

Research

Presented by Myrto Antonopoulou-Bogdanou

City of the Future

INTRODUCTION

The City of the Future (COF) was the first Research Project launched by Constantinos A. Doxiadis in 1960. The idea for a research on the future of cities was already conceived as early as 1958.

Its first Project Manager was C. A. Doxiadis himself assisted by John G. Papaioannou, who in 1964 became its second Project Manager. When he became Vice President and was appointed Director of the Research Division of the Athens Technological Organization, Myrto Antonopoulou-Bogdanou, a member of the team since the very beginning, became its third Project Manager in 1965.

The first task of the initial COF team was to compile a research design, setting the goals and the time horizons of the study as well as specifying the necessary specialties, which would cover the large variety of topics involved. The number of scientists finally participating rose to more than 100, working independently or in association with the project.

The Athens Center of Ekistics, established in 1963 as an independent organization, incorporated the City of the Future Research Project along with other research projects, which followed:

The *Human Community*, in 1961, to examine the role of the basic urban cell at the lower scale of the *Ekistic Grid* within a larger urban complex. Case study: the Greater Athens Area (Project Managers D. Iatridis followed by P. Pappas)

The *Capital of Greece*, in 1964, a comparative study of metropolitan areas to cover the intermediate scale of the Ekistic Grid (Project Manager G. Papageorgiou) and, finally,

The *Ancient Greek Cities* Research Project, which would reveal information about the structure, function and evolution of cities in the last 10.000 years in the Greek territory. (Project Manager M. Zagorissiou)

These four research projects covered the entire spectrum of time: past, present, and future.

The City of the Future Research Project was conceived as an on-going project re-examining and re-adjusting the assumptions and variables continuously.

The COF team, enriched with a number of prominent

scientists as permanent members or as visiting collaborators, proceeded to achieve its main tasks, which were to foresee and propose future alternative plans and models for human settlements on a global scale.

The findings and proposals were not to remain on the theoretical sphere, but were also to provide a frame and guidelines for proper planning for any place and for any foreseeable time horizon; proper planning for ANTHROPOS and his well being, the main concern of C.A.Doxiadis.

The importance of the COF Research Project, as it was initially conceived, was and is invaluable, because it was not meant to create a "frozen" frame of urbanization reference, but a perpetually revised frame, continuously updated, thus always valid.

METHODOLOGY

The COF project, in order to achieve its goals, used techniques such as:

- a. Extrapolating the existing trends, thus providing a "starting point" for estimates concerning the near future.
- b. Using assumptions which would provide "end points" into the furthest future (high, middle, low)
- c. Connecting the "starting point" to all three "end points" with a probable curve, a well-defined line at its beginning, turning into a hazy zone as it approached the end points.

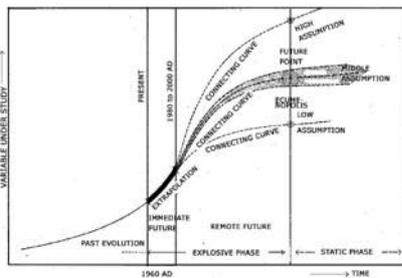
These techniques were applied to a number of variables: **population** (growth rates, densities, distribution), **resources** (water, energy, food, minerals in this order of priority according to their scarcity), **habitable land** rated according to development cost (climate, topography, drinkable water), **income**.

Other techniques (e.g. technology and cybernetics) and variables (e.g. education, health) were also taken into consideration in an effort to further refine the different projections.

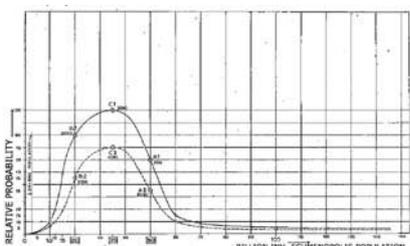
The information obtained through these techniques, in correlation with each other or independently, narrowed the width of the "hazy zones". The more variables considered, the sharper the image of the City of the Future.

Apart from the quantitative variables, the **time and space factors** had also to be considered.

For example, the population projections, estimated to 50

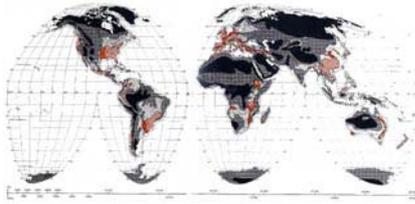


Projection methods

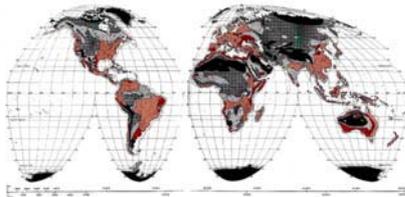


Probability distribution of assumptions on population projections for Ecumenopolis

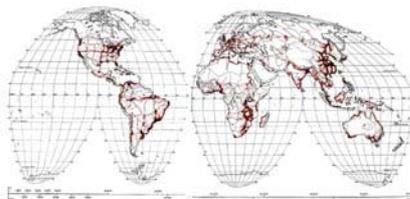
DIAGRAMS OF POPULATION PROJECTIONS – HIGH, MIDDLE, LOW



Composite habitability of the globe in 1960

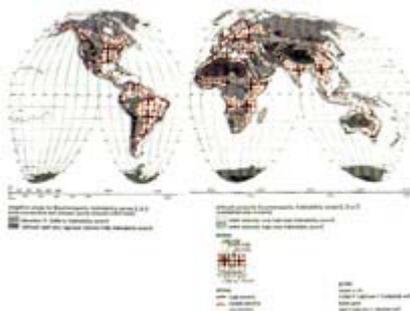


Composite habitability of the globe in 2100



Probable structure of Ecumenopolis with 20 billion inhabitants, 2100

MAPS OF HABITABILITY STUDY



Ecumenopolis: theoretical configuration of global axes and centers adjusted for distorting factors

billion (high), 15-20 billion (low), and the inevitable intermediate approximation of 35 billion people, have been assumed to be reached between the years 2090 and 2120 for high population assumption, between 2030 and 2060 for the low assumption and between 2060 and 2090 for the middle one. (Diagrams of Population Projections – high, middle, low)

The space factor is perhaps the only one which cannot be considered purely as “variable” since the criteria used for estimating the habitable land in the future were quite predictable (ruggedness, drinkable water, cost of development of hostile areas).

The total surface of habitable land at a reasonable development cost was estimated at 57 to 68 million sq. km. allocated almost equally to production (25 million sq. km. for food, power, water, minerals), to natural reserves (23 million sq. km. for breathing space, wild life, floras), and to settlements (20 million sq. km.) where the projected population would be housed. (Maps of habitability study).

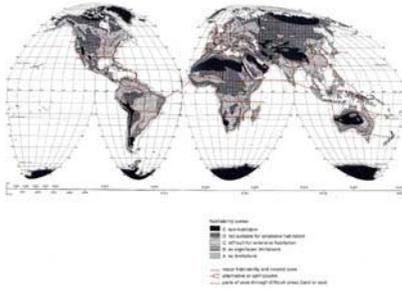
FINDINGS

Even if only the population projections were to be considered, it is obvious that any of these figures would lead to an expansion of occupied land, eventually saturating the available habitable land and organized into one global entity. This global city was named ECUMENOPOLIS, after the Greek word Οικουμένη (Ecumeni).

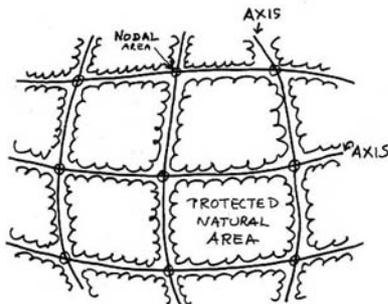
Working with the two variables (population and habitable land) the project exploited the possible and probable population distributions according to existing urban development, main transportation axes, and availability of habitable land. The findings were illustrated in a series of maps, which give an image of ECUMENOPOLIS and its future land use, assumed to occur towards the middle of the 21st century or latest at the beginning of the 22nd century. (Selected maps of Ecumenopolis)

The COF findings were used extensively while the project was still in progress, providing the wider frame for future development in many areas, e.g. Iran, Pakistan, Greece. In some areas, the forecasts were used very successfully in city planning. One striking example is *Islamabad, the new Capital of Pakistan* designed on virgin land by Doxiadis Associates, a city that has developed today exactly as planned.

The 1st Phase of the COF Project ended in 1971. Since then, numerous partial studies and reports were carried out and published by scientists around the world and



Protected Natural areas within each mesh of the Ec grid



Within each mesh of the Ec Grid:
Protected Natural Areas

Hierarchy of Natural areas and interconnecting "Bridges" between adjacent Natural Areas

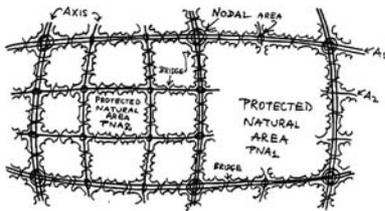


Fig. 7: Hierarchy of Natural Areas and interconnecting "Bridges" between adjacent Natural Areas.

Ecumenokepos, or the global garden, superimposed on a map of Ecumenopolis



SELECTED MAPS OF ECUMENOPOLIS

especially by C. A. Doxiadis himself and J. G. Papaioannou.

The emergence of ECUMENOPOLIS has been observed in more than one spot of the globe. The increase of world population and its unequal distribution, and more so the unequal distribution of wealth, the scarcity of resources locally or their overexploitation, the political situation and other forces have led to mass movements of population, without an overall plan and into reception areas totally unprepared for them.

The principles of ECUMENOPOLIS had been tested in many parts of the world, such as France, Italy, Germany, Rio de Janeiro, Japan, China. These case studies and many more could be tested again today and reveal valuable information about the validity of the findings of the project.

CONCLUSIONS

Although the brilliant idea of an on-going project was never fully realized, the model and structure of the project allows for updating at any moment and of any variable, even simply by making a cross section at a given date and comparing the sets of figures, readjusting the relative points and curves.

It will be worthwhile to check today even one momentum of the foreseen projections, whether this is the urban development of an area, or the population of a country, or income, or any variable for which information is available and comparable.

ECUMENOPOLIS is finally acknowledged by the international scientific community, which is now accepting the urbanization developments foreseen by C. A. Doxiadis 30 years ago.

Finally I would like to make a personal remark: I feel extremely fortunate that at the very beginning of my professional life I became a member of this never again experienced creative, rewarding and fulfilling group of people, working unanimously under the gentle and genius guidance and presence of C. A. Doxiadis. Forever grateful.

Myrto Antonopoulou-Bogdanou
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