

Kyoto Morphospace: Vision of Kyoto for the 21st Century

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INTELLIGENCE OF THE ARTIFICIAL

Our vision for the future of Kyoto extends 1200 years of urban history and the geomantic rules underlying the city's construction to include the electromagnetic conditioning of the environment. Kyoto will evolve an artificial nervous system capable of both monitoring the environment and supporting a state of high communication necessary for informed citizen participation within an increasingly bio-engineered world. Kyoto Morphospace envisions an urban ecology formed by the Kyoto Constellation, an energy and information satellite system; Kyoto Teleport, a hybridized natural setting at the heart of the city; and Kyoto Metabody, a ubiquitous telecommu-

nications network supporting behaviors determined by software, participants and environmental circumstances. These operative strategies merge technosphere and biosphere to make Kyoto a global leader in establishing a sustainable future and open democratic society.

KYOTO CONSTELLATION

Kyoto Morphospace transcends the construction of real space infrastructures such as roads, bridges, and railways to include comprehensive planning and design of the real-time environment of interactive technologies. We propose Kyoto as the first city to implement acivicglobal telecommunications and renewable energy

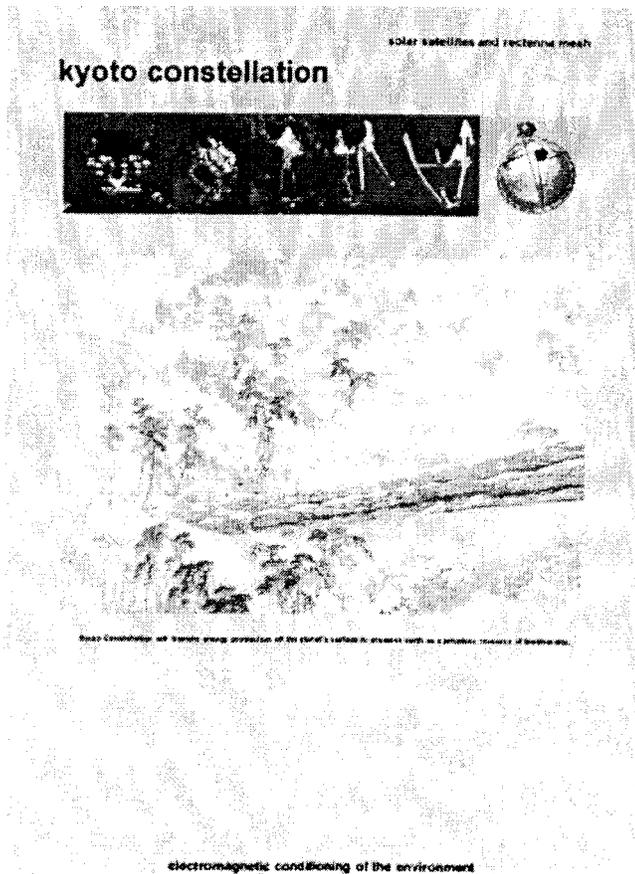


Fig. 1. Kyoto Constellation



Fig. 2. Kyoto Teleport.

system by the year 2020. The satellite equivalent of fiber optics, the Kyoto Constellation (Fig. 1) will ensure high speed data communications and video conferencing — the ability to communicate with anyone, anywhere. The Kyoto Constellation, to be developed by research and industry partners, will deploy a series of low earth orbit satellites circling earth at an altitude of 600 to 1,000 kilometers providing a range of environmental monitoring and telecommunications services. These small, approximately 50Kgs. suitcase-sized communications satellites will also serve as the vehicle for inflatable solar collectors beaming orbitally collected solar energy to Kyoto via microwave transmitters. Energy will be provided on a virtually continuous basis as at least one satellite will always be in view of receiving stations in the Kyoto region. Scaling up over time, these solar satellites will power the entire urban region, effectively freeing Kyoto from dependence on fossil and nuclear fuels as well as foreign energy sources. Power will be transmitted through the infrastructure of transmitters and receivers in place for the satellite communications system. Rectenna will receive microwave transmission for distribution within the existing electrical grid. Made of fine metallic mesh, rectenna will be visually transparent so their presence on the ground will not interfere with agriculture and animal life. Rectenna may also be deployed in slow moving aerial gardens over landfills, rivers, and fields, producing biodiversity factories. The Kyoto Constellation transfers energy production off the planet's surface to preserve earth as a priceless resource of biodiversity.

KYOTO TELEPORT

At the center of the city/garden and in the site of the Imperial Park we propose to create the Kyoto Teleport (Fig. 2) as a true cyber-place of interactive communications. This new datascape for learning and citizen participation introduces an intensive event space at the heart of the city. The Imperial Palace will be relocated and the former Imperial Park designed as a hybridized natural setting and new zoological model for the enjoyment of all Kyoto. The program includes Goshō Server, Kyoto Free-net, Dataspace, Aviary, Water Pavilion, and Emperor's Forest. This tissue of interactions will produce a living and genuinely artificial space, favoring the emergence of techno-ecosystemic niches.

KYOTO METABODY

The Kyoto Metabody (Fig. 3) will provide a set of collaborative tools and interfaces for new modes of interchange between the urban and the technological. The Kyoto Metabody assumes the cyborg as a potentially positive development and seeks to design products and culturally specific interfaces sensitive to local circumstances that support individual freedom and new forms of collective action. Employing nanotechnological miniaturization the Kyoto Metabody proposes the design of bio-electronic exchangers powered by corporeal movement and the body's electricity. For example, the "Smart Kimono" proposes one of several modalities capable of monitoring

physiological data specific to the individual. Recyclable and environmentally friendly, the micro-elements woven into the garment assure the wearer's specific existence within the information society. Kyoto Metabody explores a necessary synthesis between software and hardware, mind and body. Our goal is to develop tools and interfaces that are locally specific, responding to cultural and social circumstances.

The meshed networks of the Kyoto Morphospace will engender a state of high communication to support citizen participation, generate new businesses and research in the region.

PROJECT CREDITS

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Source material provided courtesy Jet Propulsion Laboratory/California Institute of Technology, Pasadena, CA.

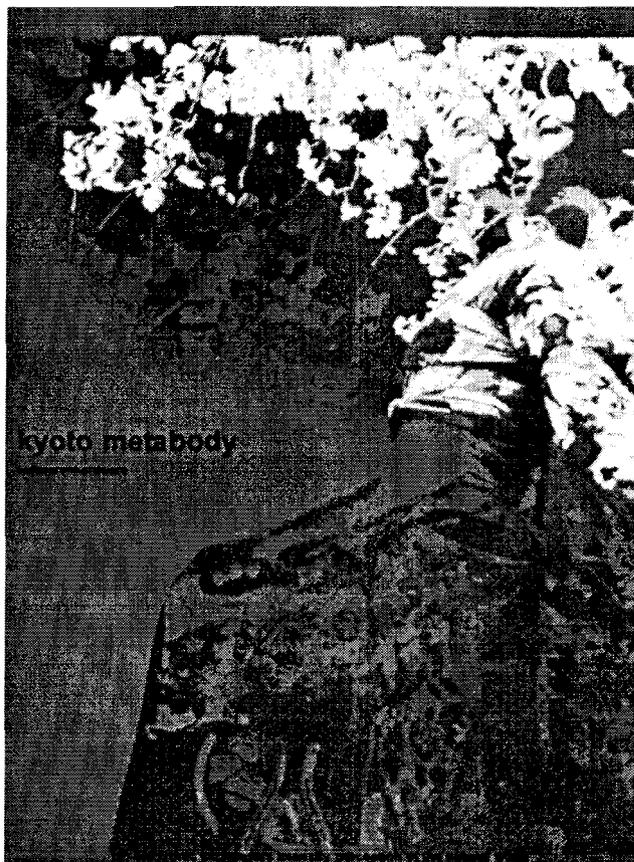


Fig. 3. Kyoto Metabody.