

Strategy for “Bigness”: Maki and “Group Form”

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INTRODUCTION

In recent urban theory the phenomenon of “bigness” or “the large” has figured as an inevitable characteristic of the emerging urban artefact of modernization. Jameson has postulated the appearance of ‘hyperspace’ and its nature in the urban context.¹ Deleuze and Guattari have speculated on an action model for handling complexities, such as those intrinsic in vast size.² Others, including Koolhaas, have proposed means of coming to grips with the realities of such an urban condition.³ Hypersize appears as an unavoidable outcome of the technology, space, numbers, endeavours and programs of the twenty first century. Given this situation, Fumihiko Maki’s concept of “group form” emerges as a possible strategy for accommodating the notions and realities of the growth of the urban intrusion.

Maki’s group form was derived as a formal/spatial strategy for organizing physical fabrics, urban and rural, large and small. His exploration of group form, as a means of handling large and complex buildings, commenced in the 1960s with the theories of Metabolism and Megastructures and has evolved through his projects such as the proposal for Shinjuku, 1960, Rissho University, 1968, Hillside Terraces, since 1969, to the large ‘cloud’ complexes, including the gymnasiums and exhibition buildings, of recent years. These projects seek to humanize bigness, when bigness is inherent in the program. The designs are based on a policy of accepting and accommodating the large through strategies of uncontainment and incompleteness. Maki’s group form provides for an over-riding cohesive “bigness” consisting of loose parts tied by revealing cues of relationships providing a sensed, rather than a material, order. The whole retains a fluctuating ambiguity with a shifting focus from the whole to the part and back again. The conceptual openness of the structures provide for multiple penetrations and an acceptance and responsiveness to uncertainty.

Maki’s theories on group form derive from such Japanese ways of thought that embrace the incomplete, the unpredictable, the transient, and suggest ways by which the emerging urban phenomenon of “bigness,” with its demands and complexities, might well be addressed.

THE TOWER OF BABEL +

The hypersized object in the landscape or in the city is rooted in the very beginnings of architectural history. The Pyramids, the Tower of Babel, Versailles, however, were based on the same techniques and understandings of their smaller fellows — they were simply bigger. The modern hyperobject is of a different order to its predecessors, being a permutation of historical massiveness and structural and service systems initially generated in the Industrial Revolution. For example, conceptually distinct in Western architectural history was the megastructure, as seen in Le Corbusier’s design for Algiers, resembling more, in its organization at least, the

longhouses of the Dyak peoples. Corbusier’s ideas formed the basis of rational structuralist studies such as those by Nicholas Habracken, and were romanticised in the endless ribbon city of visionaries such as Archizoom. Just as the tall city building emerged as an inevitable product of the technology, economics and spatial comprehension of the mid-century, the current hyper-urban intrusion emerges from the technology, economics and spatial comprehension of the late century. It is, as many have pointed out, “a beast of another colour.” There would appear to have been two major contrasting categories of ‘beasts’ in the 1960s and 1970s, one the open-ended megastructure, reaching out to involvement and encouraging tentacles of further growth as in John Andrews’ Cameron Offices, Canberra, and the other, the blind, sealed and isolated volume, perhaps first fully expressed in Caesar Pelli’s Pacific Design Centre, Los Angeles, eventually becoming a mini-city as in John Portman’s hotels. Perhaps the ultimate image of such self-sufficient containment is seen in the socializing of urban units moving in community gatherings as depicted in Rod Herron’s Walking City.

Maki’s buildings designed on group form principles belong to neither of these categories, but to a third smaller group consisting of assembled parts as with the Smithsonian’s Economist Building, London, and given recent radical expression in Koolhaas’s Eurolille, (which contains amongst other mega-blocks Koolhaas’ enveloped Congrexpo of 1995). But while Maki’s basic manner of break-up and re-assembly may be seen as resembling the others in this category, the conceptual basis of the design and the pattern of relationships of the parts are of a different order, an order deriving from Japanese roots.

From his very first projects Maki has seen the role of the urban designer as “charged with giving form - with perceiving and contributing order.”⁴ Maki’s designs, be they of urban or detail scale, are balanced within a conceptual net of instinctive, guiding and controlling directives. These intrinsic ways of working and shaping the solution are elusive rather than evident, and would seem to stem from inheritance and experience.

MAKI AND METABOLISM

Maki’s urban studies with the resulting theory of “group form” need to be positioned against the state of mind in the profession in the 1960s when Team X’s structuralist theories were propounded by the radical avant-garde. Further, Maki’s early work has to be seen in the context of Japan in the post-war era when the search for a solution to the Japanese urban crisis was real and pressing: the situation demanding, seemingly, radical urban intervention. The Metabolists pursued the radical with poetic visions of urban form involving hyperstructures. In their Metabolist manifesto in the 1960 publication, *Metabolism: The Proposals for New Urbanism*, they stated, “‘Metabolism’ is the name of the group in which each member

proposes future designs of our coming world through his concrete designs and illustrations. We regard human society as a vital process — a continuous development from atom to nebula. The reason why we use such a biological word, the metabolism, is that, we believe, design and technology should be a denotation of human vitality.⁵⁵ Apart from the brief essay, “Toward Group Form,” by Maki and Masato Ohtaka, *Metabolism* contains three further illustrated essays, “Ocean City” by Kikutake, “Space City” by Kurokawa, and “Material and Man” by the critic Noboru Kawazoe, who later coordinated the architectural program for Expo '70 at Osaka. Generally the essays present futuristic declarations, with Maki and Ohtaka's less radical contribution proposing a rational open-ended planning approach to accommodate the dynamics of the changing city.

The writings and schemes of the Metabolists were primarily concerned with determining new forms of urban order that would accept the conditions of a nuclear world and lead to the revitalization of the Japanese city. That is, change itself was seen to provide order. Chris Fawcett observed that the two radicals of the verb for change in Japanese, *Kawaru*, are transformations of the a sign of motion and a simplification of kanji that “expresses the idea of rearranging or disentangling something which is confused or tangled, and generally means ‘to change.’ In other words, ‘change,’ is regarded as an organizational principle, not something disruptive and fickle.”⁵⁶ Fawcett claimed “it was this plateau of cultural agreement on which Metabolism was based, lending credibility to its vision of an environment as a sort of living plasma of demountable settings, a multi-strategy architecture of indeterminacy ...”⁵⁷

Basically, the city would be continually regenerated by continuous replacement of parts on a “metabolic cycle” as in nature. This is in accord with the Buddhist notion of the world-in-transformation where phenomena are viewed as transitory states rather than as fixed objects, which ties closely with Shinto's vision of nature as on a cycle of renewal. This thinking was compatible with the existing situation as the Japanese city constantly changes according to the natural patterns of decay and renewal. Further, this analogy is easily transferred to the individual building, where the Metabolist pattern of exchangeable and transferable parts sits well with Japanese traditional building practices. These evolutionary notions of development were coupled with a quite advanced awareness of technological possibilities. In 1955 Konrad Wachsmann had lectured in Japan on theories and applications of flexible, prefabricated systems. Being in America at the time, Maki had not attended the talks, but several of his colleagues had, and, again, such ideas would have been easily assimilated with the Japanese tradition of building.

The work of the Metabolist group (with Kenzo Tange and Arata Isozaki) was later shown in Tokyo in 1964 and drawings, such as Isozaki's Space City, 1960, Kurokawa's Helicoids project, Helix City, 1961, and Maki's Golgi Structures, 1965, became the visionary symbols of the new spirit.⁸ While the futuristic vigour and drama of the Metabolist proposals bear some comparison to the Archigram designs of England of the same decade, the basic premise differs. British in its tectonic base, Archigram drew primarily on a mechanistic metaphor, with accompanying notions of material impermanence, while Metabolism, though technological in its parts, was inspired by biological growth with an organic evolution of extension and replacement.

MAKI AND MEGASTRUCTURES

Concurrent with his involvement with the Metabolists, Maki was engaged in teaching in urban studies at Harvard. The ideas of Metabolism were elaborated and more fully illustrated in his book of 1964 *Investigations in Collective Form*.⁹ In this Maki makes the first written use of the word Mega-Structure, though Banham suggests (and Maki agrees) that the term may have been in usage in discussions in the American schools when Maki was teaching there.¹⁰ Maki defines a megastructure as “a large frame in which all the functions of a city or part of a city are housed. It has been made possible by



Fig. 1. Maki's sketch of three paradigms: compositional form, megaform, group form.

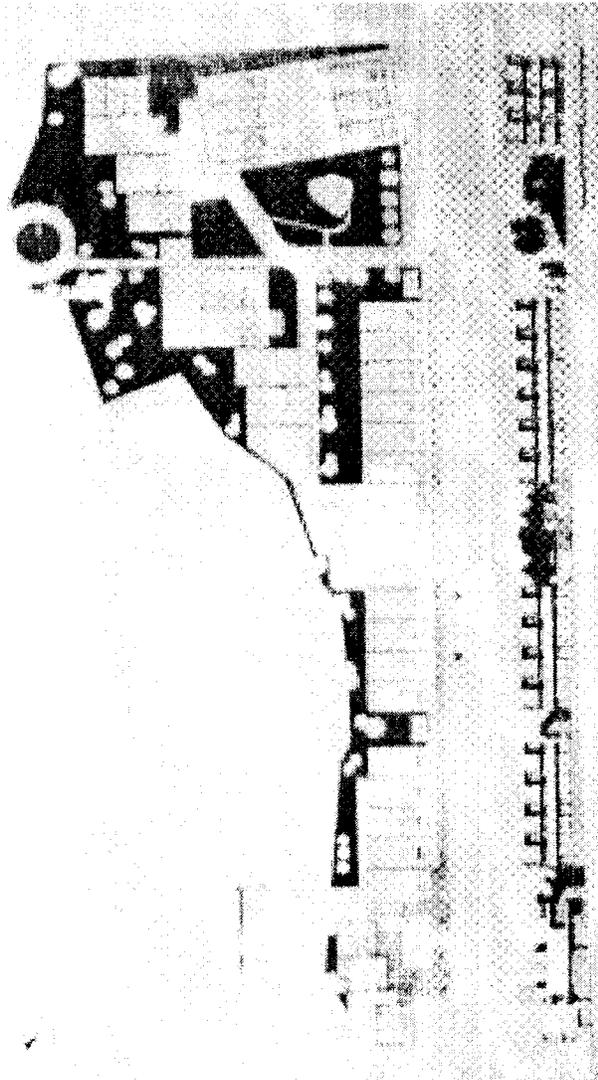


Fig. 2 Hillside Terraces, first master plan, 1967.

present day technology. In a sense, it is a man-made feature of the landscape. It is like the great hill on which Italian towns were built.”¹¹ He identifies the Mega-Structure, as presenting one of three possibilities for the ordering of the city, and draws upon Tange's Tokyo Bay Proposal as an illustration. He indicates, however, shortcomings in the mega-structure approach. The others are “composition,” as understood in its conventional sense, and “group form.” While Maki plays with the concept of megastructure, he clearly leans in favour of a group form approach.

GROUP FORM 1960S

In their 1960 essay "Toward Group Form" Maki and Ohtaka first clearly delineated the intentions of, and means of, achieving "group form," in which a number of elements compose an ensemble by virtue of a system inherent in each element. Illustrating the idea was their Shinjuku Station proposal, conceived as a total group embracing the smaller groupings of the shopping complex, office complex, and entertainment centre, all raised on an artificial platform. Different orders were applied to each of the groupings designed to maintain coherence despite the addition and subtraction of individual parts.

Group form developed as a critique of the static nature of "master planning" and its demonstrated inability to grapple with the problems of the cities which were described by Maki and Ohtaka as being either confused or monotonous, lacking elasticity and flexibility, and incapable of visually accommodating the super-human scale of modern systems and units. The basic intention of group form planning was to provide for the individual and the collective within a rapidly changing context, giving expression to the particular (including the region) and the general. "Collective form is, however, not a collection of unrelated, separate buildings, but of buildings that have reasons to be together."¹²

For the "master-plan" they substituted the "master-program" which was conceived as involving a time dimension, in de Certeau's sense of the role of the "tactition."¹³ The passage from "plan" to "program" is evident in the design for Hillside Terraces, for which Maki had first designed a "master plan" which did not work in reality. They described "master design" as "a formative technique, as an indicator and evaluator of intentions, and if possible as a tool for the generation of collective form."¹⁴ The key lies in the possibility of open ended and involving planning. The term "master form" was also introduced as an "ideal" "which can move into ever-new states of equilibrium and yet maintain visual consistency and a sense of continuing order in the long run ... The vital image of Group-form derives from a dynamic equilibrium of generative, not a composition of stylized and finished objects."¹⁵ The equilibrium of "master-form" was to be sustained by the elements present at any given time. In a perceptive article of 1976 Heather Cass identified the attempt in "Toward Group Form" "to reconcile the deterministic object-oriented tradition of the West with the indeterminate evolution-oriented tradition of Japan."¹⁶

The Shinjuku project is clearly illustrative of "group-form" and "master-form" thinking, which was later developed by Maki in the built designs for Rishso University Campus, 1967, and Hillside Terraces, 1969. The Shinjuku project was conceived as a total urban group embracing the smaller groupings of the shopping complex, office complex, and entertainment centre, all raised on an artificial platform.¹⁷ Different ordering principles were applied to the groupings, each designed to maintain unity despite the addition and subtraction of individual parts. This project introduced an early use of metaphor to assist in the conception of the work. Elements and systems are developed according to themes reflecting the activity and energy of life. The metaphors pertaining to physical patterns, such as the "petal" imagery of the entertainment zone, were poetic and organic rather than mechanistic. The entertainment zone serves well as an example of the "dynamic equilibrium" of the concept, wherein, as with a flower, single of multiple elements (petals) can be taken away or added without destroying the evident governing structure of the object in its totality. The essential basis to this thinking can be found in the Japanese cultural understandings of the harmony possible from dynamic states of equilibrium and the beauty of imperfection, reflecting the cultural balance of the interdependence and connectedness of all things. As Masataka Ogawa wrote in 1973, "Maki's interpretation of the relationship between system and element denies existing ideas of architecture as an element and affirms the concept of architecture as an assemblage of elements. In terms of group concept, Maki's philosophy enables both the city and architecture to share a common, flowing life."¹⁹

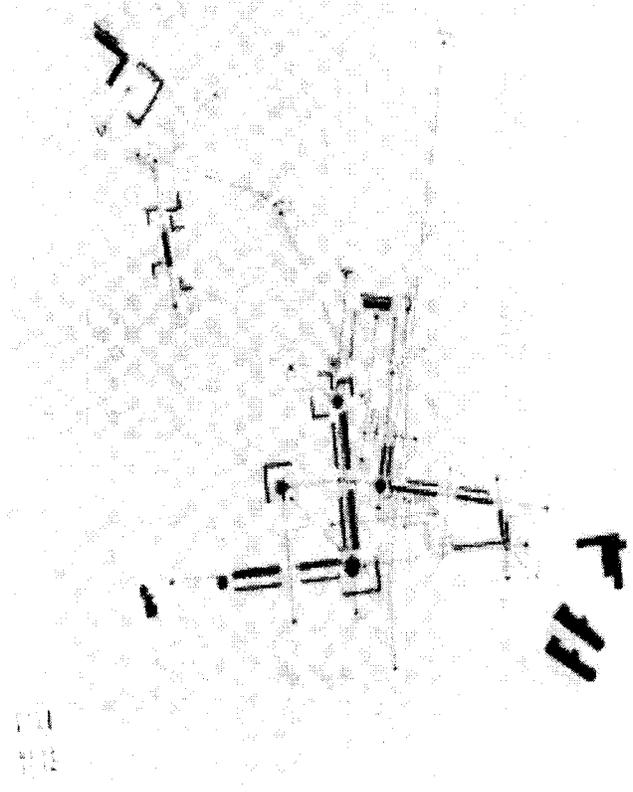


Fig. 3 Rishso University Kumagaya Campus site plan.

The thinking that led to Maki's publications of 1960 and 1964 has remained consistent throughout his career. Although he later wrote on the early schemes that he felt that he should have paid more attention to external space and connections, rather than concentrating on form, it is clear that the projects have been conceived as defining and involving spatial and tactical environments.²⁰ This awareness provides a key to Maki's formal/spatial strategy wherein external space or space between is an implied linkage. While structuralism in general, and the theories of Team X in particular, shared Maki's interest in designing flexible systems to accommodate choice and change, Maki's particular contribution through his various "group-form" proposals was unique in its easy acceptance of the incomplete.

In 1966 Maki commenced a two stage design of the new Kumagaya Campus for Rishso University. This major planning and architectural project gave him the opportunity to implement his theories of spatial organization for a vital and participatory "urban" prototype. In accord with the premises of "group form," the campus was organized as two clusters of buildings loosely related, in this case along two primary axes set at 30 degrees to each other, and a defining major exterior space with several ancillary spaces.²¹ The order of the organization is not clearly evident causing Ogawa to comment "An aerial view of the present campus reveals buildings facing a long, beltlike open space in an arrangement of subtle disorder."²² The most evident element stabilising the group is a long rectangular block edging the plaza which acts as a static and fixed unit against which the remaining free form buildings are played.

At Rishso there is a high level of complexity and variety in the spatial units, and yet there is a kinship due, in part, to the uniform treatment of materials and details throughout. Despite little evidence of explicit control, the design was rationally planned in an exacting, analytical manner using projected geometries. The result is a remarkable cohesion in the grouping resulting from the establishment of a most careful series of visual relationships between building and building, in such a way that the buildings appear to physically acknowledge each other and engage in exchange across

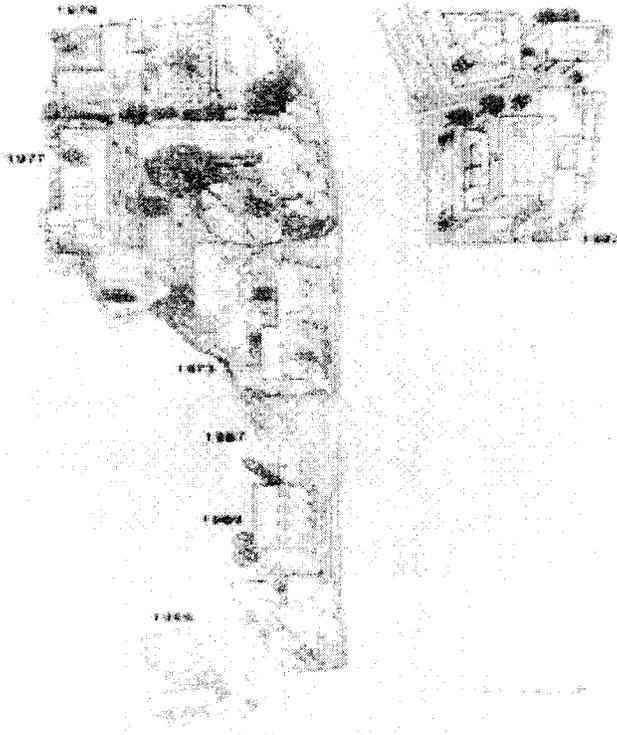


Fig. 4. Hillside terraces I -VI.

the intervening open space.

In 1971 in *Japan Architect* Maki wrote poetically of the spaces and connections he was attempting to generate: "it seems that creating a place for human encounters involves expanding the territory of the building; that is, opening it as one might open a hand ... one can consider the plaza as this kind of open hand expanding the territory of a given building ... and, ... I am fond of thinking about buildings that seem to be extending open hands towards each other in an overlapping of encounters."²⁴ Spatially the Risho campus establishes an orchestration of diverse user-directed areas, remarkably convincing of the planning concepts of Maki's theories that here have established a dynamic balance, uniting objects and forming space without the stasis of conventionally ordered compositional design.

SEQUENTIAL GROUP FORM 1970S

While the basic intentions and strategies of group form were laid down in the work of the 1960s, variations on the themes are seen in the projects of the following decades. Of interest are "sequential group form" whereby the group form logic is sustain in a grouping emerging over time, and "cluster group form" with a hen-and-chickens arrangement.

1970, the year of the Osaka Expo, marked a turning point in the Japanese values, with an awareness of the environment price paid in the rush for development and economic growth. The technological imagery and dependency of Metabolism led to its discredit. Further, Maki felt the frustration of attempting to achieve the unachievable and also was disillusioned at the impossibility of tending to detail in schemes of vast extent. He resolved that in each project he would "make just one small part of the city better," and hoped that others would do the same, and this would accrue to a improved city overall.²⁵ Such a melding of well designed "small parts" would give rise to a city of parts dynamically evolving in a ever shifting whole: the city viewed as a total collection of group form. It was with Hillside Terraces that Maki hoped to first demonstrate his new approach to the design of the city.

Hillside Terraces, which has not ceased to grow since the

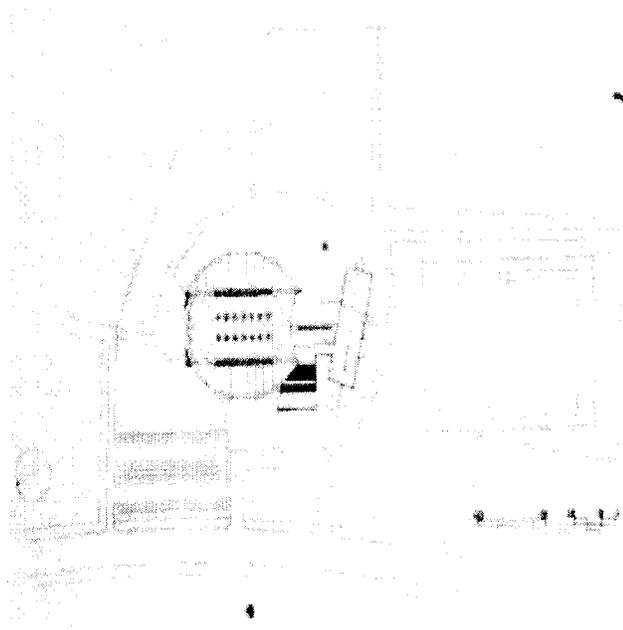


Fig. 5. Fujisawa Gymnasium.

building of the first increment in 1969, provides a remarkable example of this theory within Maki's own oeuvre. Hillside Terraces stretches down both sides of a fashionable street of the Daikanyama district of Tokyo.²⁶ It is an extensive project gently modified and finely tuned over time. It is an on-going private commission primarily of mixed residential and commercial uses responding with each new addition to the changing structure and significance of the street, to the lessons learnt from the preceding segments, to the changing spirit and possibilities of architecture, and to the developing ideas of its designer. In all, it provides a remarkable example of consistency and diversity in an orchestration of forms and activities which (like the flower/petal analogy of the Shinjuku Station project) in each complete/incomplete stage remain suggestive of some governing structure. This is group form at its most dynamic, growing and evolving organically through time.

CLUSTERED GROUP FORM 1980S-90S

The hen-and-chickens clusters of group form are found primarily in the very large urban interventions of the 1980s and 1990s. They tend to be physically subscribed as distinct from the city; the Tokyo Metropolitan Gymnasium, 1990, for example, being located on and under a clearly defined podium. Yet there is a penetrability across the sites and around the forms that open up the total grouping spatially and temporally to the surroundings. The mode of arrangement was established in the first of such groupings, Fujisawa Gymnasium, 1984. Cohesion here is acquired through the drama of the primary section, in this case the stainless — steel roofed main gymnasium, and the relationships established with other minor, yet arresting forms, commonly exploiting different materials. The relationships are determined not by kinship or subservience, but by an equality of presence and the overall sculptural relationship between the parts. At the Tokyo Gymnasium the distinctive roof-forms of the various parts, main arena, small arena, swimming pool, entrance, penetrate the podium and establish a dialogue across the site and hint as spaces and relationships below. Hence the total composition is subtly linked across space in all dimensions. In these clusters there is, however, no sense of completeness in the sense of closure, but each has its own completeness. This is exemplified by the vast Makuhari Messe (Tokyo Exhibition Hall), 1989, which has recently tolerated a further addition of vast dimen-

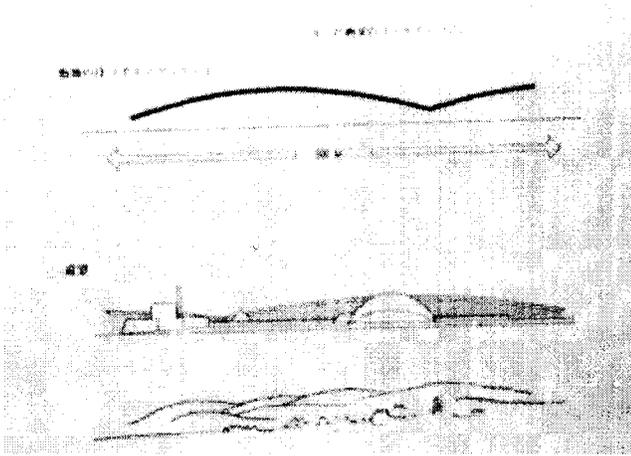


Fig. 6. Makuhari Messe. Phase 1, "Hill."

sion without losing the knit quality of the original group form.

The 1994 Kirishima Concert Hall in a dramatic mountain setting in Kagoshima Province, Kyushu, provides a different example of cluster group form. There are three distinct parts to the complex: the two components of the main building consisting of the stainless-steel roofed concert hall and a group of secondary performance spaces and practice rooms, and a third somewhat distant outdoor auditorium located astride an axis at right angles to that of the Concert Hall. The outdoor stage faces a subtle and gentle space with grassed seating laid out in a semi-circle. The site planning has a marked kinship to the previous buildings in the "cloud" series, but distinct at Kirishima is the fleeing fragment, as the canopy of the outdoor theatre appears adrift yet tied in tension by taut violin strings to the parent object.

CONCLUSION

Maki's strategy of "group form" is open-ended and operates in the dynamic of the unpredictable as in the urban realm of today. It is a porous, adaptable system permitting change and penetration. As demonstrated in his work, the principles of group form are operable across time as well as space.

The image of group form offers a convincing model for rejecting the notion of bigness as demanding a sealed self-referring ambience, and suggests that bigness can be structured and arranged to enliven and enrich the city through exchange and conversation.

NOTES

- ¹ Fredric Jameson, see "The Cultural Logic of Late Capitalism" and "Architecture: Spatial Equivalents in the World System" in *Postmodernism or the Cultural Logic of Late Capitalism* (Verso, 1991), pp. 1-54, 97-129.
- ² Gilles Deleuze and Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: University of Minnesota Press, 1987).

- ³ For example, Rem Koolhaas, "Bigness or the Problem of the Large," *Artforum* 4 (1994), p. 49.
- ⁴ Michael Franklin Ross, *Beyond Metabolism: The New Japanese Architecture* (New York: McGraw Hill, 1978), p. 199.
- ⁵ K. Kitutake, N. Kawazoe, M. Ohtake, N. Kurakawa, F. Maki, *Metabolism: the Proposals for New Urbanism* (Tokyo: Yasuko Kawozoe, 1960). This was the only issue published, though others had been planned.
- ⁶ Christopher Fawcett, *The New Japanese House: Ritual and Anti-ritual: Patterns of Dwelling* (New York: Harper Row, 1980), p. 17.
- ⁷ Fawcett, p. 17.
- ⁸ In a Golgi structure outer spaces lead the way for organizing the whole.
- ⁹ Fumihiko Maki (in part with Masato Ohtaka and Jerry Goldberg), *Investigations in Collective Form* (St Louis: Washington University, 1964). Republished by Maki in an extended form entitled "Notes on Collective Form" in *Japan Architect* 16 (1994), pp. 247-297, and in *Fumihiko Maki: Buildings and Projects* (New York, Princeton Architectural Press, 1997), pp. 206-217.
- ¹⁰ Reyner Banham, *Megastructure: Urban Futures of the Recent Past* (New York: Harper and Row, 1976), p. 70.
- ¹¹ Maki, "Notes on Collective Form," *Japan Architect* 16, p. 256.
- ¹² Maki, *Investigations in Collective Form*, p. 5.
- ¹³ Michel de Certeau, *The Practice of Everyday Life* (Berkeley: University of California Press, 1984).
- ¹⁴ Maki, *Investigations in Collective Form*, p. 7.
- ¹⁵ Fumihiko Maki, "The Future of Urban Environments," *Progressive Architecture* 10 (1964), p. 178.
- ¹⁶ Heather Willson Cass, "Architecture as Human Experience," *Architectural Record* 8 (1976), p. 78.
- ¹⁷ Under "News and Comment", in November 1961 *Japan Architect* (p.8) reported that the Ministry of Construction had taken up the idea in the Maki-Ohtaka study for multi-storied blocks with floor space for 'individually owned' flats and shops. "The idea was to create new "ground" which could be divided up by small owners very much as the space along the street is now." However, while the Maki-Ohtaka study had advocated mixed use, the Government proposed to use the idea primarily for housing.
- ¹⁸ Maki, *Investigations in Collective Form*, p. 58.
- ¹⁹ Masataka Ogawa, "Fumihiko Maki — Frontiers of Contemporary Japanese Art," *Japan Architect* 3 (1973), p. 84.
- ²⁰ Maki, "Notes on Collective Form," p. 250.
- ²¹ The final stage of the project was not built.
- ²² Ogawa, p. 82.
- ²³ "The Rishso campus and public spaces," office manuscript (1968), 6.
- ²⁴ Fumihiko Maki, "Thoughts about plazas; recollections. From the Nagoya University Toyoda Memorial Hall to the Consolidated Offices of Kanazawa Ward, Yokohama," *Japan Architect* 12 (1971), pp. 39-50. The metaphor of the open hand is also used by Aldo van Eyck, and in a quite different way by Le Corbusier at Chandigah.
- ²⁵ Conversation with the author, Tokyo, 1975.
- ²⁶ A further section, Hillside West, was completed in 1998 on a site a few hundred metres up the street from the earlier stages of the development.