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THEMATIC MAPS FOR URBAN PLANNING

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## THEMATIC MAPS FOR URBAN PLANNING

Modern urban planning is not possible without reliable information enabling thorough evaluation of existing infrastructure. Besides statistical information, data gathered during the inventory and specialistic elaborations, maps are a very important source of information for urban planning.

Maps provide detailed and concise information allowing the consideration of subjects and phenomena with respect to problems, time and space.

The role of maps in urban planning can be considered from the following points of view:

- as the initial material allowing elaboration and graphical presentation of the draft development plan,
- as source material supplying original information / both unitary and integrated / and secondary / derived / information, representing new qualities and produced in the process of correlating, comparing and generalizing cartographical and other information.

Present tendencies towards regarding urban planning as a continual process lead to the close cooperation of specialists from different branches of science.

The participation of the staff of the Institute of Geodesy and Cartography in solving the problem: "Methods of characterizing existing infrastructure for the purpose of urban planning" may serve as a good example of such cooperation between cartographers and urban planners. The problem is the responsibility of the Research Institute on Environmental Development. Within this problem, the Institute of Geo-

desy and Cartography is engaged in elaboration of sub-topic entitled:  
: Thematic maps for urban planning".

Urban thematic maps have been so far containing diversified information presented in highly ununiform manner. Mainly the problems of urbanistic inventory / in a narrow sense of this word / arranged accordingly to the elements of infrastructure / were presented.

The shortcomings of hitherto produced thematic maps were the consequence of lack of uniform approach to the presentation of map content and its cartographic form. The lack of uniformity resulted in incomparability of these materials.

The elaboration of uniform rules concerning the content of urban survey maps and their form became indispensable. The task could be performed by urban planners themselves or by other specialists.

Main principles of elaboration of thematic maps resulted from the theory developed at the Research Institute on Environmental Development. According to this theory thematic maps should not only provide graphical illustration of the basic information but should also be the source of the information of new quality. Thematic maps should secure uniform identification of the body of cartographic information and information from other sources; should form one of the elements of the description of given area and have logical ties with the overall description system.

In this respect the main task of cartographers was to define the types of thematic maps to be produced, the detailed scope of their content and elaboration of the uniform system of cartographic symbols, based on precisely defined rules of presentation of the map content.

In collaboration with urban planners and other specialists thorough analysis of needs has been performed. The choice of problems to be presented on the maps / after appropriate transformation and aggregation resulted from this analysis /.

Production of following thematic maps, divided into four main groups has been rendered appropriate:

Group I. Maps of the physical structure of the area

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- 1.1. Basic urban survey map / 1:1 000 /
- 1.2. Land utilization maps / 1:5 000 and 1:25 000 /
- 1.3. Maps of the intensity of building structures  
/ 1:5 000 and 1:25 000 /
- 1.4. Maps of the value of buildings / 1:5 000 /
- 1.5. Map of the standards of housing resources  
/ 1:5 000 /.

Group II. Maps of the distribution of functions

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- 2.1. Maps of the distribution of population compared with  
the density of population / 1:5 000 and 1:10 000 /
- 2.2. Maps of the distribution of recreational centres  
/ 1:5 000 and 1:25 000 /
- 2.3. Map of the distribution of working places / 1:5 000 /
- 2.4. Map of the distribution of services / 1:5 000 /.

Group III. Operational maps

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- 3.1. Documentary maps of the spatial structure  
/ 1:1 000 and 1:5 000 /
- 3.2. Map of the legal aspects of the area development  
/ building licences granted, localization of buildings,  
legal restrictions on construction activities /  
/ 1:5 000 /
- 3.3. Map showing chosen elements of the restricted dispo-  
sability of land / 1:5 000 /.

Group IV. Technical infrastructure maps

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- 4.1. Water supply maps / 1:5 000 and 1:25 000 /
- 4.2. Sewage disposal maps / 1:5 000 and 1:25 000 /

- 4.3. Heating system maps / 1:5 000 and 1:25 000 /
- 4.4. Gas network maps / 1:5 000 and 1:25 000 /
- 4.5. Electric energy network maps / 1:5 000 and 1:25 000 /
- 4.6. Telecommunication system maps / 1:5 000 and  
1:25 000 /
- 4.7. Transportation system maps / 1:5 000 and 1:25 000 /
- 4.8. Public transportation system maps / 1:5 000 and  
1:25 000 /
- 4.9. Map of the evaluation of the city area from the point  
of view of motor transport coefficient / 1:25 000 /.

The next important task was the elaboration of uniform system of symbols for all the groups of thematic maps. Following rules have been observed in designing symbols:

1. Symbols should be clear; their graphical form should cause in user's mind the association with real objects they represent. Appropriate symbols enable the user to read the maps vary easily, without conscious effort and, at the same time, according to the reality.

2. Symbols should be well readable and pleasant to the eye. The above concerns both individual and integrated symbol systems. The value of the map for the user and its value as a cartographical work depend to a large extent on the quality of symbols.

3. Symbols should be as simple as possible, easy to remember and easy to draw. The simplicity of symbols is also the requirement of new elaboration and reproduction techniques. The use of simple symbols lowers the cost of production.

4. New symbols should in some way resemble the old ones. This is particularly important for the users working with both old and new maps.

5. All the symbols should form one uniform system, in which similar objects and phenomena are presented by similar symbols. Ob-

servicing the uniformity of the symbols will result in uniform graphical set-up of all thematic maps produced in Poland for urban survey purposes. This system will also enable comparison of maps elaborated by different enterprises.

The system of uniform symbols, common for all groups of thematic maps has been elaborated on the basis of the above assumptions. The relations between various elements of the content of particular thematic maps have been correlated in two approaches: analytical / unit system / and synthetic / integrated system /.

The overall system of symbols is an open one, it allows incorporation of new information into particular individual systems, according to logic and in concordance with the internal structure applied in the system.

The devised system meets the basic requirements placed on thematic maps by urban planning, and, in particular:

- enables uniform identification of the collection of cartographic information as well as information from other sources,
- besides providing graphical illustration of the basic information, thematic maps are also the source of qualitatively new information,
- thematic maps constitute one of the elements of the overall system of description of the area for the purpose of urban planning and as such have logical ties with the system.

Draft maps for all kinds of maps listed in the four above cited groups have been elaborated in 1975. These drafts are now being analysed and evaluated by urban planners and cartographers.

Final results of this elaboration will be presented in the form of the atlas of the standard sample maps for urban planning and accompanied by descriptive part containing theoretical and practical bases for editorial elaboration. Completion of works is foreseen for March 1977.

