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A RESILIENT CITY – TOWARDS A DISASTER-RESILIENT COMMUNITY

MIASTO ODPORNE – W STRONĘ SPOŁECZNOŚCI ODPORNEJ NA KATASTROFY

The Fukushima Daiichi nuclear disaster that followed Tōhoku earthquake and tsunami in March 2011 exposed once again the fleeting nature of built environment. This paper faces the role of the university in disaster risk reduction and building disaster-resilient communities. Because without a community there will be no city and without a city there may be no space for architecture as we know it.

Keywords: University – Community Collaboration, Partnership, Disaster – Resilient Community, Business Continuity Management, Disaster Risk Reduction

Katastrofa nuklearna elektrowni Fukushima, do której doszło w następstwie trzęsienia ziemi w rejonie Tōhoku w marcu 2011 roku, obnażyła raz jeszcze ulotną naturę środowiska zurbanizowanego. Artykuł porusza kwestię roli uniwersytetów w ograniczaniu zagrożeń katastrofami naturalnymi i tworzeniu społeczności mogących sobie poradzić w takich okolicznościach. Ponieważ bez społeczności nie ma miasta, a bez miasta może nie być miejsca dla architektury, przynajmniej nie takiej, jaką znamy.

Słowa kluczowe: uniwersytet a społeczność, partnerstwo, społeczność w obliczu katastrofy, zarządzanie ciągłością biznesową, ograniczanie zagrożenia katastrofami naturalnymi

University resources are plentiful and useful for providing the support in widespread. Comparing university with other facilities in the city, university has more advantages and fewer weaknesses to develop its usefulness for mutual support. University resources mentioned earlier have been classified into two main elements. The first element is Physical ele-

ments; such as university's infrastructure or it could be divided again into small elements as *Utility and Facility*, comprised both goods and services. Utility refers to Water Supply, Electricity, Drainage system, etc., meanwhile Facility, it refers to Multimedia rooms, Gymnasiums, Pocket parks, Open Space, Fire extinguishers, etc. The second element is Social elements

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that refer to *Human Resources*, which assembled in university and included all workers or employees in the university, such as; students, university's staffs, professors, so on, who are full with Knowledge repository and expertise.

In fact, university's infrastructure already has its potential to satisfy the basic needed of human or even better than the standard. The capacity of the person mentioned earlier is much more than the use of individual or self-help support, it could also be developed to offer the mutual support for the locality. However, the capabilities only are not enough to create resilient but with the applicable plan, the disaster – resilient community and city would be close to possible.

Hence, this paper introduces the concept of Business Continuity Management (BCM) to the university, which will be described afterward in details entitled the concept of University – Community Business Continuity Management for Disaster – Resilient Community and City. Applying BCM does not just reduce risk and damage that may caused by disaster but also it allows university to offer the surrounded community social responsibilities, besides serving and running university community business as usual. In light of this, it is essential that BCM could be one of the key factors, which derives building capacity of Disaster – Resilient Community under collaboration of university and community.

This paper introduces the guideline of the concept of University – Community Business Continuity Management for Disaster –Resilient Community and City and identify and assess the social impacts that may caused by the concept to ensure the benefit that this concept will create for the society. In addition, this paper studies profoundly in seeking evidence based to indicate factors of success in lurching the concept of University – Community BCM. Ultimately, it discusses and illustrate how university design or redesign the spaces in the university to develop the

concept of University – Community BCM for Disaster – Resilient Community and City.

The concept of university – community business continuity management for disaster – resilient community and city

A focus on resilience means putting greater emphasis on what communities can do for themselves and how to strengthen their capacities, rather than concentrating on their vulnerability to disaster or their needs in an emergency. Community resilience can be understood as: 1) Capacity to absorb stress or destructive forces through resistance or adaptation, 2) Capacity to manage, or maintain certain basic functions and structures, during disastrous events, and 3) Capacity to recover or 'bounce back' after an event [1]. Meanwhile, the concept of University – Community Business Continuity Management was developed from the original concept of Business Continuity Management (BCM). BCM advocated by USA, aims at pursuing the minimum consequential loss of businesses after unexpected emergencies. It assists private business enterprises not only to minimize their economic loss but also to maintain their competitive capacity in the economic market. BCM should be able to manage the risks, which could result in disastrous events and thus minimize the likelihood of a disaster, reduce the time taken to recover when an incident occurs and minimize the risks involved in the recovery process by making the critical decisions in advance in stress-free conditions [2].

According to those two main concepts we can see the linkage of these two concepts at aim of them are similarly to minimize losses and manage or maintain the basic functions which are needed in the time of emergency. Nevertheless, in order for the BCM to be implemented effectively, the intensive involvement of the all stakeholders is vital. Therefore, some continuous program for promoting people's awareness must

be provided in daily life. Thus, this paper introduces the concept of University – Community Business Continuity Management which is the collaboration made among university members (On – Campus) and the residents surrounded community (Off – Campus) to mutually manage their community's business continuities.

The advancing benefits of the concept of university – community business continuity management

The concept contains four activities that could sustain the business as usual of the university community within seven days after the disaster breaks out. In the crisis, the first seven days are probably the most important period that could direct the victim's possibility to be survived. The benefits of the activities are as follow: 1) Disseminate the information about evacuation through the local television; 2) Offer the community to join in the disaster drill held by Ritsumeikan university; 3) In the case of disaster or emergency, being information center for lost and found contacts; in case of evacuation information and training activities; 1) Prepare Student Volunteers, who are well trained in evacuation principles, to help you when you need to evacuate to the safe place in disaster time; in case of disaster volunteerism group activity; 1) Improve the disaster resilient building in the campus; 2) Make sure all accessibilities to university are well prepared for disaster or emergency; 3) Adapt universal design of the refugee for all users (especially for disable people) 4) Ensure to prepare basic needs (food, water, medicine, blanket, etc.) in the campus; in case of shelter-in-place activities and 1) Disseminate the information about evacuation for evacuees; 2). In the case of disaster or emergency, being information center for lost and found contacts in case of evacuation information activities.

Preliminary project and case study

The preliminary project takes place at the case study of Ritsumeikan University and Kinugasa community in Japan. Since, Ritsumeikan University, Kinugasa Campus is located on northwestern Kyoto in Japan, a 1200 year old city rich in culture and art. Kinugasa Campus is mainly surrounded by residential areas and also such auspicious temples as Kinkakuji, Ryoanji, Ninnaji, and Tojiin. Therefore, Ritsumeikan University is designated as evacuation place in case of disaster and emergency, since it has large open space to accept huge numbers of evacuees. Thus, the fundamental role of Ritsumeikan University is not just providing higher education but being shelter – in – place for the community when needed. Notwithstanding, perhaps the first question that has to be answered is what will the universities and community will get in practically obtaining this project.

This project investigates the benefit that university and community could have when utilizing this concept. This research uses the methodology of Social Return on Investment (SROI) to measure and account for not only the benefit in term of financial value but also social value. There are several ways to calculate the SROI but in this study we use SROI to evaluate how much social value could be contributed when the proposed project has been developed. The measurement of social value in SROI analysis for this study is Social Capital, which is divided into two elements, Trust and Commitment. A Questionnaire survey is conducted to get data in order to analyze the SROI. The target of the sampling was designated in Kinugasa Community. The questionnaires are posted door to door in each house for the community members and for community – based organization members, and the questionnaires are passed to the community leader after answering or are posted to the university. SROI analysis will lead to ratification of improving or inventing the concept.

The analysis could also sustain the systems of university – community collaboration by revealing the social value that the concept will contribute. Thus we can identify that which activity meets society needs. Moreover, not only Ritsumeikan University can earn the benefit from doing this study, but also other universities, which try to start the social responsibility, can refer to or adopt the framework of this SROI in order to verify their benefits. The total annual social benefit is expected to be higher than an annual cost of CSR activities. The maximum range of return period, in this study, is for three years. Although the actual returns for a particular project would depend on the outcomes and expenses of the particular project, this study tries at least to present returns of social value that could be investigated. Therefore it is certainly possible that actual returns could be higher than these analyses, especially when a project affects the larger number of population.

Summary

In sum, the concept of University – Community Business Continuity Management is one of the new challenging concept in disaster management or development in planning to generate the collaboration among university and community that leads to the creation of

disaster – resilient community and city. Not only use the physical space of the universities but also making uses of universities in which they are the sources of knowledge will enhance the future of the community and the city in widespread. The most essential part of the concept is that to delivery the new frontier of thinking to the universities to embrace and hopefully, if the concept does work, many universities in the city could achieve the concept, the coverage area for the disaster – resilient community could enlarge covering the scale of the city. The concept itself is not outreaching difficult to start but to maintain. Thus, the collaboration among university and community is the most crucial in developing the concept. The intention of the study to introduce the guideline and to ensure the benefit of the concept in practical will encourage the universities to approach to this concepts.

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ENDNOTES

[1] John Twigg (2007) *Characteristics of a Disaster-resilient Community* (<http://practicalaction.org/reducing-vulnerability/docs/ia1/community-characteristics-en-lowres.pdf>).

[2] Kaji Hideki (2010) *Business Continuity Plan Of Education And Researches In University-A Case Study On Tokyo-*

o-Tech Suzukake-Dai Campus, ACEE –2010, the 3rd Asia Conferenceon Earthquake Engineering, with the theme of *Disaster Risk Reduction and Capacity Building for Safer Environments* on December 01–03, 2010 at Bangkok, Thailand.