

DATABASE MANAGEMENT: JAPAN, POSTMODERNITY & ARCHITECTURE'S DIGITAL TURN

ABSTRACT

This article offers a framing of the development and adoption of computer aided design tools by Japanese architects in the 1980s and early 1990s that counters the interpolation of their work into conventionalised narratives of a momentous “digital turn.” It combines media theoretic and cultural studies approaches to analyse the design practices and design outputs of Japanese architects engaged with computers alongside prevailing political-economic policies and contemporary popular cultural genres/forms such as database novels. The article thereby elaborates on the formation of a “database imagination” of Japan and information management practices through which computer use was framed domestically and internationally in relation to emerging theories of aesthetic and technical postmodernity. Setting these domestic and international framings against one another, the article shows how efforts to construct a particular image of Japan were used by multiple groups to position the country and its architectural production within larger narratives of cultural and technological change. Finally, this positioning is examined as a site through which the cultural specificity of Japan and the co-constructive encounter of Japanese architects with computers was and continues to be negotiated.

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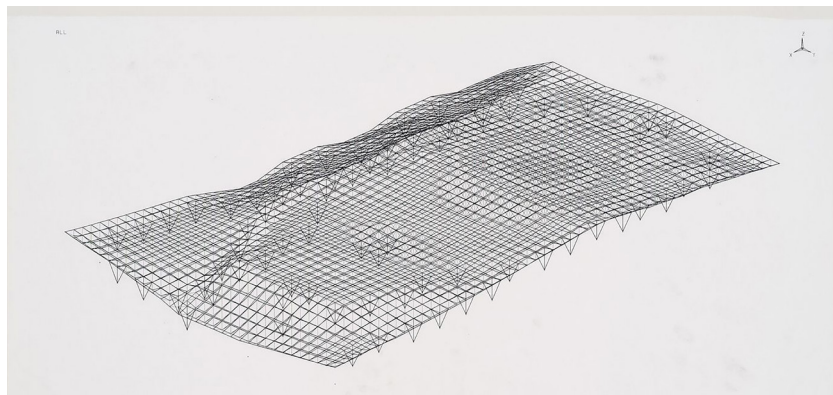
INFORMATION SOCIETY

1. INTRODUCTION

Japan and the work of Japanese architects such as Yoh Shoen and Isozaki Arata have been situated prominently as paradigm-defining examples of experimental and innovative uses of Computer Aided Design (CAD) tools within conventional histories of architecture's "Digital Turn"—the widespread adoption of computers for the design of novel architectural forms in the late 1980s and early 1990s. Yoh's digitally-sculpted roof surfaces at the Odawara Municipal Sports Complex (1991) [Figure 1] and the Galaxy Toyama gymnasium (1992), for example, were approvingly cited as important precedents by Greg Lynn, one of the leading protagonists and subsequent historians of the "Digital Turn," in a now canonical 1996 *Architecture New York (ANY) Magazine* article, "Blobs, or Why Tectonics is Square and Topology is Groovy."¹ However, the work of Yoh, Isozaki and many of their compatriots rarely required or was explicit about the use of CAD tools for their aesthetic design or material realisation, as Lynn's article and subsequent narrativisations of the digital turn have suggested. Similarly, the link between the use of computers and Japanese national identity that these narrativisations read into Yoh and Isozaki's work was, in fact, significantly more complex than what was implied.

With this in mind and building from an acknowledgement that many histories of architecture, including digital turn narratives, are predicated on a disciplinary distinction between design and more managerial activities, a reevaluation of the work of Yoh, Isozaki, and their contemporaries seems necessary.

FIGURE 1: Computer-generated image featured as part fo the Archaeology of the Digital exhibition at the Canadian Centre for Architecture:Perspective view of space frame, Odawara Municipal Sports Complex, Odawara Kanagawa, Japan. 1991. Digital Print on Paper. 34,2 x 56,9 cm. ARCH265924. Shoen Yoh fonds. Canadian Centre for Architecture. Gift of Shoen Yoh. © Shoen Yoh + Architects.



By attending in turn to the manners in which their work corresponded with contemporaneous political-economic projects of the Japanese government, managerial practices advanced by Japanese corporations and popular forms of cultural media; this reevaluation connects broad-based genres of cultural production that were emerging in Japan with the specific practices and media capacities employed by architects.

In doing so, it shows how architectural practices were employed in constructing a distinct imagination of Japan and of computers, as well as how these imaginations reciprocally shaped the work and reception of Japanese architects.

Rather than being seen as an early and model manifestation of a new globally applicable approach to architectural production in relation to the supposedly universal logics of newly available computer technologies, the work of architects such as Isozaki and Yoh might instead be seen as a co-constitutive with a framing of the Japan of the 1980s/early 1990s as synonymous with postmodernity. This framing, of which particular computer-related cultural practices were just one part, was cultivated by nationals and foreigners alike to negotiate the treatment of Japan and Japanese architecture as both idiosyncratic and indicative of a more general/global postmodern “condition”. Moreover, by discursively analysing these negotiations along with the media support and genres, they drew on, this article recovers some of the specificity of this historical moment. Doing so foregrounds the multi-directional exchanges of ideas and practices between architects and other specialists across various geographies. As such, it works to counter the long-ongoing co-construction of Japan as a constitutive Other or foil through/against which “the West” and its actions have been brought into relief, perpetuated in part by narratives such as those of a “Digital Turn.”²

2. MAKING JAPAN POSTMODERN

Despite its long history of being positioned as an uncanny and co-constitutive foil to the West by both foreign and domestic thinkers alike, Japan was not automatically emblematic of postmodernity or figured as a counter to Western modernisms. Japan had to be made postmodern just as Postmodernism, as an explanatory theoretical framework premised around a collapse of grand narratives and abstract structures of universalising order in the face of an emerging “late capitalism” had to be constructed to account for the different social, economic and political shifts being experienced by Japan and other countries.³ For Japan specifically, these shifts included a series of commodity crisis-related boom and bust cycles, student protests, information/

communication media network proliferations and a more general questioning of national identity and intellectual autonomy in the decades following the end of the Second World War and the subsequent occupation of Japan by the United States.⁴

The co-construction of Japan and Postmodernism around these transformations was made explicit in the widespread efforts by government officials, corporate leaders, writers, literary theorists and architects to both descriptively and protectively characterise their experience of the various productive crises composing communications technology-facilitated processes of post-industrialisation as the formation of an “information society”. Made by such publicly prominent figures as Prime Minister Nakasone Yasuhiro, former Mitsubishi Materials Corporation CEO Takeshi Nagano, architect Kurokawa Kisho and critic Asada Akira throughout the 1960s, 70s, 80s and up until the bursting of the “bubble economy” in early 1992, such characterisations brought discourses on postmodernity in economics, management, literature and architecture into connection with one another and consequently to broader public consciousness.⁵ The “information society” was framed by these figures in terms of a shift in the locus of power from the coordination, control, and deployment of materials and commodities towards the derivation of value from the applied and theoretical knowledge embodied in materials, assemblies, processes of production, and their organisation. As such, for many in this discursive milieu, “information society” served not only as a description of the particular political-economic and cultural formations around the proliferation of media and circulation of information occurring in Japan during this time, but as a metaphor for Japan itself. In at least Nakasone’s formulation of this metaphor, which conflated information, nature, and environment, Japan was to be seen “as the computer that best processes information.”⁶ Consumers, corporations, cultural producers and critics alike were encouraged to engage in this process by drawing on numerous media including magazines, radio, television and new government or corporate-funded computer networks to “playfully synthesize data from many different outlets rather than looking to one central authoritative source.”⁷ In this blurring of distinctions between production and consumption, information was to be understood not so much as a representation of the truth, but rather as a material to be manipulated.⁸

Cast in terms of the generation of formal, spatial, and conceptual complexity through practices of reference, collage or geometric experimentation which understood architecture in terms of semiotic organisations of information tied to a social/political project of difference, the work of Yoh, Isozaki and many of their contemporaries in Japan intersected almost seamlessly with

this understanding. It also intersected with the practices extending from literary theory and management discourse in which Japan figured prominently and through which concepts and practices of both postmodernity and the “information society” were being worked out. This was best captured in projects such as Yoh’s gymnasia or Isozaki’s Tsukuba Center which displayed their reconciliation of aesthetic and managerial projects that challenged modernist standardisation by showing how they had been computationally or combinatorially produced; forming an evocative smooth undulating surface from a precise arrangement of non-uniform wood modules in the former and organised space for significant activities from a collage of architectural references in the latter.⁹

The rendering of Japan as a kind of concrete abstraction within highly mediated informational networks was further built out in a multitude of venues that themselves collaged together managerial, literary and architectural production in a kind of trans-medial/transnational assemblage: the magazine *Japan Architect* where these buildings were presented alongside advertisements for exhibitions, books, and articles on Postmodernist architecture and personal computers; the government-funded exhibition, “Visions of Japan,” held at London’s Victoria & Albert Museum in 1991; the 1992 “Anywhere” conference held in Yufuin but broadcast on national radio featuring Isozaki and figures associated with theories or practices of postmodernism including Asada Akira, Frederic Jameson, Jacques Derrida, and Paul Virilio; and international design competitions for prominent government buildings such as the new Tokyo City Hall (1986) or the Yokohama Port Terminal (1993).¹⁰ As the construction of this assemblage also figuratively and literally helped construct images of Japan, contemporary Japanese architectural production and the use of computers in Japan, it both explicitly and implicitly drew on and fed back into longstanding foreign and domestic conceptualisations of a specifically Japanese technological and aesthetic cultural identity—a unique mix of structural and expressive simplicity, open-ended forms of collective production based on recombination/flexible reorganisation, historical (dis)continuity and incorporation/adaptation of technologies. In architecture, at least, these conceptualisations dated from the post-Meiji Restoration travels of /publications by Bruno Taut, Frank Lloyd Wright and later Walter Gropius, Reyner Banham, and Charles Jencks within Japan as well as of Japanese architects abroad.¹¹ In the contemporary setting, however, they amounted to what Marc Yamada, borrowing from and historically extending the analysis of Azuma Hiroki, has called “the database imagination of Japanese postmodern culture”—a literal and metaphorical organisation of economic and cultural production through the decentered, hypertextually indexed and non-narrative form of the database with its capacity

to store, link, process and manage diverse information including history, as well as images/imaginings of Japan and the database imagination itself.¹²

The proliferation of this “database imagination”, marked by the near constant approving citation of Roland Barthes’ description of Japan as an “Empire of Signs”, was coincident with and crucial to what media and architecture historian Yuruki Furuhashi has described as “the rise of intellectual labor, economic synergy across industries, automation, and participatory democracy in which citizens actively engage in policy decision making through networked systems of communication feedback” that began in Japan in the 1970s.¹³ Both were advanced through a regional/prefectural decentralisation of governance undertaken in earnest starting in 1977, as well through the implementation of increasingly indirect, yet also individualised apparatuses of social, economic and political control modelled on the flexible organisations of databases, networks and systems of production that were expected to inform and be informed by a reformulation of material/cultural productions around contemporary needs. The latter was manifested in the growing investment in research/innovation activities at major corporations like Toyota and Panasonic in manufacturing and electronics, Nikken Sekkei and Takenaka in planning and construction and Yamanashi in broadcasting, as well as by derivative cross-media creative production in arts and literature. Linked with shifts in both the literal organisation of economic and intellectual production around continuously varying information flows as well as in the organising social metaphors that the “database imagination” represented, these efforts were seen as requiring new forms of management/governance.¹⁴

3. REALISING THE DATABASE IMAGINARY

Moreover, several of these new management practices such as Total Quality Control (TQC) and Just-In-Time (JIT) production pioneered by manufacturers including Toyota, design-build-manage contracts being implemented by large architecture and construction firms or government initiatives such as the informationalisation of bureaucracies were framed in terms of adopted/projected conceptions of Postmodernism as strategies of production/consumption that drew on and recombined various information channels and created a specific cultural affect or ethos that extended beyond their functional purview. Such appeals were used by political and corporate leaders in combination with analogies between managerial practices and popular forms of aesthetic production/consumption to render information society Japan and its database imagination as phenomena that were simultaneously contemporary and deeply rooted within specific formulations of national cultural history.¹⁵ This was important because the indirect apparatuses of control that the

information society was predicated upon were centred around the imperative to participate in or “buy-into” the processing/feedback of databased information; the voluntariness and adoption of flexibility and continual improvement as an ethos by all levels of organisation down to individuals was a defining feature of practices such as JIT and TQM.¹⁶ This structure of buy-in and feedback was based not on explicit rules, but on the circulation and adoption of such (meta) signs, like the computer, the database and Postmodernism that through their programmability, abstraction and aestheticisation could be used to link across different regimes of meaning, thus carrying the organisational frameworks, encodings and terms underwriting the discursive co-construction of the “information society” somewhat invisibly with them.¹⁷

Management of the perception of Japan as well as of the managerial and creative practices taking place in Japan both at home and abroad through the promotion and self-conscious adoption of particular Postmodernist formulations of works, individuals, organisations, the nation and their intersection in the information society was, therefore, a pressing and integrating project for all scales of government along with corporations and intellectuals. In other words, it was as much through the promotion of the imagination of Japan as a unique but also paradigmatic postmodern “information society” – a bit of both the past and the future in the present – as through any real organisations of production which this imagination referred to or helped realise that the various crises the country faced were to be transformed into new reciprocally reinforcing forms of productivity, investment and pluralist creativity such as tourism or process innovation that liberated and channelled local and global knowledge and desires.¹⁹ As it formed a nexus of material and cultural production, in both the organisation of architectural practices and the design of built forms was made into one of the prime vehicles for this project. If Japan was to be seen as a computer, it was to happen through the processing of domestic and global desires that its corporate, literary and most of all its architectural databases performed, as well as the imaginations of Japan as postmodern and the actual or possible roles of computers in this postmodernity that these databases made productively mobile.

4. INFORMATION MANAGEMENT MANAGEMENT

The co-formation of “information society” Japan, organisational management and postmodernism was supported, at least in part, by the adoption of emerging digital technologies in the fields of logistics and human resources. The global competitiveness of Japan-based corporations during the “high-growth years” leading up to the bursting of the bubble economy in the early 1990s was attributed by many, both in Japan and elsewhere, to a unique

mixture of technological efficiencies, monetary policies and management approaches such as TQM and JIT for addressing quality variation in labour/production rooted in the continual recording and statistical analysis of information about them. These management approaches, particularly the role of information in them drew the attention of management theorists, including Peter Drucker, advocating for what they called a postmodern approach to management. In addition, through their intentional export/adoption, often described as “Japanisation,” these approaches were made synonymous with Japan, information technology networks and flexible divisions/spatialisations of labour within the globally distributed late capitalist production organisations to which Postmodernism was linked.²⁰

Perhaps the central tenet of the postmodern management theories associated with Japan was a rejection of “modernist” social organisations of production, framed as vertical hierarchies of decision-making and information flow. Instead, these theories privileged a more “humane” process of group decision-making that was translated in terms of “information society” rhetoric as the decentralised, horizontal sharing, movement, and management of information.²¹ In this model, which was referred to as the *kaisha* system in corporations like Nikken Sekkei, individual workers were employed “for life”, and, with their institutional knowledge of the company and its practices, were to serve as nodes of information collection and transfer. Through its emergent aggregation, the information collected by and circulating amongst workers was expected to enhance production/processing capacity, reduce risk and increase corporate practice optimisation while also bringing consensus on the adoption of new technologies such as CAD.²² As a corollary, both the positions of workers within such systems, as well as the system itself, were meant to be flexibly reorganised based on the needs or opportunities discovered in the processes of information collection and communication. Working groups for a particular project would be (re)formed as called for and through constant worker (re)training in areas adjacent to their specialty, group members could be effectively interchanged.²³

Consequently, workplaces, much like Japan itself, were framed as laboratories for the continuous, collective production of knowledge about production, which could then be fed back into production processes to avoid waste and unevenness, thereby increasing the added value embodied in the products and services supporting the information society.²⁴ Whether or not such descriptions of the group decision-making purported to be the norm in Japanese corporations were, in fact, accurate or even represented a radical shift in business practices, they nevertheless became the terms by which both Japan and Postmodernism came to be defined within management discourses

of the 1980s as both foreign and domestic governments and corporations sought to gain or maintain the competitive economic edge these practices respectively were associated with.²⁵ By virtue of their foregrounding the collective, informational authorship of decisions, flexibility of organisation and technological adaptation, but also couching these in terms of nationally-specific cultural tradition sometimes referred to as “post-confucianism,” or else the particularity of the Japanese encounter with modernism, these practices, or at least their descriptions, fit well within the constructions of the information society and its associated database imaginary.²⁶ Not only was the information contained in the drawings and designs of Nikken Sekkei able to be linked, layered, processed, interchanged, and reproduced in new ways with the hypertextual structure and search capabilities of the CAD software the company was experimentally developing, but through the already-existing practices of distributed authorship and excerpting from previous designs this software extended, so to were its workers. Through these parallel linkings, employees of companies like Nikken Sekkei and the process of design more generally came to be seen as one of creating new value in the form of buildings and knowledge about them through the management of information movement across spaces, times and media. As the largest architecture firm, in both Japan and the world at the time, with projects around the globe, including designs on expansion into the architecture and construction industry in the United States, alongside other large Japanese firms; Nikken Sekkei’s information-centred management practices and uses of computer technology made it one of the corporations, like Toyota, Panasonic and Mitsubishi, involved in linking together the co-productive images/imaginings of Japan and a techno-managerial, if not necessarily aesthetic postmodernity.

5. MANAGEMENT AND METAFICTION: LITERATURE, ARCHITECTURE AND AESTHETIC POSTMODERNITY

More than other fields of cultural production, it was literature, and particularly a strain of literary criticism influenced by translations of concepts from French poststructuralists such as Derrida and Deleuze, that provided the discursive theoretical touchstone linking a more aesthetic construction of postmodernity with architectural production in Japan and the database imaginary of the information society. Many members of the post-Metabolist “New Wave” of Japanese architects, including Kurokawa Kisho, Isozaki, and the amorphous collective “ArchiteXt,” explicitly appropriated theories and practices from this strain of literary criticism, its proponents such as Asada Akira and Kojin Karatani, and the writing of Japanese authors to which this criticism was addressed. In this appropriation, these architects consciously adopted the

associations with both Japan and postmodernity these theories brought with them. One of the uniting forces for the diverse membership of ArchiteXt, for instance, was an interest in the “discontinuous continuity” of urban semiology – a reading of cities as text composed of physical, graphic, and literary signs. At the same time, Kurokawa, in his 1991 book *Intercultural Architecture: On the Philosophy of Symbiosis*, to which leading theorist of Postmodernism in architecture, Charles Jencks, provided the introduction, related his architecture to the information society through the Deleuzian conceptualisations of minor literature and the rhizome; arguing that postmodern design was the design of the information society because it embraced multiplicity and potentiality that allowed Japan to speak within as well as transform modernist architectural idioms.²⁷ Isozaki and Shinohara Kazuo, for their part, developed approaches to thinking about their work through literature as a metaphor that “combined diverse intentions, experiments, motifs, quotations and metaphors into a unique form of symbolism” that paralleled Kojin’s characterization of architecture as a metaphor for language, number, and money.²⁸ However, these direct theoretical adaptations and overlapping metaphors through which architects in Japan began to link themselves with Postmodernism were not the only ways in which the fields of architecture and literature influenced one another in their situation within the discursive and media milieus comprising the information society. There were also looser, more praxis-based overlaps that were manifested in a similar treatment of both architecture and literature as kinds of hypermedia for managing meaning, understood as an informational commodity, through how both were assembled together with a diverse array of signs, symbol systems and other media to produce a particular image/text/building as well as the more meta-images of Japan, architecture, literature and Postmodernism.

Linked to questions about the role of the author and the coherence of the subject characteristic of assemblage-based practices blurring creation and consumption in the broader media space of the information society, as well as the situation of these practices in specifically Japanese histories of transmedial, trans-authorial literary production through recombinations, reformulations and retellings, the hypermediatic aspects of literature contemporary with the information society were represented by a self-conscious focus on the metafictional. The works of writers such as Tanaka Yasuo, Takahashi Gen’ichirō and Kobayashi Kyōji were thus situated within multi-directional information flows similar to those characterising group decisionbased management structures through their intertextuality. They were intended to be read through/with other texts, sometimes included as alternative fragmented narratives, endnotes or catalogue elements, while other times relying on readers to act as co-author through the extended cultural knowledge they brought to bear through their reading.

In addition, they also had a simultaneous double function as both literary content and literary analysis. In other words, these metafictional works both told a story and deconstructed the historical and contemporary conditions of possibility for telling that story. Much as the citizens of Japan were encouraged by Prime Minister Nakasone and others to manage and synthesise the various flows of information and media composing the information society, so too were readers of this metafiction prompted to, and did, extend to literature the discontinuous information-based parsing, (re)combining, and “snacking” of canonical and noncanonical, textual and extratextual references, through which these provisional syntheses were achieved.²⁹

Tanaka’s *Nantonaku Kurisutaru* (Somehow, Crystal; 1980) perhaps provides the most literal example of this “snacking” synthesis as both protagonist and reader work their way through the informational landscape of urban Tokyo, supplemented by menus, phone directories and other texts included as endnotes. Beyond simply supplementing contemporary literary representations with information content from other places, times and media in ways intended to construct and draw on co-informing cultural histories or behaviours of interconnected reading, watching and listening, these practices also foregrounded derivative forms of literary production/consumption. This included the creation of new works by fans or other authors who, by extending and (re)combining narrative elements, characters or other aspects of existing works, reciprocally (re)informed broader patterns of form and content in literature through their proliferation alongside and later by way of the literal computer databases and exchange networks becoming available beyond the bounds of the national government and large corporations.³⁰ Both in its form and the active processes of simultaneous reading/writing, literature, self-consciously framed around the contemporary and historical dissolution of author and narrative underwritten by multi-directional exchanges of information, was thereby made to performatively participate in the database imaginary and its co-productive articulations with images of Japan and Postmodernism as framework and content.

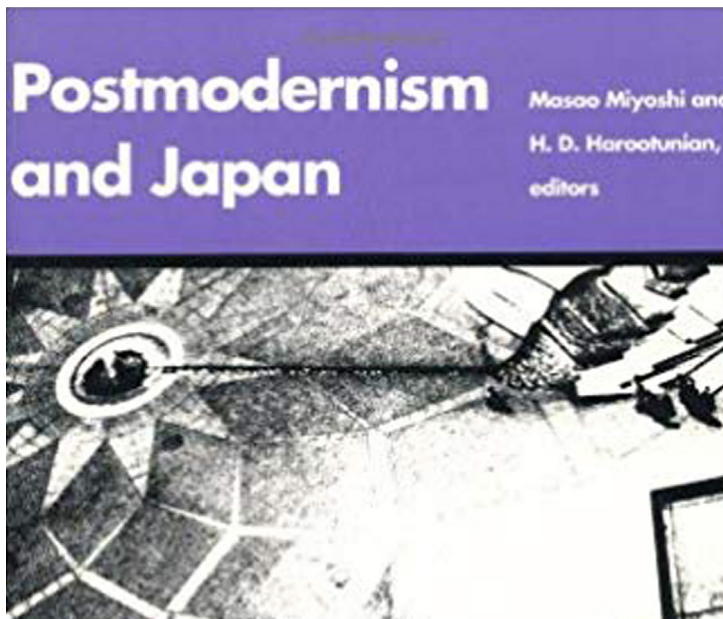
In architecture, this metafictional impulse and its double function as an analytical framework and content – to both create a building, but at the same time to (de)construct the particular figures of architecture, Japan, and postmodernity that were the conditions of possibility for the building as such through practices of managing multiply-authored fragmentary citations, allusions and other connections – was most evident in the work of “New Wave” alumni of the Metabolist movement or their acolytes. This group included Isozaki, Shinohara, Kurokawa, as well as Maki Fumihiko, Takamatsu Shin, Takeyama Minoru, Ishii Kazuhiro and Hasegawa Itsuko. Of them, Maki,

Kurokawa and Isozaki were perhaps the most theoretically inclined. Maki, for example, used his work to outline a concept of “group form” wherein materials, scales and abstracted formal elements were juxtaposed in a way that foregrounded individual parts, leaving the systems that emerged from their clustering open to expansion, multiple interpretations and a constantly ongoing dialogue with their dynamic surrounding context as in his 1985 Spiral Building or the decades-long Hillside Terrace project. Kurokawa, too, looked to exploit the tensions between part and whole to create “hybrid,” “mongrel” and “heterogenous” organisations that included mainstream and “minor elements” in what he explicitly called the “postmodern architecture... of the Information Society” centred on the production, exchange and management of history, culture and desire as forms of information. Exemplified by his reframing of the multivalent uses Tatami floor unit, the Tatami floored rooms of Kaikan all-purpose halls and the computer science term “time-sharing” through one another to arrive at a framework for spatial (re)programmability and variety, Kurokawa viewed this architecture of the information society as an intersectional strategy of spatial and social management. This management was achieved, according to Kurokawa, through the informational mediation of the production and experience of space—the changing of its constitutive signs and symbols or the framework of relationships among them.³¹

Isozaki, more than Maki and Kurokawa, worked to move outside the formal language of the architectural modernism associated with Metabolism and, in some ways, merged their approaches to make the effects of his hybrid theories/methods of “mannerism” and “rhetoric” immediately visually apparent. Through “manner,” or the drawing on semi-autonomous patterns and images already existing in art, history and everyday life treated as a kind of database of both content and relationships, Isozaki sought to update the modernist notion of architecture as a machine for living to the conditions of the information society, viewing architecture instead as “a machine for producing meaning” – a “semantic vehicle, that is, a form or series of forms capable of transmitting content” or “rhetoric.”³² In his combinations of recognisable forms as diverse as Michelangelo’s Piazza del Campidoglio in Rome, Shinto landscape principles, multilayered abstract geometric grid permutations and the mega-formal legacy of Metabolism in projects such as the 1983 Tsukuba Center (featured on the cover of *Postmodernism and Japan*), [Figure 2] Isozaki used the principles of “manner” and “rhetoric” to manage the promiscuous interactions of multiple unstable informationalised and mobile symbols of Japan, architecture and Postmodernism to generate a building.

Collectively then, these buildings were designed by their architects to be open-ended assemblages of images that provided both framework and content for the pluralist information society in which individuals were encouraged to participate by bringing additional information to bear in the dialogic construction of multiple meanings. Extended to the organising and overseeing of often incongruous works by multiple architects, including Ando Tadao, Takasaki Masaharu, as well as numerous foreigners in the Kumamoto Artpolis collection of cultural buildings by Isozaki under the charge of Prefectural Governor and future Prime Minister Hosokawa Morihiro in 1988 as a cultural showcase and tourist draw, these strategies of Maki, Kurokawa and Isozaki simultaneously created and situated architecture and a Japanese cultural identity as ongoing constructions opportunistically pulling from contemporary and historical sources. Further, they dovetailed well with the strategies and patterns of rapid and piecemeal urban development fueling and fueled by the booming economy.³³

FIGURE 2: Arata Isozaki's Tsukuba Center Plaza (1983) as featured on the cover of the edited volume of essays *Postmodernism and Japan*, underscoring the connection of such projects with an imagination of Japan's position relative to contemporaneous notions of globalisation and Postmodernity. The close and seemingly fragmented view shown on the *Postmodernism and Japan* cover further emphasises the collaged, multinarrative strategies common to both Isozaki's design practice and the other forms of cultural production addressed by the book's contributors, of which architecture was frequently framed as being emblematic; Masao Miyoshi and H.D. Harootunian ed., *Postmodernism and Japan* (Durham, NC: Duke University Press, 1989).



6. IMAGE MANAGEMENT: ARCHITECTURE AND POSTMODERNISM IN THE BOOM ECONOMY

In the booming economy's competitive landscape, prefectures eager for tourist dollars and other forms of investment capital, corporations vying for public awareness and individual landowners seeking to increase property value or rent rates came to treat buildings as informational products that the general public and critics helped construct by consuming them as images. Often cheaper than the land on which they were built, formally evocative buildings served as a means for garnering attention and consequently various forms of capital for owner, tenant and architect alike. In other words, buildings or collections of buildings, as in the Artpolis, were actively made meaningful through the database of references, allusions and media their designers and owners drew on to produce idiosyncratic and iconic images, as well as through their own insertion into and recirculation in media such as TV advertisements, magazines, and books as part of this database.

Takeyama's 1970 Ni-Ban-Khan (Building Number Two) provides the clearest example of this. An intentionally eye-catching collection of contrasting forms, graphics and signs that complicate any simple reading of the building's shape through their collapse and expansion of depth, Ni-Ban-Khan, on the one hand, provided an iconic informational image for the property owner, the drinking establishments much of the building was leased to, or the tourists and locals navigating Shinjuku nightlife. On the other hand, it was also elevated by critics eager to represent Japanese architecture as exemplary of postmodernist practices that foregrounded appearance through collaging disparate elements, while at the same time representing Postmodernism more generally as having innately Japanese characteristics.³⁴ Included on the covers of both the first (1977) and second (1978) editions of Jencks' seminal *The Language of Post-Modern Architecture*, though notably with a different painting scheme and changes to its external details, Ni-Ban-Khan was held up as a symbol of Japan, Postmodernism, and the booming economy as they all underwrote one another as conditions for contemporary architectural production; informing readers what to expect of each in a single glance.³⁵ Other architects, even including some predating the formal declaration of the information society, like Tange Kenzo consciously played up the formal and citational collage construction of their buildings and their role as communications conduits in his later works. However, these architects and their project less explicitly spoke or were spoken of in terms of Postmodernism. Ishii in his House with 54 Windows (1975), Takamatsu in both the Nishina Dental Clinic (1983) and Kirin Plaza (1987) and Shinohara in his computer-assisted design for the Tokodai Centennial Hall at the Tokyo Institute of Technology (1987), [Figure 3] for example, combined

ready-made or found forms, many of which were related to or drawn from manufacturing and communication technology, in order to evoke the tools and processes of industrial and informational production. As they were subsequently circulated in magazines, television and travel guides alongside other images of cultural production and advertisements for computer systems, these buildings came to provide a vocabulary or setting for narratives of the information society, with Takamatsu's buildings in particular often serving as film/anime locations.³⁶

For Tange, this focus on communications was slightly more literal, as most evident in the physicalisation of the database form of his 1966 Yamanashi Press and Broadcasting Center in Kofu. Designed as an extensible block of three-dimensional cells, each containing different programs and grouped according to media, the building was literally and visually subdivided and structurally/functionally stitched back together by sixteen cylindrical “communications cores” containing vertical circulation, mechanical systems, and telecom infrastructure.³⁷ Similarly, his winning entry for the 1986 New Tokyo City Hall competition, for which he and Isozaki both submitted computer-generated images produced by subcontractors, featured a “lattice-like pattern of windows and of marble and granite on the exterior of the buildings... intended to invoke the memory of geometric timber-frame buildings of Edo as well as the circuit board of a computer” in addition to allusions to the towers of gothic cathedrals and the contemporaneous Grands Projets of the Mitterrand government in France. [Figure 4]

FIGURE 3: Grid collage of computer-generated perspectives of Shinohara's Tokodai Centennial Hall, Tokyo Institute of Technology (right), and photograph of the completed building (left), emphasising collision of independent forms and non-privileging of any specific vantage or entrance point; Kazuo Shinohara, 1986; Unnamed photographer, 2009, Wikimedia Commons.



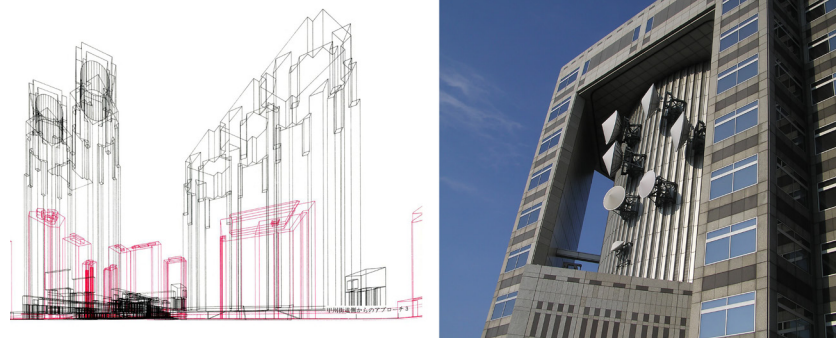
Combined with the “mushroom-like” constellation of satellite dishes on the upper reaches of the towers and the extra space on and between floors to accommodate the optical fibre cables of the city’s growing electronic information networks, these facade elements of Tange’s design for Tokyo Metropolitan Government were meant to not simply symbolically represent, but perform as part of the city’s informational governance: it provided an image in which this governance could be visibly embodied, circulated, and fed back through its articulations with the database of other images co-productive with Japan and Postmodernism.³⁸

7. MANAGEMENT IS THE MESSAGE: EARLY COMPUTER-AIDED DESIGN IN JAPAN

It was in this environment that Japanese architects who had already been rendered or self-consciously presented themselves as engaged in and surrounded by practices of productively managing continuously varying flows of information through their interactions with management discourse, literary theory and their conjunction in the database imaginary of the information society began exploring the use of Computer-Aided Design software in the late 1980s and early 1990s. To that end, from their own perspective, many were not doing anything particularly novel, but rather adapting newly available tools to existing organisational and theoretically-informed practices.

For both corporate firms like Nikken Sekkei and small/sole practitioners like Isozaki, Yoh and the other members of the “New Wave,” the specific capacities

FIGURE 4: Wireframe perspective image (left) of the proposal for New Tokyo City Hall developed by Kenzo Tange, 1986. Published in *Process*, “Proposals for the Competition of New Tokyo City Hall Complex,” Special Issue 4 (1986), courtesy of Tange Associates. Photograph of “mushroom-like” communications equipment near the apex of completed Tokyo City Hall towers; Unnamed photographer, 2003, Wikimedia Commons.



of CAD tools proliferating at the time to link and layer multiple formats of information, dynamically update cross-referenced information, precisely control compound curvature and produce images of an informational model from an infinite number of viewpoints were all combinations and extensions of familiar practices translated into a single new and newly available medium with its own particular protocols for information exchange and management.³⁹ Despite the difference in overall aesthetics and degree of refinement between the silkscreens and computer-generated images, Isozaki produced with the help of subcontractors for a number of his projects; the underlying processes by which the two sets of images were produced nonetheless had similar organising principles that were amenable to Isozaki's method of collaging referential forms and colours.⁴⁰ [Figure 5]

FIGURE 5: Final screen-printed and longitudinal section view of the proposal for New Tokyo City Hall, with colour separation indicating an understanding of layering procedures common to contemporaneous CAD software, and potentially themselves produced from computer generated models captured in additional in-process perspectives, produced by consultant firm ARC Yamigawa using the McDonnell Douglas-produced Graphic Design System with additional development by Applied Research of Cambridge (ARC); Left: Longitudinal Section of Main Building for the Tokyo City Hall Competition Entry. Printed 1986. Screen Print. 58,2 x 115.0 cm. DR1988.0274. Canadian Centre for Architecture. © Arata Isozaki; Right: View of Atrium, looking up for Tokyo City Hall Competition Entry. 1986. Computer-Aided Design Print. 76.8 x 108.6 cm. DR1988.0273. Canadian Centre for Architecture. © Arata Isozaki.



While in the silkscreens the drawings of linework and fields of each colour must be separated into a separate layer which is then exposed to a photosensitive screen to produce a series of negatives which must then be registered and recomposited layer by layer according to colour, in the CAD model and the resulting images, each major category of building element – structure, mechanical system, enclosure, etc., or any subdivision/combination thereof – can be placed on its own layer and assigned its own colour which is then broken down into colour channels for digital display or printing through mechanisms which also depend on photosensitivity. Even this difference in aesthetics was effectively reduced by the early 1990s, when Isozaki was working on his design for the Team Disney Building with its bright colours coordinated with its bold geometric forms presented in computer-produced images. [Figure 6]



FIGURE 6: Silkscreens prints developed from computer-generated renderings of Arata Isozaki's Team Disney Building, Orlando (1991) combining aspects of both layer-related colour and form management and intersections of independent formal volumes corresponding to database imagination and recombination practices; 1999, Estate of Arata Isozaki.

Several of Isozaki's contemporaries too, especially Shinohara, Hasegawa and Takamatsu, had by that time adapted their own design and image-making styles to CAD softwares. In contrast, others, including Watanabe Makoto Sei, Kikuchi Makoto, Aida Takefumi, Ando and even sometimes Isozaki, continued to experiment with ways to simultaneously show and perform the information management operations of which CAD software was now a part.⁴¹ That many of the capacities of CAD programs had parallels in practices associated with Postmodernism and the specifically Japanese cultural identity constructed in tandem with it through the database imaginary of the information society with their serial recombinations of elements into emergent assemblages based upon multi-directional information flows made them all the more appealing and easy to incorporate into existing organisational structures and design practices influenced by management discourse and literary theory that were themselves tied to images/imaginations of a postmodern Japan. Hasegawa, for instance, recalls being so fascinated with the 60-bit computer her younger brother used to play a virtual version of Go, that she used the computer's drawing program to create a cross section of a small house constructed with traditional timber joinery that she was struggling to develop using a minimum number of lines and connection types. She subsequently photographed the computer screen and "superimposed pictures of the same drawing with different colours" to represent her solution.⁴² [Figure 7]

Similarly, Yoh recalls his use of CAD software as bridging between modern fabrication and the timber construction associated with Japanese cultural traditions, with the software primarily serving as an aid for managing and optimising information about the many different lengths and orientations of wood required to build the undulating roofs of his gymnasium.⁴³ By providing a visual display linked to a reorganisable database which could be sent to and adjusted by engineers, manufacturers and builders, Yoh's software use quite literally drew on and embodied the complexities and enmeshments with material production of the database imaginary.

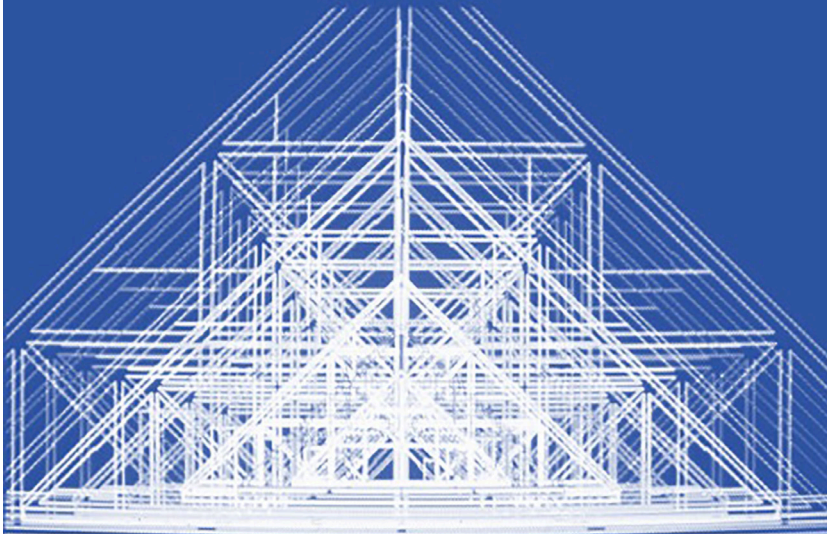


FIGURE 7: Print of compound drawing produced through the superimposition of photographs of a computer-generated wireframe section of House in Yaizu 2 (1977). Itsuko Hasegawa, 1985.

8. CONCLUSION

As these examples demonstrate, Japanese architects, both in reality and in characterisations by themselves and others, already had theoretical and practical information management tools through which they could understand and effectively put CAD programs to use in the production of actual buildings, but also in the production of narratives about themselves and their work prior to any sudden events or subsequent narratives of the “Digital Turn.” Much like Postmodernism, then, CAD software became a means by which Japanese architects and their work situated and were situated within transnational and trans-medial networks of architectural discourse and production during the 1980s and 1990s – an informationalised sign through which to manage the place of oneself, Japan and architecture within a changing social, economic and political landscape by way of participating in the emergent processes of its adoption, circulation and transformation. The medium of CAD software, then, was in some ways the message – a set of terms and practices through which other terms and practices could be made intelligible and mobile.

Returning to the digital turn narratives in which Japanese architects/architecture figured so prominently themselves, what becomes clear from laying out the complex intersections between literature, management theory, imaginations of Japan, Postmodernism and CAD software is the degree to which these

narratives appropriate and decontextualise the works of Yoh, Isozaki, and their compatriots. Plucked from the mediatic assemblages of discourse and production within the broad late-capitalist conditions that prevailed in Japan from the 1970s through the early 1990s, they were subsumed into the “Digital Turn” by way of references that were (re)combined and used to build a new narrative, featuring similar actors and storylines with a few twists and a new setting. What emerges in the stead of this narrative when the works of Japanese architects during this period are placed back within those assemblages of discourse and production is a picture of a specific encounter between technical, cultural and economic practices that as they gave architectural form to ideas from management theory and literature, both drew on existing images and helped form new domestic and international imaginations of a postmodern “information society” Japan.

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UPRAVLJANJE BAZAMA PODATAKA: JAPAN, POSTMODERNOST
I DIGITALNI PREOKRET ARHITEKTURE

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Rad predstavlja pregled razvoja i usvajanja kompjuterskih alata za projektovanje od strane japanskih arhitekata 1980-ih i ranih 1990-ih, što je u suprotnosti sa interpolacijom njihovog rada u konvencionalne narative značajnog „digitalnog preokreta“. Kako bi se to postiglo, kombinuju se pristupi teorija medija i kulturoloških studija, sa ciljem ispitivanja dizajnerske prakse i rezultata dizajna japanskih arhitekata koji se bave računarima, uz preovlađujuće političko-ekonomske polise i savremene popularne kulturne žanrove/forme kao što su noviteti u bazama podataka. Rad se fokusira na formiranje „ imaginacije baze podataka“ Japana i praksi upravljanja informacijama kroz koje je korišćenje računara uokvireno na domaćem i međunarodnom nivou u odnosu na nove teorije estetske i tehničke postmodernosti. Postavljajući ove domaće i međunarodne okvire jedne naspram drugih, članak pokazuje kako je više grupa koristilo napore da se konstruiše određena slika Japana, da se zemlja i njena arhitektonska produkcija pozicioniraju u okviru većih narativa o kulturnim i tehnološkim promenama. Pozicioniranje se ispituje kao mesto kroz koje se pregovaralo i nastavlja se pregovarati o kulturnoj specifičnosti Japana i konstruktivnom susretu japanskih arhitekata sa računarima.

KLJUČNE REČI: JAPAN, DIZAJN POMOĆU RAČUNARA, POSTMODERNIZAM,
UPRAVLJANJE INFORMACIJAMA, INFORMACIONO DRUŠTVO