KANSAI SCIENCE CITY

KEIHANNA SCIENCE CITY

Comprehensive Brochure

A Knowledge-Creating City That Pioneers the Future

Outline of the City

The Keihanna Science City (officially known as the Kansai Science City) is nestled in the green Keihanna hills stretching over Kyoto, Osaka, and Nara prefectures in western Japan. The city, which has been constructed and maintained under the Kansai Science City Construction Act, is one of Japan's national projects – much like the Tsukuba Science City in the east of Japan. Twelve cultural and scientific research districts (about 3,600 ha) scatter the 15,000 ha of land that makes up the Keihanna Science City. The city is about 30 km from the center of both Kyoto and Osaka cities, and about 10 km from the center of Nara city. With about 130 research facilities, including universities and cultural facilities, the city has accomplished remarkable success in the fields of cultural and scientific research.

Significance and Philosophy of the City's Construction

1. Creating a base for new developments in culture, science and research
2. Contributing to the development of culture, science and research in Japan and across the world, as well as to the development of the national economy
3. Foundation of a knowledge-creating city that pioneers the future

As various issues surrounding global human survival begin to arise in this present day in age, we need to pursue even further cultural and scientific studies concentrating on how to make sustainable societies a reality. The Keihanna Science City was constructed as a research space that focuses on subjects such as global environmental studies; cultural and scientific studies by combining the natural, cultural and social sciences; and various other studies that always keep ahead of the times.

Features of City Construction

The Active Involvement of the Private Sector /

To undergo the development of the Keihanna Science City successfully, the effective collaboration between the citizens and private sectors in the academic, industrial, and administrative fields is essential. This project uses "private sector vitality" as much as possible by assigning each sector roles and functions that make the best use of their strengths.

The Cluster-type Development /

In order to promote the balance of environmentally friendly development among the existing cities and towns, as well as the forestry, agricultural fields, and the natural environment, the Keihanna Science City employed a cluster-type development plan in which 12 cultural and scientific research districts are scattered – much like a cluster of grapes. The city also attempts to unify the entire city by assigning each district urban functions that take advantage of their strengths.

To prevent wasteful investments and unexpected major changes in development plans, we begin working on each district only when they fulfill all necessary conditions for development. This enables us to carry out the development in phases exactly as planned.

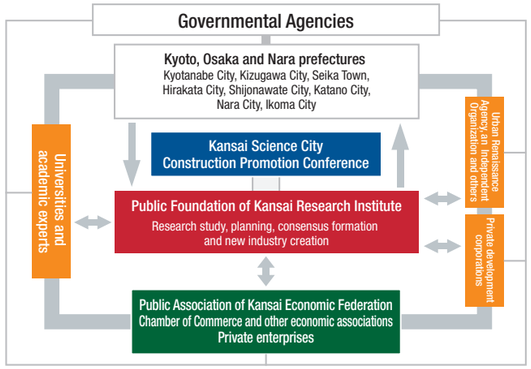
Development with a Fusion between Housing and the Cultural and Scientific Facilities /

The Keihanna Science City construction involves the development of the cultural and scientific facilities along with the residential areas. We aim to construct a fascinating city with a remarkable fusion of academic space and living environment by taking advantage of the convenience of a large city with many residents. In such a city, the collaborative research between institutions and citizens are made possible by asking citizens to participate in scientific studies and demonstrations.

History of City Construction

The construction of the Keihanna Science City was proposed by the "Kansai Science City Surveillance Conversazione" (Chairman: Azuma Okuda, former Head of Kyoto University) in 1978. The idea was finalized when the "Kansai Science City Construction Promotion Conference" was established in 1983, by Kyoto, Osaka, and Nara prefectures and economic organizations in the Kansai region. Following the enactment of the Kansai Science City Construction Act in 1987, full-scale construction began as a national project for Japan. About 30 years have passed since the law came into effect, and about 60 percent of the cultural and scientific research districts are now ready for use. We are currently in the process of moving onto the next step of construction to create a research city with top-level management systems – applying the knowledge and experience we have gathered over the course of our accomplishments with this project.

Organizational Structure for Promoting Urban Development



Kansai Science City Construction Promotion Conference

Established: March 15, 1983
Main Business: (1) Demand activities and public relations activities
(2) Attraction of cultural and scientific research facilities, etc.
Chairman: Shosuke Mori (Chairman of Kansai Economic Federation)
Representatives: (9 in total) The chairman of the Kansai Economic Federation, governors of 3 prefectures, presidents of 3 chambers of commerce, president of the Kansai Research Institute and an academic expert

Public Foundation of Kansai Research Institute

Public corporation established for the purpose of promoting construction of the science city
Established: June 19, 1986
Number of Directors: 15
President: Yasuo Kashihara (Vice-Chairman of Kansai Economic Federation)
Executive Managing Director: Hiroshi Seto
Directors: Individuals related to 3 prefectures, economic associations and enterprises

Structure and Scale of Keihanna Science City (As of April 1, 2015)

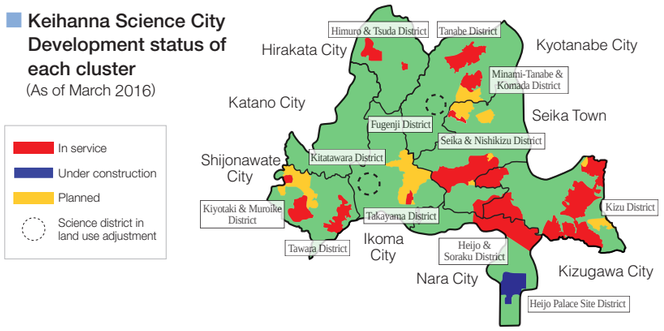
Status of Constitutive Autonomous Body
(Population includes the number of registered foreigners.)

Pref.	Municipality Name	Whole Governorate Population (persons)	Of which, Science City Area Land Area (ha)	Of which, Science City Area Population (persons)
Kyoto	Kyotanabe City	66,879	2,442	19,247
	Kizugawa City	73,319	2,362	50,276
	Seika Town	37,489	2,566	37,489
	Sub total	177,687	7,370	107,012
Osaka	Hirakata City	406,281	1,510	32,949
	Shijonawate City	56,455	1,470	11,316
	Katano City	77,928	1,550	14,632
	Sub total	540,664	4,530	58,897
Nara	Nara City	363,051	1,460	54,790
	Ikoma City	120,893	2,050	26,108
	Sub total	483,944	3,510	80,898
Total		1,202,295	15,410	246,807

Status of Each Cluster

Pref.	Name of Science District (Cluster)	Municipality to which belongs	Land Area (ha)	Planned Population (persons)	Current Population (persons)
Kyoto	Tanabe District	Kyotanabe City	100	0	73
	Minami-Tanabe & Komada District	Kyotanabe City, Seika Town	344	19,000	2,250
	Kizu District	Kizugawa City	737	32,000	15,015
	Seika & Nishikizu District	Kizugawa City, Seika Town	506	25,000	21,470
	Heijo & Sraku District <Kyoto Area>	Kizugawa City, Seika Town	264	30,000	17,540
	Fugenji District	Kyotanabe City	Undefined	—	—
	Kyoto Area Total		1,951	106,000	56,348
Osaka	Himuro & Tsuda District	Hirakata City	74	3,000	2,418
	Kiyotaki & Muroike District	Shijonawate City	340	3,000	145
	Tawara District	Shijonawate City	127	10,000	6,839
	Osaka Area Total		541	16,000	9,402
Nara	Heijo Palace Site District	Nara City	142	1,000	513
	Heijo & Soraku District <Nara Area>	Nara City	362	38,000	24,444
	Takayama District	Ikoma City	333	24,000	516
	Kitatawara District	Ikoma City	Undefined	—	—
	Nara Area Total		837	63,000	25,473
Total			3,329	185,000	91,223

Keihanna Science City Development status of each cluster
(As of March 2016)

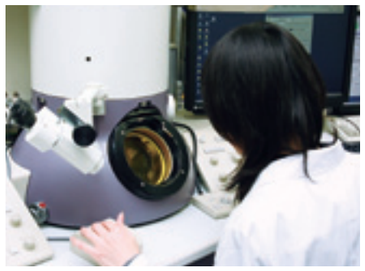


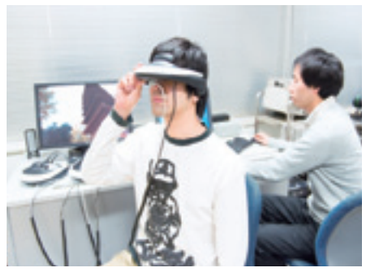
Keihanna Science City's Logo

"Keihanna" refers to the Kansai Science City. The logo of the city depicts a flying angel known as "Hiten," who scatters flower petals, plays music and burns sweet incense while flying in the sky. The gentle curves in the logo represent the slopes of the Keihanna hills, and the three patterns symbolize "time" accumulated throughout the past, present, and future. The three patterns also represent the cooperation between Kyoto, Osaka, and Nara, or the collaboration between industry, academia, and government.

New Industry Creation
from the Keihanna Science City

Industries, universities, and laboratories of various fields and scales reside in the Keihanna Science City. The city's missions are "to lead global knowledge and industries" and "to continuously stimulate the world with new innovations" by taking advantage of these facilities. To fulfill these missions, we are devoted to creating new businesses and industries by making the best use of our knowledge and technologies accumulated through our cutting-edge research and development. This also calls for the effective collaboration between industry, academia, and government, as well as the cooperation with various research centers and local industries outside the city. In today's global world, many researchers, businesses, and research institutions around the world are accessing the city. To further promote global access, we extended our research areas, enhanced our global communication channels, and improved our transportation systems by expanding the bus services, and repairing and construction of roads.
With the Keihanna Open Innovation Center (KICK) beginning its full operation, our new "open innovation" project has started to back up the city's promotion of innovative projects.
We will continue to grow like our innovation cluster by promoting the collaboration between the city's research faculties in the "information and communication," "environment and energy," "health care," and "biotechnology" fields and fully realizing their potential. We will be the creators of the new Keihanna businesses and industries.





Various Events
in the Keihanna Science City

The Keihanna Science City promotes various projects in which citizens and researchers alike can actively participate. The projects include events organized through the collaboration between industry, academia and government, in addition to sharing information about various research achievements with its citizens.

Various Events in the Keihanna Science City

University Cooperation Open Lecture

SSH Science Festival (Poster Session)

Keihanna Innovation Networking Event

Science Festival

Keihanna Business Messe

Meeting of Goethe

Keihanna Science Café

Keihanna Information and Communication Fair

Kyoto Smart City Expo

Keihanna Experience Fair

Takayama Science Festival

Keihanna Plaza Mini-Concert

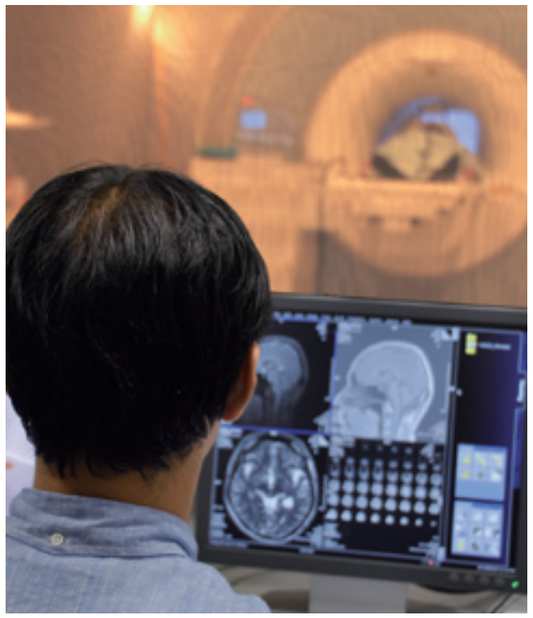
Advanced Research and Development
at Keihanna Science City

Keihanna Science City is home to research institutions, universities, and companies actively engaged in research and development in a wide range of cutting-edge technologies in the fields of environment, energy, information and communication technology (ICT), bioscience, optical science, nanoscience, and manufacturing.

Advanced Telecommunications Research Institute International (ATR)

We do research and development in the fields such as brain information science, life-supporting robots, and wireless communications. Our research activities include developing a mental illness treatment using fMRI (Decoded Neurofeedback) and networked BMI (Brain Machine Interface) in order to help elderly and physically challenged people live with greater independence.

A "brain-machine interface" (ATR) to support autonomous daily life

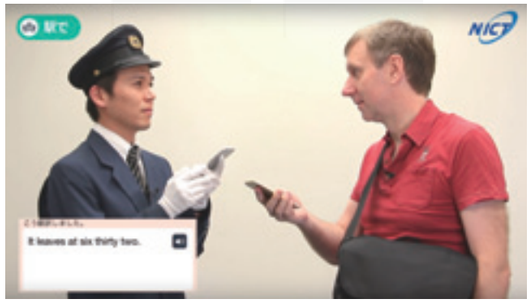


Brain studies utilizing fMRI and so on.

National Institute of Information and Communications Technology (NICT)

Dedicated to the development of heartfelt communication technology by overcoming barriers of language, culture and know-how, we develop the information analysis and multi-language translation technologies which are the core technologies to promote the globalization of our mutual communications.

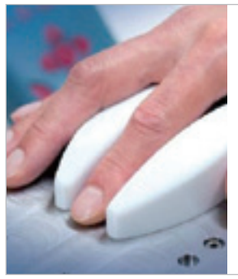
Multisensory interaction



VoiceTra
Network-based multilingual speech translation system for smartphones

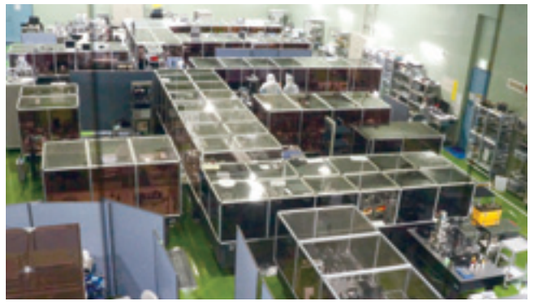
Quantum Science and Technology Research Institute (QST)

We develop the high intense laser (J-KAREN) devices, such as an instrument used for particle beam cancer therapy and a remote / non-contact control device to detect defects in concrete tunnels. We also promote the implementation of these technologies to our society.



A noninvasive palm-sized blood glucose level sensor that utilizes a laser.
No blood sampling and no needles necessary. Because it can measure simply with the touch of a finger, this sensor is useful for easy day-to-day blood glucose level management as well as for diabetes prevention in healthy persons. In addition, this sensor will reduce the blood sampling and data input burden on health care providers performing patient blood sugar measurements at hospitals and so on. Consequently, it is expected to lead to an increase in treatment speed.

High peak power laser J-KAREN (QST)



High average power laser QUADRA-T (QST)

Research Institute of Innovative Technology for the Earth (RITE)

We research and develop technology to realize the world where the both preservation of the environment and economic development are pushed forward without interfering with each other. Our research activities include the development of biorefinery technology to generate green energy from non-food plant using RITE bacteria for reducing amount of emission of warming gas, as well as developing technology to capture and store CO_2.

Observation of rocks with X-ray CT

Bio-fuel and chemical production from non-edible biomass that uses microorganisms

The CO_2 separation and recovery verification plant "CAT-30" in the COURSE50 project

Promoting the Creation of a Sustainable Model City

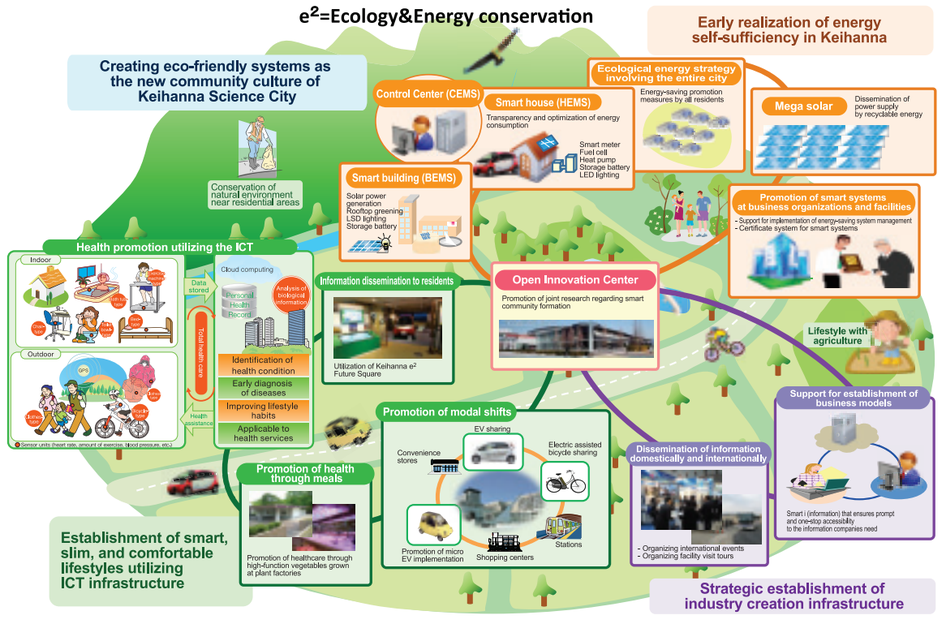
Creating eco-friendly systems as the new community culture of Keihanna Science City

Keihanna Science City established the Keihanna e² (Ecology & Energy Conservation) Future City Project to continue the progress of the Keihanna Eco-City Promotion Project into the third-stage plan, and has promoted the creation of a sustainable model city through the integration of science, technology, life, and culture.

The Creation of the Keihanna e² Future City

The smart, sophisticated and comfortable global model city, "Keihanna e² Future City," will be developed through the active participation of citizens and the close collaboration between industry, academia and government. Using ICT effectively, the system to sustain stable energy supply to the surrounding region as well as a new comprehensive social service system, including health care, will be built in the city. We will also create a new business model, incorporating our allied technology and social systems, to encourage domestic and global investments into the city.

Image of Keihanna e² Future City



To Become "Energy Self-Sufficient Keihanna"

The Keihanna Science City is devoted to becoming an energy self-sufficient city "Energy Self-Sufficient Keihanna*" in the nearest future by implementing various strategies to sustain the stable supply of energy. These strategies include introducing an energy management system that uses ICT, cutting CO_2 emissions in cooperation with energy consumers such as industries and local people, as well as using dispersed generation systems like renewable energy.

*We will define a state in which our energy supply surpasses our demands as "Energy Self-Sufficient Keihanna." To accomplish this state, we will continue to develop a new energy-conservative society using ICT, as well as promoting a "smart community" by making the best use of the strengths of each district.

The Creation of the ICT- Based Smart, Sophisticated and Comfortable Lifestyle

The Keihanna Science City was selected as one of the "Next-Generation Energy and Social System Demonstration Projects" by the Ministry of Economy, Trade and Industry of Japan. To establish the Keihanna model of smart grid (regional nano-grid), the city will carry out various experimental projects including the implementation of solar power and other renewable energies, introducing a large number of electric vehicles to the city, the "visualization" of energy consumptions by households, and the development of an optimal management system for households, buildings, electric vehicles and the whole region. Using these systems effectively, we aim to create a new smart and comfortable lifestyle for the city.

Building the Framework for the Strategic Development of New Industries

By applying the knowledge and accomplishments we have accumulated over the course of our research and experiments in the Keihanna Science City, we will help create new business models and distribute them within and outside Japan. We are building the framework for the strategic development of new industries with which we promote more investments into the city, enhance our industrial areas, and create more opportunities for industries to expand into overseas markets.

History of City Construction

1978
September: "Kansai Science City Surveillance Conversazione (Chairman: Azuma Okuda, ex principal of Kyoto University)" was set up.
November: Japan's Prime Minister approved a "Basic Development Plan for the Kinki Region" that included studies for the Kansai Science City Vision.

1981
November: Kyoto Pref. released a "draft of basic concepts to construct a culture, science and research city."

1982
June: National Land Agency announced the "Basic Concepts of the Kansai Science City (pilot plan)."

1983
March: The "Kansai Science City Construction Promotion Conference" was established by 3 prefectures, Kansai Economic Federation and others.

1984
February: Nara Pref. announced their "Basic Plan for the Kansai Science City."
March: Kyoto Pref. announced a "draft of basic construction plans (for the area in Kyoto Pref.) for the Kansai Science City."

1985
March: Osaka Pref. announced their "Basic Plan for the Kansai Science City."

1986
April: The Kyotanabe Campus of Doshisha University and Doshisha Women's College of Liberal Arts opened.
Doshisha-mae Station on the JR Katamachi Line opened.
June: The "Foundation (now Public Foundation) of Kansai Research Institute" was established by the Housing And Urban Development Corporation (now Urban Renaissance Agency), 3 prefectures and financial circles of the Kansai region.
September: The "Diet Member Confederation for Promoting the Construction of the Kansai Science City" was inaugurated.

1987
June: The Kansai Science City Construction Act was promulgated and enforced.
September: Kansai Science City districts were designated.
The "Basic Policy on the Construction of Kansai Science City" was determined based on the Construction Promotion Law for the Kansai Science City.

1988
June: "Hiten" was selected as the logo for the Science City.

1989
April: Advanced Telecommunications Research Institute International (ATR) opened.
August: The "Keihanna Corporation" was founded as the administrative body for establishing and managing cultural and scientific research exchange facilities.

1990
July: The Ion Engineering Center (now Ion Technology Center) opened./The Kiyotaki No.1 Tunnel on Route163 opened to traffic.

1991
April: Midori no Bunkaen (natural park) opened.
December: Keina Road (between Tanabe-Nishi and Seika-Shimokoma) opened to traffic.

1993
March: Keina Road (between Seika-Shimokoma and Yamadagawa) opened to traffic.
April: Cultural and scientific exchange facilities for "Keihanna Plaza" were completed and opened.
The first entrance ceremony was held at the Nara Institute of Science and Technology.
October: The International Institute for Advanced Studies (IIAS) opened (established in August 1984)./The Takayama Science Plaza opened.
November: The Research Institute of Innovative Technology for the Earth (RITE) opened.

1994
September: "Keihanna Science City Festival '94" was held (Opening of the science city).
Kizugawadai Station on the Kintetsu Kyoto Line opened.

1995
April: Kyoto Prefectural Keihanna Commemorative Park opened.

1997
April: The Kyoto Prefectural Agricultural Resources Research Center (now Biotechnology Research Department, Kyoto Prefectural Agriculture, Forestry and Fisheries Technology Center) and the University Farm, Faculty of Agriculture, Kyoto Prefectural University opened./Daini Hanna Road opened to traffic.

1998
February: Restoration work on the Suzaku Gate of Heijo Palace site was completed.
May: The Second Stage Plan Promotion Conference announced "Aiming for realization of Second Stage Plan."

1999
September: The Advanced Photon Research Center, Kansai Research Establishment, Japan Atomic Energy Research Institute (now National Instututes for Quantum and Radiological Science and Technology) commenced research.

2000
April: Keina Road (between Yamadagawa and Kizu) opened to traffic.
July: The Keihanna Human Info-Communication Research Center, Communications Research Laboratory opened.
The Institute of Free Electron Laser, Graduate School of Engineering, Osaka University open

2001
July: The Kids' Science Museum of Photons opened.

2002
April: The Ministry of Education, Culture, Sports, Science and Technology (MEXT) selected the "Science City Research Project" for the "Intellectual Cluster Creation Project."
October: The Kansai-kan of the National Diet Library opened.

2003
March: Daini Keihan Road (between Oguraike and Hirakata-Higashi) opened to traffic.
April: The Science City was authorized as a "Special Intellectual District," where visa requirements for foreign researchers were eased.
June: The "Keihanna Info-Communication Open Laboratory" of Keihanna Human Info-Communication Research Center, Communications Research Laboratory opened.

2005
April: The Keihanna New Industry Creation and Interactive Community Center opened.
November: Exchange promotion agreement was signed with Beijing Science Park.

2006
March: The "Third Stage Plan of the Kansai Science City" was formulated./The Kintetsu "Keihanna Line" started operation.
November: Doshisha University Gakkentoshi Campus opened.
December: D-egg (Organization for SMEs and Regional Innovation) opened on the Kyotanabe Campus of Doshisha University.

2007
March: Kizu-cho, Kamo-cho and Yamashiro-cho were consolidated into Kizugawa City.
April: The number of companies/organizations with facilities in the Science City exceeded 100.
October: The "Children Who Live in Science City" project was launched.

2008
May: The "Development of Ubiquitous Bio-instrumentation Healthcare Devices and Systems" was adopted by MEXT as a "City Area Program in Industry-Academia-Government Joint Research."

2009
July: The Kansai Research Institute was merged with the Keihanna New Industry Creation and Interactive Community Center.
September: The transfer of the farm attached to the Graduate School of Agriculture, Kyoto University to the Kizu district was agreed.

2010
January: Celebrations for the 1300th anniversary of Nara Heijo-kyo Capital started.
March: Daini Keihan Road (between Hirakata-Higashi and Kadoma) opened to traffic./ The "Keihanna Wide-Area Regional Basic Plan" was crafted to develop wide-area industrial clusters by creating new industr
April: The Science City was selected as one of METI's "Next-Generation Energy and Social System Demonstration Areas."

2011
April: Doshisha International Academy opened.
August: The Keihanna Science City Healthcare Development District was selected amongst regions promoting regional innovation strategies as one of the "Regions Focused on Strengthening International Com
December: The Science City was designated a part of the Kansai Innovation International Comprehensive Strategic Special Zone.

2012
July: It was determined to establish the farm attached to the Graduate School of Agriculture, Kyoto University in the Kizu district.

2013
April: Osaka Prefectural Kita-Osaka Advanced Vocational Training Center opened.

2014
March: The Kiyotaki No.2 Tunnel on Route163 opened to traffic.
April: The former "Job World (Watashi no Shigoto Kan)" was transferred to Kyoto Prefecture from the national government.

2015
May The Keihanna Open Innovation Center (KICK) opened.

2016
March "New City Development Plan" was formulated.

Kansai Science City Development Plan

Hirakata City
Ide Town
Joyo City
Kyotanabe City
Neyagawa City
Katano City
Ikoma City
Shijonawate City
Daito City
Higashiosaka City
Kizugawa City
Nara City
Seika Town
Seika & Nishikizu District
Himuro & Tsuda District
Tanabe District
Fugenji District
Minami-Tanabe & Komada District
Kiyotaki & Muroike District
Kitatawara District
Takayama District
Tawara District
Heijo & Soraku District
Heijo Palace Site District
Kizu District

Hirakatashi Sta.
Fujisaka Sta.
Tsuda Sta.
Nagao Sta.
Kisaichi Sta.
Shinobugaoka Sta.
Shijonawate Sta.
Ikoma Sta.
Kyotanabe Sta.
Kodo Sta.
Doshisha-mae Sta.
Miyamaki Sta.
JR Miyamaki Sta.
Shimokoma Sta.
Komada Sta.
Hosono Sta.
Shin-Hosono Sta.
Yamadagawa Sta.
Kizu Sta.
Takanohara Sta.
Yamato-Saidaiji Sta.
Kintetsu Nara Sta.
Nara Sta.
Gakken-Kitaikoma Sta.
Gakken Nara Tomigaoka Sta.

Yawata JCT
Joyo JCT
Daini Keihan Road
Shin-Meishin Expressway
Keihan Main Line
Keihan-Katano Line
JR Gakkentoshi Line
Osaka International University
Hirakata-Higashi IC
Tanabe-Nishi IC
Yamate-Kansen Avenue
JR Gakkentoshi Line
Kintetsu Kyoto Line
JR Nara Line
Doshisha Women's College
Doshisha University
Kansai Gaidai University
Hirakata-Yamashiro Route
Hirakata-Yamato-Koriyama Route
Keihanna Expressway
Seika-Shimokoma IC
Shimokoma-Ekimae Route
Seika-Gakken IC
Keihanna Plaza
Seika Odori Avenue
Nara Seika Route
Nara Nishikizu Route
Yamadagawa IC
Kizu Bypass
Kizu-Ekimae Higashi Route
Higashi-Cho Route
Teijin-Yama Route
JR Kansai Main Line
Kizu IC
Narazaka-Minamitawara Route
Osaka Electro-Communication University
Osaka Outside Loop Route
Kintetsu Keihanna Line
Kintetsu Nara Line
Hanna Road
Daini Hanna Toll Road

Legend

- Prefectural boundary
- City boundary
- Railway/Station
- Inter-regional trunk road (In service)
- Inter-regional trunk road (Under construction)
- Inter-regional trunk road (Planned)
- Regional trunk road (In service)
- Regional trunk road (Under construction)
- Regional trunk road (Planned)
- Expressway (In service)
- Expressway (Under construction)
- Kansai Science City district
- Science district
- Science district in land use adjustment

Cluster land use plan

- Science City site
- General housing lot
- Planned housing lot
- Roadside housing lot
- Residential complex
- Planned building site
- City administration facility
- Center site
- Roadside facility lot
- Educational facility
- Welfare/Public interest facility
- Park/Green space/Collective farm

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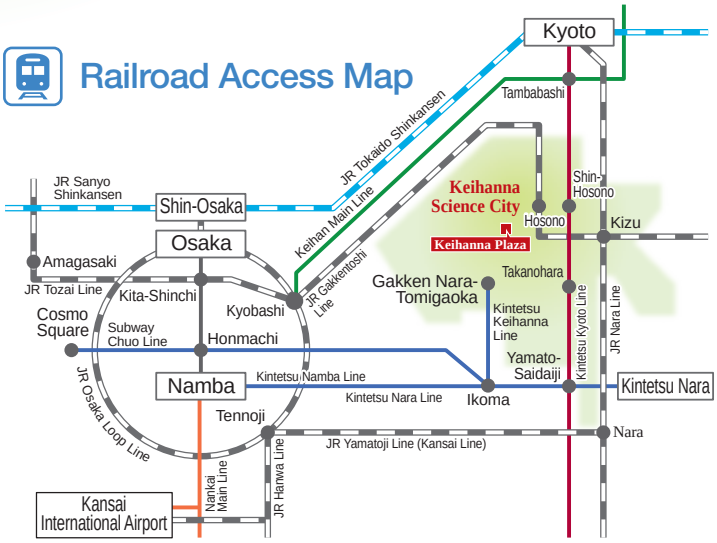
Access Map

Road Access Map

Railroad Access Map



Public Foundation of Kansai Research Institute
Kansai Science City Construction Promotion Conference

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