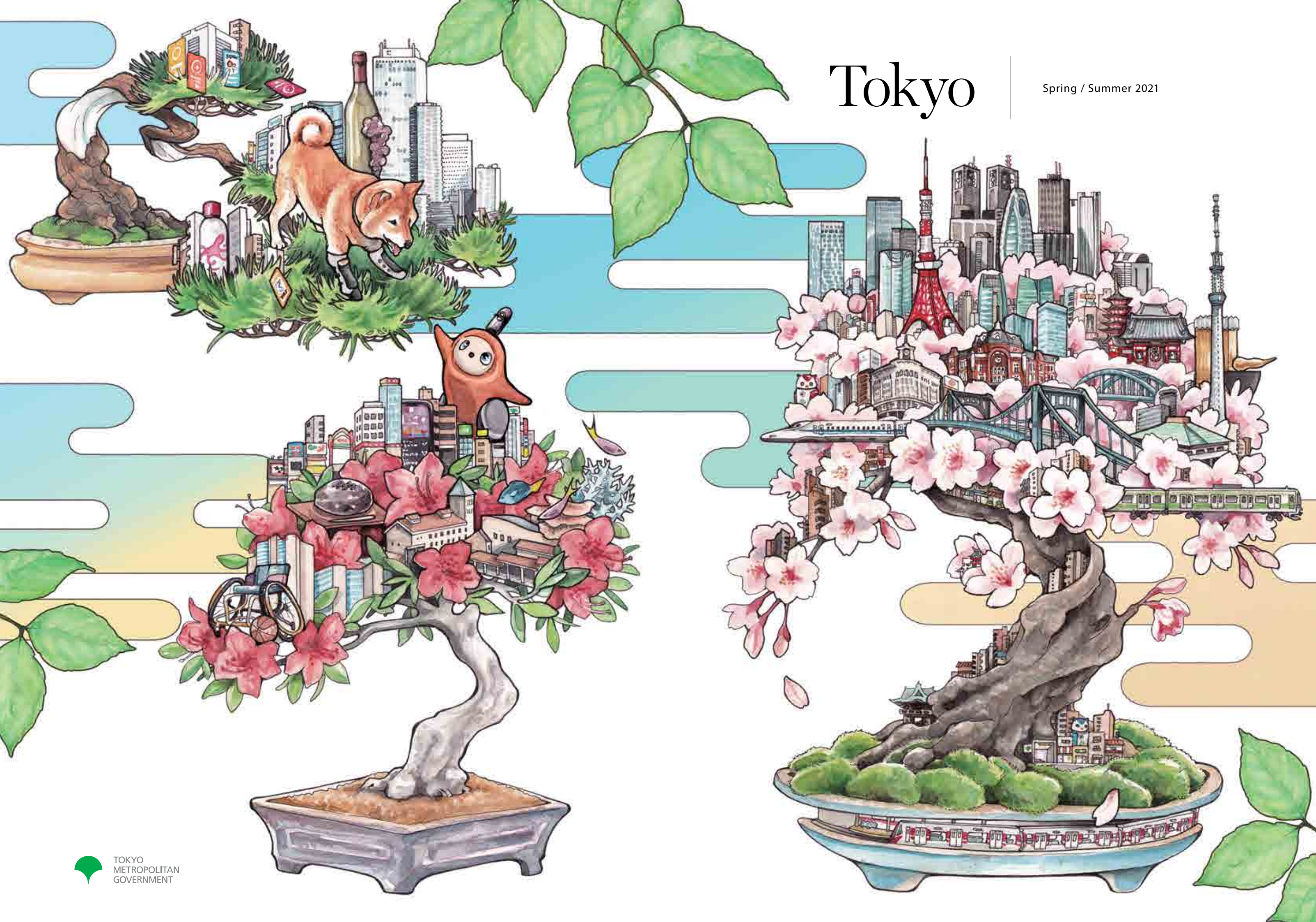


# Tokyo

Spring / Summer 2021



# Tokyo

Spring / Summer 2021



HOST CITY



The image above is the logo and slogan for Tokyo. The unique aspects of the city are conveyed in two different fonts representing the coexistence of old and new: the brushstroke expresses the traditions that date back to the Edo period (1603–1868), while the sleek block typeface expresses the cutting-edge culture of a modern city and is done in sky blue to represent an innovative future. The traditional square stamp in red that graces the logo illustrates the famed crossing in front of Shibuya Station, one of Tokyo’s symbolic landmarks.

## Contents

Robot Healing . . . . .	1
Sweet Success . . . . .	3
Back to School—a Few Decades Later . . . . .	5
The Quest to Keep Coral Alive . . . . .	7
Playing for Our Global Future . . . . .	9
The Animal Savior . . . . .	11
A Digital Revolution in Sport . . . . .	13
Working for the Future, with AI . . . . .	15
Protecting Architectural Heritage . . . . .	17
5G Networks Are Accelerating Telemedicine . . . . .	19
Ilan Yanizky: Connecting Worlds through <i>Sumi-e</i> . . . . .	21
The Infinite Loop . . . . .	23
Local Wine in Downtown Tokyo . . . . .	25
Tokyo Is Asia’s Best Kept Secret . . . . .	27
Tokyo Basics . . . . .	29

---

*Tokyo* is a publication issued periodically by the Tokyo Metropolitan Government with the aim to provide readers with the latest information on various aspects of Tokyo, including events, programs, and experiences.

# Robot Healing

Unique robots support elementary school children's mental health during the pandemic.

by **Bob Sliwa**

COVID-19 has had a profound impact on the lives of Tokyo's children. They have spent time in conditions they have never experienced before, including the closure of schools from March to May 2020, causing feelings of anxiety. At the same time, the pandemic has accelerated the use of technology in schools. In response to the prolonged school closure, the Tokyo Metropolitan Government decided to move the Tokyo Smart Schools project to promote ICT in education significantly forward from their original plan. ICT-based learning support services were introduced to all metropolitan schools starting in May 2020, allowing for online communication between teachers and pupils, including delivering and collecting assignments.

Under these circumstances, Eguchi Chiho, the principal of Kita Ward's Oji Daini Elementary School, north of the city center, faced the unprecedented situation of not being able to hold normal school events and assemblies due to the COVID-19 countermeasures. Even after the school

reopened, she was keenly aware of the need for mental health care for the children. It was just then that they came upon a household-type robot called LOVOT. Programming classes were already planned to start in 2020, and they were considering introducing a state-of-the-art robot, so it was the perfect fit. They contacted Groove X, the Tokyo start-up that created LOVOT, and the company agreed to loan the school six of them for real-world testing.

LOVOT was created for a different purpose than the vast majority of robots, whose sole function is to replace human beings, like on a factory assembly line. Groove X's CEO, Hayashi Kaname explained the concept behind his team's creation. "I saw that machines working on behalf of people don't always make them happy, and I wondered if something could be done about it. Pet dogs and cats are loved even if they don't work for people. They recognize people and move to people, only to be completely dependent and get in the way of them. But, that's exactly why we feel happy."

Typically robots have a cold industrial feel. How a LOVOT functions as this calming pet-like companion for humans is because Groove X's Emotional Robotics® technology is encased in its soft and warm to the touch body. They can separate human beings out from their surroundings with infrared cameras, recognize multiple faces they encounter, understand speech, and respond to stimulus like tickling with their surprisingly emotive LED eyes and cute gestures.

In the first part of the program before summer vacation, playing with the LOVOTs and taking care of

them eased students' pandemic anxieties. So in the second half it was easy for them to learn to program actions like simple dances, because they were comfortable with their LOVOT. The LOVOTs are a massive hit with the students of all grade levels. They eagerly pass them around, hug, tickle, and talk to them, disinfecting their hands before and after. Even students with animal allergies feel at ease playing with them. The principal observed, "Outgoing students immediately embraced the LOVOT, but the most noteworthy effect has been on shy students who would sit alone with one, and emotionally open up by interacting with

it. We have heard from families that children look forward to going to school when it is their turn to take care of their new friend, and that they are also more communicative at home about their school. I've also seen teachers having a one-on-one with a LOVOT!"

Faculty and students were unanimous about what a positive effect having the LOVOTs in the school was; most importantly, brightening the overall mood of the children, which had been darkened by the pandemic.

Emotional Robotics is a registered trademark of GROOVE X, Inc.

LOVOT responds with its expressive eyes when students stroke and tickle its warm, soft body.



Students accepted LOVOTs as if they were a classmate.



LOVOT roams the classroom freely during classes.





The entrance of Eitaro Sohonpo's refurbished store in Nihombashi, unveiled in August 2020.

## Sweet Success

How the 202-year-old confectionery Eitaro Sohonpo blends traditional techniques with modern tastes for the perfect example of old meets new.

by **Anne Lucas**

**A**mong both locals and visitors, Tokyo is highly regarded for how it embraces traditional Japanese culture. Despite being a thoroughly modern city, it still provides a home for craftsmen who are keeping alive products and techniques imbued with more than 100 years of history. To pay homage to these artisans, and to the city that showcases their talents, the Tokyo Metropolitan Government launched the Edo Tokyo Kirari Project in 2016. Under the

theme “Old Meets New,” the project spotlights companies that display a commitment to preserving tradition together with creative solutions for ensuring their business can continue to succeed even as lifestyles change.

One such company is Eitaro Sohonpo Co., Ltd., a confectionery founded in 1818 and known for producing Edo's favorite sweets. Having celebrated its 200th anniversary not too long ago, along with a variety of other achievements,

Eitaro Sohonpo was a natural choice for inclusion in the group of representative Tokyo brands. So, in 2018, the company was proudly added to the Edo Tokyo Kirari project.

The current name of the company was created in 1857 when the third-generation owner opened a shop in Nihombashi, which was one of the centers of business in Japan during the Edo period (1603–1868). He named it Eitaro based on his own childhood name. Although the shop was first popular for its delicious *kintsuba* (confections made from azuki red bean paste wrapped in a thin layer of wheat dough, formed in the shape of a round sword guard and grilled until golden in color), Eitaro created quite the stir when he introduced a brand-new sweet nicknamed Umeboshi-ame (pickled plum candy) because its small triangular shape reminded customers of how *umeboshi* looks, even though the sweets were not at all sour like real *umeboshi*.

Eitaro was always eager to create new offerings. In fact, the company philosophy translates as “Don't rest on your laurels. Always experiment with processes and products.” The only aspect that Eitaro insisted never change was the recipe and production methods for his famous red bean pastes and candies.

Through the decades, this wish has been wholeheartedly respected. Even at the company's refurbished main store in Nihombashi, which was unveiled in August 2020, the original *kintsuba* is handmade in front of customers. The craftsman here is Aoki Seiji, who has been working in this field since he was 17 and is one of only around 130 Japanese sweets confectioners who are certified in Japan.

The difference in the experience today lies in the fact that customers can enjoy the traditional sweet in a beau-

tifully designed space that is contemporary while also bringing to life the spirit of Edo. Visitors can also shop for more modern Eitaro products here.

Another turning point for the business came in 2007 when they introduced Ameya Eitaro, a line of candies that look like cosmetics and jewels. This range helped to attract a new, younger market. The aim was to expand the possibilities of candy while maintaining traditional manufacturing methods.

Even though the company has grown to include mass manufacturing methods—including opening a new factory in Hachioji, which is found in Tokyo's Tama area, in 2013 boasting top technology, the key to maintaining their unique taste is that they still use master craftsmen at crucial steps. For example, when the candy-making process is fully automated, the syrup is heated to a limit of 130 degrees



The store's master confectioner, Aoki Seiji, handcrafts *kintsuba* in front of customers.

Celsius (266 degrees Fahrenheit). But with a craftsman present, this optimum temperature is adjusted, sometimes up to 175 degrees Celsius (347 degrees Fahrenheit), and by doing so the sweetness of the candy flavor is enhanced. In addition, the temperature and humidity will vary from day to day so it is up to the craftsman to monitor this for optimum taste.

In 2018, to coincide with the 200th anniversary, the company motto was changed to “A company that entices the richness of the heart.” As every employee looks ahead to envision how they can continue the company's long, sweet legacy, they keep this new motto in mind. All with the ultimate aim to take up new challenges, create, and enrich.

## Back to School—a Few Decades Later

How Tokyo Metropolitan University's unique program is giving older citizens new ways to connect with ideas and people.

by **Phoebe Amoroso**

If lectures at an open university—where anyone can study anything—are like an à la carte menu, then consider Premium College at Tokyo Metropolitan University to be more like a French full course meal. This is a menu for select diners. Aimed solely at those aged 50 or over, students pursue a unique interdisciplinary curriculum centered around one grand, overarching theme: Tokyo.

The program comprises a one-year course of on-campus classes and off-site fieldwork—although operations have currently moved online due to COVID-19. Unlike other universities, there are no specific academic entrance requirements for aspirants fitting the age demographic, besides having graduated from high school. Eager applicants must write a short essay and undertake an interview where they must demonstrate their passion in order to secure one of the limited 50 places on offer each year.

Launched in April 2019, Premium College reflects a broader effort by the Tokyo Metropolitan Government (TMG) to welcome in the era of the so-called “100-year life.” The TMG has launched several initiatives aimed at senior citizens, from promoting sports and cultural activities to establishing the Tokyo Metropolitan Employment Service Center, where elder residents can receive consultations on everything from skill development to short- or part-time work opportunities.

Many of those studying at Premium College are driven by a motivation to proactively contribute to society. “People in their sixties can still be healthy for another 30 years,” says one student (63), who was among the first intake. “From that standpoint, I am thinking about what I can do next, whether that is further studying or volunteer activities. There are many directions I could take.”

Kachi Naoki, Professor of Ecology, teaches courses on nature, including Tokyo's islands and the forested western region. “The students have really different personalities from undergraduates,” he says. “Because only those 50 years old or older can apply, they have a wealth of life experience. Moreover, they really want to once again play an

active part... and they have a clear awareness of problems.”

Students can learn about the city in which they live through a choice of 40 different subjects. “There are so many fields that I just didn't know about until now,” said one student (67), who retired from his job early in order to begin studying again. “For example, things like concrete and structures, and how Japanese buildings are constructed. And, also social welfare and child psychology. It really satisfies curious minds.”

More than that, the opportunities for fieldwork are one of the core strengths of the program. Students visit various sites around Tokyo, from the central Ueno Zoo to Tachikawa Life Safety Learning Center in the Tama area. “Better than just reading books, doesn't seeing the actual thing lead to a greater understanding?” asks a student (68), who has enjoyed trips to many Tokyo facilities, including some not usually accessible to the general public.

The heavy emphasis on fieldwork serves a wider goal to give back to society. “We are really hoping that the students will be able to use the many resources in Tokyo to contribute to community development after they graduate,” says Prof. Kachi.

While operations currently remain online for safety, under usual circumstances students have plenty of opportunities to bounce ideas at weekly classes on campus. They can even sit in on undergraduate courses, allowing them to interact with younger students. Debate, discussion, and casual chats with classmates are widely cited by students as one of their favorite parts of the program. Some like to joke that they attend an optional “sixth period” on the timetable—after-class socializing at a nearby pub.

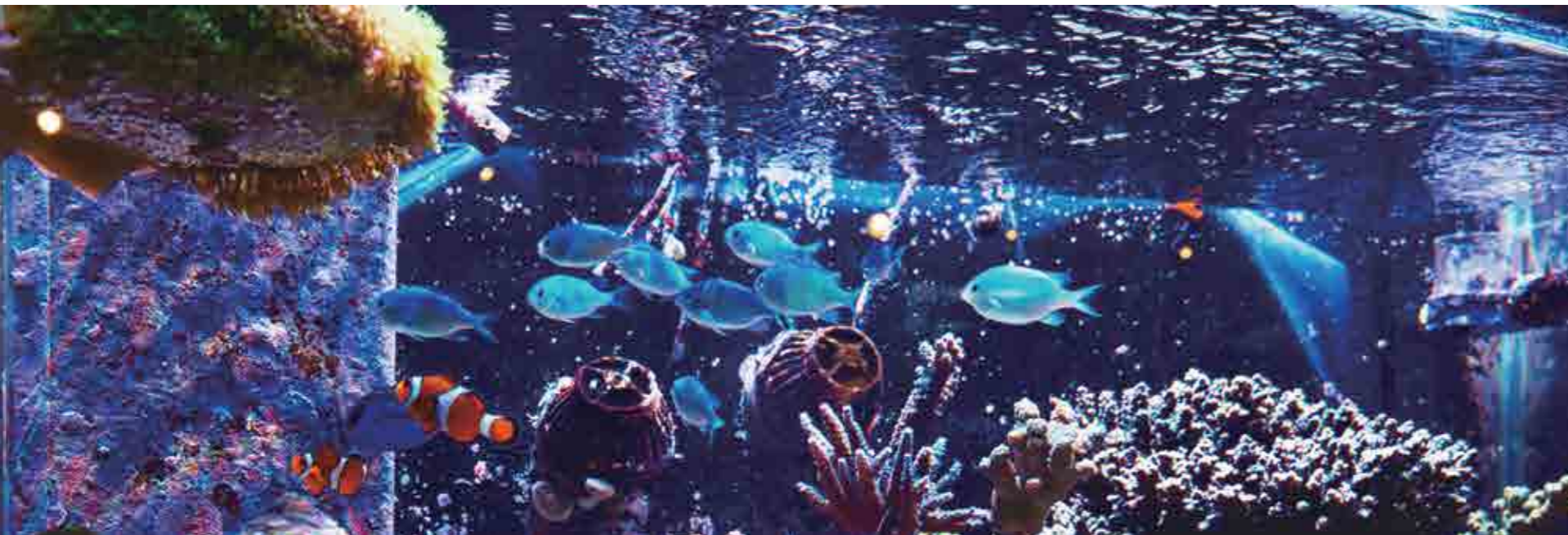
There is, of course, the important question of future plans. Premium College has proved so popular that, from April 2021, students will be able to continue studying for up to four years, giving them plenty of time to consider how to apply their newly acquired knowledge of Tokyo and make full use of its resources.

“We are only in the second year of the program,” says Prof. Kachi. “I am looking forward to seeing where the students end up next.”

# The Quest to Keep Coral Alive

A Tokyo startup is using AI and IoT to raise coral in an urban environment.

by **Tim Hornyak**



In one corner of an office above a beer hall in the Toranomom business district, clownfish, blue tangs, and blue-green chromis dart about in a tank. But look closer and you will see something more remarkable: the aquarium is full of colorful coral that is actually alive.

“More than 50 kinds of organisms are living together in this tank,” says Takakura Yota, CEO of Innoqua Inc., a startup business that grew out of the University of Tokyo. “What makes Innoqua different is our ability to create an artificial ecosystem in which coral can survive.”

Behind the tank is a blueprint, laid out like a circuit board, which shows the relationships between all the living things in the aquarium. The startup has managed to get corals raised by aquaculture farmers in Okinawa Prefecture, in southern Japan, and cultivate them in a carefully controlled environment in the heart of Tokyo. It is very difficult to raise coral because its native ecosystem must be copied in terms of water quality, temperature, and wave characteristics as well as microorganisms and other living creatures.

With the proliferation of sensors and Internet of Things (IoT) devices, however, top aquarists have gathered enormous volumes of data on the ideal artificial conditions for coral to grow. Innoqua uses this crowd-sourced data, which is stored in the cloud, and an artificial intelligence system to carefully regulate its ecosystem. This includes ultraviolet lighting systems to simulate sunlight and moonlight, artificial saltwater, and water temperature precisely tuned in increments of 0.01 degree to mimic the Okinawan sea. The company calls this environmental transfer technology.



Living coral brighten this aquarium in the office of Innoqua, Inc. Even in this small space, a near-perfect marine ecosystem can be created.

Takakura’s vision is to be “a doctor for the Earth.” His first objective is to engineer the artificial spawning of coral—the release of millions of eggs and sperm in a spectacular underwater blizzard. He believes this will prove Innoqua’s artificial ecosystem to be sound. Like raising coral, it is extremely difficult to reproduce the precise environmental conditions for spawning. His efforts may raise awareness in Japan about the problem of coral bleaching, in which an absence of phytoplankton and nutrition can lead to coral death.

“There are over 800 species of coral in the world, and about 400 of them are found in Okinawa,” says Takakura. “We want to bring the magic of these organisms to many people so everyone can realize how precious they are.”

The 26-year-old Takakura grew up in a family that enjoyed marine activities, especially diving and snorkeling, and he

became interested in tropical fish in middle school. After studying AI at the University of Tokyo, he decided to establish Innoqua in 2019 with the goal of “delivering the value of nature to people.” It already has about 10 staff and ties with major organizations in Japan.

Takakura and colleagues established a coral aquarium attraction in a shopping mall that lets children learn hands-on about conserving marine resources while communicating with experts from the company. It is also working with the Japan Aerospace Exploration Agency (JAXA) to adapt its environmental transfer technology for space exploration, specifically the challenge of growing food for a large group of people living in a moon base in the 2040s.

That is a remote goal, and for the meantime, the startup is focused on achieving the perfect conditions for coral spawning. While it managed to simulate the environmental conditions that prompt spawning, actual reproduction remains elusive. But Takakura is certain he can accomplish it—even in an office in Tokyo.

“I was lucky enough to witness coral spawning in Okinawa,” says Takakura. “It’s the most dramatic spectacle and it’s what I would most like to show people to convey the value of these precious creatures.”



Examples of the English version of project cards actually used in the game. Each project card specifies the required costs, the resulting benefits, and the eventual global impact of that proposal.

## Playing for Our Global Future

How a Tokyo-born card game is spreading the message of sustainability worldwide.

by **Phoebe Amoroso**

On October 24, 2020, Tokyo Skytree was illuminated a startling red. Then it turned a deep gold, followed by vibrant green. The light-up progressed through 17 different colors, each representing one of the Sustainable Development Goals (SDGs) as part of a five-day commemoration for the 75th anniversary of the foundation of the United Nations.

The SDGs are 17 goals agreed upon by world leaders in 2015 in order to create a better, fairer world by 2030—ending poverty, addressing climate change, and abolishing inequality. Given their ambitious scope and the complexity of the global situation, it is hard to imagine how all of these could be condensed into a game, let alone an educa-

tional one. Yet that is exactly what Tokyo-born company Imacocollabo has impressively achieved with their card-based 2030 SDGs Game. Multiplayer and highly interactive, it has reached businesses, schools, and organizations around the world and continues to grow in popularity.

Imacocollabo co-founder Inamura Takeo has always had an interest in environmental issues. While working on creating innovative talent development methods, he encountered business simulation games and realized their potential for positive impact. An idea began to form as he contemplated a way to spread the message of sustainability further.

Collaborating with a genius board game developer,



the card game 2030 SDGs Game was born in a mere two days. For Inamura, it was important that the game be fun to play so that even those with no interest in SDGs would be able to enjoy and take away some key ideas. Over 200,000 people from 20 countries have played in just 4 years—figures that can attest to its success.

The premise is surprisingly simple. Players receive one of five goal cards: “Acquiring wealth,” “Enjoying leisure,” “A world without poverty,” “Environmental conservation,” and “Social justice.” Each of these goals has specific criteria that must be met. Players race to carry out projects, each requiring varying amounts of time and money, through which they might earn more time, money, and “project cards” and also “principle cards,” which help players with value-based goals.

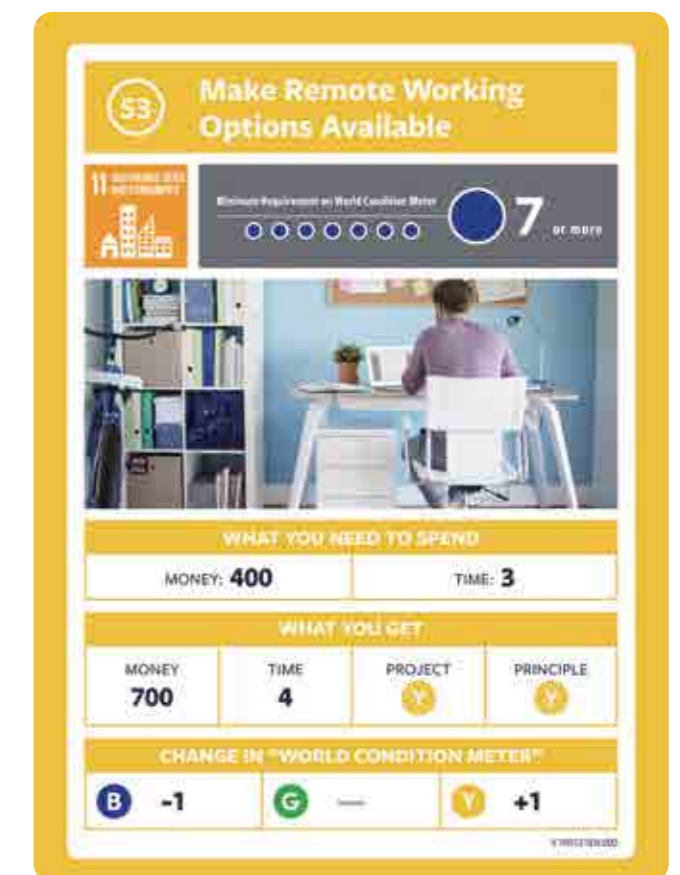
Just like the real world, all of these actions have an impact. On a white board with color-coded magnets, the World Meter tracks the status of the global economy, environment, and society. “Build Transportation Infrastructure” by spending 500 Money cards and 3 Time cards, and you will contribute +1 to the global economy and earn back 1,000 Money cards—quite a profit! Yet this is not without consequences—the global environment will take a -1 hit.

The genius of the game lies in how it influences participants’ awareness, choices, and behavior through gameplay and thereafter. Seemingly straightforward transactions quickly turn into savvy and often socially-minded strategizing. From rushing to achieve individual goals, players begin to realize the need for a broader global perspective alongside collaboration, negotiation, and cooperation so that more goals are achieved among the wider group. As a result, by the time the game wraps up, all kinds of trades, deals, and good deeds might have taken place.

Game-play transactions are underwritten by conditions and dilemmas that closely simulate the real world. For example, participants with environmental or social goal cards quickly realize they cannot act without funds. Ironically, some may initially have to undertake profitable projects that are actively detrimental to their end goals. This kind of realism is unflinching yet thought-provoking.

The post-game discussion reiterates our global interconnectedness and the potential butterfly effect of our seemingly small decisions. To make this point even more relevant, players are confronted with the statement—candy causes climate change—and asked to think how and why, and what they can do themselves. Through this, each participant leaves with a sense of responsibility, self-awareness, and self-efficacy.

With over 850 facilitators in Japan and 90 overseas, versions in eight (soon to be nine) languages, and due to be available online in spring 2021, the game is delivering the core messages of the SDGs across borders far and wide. Although we may be racing against time to reach sustainability, it shows us that, both individually and collectively, we all have the power to effectuate meaningful change.





# The Animal Savior

Prosthetist and orthotist Shimada Akio has rescued tens of thousands of pets since he launched his company over a decade ago.

by **Matthew Herson**



Shimada Akio inspects the left hind prosthetic leg of Pod.



The gorgeous looking bloodhound mix, Pod is going strong despite losing both his left legs.

Japan is a nation known for providing excellent health care and that stretches not only to humans but to animals as well. In a country where there are more registered pets than children under the age of 15, citizens can feel secure knowing their cherished dog or cat will be well looked after if their pets get sick. Huge efforts have also been made to find new homes for pets in need of adoption and in the fiscal year 2018, not one dog or cat was culled in Tokyo.

There are many first-class veterinary hospitals in the city. A prime example is Minamino Animal Hospital located in Hachioji, a charming western suburb of the capital that is surrounded by greenery. Working out of the same hospital is Shimada Akio, an affable and humble individual who has rescued more than 20,000 pets since he started his business around 13 years ago. He is not a doctor, but a technician, making prosthetics and orthotics for animals. Seeing the joy on the faces of the patients and their owners as he works his magic is truly a wonderful sight.

“At vocational college I studied prosthetics (in which a limb is replaced entirely) and orthotics (where a device is used to support limbs) for humans, however, I decided to focus my thesis on animals as nobody was doing that in Japan at the time,” he says. “Through my research, which included many books and websites as well as surveys sent out to 200 pet owners and 100 vets, I realized there was a lot of room for development in the field.”

Shimada went on to work as a technician at an orthosis company for four years. His desire to help animals, though, grew stronger after he witnessed a vet hand-crafting a corset for a chihuahua owned by a senior colleague. After three years of training at a veterinary hospital, he established his own company in 2007 and quickly became a pioneer in animal prostheses.

“Initially it was said that animals do not need artificial limbs and what I was doing was nothing more than an expensive pastime,” recalls the prosthetist. “Attitudes have

changed over time and there is now the growing realization that these procedures clearly improve their quality of life. My purpose is not to make something that looks like the leg of an animal, but rather create devices that are functional. Hair, for instance, adds an unnecessary burden for them.”

A typical consultation begins with Dr. Hiroma Junshiro, the director of the Minamino Animal Hospital, undertaking a medical examination of the animal; Shimada then makes a decision based on the diagnosis of the doctor. The pair have a strong working relationship and that, the youthful-looking 39-year-old believes, is one of the main reasons for his success. He also emphasizes the importance of providing clarity to pet owners, including times when the use of prosthetics is not necessary or may not be successful.

A recent example of this was with an adorable Pomeranian named Sou who was born with deformed paws. Realizing that prosthetic replacements would put extra tension onto the shoulder, Shimada suggested leaving things as

they were and evaluating the situation again in the future as the dog seemed comfortable. He is motivated purely by the well-being of the pets and their owners.

Another patient visiting on the same day was Pod, a beautiful bloodhound mix that lost both its front and back left legs. Despite the impairments, the courageous dog is going strong, having fully adapted to a prosthetic frontal limb. He was in the hospital for a fitting on his left hind leg which will make walking that much more bearable. The appreciation shown by the owners toward Shimada showed just how important his work is.

A highly respected figure, he has appeared on various TV shows and given lectures at universities. He is constantly looking to evolve and plans to use 3D printers in the future. It is all for the benefit of his patients as he tries to make their lives more comfortable. Like so many animal health workers in Tokyo, Shimada provides an invaluable service, helping to save numerous pets. He is a true hero.

# A Digital Revolution in Sport

The global spread of COVID-19 has had a huge impact on all kinds of industries, and sport is no exception. Live events, which for many spectators can help to bring a sense of belonging and a feeling of escapism from reality, were restricted for much of 2020 with many fans having to watch them remotely.

Being away from the stadium, however, does not mean fans have to miss out on the excitement. Spectators can feel as if they are close to the action even if they are hundreds of miles away thanks to groundbreaking technology from some Tokyo-based companies.

The Nippon Telegraph and Telephone Corporation (NTT), for instance, started developing an advanced Ultra-realistic Communication Technology called Kirari! in 2015. Aiming to create an ultra-realistic visual experience for viewers that makes it feel like you are right there next to the players, the current results are astounding.

They achieved their goals by using unique technology including what is known as the Extraction of Objects with Arbitrary Backgrounds. This enables images of only the moving athletes to be drawn out at real time so the audience can have a much better perspective of their speed and power.

“The technology demonstrates a high degree of freedom, using AI that studies the subject to be extracted in advance,” says the public relations manager of Kirari!. “Specified players can be extracted even when there are reflections from members of the audience. In addition to sports, it has been adopted for stage performances and the future plan is to use it as a two-way communication tool.”

NTT has also developed “super high-definition video



Will watching sports 100 years from now be something like this?

stitching,” an ingenious technique that breaks through the barriers of an enclosed 16:9 rectangular frame to create ultra-wide videos. This has been achieved by shooting a very wide area of the stadium with multiple cameras and composing the segments in real time. It made its debut in America at the MLB postseason baseball game between the Houston Astros and the Tampa Bay Rays in 2019.

“For those watching at a remote live viewing venue it can feel like they are actually in the stadium,” adds the PR manager. “On a conventional live feed, the video is edited and arranged based on what the creator wants, whereas

Rapid advances in technology are changing the way sports fans follow their favorite teams and athletes.

by **Mathew Hernon**

was difficult for people to share that feeling of enthusiasm with others around the globe. With Player!, everyone on the planet can be right there at the match venue, no matter where they really might be. We are able to connect with our team and the other supporters.”

You can get breaking news updates in real time on all kinds of games involving professional, amateur, university, and school teams. As well as pop-up notifications that appear before, during and after matches, subscribers can use the emotion function to cheer during the match with stamps, and use the comment function to allow interaction with the teams and other fans. Also there are features that allow fans to directly support their team in some matches.

“Many sports organizations, including college athletics clubs and sports teams of corporations, are using Player! as a communication tool to engage with supporters,” Ogata continues. “We are continuing to improve by receiving feedback from various people such as users as well as team members. We are also planning to implement initiatives to promote

community formation centered on sports.”

It is an exciting time for the sports industry. Innovative companies based in Tokyo continue to develop technology that has made it easier for spectators to feel closer to the action than ever before, not only by enhancing the viewing experience, but also by strengthening the bond between fans and their teams. Supporters from around the globe can now enjoy the action from remote locations and communicate with each other in real time without actually meeting face-to-face. It is a new way of consuming sport that is extremely beneficial to everyone.

# Working for the Future, with AI

Hirano Miku, CEO of a business-centered AI company, is on a mission to shake up work life through AI.

by **Kirsty Bouwers**

Imagine your work life consisting of just a few hours a day. This is the future that Hirano Miku, CEO of Cinnamon, Inc., envisions. Through her company's innovative use of AI, she envisions a future in which people can work smarter and unleash their full potential by spending more time on creativity or meaningful work.

After graduating college, she moved to Singapore and then Vietnam, where she founded Cinnamon. Then, she became a mother. Hirano says that was a wake-up call: it made her feel the current style of work was ineffective. She realized that she wanted to innovate how people work and improve life for her children's generation. The aim was to help create a world where AI could support a person's work, leaving more time for people to focus on the creative side of their jobs. Through this, work would become more efficient, freeing up time to spend on family. After several years in Vietnam, it also became clear that her business ought to be in Tokyo—with the city being home to many large corporations, and Japan ranking number one for AI potential, there were strong incentives to launch an AI business here instead. Hirano thus decided to move the company and pivot its goal: Cinnamon became a company with a mission to change the working model to a much more efficient one that opens up the day to personal time.

Cinnamon's products now collate a wealth of unstructured data—think loose paper invoices, large bodies of emails, and other items that are not necessarily categorized automatically—by extracting key data and converting them into well-structured pieces of information that are easy to find. Thanks to this, one can boost one's output and

productivity exponentially, Hirano believes.

Hirano envisions a world where people's work is complemented by AI. Currently, people adapt to machines, but in the future, machines will be able to adapt to people. An example would be using AI technology to collate and structure information gathered from business calls; by analyzing the data, companies could then become more efficient by recognizing patterns in how the top salespeople operate. Before that happens, Hirano feels the preconceptions that exist about AI, such as fears of it taking over people's jobs, need to change. In her opinion, rather than being something people should be fearful of, using AI should be seen as a positive, as it can make a company more competitive by increasing efficiency in a cheap and quick way. Moreover, with Japan's working age population projected to fall to 50 million by 2050, utilizing AI can be a great way to boost performance, which may set an example for the rest of the world.

This future will need to be addressed in the current workforce as well. AI engineers who can build programs are relatively common, but to devise the algorithms that the AI is based on from scratch, AI researchers are needed. AI researchers are a rare breed. Cinnamon has managed to recruit 100 AI researchers in Japan, Vietnam, and Taiwan—a staggering number. They work in-house to help research and develop their products. Hirano notes that there is a lot of potential for the IT sector in Tokyo and Japan as a whole. "Many more people have become interested in the start-up scene in Tokyo in recent years. It's made it a lot easier to find and recruit the best people."

To enable a promising future elsewhere too, it is female business talent like Hirano who the Tokyo Metropolitan Government is looking to nurture through the Acceleration Program in Tokyo for Women (APT Women). APT Women runs workshops and mentoring schemes designed to help women expand their network and business know-how, and support female entrepreneurs with business expansion (including expansion overseas). There was also the third NEW CONFERENCE (Network to Empower Entrepreneurial Women Conference), an event for female business leaders that was held in November 2020. It was the first NEW CONFERENCE to be fully virtual, and had a program full of diverse speakers, from Tokyo Governor Koike Yuriko to Hirano Miku, among others. The conference provided a chance for female entrepreneurs to gain new insights while learning from senior leaders about how they grew their companies and discussing a wide range of business challenges and other topics.

With the future of work sure to look very different, Hirano and her company are part of driving this change, and passing it on to the next generation.



For an innovative vision of the ideal future work style, look no further than Hirano Miku, CEO of Cinnamon, Inc.

# Protecting Architectural Heritage

Engineers balance preservation with seismic protection.

by **Tim Hornyak**

Many visitors to Tokyo are enchanted by the way in which Japan's capital mixes old and new. Despite the fact that Tokyo has seen a multitude of disasters during its long history, the metropolis is still home to many old structures, and they must be protected from the ever-present threat of earthquakes. This preservation is carried out in addition to other earthquake countermeasures such as quake-resilient urban planning.

Older structures are protected by carefully balancing preservation with reinforcement. The Imperial Palace lies at the heart of Tokyo and was erected on the site of Edo Castle. Even though during World War II buildings were flattened only blocks away, massive earthworks and original gates dating to the 17th century still stand. The Shimizumon gate was built in 1624 and designated by the central government as an Important Cultural Property in 1961. The structure was repaired after the 2011 Great East

Japan Earthquake. To make the gate more quake-resilient, engineers fitted the base with a tie rod, a long bar that can support architectural structures. While helping relieve tensile force on the gate, it has little effect on its overall appearance.

Preservation efforts have also been undertaken for structures that are not very famous. The Pumping Station at the Former Mikawashima Sewage Disposal Plant is a sewage facility along the Sumida River that began operations in 1922, being Japan's first modern facility of its kind to purify sewage before disposal. It survived the 1923 Great Kanto Earthquake with minor damage and was finally shut down in 1999. In 2007, the Pumping



Surrounded by cherry trees, the Pumping Station at the Former Mikawashima Sewage Disposal Plant was reinforced against earthquakes around 2012.



Kiyosu Bridge has been outfitted with a vibration-control system to protect against earthquakes.



Rebuilt in 1926 after the Great Kanto Earthquake, Eitai Bridge has been equipped with bearings to dampen large seismic forces.

Station became the first sewage facility to be designated an Important Cultural Property. Thanks to seismic-reinforcement renovations carried out around 2012, the 10 massive pumps in the pump pit, where sewage was drawn from underground wells, are now clearly visible because large support trusses have been mostly removed in favor of more discrete strengthening measures. Visitors can now fully grasp the importance of the facility while admiring its nostalgic Taisho era (1912–1926) brickwork and the surrounding blossoming cherry trees.

Tokyo is a city of more than 100 rivers, and bridges form part of its civil engineering heritage. Two historic spans across downtown Tokyo's Sumida River, Eitai and Kiyosu bridges, are also being carefully preserved. First made of wood and erected in 1698, Eitai Bridge was celebrated by the woodblock print artist Utagawa Hiroshige. It suffered two disasters. In 1807, it partly collapsed under the weight of many revelers heading to a Shinto shrine festival

held for the first time in 12 years. In 1923, wooden slabs on the bridge burned in the Great Kanto Earthquake. It was rebuilt in 1926 as a massive steel arch and formed part of an earthquake reconstruction project along with Kiyosu Bridge, an elegant suspension bridge.

Work began in 2013 to extend the life of these spans by more than 100 years and to safeguard them against massive earthquakes, with reinforcements discretely installed. "To pass these assets on to future generations, in principle existing materials shouldn't be modified and the landscape should be considered," says an official with Tokyo's Bureau of Construction. "At Eitai Bridge, we have taken measures such as installing new bearings to dampen large seismic forces, and at Kiyosu Bridge, we installed vibration control devices to reduce seismic shaking."

Next time you are touring a heritage structure in Tokyo, take a closer look, and you may see evidence of the care that has gone into protecting it for future generations.

# 5G Networks Are Accelerating Telemedicine

Tokyo is leading medical and healthcare applications for 5G.

by **Tim Hornyak**



© 2021 Tokyo Women's Medical University

The Smart Cyber Operating Theater® (SCOT®) is supporting surgeons during delicate brain surgery procedures.



© 2021 NTT DOCOMO, INC.

The interior of the Mobile SCOT® concept vehicle.

Mobile communications are undergoing a revolution. The TOKYO Data Highway Basic Strategy calls for ultra-high-speed mobile communications systems, and they are being realized with the rollout of the fifth-generation mobile communications system (5G). 5G will offer significant broadband communications and low latency to individual users. 5G also presents tremendous opportunities for organizations working in telemedicine, which is drawing enormous attention in the era of COVID-19.

At Tokyo Women's Medical University, surgeons and engineers have teamed up to create a next-generation operating room that uses the latest networking technology. With its flat-panel displays, robot arms and automated patient beds, the Smart Cyber Operating Theater® (SCOT®) looks like something from the set of a science fiction movie. Its robotic systems can support surgeons' arms during delicate brain surgery procedures, and automatically help surgeons move the patient for a magnetic resonance imaging (MRI) scan during an operation. Meanwhile, SCOT's middleware interface, OPeLiNK®, gathers data from equipment including a surgical microscope, a surgical navigation system, vital signs monitors, and intraoperative MRI. At the Strategy Desk, the interface integrates and displays the data on large screens in high resolution. The aim is that this cutting-edge technology will support decision-making during the operation and ensure better results after surgery.

Surgeons from the university and its partner organi-



Small, cute, and approachable—Zukku is a desktop communications robot that is being equipped with 5G connectivity.

zations used SCOT technology to perform groundbreaking brain surgery on a patient with a neurological disorder. Following on that success, surgeons now want to create a mobile version of SCOT on a truck, and connect it to remote surgeons via NTT DOCOMO's Open Innovation Cloud™. The truck will provide an advanced level of medical care nearly anywhere, and it will be also able to link with veteran surgeons providing support through a Mobile Strategy Desk even on a train.

"We hope that guidance and support from experienced doctors will spread nationwide to reduce regional disparities in medical technology," says an official with the telecom. "We also hope to be able to perform difficult operations with the wisdom of multiple doctors, and to provide remote emergency doctor support in disasters."

Startup companies are also using the 5G network for remote care applications. Tokyo-based Hatapro Inc. has developed a soda can-sized robot that looks like a cartoon owl. Zukku can rotate its head, flap its wings, and use LEDs to light up its eyes. With its microphone, camera, and squeaky voice, the robot can carry on basic conversations,

such as asking people about their health. Equipped with AI and 5G, the device can gather health information, flag unusual responses or events, and alert remote caregivers when necessary, all with near-zero communications delays.

With the rapid aging of the Japanese population, more and more elderly people are living alone, but the country also faces a shortage of 320,000 caregivers by 2025. That is where remote care can help.

"Zukku is designed to help monitor people who are alone such as elderly who may require assistance, for instance by checking whether they are taking their medication," says Izawa Ryota, CEO of Hatapro. "We hope to contribute to solving these social issues through technological innovation."

Expectations are growing in Tokyo for the new era of 5G. Remote care, emergency medicine, and surgical support are only some of the healthcare areas that will improve with 5G technologies. Under the TOKYO Data Highway Basic Strategy, which aims to accelerate mobile communications systems and Internet access, digital transformation will benefit various aspects of peoples' lives.



From its shining glass towers to its quiet, intimate shrines and gardens, Tokyo is famous for bringing together new and old, modern and traditional, international and distinctly Japanese. These contrasts make Tokyo the rich and exciting experience it is, and everyone experiences them in their own way. Artist Ilan Yanizky's journey began in his home of Israel and took him along the path of *sumi-e* ink wash painting, gaining a reputation for his modern take on the traditional art. He was recognized for his work by the city in 1997, when he received the currently nonprofit organization, the Nangain Tokyo Governor's Award, and he has now established himself as an artist and teacher in this most Japanese field.

## Ilan Yanizky: Connecting Worlds through *Sumi-e*

How an Israeli artist found inspiration bringing together old and new in a traditional Japanese artform.

by Ian Martin

Yanizky's background was in Western art, studying in Tel Aviv, Rome, and London, and he had been planning to study visual arts in New York as his next step. It was a chance moment of inspiration in 1983 that upended his plans and brought him to Japan.

"Everything was ready for me to go to New York," Yanizky explains. "Just two months before that, things happened. *Time* magazine dedicated a whole issue to Japan. I saw that and that was it!"

From sushi to pop idols, the feature hooked him in with its lively depictions of a world he had never seen before, and soon after, he was in Japan. What he discovered after he arrived turned that moment of inspiration into a lifelong journey, and an important part of that was his discovery of the artist Ito Jakuchu on a visit to the Tokyo Metropolitan Art Museum.

Coming from a background in Western art traditions, Yanizky was struck in particular by Jakuchu's use of large areas of white space on the canvas—something he realized was extremely rare in European and American art, where artists tended to fill every inch of the canvas with detail.

"I saw a white crane and black tail, and the crane was standing like this, and a lot of white," Yanizky explains, standing up to demonstrate the bird's pose. "The white space is so important."

The idea of space or absence is one that Yanizky touches on in various ways when he talks about his experience of Tokyo and Japan. It is present in the zen gardens that inspired him when he first came to Japan. It is in his *sumi-e* training, where he had to learn by observing carefully rather than through detailed explanations from his teacher. It is there in daily interactions through the philosophy of *ishin denshin* or communication without words. In his Shibuya studio, he has on display two calligraphy works depicting the Japanese character *ma*, signifying the space between things or people. "We need a lot of space!" he declares. "It's a very important concept in Japanese culture."

Through his passion for *sumi-e*, Yanizky forged his connection to Japan by throwing himself into a centuries-old Japanese tradition. He found a teacher and entered into years of rigorous training, repeating the same motifs again and again to hone his technique and learning to grind his own paints from natural materials in the traditional way. As well as embracing tradition, though, he also

brought his own modern take to *sumi-e*, bringing bold, vivid colors to a form with a reputation for having a more muted, monochrome style. It is this bold approach to the art that Yanizky believes may have encouraged more Japanese people to reconnect with their own culture and tradition through *sumi-e*.

"I have many young people coming here and studying because they say, 'This is the kind of *sumi-e* I want to study!' or 'This kind of modern *sumi-e* is something I would like to learn!'"

As a foreigner studying *sumi-e* in 1980s' Tokyo,



Yanizky's art brings vivid color to the *sumi-e* form, which is often seen as muted and monochrome.

Yanizky learned from Japanese tradition. As an artist and teacher, his modern take on tradition helps Japanese people reconnect with that same culture. Like the city he now calls home, through his work new and old, modern and traditional, international and Japanese all exist together.



At work in his studio, Ilan Yanizky combines bold strokes with extraordinary control.

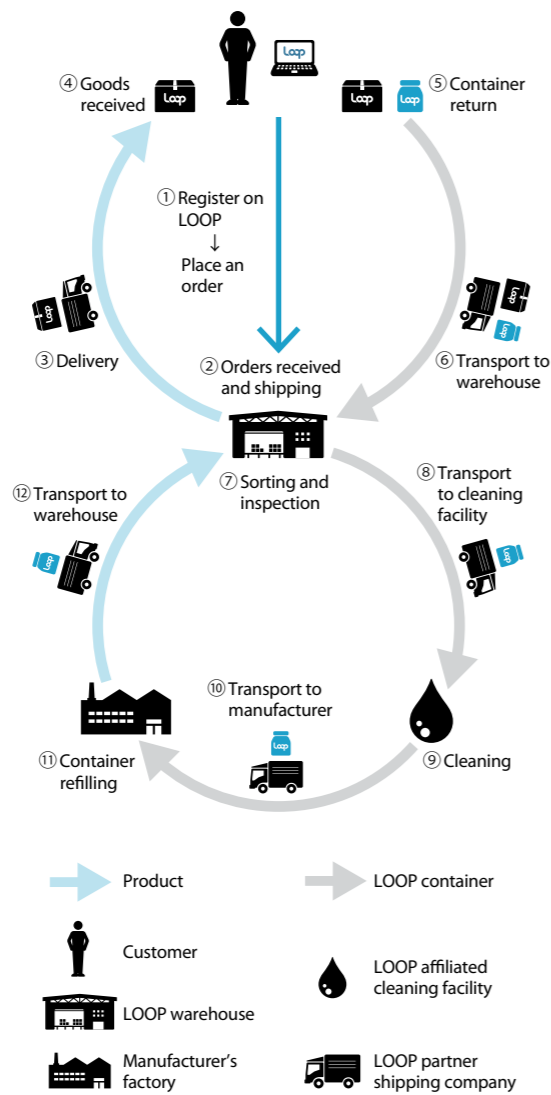
# The Infinite Loop

Loop aims to tackle waste through a circular model, involving both company and consumer.

by Kirsty Bouwers

The fight against the global climate crisis is upon us: to get to a net zero carbon world, humans need to drastically rethink our usage of finite resources. In Japan, endeavors to do so are coming from the industrial sector, supported by the Tokyo Metropolitan Government (TMG), with the aim being to create a circular economy based on the 3R (reuse, reduce, recycle) principle. Indeed, reusing is the new vogue, with companies that manage to reuse bottles and containers fitting perfectly within this goal.

To support these efforts, the TMG has selected several companies that are creating a new business model for the sustainable use of plastic. These include major multinational Kao, the chemical and cosmetics producer, who was selected for their aim to reduce single-use plastics. Another initiative selected is Loop, by TerraCycle, a social enterprise which helps companies not just recycle, but reuse their packaging. Loop announced their entry into the Japanese market in 2019.



The Loop concept is quite simple: a customer buys a branded product in a Loop-approved durable container from the on-line store or physical shop, and once finished, Loop will pick up the empty container or the customer may return it to a collection bin at a designated retail store. Loop will collect the packaging and send them to a commissioned cleaning facility. Cleaned packages are returned to the manufacturer, where the packaging is refilled and sent to the Loop warehouse again, after which it reaches the customer. In essence, it creates an infinite loop of reusable, zero-waste packaging between company and customer, and is an example of a circular economy.

The concept that Loop is promoting is not far from *mottainai*, a Japanese phrase which refers to lamenting the waste of things. The traditional spirit of *mottainai* is undergoing a revival due to the renewed focus on sustainability and the plastic-free movement. An example is the charge on plastic carrier bags introduced in Japan to help reduce the amount



Products from a wide range of industries are included in the Loop trial, such as these containers of soup stock granules.

of plastic consumption. Loop ties in perfectly with this sentiment, and presents a new way for Tokyoites to embark on a zero-waste lifestyle.

Loop is currently planning operations or is starting trials in seven countries, including the US, the UK, and France. In Japan, a trial with 22 major manufacturers and retailers, including Ajinomoto, Aeon, and Canon (as of September 2020,) is set to start in spring 2021. It is the first in the world to be conducted both online and in-store, with Loop products set to be made available at several Aeon supermarkets within Tokyo and other sites within Japan.

The trial sees the packaging undergoing durability tests, as well as tests to measure the level of environmental impact. Special packaging had to be designed which would be easy to clean and durable enough to reuse, while still being visually appealing. With design being very important to many Japanese consumers, this was something Loop and the participating companies needed to get right.

Eric Kawabata, Asia-Pacific General Manager at Loop, recognizes this and says they are up for the challenge. “Japanese manufacturers are renowned for their relentless drive for improvement and perfection,” he notes. Indeed, some companies have already created luxurious new packaging designs in anticipation.

Ultimately, the aim is to change consumer habits and views on waste, driving them towards a more sustainable lifestyle. To help nudge people in the right direction and better inform them, Loop products and its online platform may include messages on sustainability. Through this, Kawabata notes, customers are slowly educated on the issue of waste, with positive reinforcement via the platform hopefully helping them appreciate and actively choose a zero-waste, sustainable life. With even more companies set to sign up for the Loop trial soon, reducing waste in Tokyo by reusing has never looked as easy as now.



Aesthetics as well as sustainability and strength were taken into account when designing new packaging for these printing ink containers.

# Local Wine in Downtown Tokyo

Enjoying fresh wines under the rooftop vines at Fukagawa Wine Garden.

by **Bob Sliwa**

The United Nations Sustainable Development Goals (SDGs) are currently being implemented by countries all over the world, and Japan is no exception. Several of the SDGs are concerned with agriculture and consumption, and local production for local consumption initiatives have recently arisen in Tokyo from these SDGs. As a large metropolis, agriculture is not usually a big part of Tokyo's image, but in fact, local production for local consumption has been promoted since before the SDGs were formulated. For example, the Tokyo Metropolitan Government has been certifying restaurants and stores that actively use foodstuffs produced in Tokyo, in an effort to more widely promote their produce.

In addition, many businesses and individuals are producing a wide variety of products that are well liked by city residents. Fukagawa Winery Tokyo is

The naturally fermented mixture produces a fragrant froth when stirred.

located in the city's downtown area. It is one of five wineries in the 23 special wards, with one more located in Tokyo's Tama area. Fukagawa Winery Tokyo is unique in that it has 100 vines planted on a nearby rooftop. Because of humidity, the Japanese climate is not thought of as being conducive to grape growing, but the rooftop location provides the vines with excellent ventilation and an abundance of sunshine.

These vines, which were planted three years ago, were harvested for the first time in August 2020. There were not enough grapes to produce a batch of wine, so they were used to make the starter yeast employed in the winemaking process. Chief wine maker Ueno Kosuke explains, "We consider ourselves a winery that offers not just wine, but also experiences to our customers." If not for COVID-19, customers would have been able to come in and harvest these grapes and then later enjoy drinking the wine they were used to help make. The grapes used to produce the 18 varieties currently offered are mainly sourced from five prefectures north of the metropolis. They are naturally fermented in downtown Tokyo.

This rooftop farming program, a collaboration with a major developer, is not just an urban greening project, it is an experiment in which residents are growing grapes to make their own wine. If it succeeds, it will be duplicated in other locations as part of town revitalization projects.

The winery is partnering with nearby Tokyo University of Marine Science and Technology in a unique



The first rooftop harvest was August 2020.



One hundred grapevines have been planted on the rooftop of another nearby building.

experiment in aging wines at the bottom of Tokyo Bay. The inspiration for this project comes from the romance that people feel for wines that have been pulled out of shipwrecks at the bottom of the sea after many years. The experiment is to submerge 120 bottles of cabernet sauvignon for seven months at the bottom of the bay to see if that changes the taste of the wine. The experiment was carried out three times so far, with wines lowered into the bay in December of 2018, 2019, and 2020, then pulled out in July of the following year. To determine whether the taste had changed they assembled a panel of 12 experts to do a tasting. Differences in taste were noted and some judges felt that the submersion sped up maturation.

The theme of Fukagawa Winery Tokyo's in-house restaurant is the marriage between their wine, which is produced to appeal to Tokyoites appreciation of clean refreshing tastes, and carefully chosen ingredients. For example, they pair their dry white wine with seafood, while they pair their rich reds with lean pork or chicken. Their sister shop, Shibuya Winery Tokyo opened in one of Tokyo's central hubs in summer 2020. Having their own wine makers in charge of producing wine at this new location means customers can enjoy the differences in the taste of their wines from the Fukagawa ones, despite both being in Tokyo. Next year's harvest should be enough to produce the first wine from grapes grown on a Tokyo rooftop.



# Tokyo Is Asia's Best Kept Secret

As Tokyo looks to regain its position as a global financial center, investment banker David Shirt talks about the strengths of the capital.

by **Anne Lucas**



British-born, Tokyo-based investment banker David Shirt believes in giving back to the city.

Tokyo is already considered a central hub for so many industries, from tourism to fashion to food. Now, the Tokyo Metropolitan Government (TMG) has its sights set on revitalizing the financial strengths of the capital to re-secure its place alongside top financial bases such as The City in London and Wall Street in New York.

Spearheaded by Tokyo Governor Koike Yuriko, the TMG formulated the Global Financial City: Tokyo Vision in 2017. The project has included the launch of a series of initiatives and services, all geared towards attracting investment and making it easier for foreign entrepreneurs and companies to set up business in Tokyo. Some of the goals include improving English support, providing access

to excellent healthcare and education for attractive living conditions, and encouraging financial players to enter the Tokyo market.

One of the most exciting initiatives so far is FinCity.Tokyo, which was launched in 2019. Sponsored by more than 30 organizations, including the TMG, the corporation is tasked with promoting the financial services of Japan and the superior resources that Tokyo can offer. The focus is on the facilitation of asset management and FinTech, while also helping to solve social challenges that might have previously stood in the way of investors.

One foreign businessman that has enjoyed the benefits of these initiatives and services is British-born David Shirt. As CEO and founder of an investment advisory company in Tokyo, he describes his business as “a gateway to Japan.” His company offers investment and corporate advisory services, and helps offshore investors meet Japanese

companies. “We are increasingly becoming a gateway to facilitate offshore financial players who want to participate in the Japanese market,” says Shirt. “We bring opportunities to Japan.”

One of the pioneering ways that Shirt is offering opportunities comes in the form of a brand-new service: “It’s kind of like a dating app between offshore opportunities and Japanese investors. And it’s about how we match you together.” The reason for this new venture, says Shirt, is because he is inundated with inquiries from people overseas looking to raise capital from within Japan. “Japan has investors and offshore has opportunities.”

Having worked here for 18 years, Shirt is enthusiastic about the strengths of Tokyo, not only as a financial center but also as a place to set up home. “I always describe Tokyo as Asia’s best kept secret. I’ve been in financial markets for 25 years, been to Singapore, Hong Kong many times, but Tokyo is a real city. There’s fantastic infrastructure, it’s a safe place to live, it’s a clean place to live, the services are fantastic, and the food is exceptional.” He also points out that, compared to cities such as Singapore and Hong Kong, living expenses in Tokyo are considerably cheaper.

Shirt is equally grateful for the career opportunities afforded to him by the city. “We’ve had real help from the TMG. They provide expertise, networking opportunities, office space support, and advice.”

And can Shirt offer a top tip for investors and entrepreneurs setting up business in Tokyo? “Things take time here,” he says. “So many clients approach me and say they tried previously to start a business in Japan but gave up after six months. I always say, why did you give up? Things take time in any country.” Shirt goes on to advise that although the Japanese market may be perceived as difficult to enter, maybe because of the language or cultural barriers, entrepreneurs should not give up.

In many ways, Shirt holds the same aim as FinCity.Tokyo—to raise the profile of a global financial city. “I am really appreciative of the career I’ve had here and my time here, so I think it’s important to give back.”

# Tokyo Basics

## Population

Total Population of Tokyo (2020)

13,962,725

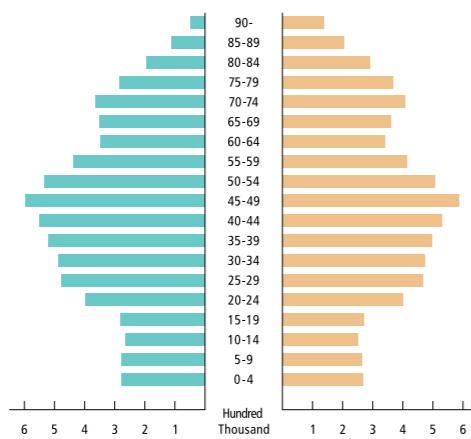
Men (2020)

6,859,659

Average Life Expectancy (2015)

81.07

Population Age Structure by Gender (2020)



Women (2020)

7,103,066

Average Life Expectancy (2015)

87.26

Foreign Residents (2020)

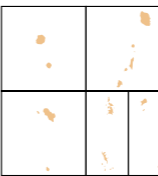
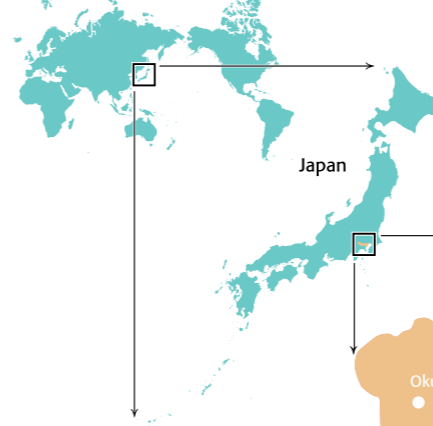
539,342

People Over 100 Years Old (2020)

6,077

## Location

World

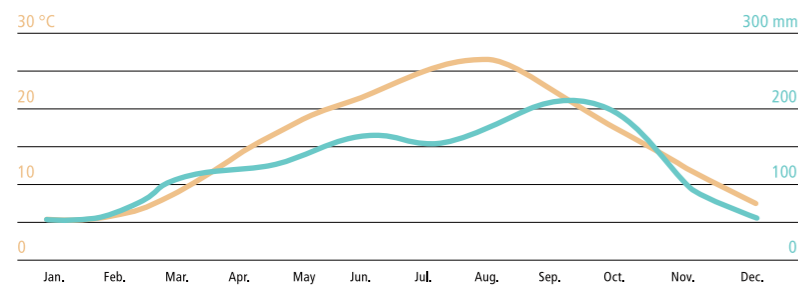


## Area

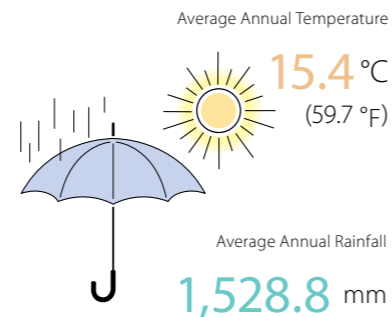
2,194.03  
sq. kilometers



## Average Monthly Temperature and Rainfall



Source: Japan Meteorological Agency, 1981-2010



## Sister and Friendship Cities/States\*

- ① New York (USA)
- ② Beijing (China)
- ③ Paris (France)
- ④ New South Wales\* (Australia)
- ⑤ Seoul (South Korea)
- ⑥ Jakarta (Indonesia)
- ⑦ São Paulo\* (Brazil)
- ⑧ Cairo (Egypt)
- ⑨ Moscow (Russia)
- ⑩ Berlin (Germany)
- ⑪ Rome (Italy)
- ⑫ London (UK)



## Annual Foreign Tourists (2019)



15.2  
million

A 6.6% increase over 2018

## Tokyo's GMP<sup>1</sup> (Nominal) as a Share of Japan's GDP (FY2017)

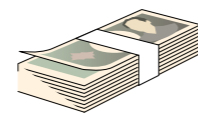
Japan ¥547.4 trillion



19.4% of  
Japan's GDP

1. GMP: Gross Metropolitan Product  
2. \$958.8 billion  
2017 annual average conversion rate ¥1 = \$0.0090

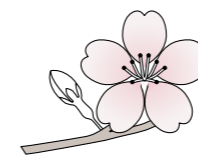
## Tokyo's Budget (Initial FY2020)



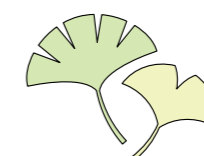
¥15,452  
billion\*

\* \$150 billion  
¥1 = \$0.0097 (Bloomberg, January 4, 2021)

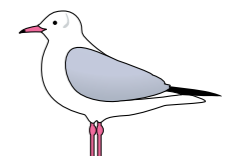
## Symbols



The *somei yoshino* cherry tree was developed in the late Edo period to early Meiji era (late 1800s) by crossbreeding wild cherry trees. The light-pink blossoms in full bloom and the falling petals scattering in the wind are a magnificent sight to behold.



Ginkgo biloba is a deciduous tree with distinctive fan-shaped leaves that change from light green to bright yellow in autumn. The ginkgo tree is commonly found along Tokyo's streets and avenues and is highly resistant to pollution and fire.



The *yurikamome* gull has a vermilion bill and legs. It comes south to Tokyo in late October every year and sojourns at the surrounding ports and rivers until the following April. A favorite theme of poets and painters, it is also called *miyakadori* (bird of the capital).




TOKYO  
METROPOLITAN  
GOVERNMENT

[www.metro.tokyo.lg.jp/english/](http://www.metro.tokyo.lg.jp/english/)

 [www.facebook.com/TokyoGov/](https://www.facebook.com/TokyoGov/)

 [twitter.com/Tokyo\\_gov](https://twitter.com/Tokyo_gov)

 [www.instagram.com/tokyo\\_gov/](https://www.instagram.com/tokyo_gov/)

 [www.youtube.com/c/TokyoGov](https://www.youtube.com/c/TokyoGov)

**Peter Ryan** Editor in Chief

**Imai Hirotaka** Art Director

**Erica Ward** Illustration

**Maeda Shigeki** Design

**Iwai Satoshi, Hoashi Munehiro, Marutani Yoshihisa** Photography

© Copyright 2021 Tokyo Metropolitan Government

Registration number (2)16

All rights reserved.

Reproduction in whole or part without permission is prohibited.

This brochure is made from FSC® certified paper.