Creating a sustainable town in the same way as a campus

Kashiwa-no-ha International Campus Town Project

Takeshi Ueno

Winter 2018
Chiba University, Facts

- Undergraduate: 11,179
- Graduate: 3,876
- Faculty: 1,218
- Staff: 1,490
- Total: 17,763
- International: 1,100

- Land: 96ha
- Building: 475,844㎡
- Budget: ¥60,209M
- Energy Cost: ¥1,269M
- CO₂: 34,256t

Nishi-Chiba Campus
- Liberal Arts & Sciences
- Letters
- Education
- Law & Economics
- Science
- Engineering

Inohana campus
- Medicine
- Nursing
- Pharmacy
- Hospital

Matsudo Campus
- Horticulture

Kashiwa-no-ha Campus
- Environment, Health & Field Science
- Preventive Medical Science

Technical Panel on Sustainable Design – Takeshi Ueno
Campus is an experimental model; a living laboratory.
New Roles of University

A Model of College-Linked City

Sustainable Town Management through Knowledge Linked Connection

Close Relationship to CITY by Space-making and Knowledge-linking Power of Universities
The Challenge of the Kashiwa-no-ha Campus Town

The Co-creation Smart-city Project with Public-Private-Academia Partnership
Public-Private-Academia Partnerships for Sustainability

INTERNATIONAL CAMPUS TOWN KASHIWANOHA

Kashiwa City
Univ. of Tokyo
Chiba Univ.
Mitsui Fudosan

Birch of Kashiwa

Environmental Technology
Public Transportation
Community Development
Community-Based Eco-Action

Physical

Non Physical

Environmental Technology and Civic Activities
Laporte Kashiwanoa, located in front of the station, features a research area for citizens to interact and enhance environmental awareness by saving natural resources. Eco-friendly measures include wind and solar power generation, which help meet electricity needs.

Apartment Building CO2 Emissions Monitoring
The Park City Kashiwanoa residential complex contains a sophisticated CO2 system to monitor and manage building energy usage, ensuring energy-efficient design.

New People-Powered Public Transportation
The "Vibebus" pedal-powered electric vehicles from Germany are famous for zero-emission performance, creating jobs and preserving natural landscapes. Users in Kashiwanoa can enjoy the unique experience of walking or cycling to the station.

Urban Design School Supports Community Development
Urban Design Center Kashiwanoa offers free courses taught by renowned development leaders, including Kashiwa City Mayor Akira Honda and University of Tokyo Professor Takeshi Kijima. The program encourages citizen participation, interaction, and feedback in town planning.

Community-Based Eco-Action Hands-on Tours
Kashiwanoa Eco-Design Tours promote hands-on experience and appreciation of the environmental programs developed at local universities and other major faculties. Participants learn techniques and knowledge applicable to the home, contributing to greater eco-awareness.

Technical Panel on Sustainable Design – Takeshi Ueno
Kashiwa-no-ha New Town Under Development

**Kashiwa-no-ha Campus**

- A land readjustment project area covering 273 hectares with planned population of 26,000
- Developed from scratch
  - Leveraging advanced knowledge and technologies
  - A social experiment in which residents are participating

Technical Panel on Sustainable Design – Takeshi Ueno
Kashiwa-no-ha in 2004

Pre-opening of Tsukuba Express Line
Kashiwa-no-ha in 2013

Condominium (1st Phase: 1,000 Units)

The University of Tokyo

Sports Park

Governmental Institutions

Industrial Park

Natural Park & Sanctuary

Joban Highway

High School

Chiba University

Gate Square (3rd Phase:)

Condominium (2nd Phase: 880 Units)

"Kashiwa-no-ha Campus" Railway Station

Tsukuba Express Train (TX)

Route 16

Land Adjustment Project Implemented Area

Technical Panel on Sustainable Design – Takeshi Ueno
Kashiwa-no-ha International Campus Town Initiative

The vision has been developed by Governments & Universities (Chiba Pref., Kashiwa City, Univ. of Tokyo, Chiba Univ.)

**Vision**: International Academic Research City

Next generation environmental City

• **Interaction of Universities and Communities**

• **Town as like a campus**

Public sector

Private sector

Academia

Creation of new industry & culture

Residents

Governments

Students

Business

Technical Panel on Sustainable Design – Takeshi Ueno
## Kashiwa-no-ha International Campus Town Initiative: The 8 goals

| 1 | Sustainable Garden City | 1 Preserve and Strength the green networks 40% Green Field  
2 Achieve High Sustainable Buildings as “Kashiwa Model”  
3 Promote Environmental Symbiosis Lifestyle |
|---|-------------------------|---------------------------------------------------------------|
| 2 | Creative Culture & Industry | 1 Promote 100 Industry Incubation and 10 Investment by TX Wide Partnership  
2 Construct TX Knowledge Network in Tsukuba-Akihabara Line  
3 Advance Existing Industry and exceed environment development and competitiveness |
| 3 | International Academic Community | 1 Attract 10 Research & Educational Institution  
2 Improve Living Environment for Foreign Researchers and students  
3 Incubate Global Frontier Human Resources from Kashiwa-no-ha  
4 Create Original Culture and Space by Partnership of Univ., Region and Research Institutions |
| 4 | Low Carbon Mobility System | 1 Create Global Model Mobility System Environment  
2 Create Network of Enjoyable walking and bicycle way  
“Increase 10% use of bicycle” “Decrease 10% use of cars” |
| 5 | Suburban Style of Living | 1 Entrench Health, Enriched Environmental based Kashiwa-no-ha Life Style  
2 Supply Diverse Housing  
3 Enrich Life and Space by Agricultural, Food Industry |
| 6 | Participation and Partnership | 1 Management by increasing the quality of environment health life style  
2 Management to Increase the Value of security and amenity  
3 Independent Management by partnership of Public-Private-Academia |
| 7 | Quality Urban Space | 1 Create Flexible Urban Space as University Campus  
2 Create University Axis for University to connect with region  
3 Create Green Axis for diverse activity with in Green Space  
4 Promote Urban Design based on UDCK  
5 Promote Urban Design through out and out side Kashiwa City and along TX |
| 8 | Innovation Field | 1 Appeal International Academic Research based City  
2 Support Social Experiment and Supply Action Programs |

Technical Panel on Sustainable Design – Takeshi Ueno
Kashiwa-no-ha International Campus Town Initiative: Numerical Targets

- Networking TX Enterprise Zone
- Over 100 New Venture Companies Production
- Over 10 Companies

- Introduction of Sustainable Building Models
- 35% Reduction of CO\textsubscript{2} less than conventional Urban Development

- Increasing 10% of Bicycle Trip Share: 17% => 27%
- Reducing 10% of Car Trip Share: 36% => 27%

- Preservation and Strengthening of Green Network
- Green Coverage Area: Over 40%
Kashiwa-no-ha International Campus Town Initiative: Key Concept

- Model of Combination of Three Different Types of Problems Confronted by Advanced Cities
- Promotion with Support and Subsidy by National Government and Designation of Special Zone → “Future City” Initiative

Toward a Model City for Problem-Solving to be Shared in Advanced Cities

**Energy-conscious Eco City**
- Local Management of Energy
- Reduction, Creation, Storage of Energy
- Local Production of Energy
- New Transportation System
- Life line Security in Emergency

**Health & Longevity**
- Preventive Care for Seniors in Collaboration of Local Community
- Induction of Positive Social participation by Seniors
- Vitalization of Exchange among Multi-generation through ICT

**New Business Creation**
- Fostering Venture Business with support by Local Society
- New business for Green economy
- Creation of International Venture Business Community
Area Energy Management System (AEMS) of Kashiwa-no-ha Smart City

Resiliency, battery storage, and real-time display

Source: Mitsui Fudosan: Environmental Initiatives, Kashiwa-no-ha Smart City
Kashiwa-no-ha International Campus Town Initiative: **Key Organization**
Urban Design Center Kashiwa-no-ha (UDCK) Since 2006

**Hub for Collaboration with Public-Private-Academia Partnership**

**composition groups**
- Public
  - Kashiwa city
  - The Kashiwa Chamber of Commerce and Industry
  - Regional Council of Tanaka area
- Private
  - Mitsui Fudosan Co., Ltd.
  - TSUKUBA EXPRESS (Metropolitan Intercity Railway Company)
- Academia
  - The University of Tokyo
  - Chiba University

**cooperative groups**
- Kashiwa City Development & Promoting Foundation (An affiliated organization of Kashiwa City)
- Chiba prefecture
- Wacoal Art Center/SPiral (Art Direction)
- Urban Design Institute Co., Ltd. (Promotion of all initiatives, such as research and analysis area)
- UG Toshi-Kenchiku Co., Ltd. (Urban design strategy, and support for Business Creation)
- NPO Support Center Chiba (Civic action support)
- Japan Life Design Systems (Planning and Management Program)
- PRAP Japan, Inc. (PR)
- YRP Ubiquitous Networking Laboratory (Ubiquitous, regional ICT)
- FUJISAKI OFFICE CO., LTD. (Promotion of Environment and Health)
Kashiwa-no-ha International Campus Town Initiative : Key Organization

Functions of UDCK As Center of Human Activities, Information, Ideas

1) Collaboration Platform

- Networking Stake Holders
- Promoting Collaboration Works
- Sharing Information
- Incubating and Innovating Ideas
- Promoting Social Experiment

2) Think Tank

- Proposing Policies and Plans
- Improving Implementation Methods
- Analyzing Problems
- Forming Design Principles and Guidelines
- Proactive Treatment

3) Publicity Channel

- Organizing Events and Exhibitions
- Publication, Web Design
- Press Release, Propaganda

Goal: Sustainable Development & City’s Brand
Local Transportation for Semi-public & Low-carbon Mobility such as On-demand Bus System, Bicycle Sharing System, Velotaxi and Segway
Kashiwa-no-ha International Campus Town Initiative: Social Experiment

Car Sharing System for Short-distance Transportation in Combination of Electric Cars, Electric Bikes, and Bicycles
Universities and Companies

Seeds of Innovated New Knowledge and Technologies

Application to the Area

Analysis
Proposal
Social Experiment
Implementation & Management

Social Needs for Daily Life
Area Resident’s Practice
Community’s Conduction and Feedback
Implementation of Local Government Sectors

FUNCTIONS
Collaboration Platform / Think Tank / Publicity Channel

Toward Sustainable Development with Local Community-based Strategies
Kashiwa-no-ha International Campus Town Initiative: Education Program

Urban Design Studio (practice for graduate student)

3 universities exchange program (Univ. Tokyo/Chiba Univ./Tokyo Univ. of Science)
Field study, design & proposal on Kashiwa-no-ha Area
Kashiwa-no-ha International Campus Town Initiative: Education Program

Education Programs for Citizens

- Urban design school by UDCK
- College linked program (Environment, Health, Agriculture, Food) by Chiba Univ.
- Science Café for children by Graduate Student
EXISTING
1,777 jobs
1,229 residential units

JOBS : HOUSING = 1.5 : 1
Proposed Image of Next Phase (Innovation Campus)

Size: 365,000 sm
Uses: 25% Residential, 13% Research, 50% Commercial & Retail, 12% Community Services

Proposed
15,329 jobs
5,546 residential units
Jobs : Housing = 2.8 : 1
Urban design of the surrounding pond (stormwater reservoir for flood control)

Aqua Terrace
Urban design of under the elevated railway tracks

Ya-tai Project (commercial street)
Kashiwa-no-ha Smart City


UDCK

http://www.udck.jp/en

Edited by Ariane König
Edward Elgar
Cheltenham, UK
ISBN:9978-1781003633
13 November 2013
pp.236-253
Thanks For your attention

Contact info

• Email: uenot@faculty.chiba-u.jp
• Office address & phone:
  • Chiba University, 1-33, Yayoi-cho, Inage-ku, Chiba City, 263-8522, Japan
• Phone: +81-43-290-2147