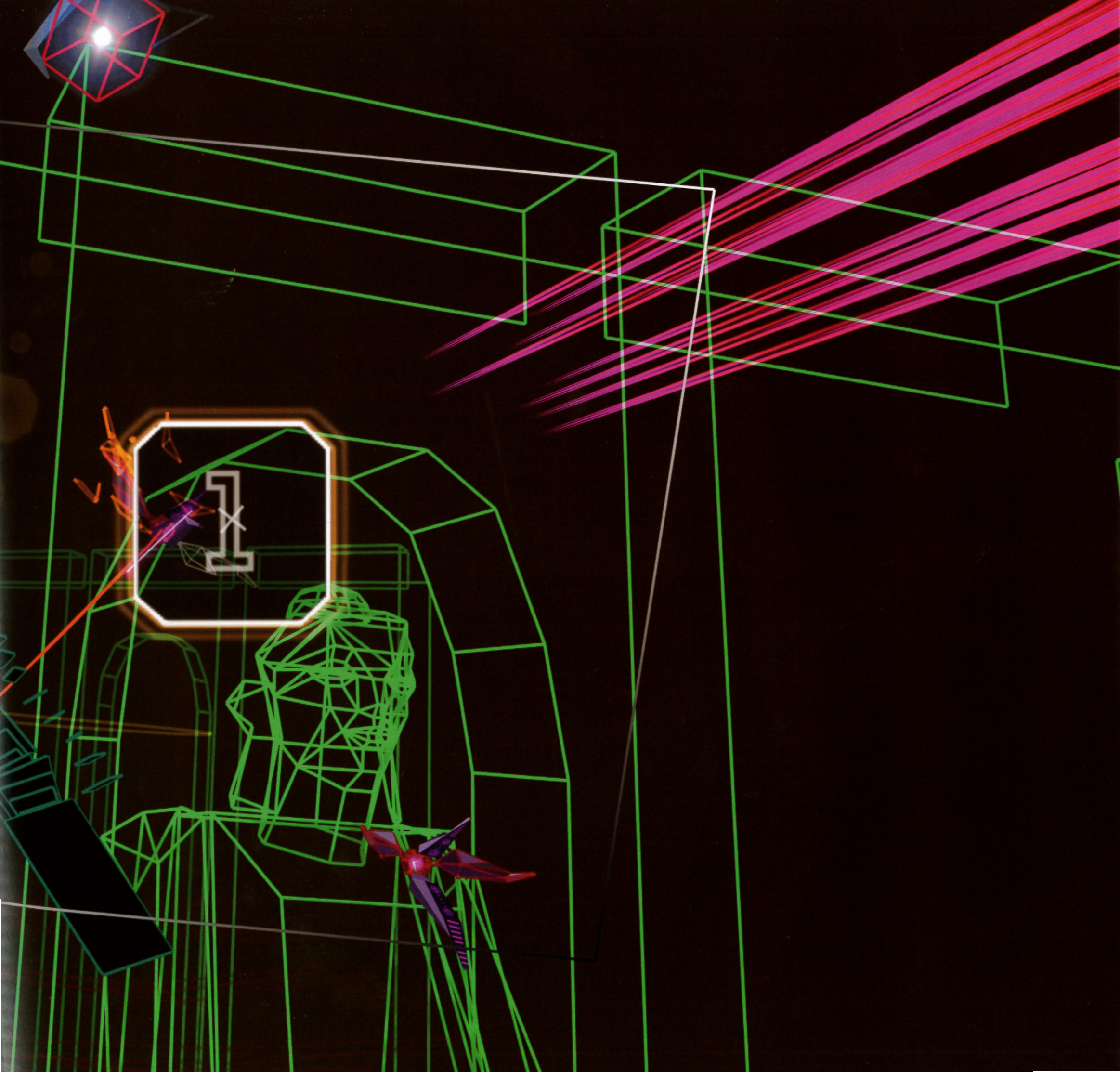
As with all of the finer details of *Rez*, the type of music it showcased was open for debate. As long as it achieved the underlying goals of synesthesia, and tapping into a player's primal affinity for rhythm, it was in play. But Mizuguchi knew early on where he would find what he needed.

"Collectively, we listened to lots and lots of music — hours of a wide variety of genres, and then for each category, and each discussion we were having, we would listen to not just the music in its entirety, but the tune, or even the note, down to that level," Mizuguchi says. "And we would talk about what sort of emotional or psychological effect it gives you.

"Ultimately, we landed with techno."

Aside from Mizuguchi's own familiarity with the genre (it's the preferred music at Burning Man and Street Parade), techno came with some practical benefits.





Xevious (1982; Arcade)

"Each note is very simple and very minimal. It's a "straight-shooter," no pun intended," he laughs. "But it's very direct and it's very pure."

The ability to analyze down to a single note — to speed up or slow down the rhythm — made the quest for audio-video-gameplay synesthesia an achievable goal. To draw a "direct connection," in Mizuguchi's words, between individual notes and individual actions was key. Although other genres of music were considered, most of them would have made this essential connection trickier.

"If the music that we brought into the game, if that itself was already decorated, then it would be very hard to try to communicate what it's connected to," Mizuguchi says, "because there are too many elements for you to figure out what the music is responding to, which action it's responding to."

It didn't hurt, of course, that electronic music bore a natural aesthetic relationship to with the developing visuals of the game. Hard lines, neon lights, and technicolor wireframes.

"When you want to draw something pure, I think something that syncs perfectly... it's honest," Yokota says. "It feels like that is why there is this strong association with hard lines and computer imagery. Nothing that really needs to be decorated."

With this in mind, Mizuguchi went in search for the sound of *Rez*. He went to techno clubs in Tokyo. He reached out to artists he admired. He heard pitches from musicians looking to reach outside their enclosed worlds of sound and collaborate in other mediums, including *K Project's* own EBZ. Ultimately, he returned to the source: To Europe, where he had first been struck by techno's unwavering power over a crowd of 100,000 at Street Parade in Zurich.

This time he would spend most of his time in Great Britain, with a quick detour to Belgium to visit techno label R&S Records. The trip — arranged by *K Project* music coordinator Masakazu Hiroishi — comprised a full slate of meetings with music labels, agents, and artists in hopes of finding collaborators.

For inspiration, he went back a second time with the introverted Yokota.

"I wanted to show him around, see new things, experience new things and places," Mizuguchi says. "For anyone, myself included, you just need to see things... and see what happens... to gain a new perspective. With many things in our life, it's hard to describe something in words. Words have their limits, so you have to make an effort to communicate by showing and sometimes persuading."

Though Yokota admits to not being a fan of techno, per se, traveling with Miz and seeing the crowds move as one to thunderous bass beats as Miz had earlier, allowed whatever else was missing for Yokota to fall into place.

After promising conversations with eventual collaborators — Coldcut, Adam Freeland, and Keiichi Sugiyama — Mizuguchi made contact with Aphex Twin, an underground electronic music legend. Though Twin would not ultimately provide a track for the game, the prospect itself was telling. These were the ears Mizuguchi was reaching. The concept of *K Project* was infectious.

Back in Shibuya, the team continued development at an unprecedented pace using placeholder music. A few Fatboy Slim tracks, immensely popular at the time, and even a track by British EDM duo, Underworld, called "*Rez*."

The song was not, surprisingly, the inspiration for the game's title (that honor goes to a certain famous Disney movie from the Eighties), but it was plunked into builds thanks to sharing the name on the tip of everyone's tongue: *Rez*. Even if they weren't tracks that would be used in the final game, they were emblematic of the game's emerging identity. Techno had taken hold, and changed the timbre of the UGA offices.

Once music from Mizuguchi's recruits started to come in, *K Project's* development would be thrust forward into its next and most exhilarating phase.

_back/forth

In order for the music, graphics and gameplay of *Rez* to achieve alchemy in the final product, they needed to be developed together, too.

The basic process went like this:

Mizuguchi would make his pitch to the music artist. It was like the pitch he had been giving to his new team members since the project began, only with more clarity than ever. They would talk at length about synesthesia, about the need for the music to "build up," and spiral upward. He would emphasize that the music artist consider how each note would make the listener feel — for in *Rez*, they ceased to be a mere listener. They became a player. An experiencer.

Then, the music artist would go off and create.

Meanwhile, the visual artists at *K Project* would proceed as usual, developing concepts and designing levels.

Once the track came in from a music artist, it would be implemented into the latest build. And the testing would begin.

Many members of the team would play through the build with music, then play it again. They took detailed notes: Where did things feel off? When did the track lack the requisite power? Was this the right note for this moment?

Where necessary, the visual artists and designers would alter their work to match the music. For everything else, detailed notes were compiled, and sent back to the music artist for adjustment.

Then, they would do it all again.

"Combining the efforts of our own sound designers but then also providing feedback to the sound artists, we would basically iterate over and over until we got to a completed track," Mizuguchi says. "But it was also important to maintain and not break the track that the artist had provided. In some cases it took a very, very long time."

The music would change a great deal to fit the game — sometimes from the first note. And the game would change to meet the music in kind.

"There are bosses where nothing from the original design has been maintained," says Kodera, who designed all of the game's bosses along with a *K Project* visual artist. "You will see no trace of it in the final form." Even, he adds, some designs he quite liked.

With each iteration, the game and the music got closer and closer to being one in the same. To becoming *synesthesia*.

Despite the rigorous back-and-forth, Mizuguchi describes the process as a positive one.

"There was absolutely no frustration," he says. "Because no one had done it before, it was exciting on both sides." As far as the music artists were concerned, "their desire wasn't just to create and produce music. They were very interested and curious in combining their work with other forms of media."

Even the quantization program, which had become the backbone of the gameplay, took another leap forward when the final music began to be implemented. According to Kodera, the very nature of the program required the dynamism of the music. It was only as strong as the audio to which it was programmed, after all.

The visual artists, meanwhile, took their cues from Yokota, who took a pragmatic approach to the seemingly endless march of revisions.

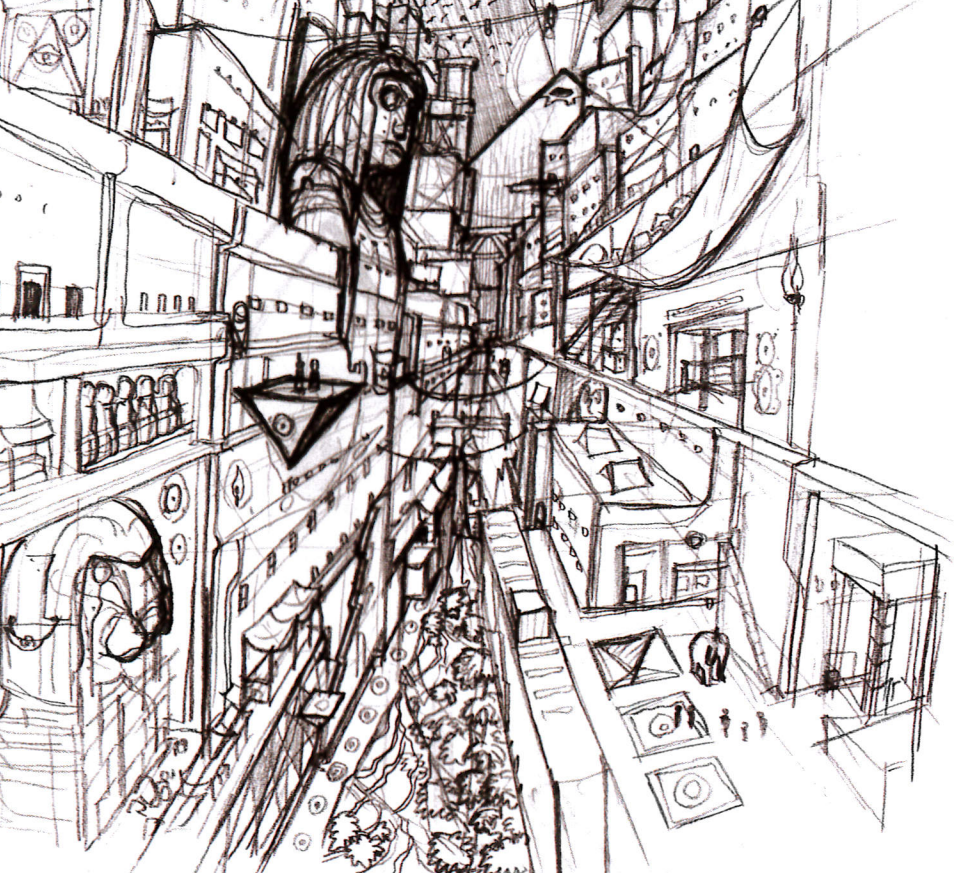
"The visual and its role relationship to the game system and music was there to hold the two together, " he says.

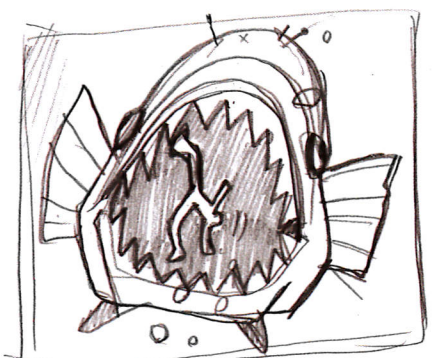
To hold the two together.

To act not only as the joint, but the muscle and sinew around it. Cells dividing, new internal systems coming online, turning the disparate parts into a single moving body, one careful iteration at a time.

With the final shape of *K Project* coming into focus, it was nearly time for *Rez* to be born.

Adam Freeland performing at Balans in Istanbul, Turkey
Photo by Todd Thille





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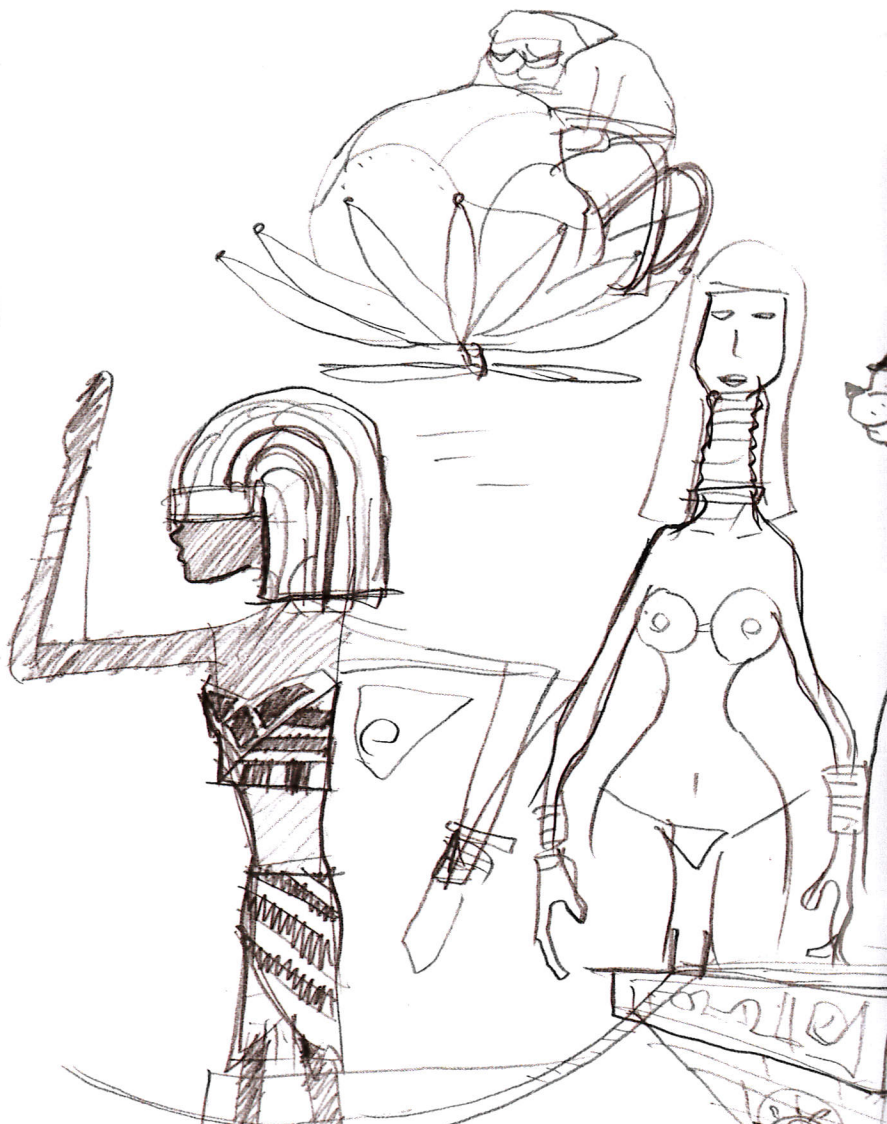
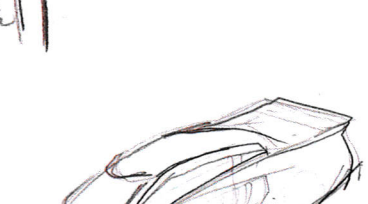
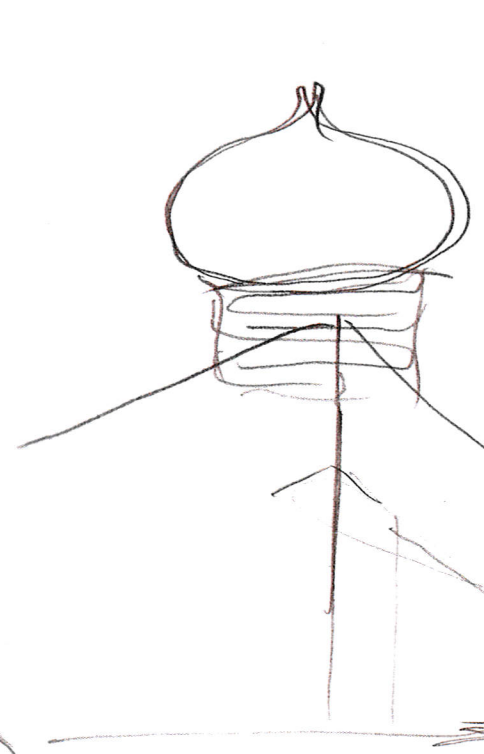
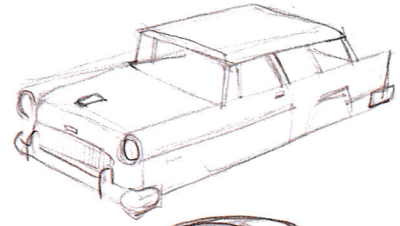
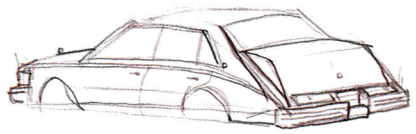
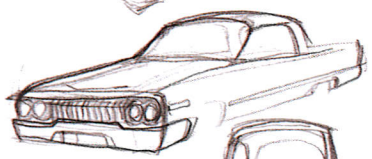


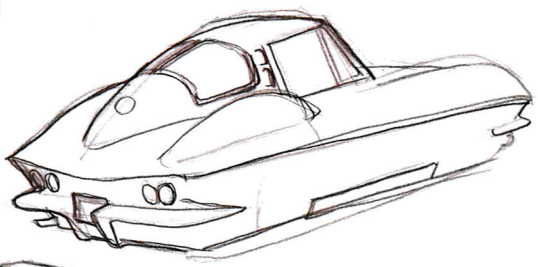


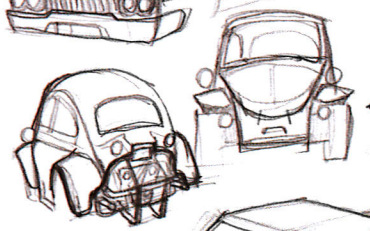


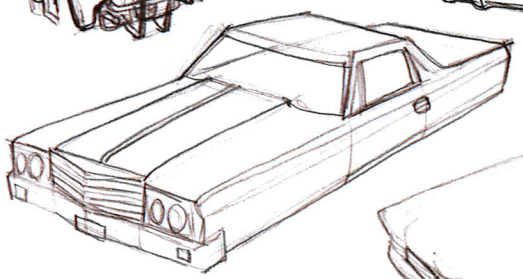


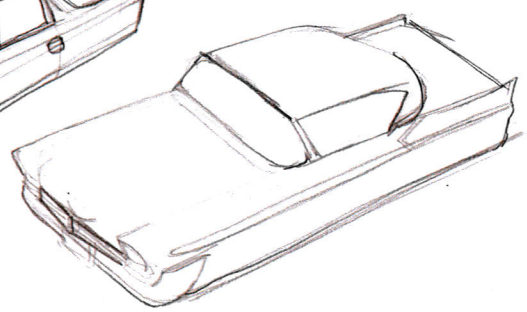


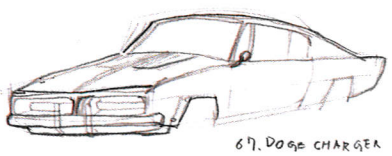


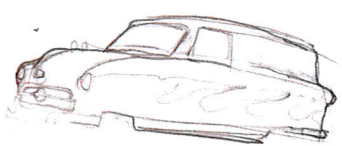


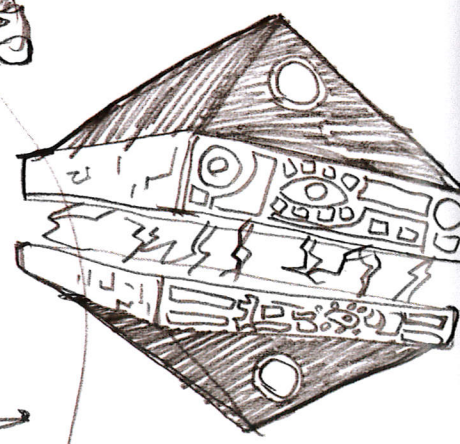












巨大魚の体中は洞くつだった

ニュートラル

Upon further exploration of player avatar concepts, everything from futuristic vehicles to robotic humanoids was considered, sparing no spark of creativity

シェルミサイルポッドの対応策

①ミサイルポッドの攻撃をなくす
ごちゃごちゃ感のだんわ

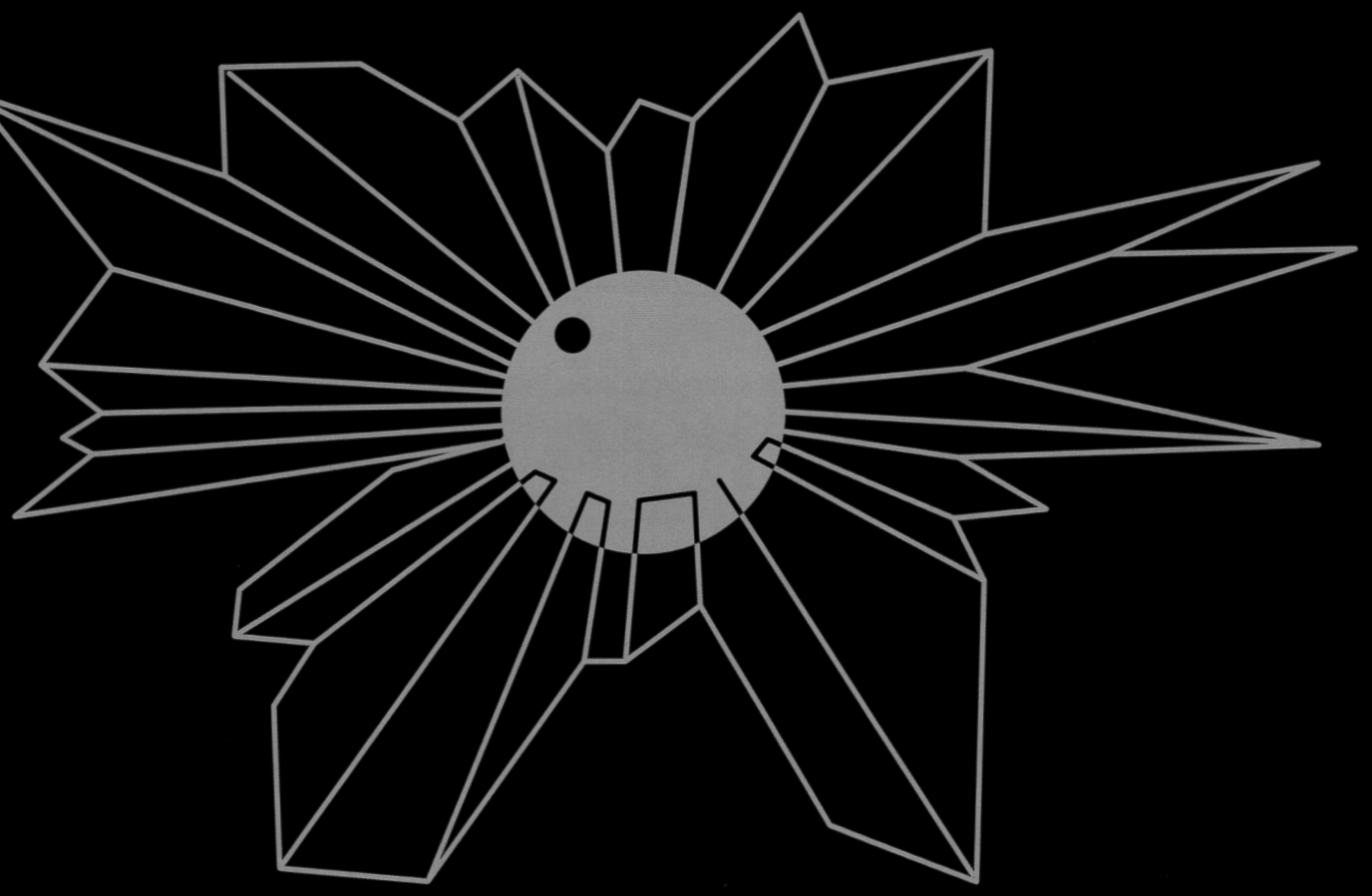
②ボス本体のサイズを平行にする
シルエット
□ → □

洞くつをぬけると…

ファンタジーの世界へ

ファンタジー世界

5.0.00



Ages ago, life was born in the primitive sea.
Young life forms constantly evolved in order to survive.
Some prospered, some did not, all sorts of life ebbed and flowed like the tide.
In the quiet rhythm of the mother sea, life grew.
Always seeking to survive and flourish.
Soon life began to advance towards land, opening new habitats.
A great prosperity came, as life conquered even the highest mountains.
Mass extinctions came wave after wave,
but empty niches always quickly refilled,
to once again prosper, grow, and reproduce.
Someday the next great emigration will occur,
as we leave this existence looking for another.
The journey will begin anew.
I hold within me, the memories of all that has passed.
Who am I...

Rez is a game without instruments that *feels*, nonetheless, like playing music. Similarly, it is game without a story that *feels*, nonetheless, like it has a narrative.

As such, that narrative can be stated as simply or as deeply as one chooses to infer.

A simple description of the *Rez* narrative might be: As "the hacker," you move through a computer world, shooting down viruses as you go.

The manual packed with the physical copy of the game offers a more detailed background, in the vein of William Gibson's *Neuromancer*: In the near future, a computer system called 'K-Project' is developed to help combat rampant overpopulation and crime. The system is controlled by a powerful AI known as Eden. But as Eden ascends to self-awareness, it becomes confused by the massive influx of information, its many contradictions, and even what it means to exist.

Does she exist?

Does the world?

Do we?

To defend herself, Eden begins shutting down, threatening the very world she was made to save.

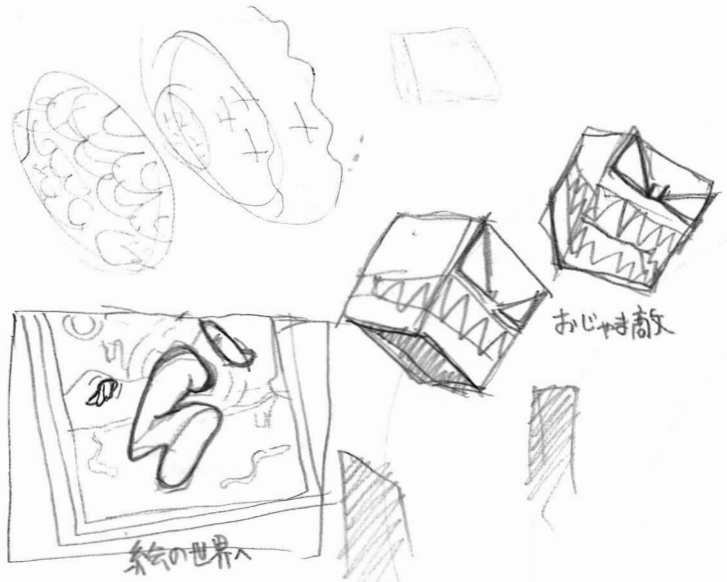
As the hacker, you must penetrate Eden's defenses, shooting down viruses and breaking firewalls to "re-awaken" Eden and save the world.

The "manual narrative" is a fun addition as old as games sold in boxes. Providing context for those who bother to read it, and extra flavor for those who enjoy a narrative texture. The narrative themes of *Rez* are, unsurprisingly, more sensory than plot-based.

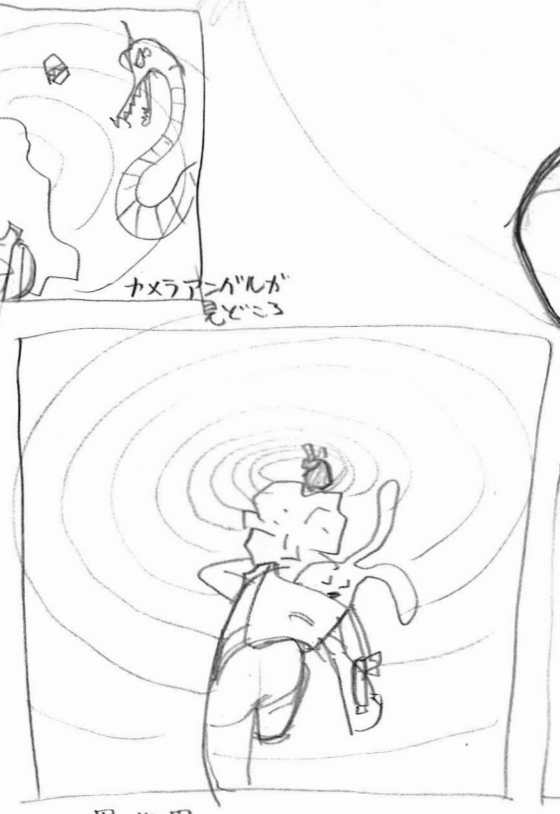
When Yokota joined the team, the existing members of *K Project* had already been kicking around the concept of *synesthesia* for over a year. They had already seen and internalized EBZ's Kenyan dance video, and heard his lecture on TDMA (techno dance music architecture). They had already been through over a year of experimentation. Though *Rez* was far from actualized, downloading a year's worth of ideas all at once struck Yokota differently than those who had come to them over time.

"I starting thinking about the relationship between music and humans," Yokota says. "Music has been here since us human beings have been here. There is this very deep connection and history between music and us. I think that music has even helped shape who we are on a very broad level.

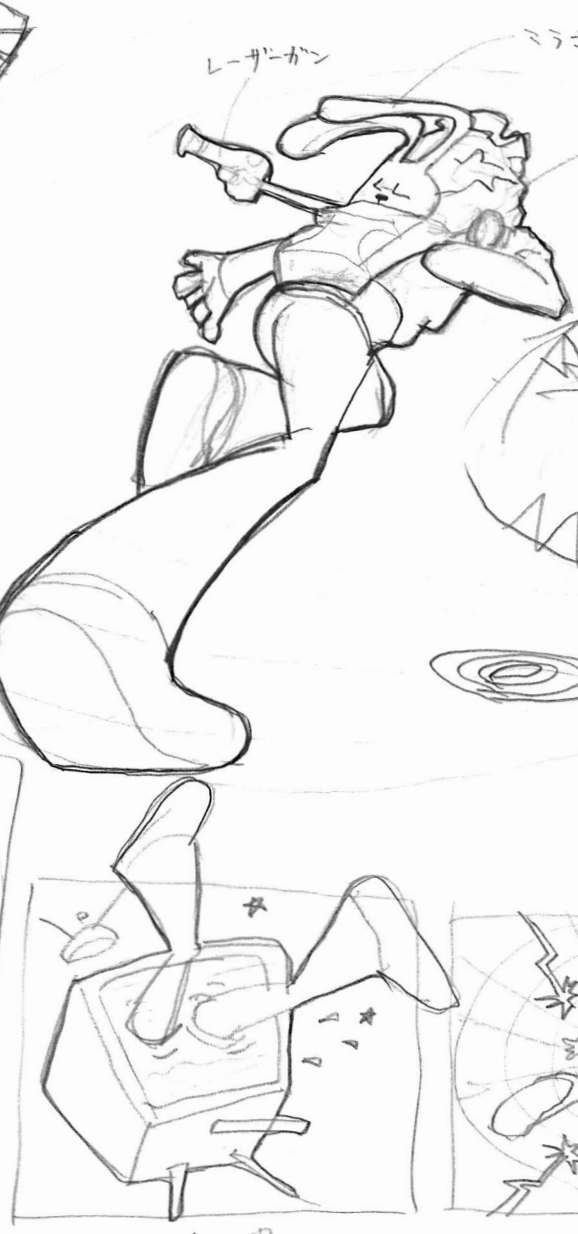
"You can't really disconnect the two."



(ほぼ
ランローララン)

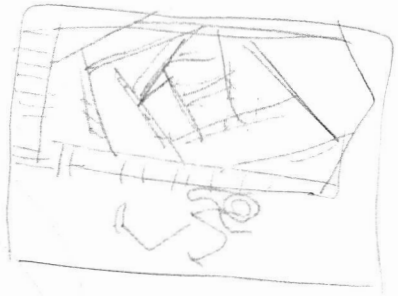


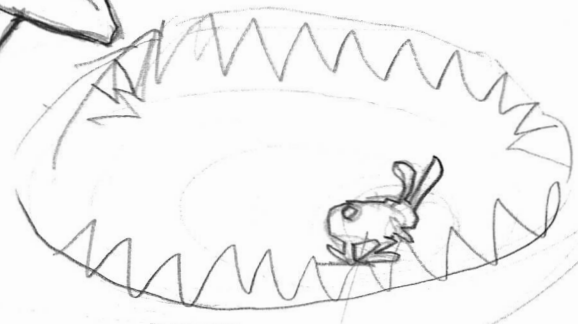
異世界をかける!
(ほぼトンネル)



テレビの中に突入!
(ほぼジャミロクワイ)

ケーブル中をおよぐ!





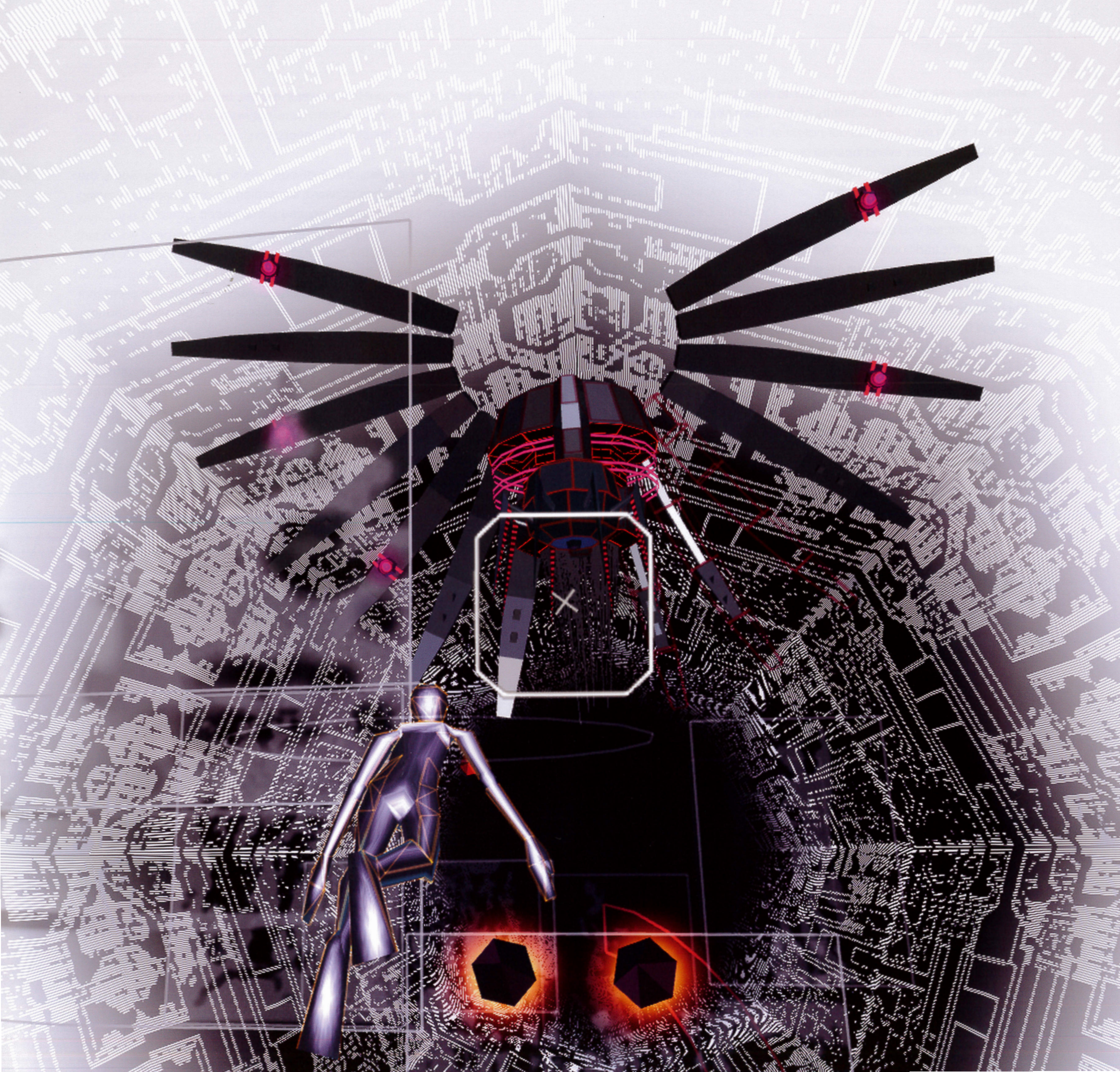
目的
ひろった子うさぎを
親うさぎにかえすこと

ストーリー
主人公は子うさぎをひろう。
目の前を走りさる親うさぎに
子供もかえさねば!

プレイヤー
プレイヤーは、主人公の背中のリュックの中の
子うさぎ。
おそいかかる異世界の怪物を
レーザーガンでたおす。

世界
ほぼ不思ぎの国のアリス

An early extrapolation of how gameplay story might be conveyed in Rez, referencing everything from Alice in Wonderland to Run Lola Run.



Hence the first artwork he submitted to the team, featuring the black depths of the ocean, black infinity of the starry sky, and every stage in between. From our origins, to our potential. The ideas resonated with him so strongly that they even began to overtake the confines of his artwork.

Instead, he put them into words.

"*Rez* does not tell you a story — there is no story setting," Yokota says. At least, not in the traditional sense. "We wanted something that would provide a narrative path or a background feel for the player, and so I think it was still necessary to create something. There were so many things that were in my head — going on that trip [to Europe with Mizuguchi], being inspired, so much that I went though that there was also part of me that wanted to communicate that in some way shape or form. So I ended up writing it."

By "it" he means the poem in Area 5. As players progress through the game's final stage, the poem is revealed a single line at a time. It's a somewhat jarring addition to a game that, up until that point, is about the melding of sound, audio, and gameplay — but not words.

"You may not get the story the way we're telling it through the hacker, but there's really a more meaningful deeper story behind it," Mizuguchi says. "So we didn't just want to leave it at that. We felt, by writing this, it would bring more meaning."

To look back on the poem more than fifteen years later, Yokota claims to be embarrassed. Where a new player might still see the thematic relevance of the words, perfectly at home within the context of *Rez*, Yokota sees a younger version of himself, grasping at the profound. Fortunately, he didn't feel the way at the time. Or at least, he didn't let it prevent him from sharing the poem with the team.

They were enthusiastic to include it in the game.

As the experience of *Rez* approaches its conclusion, the poem asks players to consider the deeper thematic implications of the game, as Yokota did. To think back to where we began, as a species, and perhaps also forward, to what we might become. The game does take place in a computer, after all, starring you — a "hacker."

And then it ends with a question without a mark.

Who am I...

It's unclear if this ending is meant to be an existential pondering, perhaps by the fiction's unnamed author, or if it turns the poem into a riddle. Is the game asking players for an answer, or merely asking them to ponder a question?

In either case... is there an answer?

"On the surface, it's about this hacker's journey, but really the analogy that we are trying to draw here is that you're not really a hacker, but a sperm," Mizuguchi says. "It's the story of conception."

When the hacker defeats the final boss, thus re-awakening Eden, the figure of a woman reaches skyward, ascending toward a tranquil, glowing light. A sperm has reached its egg, and life has been created.

According to Mizuguchi, the imagery is at the core of their desire to evoke emotion from the *Rez* player. Conception is an event that happens to all of us — it is, indeed, the beginning of each of us — but is also an event that we have no recollection of. The memory is ancient, primal, coded into what it means to be alive; not unlike the inexorable link between humanity and music. Though it's unlikely you'd recognize it, the experience of *Rez* is an attempt to reach back into that memory and tap into something at the core of our being.

This concept is also behind the name of the game itself.

TRON, the classic 1982 Disney film, is the story of software engineer, Kevin Flynn. He tries to hack his former employer's mainframe, and ends up transported into the computer world. "In the world of *TRON*, when you're solid, you're alive, when you're not, you're dead — or "de-rezzed," which is the opposite of *Rez* to us, which is becoming one," Mizuguchi explains.

Audio and visuals coming together.

Gameplay and sound coming together.

Sperm and egg coming together.

Synesthesia.

"You, the sperm, come together with an egg that is strong enough, and you are conceived. And you are now born as a life form and you are something that is to be left in this world. You are now a living thing in this world," Mizuguchi says.

But born as what, exactly? If you weren't alive before, what were you? If Eden was an AI construct, what does it mean for her to become "alive"? More importantly, if she is... what does that make us?

At the turn of the Millennium when *Rez* was released, with all our hopes and fears about the advancement of technology lined up before us, Mizuguchi and his team chose to look ahead at what could be. This included the singularity, or the theoretical point at which AI and human become indistinguishable. Unlike Y2K, which was more of an overblown fear of malfunction, the singularity is a real philosophical concern.

If the distinction between human and AI reaches that point, Mizuguchi says, "then I ask myself the question, 'Why am I even making *Rez*? Why am I still making and working on *Rez*?'

"If you give me a piece of artwork and you tell me this was done by a computer, or you present me a piece of music, and you say you know this was done by an AI, it may already become very difficult to differentiate that piece of art or music between human made or AI made.

"So AI is going to take over or take control over humans, but then there's the simple question of, okay, so who are humans?"

A robot may be able to complete a game. It may be able to pantomime the emotions associated with victory and defeat. Even today, there are AIs capable of defeating the top chess players in the world, with routine. But can that AI — even one good enough to be considered alive, Mizuguchi asks — "Can it get high from *Rez*?"

"We have senses, we are living beings, and we experience things. We also have a soul, we have emotions, we have feelings. The one place I'm pretty confident that an AI cannot maybe feel or get the same feeling is this synesthesiac experience," Mizuguchi says.

Perhaps this is what the question at the end of the poem is after. If I'm artificial intelligence and you're human, but we're both alive, then Who am I? If I'm human and you're AI, but you possess all the same qualities that define me, then Who am I?

Who am I...

"There is kind of a hidden power in *Rez* in that there isn't really a final answer. No matter how many times you want to play *Rez* there is going to be some sort of a message to you. We're leaving it to the player to place an interpretation," Mizuguchi says.

But for Mizuguchi at least, the answer might be another question. When you've finished *Rez* and Eden ascends... when the credits roll and the memory of the music and the sounds of felled viruses echo against your cochleae...

What do you feel?

When SEGA Dreamcast launched, it was an exciting time for games.

As a company, SEGA had already dominated the arcade market, had been through the console wars ("SEGA do what Nintendon't"), and even been on top for a time. But the market was changing. Arcades were disappearing, as more and more gamers preferred to play at home. And since the launch of Nintendo 64 and Sony PlayStation — both world-altering entries in the booming console business — SEGA had fallen into a distant third place.

Dreamcast was a moonshot. The last, great effort of a proud, innovative company.

SEGA knew that to have any chance at gaining significant ground on its competitors, their next console would have to be different. Even unprecedented. This not only meant more powerful (128 bits to Nintendo's 64, and PlayStation's 32), more innovative (built-in modem, controller-bound memory units with on-board digital screens called VMUs), and better looking (pleasing lines, eye-catching white finish, soothing orange lights) — it also meant *riskier*. To succeed, SEGA would have to attract a new kind of gamer — young girls and old men, musicians and those with a predilection for the weird. In other words, the *non-gamer*.

They would need to create a market where there hadn't been one before.

"Back in those days, there wasn't a whole lot of mimicking or doing what a lot of other competitors were doing. It was the opposite, because I think at its core, SEGA really wanted to encourage us to create something that didn't exist," Yokota says. "That was our core value. That thought was valued a lot throughout the company. So it was almost like we weren't supposed to be looking at other games. That's what SEGA was at the time."

It was this environment at that allowed for *K Project's* existence — that nurtured it and was patient through experimentation, changes, and internal discovery.

In the meantime, SEGA turned out a host of innovative titles.

Games like *Seaman*, in which you controlled a fish through a proprietary microphone.

Games like *Shenmue*, an adventure in a sprawling city, in which almost everything was interactive.

Games like *Phantasy Star Online*, a console MMO in which you could communicate and take down bosses with your friends, without the need for an expensive PC.

Games bursting with style and flavor, like *Jet Set Radio*, *ChuChu Rocket*, and UGA's own *Space Channel 5*.

There were traditional games, too — RPGs like *Skies of Arcadia* and polished arcade fighters like *Virtua Fighter 3*. But even those offered graphics and flourishes that made them unprecedented on in-home consoles.

To SEGA's credit, they did exactly what they set out to do.

Unfortunately, it wasn't enough.

Though Dreamcast achieved critical success, and cult status in the United States, it landed in Japan like as if flung from the top of a Shibuya skyscraper. Sales were simply too weak to salvage SEGA's dwindling marketshare.

On January 31, 2001 — just shy of 11 months from *Rez*'s release — SEGA announced that it would pull out of the console market and become a "platform agnostic" third-party developer. The promising future and risk-taking attitude that had allowed for *Rez*'s conception was gone, with *Rez* still in utero.

But *Rez*'s future was far from over, thanks in large part to another new console aiming to change gaming for good.

On the evening of June 26, 2001, Tetsuya Mizuguchi looked into his bathroom mirror, only slightly surprised to find that the man staring back at him had platinum hair. At the Shibuya AX Sony PlayStation 2 party the next night, he would reveal *Rez* to the world.

"[I wanted them] to feel what I'm feeling when I'm playing it," Mizuguchi says. "So the night before the party, I dyed my hair completely white."

He was invited to the party for the upcoming Sony console as part of SEGA's new software-only initiative. Mizuguchi had probably never imagined *Rez*'s unveiling would take place in a room of strangers, hosted by a company *other* than the one for which he'd worked for the past decade. But in five months time, *Rez* would become the first SEGA title available for the PlayStation 2.

"It was a very complicated situation, and I felt very conflicted at that time," Mizuguchi says. "Because on one hand, there is me who is a part of SEGA. And on the other hand, there is me who is head of this game development studio and company called UGA. Both exist in one person. So if I look at just the SEGA side of me, it was really disappointing to see what was going on and not performing as well as we thought. But as the head of a game development studio, in the end, the more players that are able to interact with the game we are making, the better. So it wasn't just going to be a Dreamcast game anymore and we were going to be able to provide this game to the PlayStation 2 hardware as well. That meant that there were more opportunities for the game to not just sell, but be known.

"That was really, really exciting for us."

In an otherwise semi-formal corporate party atmosphere featuring mostly black hair, Mizuguchi's dye job made him stand out — but he probably didn't need to. *Rez* would do the talking.

Gripping a matte black PS2 controller, he stepped out onto the reflective black stage. Over his shoulder, the backdrop comprised an enormous, square screen, flanked by metal scaffolding, and green and blue and white lights.

Without a word — without setup or introduction — he began to play.

"There was nothing to be explained. I went up on stage, I was holding the controller, and I played it. The audio was on max volume," Mizuguchi says.

After three adrenaline-fueled minutes, the unveiling was complete. Again without explanation, Mizuguchi walked off stage.

"I could see the members and the party-goers and the people from our industry — their jaws just dropped," Mizuguchi recalls. "They didn't know what they'd just witnessed. I was on a complete high."

It was only after arriving backstage that Mizuguchi began to return to his body (and perhaps realize what he'd done to his hair). Did they like what they'd seen? Did they even understand? To conclude the evening, chock full of other demos, trailers, presentations and reveals, Sony Computer Entertainment chairman, Shigeo Maruyama, took the stage. Despite being a "suit," Maruyama knew a bit about music, having formerly been the president of Sony Music. To Mizuguchi's surprise, he started talking about *Rez*.

"He said, 'I was just so in awe and surprised by Mizuguchi's performance today. This game *Rez*, is not only going to make, but *change* history for music in games,'" Mizuguchi remembers.

Leading up to that night, Mizuguchi had started to sense that SEGA's support of *Rez* was waning. Whether it was the changing circumstances at the corporate level, or that they simply didn't "get it," Miz and UGA had spent much of the past year feeling more and more alone.

But following Maruyama's closing remarks that night, Mizuguchi was swarmed by SEGA executives.

"They basically changed their attitude 180 degrees and said, 'Oh my god, that was so awesome. We're gonna start rooting for you and we'll support you in any way possible,'" Mizuguchi says.

Sony executives — a bit of an unknown for UGA up until that point — did the same. They were eager to market *Rez* in any way possible, despite its unconventional nature — and despite coming from SEGA.

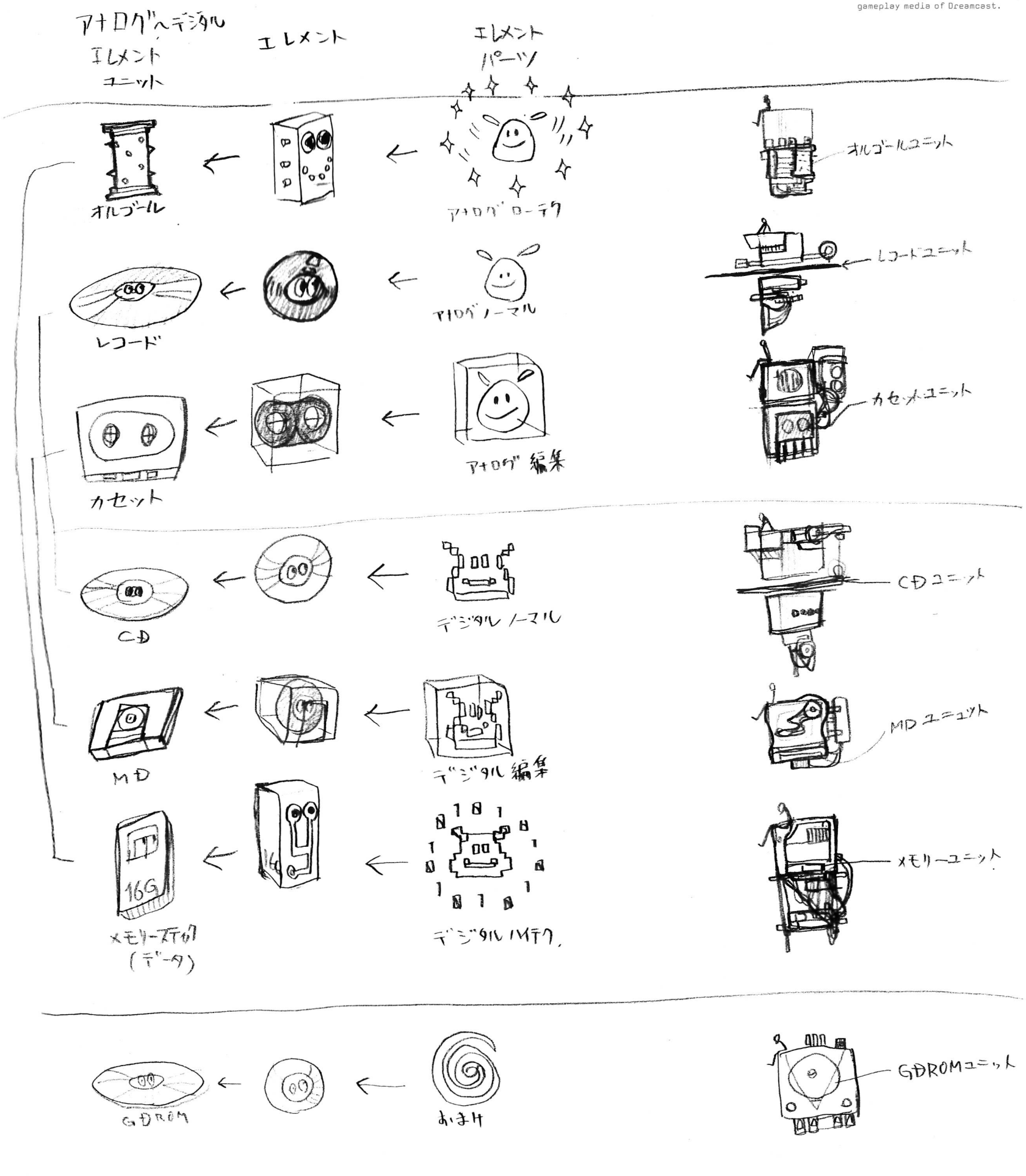
"They came up with some very original and unique marketing and advertising campaigns," Mizuguchi says. This included co-promoting with music festivals, unheard of at the time. Wherever the audience for *Rez* might be, Sony was determined to find it. In essence, the vision and blind faith with which *Rez* began at SEGA was picked up and carried through by Sony, its one-time competitor.

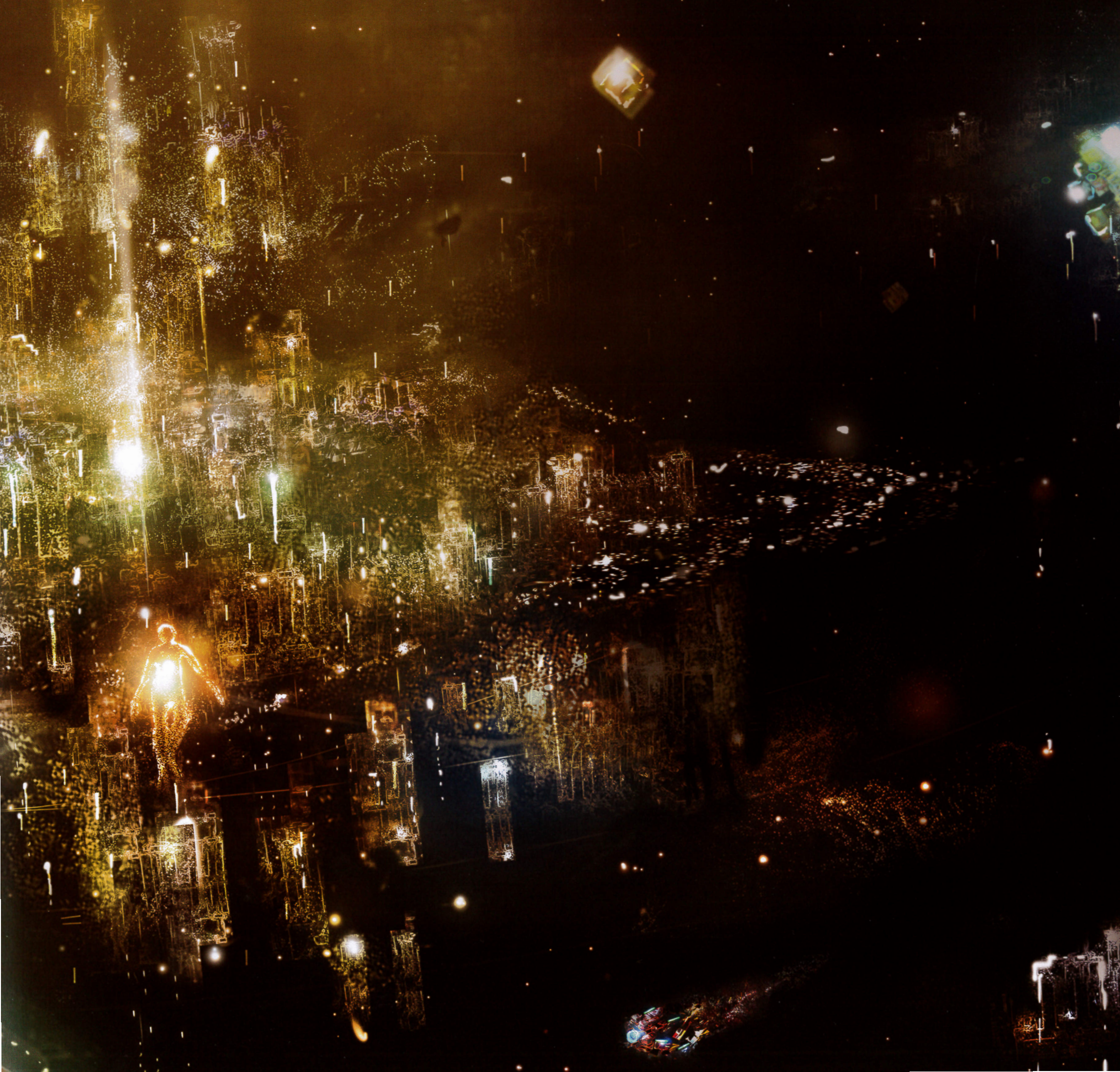
Mizuguchi remains in contact with Maruyama to this day. Occasionally, they meet for coffee to talk about games, about life, and to reminisce.

To Mizuguchi, it's no coincidence that Sony Computer Entertainment and *Rez* found one another. When Maruyama started Sony Computer Entertainment, he brought Sony Music veterans with him, many of whom had no games experience. It was not unlike the way Mizuguchi approached building his team for *K Project*, recruiting artists and VJs in an effort to create something truly new.

"It really had this mood or atmosphere of a music label," Mizuguchi says. "I think in the early days, because of those people being kind of the first

An illustration of the evolution of music technology, starting with the mechanical music box (pictured at top), traveling thru vinyl, cassette tape, CD, minidisc, digital harddrive leading to the gameplay media of Dreamcast.





group to start Sony Computer Entertainment group, there were a lot of ideas that resonated, or at least had a chance to blend with musical elements. Even the games that, if you think about it now, had some sort of intertwining element between games and music that came from these people, were the first comers to the Sony PlayStation group."

On November 22, 2001, after nearly three years in development, *Rez* was released on both SEGA Dreamcast, and Sony PlayStation 2, on the same day.

_life

In some ways, *Rez* and Dreamcast shared a similar fate. *Rez* was beautiful, unique, released to critical acclaim, and found a passionate fan base — but its sales were tepid. Despite a two system release, *Rez* would only go on to sell 350,000 copies in Japan.

But as Dreamcast's bright, orange light flickered out, the glowing neons of *Rez* had only just begun to shine. *Rez* reached an audience outside of gaming, as was *K Project's* stated goal, garnering renown from musicians, DJs, and filmmakers. Notably, its soundtrack became a sought after standalone item, and a regular on "Best Game Soundtrack" lists.

Mizuguchi's Street Parade compatriots would be proud.

Mizuguchi and his team were proud, too. They had accomplished their goal, and created something truly unique. Many members of *K Project* — including Kodera (game designer and programmer) and Yokota (art director) — would follow Miz to his new, independent studio, Q Entertainment. There, the pursuit of synesthesia continued with games like *Lumines* and *Every Extended Extra* for the PlayStation Portable, *Meteos* for the Nintendo DS, and their many sequels. Each was unique, but all came with that same trademark melding of sight and gameplay and sound.

Still, something nagged at Mizuguchi. He was pleased with *Rez*, of course, and happy with each game that came after, but felt all the while that his journey with *Rez* was incomplete.

"Even at that time, I was openly saying that this *Rez* is really only the beginning of something that I wanted to work on in the future," Mizuguchi says. "So the evolution of *Rez*, in whatever form, is something that I've always been thinking of doing and continuing. To me, it's life work. So it will continue to be part of my work for as long as I continue to do this."

By "this" he means making games. In a way, all of his games since have been versions on a theme. Celestial bodies orbiting the solar system of synesthesia. But the burning, hot life force at its center, is *Rez*.

So what was missing?

"In my head, *Rez* existed in VR from the very beginning. From the get-go," Mizuguchi reiterates. He wanted a full 360-degree world, with enemies flying by in every direction. He wanted more intricate computer worlds. He wanted the player to feel that they were flying at the very center of that synesthesia solar system, meeting the game in the exact place where its music and visuals converged.

He wanted more.

"Obviously, with the technology we had at the time, we had to shove all of that into a small screen space. It was very, very frustrating for me."

Still, he credits those technological limitations with helping *Rez* become what it was — even if it was, in his mind, only the foundation of something greater. "Because of these restrictions [on] something that is in your imagination — as wild as it can be — you have to put it into a small screen, which meant you have to be very creative with your game design. It really... pushed us to come up with the game design," he says.

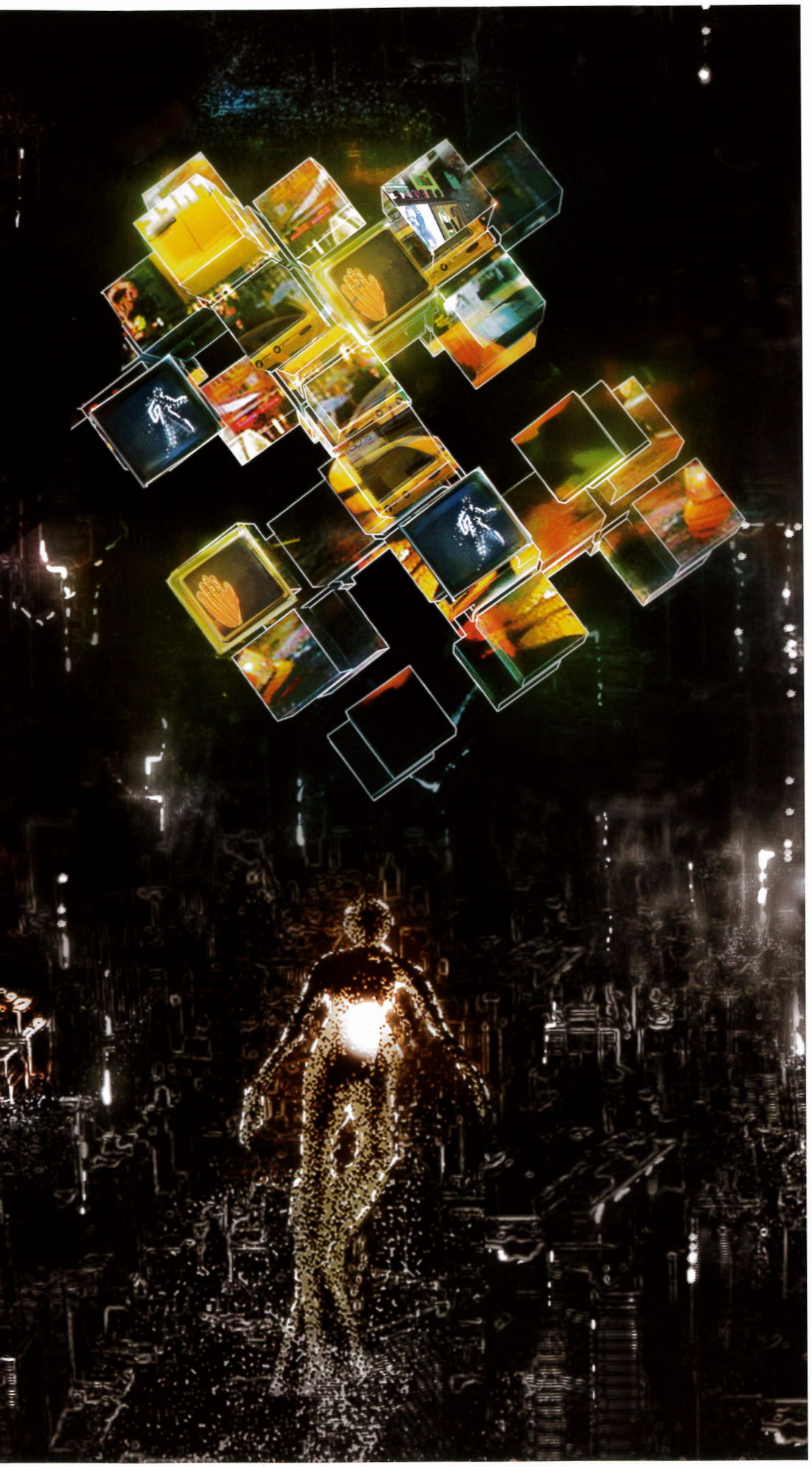
"To me, it's life work. So it will continue to be part of my work for as long as I continue to do this."

- Tetsuya Mizuguchi

In the 15 years since Rez was first released, there have been tremendous technological improvements in games and beyond. *Rez* even got an HD re-release on Xbox 360 in 2008. But for Mizuguchi, graphics are only one piece of the puzzle. In the past several years, virtual reality has finally come into vogue. Not merely in the way that *Rez* evoked — or that its influences, like *TRON* and *Neuromancer* imagined — but practical, working VR, just as humanity has dreamed possible since the dawn of computers.

In other words, gaming has finally caught up with *Rez*.

"With the arrival of today's VR, for me it's a huge relief," Mizuguchi says.



"All the frustrations that I've carried around for a long amount of time, that I can kind of relieve myself from that. Now *Rez* has finally become a reality for me."

That reality — both virtual and actual — is *Rez Infinite*.

_Infinite

The first thing you'll notice about Area X — the new area made for *Rez Infinite* — is that it feels bigger. And not bigger in the standard sequel-y way, with superficial additions posing as something new, but physically *bigger*. It's bolstered by the thrilling sensation of VR, but it's there in the standard game, too: A depth to the world. The blackness of the beyond feels, in a word, infinite. The surrounding world is not a dazzlingly decorated hallway, but vast, with enemies near and far, and details — without the time or need to fly closer for inspection — we may only *sense* are there, at the peripheries. All of it contributes to the sense of scale.

The next thing you'll notice is that Mizuguchi has received his wish — or rather, helped build it. *Rez Infinite* is a full 360-degree world. Enemies will catch the corner of your eye, and the game passively demands that you look around you, and be prepared from all sides.

That sensation then leads to the third innovation (provided the first, second and third weren't instead the entrancing music, which they might have been): You, "the hacker," are no longer on rails. You're free to fly in any direction, creating the potential for more dynamic outcomes. Before, each playthrough might have been different, and each area may have struck you in a different way, but in *Rez Infinite* you can move through the game in a new way each time, learning and experimenting. It will never twice be the same.

According to Mizuguchi, "entering the space of 3D and 360" meant he and his team had "to turn on a different switch in our brains." They still approached the design as a piece of "moving architecture," as he calls it, but freedom of movement for the player means less control for the designers. The game doesn't get to choose the frame for you. You're fully enveloped in the world.

"The synesthesia feeling is very different than the original *Rez*," Mizuguchi adds.

Of course, the graphics make a difference, too.

Rez *Infinite* was developed by Monstars, the studio founded by *Rez* game designer and Mizuguchi's Q Entertainment compatriot, Osamu Kodera. The Monstars team developed Area X on the Unreal Engine and, according to Kodera, pushed it to its graphical limits.

"When you look back at [Dreamcast] now, there are so many limitations

compared to what we can do today," Kodera says. "I think that the biggest element is that there are a lot of expressions — visual expressions — that we wanted to do, but we simply couldn't because of hardware limitations."

To create those visual expressions, Mizuguchi and Kodera brought in artist Takashi Ishihara, who also worked on *Child of Eden*, the spiritual sequel to *Rez*. Ishihara remembers his anticipation for *Rez* when he was in high school.

"I saw a bunch of TV commercials. There was even like a mini-documentary that was on TV. So for me I was anticipating the release of this game that was being promoted and advertised, and I picked it up," Ishihara says. "And I was kind of shocked. Because it wasn't just a game — it was more than a game. It was this thing that was giving us a brand new type of experience, all wrapped around sounds and signs, as well as a visual expression. It wasn't just a game. It was so much more than that."

"With the arrival of today's VR (...) Rez has finally become a reality for me."

- Tetsuya Mizuguchi

Already an aspiring artist, and a fan of video games, Ishihara was unsure if he could combine the two. "Then I met *Rez*, and that's when I felt like, this is the type of game that I want to pursue if I'm going to have a career in games," he recalls.

With *Rez Infinite*, Ishihara was faced with no easy task. He not only had to create a visual style that fulfilled Mizuguchi's vision, and took advantage of the Unreal Engine's powerful particle physics, but also one that honored the beloved look Yokota developed for the original.

To achieve this, his process was is not unlike Yokota's, fifteen years prior. First and foremost, he relied on thematics.

"We were talking about a cyber network, or the world — of course we wanted to maintain that, the setting. But when you think about the definition of "network" back then compared to what we know and have today in today's internet day and age, it feels like it has expanded by hundreds or thousands. Now when you talk about network, it could be things like the cloud, to social and community, and how connected you are, and it's so much larger in scale. When you think about packets of data being communicated back and forth, it was probably unimaginable what we can do today compared to fifteen years ago when we were working on original *Rez*," Ishihara says.

So as the technology to make games has grown, so too has the technology surrounding us — the very technology *Rez* comments upon. Ishihara's visuals, then, become a fulfillment of the original vision of the game *and* a thematic update proportional to the exponential growth in human connectivity. Yes, the modern Unreal Engine is capable of producing many more particles on the screen at any given time, but if *Rez* depicted the inside of a computer in 2001, *Rez Infinite* does the same for the deluge of data in 2016 . Even the enemy AI is much improved, proportional to the growing brains of our hardware and software.

Of course, Ishihara was not alone. The visuals of *Rez Infinite* — like its predecessor — were developed in parallel with the music.

Ishihara likens the process to sculpture. He begins the sculpture, knowing there is an existing visual style to honor, and an ideal one for which to strive. But he stops before getting too far, for his vision is not singular. The music artist (and their music) then gets a pass at the sculpture, carving into the untempered material. With details coming into focus, Ishihara goes at it again, whittling out the excess, until the final product begins to come into focus. They go on like that, etching and burning in, until all that remains of the sculpture... is *Rez*.

"The art side and the music-making side are carving or engraving these things into this larger material and so we're simultaneously and in conjunction working on it together and eventually the final form or completed piece is made," Ishihara says.

As for Mizuguchi, he directed and produced the game. But in his quiet times, when he was able to find them, he worked on a follow up to Yokota's Area 5 poem.

"If the previous poem's theme was conception, then Area X's poem's theme is birth," Mizuguchi says. He calls the new poem an "extension" of the one in *Rez* and adds that, "It's safe to assume that it's based on this vision of the future being this singularity."

After all, *Rez* and artificial intelligence have both come a long way.

...

One of the many selling points of the PlayStation 2 was its controller. The DualShock, they called it. It came with an internal vibration function that wasn't a shock, really, or even a rumble, but haptic feedback that developers could use to enhance gameplay experiences. Rumble controllers are common now, but in the '90s were typically a peripheral atop a peripheral (see: Nintendo 64's rumble pack). Building it into the controller was a new standard.

But for Mizuguchi, it wasn't enough.

What he wanted was the thwump-thwumping speakers of Street Parade. A bass beat shaking your bones, forcing your body into rhythm, like shaken strings on a marionette. After all, the physical sensation of playing *Rez* was part of its synesthesia. Compared to every techno show Miz had ever been to — which was a lot by the time *Rez* was complete — the DualShock was a gentle tickle.

Short of being able to provide every *Rez* player a thunderous home surround sound system, UGA partnered with ASCII to create a unique peripheral. It was sold in a special edition of the game that only ever retailed in Japan. And it was called the Trance Vibrator.

The Trance Vibrator plugged into the USB port of the PS2 and provided a much bigger vibration than the DualShock controller. The device (which comes in a small, black protective pouch) is meant to be held by the player, or placed in their pocket while they play.

For perhaps obvious reasons, the Trance Vibrator drew attention, and remains a favorite joke starter among *Rez* (and vibrator) fans to this day. Mizuguchi was surprised by the more... *sensual* reactions to *Rez* Trance Vibrator playthroughs... but for him, the enhanced sensation it provided *still* was not enough. Rather, it was only a step closer.

The vibrator is emblematic of Mizuguchi's pursuit of synesthesia.

Just a bit closer; just a little more.

It wasn't his first attempt at expanding the sensory impact of *Rez*. Shortly after the game was completed, Mizuguchi had an idea to bring *Rez* to arcades.

"The idea was, you could experience the vibration through a synesthesia chair. You'd be playing, but there was this special chair you'd sit in, and you would feel the beats and vibration through this chair," Mizuguchi says, almost laughing. "There was a person in charge of all the arcade cabinets and the design of them at SEGA — I actually pitched it to him. I pitched it, talked about it, you know, 'Don't you think this is a great idea? It's never been done before and then this way. We could present *Rez* in a game center environment. We could do this.' And all he did was, he smirked. He didn't say anything."

The meeting evidently over, Mizuguchi left the room.

The synesthesia chair was perhaps not meant to be. But when it came time to debut *Rez Infinite* at the PlayStation Experience in 2015, Mizuguchi had an idea — an idea even better than bleaching his hair.

The Synesthesia Suit.

"Since we're now making the ultimate version of *Rez* with *Rez Infinite*, we thought, why not also make the ultimate version of the Trance Vibrator?" he says in the official Sony announcement.

The one-of-a-kind suit, according to Mizuguchi, has to be felt to be believed. With 26 individual "actuators" (and an iridescent sheen), the experience of playing *Rez Infinite* in the suit truly brings players *inside* the game and its music.

These peripherals may seem like gimmicks — goofy ideas that exist outside one's enjoyment of a particular game. But for Mizuguchi they're

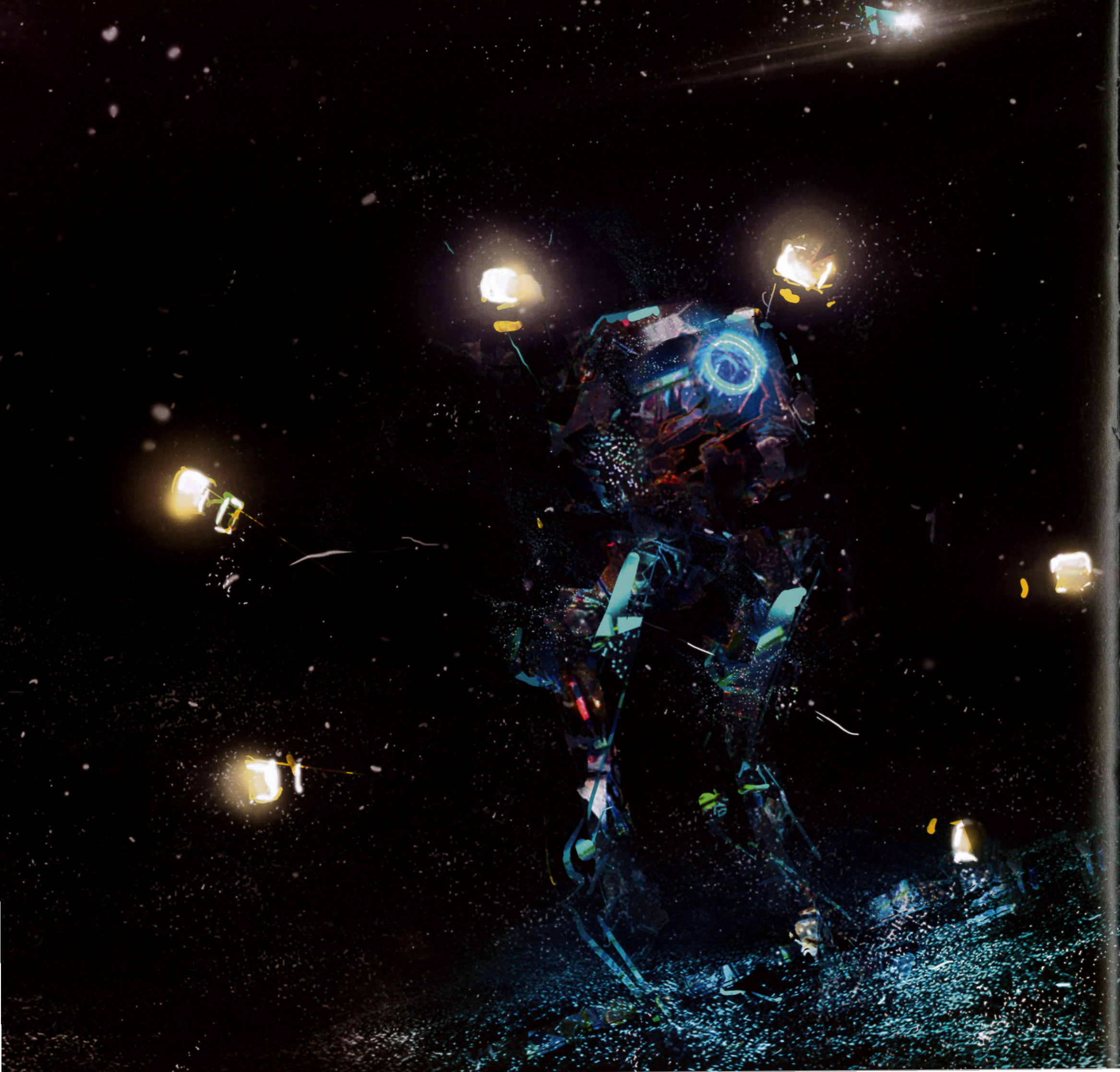
about the pursuit of synesthesia. Each iteration of *Rez* gets him a bit closer. Each vibration elevates you toward synesthesic nirvana. Even *Rez Infinite*, with its brain-melting graphics, dizzying particle physics, VR headset, and full-body suit, for Miz constitute an "experiment." A proving ground, he hopes, for more of what *Rez* wants to be. If he ever felt he had experienced or created synesthesia in his life, it's likely he would stop. His journey, pacing slowly through the dark unknown toward the warm intersection of sight and sound in the distance, would be complete.

But he hasn't.

And so, synesthesia remains an ideal for which to strive. A *philosophy*.

"It doesn't exist in reality for me yet. It's only in my head. I strive to make that happen for *Rez* in game form, but it's not perfect yet. Obviously with *Rez Infinite*, it being in VR with 3D visuals, 3D audio, and the full body vibration suit, if you combine all those elements, for *Rez*, I think it's as close as we can get right now. But in my head, what that synesthesic feeling is, I don't think it's even really close. It's as close as we can get, but it's still far away from what I feel inside my head, or what I see and envision inside my head," Mizuguchi says.

"Because of that, I will continue to pursue and follow that path... wherever it takes me."



Rez™ infinite

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DESIGNED BY CORY SCHMITZ

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DEVELOPED BY MONSTARS INC. AND RESONAIR

A
1 Keiichi Sugiyama / Buggie Running Beeps 01 <area 01> 5:52
2 Mist / Protocol Rain <area 02> 7:08
3 Ken Ishii / Creation the State of Art <Full Option> <area 03> 6:33

B
1 Joujouka / Rock Is Sponge <area 04> 7:31
2 Adam Freeland / Fear <Rez edit> <area 05> 5:06

C
1 Coldcut / Boss Attacks <Remix> <Eden/Last Boss> 7:15
2 EBZ / F6 G5 <Lost area> 7:48

D
1 Oval / Octaeder 0.1 3:22
2 Ken Ishii / Creative State 6:20
3 EBZ / P-project <Trancemission> 5:42

X
1 Hydelic / Singularity X <area X> 4:21
2 Hydelic / Butterfly Effect <area X> 4:18

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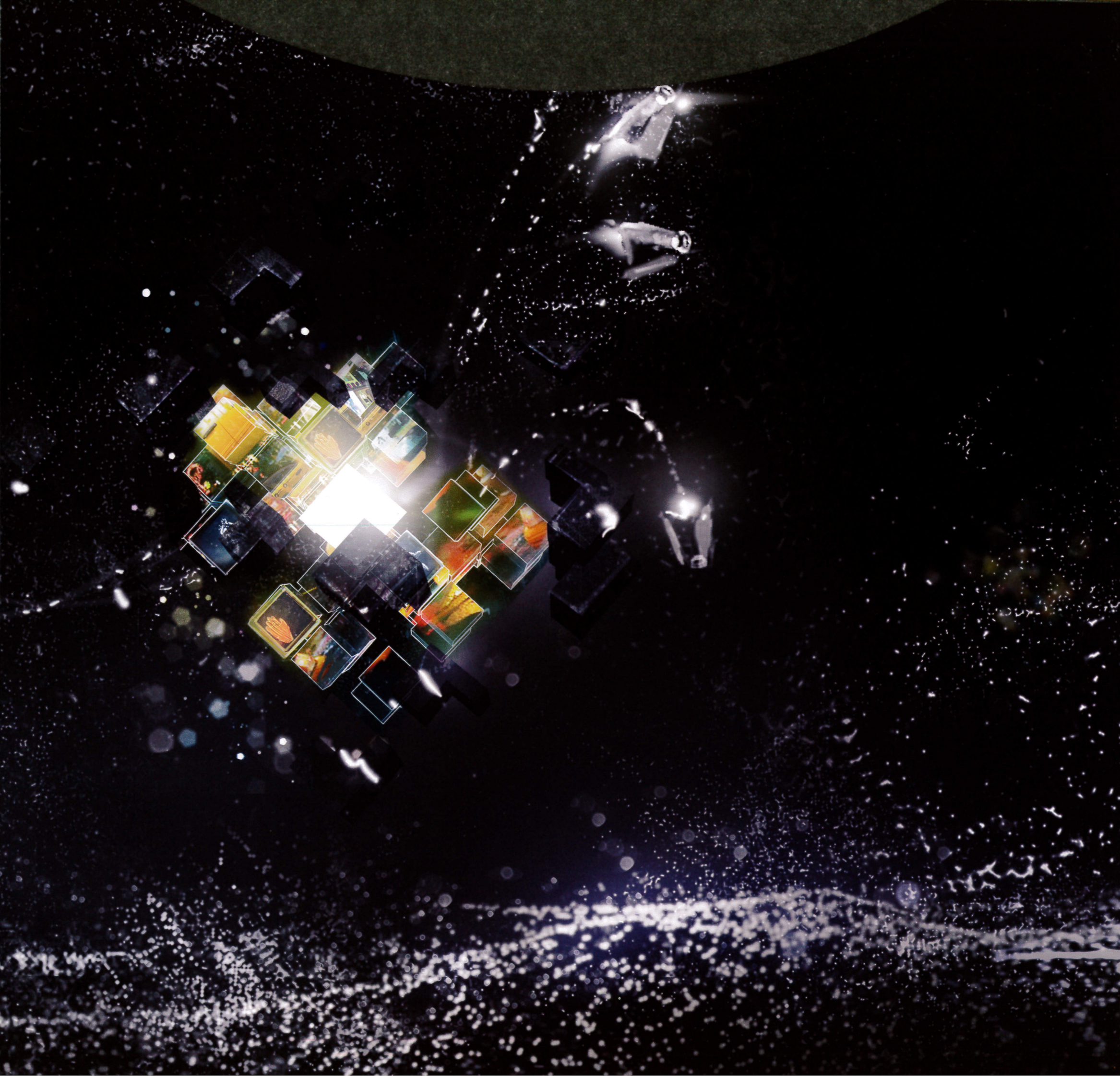
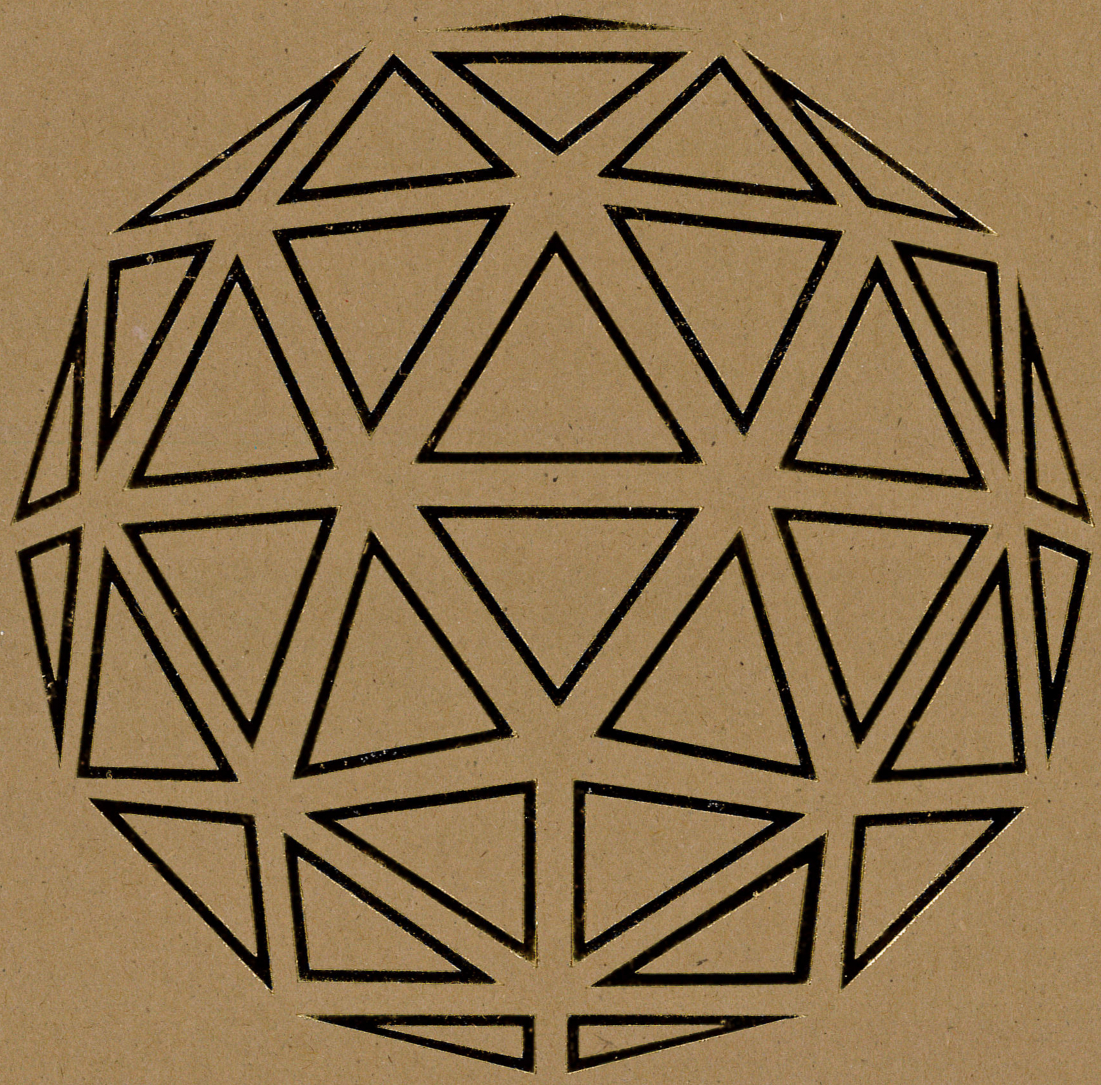


Rez∞ infinite

Ladies and Gentlemen, open your eyes.
Go to Synaesthesia.

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