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CITY CENTER ORGANIZATION AND ITS INFLUENCE ON THE CITY STRUCTURE

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Abstract. *A city center is a starting and end point of numerous and various movements of a city, so called "basic paths focus" [2]. Therefore, it is strained by the tensions of the centrifugal and centripetal courses of the city and its denizens. The center unifies variety of high and low level activities, and concentrates the characteristics of a wider area and imposes a high degree of social communication and contact. In each city tissue, the center represents the most attractive and unique ambient unit, due to a high concentration of various activities taking place in it. The center, regardless of its characteristics, functions and category, exists only as a part of an urban system – it is functionally connected to the gravity area, and structurally to the city as a system.*

1. INTRODUCTION

Notion of a center

In the city center, the social, cultural, business and entertainment activities of its denizens take place, as well as the material and spiritual exchange among people. The center is place a city is often identified with, because it, to the greatest extent, shapes a collective image and conception of a city in the mind of an observer. The city center is most frequently its historical core, or it is closely related to it, and is subject to a series of transformation during its development. This space in the city symbolizes a place of intensive gathering point of the people, for the purpose of satisfying their most varied requirements (primarily those which are not immediately connected to the dwelling and working).

The substance of the center, its functions, form and physical structures have strong anthropometric dimensions, because man is the starting factor of all the processes taking place in the center. Human need to be surrounded with other people, to see the friends and establish a social contact is the lasting and inevitable requirement of man as a social being.

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Central urban functions

An urban function expresses a relationship of the mutual dependence between of the social needs and the urban form [1]. In this paper, we will observe one of the basic groups in the city – central functions. Central functions correspond to the most part of the urban needs, above all those not dealing with the dwelling and production, in the narrow sense of the term. They are common for the total population in a social space of the city and they have an integrative character, separating them from the other urban functions.

The following functions belong to the central functions [2] (diagram 1):

1) *supply-service;*

2) *catering-tourist;*

3) *financial-business;*

These three groups make a so called group of commercial activities: retail trade, handicraft-and-service, catering and tourism, financial and business services and some of the manufacturing activities.

4) *communication-information;*

The basic components of this function are the perceptive, information and traffic. The perceptive role of the center comprises a unique empirical experience of an observer, his individual perception, conception and understanding of the center are, physical structures and spatial relationships. All the information about the city are concentrated in the center. The traffic connections of the center with the city and the wider gravity area ensure an easy access to a widest possible range of users and visitors.

5) *educational-scientific;*

The buildings of the educational-scientific branch are the schools and institutions of all the levels of education (primary, secondary, high), as well as of scientific and research activities.

6) *cultural-entertainment;*

The function of the culture in a city is most overtly expressed in its center, through the numerous buildings where people may satisfy their demands: archives, libraries, cinemas, community cultural centers, galleries, concert halls, museums, theaters, exhibition pavilions.

7) *sport-recreation;*

If they are in the center itself, the sport arenas are most often indoors. Open, green and recreation areas in the centre are usually used for the mass, and seldom for the top sports, and most often they are intended for recreation, strolling, socializing and entertainment.

8) *social-health protection;*

This function is performed by the institutions which are a part of the specialized centers: most frequently, those are the pharmacies and some ambulance or polyclinic services.

9) *social-political;*

It consists of the various activities of the social and political organs and associations, youth, amateur and professional organizations and associations.

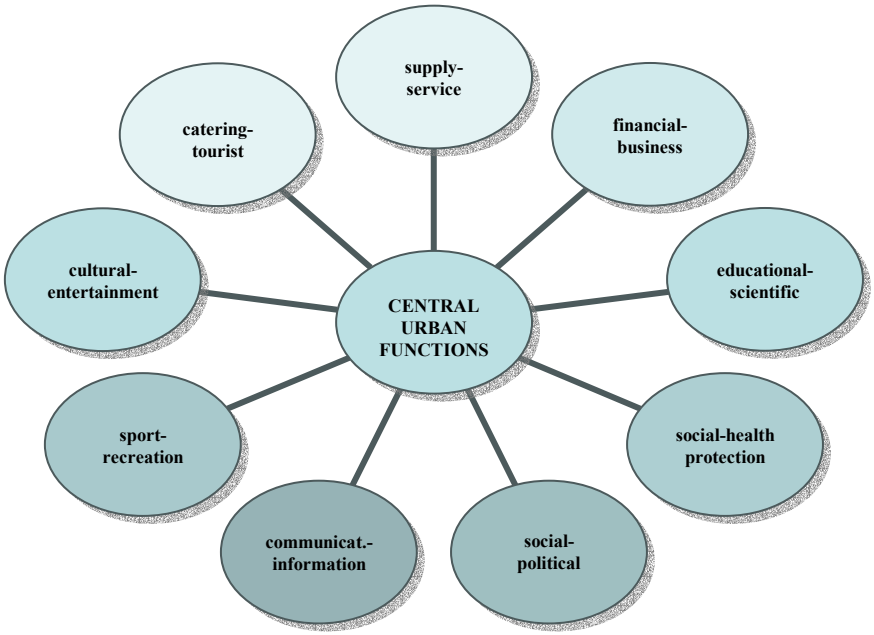


Diagram 1. Central urban functions

CITY CENTER ZONE

Center structure and its elements

The city center structure is the totality of the units, elements and systems, so that the unity is actually the resulting sum of all the relations of the individual elements and living processes going on in the center, according to the laws of the complex urban system [2]. The structure of a center comprises not only physical, by also the geographical, geomorphologic, social and economic structure. The basis of the physical structure are the architectonic object, but not as the individual buildings and spaces, but as a unified urban system. The elements of the physical structure are the paths, foci and nuclei.

The paths are directions of movement in space which give directions to the various physical and functional courses, such as the movement of the people and vehicle. Those can be the pedestrian communications, streets and various traffic lines. The high density of paths indicate an intensive communication space – street. The street connects the center with wider area and represents a lot more than a necessary communication: it is at the same time a space where social contacts may take place. Since the ancient times up to now, the *trade streets* play an important role in the city center structure. A modern trade street is intended exclusively for the pedestrian movement. The buildings are mostly of a miscellaneous character: the ground floor is used for the shops and service workshops, while the upper floors contain the business premises. The content of a trade street should be in function of the human requirements, so the catering establishments, greenery, and the areas for short rest are usually a part of it.

The focus is the place where the paths are concentrate, where they intersect or turn – in the urban structure of the city; those are crossroads, squares and plazas.

Crossroads is the open space of pronounced horizontality.

Plaza is mostly a small enclosed or semi-enclosed space, whose characteristic is the proximity of the elements forming it.

The concept of *square* is very different depending on the historical period. The Ancient squares – agoras were the nucleus of the public life, and the most solemn space in a city. The squares of mediaeval cities are irregular in form, and occupy mostly the central places in the city, in front of or near a church. The renaissance squares are characterized by the visual closeness and dynamic spatial composition (transition of horizontal into the vertical lines). As opposed to the renaissance closedness, the baroque square opens the visual perspective in the direction of the main access to the square, along the longer axis of the symmetrical composition. The first completely open square is the La Place de la Concorde in Paris, built in 1763.

Nucleus – city core is a high concentration of the foci which linked during the historical development in functional and structural terms. The nucleus is formed by the series of squares and plazas, interconnected with the numerous streets in the unified ambient unity. With the increase of the city size, the core develops into a central city zone.

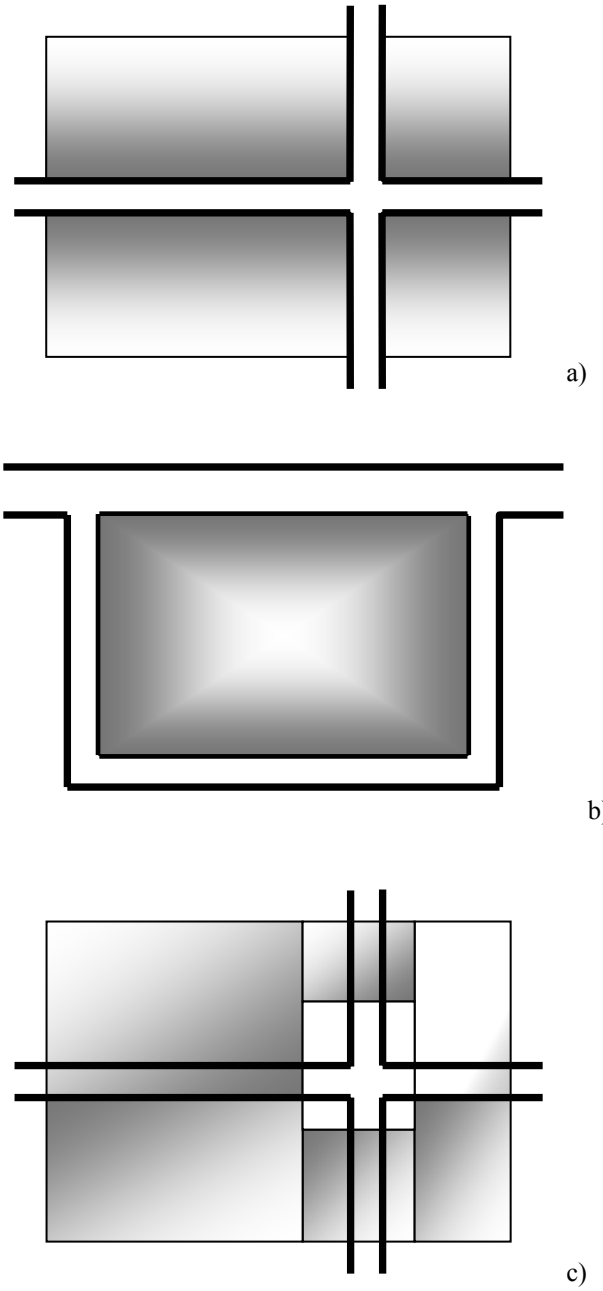
City center surface area in correlaton with the city size

For the approximate dimensioning of the center, the percentage of the total size of the city is used, or the standards of the surface area of the center in hectares per thousand denizens of the city. Very seldom, the patterns for calculation of the of the center surface area are used, since the surface are of the center, as well of the city is very specific and different for each city. With the increase of the city, the total surface area of the center is increased, while the center surface are per a city denizen decreases. The center surface are has its ultimate dimensions and cannot be increased infinitely.

Traffic in centers

While planning a center, it is necessary to establish the appropriate relationship between the center of the certain rank, and the city traffic network. The high ranked centers, of third and fourth degree, are usually placed in the immediate proximity of the highest capacity traffic routes – city highways and major roads. The second degree centers are most frequently connected to the traffic system through the collective streets of high transport capacity, while at the lowest degree centers this connection is provided via some access road.

The organization of the traffic in the centers is based on the spatial and temporal segregation of the traffic surfaces. The spatial segregation comprises the separation of the various sorts of traffic, so that each kind uses the appropriate surfaces. The temporal segregation is based on the usage of the same traffic surfaces for the various sorts of traffic, but at different times. In the organization of traffic in centers, particularly important is the segregation of the pedestrian and motor traffic. The position of the main linking traffic routes in respect to the center area is given through three characteristic schemes:



Scheme 1. Traffic in centers – characteristic schemes.
Source: Centralne urbane funkcije-centri, P. Badovinac.

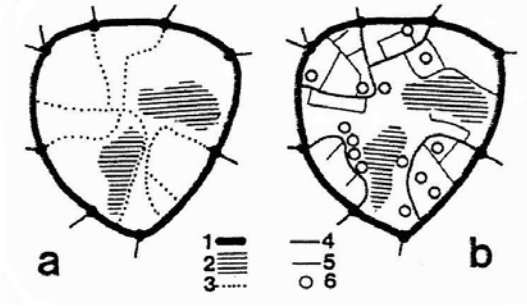
The center space is formed around the crossroads of the linking traffic routes. At small centers, the favorable links with the surrounding area is provided, as well as among the parts of the center itself, because the linking traffic routes are of a small capacity and do not impede the pedestrian traffic. At larger centers, these traffic lines disintegrate the center area, and the traffic function of the parts of the center is endangered and the closeness of the crossroads aggravates the environmental conditions in the center zone.

The center is formed in the area between the main linking and peripheral traffic route, or in the area which is encircled with the traffic circle. At small centers, there are favorable possibility for separation of pedestrian and motor traffic, and the good conditions for the pedestrian links of the center with the surrounding areas (unless the main linking traffic route is not of a large profile thus forming an impediment for the pedestrian courses). At larger centers, due to the big volume of the traffic, both the peripheral and main linking traffic route impede the pedestrian circulation

The center is formed above the main traffic route. The segregation of the motor and pedestrian traffic is total, and is accomplished at different levels. The possibilities for the service and standing traffic organization are favorable, and the pedestrian traffic is completely safe. The environmental conditions at lower levels are less favorable. The building and maintenance costs of such areas are very high.

The segregation of the pedestrian and motor traffic is most often accomplished by the conversion of the parts of central area into the pedestrian only zones. The total elimination of the transit traffic from the center area is obligatory. The traffic route should have the tangential (detour) position in respect to the compact town planning unit such as the central city zone, because the transiting traffic would destroy it. The city nucleus detour routes planning principle is particularly simply applied at radial-concentric pattern of the traffic network [6]. This pattern forms a circle of the central pedestrian zone, while the individual and public traffic end at the periphery of that circle.

In order to provide a good access of a large number of visitors to the center, forming of the pedestrian zones in the central city areas is conditioned by the appropriate solutions of the efficient service of the motor traffic of the facilities located around the pedestrian zones. It is possible to solve this problem in two ways (Schemes 2a and 2b):



Scheme 2. Organization of traffic in the central zone of Norwich.
Source: Centralne urbane funkcije-centri, P.Badovinac.

a) The pedestrian zones in the center are reached by the public transport. The same traffic routes are used for the supply of the buildings in center. In the zones along the

peripheral traffic route, there are large parking zones and multi-storey garages which accept and contain the individual motor traffic.

b) The system of service traffic routes enables supply of the buildings and arrival of the individual vehicles to the center, with the possibility of short-term parking.

Criteria for the city center organization

The planning of the center organization proceeds along the functional and structural criteria [2].

Functional criteria are based on the human demands and the manner of their satisfaction. Particularly important for the center are two divisions of human demands (Diagram 2):

a) According to the duration of the satisfying of demand, the demands are divided into:

- Short-term, whose satisfying last from several minutes to several hours (material exchange, aesthetic experience);
- Medium-term, whose satisfying lasts from several days to several weeks (free and recreation activities);
- Long-term, which last several years or whole life (education and development demands).

b) According to the frequency of satisfying, they are divide into:

- Daily, important for the sustaining of the vital functions of man (biologic needs, food consummation requirements, social contact and community needs, daily rest and recreation needs);
- Periodical (consummation not related to nutrition, needs met by the material exchange, needs for cultural, social, sport and entertainment events, needs for rest and recreation);
- Extra periodical (needs met in the process of exchange, of high material or spiritual value).

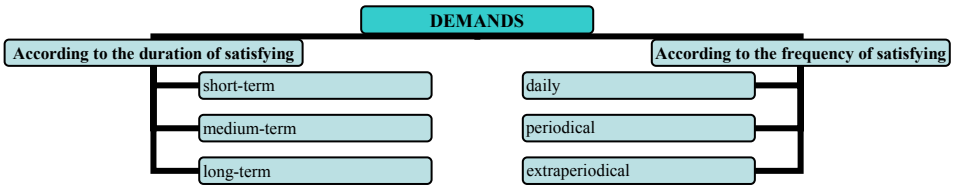


Diagram 2. Division of human requirements.

Structural criteria determine the characteristics and the quality of the center and can be divided in three basic groups: (1) center size criteria, (2) intensity of area purpose criteria and (3) center area quality criteria (Diagram 3).

1) *Center size criteria*

The basic criteria of the center size are the size of the gravity area, by which the potential number of users is determined, and the size of center itself. The size of the

gravity area (i.e. the radius of the center gravity) is determined on the basis of the model which is analogous to the Newtonian gravitation model:

$$R_a = \frac{D_{ab}}{1 + \sqrt{\frac{S_b}{S_a}}}$$

R_a – center A gravity radius A
D_{ab} – distance between centers A and B
S_a – center A population A
S_b – center population B

The spatial, temporal and social distance is very important for the size of the center itself. If the gravity area is too large, center cannot be of unlimited size, because it would be a negation of the center itself.

2) *Intensity of area purpose criteria*

Intensity of area purpose in center is directly dependant on the size of the city – the larger the city, the more intensive is the usage of center area. These criteria are composed of the parameters of *concentration and intensity of building*.

3) *Center area quality criteria*

This criterion determines the characteristics of the environment, properties of the communication space and the physical structure of the center and the center form quality.

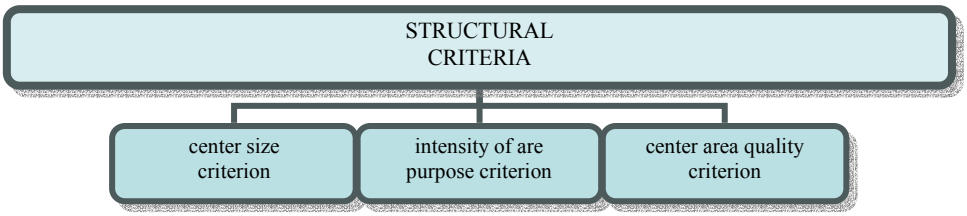


Diagram 3. Center Structural criteria.

Center types

There are several divisions of city centers [2]:

- By rank: zero, first, second, third, and fourth degree centers;
- By function: general (social) and special (specialized) centers;
- By form: linear, cellular, modular, free spontaneous forms, etc;
- By time of inception: historical, old city centers, new city centers;
- By character and type of movement; with differentiated traffic system, pedestrian centers, miscellaneous traffic centers;
- By location in the city: centers in the continually built city tissue, centers in the core of city area, centers in the wider city are, centers outside city area.

Functional classification of the centers is most frequently used, because it indirectly involves all the remaining criteria. It is based on the city population demands. In general or social centers, those are the demands of the biggest portion of the city population, that

is population in the gravity zone of that center. The general centers are polyfunctional, because, the social cultural and commercial activities are located in them. Special, that is specialized centers are either in the function of the smaller part of the city population or in the function of some special needs of the entire population of the gravity area. Those are mostly monofunctional – with only one of the central functions and possibly several other, complementary functions. The most frequent examples of the monofunctioal centers that are planned for the small and medium sized cities are the health, school and sport centers. Large cities usually have large complexes: scientific-research centers, university cities, astronomic and seismologic observatories, institutes etc.

Categorization of the city centers and the relatioship to the city structure

The basic criteria for the determination of the centers categories are the attraction and the priority of the center [2].

Attraction of the center is defined on the basis of the centrality and the traffic accessibility and connections of the center to the gravity area in other centers. The center is composed of numerous central units which have the certain relationship in space, and so define the center attraction intensity.

$Pi = Ci * Si$

Pi – attraction of the center i

Ci – centrality of the center i

Si – accessibility of the center i

It is of highest importance for the center attraction is that quality of the ambient, properties of the physical structure and the space are in the function of the needs of the users of that space, that is, of man.

The centrality determines the relationship of the center to the environment, its influence on the other centers, as well as the influence of the other centers on the center itself. By determining the centrality, it may be verified whether the gravity area, that is number of the denizens of a center, is adequate to the structure and capacity of the center functions.

The accessibility to the center from its surrounding is conditioned by the capacity, variety and efficiency of the traffic connections between the center and the gravity area, as well as by the traffic conditions in the center itself. The traffic connectivity denotes the relation of real to potential traffic capacity linking the center with the gravity area. Traffic accessibility expresses the relation between the available area for the standing traffic and the known demand for that area in the central zone.

At historically formed centers, central city zones, the attraction of the center is higher in relation to the accessibility. Nowadays, the existence of good traffic routes with high capacity, made the access to the center easier. However, the increase of the motorization rate and the increase of the attraction power of the center pose a problem of accepting the vehicles in the center. Some of the problems are the insufficient space for the standing traffic, inappropriate disposition of parking lots in the center and the impeded pedestrian traffic. It is possible to mitigate these shortcomings by the reconstruction of the physical structure of the center. Such intervention, however, presents a danger of damaging the ambient value of the center area, which have the detrimental effect to the attraction of that area.

The priority in the center system have: the higher attraction centers, then the centers with numerous connections to the other centers, centers dominated by the satisfaction of the continual needs, and the centers more apt to transformation.

Center categorization directly depends on the number of the denizens gravitating to the center, concentration of the central units and the position and the role of the center in system of the centers. In order to analyze the system of the centers, it is necessary to have at least three categories of the centers: (1) lower level (2) medium level and (2) higher level of centers, analogous to small, medium and large cities. This division is corresponded by the division of influential, gravitation fields of the cities in micro, mezzo and macro influences.

The characteristic city sizes are numerous and different in view of various authors. According to the statistic data and the population size, the cities, as deemed by eng. Otto Blum, could be divided into [5]:

- Small cities from 5 000 to 20 000 denizens,
- Medium size cities from 20 000 to 150 000 denizens,
- Large cities from 150 000 to 700 000 denizens,
- Giant cities from 700 000 and more.

In respect to the previous data, the city centers may be divided into three categories [2] (table1):

1) *Low level of city centers (local centers)* – They have micro gravitational influence and are used mostly for satisfaction of the daily needs of the local population. The local center comprises several individual supply points – zero level centers. The lower limit of the local center size is 1000 $м^2$ of the selling surface area or 5000 gravitating denizens. The criteria for the number of the gravitating denizens in the individual centers differ. 2 to 3 MZ gravitate to the local centre, and they have 5000 – 10 000 denizens in average. That is, the number of the gravitating population per local center range between 10 000 to 30 000 denizens.

2) *Medium level centers (secondary city centers)* – By the time of inception they are considerably younger, and appear as a consequence of solving certain faults in the city development. Their influence is mezzo gravitational The medium sized centers have 2 or 3 local centers. It is most often a center of a city district or municipality, and is used by 40 000 – 80 000 denizens. The growth of medium sized cities into the large cities results in the secondary centers development. They ensure the relief of the central zone and its spatial defining.

3) *High level centers (regional centers)* – City centers of the highest level have the characteristic historical stratification, which, despite the variety of the structure parts, yet gives an impression of an attractive homogenous environment. They have a macrogravitational influence and in their gravity field have more than 150 000 inhabitants. In due course, those centers change the central city zone by the constant transformation of the city nucleus. The central zone is most frequently the historical nucleus of the city and there are no precise and fixed boundaries. It has the highest concentration of the central activities, and so the jobs – a large number of people works in this zone. Also, in the central zone, around 10% of the city population resides, or approximately the number of the people employed in the central zone. Depending on the size of the city, its role and significance in the regional network, the main city center may also be the regional center.

Table 1. Center categories

Functional space – influence	City size	Center category	City population and gravitational population of the center
C1 macro gravitational	Large cities	Higher level	C1 › 150 000
C1 mezzo gravitational	Medium cities	Medium level	150 000 › C1 › 20 000
C1 micro gravitational	Small cities	Lower level	20 000 › C1 › 5 000

Source: Gradski centri, M.Ćuković

Central activities concentration

Coefficient of the central units activities is calculated in the following way:

$$K_{(j)} = \frac{P1}{\sum P}$$

$K_{(j)}$ – coefficient of the central activities concentration
P1 – total gross surface area of the structures of the central activities of the center P1
$\sum P$ – total gross surface area of the structures of all the central activities of the entire city

K(j) = 0	no concentration, no center
0,05 ‹ K(j) ‹ 0,15	local center (lower level)
0,10 ‹ K(j) ‹ 0,30	secondary center (medium level)
0,30 ‹ K(j) ‹ 0,50	central zone (higher level)
0,50 ‹ K(j) ‹ 1,00	dominant center in the city
K(j) = 1,00	monocentric city

Tendencies in location of the central activities

Positioning of an activity in the center depends on the category of the center itself, characteristics of the city space and its position in respect to the residential and working zones. The size of the gravitation area and the frequency of needs must be taken into account. Along with the development of the center, the criteria for the intensive usage of the building surfaces are ever stricter. The activities requiring large surface (industry, storage facilities, etc.) cannot be placed in a higher level center.

Daily needs are most often satisfied by a pedestrian, in a 5-6 minutes distance from a residence to supply point. If a pedestrian course in the residential section is continuous, with no impediments to the supply point, the service radius may be calculated. Everyday needs in the residential section, in the lower level center, are satisfied in the radius up to 450 m.

10-12 minute walk from a residence to a supply point is taken as a top limit of walking in order to satisfy the occasional needs, that is, an area with the gravity radius of 750-900 m. It is a gravitational area of the medium level centers.

If the gravitational areas of certain activities require more than 15 min of walking, that is if their gravity radius exceeds 1250 m, then such activities tend to be placed into the higher level city center.

It may be concluded that the larger the gravitational area of the activities, the higher the tendency for locating those activities in the center. The concentration of the activities related to the periodical and extra periodical needs of the wider gravitational area is the

highest in the city nucleus as it is a higher level center. There are also the activities of the daily needs of the denizens who live in the center itself. In the medium level centers, the activities related to the periodical needs are the dominant, but with a considerable participation of the extra periodical needs. The everyday needs activities are concentrated mostly in the local centers (Table 2, Table 3).

Table 2. Distribution of the activities according to the frequency of needs per city centers

Activities according to the frequency of the needs	City nucleus in %	Secondary centers in %	Local centers in %
Daily	18	63	69
Periodical	39	20	19
Extra periodical	43	17	12
Total	100	100	100

Source: Gradski centri, M.Ćuković

Table 3. Participation of the centers in total central activities of the city, according to the frequency of the needs

City area	Daily needs %	Periodical needs %	Extraperiodical needs %
City nucleus	24	66	80
Secondary centers	42	18	13
Local centers	34	16	7
Total	100	100	100

Source: Gradski centri, M.Ćuković

Center as a part of the city centers system

Center, as a subsystem cannot be analyzed separately, outside the city centers system. In evaluation of a city center with a system of centers, two relationships must be observed: of the center and gravitational area and the center with other centers.

The relation of the center and the gravity area is determined on the basis of the position and size. The level of satisfaction of the population demands depends on the position of the center in respect to the gravitational area (which can be centric, eccentric and coincident), and on the level of center equipment. It is considered that the equipment level of the center is appropriate only when the degree of the center is harmonized with the size of the area.

In order to make a center a part of the system, it must be connected to at least one center in the system. The number of links increases with the rank of the center. The first degree centers usually have one, while the second degree centers have at least three links in the system, with the centers of higher and lower rank (Scheme 3).

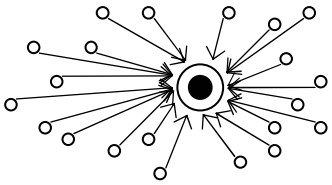
Centers network

The centers of the small cities belong (by certain functions) to the higher level centers. However, according to the capacity of the central activities, size of the gravitational area,

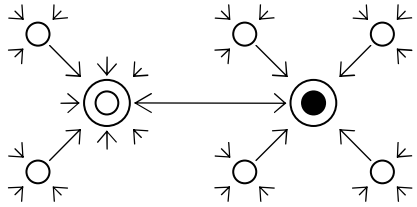
number of denizens and the connection of these centers with the subcenters, they belong to the category of the lower order centers. This discrepancy is conditioned with the comparison and the role of the city in the wide region. The most frequent organizational concept of those nuclei is the concept of two degrees of centers, which comprises one dominant center, and weakly developed subcenters – zero degree centers (Scheme 3a). That is why this concept is often called a monocentric concept. It is frequently present in the medium sized cities, as well as in the large cities which do not have a developed system of centers.

The medium sized centers have two levels of centers developed – middle and lower level. Apart from the man city center of the second degree, which is dominant, there are also the first and zero degree centers in the centers network. This concept is characterized by the insufficiently developed subcenters, even though the process of decentralization of central functions has begun, as well as of the creation of preconditions for the development of the new centers (Scheme 3 b).

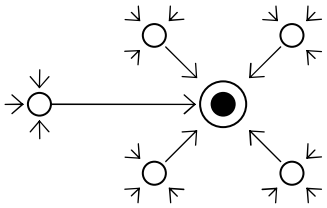
The cities with over 150 000 denizens and the surface area greater than 92κm^2 and the radius bigger than 5400 m, should have three levels of centers. The characteristics of this system are the pronounced decentralization of the central functions and the beginning of the polycentrism development (Scheme 3 c). Apart from the general centers, a number of the specialized centers are formed. The developed form of this concept has a network of subcenters (Scheme 3 d).



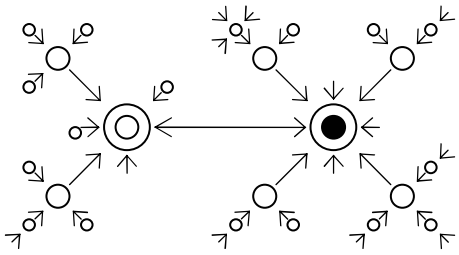
Scheme 3a. Dominant center concept



Scheme 3c. Three levels center concept



Scheme 3b. Two levels center concept



Scheme 3d. Four levels center concept

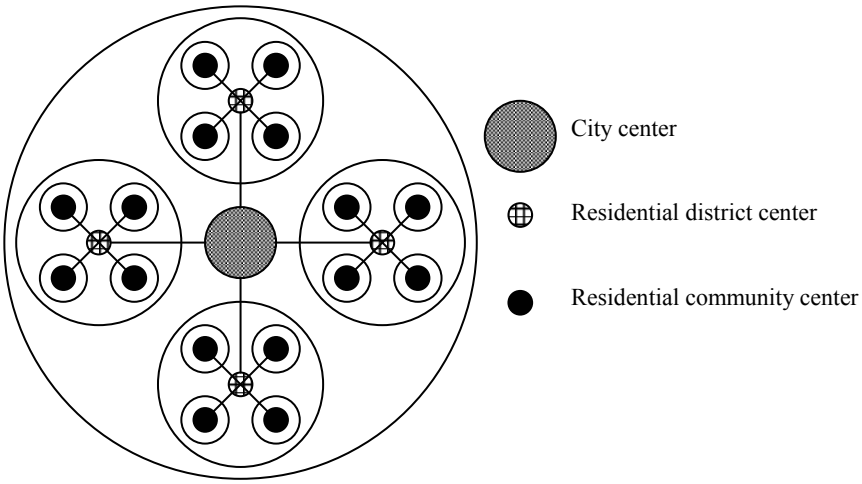
Scheme 3. Center concepts.
Source: Gradski centri, M.Ćuković.

Residential zone structure: housing units and their centers

A new, more humane spatial organization of the residential zone relies on the living requirements of a city man. The social services centers, open spaces for rest, child's play and sport are close to the housing units. The division of the residential zone into the spatial units with the social center of the appropriate degree has rendered possible the decentralization of the city functions, relief of the traffic network and brings together the users – occupants of those units.

Primary residential group, with 1500 – 2000 occupants, represents the initial, zero degree of the spatial-housing unit. This size enables the users to reach the most required daily services, in at most 2 minute walk: children care institutions, telephone booths, supply points. An important element is the associated free space for rest, child's play and recreation.

In the modern town planning practice, the housing problem is viewed through the residential units of lower (residential community) and higher level (residential district and residential region) [5]. In terms of organization, a region consists of the residential districts, and the residential districts of the residential communities (Scheme 4).



Scheme 4. Network of social services, three degree center system.
Source: Urbanizam: teorija prostornog planiranja i uređenja naselja, B. Maksimović.

The idea of bringing together the denizens and creation of the neighborhood relationship through the individual settlement with its social center has resulted in forming of the *neighborhood unit – residential community.* A residential settlement organized in this manner is functionally connected to the other residential units and with the home city center and it gives a modern dimension to the living. The territorial size of the residential unit is 20 – 30 hectares, and the service radius does not exceed 500 m. The number of denizens is the relative category affected by several factors, and for in our case it is around 5000 - 7000 denizens. The center of the residential community has to fulfill the everyday needs of supply, social-cultural activities and resting with its position, form and content.

Residential district is the independent housing agglomeration or settlement with 15 000 – 20 000 denizens. It is not bounded with territorial boundaries. Apart from the daily needs, the center of the city residential district satisfies some of the occasional needs of the population.

Residential region also does not have the fixed territorial borders. Its gravitational area, depending on the local conditions, have 30 000 – 50 000 denizens. The regional center meets the demands of the population of the residential units and city districts.

City municipality is an area in the city structure composed of 2-3 regions territories.

CONCLUSION

The city center, as place of the intensive gathering of the people and the spiritual exchange has a long tradition, which also brings it a significant role in the city life. In planning the center organization, one should take into account the human needs and the characteristics of the center itself (its size, intensity of area purpose and the quality of the center area). Each center should be regarded as a subsystem – a part of the city centers system, and analyzed separately on the basis of its characteristics, functions and category. The basic criteria for the determination of the center categories are the attraction and priority of the center. On this basis, the city can be divided into: 1) lower level of city centers (local centers), with micro gravitational influence; 2) medium centers levels (secondary city centers) with mezzo gravitational influence; and 3) highest level centers (regional centers), with macro gravitational influence.

With its organization and functions, the center significantly influences the city structure, as well as the perspective of its regular and uniform development. The city development is followed by the transformation of its center: there is a high density of building structures within a space and high concentration of all the sorts of traffic. This causes the problems in the city center functioning (adverse ecologic and microclimate conditions, high density, traffic problems, hindered usage of space, high cost of lots) which impedes functioning of the city itself. The city centrality changes significantly only after the new centers in the centralized, monocentric city are formed. The new centers are created both spontaneously and as a result of planning, in the city tissue or in the city periphery. That is why only the polycentric city structure provides a harmonious and uniform development of the city and all of its functions.

For this reason, the new town planning concept of the residential zone is based on the needs of a city man. The social services centers, open spaces for rest, child's play and sport are close to the housing units. The residential zone is organized as a system of the spatial units with the social center of the appropriate rank, which makes possible the decentralization of the city functions and its more harmonious development.

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ORGANIZACIJA GRADSKOG CENTRA I NJEN UTICAJ NA STRUKTURU GRADA

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Gradski centar predstavlja polazište i ishodište brojnih i različitih gradskih kretanja, tzv. "fokus osnovnih putanja" [2]. Stoga u njemu vladaju naponi centrifugalnih (od centra) i centripetalnih (ka centru) tokova grada i njegovih žitelja. Centar objedinjuje različite sadržaje viših i nižih nivoa, koncentriše karakteristike šireg područja i nameće visok stepen društvene komunikacije i kontakata. U svakom gradskom tkivu centar predstavlja najprivlačniju i unikatnu ambijentalnu celinu, zahvaljujući velikoj koncentraciji različitih aktivnosti koje se u njemu odigravaju. Centar, bez obzira na svoje karakteristike, funkcije i kategoriju, egzistira jedino kao deo urbanog sistema – povezan je funkcionalno sa gravitacionim područjem, a strukturalno sa gradom kao sistemom.