

**Seminar 5: Restoring Local Lives, Cities, and Regions: Looking at the Post-Disaster Restoration and Exploring Alternative Planning Approaches for the Future**

Tuesday, September 13, 2011

1:00pm-3:00pm

Ambassador Room, The Embassy Row Hotel

Organized by the U.S.-Japan Research Institute

**Welcome Remarks**

**Professor Katsuichi Uchida**, *President, USJI/ Vice President, Waseda University*

Prof. Uchida gave a brief introduction to the U.S.-Japan Research Institute, a non-profit organization which was established by 5 prestigious Japanese Universities (Keio University, Kyoto University, Ritsumeikan University, The University of Tokyo, and Waseda University) to connect the United States and Japan through research on security, environmental, and economic issues. This seminar was part of a weeklong series of seminars part of USJI Week: Reconstruction after the Great East Japan Earthquake that analyzed various solutions for accelerating Japan's recovery and revitalization.

**Moderator's Presentation**

**Dr. Takashi Ariga**, *Professor, Department of Architecture, Graduate School of Creative Science and Engineering, Waseda University*

Dr. Ariga began his presentation by highlighting his main theme: Japanese *machizukuri*, or citizen-based collaborative urban design and planning. This theme will be important during the presentation, and it also impacts the thinking of researchers at Waseda University, whose urban design research focuses on:

1. Urban morphologies: social and cultural impacts on the built environment and the quality of life
2. Strategic spatial planning concerning urban heritage and ecological and community sustainability and stability
3. Cognitive analyses, visualization, and simulation of urban design policies and guidelines
4. Urban heritages and community developments

**Japanese *Machizukuri***

***Machizukuri* is integrating citizen-based urban design with a larger extent of natural environment, socio-economic needs, ecosystems, and regional planning; developing alternative planning methodologies for new social entrepreneurial projects; and assisting with planning outreach and community empowerments.**

Therefore, Dr. Ariga explained the objectives of Seminar 5: looking at alternative approaches for restoration. He brought up a few key points and goals to think about during the subsequent discussion:

- The central government has given a lot of effort to restore Japan, but the process is difficult. In addition, the disaster mitigation plan must also accommodate social needs.
- There is a need to invent alternative forms of human settlements that are safe, creative, durable, and equitable in both physical and social planning and design.

Dr. Ariga stated that, in order to achieve these goals, **urban planning and design to be inclusive, integrative, holistic, and enable connection of disaster mitigations at large scale with citizen's efforts of restoration of lives at the community level.** Dr. Ariga explained that restoration will need to take place on regional and community levels. On the regional level, inundations and subsidence of urban land and infrastructure are the biggest problems. But on the community level, destruction of people's

lives and loss of community heritage are the biggest problems. Therefore, restoration planning needs to **include big and small actions**. Big actions include legislation planning, enforcing rules, and mitigation. Small actions consist of collaborative citizen's activities. Finally, successful restoration plans should be **authoritative and collaborative** – predictable and precise, as well as **self-organized and allow for autonomous progress**.

### **Big Planning: Sendai Plan**

Big planning steps include dealing with large scale subsidence, which impacts irrigation and sewage networks and floods fields. **Clean-up plans punctuate people's memories of the past**, as a lot of the debris is piled to form hills that become recreational areas and potential safe havens for future tsunamis. In addition, Dr. Ariga emphasized that **proposed tsunami mitigation plans might vary slightly by region based on topography, ecology, and economic and other activities**. Some specific mitigation strategies include building residential zones on higher ground and replanting forests. In addition, there will be citizen centers for planning and recovery. **Temporary housing communities** are important because they keep social cohesion and they promote exchange of ideas for restoration through community meetings and proposal submissions. School activities relating to restoration also help children cope with the disaster and the recovery process.

Dr. Ariga argued that dimensions for disaster mitigation and recovery should address Japan's vulnerability to natural forces, and make it more tough – “tough” being a broad term to include: adaptability, stability, resilience, robustness, diversity, and tolerance. The coastal plains will benefit from moving residential zones inland and on plateaus, planting tsunami mitigation forests, and developing flood management zones. Dr. Ariga believes that, since Japan is living potential disaster from nature, it is best to focus on disaster mitigation instead of prevention as part of a holistic system.

### **Alternative Approaches to Restoration**

Dr. Ariga said that alternative approaches to restoration that are just as important are:

1. Involve local residents who are in temporary housing units in the process of developing restoration schemes and consensus-building activities
2. Support previous community groups and social organizations to maintain continuity into the future
3. Re-evaluate topography and urban morphologies that can help mitigate risks from natural disasters
4. Decontaminate inundated soils for resettlement of location-dependent farming industries
5. Relocate residential zones to safer and commutable places – inland and/or on plateaus
6. Encourage social and economic inter-relationship among coastal cities and inland regions
7. Invent buffer zones like flood management plains, mitigation forests, and environment rehabilitation zones
8. Decontaminate rubble and debris, perhaps pile and cover for use as emergency evacuation mounds and symbolize and memorialize the disaster
9. Restore local economies concerning local-dependent economic activities
10. Reform land use patterns, including relocating residential zones

**Dr. Eran Ben-Joseph**, *Professor Head, Joint Program in City Design & Development, MIT School of Architecture & Planning*

Dr. Ben-Joseph's main argument was the **benefits of integrating university planning and design programs in restoration plans, in particular if the program solidifies its relationship and commitment to a place by setting up a local base to participate in rebuilding the community**. An important aspect of engineering resiliency, Dr. Ben-Joseph said, is shifting to ecological resiliency and analyzing the changing dynamics after a disaster since you can't just re-build what was there before.

### “You Never Want a Serious Crisis to go to Waste”

Dr. Ben-Joseph listed a few key arguments and examples for how a crisis is an opportunity for change.

1. Opportunity to question old rules and standards. Example: Greensburg, Kansas after a devastating tornado, decided to rebuild itself as a green community, making it one of the greenest in the region.
2. Accidents reveal substance of failure, which promotes innovation. Example: Design engineers can create a better design and though it might otherwise be radical, if it is presented quickly enough after the disaster people will readily accept the design.
3. Failure is a catalyst for change and experimentation.
4. Speedy solutions tend to favor typical practices, illustrating the tradeoffs between quick action and long term planning.
5. Clean slates and utopian approaches are bound to fail.
6. Redundancy of infrastructure equates to resiliency – the more you have, the more chance that it will survive. Examples: retrofit and older places and design communities to be self-sustaining during rough times.
7. Sustaining meaningful contacts and presence empowers communities.

Dr. Ben-Joseph then outlined a few lessons and outcomes from the field of academic engagement based on his experience.

- Learning by doing is an important aspect of education for future professionals
- Establish centers, labs and programs
- Encourage innovation
- Set local outpost
- Pair local centers/organizations with other programs/universities
- Connect to local organizations
- Commit to long-term engagement
- Set up potential jobs for graduates

Dr. Ben-Joseph explained the value in these centers lies in the long-term commitment of the programs and the skills of the experts and students. Cities might not have the human capital needed to develop designs, so students offer these design skills for proposals that the community can accept or reject. Students can also bridge between any political divides, since they are non-threatening they can change the level of discussion. In order to provide the best designs, students listen to the community’s needs and look at the larger context to promote self-sufficiency, economic activities, empowerment, and social and natural ecology. Students also conduct assessments for the designs; namely, rapid visual assessments – screening buildings – to see what things can be done, and develop tools that the community can use to do the assessments themselves. In short, these students act as ambassadors to help bridge academia and communities.

**Dr. Peter Bosselmann**, *Professor of Urban Design in Architecture, City & Regional Planning, and Landscape Architecture; Co-Chair, Master of Urban Design Program, College of Environmental Design, University of California, Berkeley*

Dr. Bosselmann used a quote from an old stone monument near the coastal city of Kesennuma in Japan warning descendants of the dangers of building below a certain elevation to show that **along with resilience and preparedness, successful restoration plans should fight complacency by facilitating bottom up planning**. How to rebuild is not just a question for engineers, but also communities. Dr. Bosselmann reminded the audience that damage from tsunami disasters is unavoidable, since tsunami forces are strong and structures are not strong enough – though our advanced technology might make us complacent and not heed warnings such as the ancient warning mentioned above. As an example, the March 11 tsunami was one of the most deadly tsunamis in Japan over a period of nearly 1,000 years.

Dr. Bosselmann stated that **tsunamis and their destruction create profound social, economic, human health, and psychological consequences for the individual, community, and society as a whole, and there is a known resilience in Japan for disasters as a result.** To further support Japan's resiliency, policymakers and designers need to address the following:

- Tsunami preparedness
- Where to rebuild and where not
- How to protect low-lying areas through improved engineering and bioshields while taking the ecology of the site into consideration
  - Bioshields help mitigate hydrodynamic effects
- How to design resilient coastal cities and landscapes

Dr. Bosselmann observed that land probably won't be used as it was used before due to the change in the dynamics, as illustrated by the striking Moerenuma Park, which is built on the grounds of a previously tsunami-devastated area.

### Question and Answer

Question directed at Dr. Ben-Joseph: **Do your programs conduct post-project evaluations of impacts of projects?**

Dr. Ben-Joseph: these programs are a long-term commitment of the organizations/universities, and some students write their graduate theses on their previous work. New students are continually coming in so it would be good to have more regular assessments.

Question: **Do you think Japan will get corporate benefactors like Greensburg, Kansas did?**

Answer: It is not clear. One issue is that if a project gets sponsorship, the designers don't want restrictions associated with sponsorship. In addition, affected companies are under pressure to maintain production because of supply chain and so production might be moved inland – possibly permanently – and hopefully they will stay committed to the original area.

Dr. Ariga added that most want to stay but are nervous about the currency rate issue threat and must move abroad for lower costs, which threatens revitalizing Japan's economy.

Question: **Regarding the criticism of the central government's response and properly coping, what is the effect of political gridlock?**

**Dr. Ben-Joseph:** This is a lesson of New Orleans – it's been 7-8 years and not a lot has been done. The power of recovery is in the process through empowering people.

**Dr. Ariga:** Despite the central government's gridlock, at the city level there are many active mayors who are designing comprehensive rebuilding plans. The trend shows a shift from central government to local authorities taking initiative with administration abilities.

**Prof. Uchida** added that it is very positive that the SDF (Japan's Self-Defense Forces) were deployed promptly, and showed a lesson had been learned from the last major disaster when the SDF was deployed very slowly. Finally, Japan's Reconstruction Commission issued a report in June which included a mixture of news on the reconstruction plans.

Question: Despite the magnitude of the earthquake, the damage was relatively small due to improving construction standards after the Hanshin Earthquake. This along with other examples such as trains being relatively unaffected, broadcasts how quickly Japan can restore main infrastructure after an earthquake. However, Fukushima has had a much larger effect. The number of relocations due to the Fukushima accident are relatively high, which means the nuclear accident might be bigger than the tsunami. **Can you share your opinion on the Fukushima accident?**

**Dr. Ariga:** The impacts of the Fukushima accident are still ongoing. Therefore, urban design in the region and regions nearby should take into account the Fukushima accident, like where to relocate and

how. Perhaps designs should divide into degrees of impact to provide more specifics since the government plan is ambiguous, so locals are ambiguous about when they can return. The government should offer a precise mapping system, and since the area can't be decontaminated for years, Dr. Ariga believes that Japan's government will take land over from property owners. Then the area could be used for experimental purposes, nuclear storage, and hopefully new industries once the area is safe to work in under precautions. On a related note, national land use should be reformed because the Tohoku region has been stable in demographics, but March 11 brought about a rapid shift in social demography and a cultural shift. A change in land use structure on a national scale will help small cities along the coast offer a place for a new quality of life.

**Dr. Bosselmann:** The 9.0 magnitude earthquake is rare and the tsunami was much more severe than most. The nuclear accident has long-range impacts, as nuclear energy offers global benefits for energy choices and energy efficiency.

**Dr. Ben-Joseph:** It is human, and engineers', nature to rarely celebrate successes and instead dwell on failure. The accident caused a paradigm shift to solve problems, not just for urban planning. As he mentioned in his presentation, this crisis, while regrettable, is a great opportunity for experimentation.

To conclude, Dr. Ben-Joseph asked the audience a question regarding **the engagement of Japanese universities in the restoration process.**

Dr. Bosselmann: He was in Japan right afterwards and he noticed a shift in what an individual can do for themselves and what the government can do for them. He also observed that citizens empowerment groups are very knowledgeable about the issues and discuss highly technical aspects and solutions.

A participant commented that there is less emphasis on experience in professional schools for education, training, and experts in Japan. Students are viewed as student only and not ready to do work. However, recently more are trying to engage communities.

Another participant commented that in the wake of the disaster, it was difficult for government schools to establish teams to volunteer to work since professors can't leave for that long, but professors certainly didn't stop students from leaving to help.