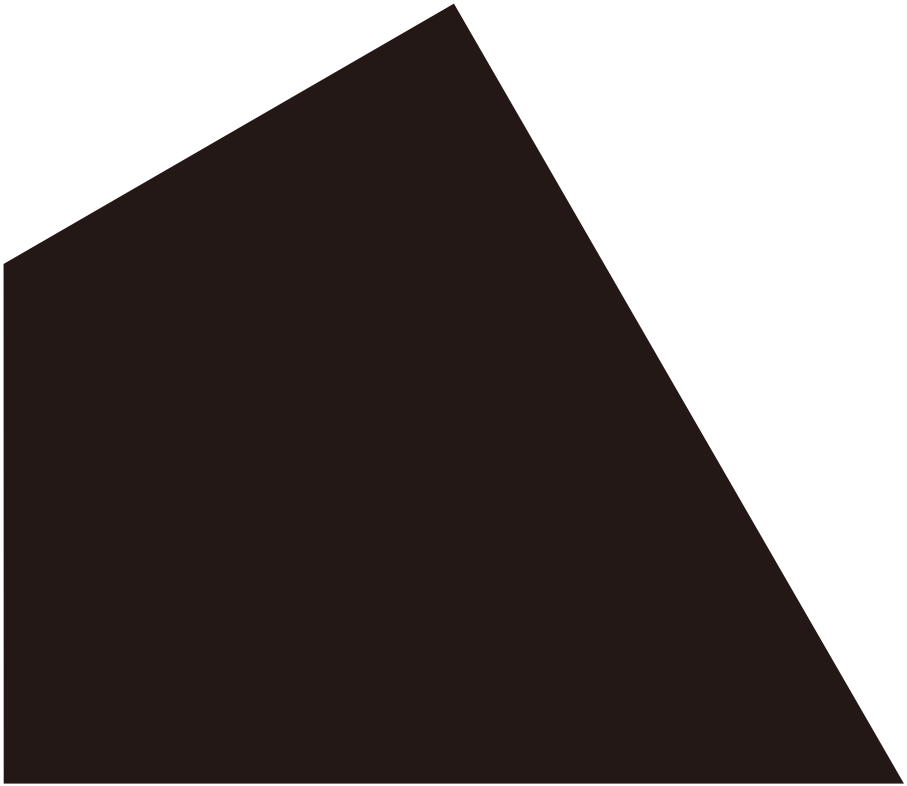
産業

Industry



ポスト万博シティ・けいはんな

けいはんな学研都市は、「東のつくば」と並ぶサイエンスシティ。
大阪・関西万博にあわせて、「けいはんな万博2025」を開催中です。
ここ京都ゾーンでは「食」、「人間拡張」、「VR」をテーマに最先端技術をお楽しみいただきます。

Post-Expo City Keihanna

Keihanna Science City is a leading science city in Japan, often called the "Tsukuba of the West." In conjunction with the Osaka-Kansai Expo 2025, we're currently hosting "Keihanna Expo 2025." Here in the Kyoto Zone, you can experience cutting-edge technologies centered around the themes of "Food," "Human Augmentation," and "VR."

1 東レ建設株式会社
Toray Construction Co., Ltd.
未来食研究開発センター株式会社
Future Food R＆D Center Co., Ltd.,
金沢工業大学
Kanazawa Institute of Technology
京都光華女子大学・京都光華女子大学短期大学部
Kyoto Koka Women's University, Kyoto Koka Women's College

2 株式会社CCHサウンド
CCH Sound,Inc.
株式会社SHIN-JIGEN
SHIN-JIGEN Inc.
特定非営利活動法人けいはんなアバターチャレンジ
The Keihanna Avatar Challenge, a specified non-profit organization

2 奈良学園大学
Nara Gakuen University
大阪府四條畷市 田原支所
shijonawate city
奈良県立医科大学・MBTコンソーシアム
Nara Medical University / MBT Consortium

3 株式会社ゆずプラス
Yuzuplus Co., Ltd.
株式会社Universal Robot Lab
Universal Robot Lab, Inc.
工学院大学VRプロジェクト
Kogakuin University VR Project

4 けいはんな万博2025運営協議会事務局
Keihanna Expo 2025 Executive Secretariat

1-1 Enjoyable and Easy: Trefarm's Elevated Sand Cultivation

Food

Enjoyable and Easy Farm Work with Elevated Beds.

It's fun because you can watch vegetables grow right before your eyes. And because you cultivate them at table height (using an elevated-bed system), the work is easy. You don't have to bend down, so it's a suitable activity even for seniors and those in wheelchairs.

Safe and Secure Vegetables Grown in Sand Cultivation

Since this is 100% sand cultivation, there's no need for special farming tools or the disposal of growing media. The cultivation beds, made from highly reliable construction scaffolding materials (which are more dependable than general agricultural materials), are exceptionally sturdy and safe. There's no need to dispose of the sand medium, and automatic, precise irrigation settings prevent the waste of water and liquid fertilizer.

Kyotanabe Cross Park (Alias: Tanakuro)

We've opened Tanakuro in Kyotanabe City, utilizing Trefarm, as a green hub where all citizens, from children to the elderly and people with disabilities, can interact.

Toray Construction Co., Ltd.
19th Fl., Nakanoshima Mitsui Bldg., Nakanoshima 3-chome, Kita-ku, Osaka-City

1-2

Food

A New Rice, "Kyo no Yume," to Transform the Future of Agriculture

"Kyo no Yume" is a dwarf rice variety.

Dwarf rice refers to rice varieties with very short plant heights. Typically, their dwarfism is due to a deficiency in the plant hormone called gibberellin. Because of factors like their lower yield per plant, they haven't been widely recognized by agricultural workers.

Entering an age where rice cultivation is accessible to everyone, everywhere.

Our developed "Kyo no Yume" is a rice variety with a plant height of only about 20 cm. Its growth period is approximately three months, which is 2 to 3 times faster than regular rice. It can even be grown hydroponically on balconies or indoors.

The Great Potential Hidden in Small Rice.

A significant advantage of cultivating rice in multi-tiered and vertical farms, such as plant factories, is the ability to achieve stable grain production unaffected by environmental fluctuations. By applying this technology, we aim to develop a business that helps prepare for the global food crisis.

Future Food R＆D Center Co., Ltd.,
84 Oji, Kitainayazuma Seika-Cho,Soraku-Gun
Kyoto Prefectural University,
Industry-Academia-Government Collaborative Research Center, Laboratory 5.

1-3 Satoyama in Japan table projection

Food

Keihanna's Satoyama on Your Table.

Enjoy works featuring Keihanna's rice cultivation, festivals (Seika Ondo), and various Kyo-yasai (Kyoto vegetables). By projecting these works onto a gathering table, an immersive experience is created, making you feel as though you're participating in the daily life of the satoyama (traditional rural landscape).

"Touch and Feel Satoyama Nature"

By combining "tactile tools," we've recreated the feel of satoyama nature. You can primarily experience the dynamism created by water, such as paddy field water, rain, and rivers.

Connecting Satoyama Nature and Lifestyles to the Future

For many years in Japan, people have coexisted with nature, living in harmony in mountainous and coastal regions like this. Through this work, please experience a sustainable, beautiful, and warm future where nature, food, and culture are in harmony.

Keihanna Research City Collaboration and Joint Activities Partners
Kanazawa Institute of Technology
Ogigaoka 7-1, Nonoitchi-city

1-4

Food

Kyoto's Proposal: Aiming for "Food Accessibility for All"

Soft Wagashi

These are wagashi (Japanese confections) developed with specially adjusted ingredients to make them easier for individuals with reduced swallowing ability to consume.

Care tableware made from Kiyomizu-yaki and Kyo-shikki.

These are traditional craft care tableware that combine beauty and ease of use, along with lacquer-style trays with non-slip features.

Wellness Sweets (Japanese & Western-style) designed for health.

These are canelés and financiers made using Kihada leaves. Kihada is a tree in the citrus family, and its leaves are rich in folic acid, dietary fiber, calcium, and more. The mizu-yokan (red bean jelly) incorporates rare sugar, which is known to help suppress blood sugar level increases and promote fat burning.

Kyoto Koka Women's University, Kyoto Koka Women's College
38 Kadono-cho, Nishikyogoku, Ukyo-ku, Kyoto-City

2-1

Human augmentation

The Future of Hearing Is Here

The Third Auditory Pathway: “Cartilage Conduction”

Cartilage conduction—discovered 500 years after air and bone conduction—has been dubbed the “third auditory pathway.” It offers benefits such as improved hygiene along with prevention of hearing loss, outer ear inflammation, and dementia.

Vibrates the Ear Cartilage Only

Unlike conventional bone conduction, which relies on vibrating the skull, this entirely new mechanism vibrates only the small, lightweight ear cartilage, enabling low power consumption.

Innovative Technology That Opens Up New Possibilities

This unique sound transmission mechanism, which generates sound within the outer ear canal by vibrating the ear cartilage, offers a completely new auditory experience. It opens up new possibilities in medicine, welfare, and a wide range of fields.

CCH Sound,Inc.
4-28-8 Hikaridai, Seika-cho, Soraku-gun

2-2

Human augmentation

Electric Assist Suit for Upper Limb Support

Lighten up the work of transporting heavy objects.

This is a wearable robot equipped with an electric motor and sensors to support transportation tasks. Designed for ease of use, it's ultralight, weighing less than 2 kg, and can be easily put on in just tens of seconds.

Reduces shoulder and arm strain

Repeatedly carrying heavy objects in fields like construction, factories, or nursing care can place a significant burden on your shoulders and arms. Simply by wearing an assist suit, that strain is reduced.

Towards a future where diverse people can work vibrantly.

Assist suits broaden employment opportunities for individuals with less physical strength. They also contribute to a future where people can work longer and more vibrantly in an aging society.

SHIN-JIGEN Inc.
Sakyo 6-5-2,Nara-City

2-3

Human augmentation

Let's go sightseeing with Avatar Robot! ～Walking around Keihanna

The scenery of Keihanna is right in front of you.

You'll be able to remotely control an avatar robot located in Keihanna from the Kyoto Zone. The robot transmits live video from its location, giving you an immersive experience as if you were walking there yourself.

Conversation with locals

The avatar robot also has a conversation function. You can chat with people in Keihanna in real time and enjoy a game-like experience as if you were there.

Toward a future where everyone can enjoy tourism

We're expanding the possibilities with avatar robots so that people who find it challenging to go out, whether due to psychological or physical reasons, can still experience the joy of tourism and participate in society.

The Keihanna Avatar Challenge, a specified non-profit organization
2-2-2 Hikaridai, Seika-cho, Soraku-Gun

2-4

Human augmentation

Transforming "Tough" into "Enjoyable" The Future of Rehabilitation Experience

Transforming the Image of Rehabilitation with XR

Virtual rehabilitation is a type of therapy that leverages XR (Extended Reality – VR/AR/MR) technology. Unlike conventional, monotonous training, it encourages immersion in a virtual world, promoting active participation and enhancing the effectiveness of rehabilitation.

Let's actually experience it!

Experience the "Virtual Muscle Strengthening Training System," which combines immersion, enjoyment, and safety. The "Virtual Fall Experience System" recreates the sensation of falling. This helps enhance attentiveness and improve the ability to avoid falls.

Fun rehabilitation with a game-like atmosphere

The Motion Training System "TANO" offers "rehabilitation through play." When you stand in front of its sensor, your body becomes the controller, reacting to your movements and voice. Anyone, regardless of age, can operate it intuitively and enjoyably, making it easy to continue.

Nara Gakuen University
15-1-3 Nakatomigaoka, Nara-City

2-5

Human augmentation

Town planning initiated by the community, leveraging self-driving cars.

Enabling local transportation through self-driving technology.

There are significant elevation differences in the Tawara region, located in the eastern part of Shijonawate City, Osaka Prefecture. Many residents here are concerned about their means of transportation within the area. To address this challenge, a series of verification experiments began in 2020.

From demonstration to implementation: Operations began in May 2024.

A volunteer organization formed and, pouring their aspirations into a cart connecting the community, named it the "Tawara Connect Cart." In May 2024, local residents took the lead in launching its operations, and it has since become a well-established means of transportation within the region.

Towards a society where everyone can easily go out.

Even as the population ages, autonomous vehicles will enable local residents to move freely within their communities, creating opportunities for them to "go out." This is also expected to contribute to frailty prevention.

shijonawate city
1 Kamitawara, Shijonawate-City

2-6

Human augmentation

Urban Development and Industrial Innovation Rooted in Medicine

Medical-Based Town Development (MBT)

Traditionally, medical care and urban development have progressed separately. However, Medicine-Based Town (MBT), promoted through a collaboration between Nara Medical University and the MBT Consortium, is a unique initiative where doctors and medical researchers commit to urban development and product creation alongside MBT Consortium member companies.

Engineering and Industry Creation Rooted in Medicine (MBE)

As products and services that leverage medical expertise increase, our daily lives will become safer, more secure, and healthier. This is what we call MBE (Medicine-Based Engineering), and it's what we're dedicated to.

Monitoring Health with Electricity Data

By AI-analyzing household electricity usage data, we can detect early signs of health anomalies and lifestyle changes, providing proactive health monitoring. This represents a model for "future urban development" where medicine, AI, engineering, and industry converge.

Nara Medical University / MBT Consortium
840 Sijyo-cho, Kashihara-City

3-1

VR

New Learning Style: "Classroom of the Future"

Metaverse Workshop

This is a program where you become an avatar in a virtual space and explore your own "interests." Participants can freely set themes they're interested in, and experience everything from gathering materials to production, presentation, and exhibition—all within the VR space.

Web Learning Lab

This is an extracurricular activity that connects multiple schools online, a collaboration between the Kyoto Prefectural Board of Education and Ritsumeikan University. It supports after-school inquiry-based learning by using both Zoom and Teams. Please see how this "new type of extracurricular activity" is expanding, showcasing collaboration that transcends regional and grade-level boundaries.

Access to Desired Learning Opportunities for All.

There are cases where individuals cannot attend classes due to geographical or physical limitations, even if they are interested. The "Classroom of the Future" aims to resolve such educational disparities, contributing to the creation of a society where everyone has the opportunity to learn and grow.

Yuzuplus Co., Ltd.
30-13 Kisshoin Nakajima-cho, Minami-ku, Kyoto-City

3-2

VR

Keihanna Disaster Prevention VR Video From the Guest Room: Practical Hotel Evacuation VR Simulation

Experience a Seismic Intensity 7 Earthquake at Keihanna Plaza Hotel

You'll realistically experience evacuation from a guest room. The building is precisely recreated in 3D, and a seismic intensity 7 earthquake based on Japan Meteorological Agency strong-motion observation data is simulated. You can safely learn about the tension and difficulty of acting during a disaster within a virtual environment.

Learn Evacuation Behavior Through Self-Judgment

Starting in a hotel guest room, you'll immediately feel the tremor and proceed with evacuation actions while making real-time decisions on how to move. If you switch to a power outage scenario, you can experience hazards underfoot with only emergency lighting illuminating your path.

Practical Disaster Preparedness Learning Content

Natural disasters are difficult to predict, making it crucial to raise disaster preparedness awareness and learn evacuation procedures daily. We are expanding a culture of saving lives through pre-experience with disaster prevention VR.

Keihanna Research City Collaboration and Joint Activities Partners
Universal Robot Lab, Inc.
Amagasaki-City, Misono-cho 27-3 Saki Tower Sanctus 2304

3-3 strolling on air

VR

New experience of sightseeing the city from the sky

In this work, we've realistically reproduced the city's landscape using specially recorded photos and 360-degree panoramic images. Unlike map applications, you can thoroughly learn about the city's structure and characteristics. You'll gain an understanding of the city not just through its tourist spots, but also through explanations of its roads and land development.

Keihanna Science City is the newest addition

Following our previous additions of Tokyo's Shinjuku and Osaka City, we've now included Keihanna Science City. What makes Keihanna Science City unique isn't just its numerous research institutes, but also its systematically developed residential areas and wide, artery-like roads. This offers a valuable virtual experience, allowing you to view the charm of its urban design from above.

Keihanna Research City Collaboration and Joint Activities Partners
Kogakuin University VR Project
2665-1 Nakano, Hachioji-City

4 Keihanna Science City & Keihanna Expo 2025

Japan's leading science city

Keihanna Science City is situated in the lush green hills spanning Kyoto, Osaka, and Nara prefectures. Its official name is the Kansai Science City. It is one of Japan's leading science cities, developed in accordance with the law.

What is Keihanna Expo 2025?

With the Osaka-Kansai Expo as an opportunity, Keihanna Science City has gathered its wisdom to hold various events under the theme of “Contributing to the Future Society - Solutions for the Next Generation”. Festivals, a variety of lectures, and international conferences in the four fields of “Robot Avatar ICT,” “Wellbeing,” “Startup,” and “Science & Art” are currently being held.

Come to Keihanna to experience the future!

Keihanna Expo 2025 is being held until Saturday, October 11, 2025. Don't miss this opportunity to visit and experience the future that the science city aims to achieve.

Keihanna Expo 2025 Executive Secretariat
1-7 Hikaridai,Seika-cho,Soraku-Gun

Space introduction

A Spatial Design Covered in Kyo-Kawara “Kimono Tiles” & Featuring Non-Verbal Expression through Images and Music

This experience enables visitors to deeply engage with
Kyoto’s future and past through a minimalist and sereneenvironment
unified by original Kyo-Kawara “Kimono Tiles.”
Non-verbal images and audio are also integrated in harmonywith the environment,
expressing its multifaceted appeal.

Video introduction

Mulberry Fields

Location: Kyotango-City (Kyotango-City)
Cooperator: Santoku

Silk Glass

Location: Studio
Cooperator: ITOKO Co.,Ltd.

Silk Cocoons

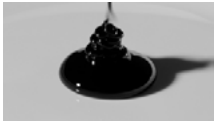
Location: Studio
Cooperator: Tango Textile Industrial Association

Kyoto Black Montsuki (Crest) Dyeing

Location: Kyoto Montsuki Inc. (Nakagyou-ku, Kyoto-City)
Cooperator: Kyoto Montsuki Inc.

Machine-woven Textiles

Location: Kojima Orimono Co., Ltd.
(Kizugawa-City)
Cooperator: Kojima Orimono Co., Ltd.



Dripping Lacquer

Location: Studio

Wisteria Thread

Location: The Fuji-ori Folk and Community Center
(Miyazu-City)
Cooperator: The Association for Preservation
of Tango Fuji-ori

Lacquer-tapping

Location: Yakuno-cho, Fukuchiyama-City (Fukuchiyama-City)
Cooperator: Tanba Urushi

Video introduction

African-print Fabric

Location: Studio
Cooperator: AFRIKA DOGS Inc.

AFRIKA DOGS Inc.

Location: AFRIKA DOGS
(Shimogyo-ku, Kyoto-City)
Cooperator: AFRIKA DOGS Inc.

Mother-of-pearl Woven Thread

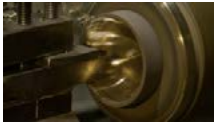
Location: Studio
Cooperator: Tamiya Raden Ltd.

Sparkling Seashell

Location: Studio
Cooperator: Tamiya Raden Ltd.

Kyogawara (Kyoto Roof Tiles)

Location: Kyogawara Co., Ltd.
Asada Kawara Factory
(Fushimi-ku, Kyoto-City)
Cooperator: Kyogawara Co., Ltd.
Asada Kawara Factory



Sahari Orin (Japanese Singing Bowl)

Location: Nanjo Kobo Ltd. (Uji-City)
Cooperator: Nanjo Kobo Ltd.

Erica

Location: Advanced Telecommunications Research Institute International
Deep Interaction Laboratory Group
Hiroshi Ishiguro Laboratories (Seika-cho)
Cooperator: Advanced Telecommunications Research Institute International
Deep Interaction Laboratory Group
(JST ERATO ISHIGURO Symbiotic Human-Robot Interaction Project)
(JST Moonshot R&D Goal 1 Avatar Symbiotic Society Project)

Harmony between Humans and Machines

Location: OMRON COMMUNICATION PLAZA
(Shimogyo-ku, Kyoto-City)
Cooperator: OMRON Corporation

Video introduction

Sensing Technology

Location: OMRON COMMUNICATION PLAZA
(Shimogyo-ku, Kyoto-City)
Cooperator: OMRON Corporation

Table Tennis Robot “FORPHEUS”

Location: OMRON COMMUNICATION PLAZA
(Shimogyo-ku, Kyoto-City)
Cooperator: OMRON Corporation

X-ray Generator

Location: Shimadzu Foundation Memorial Museum
(Nakagyo-ku, Kyoto-City)
Cooperator: Shimadzu Corporation

Chest X-ray Taken with the DIANA X-ray System

Location: Shimadzu Foundation Memorial Museum
(Nakagyo-ku, Kyoto-City)
Cooperator: Shimadzu Corporation

Microbial Culture System Converting GHGs into Resources

Location: Symbiobe Inc.
(NishiKyo-ku, Kyoto-City)
Cooperator: Symbiobe Inc.

Music introduction

The Concept of Jun'on Haikei

Jun'on Haikei is a collection of the sounds of present-day Kyoto Prefecture, in combination with sounds documented in historical records and other sources, that has been enhanced with other compositions to create a unique soundscape.

In 1996, the Ministry of the Environment (known as the Environment Agency at the time) designated the "100 Soundscapes of Japan"—a collection of sounds recognized for their particular significance in maintaining Japan's unique acoustic environment. The Ministry accepted submissions of a broad range of environments (soundscapes) featuring sounds that communities across the country cherish as local symbols and wish to preserve for future generations. Nearly 30 years have passed since then, and it is time to revisit the sounds of Kyoto Prefecture. Today, we are witnessing the acceleration of global warming and the seasons are gradually blending together. Under these circumstances, mountains, forests, and other elements of nature are becoming more important and precious than ever. Kyoto Prefecture is blessed with a rich natural environment, where beautiful sounds can still be found. Field recordings have been made to preserve them, with the hope that no more of the environment will be lost. This collection also contains newly recorded sounds beyond those already recognized in the previously mentioned "100 Soundscapes of Japan."
Works of literature also contain many descriptions of sounds. Before the invention of recording technology, people had been preserving sounds through verbal descriptions since ancient times. Preserving sounds through language in this way is also a form of field recording.

Field Recording List

Part-1 Rurikei stream (Nantan City) Wharf (Ine Town) Maizuru Port (Maizuru City) Miyazu Bay (Miyazu City) Iwashimizu Hachimangu Shrine (Yawata City)
Part-2 Kyoto Imperial Palace gravel (Kyoto City) Kiyomizu Temple (Kyoto City) Deer (Kyoto City) Mount Oe (Fukuchiyama City) Chirimen Kaido Tenmangu Shrine (Yosano Town)
Part-3 Kotohiki Beach (Kyotango City) Kototaki Falls (Kyotamba Town) Uji River (Uji City) Shinpukuji Temple water harp (Kameoka City) Myoshinji Temple (Taizo-in) water harp (Kyoto City)
Part-4 Ayabe-Ohashi Bridge, Yura River (Ayabe City) Minoyama Bamboo Grove (Yawata City) Koshoji Temple (Uji City) Kosei Water Park (Kameoka City) Shisendo Temple Deer Dance (Kyoto City) Gokonomiya Shrine (Kyoto City) Thunderstorm (Kyoto City)

Written Description Field Recordings List

Ohara, The Tale of the Heike: The sounds of bells, deer, and insects
Nonomiya, The Tale of Genji: The sounds of insects, wind through the pine trees, and court music instruments
Uji, Man' yoshu, two poems (1699 and 1700) composed on the Uji River: the sounds of geese and the river
Hojoji Temple, Eiga Monogatari, Vol. 17, Omugaku: Court music performances
Tango, Tango no Kuni Fudoki: Voices lamenting lost works and singing
Fukuchiyama, Oeyama Ekotoba: The sounds of thunder and ritual music
Iwashimizu Hachimangu Shrine, Noh Playwright Zeami, Yumiyawata & Hojogawa: Mysterious music and the sounds of nighttime ritual music
Hoshoji Temple, Ben no Naishi Nikki: The sounds of sarugaku theater performances in the back of the temple and bells
Junichiro Tanizaki, Senkantei, Yume no Ukihashi: The sounds of bamboo tubes filling with water and clacking against stone
Kotohiki Beach, Kiuchi Sekitei, Unkonshi: The sounds of the sandy beach
Kagero Nikki: The sounds of carts
Rakuyo Dengakuki: The sounds of a grand ritual music performance held in the Eicho era

Composition & Arrangement: Marihiko Hara
Guitar: PolarM
Field Recording Assistance: Masumi Muranaka
Research Assistance: Rurihiko Hara
Sound Design: Raku Nakahara (KARABINERinc.)
/ Ohshiro Sound Office Inc.
Production: MHStudioInc. / TSUYURI

空間デザイン協力　Space design cooperation
Sandwich　Sandwich

京瓦タイル「キモノタイル」製作協力　Kyoto tile "Kimono tile" production cooperation
株式会社京瓦 浅田製瓦工場　ASADA KAWARA FACTORY

テーマ映像制作　Theme video production
株式会社 青空　AOZORA,LTD

テーマ音楽制作　Theme music production
原 摩利彦　Marihiko Hara

大阪・関西万博きょうと推進委員会