



UNISCAPE EN-ROUTE INTERNATIONAL SEMINAR RECOVERING RIVER LANDSCAPES

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Between Natural and Artificial: Development and Maintenance of the Kamo River in Kyoto

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ABSTRACT

The Kamo River is the main river crossing the city of Kyoto. As a river flowing directly from the mountains, it has a wide variation in flow. Together with the mountains that surround the city on three sides, it is a defining element in the city and in its dialogical relation to Nature. Canalized early on to adapt to the geometrical structure of the city, it was used as a source of fresh water for the ancient capital and as a means of transportation for commerce between the mountainous backcountry to the North and the ocean outlet to the South. The river Kamo and its banks made over the centuries the object of numerous developments. The technological progress beginning at the end of the 19th century completely changed its role and allowed to protect the city against its floods. Confined within high dikes that protect the surrounding areas, the banks of the river were redesigned as a simple and low-maintenance promenade, with paths, plantings, benches, sports areas. In the river, a succession of engineered waterfalls creates a specific sound environment that supersedes the sounds of the city; stepping stones allow for direct crossing of the river. During periods of low water level and warm weather, with simple and technologically-driven design, the river can thus be reinvested by the population as a piece of nature within the city. Widely artificial, the arrangement of the river Kamo and its banks can however appear as looking for a natural aspect. In this presentation, we shall try to explain the implemented mechanisms allowing to reach this ideal. This subject profoundly questions the influence of the “milieu”, relation of society to their environment, during the refitting of rivers.

“There are only three unpredictable things: the armed monks of Enryaku temple, the dice of the backgammon game, and the water of the Kamo River.”

Attributed to Emperor Shirakawa, 11th c.

Introduction

Rivers were always an essential factor in the choice for the site of a new settlement. Over times, rivers have played important functional roles as well as symbolic ones. They were both beneficial (used for drinking water, irrigation, transport, energy, cleaning, etc.) and dangerous (flooding, pollution). As cities grew, new techniques developed and the role of rivers changed, the physical and symbolic relationship between cities and rivers evolved. While this evolution is comparable in all developed countries, looking at the specific example of the Kamo river (Kamogawa) in Kyoto may help us explore how the specific characteristics of the “milieu” (in A. Berque’s use of the word) influenced people’s attitude and action in the relationship of city and river, and more generally culture and nature (Berque, 1986).

Pre-modern history

The city of Kyoto was founded in 794 in a wide flat plain surrounded by mountains on three sides and open only towards the South, and crossed by two rivers, the Katsura to the West and the Kamo. The Kamo springs in the Northern mountains, runs Southward and flows into the Katsura river just South of the city. At the founding of the city, it was deviated to run parallel to the mountain range on the Eastern edge of the city, so that the site would correspond to the ideal site according to Chinese geomancy. Some of its water was diverted into North-South canals running across the city, which together with the many wells drilled into the abundant groundwater, satisfied the water needs of the inhabitants. (On the history of Kyoto: Plutschow 1979, Fiévé 2008, Stavros 2014.)

The river formed a wilderness in symbolic opposition to the ordered and codified urban grid. Over time, the more swampy Western half of the originally planned city dwindled away and the development moved eastward, with temples and new neighbourhoods being set up on the left bank of the river, in the foothills of the Eastern mountains, thus integrating the river into the city. Like most Japanese rivers, the Kamo river is a mountain river, and this determines its morphology and flow pattern. In its 30 km long course it drains a 200 km² watershed located in the mountains for 70 percent of its surface. When it reaches the flat plain where the city lies, the river channel becomes wide and shallow with a dynamic braided pattern created by the gravel eroded from the mountains and deposited in its bed. (Its hypothetical 11th century appearance can be seen on the large scale model exhibited in the Kyoto city library). Very shallow during the dryer seasons, it can change very suddenly into an uncontrollable flood after extreme meteorological event such as typhoons. Indeed, as we can guess from the quote above, the floods of the Kamo river were a recurring problem from the beginning of the city's history. Already in 824, an office was created for (among other missions) building levees along the river. In the following centuries there are several mentions of reinforcement of the river banks. By the 17th century, the river channel had been lowered and narrowed, and the surrounding neighbourhoods protected by levees that were progressively strengthened. Most of the time, however, the Kamo had little water. The riverbed was made of small shallow rivulets flowing amid island-like gravel sandbars. The gravel islands were so characteristic of the river that they were represented on most of the early maps of the city, as well as on the artistic renderings of the riverscape.

Being symbolically, legally and physically off-limit during the Middle Ages, the river was fully integrated into the life of the city as the place where its wilder, often illegal but necessary side could be played out: polluting economic activities (such as dyeing clothes), living place of social outcasts, entertainment and prostitution, battles and executions. These activities set the pattern for the uses of the river up to the modern times.

During the 18th century, the largest (now officially designated) entertainment neighbourhoods also grew along the river. As the sandbar accumulation process continued, it created islands sometimes so large as to become a place of entertainment of their own. The main bridges crossing the river, the walks and roads along the banks, the seasonal terraces built over the



water to enjoy the refreshing breezes of the river during the hot summers, were each additional ways to set up the river as a stage where the complex social games of the capital could be played out visibly (Nakamura and Saito, 1990). Indeed, from the late 18th century, river scenes next to the central bridges were represented as some of the “famous views” of the capital and were also often shown in 19th century prints. The guidebook published for the 1895 industrial exhibit organised by the city of Kyoto describes thus the scene offered by the river:

“The river Kamo upon which the city stands is little more than a wide expanse of pebbly bed through the middle of which trickles a little rivulet. (...) The Japanese too have a happy faculty of putting to some graceful use or other everything that nature offers, and thus it has come about that the unsightly bed of the Kamo-gawa serves the citizens for a picnic place. There on summer evenings they set up little tables to which access from the banks is afforded by tiny bridges of bamboo, and at these tables the people sit drinking tea, eating cakes, passing the wine-cup and making music. It is the carnival of Kyoto, (...) the river being absent, the light-hearted people have their picnics where it ought to be” (Brinkley, 1895). The guidebook’s description reflects the social value of the place that emerges as a collective “creative creation” (Fiévé, 2003).

Modern history

After the Meiji restoration of 1868, and the sudden and massive importation of Western technology and the worldview that went along with it, the relationship of city and water also changed. Changes in land use, growing urban population, straightening of the rivers changed the flow pattern and led to previously unseen, more important floods. The regulation for navigation and the protection of cities against floods as well as new economical uses were the main concerns, reflected in the first “river law” of 1896. This attitude was reflected on the work done on the Kamo throughout most of the 20th century.

The 1935 flood caused heavy damages. To prevent similar damages in the future, large scale work on the river started in 1936 and after the interruption due to the war, was completed in 1947. A dam was built upstream at Hîragi, to control the flow and erosion between Hîragi and the mouth of the Kamo (flowing into Katsura River), and the water channel was redesigned along the whole length (18 km). The riverbed was lowered by 2 to 3 meters and stabilized through a series of concrete steps creating a series of low cascades; the channel between the embankments was widened, and the embankments consolidated.

The negative changes in environmental quality created by hydraulic works and growing pollution, which began with the Meiji era, increased notably during the period of rapid urbanization following the Second World War. The important level of pollution reached by the Japanese rivers in the 1960’s and 1970’s, together with an increased awareness towards environmental issues shared with the other developed countries, led to a new approach towards rivers, and towards the relationship of rivers and cities. While the new river law of 1964 still mainly insists on the economic uses of water, the environmental issues came to the

fore and became an important part of the revised river law of 1997. (About the River Laws and their history: Takahashi 1990, Ômachi 1999, Nakai 2006.) Today, rivers are being redesigned throughout the country (often at high costs!). The various projects explore different forms of flood protection and aim at regaining ecological equilibrium while increasing urban amenity.

Kamo River today: an ongoing project

In Kyoto, large scale work, both functional and aesthetic, was started in the 1980s by the Kyoto Civil Engineering Office of the Kyoto Prefectural Office of Construction and Transportation. While the riverscape was in itself neither a natural nor an urban protected site (Fiévé, 2008), the work done on the river channel reflects the new sensitivity towards the quality and liveability of the environment that pervades Japanese society. At the same time, it successfully prevented flooding during the exceptional typhoons of the last few years. The project entailed three main phases: the remodelling of the river channel cross-section; the redesign of the embankments into an urban promenade; and an ongoing design and management work on the riverbed, to insure both biological richness and cultural appropriation.

Embankments

The railway line running parallel to the river and the canal bringing water from the Biwa Lake were relocated underground so as to allow the widening of the river channel. Between 1995 and 1999, a two-level promenade was built along the left bank with flowering plants highlighting the passing of the seasons, while the right bank had a single but wider level. The design is not very elaborate but offers diversity with simple means: a few trees and shrubs, low maintenance lawn; benches; wider flat areas for group gathering and play. There are many connections (stairs and ramps) between the levels, allowing easy access from anywhere in the city. Each “spatial event”, such as a bridge crossing overhead or a roaring cascade in the river below, is highlighted by a specific treatment. One section, planted with flowering cherry trees in 1995-1999, has by now become one of the “famous spots” of Kyoto for cherry blossom viewing. The embankments, rounded on top, are covered with stone blockwork made of diamond-shaped roughly hewn rock, combining visually into a clear geometrical pattern with natural texture. Here and there steps lead down to the river bed; elsewhere the vegetation is allowed to grow.

Riverbed

Stabilisation of the riverbed was achieved by creating a succession of steps, made from irregular rocks, hewn stones similar to those lining the embankments and double-T shaped concrete blocks. Although the new Hîragi dam changed the sediment-economy of the river, the erosion

and sedimentation processes continue; this is made visible by the ongoing formation of sandbars. Rather than dredging the riverbed clean, the engineers of the river management Agency decided to launch a 10-year experimental research program that appears more respectful towards the river. Through dredging, they experiment with the morphological properties of the gravel islands, studying their morphological evolution and their role in offering habitat to a variety of plants, birds and other animals. While the intention is not to recreate “nature” in its past culturally shaped expressions (the earlier braided morphology of the Kamo or the later large scale gravel islands used as places of entertainment), this new approach proposes yet another way to culturally shape a natural process (river hydrology) according to a society’s current sense of itself as it appears through the way it looks at nature. While the river channel is clearly the result of intensive human intervention, the irregular pattern of the gravel island bring a strong sense of nature’s presence at the very heart of human society (the city), maybe a typical characteristics of Japanese culture that has always tried to reach back to nature by allowing interstices where she could reappear, in a discursive yet timeless way (Berque, 1986).

Conclusion: the river as “milieu”

Today the Kamo River is much appreciated by the residents of Kyoto. People walking, biking, taking a break for lunch or simply sitting on top of the embankment and looking at the river are common scenes. Some activities are seasonal, related to plants (cherry blossoms, autumn leaves) or organized events, such as street festivals or the centuries-old tradition of wooden terraces built by restaurants over the river during spring and summer.

People use not only the banks, but also the riverbed itself. Fishermen in complete attire, children looking for shells can be seen wading in the water. Although the existing gravel islands



are not as large as those represented in the 19th century views and maps, they are actively used by children playing with pebbles or families having a picnic.

Here and there, a line of carved stones is set across the river. Inviting the experience of crossing at water level, they are popular with children and adults alike, for their function (an alternative to the bridges to get across the river) or pleasure (jumping from stone to stone). Clearly a cultural artefact in the middle of what appears as nature (flowing water, gravel islands), hinting at the stepping stones of traditional gardens that are themselves references to rocks for crossing mountain streams, they give physical form to the complex network of cultural references unique

to the Japanese 'milieu'. Crossing the river step by step can be understood as a profane ritual, enacted and observed (from the bridges and the embankments), that embodies the characteristic relationship of Japanese society to space and nature (Berque, 1986, 2013).

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