Kyushu University ITO New Campus and Academic City

Executive Vice President  IMAIZUMI, Katsumi
Topics

- Relocation Schedule
- Location and Transportation around Ito Campus
- Kyushu University Academic City Plan
- Research Institution Locations
- Community Development
  (Town Rezoning, and New roadways)
- Present Situation of Ito Campus and the Master Plan
- Campus for Demonstration Experiments
- Regional Cooperation
## Relocation schedule

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>October</td>
<td>Decision to relocate to <strong>Motooka/Kuwabara</strong> district, Nishi-ku, Fukuoka City</td>
</tr>
<tr>
<td>2000</td>
<td>June</td>
<td><strong>Groundbreaking</strong> on Sector I</td>
</tr>
<tr>
<td>2001</td>
<td>March</td>
<td><strong>New Campus Master Plan 2001 Decision.</strong></td>
</tr>
</tbody>
</table>
| 2003 | January | Start of construction on Engineering-Related Research and Education Building II and III accommodating about 2,000 students and faculty members in mechanical and aeronautical engineering and materials science.  
•Floor area: about 45,000 m² |
| 2005 | October | Start of operation on Ito Campus, Engineering-Related Research and Education I |
| 2006 | October | Start of operation on Ito Campus, Engineering-Related Research and Education II |
| 2009 | April | Start of operation on Ito Campus, General Undergraduate Education |
| 2014 | | Science-related Faculties scheduled relocation |
| 2017 | | Humanities-related Faculties scheduled relocation |
| 2019 | | Agriculture-related Faculties scheduled relocation **Completion of Relocation** |

**Total relocation population 18,700 students and faculty**
New Ito Campus and Academic City

Fukuoka City and Kyushu University
Transportation (Nishitetsu Bus) 2005.9~

Number of services  45 Buses
Time to destination  43 ~ 55 minutes
Price:  From Tenjin  ¥600 (adult)
        From Hakata  ¥650 (adult)
Ito Ecole card (free pass ticket)  ¥9000/month (Students only)

<table>
<thead>
<tr>
<th></th>
<th>2009.4</th>
<th>2010.4</th>
<th>2011.4</th>
<th>Flucation 2011-2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday</td>
<td>44.5</td>
<td>45.0</td>
<td>45.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Saturday</td>
<td>14.5</td>
<td>15.5</td>
<td>15.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Sunday</td>
<td>9.5</td>
<td>10.5</td>
<td>10.5</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Transportation (Showa Bus) 2005.9～

Number of services 104.5 Buses
Time to destination 15 minutes
Price ￥200 (Adult)
￥100 (Student of K.U.)

<table>
<thead>
<tr>
<th>Route</th>
<th>Yokohama</th>
<th>Ito Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Showa Bus service (Unit: Number of round trip per day)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2009.4</th>
<th>2010.4</th>
<th>2011.4</th>
<th>Flucation 2011-2010</th>
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</thead>
<tbody>
<tr>
<td>Weekday</td>
<td>71.0</td>
<td>89.0</td>
<td>104.5</td>
<td>15.5</td>
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<tr>
<td>Saturday</td>
<td>20.0</td>
<td>30.5</td>
<td>41.5</td>
<td>11.0</td>
</tr>
<tr>
<td>Sunday</td>
<td>20.0</td>
<td>30.5</td>
<td>41.5</td>
<td>11.0</td>
</tr>
</tbody>
</table>

Route Izumi

Route Kyudaigakken-toshi Sta.
Number of Itoshima City Bus service
(Unit: Number of round trip per day)

<table>
<thead>
<tr>
<th></th>
<th>2009.4</th>
<th>2010.4</th>
<th>2011.4</th>
<th>Flucuation 2011-2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday</td>
<td>18.0</td>
<td>21.0</td>
<td>31.5</td>
<td>10.5</td>
</tr>
<tr>
<td>Saturday</td>
<td>9.0</td>
<td>9.0</td>
<td>9.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Sunday</td>
<td>9.0</td>
<td>9.0</td>
<td>9.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Number of services 31.5 Buses
Time to destination
From Maebaru 15 minutes
From Hatae 10 minutes
From Susenji 15 minutes
Price ¥200 (Adult)
¥100 (Student of K.U.)
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Kyushu University Academic City Plan

● Area covered by the plan

The planned area stretches from Fukuoka City to Karatsu City, running along the Genkai Sea coast.

Primary Region:
The entire Itoshima Peninsula, centered on the Kyushu University campus, serves as an area for daily activities.

Secondary Region:
The area within a half-day’s travel from the new Kyushu University campus, spanning the area between Fukuoka City and Karatsu City.
Kyushu University Academic City Plan

Key plan concepts

Two core Areas
◆ A regional science and technology system to facilitate knowledge exchange and promote creative activity
◆ A newly-developed area to serve as the base for knowledge related, residential and leisure time activities

Dispersed regional cores (HOTARU)

The regional cores will receive R&D and industrial support from the core zone, branches of R&D firms, and new residential areas. As a model of new development for the 21st century, this approach is based on coexisting with nature and the environment in the Itoshima region.
Organization for Promotion Academic City by Kyushu University
(.OPACK) 2004.10~

Industry
- Kyushu Economic Federation
- Tokyo council
- Adviser

Academia
- Kyushu University
- Board of Directors
  - Board chairman
  - Vice chairman
  - Commissioner
- Whip

Government
- Councilors
- Fukuoka Pref.
  - Fukuoka City
  - Itoshima City

Staff Office (OPACK)
- Chief (Fukuoka Pref.)
  - Industry-University cooperation senior manager (Kyushu Electric Power Co.)
  - Vice Chief
  - Urban planning senior manager (Fukuoka City)
  - Research senior manager (Kyushu University)

Business Location Support Group
Public Relations Planning Group
Role of OPACK

OPACK makes the best use of Kyushu University’s intelligent resources, and provides a location for cooperative research with businesses and promoting a deeper relationship between industry, academia, and government, ultimately contributing to a stronger local economy.

3 Guidelines of Community Design

1. Community research status
   Inviting industry to the research center

2. Community innovation development
   Promotion of start-up ventures

3. Convenient R&D community
   Preparation of an attractive research environment

4 Activities

1. Planning • Public relations
   Provide Information on seminars and exhibitions etc.

2. Research Support
   Supporting new industry and techniques such as hydrogen energy, nanotechnology, IT etc.

3. Industry Location Support
   Support for new start-up businesses and research.

4. Communication Support
   A Coordinator of industry, academia and government.
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Inamori Frontier Research Center is a research center working to achieve the "Dreams of Humanity" for 2050 by innovating technologies needed to provide secure and comfortable lives. Since 2009, the center has focused on several divisions to achieve these goals:

**Environmental Technology Research Division**
Research into next-generation environmental technologies such as environmental remediation technology for residential and urban environments.

**Frontier Energy Research Division**
Research into next-generation energy technologies such as inorganic materials and processes for hydrogen devices and fuel cells (SOFC, etc.).

**Advanced Electronics Research Division**
Research into device technologies designed to coexist sustainably with humanity and the natural environment, and advanced materials technologies to serve as the foundation for new communication and information technologies.

**Research Division of Science and Technology for Soft Materials**
Research into technologies for control and evaluation of supramolecular chemistry, to assist in the design, development and implementation of functional molecules.
International Research Center for Hydrogen Energy

Research on Fuel cell systems, Hydrogen storage systems and hydrogen use.

The hydrogen materials research institutions are on scale with the largest in the world.

Hydrogen station
Demonstration experiments on hydrogen use.

National Institute of Advanced Industrial Science and Technology
Research Center for Industrial Hydrogen Use and Storage

Research Institution Locations
Research Institution Locations (Itoshima Research Park)

Hydrogen Energy Test and Research Center

Maebaru I.C.

Nishi Kyuushuu Expressway

Hydrogen Energy Test and Research Center

Experimental Center for Social System Technologies

Research Center for Three-Dimensional Semiconductors

Since 2010.4

Purpose:
Support of new start-up businesses and research

Service:
- Prototype testing
- Development of product testing protocols
- Hydrogen products R&D
- Seminars and public relations activities
Research Center for Three-Dimensional Semiconductors

This institution of industry - government – and academic cooperative research and development on the advanced technology of packaging semiconductors.

Experimental Center for Social System Technologies

This institution supports the comprehensive evaluation and the demonstration of applied instruments and services in the semiconductors field.

Research Institution Locations (Itoshima Research Park)
Research Institution Locations
Fukuoka Industry-Academia Symphonicity  Since 2008.4

- Communications hall
- 9 laboratories and 12 offices available for rent

0.4ha
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Community Development (Ito Land Rezoning Project)

Construction of a train station, highways and housing units is underway in the area to construct an ideal academic environment (1997～2013)
Community Development (Ito Land Rezoning Project)

- Shopping Mall (2006.8~)
- JR Kyudai-Gakkentoshi Station (2005.10~)
- OPACK Office
- Community center ‘Saitopia’ (2010~)
Community Development (Tajiri Land Rezoning Project)

New suburb housing zone (40.4ha)

Formation of housing with full amenities for researchers, staff, faculty, and students of Kyushu University.
Community Development (Gakuen-Dori avenue)

Total length: 4,180m  Road width: 27～36m  Sidewalk width: 9m
Community Development (Motoooka Land Rezoning Project)

Concept
To serve as both the “Entrance” of Ito Campus and a “Symbol” for the Academic City

2009.9~ Start of land rezoning (16 ha)
2011.4 Designated as a controlled district landscape
2012.3 Construction scheduled to be completed

Motoooka District’s Role
① Research and Development
② Support of Research
③ Housing (1500 for students, 200 for public)
④ Support of for daily life (store, restaurant, public interest)
Community Development (Motooka Land Rezoning Project)

Walking Route from Univ.

Daily-Life Support zone 1.5ha

Housing zone 2.6ha

Research & Development zone 4.7ha

Housing zone 0.9ha

Road, Park, Reservoir, etc. 3.4ha

Intermixed zone
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Ito Campus – Present Status

- General undergraduate education (2009)
- Science-Related Faculties (2014)
- Humanities-Related Faculties (2017, 2018)
- Agriculture-Related Faculties (2019)

(Photo: 2010. Feb)
Construction of Engineering-Related Facilities (1st Stage)

- Research Center for Industrial Hydrogen Use and Storage
- International Research Center for Hydrogen Energy
- Hydrogen Station
- Ito Library
- Lecture Hall West-Faculty of Engineering
- West 2
- Inamori Center (2009.10～)
- Science and Technology Library (2009.10～)
- Open Learning Plaza (2009.10～)
- Big Dora (Cafeteria, Bookstore, Store)
- Engineering-Related laboratory
- Biodiversity Preservation Zone
- WEST 3
- WEST 4
- WEST 2
Construction of the Center zone (2nd Stage)

- Center zone 1
  - Gymnasium
  - Faculty for Extra-Curricular Activities
- Center zone 2
  - Restaurant and Shops “Big Sando”
  - Facility of Languages and Cultures
  - Place for science-related Faculties
- Campus common
- Athletic field
- Retention basin
- Campus mall
- Gakuen-Dori Avenue
- Water Supply Center
- Big Orange

Campus common
Kyushu University New Campus Master Plan 2001
Lot Area 275 ha
Gross Surface Area 500,000 m²

New Campus Master Plan 2001
1. An Urban campus open citizens

2. An oasis campus based on nature and history

3. A campus devoted to conducting real experiments with the aim of facilitating next-generation technology.

21st Century Concepts for a New Campus
1. An Urban Campus Open to Citizens
Section of West Zone Facilities
Plan of West Zone Facilities

Laboratory Zone

Office Zone

Standard Floor Plan (4 F~)
1. An Urban Campus Open to Citizens

Dormitory and ‘Big Dora’ Restaurants & Shops
1. An Urban Campus Open to Citizens

Science and Technology Library
1. An Urban Campus Open to Citizens
1. An Urban Campus Open to Citizens
1. An Urban Campus Open to Citizens
1. An Urban Campus Open to Citizens

Public Space Design Manual
工学研究院
Faculty of Engineering

*レイアウトのバランスは扱う文字の大きさにより微調整が必要。
*文字に長体をかける場合は80%より小さくならないようにする。

パノラマ視角
拡大視角

写真処理カラーパレット（36色）
色彩構成比

アドレスサイン
説明サイン
記名サイン

標準タイプ支柱色
標準タイプ案内サイン
（フロストガラス）

駐車場サイン
禁止、規制サイン（ピクトグラムを除く）

UI公式指定色

みどり
赤
青

Public Space Design Manual
An Urban Campus Open to Citizens
(Town on Campus community design promotion council)
2. An Oasis Campus based on Nature and History

Greenery Control and Planning
2. An Oasis Campus based on Nature and History

Bamboo Trimming by Students and Faculty

Planting by Children

Greenery Control and Planning
2. An Oasis Campus based on Nature and History
2. An Oasis Campus based on Nature and History

Skyline of University
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We are consistently striving to implement and apply Environment and Energy research in order to contribute to the development of a sustainable society.

**Environment and Energy Campus Design**

Present ~

Energy of Carbon Resources
- Environmentally friendly R&D on Carbon resources

After 10 years ~

Hydrogen Energy
- R&D and Demonstration experiments on Hydrogen utilization

After 30 years ~

Nuclear Fusion Energy
- Active ITER plan participation

**Sustainable Natural Energy**
- Wind energy
- Wave energy
- Geothermal energy, etc…
Multi/Inter-Disciplinary Research Program
Carbon-Neutral Energy-Fueled Society

H₂
- Production, Storage, and Distribution

CO₂ in Earth and Ocean
- Risk Management of CCS

Efficient Hydrogen Storage Materials

Hydrogen Structural Materials (compatible with hydrogen)

Next Generation Fuel Cells (novel materials and devices)

Optimum and Intelligent Material Transformations (waste-free)

Solar H Production Artificial Photosynthesis

Thermophysical properties (H₂, CO₂)

CO₂ Separation & Concentration (low energy separation)

CO₂ Geological Storage (long term behavior of CO₂, stability)

CO₂ Ocean Sequestration (CO₂/Ocean-turbulence interaction)

Understanding Interface-gas reactions
- absorption, adsorption, dissolution, diffusion, reaction, conduction, etc.

Temporal scale
- Nanoseconds --- decades

Spatial scale
- molecular --- earth, ocean

Atomic --- Macro
Campus for demonstration experiments

Towards a worldwide position in hydrogen research
(Verification activities in cooperation with local government)

“Hydrogen highway” Fukuoka ~ Kitakyushu

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010~</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen station</td>
<td>(construction)</td>
<td>(operation, supply hydrogen)</td>
<td></td>
</tr>
<tr>
<td>Fuel-cell vehicle</td>
<td></td>
<td>(Test Run Experiments)</td>
<td></td>
</tr>
<tr>
<td>Hydrogen engine vehicle</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Campus for demonstration experiments

Wind-lens Turbine

The diffuser shroud and the brim create strong vortices that produce a low pressure region behind the turbine. This low pressure then results in a greater concentration of wind flowing into the Wind Lens.

- 70 kW × 2
- 5 kW × 10
- Estimated annual electric energy output amount: 120000 kWh
Campus IC card (2006~)

Kyushu University’s Campus IC card, developed with Media Independent ID, utilizes integrated circuit technology for Campus identification management.

IC card Functions
- IDs for students & staff
- Keys to buildings, facilities, and parking
- Library
- E-money (Bus, Co-op store, etc...)

Also, there future expansion of this technology within Asia may become possible as joint research with the Grameen group is currently being conducted in Bangladesh.

Our Aim is for a “Global standard” starting from Fukuoka
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Regional Cooperation

“ITO SAI”
Held annually since 2007, Ito Sai is a local festival that incorporates the entire Ito community

- Festival Highlights
  - Scientific seminar
  - Food stalls
  - Festival music
  - Candlelight Decoration
Regional Cooperation

Agricultural cooperation

Agricultural Study and Communication Tour in Motooka near Ito Campus for International Students of Kyushu University

Typical program schedule

13:50 Departure (Hakozaki)
14:30 Orientation
15:20 Training session
   1. Visit chrysanthemum cultivation facilities
   2. Visit rose cultivation facilities
   3. Farm Tractor Demonstration
17:00 Communication with future farmers
18:00 A light meal
18:30 Festival “Motooka Gion Bayashi”
19:00 Festival music (drum, shamisen, etc.)
20:30 Departure from Motooka
21:10 Arrive in Hakozaki

Organizer／Young Group of Motooka branch, JA Fukuoka and Kyushu Univ.
Regional Cooperation

Other Agricultural Cooperation

Local farmers supply fresh vegetables to Kyushu University, which are available for purchase at Big Sando and in the dormitories.

Once a month, local farmers volunteer to share recipes in the dormitories.
Kyushu University will continue its challenge of reaching out to the world from Fukuoka by illustrating its firm commitment to the pursuit of leading academic research.

Kyushu University continues to grow together with the city of Fukuoka.

Fukuoka and Kyushu University, together standing side-by-side