mounded earth. We have a location named Takaokamachi Yabunouchi in the city, for instance. Yabu in Japanese means woods, with trees and bamboos. This name implies there used to be a woody landscape there.

About a couple of years ago, I went to a shrine next to the Omi-cho market. At around 9:00 in the evening, I saw a wild raccoon walking around. You probably couldn't say that there were a lot of wild animals by the Sogamae in the past, but a wild raccoon walking back and forth there is the kind of image I imagine when I think of them.

Because we are discussing water today, I will focus upon that topic. We would like to keep the water quality of canals in Kanazawa high. In addition to water quality, the series of surrounding small hills is also important. If that kind of natural topography is restored, then you can easily imagine the original structure of Sogamae when it was built. The inner and outer Sogamae started to be filled in and narrowed during the Edo period, but restoration can provide new perspective about the castle town. We had different land use patterns in Edo period and the boundary of the zoning was Sogamae moats. Outside of the Sogamae moats, upper class samurais were given land for housing complexes for their retainers by the feudal lord. The zoning of the castle town was determined by these regulations. It is believed that Sogamae was constructed for military purpose. Under this constraint, Kanazawa developed the castle and town to support the life of both the samurai class and other general citizens. It is important to restore such historical sites as much as possible and I hope that we can learn from the original state and treasure it. Thank you.

(**Prof. Nobuyuki Tamai**) Thank you very much. Professor Masuda's lecture mainly analyzed space, but he also mentioned his dream of an urban landscape with Sogamae moat as well as the quality of life in the urban city. I think he touched upon those aspects in his short remark.

Prof. Chanson, you are knowledgeable about Roman world. Please share your knowledge about Rome and also your knowledge you have accumulated in Australia.

(Prof. Hubert Chanson) Thank you Prof. Tamai. Ladies and gentlemen, let me share some thoughts maybe on the marginal perspective from a knowledge ranging from antique knowledge to

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modern practice. I think first and foremost, if we look at interlinkage between water on the city, water is life. This is the most important thing. There is no life if there is no water. In turn, I think we can look at the interaction and interlinkage between water and city on at least three levels: a very material level, one at the level of life, and finally in terms of well being. If one was to use the human body as an example, one level would be our tummy or stomach, one level would be our heart, one level would be our head.

At a very materialistic level, water is essential of course for drinking water but also for food supplies, whether it is for irrigation or fisheries. It is also essentially in modern society for our industrial needs. No industry can run without water, and if there is no industry there are no jobs. Of course, lastly, we should not forget on a materialistic level the role of water for recreational purpose. In summer when it is very hot and sticky, it is so nice to go for a swim in the river.

At the second level, water is linked with natural events. The cycle of water is a natural system. We need as a society and as a city to deal with floods and droughts: floods, too much water; droughts, not enough water. And yet there is a natural system we cannot escape, that as a society, as a human being, we need to understand that this natural process take place. This is life, *c'est la vie*, as we say in French.

At the third level, that of well being, water is important on at least two directions. Our heritage, all our societies, all our cities develop next to a source of water, where there is a well, river or a spring. Therefore, water and water transportation is part of our tradition, is part of our heritage. We cannot ignore our history.

At the second level, water contributes to the aesthetics of the city. There is no city where you do not see a fountain for people to feel well. And I think altogether, the interlinkage between water and city is very complex, and I am sure I have probably forgotten a few more interactions. Thank you.

(Prof. Nobuyuki Tamai) Thank you very much. So there are three important factors: the material side to support life, the quality of life, and well being and welfare. At these three levels Prof.

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(**Prof. Nobuyuki Tamai**) Responding to the previous question, the value of Sogamae is quite important. I also think that returning to a walkable city, and going back to the basics of humankind, is quite critical. Well then, Professor Chanson, please.

(Prof. Hubert Chanson) Thank you. I believe one of the issues in all cities is that we take for granted to have water, that is true both in developing and developed countries. Too many people take for granted to have water available for drinking, for cooking, in the toilet, in the bath. My parents told me of their childhood where you would go in the garden for the toilets. You would have a bath maybe once a week because you did not have running water in the house. I think one of the major issues is that our community and our society should not take water for granted. In fact, a number of cities are subjected to water restrictions, or water stoppage. I live in a city where we do have water restriction, everyday of the year, all the year round. The level of water restriction increased as the water level in the reservoir dropped. But in turn, this led to a very fundamental issue in term of policy making. What is the cost? What is the price of water? Should we put a price on water? Could we use an economical model for the water? And my position as a professor in hydraulic engineering is that we should not put an economical model on the price of water. In fact, if we look at a number of European and Asian countries including Japan, Korea, Taiwan, for example, the best systems have been one where the government, whether it is local government or the federal government, has regulated the right to access water. And in turn, this puts a greater emphasis on the role of our politicians to guide our society to ensure that everyone, either a child or a senior person, whether the person is very rich or from a \*deprived\* background can have free access to water.

(**Prof. Nobuyuki Tamai**) Professor Chanson, I would just like to confirm one point, that is, do you agree or disagree with putting a price on water?

(**Prof. Hubert Chanson**) It is some form of economical model to put a price on the water but the access to water is something for which we should not put a price. Everyone in our society should have access to water, and the government has a role. Beyond this, of course, we need some of form of economical model, for example, for the access of the water by some industries to push the

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industries to reduce its water consumption.

(**Prof. Nobuyuki Tamai**) About water consumption, from the use of the water, we need to set some price and a market model for the exchange of water with some economic value. But as far as the right to access to water is concerned we need to consider that the water is public good and that the water is for everybody. So this is another very important aspect. Now, Professor Malone, please.

(Prof. Emeritus Patrick Malone) I would like to discuss several projects that we did in Rhode Island that have bearing on some of the issues that we have just raised. One, I think Rhode Island recognized the tremendous economic potential in tourism and realized that investments in a landscape that could attract tourists was definitely worth the money. Rhode Island was also very creative in getting the money. For instance, we had covered our rivers. We have two rivers that come together in Providence. We were in the Guinness Book of Records for the world's widest bridge, which I did a study of. We could not confirm it was the widest bridge but it was definitely the widest pigeon coop in the state. There were many pigeons living underneath it. No one ever looked down under the vast roadway system and parking lots that we had built over our rivers.

But in the 1970s, we came up with a plan for daylighting, which is a new term which we use in the United States, to daylight the rivers within the city, and we creatively used our government funding. We made it a highway project. The one thing we have lots of money for is the automobile. So, we were creative. We said, you have a new interstate highway coming to the city and it needs an exchange so that people can get in and out of the city, but right now, if the highway exit simply drops people in Providence, they will have great difficulty. The roadway system is incredibly congested. In the center of the rivers, we had what was called "suicide circle," which was a gigantic war memorial about which hundreds of cars circulated with numerous accidents. We wanted to solve the highway transportation problem but mostly, we wanted to get the highway transportation money. So we said that the only way to build a better automobile system was to move the rivers, and so we moved them. Now, that is not going back to the original form but we used the original materials. We used stone walls that had lined the rivers. We moved the rivers, not much, just about a hundred yards, and in doing so we made room for a new boulevard. But we used the federal highway

in mind. So it is important for Japan to express our views from the viewpoint of a humid country. Thank you.

(**Prof. Nobuyuki Tamai**) So we have climate regions as a basic zoning and Japan is a humid country. So Japan can have a special argument from that standpoint. Professor Masuta, please.

(**Prof. Tatsuo Masuta**) First, globally, we have historical wisdom as in the case of the Roman Empire. The Roman Empire had an excellent water management system. I went to Pompeii where I saw the system with high technology very close to the current level. They developed excellent urban system. There is also wisdom to be found in the Qanat, used in arid regions. In Kanazawa the Sogamae was constructed in a very short time during Edo period. So we can learn from our ancestors' knowledge what we have to look over. This is one common concept which can be applied globally.

We have, for instance, locally, a unique system which is available in Kanazawa. So collecting the wisdom from both inside and outside of Japan, we will be able to develop our existing water systems further. Depending upon culture and the climate in each local area, I think, the development should rely on each specific climate, tradition and culture.

(**Prof. Nobuyuki Tamai**) Professor Masuda talked about historical wisdom. That is global but also from a local viewpoint, as we also need to learn from the locally and historically accumulated wisdom.

Next I would like to invite Professor Chanson to give us his opinions regarding local vis-à-vis global.

(**Prof. Hubert Chanson**) Thank you. If we look at global versus local issues in terms of culture, tradition and climate, we need to look at the involvement of the society, the involvement of the general public for any successful change. When we talk about culture and tradition, for me this is a local issue. People, you and I, are interested by our local tradition, by our local heritage, our local culture. And I think to some extent, this issue has to be solved in the city, in a prefecture or in a

country. You cannot expect the United Nations to look after your local issues. On the other hand, when we look at the fundamental issues such as climate change, that is definitely a global issue, but one that must interact as a feedback mechanism with local issues. You cannot expect the general public, that is you and I, to be interested and motivated by global issues such as climate change if we do not have some local perspective, some local consequence. People need to understand locally the issue to support then the global issue.

(**Prof. Nobuyuki Tamai**) Thank you very much. Concerning climate change, it is of course an overall global issue. But adaptation or influence on each area is different from place to place. Prof. Chanson points out that it is important for us to feed back local activities and analyses to global problems.

Now, I would like to hear from Professor Malone.

(Prof. Emeritus Patrick Malone) I think people are really interested in places that are different from other places. We do not attract tourists to a site that simply has one more McDonald's restaurant and one more Holiday Inn. People are looking for unique cultural experiences, and I think emphasizing the assets of a particular locality is a very, very good tactic. It is important that we recognize that cultural heritage tourism has economic benefits, but it also I think has cultural benefits: when you make people proud of the things that differentiate their community, when you show people that their landscape represents a heritage that is worth interpreting and worth visiting, then you can attract people. So I think you need to think locally about your assets and work to restore when necessary or preserve when necessary the things that make your particular community unique, and then I think you need to advertise it globally so that you use your local assets to draw a global audience or at least a national audience and you bring people to Lowell or you bring people to Kanazawa, because they are unusual, because they have done something exceptional and because they have unique resources.

(Prof. Nobuyuki Tamai) Thank you very much. For Kanazawa, I think it was quite an encouraging suggestion, having some cultural traditional assets or unique traditions. Those are actually quite valuable assets. Professor Malone also recommended promoting those values to the

(**Prof. Nobuyuki Tamai**) Professor Chanson, could you comment on that? Professor Chanson mentioned in his talk that he can enjoy looking at kangaroos and wallabies, living in a very natural environment. What do you think about the threat of natural disasters and building houses in areas prone to those natural disasters?

(**Prof. Hubert Chanson**) This is a problem that we have in the city of Brisbane where I live. We had never had much of flood. The city of Brisbane live around a very big river called the Brisbane River and there have been over 20 major floods in the last 150 years. In particular, we had the great flood of 1897 and the flood of 1974. I was not in Brisbane in 1974 but many people remember that flood from 1974 because one-third of the city of Brisbane was under water. I have to be very cynical about the outcome. In the 10 years following the flood, everybody, from the politicians to the academics to the general public, we are very well aware of the flood and no one would buy a house or would build a house in the flood plain of 1974.

But from 1985 onward, people started to lose memory. They did not want to remember the flood. In the 1990s, the Brisbane City Council, which is the equivalent of the administration of Kanazawa City, started to give permission to build in the flood plain of 1974. Of course, about 10 years ago, a number of people were flooded. The reaction, as been about five years ago, a new political mayor decided to buy back these properties. Of course, these people should have never built at the first place. I think to some extent, the message that I can share with you is that we need, as the general public, we need to watch our politicians, because really there are some politicians who do not give a damn about flooding and there are some politicians, on the other hand, who are very well aware about the problem and will take great care to do the best for the community.

(**Prof. Nobuyuki Tamai**) In the city of Kanazawa, I am a member of the committee on comprehensive flood protection. When the capacity of the river is not sufficient, we need to solicit cooperation from the local people. For instance, we need to construct water storage tanks or some kind of infiltration facilities of rainwater into the ground at each household.

I'd like to now invite Prof. Chiku to make comments from the steering committee. Do you have any questions regarding these points?



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## Panel Discussion Transcription パネル・ディスカッション 記録集

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