# The Tragedy of the Megastructure

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**ABSTRACT**

**Relating the megastructure to the issue of the commons is a useful exercise to understand the success and the disappearance of what Peter Reyner Banham called the "dinosaurs of the Modern Movement". All these large-scale constructions suffered the same fate: a conflict between the promise of a large shared space and the temptation of its fragmentation. This quantitative quandary is also raised in another field by Garrett Hardin in 1968 as the 'enclosure dilemma'. The publication of his article "The Tragedy of the Commons" sparked a broad controversy coinciding with the megastructure's momentum. By assessing a number of theoretical correspondences, the article reexamines the impact of megastructures on the interdisciplinary debates of the time. It also considers the relationship between architecture and property as one of the possible–and tragically coincident–reasons for their success and dissolution.**

When the American ecologist Garrett Hardin publishes his famous article entitled "The Tragedy of the Commons"[1] in *Science*, the architectural debate is fully animated by the affirmation of megastructures. At the end of the sixties, a rising awareness of the limits of the planet's resources emerges [Fig. 1]. And it paradoxically intersects a craze for an endless above-ground urbanization. The consciousness of the earthly limits leads the gaze toward possible futures, even elsewhere. The conquest of space hence animates all the hopes and all the fantasies. It also appears as the vector of a collective celebration: celebration of progress, of the machine, of science. The delighted extension of human limits occurs at the very moment when the environmental crisis warns of "the limits to growth".[2] Megastructures mobilize an architectural language charged with this innovative and progressive hue: their structures are tubular, extensible, providential because technological; their elements are prefabricated, autonomous and replaceable; compositions are weightless, isotropic and suggest mobility [Fig. 2]. Megastructures are the symbol of human control and cultural resistance against an established environment, held at a distance by a sense of escape, arrogance, and because of attention. Such a language claims to be unifying, as it is particularly powerful in its evocative power. It highlights the possibility of a unitary cohabitation, able to be exported beyond the finite limits of its terrestrial conditions. Apart from the strictly quantitative and limiting point of view, megastructures also oppose their visions to the unequal distribution of resources, particularly those of the soil. Driven by the emancipation and the struggle of the working class at the end of the sixties, these architectural experiments challenge the traditional city model and, more particularly, its bourgeois predestinations. The charges brought by Archizoom Associati

1.   Garrett Hardin, "The Tragedy of the Commons", *Science* 162, no. 3859, (1968): 1243-1248.

2.   The year 1968 is also marked by the creation of the Club of Rome, which will result in the publication of *The Limits to Growth* (Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, William W. Behrens, *The Limits to Growth*, (Falls Church: Potomac Associates, 1972.)) a few years later. Also known as the 'Meadows Report', this major contribution is diffused in a period already associated with the questioning of megastructures.
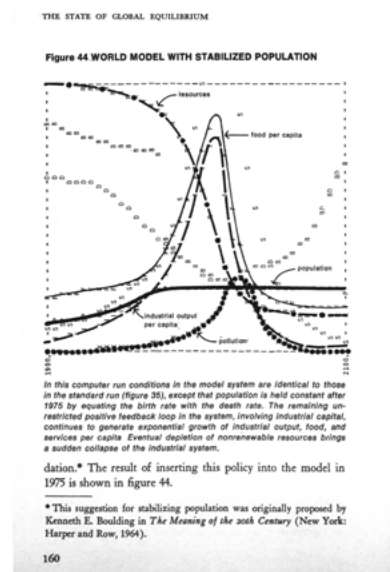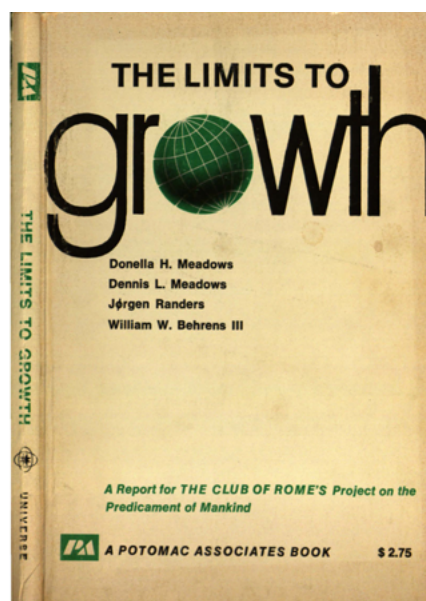


*Science* No. 5652 celebrates the publication of "The Tragedy of The Commons" 35 years before in the same journal, using Garrett Hardin's title in the interrogative form. The illustration used for the cover is a picture of the Earth taken from the space by Apollo 17 in 1972. In the same year *The Limits to Growth* signaled the unprecedented turn that the late 12th century should face in terms of global resources. (http://science.sciencemag.org/content/302/5652 accessed December 12th 2018 and http://donellameadows.org/ accessed December 12th 2018.)

**FIG. 2** The photographs of Kenzo Tange Expo'70 pavilion in Osaka represent very well the collective effervescence produced by the appearance of the new architectural forms that characterize the megastructure. (Tange, Kenzo. 1973. *Kenzo Tange: ein klassiker der modernen architektur*. Zug: Verzinkerei.)

are explicit: "In fact roads do not merely serve the compact fabric of what is private, but they also dissect it and make it communicating, making place for the emergence of architectonic language. The skyline becomes a diagram of the natural accumulation which has taken place of Capital itself."[3] Conversely, megastructures depict an urbanity which is suspended and not subject to a cadaster. They call into question the paradigm of land division on which the city has always been formed, referring urban planning to the issue of land-sharing, of its fragmentation, and to the inequality of its rationing. While industrialization celebrated by these architectures paradoxically is what has encouraged private property and capitalism to root these inequalities, megastructures announce the hypothesis of an unprecedented renegotiation of land ownership. They could, in this respect, be considered as the privileged subjects or detractors in architectural terms—both synchronous and latent—of the argument developed by Hardin.[4] At the same time, and criticizing a faulty distribution of the ground resources (both unequal and defective),[5] megastructures suggest the possibility of an anti-enclosure, leading to their pooling.

### Megastructures: for which 'common space'?[6]

All the oppositions on which the principle of megastructure has been affirmed integrate the relationship between collective and individual

3. The group of Florentine architects is particularly involved in publishing political articles in international architecture journals of the time. Andrea Branzi's "Radical Notes" published in Casabella are particularly significant. [Archizoom Associati], «Archizoom: progetto di concorso per l'università di Firenze», *Domus*, no. 509 (Avril 1972): 10-12.

4. Although both discourses coexist during the same period, Garrett Hardin does not refer to any architectural currents in his writings. The protagonists of megastructures, on the other hand, directly base their principles on the political, social and economic context of their time, even though they do not refer to the writings of the American ecologist about the *Commons*.

5. The uncontrolled development of the suburbs generated by 'the motorization' of urban sprawl is a criticism regularly raised by interpreters of megastructures. Michel Ragon, "Architecture et megastructure", *Communications*, no. 42. "Le gigantesque: gigantisme animal, mégalithiques, méga architectires, grands hommes…", (Paris: Seuil, 1985), 72.

6. The notion of 'common space' (as well as 'space of commoning') is currently discussed in interdisciplinary thinking about the Commons and their spatial implications (David Bollier, *Think Like a Commoner*. A short introduction to the life of the Commons, (Gabriola Island: New Society Publishers, 2016). Although it is very used and potentially relevant, it is not yet well defined. Since its theoretical scope is still the subject of much debate, it is used here in a more prospective register than a strictly factual one.

in a particularly effective way. The large collective scale is an artificial and permanent structure. Individual elements of small dimensions are spontaneous and temporary infills. Such a radical reduction, limited to two preponderant and extremely readable registers, nevertheless entails the risk of excessive simplification, not facilitating the declination and the interweaving of all levels of collectivity. One could thus formulate for the megastructure the same remarks that those done by Colin Rowe and Fred Koetter on modern space, and more particularly on the open space which characterizes the *grand ensemble*. In *Collage City*, the authors regret a too strong simplification between the object and the free space that surrounds it, which is automatically and counterproductively associated with the status of public space. They also address the glaring lack of intermediaries between two major polarities: the public and the private[7]. Although based on a radically binary scheme, the megastructure contains more ambiguities than the *grand ensemble*.[8] As an ultimate conciliation between buildings and city[9], the different statuses involved in the megastructure are difficult to distinguish. Does it relocate the public space into a constructed form—totally and ideally public? Or does it still support and serve private estates, as public space does? Is it in itself the collective intermediary between the private units that it contains, and the public soil from which it is detached? Contrary to its original intentions, could it represent a private object erected on public soil, in the manner of a large building within which other sub-property relationships would occur? Confronting such juridical reading grids with the imagination of such a radical movement might be perceived as inoperative. It also can become useful when the architectural vision influences the social conception of the space to such an extent, and in particular its common character(s). Therefore, it is worthwhile to consider three distinct levels of 'common spaces' related to the megastructure: the ground, the support and the cluster.[10] Each of them entails the notion of 'common' according to distinct ambitions, both closely related, and tragically irreconcilable.[11]

*The large common ground*

From The Continuous Monument to No-Stop City, all the radical utopias imagined by Archigram, Archizoom, Superstudio, and most of their fellows are remarkable for their ability to take a step back from the territory they highlight. They are staged in an a-geographical and extra-temporal view of Earth's surface, alluding to the same intensity as the first photographs of the globe taken from the space. Urban projections do not display any limits in the imaginary they convey. In contrast, the world appears generally finite, taken as it is: as a resource to be preserved.[12] Load-bearing elements are punctual, excessively limited (both from the point of view of stability and access). They appear almost transient and revocable, without imprints. There is a total dissociation between what

7.  Colin Rowe and Fred Koetter, *Collage City* (Cambridge: Massachusetts Institute of Technology, 1978), 66.

8.  Bokshub Shong, "Le concours d'Évry I: un vecteur pour la nouvelle culture architecturale?", in *Éléments pour une histoire des villes nouvelles*, (Paris: Le Manuscrit, 2005).

9.  Ibid.

10.  Beyond technical and compositional innovation, megastructures also represent a particularly semantic moment. Specific notions have accompanied the appearance of new architectural forms. Most of them also accompanied their disappearance, and still remain very attached and connoted to the idea of megastructure.

11.  Hardin's use of the notion of "tragedy" in his article is not directly understood in its unhappiness connotation, but in terms of "the solemnity of the remorseless working of things" quoting the words of the British philosopher Alfred North Whitehead. Garrett, "The Tragedy of the Commons", 1243-1248.

12.  From this point of view, the wide-angle accentuation of the Earth's curve in *New New York* montage by Superstudio (1969) is fully expressive.

already exists on the ground and what starts again differently. This large ground undergoes a sort of reset, whether it is built or even preserved from urbanization. The Earth's surface is perceive as once again charged with an original character, despite a paradoxically very invasive distancing. From the suburbia to the national parks, all sorts of landscapes are exploitable. Everything becomes common good. The territory takes on the value of a "neutral material, continuous and homogeneous".[13] Such an assumption could be related to Garrett Hardin's discourse, particularly to his considerations on the globalized effects of negative externalities related to pollution[14] . However, the ecologist does not consider all their consequences equal on the surface of the globe. This leveling is detached from the values traditionally applied to territorial distinctions and it amplifies in a quasi-schizophrenic way the constitution of a 'common world',[15] artificially renewed.

### The support of cohabitation

The architecture of the megastructure detaches itself from the large 'common world' in order to rebuild another superimposed one. As a support, its primary structure materializes a celebration of the living-together, depicting the image of an infrastructure.[16] The ability of architecture to spatially root a collective dimension is then shifted from the scale of the building to a larger one: that of the 'super-building', that of the city or even beyond. In the megastructure, the strength of self-representation potentially forged by architecture is exerted at a larger level, probably never equaled. Conditions for supporting a collective architectural projection on such a scale inevitably introduce a number of difficulties. Among them—and this is probably one of the main factors breaking away with the city logics—those caused by the rejection of the proven importance of land ownership in the constitution of the urban space[17] occupy a major and highly political place. Since the emergence of cities, the parcel division and the importance of boundaries have been one of the primary means available for urban maintenance and development. Nevertheless, this fundamental aspect is largely diluted in the semantic shift from the plot limits as a 'structure' (metaphorically the hardware) to the structure itself as a material and designed reality. The interweaving of various programs in the same spatial and structural entity automatically induces some difficulties in recognizing the corresponding areas and responsibilities. The difficulties once this built continuum is raised from the ground can be even greater when its structural configuration implicates limited and therefore shared bearing points. The renegotiation of the land propounded by the megastructure implies an extreme complexity of ownership relations. The possible legal conundrum can be avoided through the supervision of a management authority (public or private). More radically and more simply, the alternative consists in the

13. [Archizoom], "Archizoom: progetto di concorso per l'università di Firenze", *Domus*, no. 509, (1972): 10-12.

14. Garrett, "The Tragedy of the Commons", 1245.

15. Expression used by Hannah Arendt to formalize the idea of a transcendence of individual and current lives. Hannah Arendt, *The Human Condition*, (Chicago: The University of Chicago Press, 1958).

16. Yona Friedman uses 'the network of support' to qualify the hard and indeterminate infrastructure conceived in anticipation of a multiplicity of elements to accommodate. Yona Friedman, Pour l'architecture scientifique, (Paris: Pierre Belfond, 1971), 60. Jacques Lucan uses the term 'support' in the chapter entitled "Aggregative Structures and the Non-Plan" of *Composition, Non-composition. Architecture and Theory in the Nineteenth and Twentieth Centuries* (Jacques Lucan, *Composition, Noncomposition. Architecture and Theory in the Nineteenth and Twentieth Centuries*, (London: Routledge, 2012), 476)).

17. Hans Bernoulli, *Die Stadt und ihr Boden*, (Erlenbach-Zürich: Verlag für Architektur AG, 1946).

cancellation of any type of property—without even determining how the construction, maintenance and governance of such an infrastructure could be ensured. This last vision remains the most faithful to the idea of associating the megastructure with an artificial common good.[18] It is also the aspect that would have incurred the harsh criticism of Hardin. His argument is particularly skeptical concerning the ability of a group of individuals to ensure the maintenance of a shared good, without seeking (consciously or unconsciously) to satisfy personal interests, to the detriment of the general ones. Indirectly, Hardin might have predicted the ruin of the megastructure. However, beyond the operational scope, he would certainly not have measured the architectural power of this ruins; neither the incredible programmatic potential that these 'colossus' would have produced if they all had been realized. It is just as likely that his main detractor, the American political economist Elinor Ostrom, could not have unconditionally supported the more optimistic idea of a reasoned self-government.[19] The large number of potential participants would far exceed the limits of the models she has experimented with[20] . Upon reading her works, principles of collective action do not seem sufficient to sustain the growth of such a resource, due to its technical challenge and its scale.

*The community clusters*

Subdivision into sub-objects is one of the solutions regularly adopted by architects to overcome the gigantism of megastructures. Not all the megastructural experiences accord the same importance to uniformity and the expansive continuum. The project *No-Stop City* by Archizoom certainly represents the most advanced exploration in those terms. Other architectural projects have sought to introduce an intermediate scale into the founding and radical duality between the whole and its parts. Most certainly driven by a greater concern for realism, the subdivision generally results in groups of units, forming clusters.[21], the most realistic megastructures seem to have been inspired by the second one. While the 'megaform' appears unprecedented in the history of architecture, the group-form is reminiscent of traditional constructions accumulated. It reassures by its efficiency and proven experience. In fact, realized megastructures tend to give greater importance to the underlying characteristics of their own components. The compositional fragmentation reduces the architectural issues to a well-known theoretical and practical framework, closer to that of 'the city of the ground'.[22] The political scope of such a division also reduces these initially radical ambitions to more down-to-earth issues: to more economic and safer configurations,[23] also easier to grasp than the large continuous system. In the passage "from the megastructure to the monumental building"[24] a whole fraction of the traditional urban culture is also reenacted, especially in the recalling of the division into neighborhood units, urban segregation or communitarianism.

18. Elinor Ostrom, *Governing the commons*, *The Evolution of Institutions for Collective Action* (Cambridge: Cambridge University Press, 1990).

19. Elinor Ostrom is recognized as the leading specialist of the commons. Her studies earned her to receive the attribution of the Nobel Prize in Economics in 2009. She is the main detractor of the argument developed by Hardin. His book entitled *Governing the Commons: The Evolution of Institutions for Collective Action* (Ostrom, *Governing the Commons*, 188) is an explicit answer and alternative to "The Tragedy of the Commons" (Hardin, "The Tragedy of the Commons", 1243-1248) highlighting the ability of a limited group to self-organize the maintain of a resource.

20. Ostrom, *Governing the commons*, 188.

21. The debate on the dimensions of the urban is already animated since the publication of *The Neighborhood Unit* (Clarence Arthur Perry, *The Neighborhood Unit*, (London: Routledge/Thoemmes Press, 1929), but it intensifies particularly after the apogee of the Modern Movement, with the strong contributions of Alison and Peter Smithson. Among them, the project for *Golden Lane* (1952) is probably one of the most relevant because it announces the introduction by Kevin Lynch of the concept of 'cluster' (Kevin Lynch, "The Form of Cities", *Scientific American* 190, no.4 (1954): 58). It will be named *Cluster City* thereafter. Nowadays, new forms of shared housing are mobilizing this notion of 'cluster' at the housing scale.

22. In contrast with the suspended one, 'the city of the ground' here refers to the city with traditional plot divisions, that analyzed by Aldo Rossi during the same period (Aldo Rossi, *L'architettura della città* (Padova: Marsilio, 1966), English version: Aldo Rossi, *The Architecture of The City* (Cambridge: MIT Press, 1982)). Although The Architecture of the City represents a categorical alternative to the megastructural narrative, both argue to a possible concordance between architectural form and urban entity. Moreover, they both suggest the idea of a truly collective architectural form, summoning two different major principals: typology versus neutrality.

23. Yona Friedman, *L'architecture de survie* (Paris: Casterman, 1978).

24. Referring to the words that Jacques Lucan used in *France, Architecture 1965-1988* see Jacques Lucan, *France, Architecture 1965-1988* (Paris: Electra, 1989), 86.

The return of the urban parceling is expressed even more strongly when the group-forms are formally dissociated from the continuity of the whole building mass. The total insulation can go so far as to produce an autonomous and unitary section of megastructure, usually retaining a somewhat modular and expansive aspect. But the geometric definition of the fragment and its persistent autonomy continue to betray the common ideal initially affirmed, in favor of a sum of communitarian colonies, very spatially instituted.

### Enclosure again

To reevaluate the contemporary legacy of megastructures means formulating a double failure. First, its salutary impact on the democratic conception of the urban realm is tragically limited, as described before. Perhaps even more surprising is the disturbing recovery of some of their architectural characteristics in more pragmatic, conformist and lucrative schemes, far removed from the contentious vision of the megastructure's pioneers. The resurgence of complex and very large projects has influenced the international architectural scene of the past twenty years. The latest most publicized designs by OMA studio are among the most representative.[25] Like megastructures, these 'big-buildings'[26] far exceed the scale usually assigned to a building. They break with traditional methods, asking for more particularly sophisticated processes. Legal, financial and decision-making dispositions are adapted to their vastness, as well as their technical and programmatic tangle. The reason for the 'big-building' success—and what distinguishes it from its valiant predecessor—is undoubtedly its relative political disengagement and its economic viability within the commercial sphere. Monumentality no longer embodies the celebration of the common space, but that of power or brand image. It is a promotional vector, celebrating a selective appropriation. The collaboration with the public decision-maker—from which private interests still depend— is often limited to market opportunities and administrative procedures. The political scope of these descendants hence remains far removed from the societal, universal and inclusive substance, which substantiated the vision of the megastructure until the seventies. Even within the repertoire of megastructural experiments, some architects had already begun to deviate from Ralph Wilcoxon's 1968 definition, namely to be "capable of great or even 'unlimited' extension"[27]. They undertook the experiment of a contortion of the system, delimited and folded on itself, as visible in the project imagined by Frei Otto in 1971 for a city for 40,000 inhabitants, entirely contained under a 2-kilometer dome, situated in the middle of an extensive and homogeneous Arctic environment [**Fig. 3**]. For the second version of his *Thalassa* project, designed in 1963 for the Bay of Monaco, Paul Maymont gave the floating city the finished and centripetal contours of a ring. The use of these enclosed forms illustrates the co-presence

25.  Rem Koolhaas's passion for the Japanese metabolism movement is described by Jacques Lucan in *Composition, Non-composition. Architecture and Theory in the Nineteenth and Twentieth Centuries* (Lucan, *France, Architecture 1965-1988*, 478). It has certainly influenced the design of projects such as the '*Très Grande Bibliothèque*' (1989), the 'Hyperbuilding' (1996), the CCTV headquarters (2012), or 'De Rotterdam' (2013). Besides, *Delirious New York* (1978) already highlighted how the most extreme capitalism had been able to appropriate the megastructural scale for lucrative purposes, while keeping a close link with the soil, and especially with its profitability.

26.  See the thesis of Marta Meira Brandão, The Big Building Housing and Complex Design Strategies [Thesis], completed in 2017 at the École Polytechnique Fédérale of Lausanne - Lausanne, 2017.  https:// infoscience.epfl.ch/ record/225961/?ln=fr.

27.  Ralph Wilcoxon, *Council of Planning Librarians Exchange Bibliography*, 66 (Charlottesville: University of Virginia, 1968).
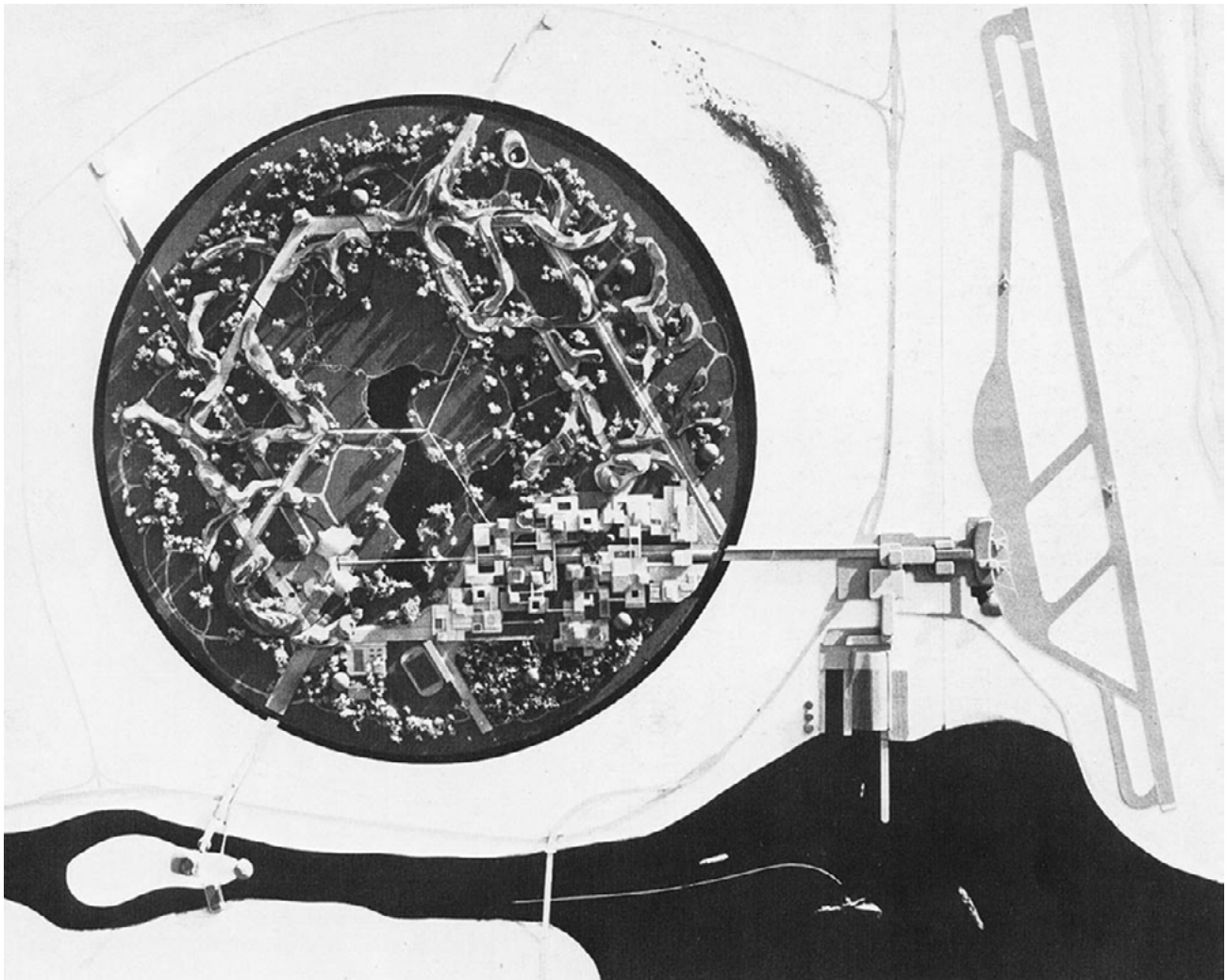
of divergent directions within the same debate, and already portends some latent drifts: those from the 'common' to the communitarianism, or from unicity of the system to the heterogeneity of the objects. Against their original intentions, and because of their lack of persuasion, the megastructures probably helped to revive the hegemony of the cult of the object. In this neglected interval, the 'big-building' found its place and drew all its strength. As an implicit consequence, megastructures also have reinforced the adherence to certain qualities of the traditional city: the use of limited architectural scales, the immediate confrontation of the built masse with the soil, the importance of legal demarcation on the ground of the built masse. These are all elements that the megastructure proposed to abolish, and which still occupy a preponderant, rooted and generalized place within the contemporary production.

*Renunciations of public action*

Public mandate has made the glory of the megastructure. As recalled by Banham in the introduction to his 1976 book *Megastructure, Urban*

*futures of the recent past,* "clients for megastructures were more likely to be universities, expositions, municipalities, central governments". The administrations of socialist regimes were particularly active when the real estate pressure was the weakest[28] , but also where the political will was most explicit.[29] It is under large public works policies that megastructure is most solicited, always dependent on a sufficiently asserted interventionism of the State. The infra-structure as a public investment is one of the most promising points attributed by Fumihiko Maki to the megastructure, considered as "a new three-dimensional vision of land use, in which public offices will retain ownership and maintenance of horizontal and vertical circulation systems".[30] Formulated in a political context antecedent to the collapse of the Soviet bloc, the scenario he is reporting appears today bold, even somewhat outdated. The abandonment of large extensible structures is understandable in the context of a weakening of public authority, as observed in the majority of Western countries since the end of the last century. Frightened by the scale and inertia of such buildings, public procurement has since welcomed a return to the scale of the object, a process that the public administration itself has certainly accelerated. The decline in endowments and the search for savings in operation, maintenance and replacement partly explain the renunciation of the public sector to support the construction of these "monumental follies".[31] Beyond the technocratic issues, the embarrassment felt by urban policies with regard to these colossal structures can also be explained for electoral reasons. Mainly related to the late and critical reception of the *grands ensembles*, public opinion has been opposing since the late seventies a violent resistance to massive social projects, whose dimensions are commonly accused of 'inhumane'.[32] A post-traumatic amalgam concerning the large-scale, supposedly unsuitable for human dimensions, resulted in a popular rejection of the megastructure. However, the relation to the human body is far from having been neglected by its protagonists, if one observes the abundant imaginary that it inspired in their productions. The number of studies concerning the relation between megastructure and the human body confirms it, ranging from the minimal housing capsule to the redefinition of clothing standards[33] . Regarding to megastructures the problem is not so much that of the individual relation to the architectural space. The problematic scale perhaps it is more that of the supposed dimension of the collective, and its political adequacy. The constructive nature of megastructures assumes a technical coherence and a certain degree of homogeneity. Because of it, most of them suffer from a dependence on a providential order that guarantees its overall functioning. The necessary supervision constrains very concretely, but also symbolically, this collective dimension at a critical, almost unsurpassable value.

28. Peter Reyner Banham, *Megastructures: Urban Futures of the Recent Past*, (London: Thames and Hudson, 1976).

29. Land ownership has become a regular issue in the history of development, and one of the major tools mobilized in urban renewal projects. In northern Europe in the Nineteenth century, it was one of the main conditions for reformist municipal policies for the hygienic establishment of the urban block with unitarian courtyard.

30. "Although the megastructure concept presents the problems outlined above, it also has great promise for infra-structure as public investment: substantial public investment can be made in infra-structures (the skeleton of megastructure) in order to guide and stimulate public structures around them. This strategy can be further extended to a new three-dimensional concept of land use where public offices will maintain the ownership and upkeep for both horizontal and vertical circulation systems.", from Fumihiko Maki, *Investigations in Collective Form, in A Special publication*, no. 2. (St Louis: Washington University, The School of Architecture, 1964), 8-13, quoted in Peter Reyner Banham, *Megastructures*, in Banham publication's appendix.

31. Banham, *Megastructures*.

32. Such mistrust was particularly high in France.

33. Roberto Gargiani, *Inside No-Stop City* (Paris: B2, 2017).

*Hospices of privatization*

The disappearance of megastructures, as they were conceived in the sixties, does not exclude the possible contemporary recovery of a number of their characteristics. Among all the generative dynamics of urban development, the private domain has been particularly hospitable. It turned out to be able to recover—or to subvert—the latest principles of these great utopias. The tools of the welfare state, especially the control of the land, proved particularly adapted to the application of the megastructural precepts in the course of the seventies. It is striking to note that today, the same conditions apply to the realization of speculative real estate transactions. Only large private companies (or consortium of companies) seem to be able to support projects of this magnitude. In the most ordinary contemporary investments, major unitary real estate operations revive the megastructure's tradition by dissociating the collective use of a built complex from the land status on which it is built. These large urban structures are commercial complexes, catchment areas, residences, business parks. They take advantage of the street as a hologram (with a public connotation) in very largely private operations. They pose in a different form the question of usurpation, or suspension, of public space in an architectural complex. In megastructures, the ambiguous nature of the accessible places is the result of a lack of spatial self-representation. It is inversely more and more conscious and motivated in large commercial structures.[34] This masquerade is sometimes so brilliantly conducted that it is impossible to recognize, as a passerby, the fundamentally private nature of the visited spaces. Such structures often prefer not to assert their nature despite their scale. This muteness illustrates a tendency to falsify the supposed neutrality of open spaces, rather than to exalt the wide and exogenous architectural events. In view of the partial resignation of the public authorities, the market sector seems today the only one able to organize—or better, to simulate—such a communion. These new practices take place in a lucrative perspective to which megastructures have generally escaped.

*Praise of ruin*

In the development of the Administrative Center of the C.D.C.,[35] Yona Friedman confronts an approach for which his contemporaries have shown very little interest: that of the structure as an 'already'.[36] Unlike most megastructures thought to be additional components laid on the natural ground, Friedman's contribution distinguishes itself by considering the skeleton of the megastructure as a part of the large natural common ground. It even resorts repeatedly to trees in order to form these frameworks. Freidman departs from the dichotomy of an artificial megastructure superimposed on a natural ground.[37] He blurs the differences between 'the common ground' and 'the common support',

34. Refer to the article by Catherine Sabbah, "Espace public, espace privé, le commerce se joue des limites", *Les Échos*, (18.11.2015).

35. Compagnie Dubonnet-Cinzano-Byrrh, at Ivry-sur-Seine (Paris area).

36. He says about this project: "Let's first look at the preconditions. The company C.D.C. owns a huge warehouse in Ivry, built in the 1920s, covering 2 hectares (70 000 m2 of developed area). [...] By demolishing all the walls and partitions, the building is then transformed into an empty skeleton, where the posts are distributed every 8m", Yona Friedman, "Le Centre administratif de la C.D.C. à Ivry-sur-Seine ", *L'œuvre : architecture et art*, no.1 (1976). "Lieu de travail – Espace de travail "http://doi.org/10.5169/ seals-48548, with the ambition to obtain a real "spatial infrastructure" as he defined it in his previous publications [translation of the author].

37. By describing the "global infrastructure" as the biological characteristics that condition the living, Friedman brings together under the same infrastructural terminology: the architectural skeleton, the earth and its biosphere, the sun and its energy, the air around us, or whether the alternating day and night (Yona Friedman, *Utopies réalisables* (Paris: 1975),10-18).

nevertheless reinforcing to the extreme the distinction between the pre-existing permanent supports (lands and structures associated) and their spontaneous and ephemeral additions. Compared to the primary structures usually associated with the idea of megastructure, the 'artificial terrain' he proposes here is also deferred twice. It does not just precede the ephemeral and spontaneous addition of aggregates,[38] but it precedes the very idea of assuming such a role. It is a misappropriation. It is neither conceived nor realized in a megastructural perspective. Friedman opens new horizons by distancing megastructures from interventionism.[39] It inspires the citizen and local re-conquest of obsolete or abandoned infrastructures. Those are no longer considered as operational and structuring elements, but as supports for innovations, diversions and appropriations. Friedman sees in the megastructure not the formalization of an object of conquest, but the fragile frame of a possible survival. By insisting on the minimal character of the support—whose qualification of 'skeleton'[40] evokes in itself the universe of ruin—Friedman identifies an architectural issue to the tragic outcome of the megastructure [Fig. 4].

38. In accordance with the binary division described in point 3 of Ralph Wilcoxon's definition of the megastructure (Wilcoxon, *Council of Planning Librarians*).

39. This is certainly the singularity of Yona Friedman in the international landscape of megastructures, and also perhaps one of the reasons for the remarkable craze of which he is still the object. Its original approach makes possible, in particular, to affiliate a large number of rehabilitated and self-managed industrial structures into a late megastructural trajectory.

40. Yona Friedman uses in French the term "ossature" (Friedman, "Le Centre administratif". «Lieu de travail – Espace de travail». http://doi.org/10.5169/seals-48548.), referring both to the functioning of the human body and to his remains.
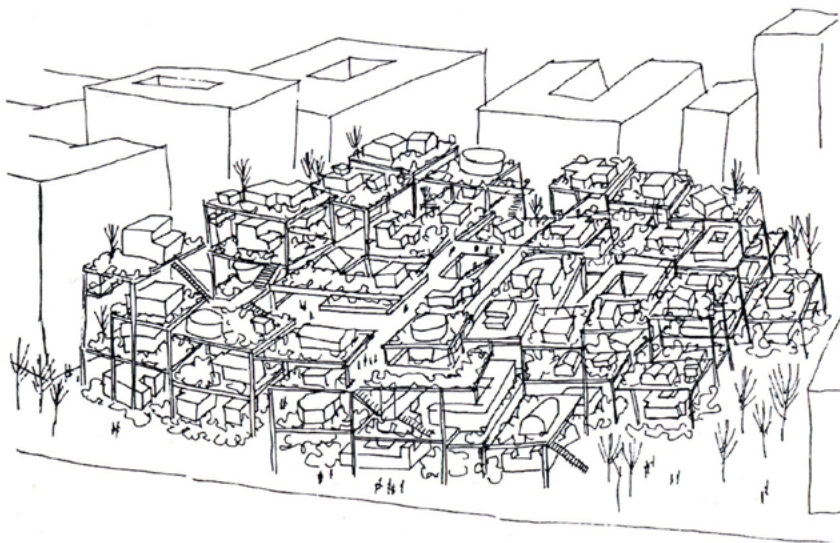


**FIG. 4**    *Green Architecture / Architecture verte*, Yona Friedman (1979). (Friedman, Yona, Marianne Homiridis. 2010. *Yona Friedman, Drawing & Models, Dessins & Maquettes, 1945-2010* Paris: Les Presses du Réel.)

### The greatest good for the greatest number[41]

Both Friedman and Ostrom raise the question of an alternative governance—(respectively and primarily) of habitat[42] and resources—delegating the responsibility for negotiation and collective intelligence to small communities.[43] If both find some relevance in contemporary debates, it is probably because they both participate in the construction of a new useful theoretical framework. Their works help to understand certain emerging directions at the economic, political and social levels,

41. Jeremy Bentham's formula is the spearhead of Garrett Hardin's argument. In his article "The Tragedy of the Commons" he formulates the criticism of a too immediate political interpretation of such a principle, by the demonstration of its main drifts. "The greatest good for the greatest number" has also had a number of repercussions in the history of architecture. The main ones resonating in the names of Robert Owen (one of Bentham's disciples and associates), Charles Fourier or Jean-Baptiste André Godin.

42. 'Habitat' is here understood in the broad sense of the condition of living on the territory.

but also certain architectural orientations that is urgent to develop. In this endless quest for "the greatest good for the greatest number", megastructure could represent to future architects a useful figure of a modern epic. By its heroic character, the tragedy of the megastructure challenges its contemporaries on the political and architectural capacity to conceive the massive nature of the human habitat, without getting into the real tragedy: one's of the unsubstantial urban sprawl.

43. Michel Ragon anticipates the territorial consequences of such a rebalance: "Since large cities are also the result of state concentrations, the image of political power engraved on the ground, it is impossible for cities to wither away if the state remains strong and centralizing. A society without a city would be a society where all political power would have disappeared. In other words, a society which has reached a degree of maturity so exemplary that the government of men would have replaced the administration of things, according to the Saint-Simonian formula, taken over by Marx." (Ragon, "Architecture et megastructure", "Le gigantesque", 69-77 [translation of the author]).