Ekistic units

The text that follows is a slightly edited version of a document by C.A. Doxiadis extracted from Ekistics, vol. 41, no. 247, June 1976, pp. 344-345).

When I started my career as an architect and, with. my concern about human settlements, I found that there was always a confusion about the subject matter of our field, its contents and its dimensions. People spoke about a city, irrespective of whether it was an urban settlement of 5,000 people or a metropolis of several hundreds of thousands, and about "city design" even when dealing with a megalopolis of millions. Also they often spoke of buildings when they meant a settlement or a community facility. This is the reason why I have tried to put some order into our subject matter and to classify it in a uniform way which, if universally accepted, could help us to understand each other, to clarify the issues, to lead to their understanding and thus toward the solution of the problems of human settlements.

Ekistic unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Com. class				1	Ш	111	IV	٧	VI	VII	VIII	ΙX	x	ΧI	XII
Kinetic field	а	b	С	d	е	f	g	A	В	С	D	E	F	G	н
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					small neighborhood	neighborhood	_			_{so}	5	, s	5		Ecumenopolis
			Ē	Ē,	ğ	bor	₫		cj.	8	bati	Ö	g	ized	o e
	Man	room	dwelling	dwelling	Eigh Bigh	hgie	small town	town	large city	metropolis	conurbation	metropolis	urban region	urbanized continent	통
name of unit	≥	5	Ď	90	₩ E	ć	Ö	5	-20						
	-	2	4	\$	250	1,500	9,000	8	8	2 ₪	1 ₹	90 M	700 M	5,000 M	30,000 M
population					8	1,5	6,	50,000	300,000			-	_	5,0	30,0
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Fig. 1: Ekistic logarithmic scales and grid: old nomenclature.

I have tried several methods. With some I failed, with some I have succeeded in different degrees. They have led me to the conclusion that what we need is a system of two-dimensional ekistic grids which can help us to classify all our ekistic knowledge in a unified way. One dimension, the horizontal one, should be the ekistic logarithmic scale from man to the whole earth (or Ecumenopolis, the universal city) with the size of the human settlement as its basic characteristic. The second dimension should cover either the elements of human settlements (Nature, Man, Society, Networks, Shells), or the disciplines dealing with them (economics, social sciences, political administrative sciences, technology and art); or other aspects which are of special interest to us.

It is natural for ekistics, being the science of human settlements, to be divided in terms of human settlements. It is therefore reasonable to accept the division by settlements as the most basic division of our subject matter. In order to facilitate such a division, we can use a logarithmic scale of typical population or of area sizes to encompass the following 15 ekistic units: Man, Room, Dwelling, Dwelling Group, Small Neighborhood, Neighborhood, Small Town, Town, Large City, Metropolis, Conurbation, Megalopolis, Urbanized Region, Urbanized Continent, Ecumenopolis (figs. 1 and 2).

On the basis of such a scale we can first speak of the ekistics of a microscale. This comprises the room and the dwel-

Ekistic unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Com. class				1	- 11	Ш	IV	٧	VI	VII	VIII	IX	х	ΧI	XII
Kinetic field	а	b	С	d	е	f	g	Α	В	С	O	E	F	G	Н
name of unit	Anthropos	room	house	housegroup	small neighborhood	neighborhood	small polis	polis	small metropolis	metropolis	small megalopolis	megalopolis	small eperopolis	eperopolis	30,000 M Ecumenopolis
population	1	2	4	40	250	1,500	000'6	50,000	300,000	2 ₹	M 41	100 M	700 M	5,000 M	30,000 M

Fig. 2: Ekistic logarithmic scales and grid: new nomenclature.

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ling up to the neighborhood. In many respects, it coincides with architectural space. Ekistics of the middle scale is the next category, comprising the small town, the town, the large city and the metropolis. This in many respects coincides with city planning or urbanism. Finally, we have ekistics of the macroscale which starts with regional planning and ends with continental or terrestrial planning.

From the very beginning of our: efforts to establish a systematic approach to human settlements, an attempt has been made to create an ekistic scale which could include *all* types of human settlements ancient, present and future, and from the smallest to the largest possible ones. The basis for such a classification was the population size of each as people are the most important element of human settlements.

Very early we concluded that we have to deal with fifteen units, from the single individual Anthropos, to the several billions of Ecumenopolis (fig. 3).

This general scale has recently been slightly altered on the basis of a long experience of its use. These alterations do not change anything in substance and the number of ekistic units remain 15 as before.

The first change was necessary to develop a better glossary and a more rational language. This glossary has to be different when referring to rural or urban human settlements but I am using it here for the urban settlements. It starts with Anthropos, instead of Man (which is oriented towards one sex), and continues with room, house and housegroup. From then on it uses one term for the following five pairs of units, the first being called a small version of the second, and it ends with Ecumenopolis (fig. 4). This makes the glossary simpler, by confining it to well-understood terms, like room, and by using the term "polis" in a sequence of different ways. Some are old (metropolis, megalopolis) but have been successfully used in the present day. Others are based on successful experience (eperopolis or the continental city and Ecumenopolis or the global city).

The second change concerns the figures of population related to each unit. Recently, I have made a systematic effort to use two ekistic scales in conjunction: the ekistic population scale (EPS) and the ekistic territorial scale (ETS). This effort

Ekistic unit 9 10 11 12 15 5 6 7 8 Ш ٧ VI VII VIII IX х ΧI Com. class H ١٧ XII Kinetic field Α В C D E F G н d g small polis name of unit 5,000 M 300,000 50,000 700 M 8 500 9,000 250 **4** population

Fig. 3: Ekistic logarithmic scales and grid: new nomenclature.

has shown that we need a more accurate scale to make proper comparisons between people and their territory.

The smallest unit is Anthropos himself as an individual. This spatial unit includes the individual, his clothing, and certain furniture, like "his" chair. The second unit can also be well defined. It is the space which belongs to Anthropos alone, or is shared under certain circumstances with a few others — that is, "his" personal room. The third unit, the family home, can also be clearly defined as long as we have families. The fourth unit is a group of homes which corresponds to the patriarchal home of earlier days and, probably, to the unit of the extended family of the present day. This is the unit that is most important to children. Their mothers need it mainly because of the children, and their fathers need it mainly because they are interested in the satisfaction and happiness of mothers and children.

I have now defined four units: the first three very clearly defined, physically and socially, and the fourth which can be conceived as a social unit. Beyond this point there can be no such clear-cut definitions of any unit until we reach the largest one possible on this earth - that is, the systems of human settlements of the whole planet. This means there are five basic units, four at one extreme of our scale and one at the other. No other well-defined unit exists today, though there are official statistically defined units, which are quite arbitrary as may be seen from the differences in their official definitions from one country to another. If we look back into history, however, we find that, throughout the long evolution of human settlements, people in all parts of the world have tended to create urban settlements which reached an optimum size of 50,000 people and whose physical dimensions were such that everyone lived within a ten-minute walking distance from the center. There is no question that, for people who depend on walking as a means of locomotion, this is the optimum unit from the point of view of social interaction through direct contacts between people.

We now have four clearly defined units at the beginning of the scale, one larger unit somewhere beyond them, and another unit at the far end: a total of six. How can we complete the scale?

Ekistic unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Com. class				1	II	Ш	IV	٧	IV	VII	VIII	IX	X	XI	XII
Kinetic field	a	b	С	d	0	f	g	A	В	С	D	E	F	G	н
		U					6/\$V							II-I	n
					200					Pagia Garage					100
e e e e e e e e e e e e e e e e e e e			3,33	(表)	0.0	-	95		51						
population range	0.0		3 - 15	15 - 100	100 - 750	750 - 5,000	5000 - 30,000	30,000 -200,000	200,000 - 1.5 M	1.5 M - 10 M	10 M - 75 M	75 M- 500 M	500 M- 3,000 M	3,000 M - 20000 M	20,000 M and more
name of unit	Anthropos	Room	House	Housegroup	Small	Neighborhood	Small		Small Metropolis 20	Metropolis	Small Megalopolis	Megalopolis	Small Eperopolis	130	Ecumenopolis
ekistic population scale	1	2	LO.	07	250	1500	10,000	75,000	200,000	W 7	25 M	150 M	1,000 M	7,500 M	50.000 M

Fig. 4: Ekistic logarithmic scales and grid: new nomenclature and ekistic population scale.

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One way this can be achieved is to consider units of space as measured by their surfaces and to increase their size by multiples of seven. The figure seven is based on a theory, first presented by Walter Christaller, that space can rationally be divided into hexagons, each central hexagon being surrounded by six of equal size. This system also works well for the organization of population, movement, transportation, and so on. Such considerations have led us to the conclusion that all human settlements — past, present, and future — can be classified in this way into 15 units. The basic units are units no. 1 (Anthropos), no. 2 (room), no. 3 (home), no. 4 (group of homes), no. 8 (traditional town), and no. 15 (universal city), and a systematic subdivision then defines the others. These units can also be classified in terms of communities (from I to

XII), of kinetic fields (for pedestrians, from a to g; for motor vehicles, from A to H; and so on) (fig. 4).

This EPS must be used whenever careful comparisons are needed, but it has the disadvantage that it cannot easily be remembered. To solve this problem I have reformed it in two ways.

- First, I have used round figures that can be more easily understood and remembered.
- Second, I have also given the whole range of populations that falls within each separate unit (fig. 3).

This gives a possibility to classify every human settlement in its appropriate category, and creates a basis for a statistical classification of all human settlements.

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