Report on IARU internship program

in University of Tokyo

Peking University

FAN Xing

June 5–July 10, 2014
It is my great honor to have the opportunity to do the one-month internship in Todai. The fruitful experience enables me learning a lot, in the perspective on experiencing the city, and learning about the sustainable management approaches in Todai, the community design and urban resilience management, etc. This experience is extremely impressive and it gives me a lot of inspirations. Here I try to do a brief summary on my five-week unforgettable exchange period in Todai.

1. Learning in Todai

1.1 Sustainable campus management

(1) General Situation of Todai

The University of Tokyo has about 13000 students and faculty members. The CO2 emission is about 13000t, which is equivalent about 136000t CO2 annual emissions per square meter. The two largest parts are the electricity and gas emissions, accounted for 79% of the total emissions and 79% respectively. Among various kinds of building, library takes the most part of it, the energy consumption accounted for 30% of total energy consumption. The University of Tokyo made two goals toward CO in 2012 and 2030: In 2012 CO emission decreased 15% than the year of 2006; In 2030, the emission realizes the decreasing on 50% compared with 2006. According to the report of TSCP office, they have realized the purpose of 2012 as the figure 1 shows.

To achieve emission reduction targets, Todai established the action framework, which aims at co-evolution among society and research institute on different scales to realize the purpose of low-carbon city construction (figure 2). This idea is worthy of using for reference. The low carbon campus not only stays on campus scale. It also plays an important role for the community and even for the whole society in the society development. Furthermore, the society also affects the construction of low carbon campus.

![Fig 1. Annual CO2 emission (ton-CO2/ year)](image)

To achieve emission reduction targets, the University of Tokyo aims at helping build the framework for action research institutions in different scales of "co-evolution" for the ideal construction of low carbon city (Fig.2). This idea is worthy of reference. Because of the low carbon campus not only stay on campus scale it to the community and
the whole society plays an important role in the development of the society's reaction also affects the construction of low carbon campus.

**Todai Sustainable Campus Project (TSCP)**

![Diagram of the co-evolution system](http://www.tscp.u-tokyo.ac.jp/en/about.html)

**Fig.2 Composition of the co-evolution system**

(2) Comparison with Peking University

The energy structure of Peking University is same with other colleges and universities of China. The energy is given priority to coal and the second is the oil and gas. And in the context of China's average situation, the efficiency of coal is only 27%, which is a kind of inefficient energy. And coal combustion will release large mounts of pollutants. As for CO, the largest contribution to the emissions from two aspects: the power supply of electricity and heating. It includes the energy consumption of teaching building, library, laboratory, students' dormitory, office building of the power supply, heating in winter and cooling in summer. Furthermore, the consumption of water resources on the campus is also huge. Peking University includes the main campus, Changping campus, Medical campus and Wanliu dormitory campus. The commuting between these campuses increases the emission of CO₂. According to extensive academic exchanges at home and abroad the commuting of flight also increases the emission of CO. Another important generation of carbon is the daily food, purchasing of daily items and consumables. In addition, the use of photocopiers, fax machines and other office supplies will constitute the increase of the carbon footprint. At the same time, the processing of domestic waste and solid waste cannot be ignored. Although there are a lot of carbon generation in the south part of Peking University, but the vegetation on the north part of the campus contributes to cut down the emission of CO₂. So this part should be given more attention on protection.

Peking University once adopted a series of reform measures in the campus from the perspective of energy conservation and emissions reduction. For instance, it issued at the management level that "interim measures for the administration of Peking University electricity", "interim measures for the administration of Peking university to save water", "Peking university utilities management interim measures" and so on. The metering quota management of water and electricity helps to save about 4.5 million yuan for the university. Peking University devotes 800,000 yuan in technical level on realizing all the self-prepare well of automation controlling. We also installed ceramic core tap in

---

1 Cite: [http://www.tscp.u-tokyo.ac.jp/en/about.html](http://www.tscp.u-tokyo.ac.jp/en/about.html)
the teaching building and dormitory building, which could save 100,000 m$^3$ water. We completed the transformation of water-saving irrigation project on campus green space: We invest 400000 yuan in 1997 for the entire school comprehensive underground pipeline network We carried on the detailed investigation and and established the computer management information system. We establish the Filtered water system in Wanliu and Changchun xin yuan dormitory district.

(3) Highly participatory of student group in Todai

It’s my pleasure to meet the Sanshiro members, which are the undergraduate students of the of University of Tokyo. They are the most active environmental protection association. It sets up a good example for us on the fruitful activity with highly participation. There are 23 to 27 members in Sanshiro group. Activities under various kinds of themes are held from Monday to Friday under the topic of "sustainable development". According to the presentation of Sanshiro group, I try to summery the activity as the following Table1.

<table>
<thead>
<tr>
<th>Time</th>
<th>Project</th>
<th>Object</th>
<th>Purpose and activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>Eco- Industry</td>
<td>High school students</td>
<td>Make the students know more about the agriculture and getting close to nature, which also enables them to have more knowledge on the first industry. In each Monday, Sanshiro members will go to high school to make advertisement.</td>
</tr>
<tr>
<td>Tuesday</td>
<td>Eco- Century</td>
<td>University students</td>
<td>In winter semester, there will be a over-night activity in the field. The students will have chances to discuss about green policy and learn more about the sustainable development.</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Eco- protection</td>
<td>Residents +University students</td>
<td>Giving the direction to the local residents on category the garbage. Clearly marked the indicator drop of garbage bins. Purposes: 1) Reducing the environment load. 2) Educate the people the eco-life style.</td>
</tr>
<tr>
<td>Thursday</td>
<td>Bio- top corner</td>
<td>Elementary students(Gr ade 4)</td>
<td>Establish a corner for students to plant by themselves. Sanshiro member will teach some courses related to biodiversity and environment knowledge, which combines with the curricular course in the elementary school: 45min *2 classes.</td>
</tr>
<tr>
<td>Friday</td>
<td>River project in Meguro</td>
<td>University students</td>
<td>To improve the environmental consciousness, they do some investigation work about the river. They cooperate with NGO.</td>
</tr>
</tbody>
</table>

Based on the group system and the characteristics of the activity, I think the there are several points for us to learn.

① Category of the activity based on different kind of people ( University students, elementary students and
local residents, etc) realized the diversity of public participation.
② Each activity has the obvious features and attractiveness, which increases the attractiveness and achieves the high participation.
③ Good cooperation with NGO, NPO and schools. It gains support from different organizations, which ensures the sustainability of the activity.

After talking with Mr. Kotoe and Ms. Akinari, I learn that they are making every effort on creating the sustainable campus with their endless energetic passion. They are the majority participants of public education on sustainable campus issue. It is worthy for us to learn their activity content and the management model as well.

1.2 Community Design
Thanks to Prof. Koizumi’s kindest help, I visit four communities to learn about the community design issue in different cities of Japan: Tokyo, Obuse, Kyoto and Iwate. I am lucky to talk with the community planners and learn more about the process on public participation during the process of community design. I summery the key points of what I learn from the cases as following:
1) For the urban planning work, it is necessary to have community planner as the role to achieve bottom-up planning
2) It is great important to focus on the participation of multiple subjects in community planning. We need to encourage the participation of local residents and learn their thoughts.
3) It is necessary to establish a good cooperation mechanism among the government, companies, experts in universities and the residents to build up the trust connection with each other, which will promote the planning construction to be sustainable.
4) During the process of community planning, patience and enthusiasm is very important. Taking the “Slack line” project as an example, Mr. Omiya established this activity for the local young people. It gathered all the young people together to take this sports and the competition was held several times a year. It enhances the community cohesion and also increases the fun for the local teenagers.(Fig.3)

![Fig. 3 Slack Line project in OBUSE community](image)

2. Experience in Japan
2.1 Compact Mega-city Tokyo
Tokyo is a functional compact city. It is very prosperous and busy. The commuting between Komaba and Hongo campuses enables me feel the convenience and completeness of the transportation system of Tokyo. Also
I feel the strong sense of metropolis. I transfer the trains in Shibuya Station. Although with a lot of people, the station evacuating ability is really good. It could evacuate the people in a few minutes. In IARU summer session, I also learnt the transportation system in Tokyo, which sets up a good example for China in establishing a humanized and efficient transportation system. I am impressed by the following aspects:

1) Clear Transfer Identification

![](image1)

2) Accessibility for vulnerable group

![](image2)

3) Humanized facility design

![](image3)

2.2 Love- oriented planning city Obuse

The strong impression of Obuse for me is its love- oriented community planning. The flower project is its symbol. Obuse has established three objectives for its use of flowers for community building: beautification, nurturing a sense of well- being, and stimulating industry. Obuse’s flower projects were established out of the
citizen’s love towards the town and their strong desire to welcome visitors. Flowers here are a terrific catalyst for interaction between people.

<table>
<thead>
<tr>
<th>Table 2. Garden Projects in Obuse</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project</strong></td>
</tr>
<tr>
<td>Floral Garden</td>
</tr>
<tr>
<td>Flower Center</td>
</tr>
<tr>
<td>Open Garden</td>
</tr>
</tbody>
</table>

![Fig.4 Private garden is open to public in Obuse](image)

2.3 Resilient city Otsuchi

Otsuchi (大槌町 Otsuchi) is a town located in Kamihei District, Iwate, Japan. As of February 2014, the town had an estimated population of 11,833 and a population density of 59 persons per km². The total area was 200.59 km². Since 1973, the University of Tokyo has maintained a marine research laboratory in Otsuchi. It is now called the International Coastal Research Center (ICRC) and is managed by the Atmosphere and Ocean Research Institute.² The area of present-day Otsuchi was part of ancient Mutsu Province, dominated by the Nambu clan during the Edo period, who ruled Morioka Domain under the Tokugawa shogunate. The town of Otsuchi was created within Kamihei District with the establishment of the municipality system on April 1, 1889. The town expanded by annexation of the neighboring village of Kanazawa on April 1, 1955.³

On March 11, 2011, the town was devastated by a 9.0 magnitude earthquake and tsunami.⁴ The tsunami obliterated the harbor and low-lying areas, while higher parts of the town were spared, though they did suffer

---

² [http://www.icrc.orl.u-tokyo.ac.jp/](http://www.icrc.orl.u-tokyo.ac.jp/)
damage from the earthquake and the many aftershocks. About half the city was inundated by the tsunami. The tsunami destroyed all but 30 of 650 fishing boats and completely wiped-out the town's sea farm industry. City firemen manually closed the 12 water gates in the port's tsunami wall, but the wall was unable to hold back the waves. Eight city firemen were dead or missing. As of 31 August 2011, 799 residents of the town were confirmed dead, with 608 others still missing, about 10% of the town's total population of 16,000. The University of Tokyo's ICRC sustained extensive damage during the tsunami with water reaching the laboratories on the third floor.

Otsuchi is not that broken as I expected. According to the recording of documentary, the tsunami town after tsunami is the situation as the photos showing below. Three years past, the city seems recovered a lot. The newly-built road is very smooth, the buildings along the road are more completed. You could distinguish some traces of disaster from some part of the buildings. However, the whole town seems comparatively complete. I am involved in the local community planning and reconstruction of the workshop. There are four kinds of participants involved in the community planning system: the local government, consulting company, local residents and university expert professor. I experienced the various participation mode during the process of community planning. The four parts, have strong connection with each other with strong sense of responsibility. The consulting company made the delicate model for the planning. It separates the area into four parts and organizes the discussion between residents, consulting company staff and experts.

Through the reconstruction plan workshop in Otsuchi, I understand the mode of multiple-subject involvement. There are four main groups ( government, consultant company, university experts and local residents). They contact with each other closely during each steps of the process, from the first step on organizing the meeting, to the second step on managing the participating and discussion and then to the step on getting feedback. In each step, these four types of people are all serious and conscientious. The consulting company makes a good model for the workshop. The model district was separated into four parts for the local residents and experts to have discussion for different planning scenarios. Then the residents express their ideas and suggestions at the final.

---

5 NHK. "Tsunami flooded 100 square kilometers of city land", 29 March 2011.
6 Fukada, Takahiro. "Iwate fisheries continue struggle to recover". Japan Times. 21 September 2011, p. 3.
8 Jump up Ito, Shingo, (Agence France-Presse/Jiji Press), "Iwate firefighter gave his life to save others", Japan Times, 9 April 2011, p. 3.
9 Fukada, Takahiro, "http://search.japantimes.co.jp/cgi-bin/nn20110915f2.html New mayor's warnings fell on deaf ears", Japan Times, 15 September 2011, p. 3.
10 University of Tokyo AORI. "Damage to ICRC". Retrieved 8 July 2013.
2.4 Well preserved Heritage site Hiraizumi

I have worked as an intern in UNESCO Bangkok for two months doing the work about heritage conservation award. So I have a special passion on the heritage sites of each country. Thanks to Prof. Koizumi's to give me the chance come to Iwate after the investigation in Otsuchi. I came to the world heritage site -- Hiraizumi. This is a quiet town, without excessive business, also without too many tourists. Unexpectedly, this is the most complete heritage sites with very moderate developing extent. Generally speaking, the tourism development of world heritage site is hard to avoid excessive, but in Hiraizumi, enjoy the ancient atmosphere of Buddha temple, the pleasant silence of the mountain and late and also the magnificence of the golden hall. I can realize the exactly the charming authenticity of the world heritage sites.

![Fig.6 Before the Tsunami](http://www.otsuchi.org/)

![Fig.7 After the Tsunami (March 11, 2011 3:25pm)](http://www.otsuchi.org/)

![Fig.8 People were try to pick up the memory before after the disaster](http://www.otsuchi.org/)

![Fig.9 Temple and old stage in Hirizumi](http://www.otsuchi.org/)

11 http://www.otsuchi.org/
4. Acknowledgement

First of all, thanks to the opportunity of University of Tokyo, which enables me to learn and experience in Japan. Furthermore, I would like to thank Prof. Yashiro, Prof. Koizumi and Prof. Bin Lu. With these three professor’s kindest help and great support, I broaden my eyes on the perspective of my major in Japan and I experience the culture diversity as well. The different atmosphere makes me feel the spirit and characteristic of different cities, which inspired me to think more about the importance on creating the city uniqueness from the responsibility of urban planner, especially in China. It is very appreciated to join the research meeting of Prof. Yashiro and Prof. Koizumi’s lab. I learn the methods and perspective of creating sustainability and also the methods on community planning. During the discussion with professors and students, I become to realize the opportunities and challenges of community planning work in my own country. Moreover, I would like to express my thankfulness to the staffs of TSCP. I am so lucky to get their patient help and support on explaining the details of the work on creating sustainable campus. And, I would never achieve such a wonderful experience without the help of Ms. Kayo Kreeves and Ms. Takahira Yoshiko. They offered me a lot of help from the beginning to the end. I will be hardworking in the future study life and try my best to apply what I have learnt in the field of my major urban planning, and in creating sustainable campus as well. Also welcome all the professors and teachers to Peking university. I look forward to meeting you again. Thank you so much!