UIA, TURIN 2008
(EXTENSIVE TEXT OF THE LAST DRAFT MANIFESTO 27/05/08)

FROM THE MEGACITY AND ECOSYSTEM CRISIS TOWARD THE ECO-METROPOLIS AND THE POST-CONSUMER AGE

"We can't solve problems by using the same kind of thinking we used when we created them." (A. Einstein)

"Human nature is not to be coerced but persuaded" (Epicurus)

The megacity and the ecosystem crisis: the unsustainability of the mechanistic paradigm and the myth of "unlimited development"

Since the post-war period, the third industrial revolution based on the omnipotence of techno science, atomic energy, automation, and computer science have restructured the entire production cycle in the post-Fordist sense, freeing humanity from manual labor.

This revolution has given an impetuous thrust toward globalization, massified society, the consumer economy and the megacities, determining the largest demographic, economic and urban expansion in history. Such exponential growth was made possible thanks to a development model that considers Nature an unlimited resource.

But the overwhelming transition from the late-industrial age to the post-industrial one has produced ungovernable problems. They justify the invective by F.Ll. Wright: "the old capitalist city is no longer safe. It is the equivalent of mass murder" in The living city ('58), an alternative organic city model to the more abstract model of Ville Radieuse (L.C., '25).

The issue concerning the need to give shape to the metropolis in the post-industrial genetic mutation was conceived as early as the second post-war

Toward the ecometropolis and the post-consumerist age: the rediscovery of the ecological paradigm and of the reality of the "limits of development".

The 250 years of industrial revolution have been dominated for four-fifths by the mechanistic (analytic-reductive) paradigm and by the myth of "unlimited development", which, together with the affluent society, have produced today's uncontrollable pathologies.

In the last post-industrial phase, however, a new perspective has opened, albeit anticipated by prophetic intuitions: the ecological paradigm (synthetic-organic) aware, vice versa, of the reality of the "limits of development" and oriented toward a post-consumerist age, a new eco-metropolitan frontier and an architecture that lives in symbiosis with Nature!

This mutation is in harmony with the sciences that, ever since the post-war period, have gone beyond the mechanistic paradigm: Cybernetics; the Theory of systems; the Gestalt theory; Ecology; Complex dynamic systems; Holistic biology; the Science of Chaos. It marks a paradigm shift from the "right to the city" (H. Lefebvre, '68) to the "right to Nature".

Obviously, such transition is extremely difficult to enact.
This is because the mechanistic paradigm has

vanguard.
This was triggered, in the mid-50's, by two provocative and complementary projects, which raised the issue "of the great dimension": The Illinois, a one mile-high vertical city ('56) and the revision, twenty years later, of Broadacre city, the horizontal city-region ('36-'58) of F. Ll. Wright.
They announced the new megastructural research for a futuristic habitat which simulated the complexity of the metropolis; whilst the Artistic Avant-guard revealed its flare in the exhibition entitled This is Tomorrow (R. Hamilton, '56).
The spatial and artistic vision did away with, at one and the same time: the paralyzing anxiety of the informal, the stereotypes of socialist realism, the late-rationalist academy, and the return to the new historicist order.
Furthermore, unlike the functionalist statute, it warned of the imminent environmental crisis by proposing, for the first time, a synthesis of architecture and ecology (arcology), that anticipated the ecologist uprising established from the end of the 60's.
This occurred with the foundation of the Rome Club ('68), the denunciation of The population bomb (P.Erlich, '68), the proclamation of the "First day of the Earth" (22 April 1970), the new bio-economic perspective (N. Georgescu-Roegen, '71), the MIT Report on "The limits of development" (D. Meadows, 1972), the First World Conference on the Environment (Stockholm, 1972), the discovery of the "greenhouse effect" (F. Schneider, '75) and the Charter of Machu Picchu ('77). The latter was responsible for terrorizing the post-functionalist, antimechanistic, open, changing, multifunctional city, serviced primarily by public transport.

Essentially, in order to tackle the greatest demographic, urban, and economic expansion in history four main roads were open.
Whilst the organic architecture proposed the model of the living city in harmony with Nature and New Avantgardism pre-shaped the Future, others re-launched the models of the city of History and of the Rational city.
The new horizontally developed, historicist, anti-

been consolidated in more than two centuries of industrial revolution, after a long preparation period within the Western culture, becoming the unquestioned "way of thinking" underlying all cultures.
J. Rifkin wrote: "already from the middle of the 17th century, all the key elements of the mechanistic paradigm had been accurately connected into a unitary scheme" ('80). Bacon, Descartes and Newton, by reducing the world to measurable "quantities" and "quality" to illusion, had announced the universe of precision and of the machine.
In the architecture of the industrial revolution, such reductionist vision finds expression in the poetics of the reductive and geometrizing stylization; that is, in the technological structuralism (from the "architecture of engineers" of the 19th century to today's high tech), in functionalism, rationalism, constructivism, which find in the Charter of Athens ('33) a full theorization.
These poetics - based on the drive to abstraction tending toward the geometric-mechanical order – operate as theory of permanent destruction of the Meaning, the negation of History and of Nature. Consequently, they fit perfectly well into the Taylorist industrial process.

The following have risen against such extreme power: on the one hand, the defenders of History who, upset by the asemantic nature of industrialism, recall past forms by adapting them to contemporary functions; on the other hand, the defenders of Nature, who reject both a return to History and Cartesian reductionism.
The latter are aware that: "human nature is not to be coerced but persuaded" (Epicurus); that "things out of their natural state do not adjust nor do they last" (Giovanbattista Vico); that "in Nature everything is interconnected; one state tends to another and prepares it" (J. G. Herder); that there exists a "moving order" of Nature seen as "an harmonious Great Whole" (W. Goethe).
Such anti-mechanistic principles constitute the basis of the ecological paradigm (synthetic-

industrial and anti-modernist model took refuge in the past which had never got to know the problems of today's megalopolies.
The rationalist, industrial and modernist one – although in the 20's it had proposed the futuristic projects of a vertically developed metropolis like the "Ville contemporaine pour trois millions d'habitants" ('22) and the Plan Voisin ('25) by Le Corbusier or the Groszstadt Architektur ('27) by L. Hilberseimer, indifferent to History and Nature – now returned, in the name of Realism, to the districts of the same years, which disappeared into the immense invertebrate suburbs. But the new historicists and new rationalists did not realize that "the lack of a theory of the great dimension is the most exasperating weakness of architecture" (R. Koolhaas).
In reality, the dramatic problems of today's megalopolies could not be solved, as they are organisms of a higher scale and complexity, reducing them to those of the rationalist districts and of the traditional city, simple and limited organisms, because: "at each level of complexity, the phenomena observed show qualities that do not exist at a lower level" (F. Capra, '96).
Now, a genetic mutation of the DNA separated districts and cities from the vertically developed metropolitan superorganisms.
Besides, as the ecologist uprising against the mechanistic paradigm emerged, the globalization of the Western development model accelerated its productive, hyperconsumerist and megalopolitan force, dodging all controls.
Meanwhile, the homologation of consciences becomes more intense in the society of consumerist delirium: "we are overwhelmed by the risks posed by a condition that we could define as 'the psychological misery of the masses'" (S. Freud).

Today, the unprecedented post-industrial development has reached the point of upsetting the bioclimatic cycles and the planet's ecosystem. This was proven by the unsustainability of the mechanistic paradigm, which constitutes the basis of the functionalist statute codified by the Charter of Athens ('33).

organic).
In architecture, this holistic vision – based on the drive to empathy tending toward dynamic, antigeometric, flexible, and fluid spaces in harmony with Nature – finds expression in the expressionist poetics and, especially, in organic architecture.
According to Wright, this "means precisely an organic society", the incarnation of democracy and, as such "it will reject any imposition on life which is not in agreement with Nature and with man's character", thus proving the "independence of the new and of the old Classicism … from any academic aestheticism" ('39) and the belief that "the essence of a house does not consist in its four walls, but in the living space within it" (Lao Tze).
Therefore, the other pole of modernity, the organic one, opposes to the city of History and to the "ville-radieuse" of Reason, the "living city" integrated with Nature and projected toward the Future.
The latter identifies itself with the great perspective, similar to the Eastern concept, which considers: "the cosmos as … a single inseparable, eternally moving, animated, organic reality: material and spiritual at the same time" (F. Capra, '75).
Hence we have an unprecedented possibility: summarizing the invincible vitality of the metropolis and the urgent need to protect ecology.
To do this, two consolidated myths must first be neutralized: on the one hand, the "conservative" one of a return to the past as the depository of symbolic values albeit indifferent to modernity; on the other hand, the "progressive" one of trust in the technocratic power, indifferent to History and Nature.
Hence, it is a difficult summary which imposes the following: "not confounding as "values of modernity" those which, instead, are merely its disastrous drawbacks" (U. Galimberti, 2003).

The "network-based" ecological paradigm, discovering the laws that govern the development of physical phenomena and the growth of living organisms, incarnates itself in

Such unsustainability manifests itself through increasingly alarming pathologies which can no longer be removed, minimized or ignored by the institutions, and which can be summarized in the following phenomena:

1. The explosion of the demographic bomb.

The world population has taken approximately 2 million years to reach the first billion in 1830, and only 100 years for the second; hence, since 1930 an exponential acceleration has been triggered whereby it took 30 years for the third billion, 15 for the fourth, 13 for the fifth, and 11 for the sixth, in 1999.
The historic demographic studies estimate that: twelve thousand years ago, at the beginning of the agricultural era, the world population reached 10 million, and two thousand years ago, with the advent of the Christian era around 250 million; at the end of the 18^{th} century, with the launch of the first industrial revolution we reached the first billion inhabitants. Finally, on the first post-industrial fiftieth anniversary, between 1950 and 2000, it grew from 2.5 to 6.1 billion. Meanwhile, each day it grows by approximately 200 thousand inhabitants.
In 2050, unless we take corrective measures, we run the risk of doubling today's population. But already in 1974, L.R. Brown admonished: "what we have to recognize today is that the constant population growth, even if it were to be moderated from now on, will increasingly exacerbate practically all the major economic, ecological, social and political problems which humanity is currently facing".
In the present situation, the demographic explosion is out of control!

2. The permanent expansion of megacities and of the megalopolitan galaxies.

the holistic vision that permits "pacification between techno-sphere and ecosphere" (B. Commoner), which is indispensable to the survival of the planet.

Hence, if we wish to free modernity from its "disastrous drawbacks" brought about by the mechanistic framework, which is by now as good as unsustainable, we urgently need to find an alternative strategy capable of achieving the following:

1.1. The defusion of the demographic bomb.

Such policy, announced already in 1969 by the UNO and reconfirmed starting from 1974 in the world conferences on population held every ten years, can be pursued by fighting the "biopathology of mass civilization" both in industrialized and in developing countries.
The former already tend to become increasingly stable due to the high economic level, whilst for the latter, the unrestrainable demographic growth is still the result of a high mortality rate due to famine, epidemics, natural catastrophes, endemic poverty, war, etc..
But we know that the demographic control in developing countries can be achieved primarily by raising their standard of living.
To this end, we first need to do the following: avoid taking from them the natural resources that must be used on site, as they are of strategic importance to their economic and social evolution; canceling the huge public debt; launching a large-scale "micro credit" program similar to the already experimented model proposed by Nobel Prize winner Muhammad Yumus.
These experiences form the preconditions for the emancipation of such peoples from foreign control and "asserting their right to control one's own destiny" (N. Mandela)

1.2. An entropic habitat: from garden-city, living city, and arcology, toward the new eco-metropolitan frontier.

The exponential demographic growth is at the same level as the urban one.
Such synergy from 1950 to 2000 caused a population growth in the cities from 25.4% (732 million) to 50.0% (2,845 million), which exceeded for the first time in history, in 2008, the rural population.
In particular in 1950, New York, the largest metropolis in the world numbered 12.3 million inhabitants, but in 1975 it was overtaken by Tokyo (19.8 million).
In 2001, the latter established a record (26.5), followed by San Paolo and Mexico city (both with 18.3 million); whilst New York ranked fourth (16.8).
The projections as at 2015 again indicate Tokyo (27.3) as the most populated city, followed by five third-world metropolis (Dacca, Bombay, San Paolo, Delhi, and Mexico City); whilst N.Y., although it grew by 5.6 million with respect to1950, moved down to seventh place (17.9).
Meanwhile, the expanding metropolis tend to establish a network with near-by cities, thus forming megalopolies, defined as such if they exceed 30 million inhabitants; that is, as much as the population of Europe at the time of Augustus.
In 1961, the first megalopoly researcher, J. Gottmann, identified ten of them: three in Europe (the London-Liverpool system, the Rhone-Rhine axis, the Padana Valley extending to the Tyrrhenian and Adriatic corridors); three in North America (New York-Boston, Chicago-Toronto, Los Angeles-San Francisco; one in South America (San Paolo-Rio de Janeiro); and three larger ones in Asia (Shanghai-Peking, Calcutta-Delhi and Tokyo-Osaka).
Today, no one knows the extent to which the expanding metropolis and megalopolitan galaxies will develop.

3 The omnipotent post-industrial development, market-focused globalisation, and the planetary control of resources.

The explosive demographic and urban growth, synergic to the industrial revolution, has spurred researchers and architects to give new forms to the cities, the “living” organisms on the genres which today are growing to disproportionate measure.
This, unlike the animal organisms programmed by Nature, which in the present bioclimatic age cannot exceed the size of the whale.
More than a century ago, E. Howard, in order to correct the pathologies of the two types of habitats produced by the proto-industrial revolution, namely the groszstadt and coketown, proposed the garden-city model (1898-1902).
In it: “all the advantages of city life … and all the joys and beauties of the country met in perfect harmony”.
This summary of nature and of the city excelled in Wright’s “living city” and was re-launched by the arcology of Soleri.
Today, in an age where the cities have changed their DNA becoming metropolis and the garden has assumed the large scale of ecology, it is necessary to imagine the eco-metropolis, a “network” habitat, consistent with the entropic age, as the powerful accumulator-processor-exchanger of immaterial and material culture, but not imploded, rather, dynamically balanced with Nature.
But the “great dimension” and complexity of the eco-metropolitan issues requires strategic plan-projects capable of integrating the architectural, urban, landscape, environmental, geotectonic, hydrographic scales, etc…, often fragmented into incommunicable sectorial competences.
Consequently, it appears increasingly evident that there is a delay on the part of the institutions in tackling the problems of the eco-metropolitan “great dimension”.

1.3. Re-founding the development model by merging economy with ecology.

“The current economic science … has completely ignored the special function of the inexhaustible

Since 1820, the global economic product has increased 58 times over, and in the 20th century only 18 times. “Since the middle of this century … it has increased almost five-fold; on average, the economic development of each of the last four decades exceeded the one registered from the beginning of civilization in 1950” (L.R. Brown, ’90).

Meanwhile, from 1975 to 2000 the growth in world production was: for electric energy, from 1,606 million kW to 3,340 kW; for iron, from 468 million tons to 580 million; steel, from 651 to 722; aluminum, from 12 million to 23 million tons.

The pervasiveness of such development is caused primarily by the synergy between the relentless progress of techno science, the commercial globalization, and the boundless, anonymous, and on-line world penetration of finance.

Finance has achieved a biotech superexploitation of the earth to the extent of destroying one third of the annual product, as well as an exterminated production of goods such as to occupy every single corner of the globe. Such hypertrophic development implies an increasingly conflictual planetary control of raw materials and markets. Meanwhile: “the development of the economic system, the way it is currently structured, will not put an end to poverty. On the contrary, the current forms of growth perpetuate poverty and extend the gap between haves and have-nots” (D. and D. Meadows, J. Randers, 2004). According to the WHO (World Health Organization): “every year in the world, approximately 20 million people die of hunger and of related diseases, whilst 18% of the population is obese”.

4. The post-Fordist genetic mutation of production, of society and metropolises.

The post-Fordist revolution is founded on the awareness that: “the lymph of post-industrial society is knowledge”. Hence “the economy has stopped to deal primarily with the production of goods in order to deal with services, research, education and entertainment” (D. Bell, ’63). This revolution has caused a genetic mutation of society: on the one natural resources, in the mode of behavior of human beings” (N. Georgescu-Roegen, ’80).

In fact, “economicism”, “market-orientation” and GNP, all expressions of the mechanistic paradigm, say nothing about the quality of life and are increasingly detached from the awareness of an environmental crisis.

A turning point is required: a remodeling of the conventional economy which assumes the responsibility of the unbalances produced on the environment.

This bio-economic perspective must meet man’s current needs, but also protect those of the future generations without compromising the vital cycles of the planet.

This can be implemented through the achievement of two objectives.

First, the demolition of the myth of “unlimited development”, that is of Nature as an infinite resource to be consumed at will, implicit in the mechanistic-rationalist paradigm.

Furthermore, the overcoming of the traditional utilitarian approach in favor of self-realizational systems and of a new economic-ecological order.

This must be carried out in the awareness that the planet is a close-ended living organism. “the various parties … are interconnected more closely than ever before” (Amartya Sen, ’99).

1.4. Rebalancing, in an eco-metropolitan perspective, the urban framework without the constraints of major transnational corridors.

The accelerated demographic, urban and economic growth, causing the explosion of the metropolis, imposes on the countries which aspire to become leaders, an inevitable eco-metropolitan restructuring.

hand, with “the end of manual labor” and of the middle class of the industrial age; on the other, with “the rise of the network society” (M. Castells, ’96), of the “creative class” (R. Florida, 2001) and of the “white collars”, the fundamentals of the post-industrial society of permanent innovation. In the United States, while the agricultural farmers and factory workers have decreased to 2 and to 21 %, respectively, service employees have increased to 77%. Such social diversity tends in any case to form a mass class with a differentiated income.

The territorial consequences of such revolution is: “the divorce between city and industrial production” (J. Gottmann, ’91) which has caused the outburst of the metropolis into unrestrainedly growing “nebula”.

This produces differentiated forms of urban systems classified as follows: “global cities” (S. Sassen, ’91), “cities in positive or negative industrial transition”, “urban areas in structural crisis”, and “traditional industrial cities”.

Today, these gigantic problems are tackled on a sporadic basis, or under the thrust of emergency, also because there are no adequate strategies for such complex issues.

5. The globalization of urban infrastructures, markets and systems into a single “infinite and shapeless” weltstadt.

The invincible techno-scientific and financial apparatus is projected on a planetary scale through an infinite soft infrastructural network (the Internet), which has grown by 50% each year since 1995, and a hard one (intermodal transport systems), with a global increase in the number of automobiles between 1950 and 1999, from 70 million (50 only in the USA) to 682 million; that is, approximately ten times over.

To measure the power of the infrastructural network that envelops the planet, we only need to note the following: “between 1950 and 1996, the world’s exports of goods increased 17 times over, from 311

It can be governed through three complementary policies.

First, the delocalization from the cities: of the great secondary activities in industrial districts located on the transnational routes or in other countries; of the tertiary ones, in suburban “superlocations” designated for macro services, equipment, mass distribution, logistic platforms, freight villages; and the establishment of eco-towns as urban self-sufficient productive, functional, energetic and controlled development units.

Secondly, the reconversion of urban areas in disuse and of historic centers and quaternary activities such as: centers de decision, conception, services rares and loisir, great urban parks, favoring the rise of civilization of knowledge; and re-naturalizing the cement-free areas.

Also, the upgrading of hard and soft networks to form interactive polycentric constellations, into complementary functions; that is: “mosaic-shaped structures” (J. Gottmann).

Within such networks, it will be necessary to identify those directrix capable of assuming the role of “axis of economic-territorial rebalancing” such as attractors of a higher level of functions in such a way as to establish the eco-metropolitan re-equilibrium of the territory.

1.5. Integrating hard and soft networks as an open, interactive, and eco-friendly cyberspace.

The post-industrial era thrusts relentlessly: on the one hand, toward increasingly more diversified specializations; on the other, toward an increasingly more inclusive interdisciplinary re-integration.

This double movement determines a relentless multiplication of networks designed to exchange and distribute flows of information, goods and people, guaranteeing an evermore extended connection of the planetary city. Today, the power of the integrated system of hard and soft networks, that is, the supporting skeleton of the weldstadt, is such as to give shape also to trans-

billion of US dollars to 5,400 billion"; "in air transport between 1950 and 1998, the number of passengers/km along international routes grew almost 100 times from 28 million to 2,600"; "every day, approximately 2 million people cross an international border, whilst in 1950 only 69 thousand did so"; "the number of telephone lines in the same period grew 8 times fold, from 89 to 836 million" (H. French, 2000). This constantly expanding planetary network obviously defies any law but that of maximum profit.

While it feeds the increasingly competitive world markets, it also integrates the megaolopolitan galaxies, the monocentric metropolis, the environmentally balanced historic cities, the obese cities, and the same bidonvilles which besiege the marginal metropolis into a single "infinite and shapeless" weltstadt.

6. The "Ecological footprint" of the planetary city beyond the limits of Nature.

The planetary city's impact on the ecosphere is unrestrainable and increasingly impressive: "today's cities occupy 2% of the earth's surface, but they consume 75% of its resources" (M. O' Meara, '99).

The hyperexploitation of Nature and the growing production of waste are depleting the ecosystems more rapidly than they are able to regenerate themselves.

This is caused by the world expansionist competition of the more industrialized countries and more indifferent to the natural equilibriums. The propagating "ecological footprint" "W. E. Rees, M. Wackernagel, '96) is evident from deforestation: in 50 years, a fifth of tropical forests were destroyed, whilst "it is expected that within 2050 the pro capita share of wooded areas will be reduced from the current 0.56 hectares to 0.38"; from the depletion of water resources: "the most serious deficits are taking place in China and especially in India, where the population has increased threefold with respect to 1950" (L.R. Brown, 2000); from the collapse of the fish stocks: "the sea resources are coming to a oceanic megalopolies, as in the case of Ny.Lon, that is New York-London which, although six thousand miles away one from the other, are connected by commuting lines.

However, the establishment of such a dynamic, complex, and integrated cyberspace tends fatally to be congested and to sweep away the equilibriums of the biosphere. Given that this high tech process is irreversible, it is obvious that in order to re-establish a balance in the pervasiveness of such infrastructural networks, it is necessary to devise territorial governing strategies on a geographic, sub-continental scale; hence, elaborated by international organisms and implemented through increasingly restrictive directives on the various national scales.

But, in particular, such cyberspace must identify itself with the dynamics of the weltstadt to be set progressively back into equilibrium with the biosphere.

1.6. A "New Alliance" with Nature beyond functionalist reductionism.

"According to the Living Planet Index, prepared by the WWF to measure Nature's state of health, this has dropped from 1970 to 2000 by 35% (G. Gardner, 2004), while the world GNP has risen by 1.0 to 1.6%.

This paradox explains the incommunicability between the environmental sciences and conventional economy.

Meanwhile, we urgently need a "New alliance" (I. Prigogine, '79) with Nature in order to check the dissipation of non-renewable resources and the pathologies that threaten our planet.

In this context, we need to combine the following: "the cyclic and conservative processes which are perfectly consistent with the ecosphere, as well as the innovative and linear ones, although ecologically incompatible, of the techno sphere." (B. Commoner, '75).

Only by achieving this convergence will it be possible to limit the "Ecological Footprint" of the planetary city and re-insert it into the self-regulated order of Nature.

close; the industrialized countries dominate the global consumption of fish, appropriating themselves of 80% of the total imports in values" (H. French, 2000).
In the second half of the 20th century, the world demand of water has tripled and "currently agriculture consumes approximately 70%, industry 22%, urban areas 8% (S. Postel, 2004); whilst rivers and lakes are superexploited and access to the aquifers is increasingly difficult.
Meanwhile, urban growth in Europe in the 1990-2000 decade has destroyed 2,445,000 hectares of agricultural area, a unique and irreproducible asset.
In general, the studies on the "Ecological footprint" show that the developed countries live above their ecological means, that is, three planets would be needed just for them.

7. The progressive destruction of the Historical Heritage and of the late-ancient communities.

In the large expanding metropolis – through the urbanization of immense agricultural areas which expand their suburbs infinitely into the sprawl – the historic centers are suffocated to the point of being demolished so as to reproportion the urban centers to the new dimensions, with the consequent disarticulation of their communities. In the metropolises such as Cairo, Shanghai, Peking, Calcutta, San Paolo and Rio de Janeiro, such destruction, caused by these areas' high real estate value, is triggered especially by the crossing of large infrastructural uneven bands which sweep away the historical fabric, considered merely an obstacle to progress and not the more tangible memory of man.
This process is pressing despite the recommendations from the opposite side: of the Charter of Athens: "the architectural assets must be protected whether they are isolated buildings or entire urban centers. They must be protected when they represent an expression of the previous culture or when they satisfy a general interest"; and of the Such strategy is as inevitable as it is difficult to pursue.
First, because it requires the mutation of the predominant mechanistic paradigm.
Secondly, because the reduction of the "Ecological Footprint" will meet deep-rooted resistance from the countries which are most steeped in the consumerist delirium.
But today, the events pass over the meanings; things are rebelling against words and demand dramatic and committing answers.
If architecture wishes to contribute to the construction of the ineluctable prospect of pacification between techno sphere and ecosphere, it must fulfill the basic task of questioning its technocratic certainties, which are presently unsustainable, and aim to re-establish its statute on the basis of a "New Alliance" with Nature.

1.7. The protection of historical heritage and population, inhabited sites, and late-ancient communities.

The Protection of the historical Heritage of humanity, as a single and irreproducible asset as that of Nature, is of fundamental importance to the survival of man and of his memory.
In the industrialized countries, where we find a zero demographic growth and an excess of rooms compared with the number of inhabitants, it is possible to fully protect the historic city since it represents a small part compared to the massive edification realized over the last decades.
In the developing countries, such protection is more difficult because the historic city is more likely to be swept away by the uncontrollable demographic and urban pressure. But such growth may only be satisfied by constructing bioclimatic housing units outside the historic centers, using technologies rooted in the genius loci.
Meanwhile, the protection of pre-existing historic places must be accompanied with the protection of the communities that live in them, as well as the anthropized sites and the surviving late-

Charter of Machu Picchu: “it is absolutely necessary that the preserving action of restoration and recycling of historic environments and architectural monuments is integrated within the vital process of urban development”. But these recommendations, confirmed by all the numerous restoration and town-planning charters, are punctually ignored.

8. Consumerism as an exponential accelerator of production: its metamorphosis from vice to virtue.

Within the infinite production capacity of the Western development model operates an exponential accelerator: consumerism.
“The metamorphosis of consumerism, from vice to virtue, is one of the most significant phenomena – and yet one of the least studied – of the 20th century” (J. Rifkin, ’95). It was first evoked in the United States in the 20’s: “before the specter of an extreme production and an insufficient demand, American companies started to exploit the advertising resource in order to sway the public”.
In the culture of sobriety, material objects needed to last a long time, function properly, and represent firm symbolic and aesthetic values so as to be preserved and handed down through the generations.
Vice versa, with the “new gospel of consumption”, objects must change with fashion, last a short time, function less efficiently, be attractive but not “memorable” so as to be replaced without regrets and disposed of in increasingly larger dumping grounds; resulting in a criminal waste of raw materials and energies. G. Anders claims: “humanity that treats the world as a world to be thrown away, also treats itself as humanity to be thrown away” (1980).
In two centuries, the free “citizen” of the French revolution has been reduced to a heterodirect “consumer”!

9. The height and decline of the age of fossil fuel: the struggle for control of the world’s

ancient communities, guaranteeing their free right to anthropological and cultural biodiversity.
This is to be realized, in particular in the belief that: “…we cannot return to the past, but specifically because of this, the memory and the traces of the past must be protected in the most radical way” (E. Severino, 2003).

1.8. From waste economy to post-consumerist thriftiness: vindicating the nondescript conscience of man-mass.

In 1923, the pressing request for the modernization of the emerging mass civilization, in a still non-consumerist Europe, was such as to legitimize the Lecorbusierian dilemma: architecture or revolution!
Today, the gravity of the environmental pathologies resulting from waste imposes a different and more serious dilemma: the economy of sobriety or the collapse of the planetary ecosystem!
Wisdom suggests the immediate need to revolutionize our life-style in the post-consumerist sense.
It must primarily neutralize the destructive principle which dominates the production-consumption cycle.
In fact: “goods are produced to satisfy needs, but needs are produced to guarantee the continuity of the production of goods” wrote U. Galimberti (2003); who reminds us that consumerism is a “new vice unknown to the generations that have preceded us”; and that “each commercial is an appeal to destruction”.
Hence, in the low cost “disposable” society, it is necessary to free the homologated conscience of the mass man, by allowing him to regain his individual responsibility so as to distinguish ever more clearly his “right to democracy” from the “tyranny of the majority” (A. de Tocqueville).

1.9. The city of the solar age (Heliopolis) and renewable energy: reconverting the

energy resources.

In England, starting from 1700, the non-renewable carbon coke energy replaced the renewable energy of wood, proclaiming the age of the steam machine and of the industrial revolution.
Today, combustible fossil (carbon, oil and natural gas) provide 90% of the energy of the industrialized countries and 75% of the world's energy, confirming a life-style which is indifferent to energetic waste.
The escalation of consumption is unlimited: if, in 1950, 463 million tons of oil were burned, in 1998 this amount rose to 3.4 billion; whilst between 1975 and 2000, consumption grew from 20,512 million drums a year to 27,635; gas consumption rose from 44.4 trillion cubic feet a year to 94.5; that of carbon from 3,300 million tons a year to 5,100.
A single skyscraper in the city of Chicago, i.e. the Sears Building, consumes as much energy as a city of 150 thousand inhabitants, whilst "in terms of energetic consumption, the 295 millions of Americans require as much energy as would suffice for 22 billion human beings!" (J. Rifkin, '80).
But the age of combustible fossil is coming to a close. The International Energy Agency foresees a peak in world oil production in the middle of the 2020-'30 period, which will then be followed by a bell curve decline; meanwhile, today we are witnessing a sharp runaway rise in prices.
No one knows what the future holds in terms of the planetary city's energy resources, but everyone foresees an ever-more intensive struggle for world control of such resource.

10. The extreme growth of waste, pollution and the greenhouse effect

The unrestrainable explosion of the population and of the weltstadt, the omnipotence of technique guided by science, the pervasiveness of the consumerist development model, the planetary

planetary habitat.

In 1957, the American physician Conant claimed: "every minute the earth is reached by a quantity of energy equal to that generated by the combustion of 100 million tons of brown coal"; and concluded: "the sun, and not nuclear fission, will constitute our future source of energy".
Half a century later the progress in solar thermal and photovoltaic technology confirmed such opinion, reiterated by Carlo Rubbia: "neither oil, nor carbon, but only solar technology can provide us with energy" (2008).
The end of the age of combustible fossil constitutes the epochal energetic watershed which "will require a full reconfiguration of the transport, construction and electricity sectors" (J. Rifkin, 2007); in brief, a refounding of the planetary habitat powered by the cycles of the biosphere.
In this context, the architecture will be "intelligent", not if it is overloaded with technical systems but, on the contrary, if it reduces them by reconverting the indispensable ones, first to the "passive systems", and then to the renewable energies: solar, eolic, geothermal, hydrogen, biomasses, biocarbons, etc..
In particular, the new architecture of the solar age will be able to imagine Eliopolis, a spatial structure fed especially by the sun which will make today's architecture appear increasingly more overloaded with system networks: archaic, costly, and unlivable.
This will enable the acceleration of the scrapping of dormitory suburbs replaced by vertically-developed and energetically self-sufficient eco-cities.

1.10. The new entropic civilization of recycling and control of pollution and the greenhouse effect.

The gravity and the extent of planetary pollution is evident from the satellite views showing its perfect correspondence to the megalopolitan

propagation of infrastructures, and the outrageous waste of environmental and energetic resources fatally translate into unrestrainable global pollution.
"The more an economy produces, the more it pollutes" (J. E. Stiglitz, 2006). Every 24 hours we emit 70 million tons of CO2 into the atmosphere. If, in 1950 we discharged 1.6 billion tons of carbon into the atmosphere, in 1998 such deathly quantity has risen to 6.4 billion.
Whilst the production of urban waste grows in proportion to the consumerist economy; only a minimum part of the raw materials used is recovered. In Europe, out of 340 million tons/year of waste, only 14% is recycled, 10% is transformed into compost, while 54% of it ends up in the dump ground and the rest in incinerators.
Meanwhile, the megalopolitan areas are increasingly massified, congested and poisoned, they form unlivable islands of heat which become practicable only at the price of boundless system networks and an increasing consumption of combustible fossils, which, in turn, increases pollution in a perverse circuit.
The metropolis are the first cause of the "greenhouse effect", which is responsible for the devastating impact on the geosphere, atmosphere, hydrosphere and biosphere causing: climatic mutations, extreme meteorological situations, holes in the ozone layer, acid rains, deforestation, desertification, shortage of fresh water, melting of glaciers, extinction of living species, etc..

11 The self-reference of architecture in the consumerist-spectacular society

The extraordinary economic development produced by the industrial revolution in the last 250 years has had an enormous impact on the way architecture is conceived.
This has become increasingly polarized around the abovesaid four trends, giving shape to oriented antinomian pairs: toward the Past or the Future and areas.
The situation is alarming because: "there is no technological remedy to the greenhouse effect phenomenon, the only possible solution consists in eliminating the cause", claims J. Rifkin, and adds: "the alternative to the generalized waste of each available energy source and to the heating of the planet is an international propagation of the values and rules of the entropic paradigm". Hence, the new post-consumerist civilization must be geared toward four cardinal points: implementing the double strategy of reducing the waste of raw materials at the onset of the production cycle and of recycling the latter after using them; drastically reducing greenhouse gas emissions (CO2, CFC, nitrous oxide, and methane) and accelerating the transition from the age of combustible fossils to the age of renewable energy; refounding the Western development model and the planetary city in the post-consumerist, eco-metropolitan sense, reestablishing their balance with Nature; undertaking a farsighted policy not only of protection of the presently existing forests, but of reforestation of the planet (which until 500 years ago was extremely green) applying it in a evermore pervasive manner to all the metropolis.
This strategy has the historical task of fighting the "stand of modern civilization which states: 'increase your needs" (M. Gandhi, '47)
In other words: "we can solve the problems (the are threatening our planet) if we renounce to the (mechanistic) way of thinking that produced them".

1.11. Digital architecture as a "prosthesis of Nature": the right to bio-diversity in aesthetics, ethics, and politics.

If the architecture of the electronic and digital era wishes to contribute to the neutralization of the pathologies affecting the ecosystems and the large urban centers, it must go beyond the self-referential language that ignores it, be they academic (neo-historicist, anti-post-modernist,

toward Reason or Nature, which take on different responsibilities with respect to the ongoing environmental crisis.
In brief: the new historicist poetics, shut within the disciplinary autonomy, remove such crisis by fleeing into the Past evidently immune to it; on the opposite side, those projected toward the Future, open to an interdisciplinary vision, face it also to the limit of utopia; meanwhile the rationalist currents which are the expression of the functionalist statute ignore its unsustainability; whilst only those of organic ascendancy are oriented toward an architecture that is created and lives in equilibrium with Nature.
Hence, in the consumerist-spectacular society, the majority of such trends believe that architecture is predominantly a self-referential language, that is, indifferent to the imminent environmental crisis.

The dangerousness of these pathologies has attained such a level as to threaten survival of the planet! We have come to the point that "things" rebel against "words" and problems elude the policies developed for their governance.

Meanwhile, the synergy between technocracy, economicism and marketism has ignored further the ongoing planetary ecocide, which has been unveiled and denounced since the '70s by the new systemic vision of the world.

The latter has highlighted that the planet, being a self-balanced "living" ecosystem, cannot be left to those principles and laisser-faire and/or laisser-passer policies, which are increasingly indifferent to the seriousness of the environmental, energy and metropolitan crisis - which has reached breaking point.

Today, UIA, on the occasion of its 60th year from foundation, in line with the Charter of Machu Picchu ('77) "anti-Enlightenment revision of the Charter of Athens" (B. Zevi) and the Declarations of Mexico ('78), Warsaw ('81), and neo-late-rationalist) or experimental (high tech or de-constructivist), now in the involutive phase.
Architecture must be geared toward a new eco-metropolitan, post-consumerist frontier, for which it cannot but start again from the prophecy of the "living city", as the living organism in symbiosis with Nature.
Furthermore, it must be capable of combining the opportunities offered by the metropolis with the ineluctable reasons of ecology, beyond the submission to the technocratic dictatorship and comforting anti-urban nostalgia.
In brief, architecture will tend to establish itself increasingly more as a "prosthesis of Nature".
Architecture will define itself as an unforeseeable plastic-spatial dynamism, it being: bioclimatic, bound to the genius loci, participated, libertarian expression of existential experience, of the collective imagination and of the right to aesthetic, ethical and political biodiversity.

To those who will argue that such strategy is debatable or utopic, we can reply that, vice versa, it is compulsory and realistic!

This is so for three main reasons: the impending end of the age of fossil fuel, which will necessitate reconverting both the production cycle and the planetary city to the use of other energy sources; the threat posed by the greenhouse effect to the survival of the planet, which mandates a strategic shift towards the "pacification between techno-sphere and eco-sphere"; and the ethical failure of nihilist consumerism, which is responsible for the destruction of Nature for the sake of superfluity.

However, these huge problems cannot be solved without the revolutionary cultural shift from the mechanistic paradigm to the bio-ecological paradigm, which is capable of re-modeling modernity after natural cycles.

Chicago ('93), takes up its responsibilities faced with these challenges and will contribute towards developing alternative strategies, expanding cross-sector skills, and raising future architects' awareness of these issues.

This is so because of the awareness that: "It is not because things are difficult that we do not dare; it is because we do not dare that they are difficult" (L.A. Seneca).

The underlying belief is that: "the essence of civilization consists not in the multiplication of wants but in their deliberate and voluntary renunciation" (M. Gandhi).

Meanwhile, the time for a radical turning point is increasingly running out, and it cannot be delegated to anyone. In fact: "of all the organisms living on earth, only we humans have the capability of consciously changing our actions. To make peace with the Planet, we must make peace among the peoples who live in it" (B. Commoner).