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## NON-MATERIAL CONSIDERATIONS AND UNIQUENESS IN THE PLANNING OF THE DEVELOPMENT OF URBAN SPACE: EXAMPLE OF LVIV

**Abstract.** The paper is an attempt to respond to selected problems of the spatial planning system in Lviv, as defined by analyses of strategic documents. Based on the analysis, the authors proposed a spatial planning model considering non-material and hard-to-measure factors which have shaped the city. Lviv was selected for analysis because of its size, its long and multicultural history, and its considerable accumulation of tangible and intangible cultural heritage elements from various eras. Today, the city faces numerous challenges in terms of heritage protection, its functional and spatial development, and the choice of an effective form of planning and management. Hence the need to offer an in-depth reflection on the importance and to consider the rich cultural heritage and non-material factors shaping urban space, in the spatial planning process.

**Key words:** non-material factors, uniqueness of urban space, expert methods, spatial planning.

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## 1. INTRODUCTION

The history of the urban planning culture, i.e. the formation, development and shaping of the structure of urban space, illustrate the importance of non-material qualities and uniqueness in architectural and urban planning solutions. The city as a type of a complex shaped in time has a specific and legally established spatial organisation. It produces long-term material considerations as part of its operation, which in turn shape its spatial organisation (morphology), land utilisation, and a special type of developed landscape. Therefore, the city has its own material/physical dimension (buildings, houses, streets, schools, squares, etc.) (Oliveira, 2016). It can be also viewed in anthropological terms – as a space occupied by people which possesses a special kind of communicational energy, atmosphere, special relations with the environment, a character, age, beauty, and a way in which it reacts to outside influence. Thus, it also possesses a certain spiritual dimension, e.g. a location memory, cultural continuity, potential and unique meanings, and a set of culture codes and symbols which shape the personal and collective identities of its inhabitants. Through the combination of those layers, i.e. material and non-material, cities in their historic development become exceptional and unique centres of human life. When analysing past and present significances of cities one may reach a point when it becomes difficult to specify what defines cities more: the material or the non-material dimension. An answer to this question seems to be impossible in the context of a city treated as a ‘complex system’. According to Byrne (2010), in order to understand the complex system of a city, its past and present, and to be able to map out its future development paths, we cannot reduce it to the sum of the isolated components we will model. There is a need for the human factor and consideration of the non-material factors affecting the city. By addressing the importance of non-material factors in urban development, and in particular in its management and planning, the authors are part of the trend of complexity theory in urban planning, which is becoming an increasingly important research issue for many scientific disciplines (Servillo and van der Broeck, 2012).

We have chosen Lviv as a case study for the ongoing analysis of non-material factors and the uniqueness of the city in urban planning practice. Lviv can be a city with various dimensions of heritage. It occupies an area of nearly 182 sq. km and has a population of 724,713 people (2019). It is the seventh largest urban centre in Ukraine, but due to its extensive historical heritage it is considered as the country’s capital of culture. Its history dates back to Mediaeval times and its character was shaped by the influences of the cultures of both Eastern and Western Europe. Representatives of diverse nationalities, races, religions and cultures have lived in the city, leaving an indelible mark on the urban fabric, as well as creating the uniqueness of its atmosphere and spirit (Godis and Nilsson, 2016). In the 19th century it nearly matched Prague in terms of its urban development and architectural

solutions. At that time, its modern metropolitan infrastructure (theatres, museums) developed (Purchla, 2018). Lviv's multi-national composition was one of its trademarks, which had a strong influence on its material and non-material heritage (Saliuk, 2009; Shablyi, 2017). In 1998, the historical part of the city was listed as a UNESCO World Heritage Site due to its perfectly preserved urban organisation. That fact required the authorities and the local community to become more responsible for maintaining a good condition of the structures and spatial organisation. Today, the city is famous for its many theatre, literary, and music festivals. In this way, attempts are made to relate to the city's rich and diverse cultural tradition (Hou *et al.*, 2014; Weslund, 2014). A dynamic turn towards history took place in Lviv after the fall of communism, in the early 1990s (Corsale and Vuytsyk, 2015). The interest in the past, the clarification and taming of the landscape, and the attempts to restore the old spirit of the city are initiated by the inhabitants of Lviv (Vonnák, 2020). The importance of both the material and non-material legacy of the city is also starting to be recognised by the municipal authorities. In the face of many livelihood problems, this process is slow and often geared towards the use of heritage for utilitarian purposes, such as tourism (Kozoviy, 2018). Thanks to its unique cultural value, Lviv constitutes a major node of the tourism flow in Western Ukraine of international significance. The 2012 UEFA European Football Championship offered the city an opportunity to improve its infrastructure and to develop. New constructions included Arena Lviv (with a capacity of 34,915), a new airport terminal, and 60 km of roads were repaired. Those and other activities became the quality-based stimuli for the development of the hotel and restaurant offer (Posatsky, 2014). Major funds were invested in the restoration and repairs of the most valuable architectural and urban development projects, and various entities engaged in actions aimed at urban regeneration of selected boroughs.

Despite the dynamic development and modernisation of many areas of life, Lviv suffers from all the problems that characterise the regional centres of the Western Ukraine area (social, environmental, economic, and territorial): transport, preservation of the historic environment, efficient use of territorial resources, development of engineering infrastructure, landscaping and beautification. At the same time, Lviv has its own problems, which are especially acute: depopulation, the city has lost many functions; territorial over-densification with buildings; intensive anthropopressure on natural elements in its structure, the lack of systematic housing policy, and problems with city planning and managing of cultural heritage. These problems, despite numerous attempts to overcome them, also in spatial planning, have remained unresolved, despite nearly thirty years of the city functioning within the free market economy. This is largely due to several decades of the city's functioning in the Soviet reality. The legacy and consequences of that period are visible in the urban fabric. They are no less clearly visible to the authors in the strategic documents they analysed. Lviv is thus examined not only from the perspective of the cultural layering of several centuries, but also as

a post-socialist city. All the above factors became the basis for choosing the city of Lviv for a detailed study of intangible factors and their impact on architectural planning processes and phenomena in the cities of Ukraine.

The article underlines the importance of non-material considerations, especially those related to the history of non-material culture, which has shaped unique architectural and urban solutions, and the uniqueness of cities in urban planning process alongside material considerations. The paper emphasises how both the material and non-material characteristics of cities, being interconnected and intertwined, are an essential component of spatial planning in the spirit of comprehensiveness. To understand how efficient non-material considerations and uniqueness in planning decisions are, the authors examined Lviv strategic/urban planning experiences between years 1991–2019. Considering the research topic and the significant amount of investigated source materials, we have analysed only selected shortcomings of the documents and we have outlined only the major methodological issues. The result of the conducted analysis, supported by the long-term experience of a part of the team working in the city management structures of Lviv, is a proposal for a model of management of the city's spatial planning. This model considers the often overlooked non-material values – from the definition of strategies for controlled urban development to the development of projects and the implementation of local tasks. It largely recognises the need for knowledgeable and experienced people to apply expert analysis when making decisions and solving spatial problems.

The article is divided into sections. After the introduction, the theoretical basis of the research is presented along with an explanation of the concept of non-material factors influencing the city. The chapter also presents a selection of source material and introduces the method of analysis used. The next part of the paper is devoted to identifying the main problems of Lviv in the context of spatial planning and its development. As an answer to the defined problems, a method for considering non-material factors and the uniqueness of a city in the urban planning process is presented. This section is followed by a discussion chapter aimed at analysing various non-material factors in the context of the city's development problems and needs. The paper concludes with a summary and presentation of the main conclusions of the research.

## **2. THEORETICAL BASIS OF THE STUDY**

According to Dąbrowska-Budziko (2005), non-material considerations which impact the physiognomy of a city are: principles, urban planning concepts of specific historical periods founded on world views, faith, science, aesthetics, and philos-

ophy; religion (centres of religious cult, cemeteries); power (secular, religious); prestige and wealth; hierarchy (e.g. the social ladder); and patriotism. The author also listed the notions of authenticity, uniqueness, *genius loci*, and various kinds of referents among the important cultural elements which impact the material side of a city. However, those are not the only elements which impact how a city functions or how it is perceived. As Boryczka and Zasina argued (2016, p. 74), considering the fact that people's prosperity is constantly growing as are their level of education and mobility, major factors which draw them to cities, apart from beautiful architecture and a well-organised space, include a city's atmosphere, and its cultural offer. The material tangible and the indefinable elements of a city combined ensure its uniqueness. The uniqueness of urban space can be, therefore, understood as the uniqueness of qualities and the interactions between its various dimensions (Vonnák, 2020). That may become apparent in various aspects: the political aspect, the socio-humanistic aspect, or the religious/world-view aspect; further in the cityscape, economic relations, etc. Furthermore, it is specific for every dimension of urban space. The uniqueness of urban space can be defined yet it cannot be measured. Significantly enough both the non-material features and the uniqueness of a city may have a positive or a negative impact on its fabric and its inhabitants. In order to simplify the analysis, the listed non-material factors which shape a city were classified thematically into four categories: cultural/religious, social, political, and administrative/legal. They were analysed both from the historical and the modern perspectives. Please note that non-material factors may influence not only the physiognomy of a city but also its other physical and functional elements, yet in the article the authors have mainly focussed on the city's architectural sphere.

The spatial scope of the study covers Lviv within its present-day administrative boundaries. The temporal scope of the study begins after Ukraine regained independence in 1991. In describing the cultural values and defining the non-material values of Lviv, the authors go back to the period of the city's historical development.

According to the authors, the main aims of the paper are to show how non-material considerations of urban space and development can matter in spatial planning, and to present the method of considering the non-material factors shaping the city and its uniqueness in the spatial planning process, in the spirit of complexity theory. The main initial assumption made by the authors in conducting the study was that in Lviv's planning practice to date, after 1991, non-material factors and the city's uniqueness have been marginalised or even ignored in development strategies and management.

The article is an evaluation of the main guidelines of Lviv's development strategies from 1991 through 2019. The purpose of the article is to discuss the nature and the role of non-material elements and the uniqueness in the current conditions for the development of Ukrainian cities using the example of Lviv, as well as to

explain how those can be considered in producing development strategies, updating urban planning documentation, and making managerial decisions.

The authors have acquired their knowledge of the relationship between non-material factors and the uniqueness of a city, and the ways of managing it and planning its development (mainly spatial) over a long period of time. This article capitalises on the expertise and skills of its authors and the exchange of information between them regarding the practical and theoretical aspects of urban planning. A critical analysis of municipal, strategic, development, and planning documents formed the basis of the analytical activities. Due to the complex nature and the broad scope of the study problem, for the analysis the authors used a number of documents from various areas of the city's activities that could be influenced by non-material factors. Their total number exceeded 150. Particular attention was paid to documents from the last 10 years (2010–2019). Additionally, the authors also studied the major historical concepts of Lviv's spatial planning in the communist era. A selection of several of the documents analysed is presented in Table 1. The table includes studies of varying spatial and temporal scope that touch on a broad spectrum of the planes of Lviv's functioning. A descriptive method was also used in the study as an auxiliary method for evaluating the collected material.

Table. 1. Selected documents on the formation of the development strategy of Lviv analysed in the article

No.	Document Name	Authorisation	Time limit
1.	Program on the development of the tourist branch of the city.	resolution of LCC as of 10.03.2011 № 243	until 2011
2.	State target program on the preparation and holding of the final part of the 2012 European Football Championship in Ukraine.	resolution of the CMU as of 14.04.2010 № 357	until 2012
3.	Small business development promotion program in Lviv for 2011–2012.	resolution of LCC as of 21.04.2011 № 373	until 2012
4.	City target program on the preparation and holding in Ukraine of the final leg of the European Football Championship 2012 in Lviv.	resolution of LCC as of 16.02.2009 № 2315	until 2012
5.	Program on improving the system of management, repair and maintenance of the housing stock of Lviv for the period of 2010–2012.	resolution of LCC as of 25.03.2010 № 3420	until 2012
6.	Housing program for young families and single citizens of Lviv for 2007–2012.	resolution of LCC as of 18.12.2007 № 13793	until 2012
7.	Household waste management program in Lviv for 2010–2013.	decision of the Executive Committee of LCC as of 26.03.2010 № 362	until 2013
8.	National program on the reform and development of housing and communal services for 2009–2014.	Law of Ukraine № 1869-15 as of 11.07.2009	until 2014

No.	Document Name	Authorisation	Time limit
9.	Program on the preservation, development and maintenance of parks in Lviv for 2011–2015.	resolution of LCC as of 21.04.2011 № 375	until 2015
10.	Integrated concept of the development of the central part of Lviv.	resolution of LCC as of 21.04.2011 № 429	until 2015
11.	Strategy to increase the competitiveness of the city of Lviv.	resolution of LCC as of 07.06.2010 № 3460	until 2015
12.	Sustainable energy development programs for Lviv.	resolution of LCC as of 14.07.2011 № 663	until 2020
13.	General development plan of Lviv.	resolution of LCC as of 30.09.2010 № 3924	until 2025
14.	Program on the reconstruction and modernisation of heat and power systems of Lviv.	resolution of LCC as of 29.04.2004 № 1239	not indicated
15.	Program to create a universally accessible environment for people with disabilities in Lviv.	resolution of LCC as of 11.10.2005 № 2582	permanent

Source: own work based on the analysed documents.

The applied methods of analysis of Lviv's development strategies and the studies of the literature on the subject enabled the authors to determine the main problems of the city's spatial and social development in historical and contemporary terms. In the course of the analysis of the strategic documents, their fundamental shortcomings and deficiencies were detailed. The critical analysis of the documents also provided the basis for proposing a method of considering non-material heritage in the strategic planning of the city. In the opinion of the authors, the selection of the analysed sources and the methods of analysis have enabled the study to meet its objectives.

### 3. LVIV'S PROBLEMS WITH URBAN PLANNING

From the mid1990s there has been a sharp decrease of the population and its quality-based composition has deteriorated in Lviv (age distribution, level of qualifications, level of education) (Habrel *et al.*, 2020). That has been accompanied by a change in the general world view and morals, and by a social polarisation and pauperisation of a considerable part of the population. Social polarisation is also visible when it comes to the changes in the perception of heritage, history, and the surrounding space, and it is associated with the introduction of market economy and the restoration of private property. On the one hand, there has been an increase in local identity and in the sense of responsibility for one's

surroundings. On the other, however, there exists a clear superiority of ground rent, which causes problems for the protection of cultural heritage and the needs of local communities. Within the conditional dimension, one should note: political/legal and location conditions of a city; the requirements, limitations and regulations applicable in the city management system; the deteriorating ecological conditions; the increasing outflow of capital from Ukraine; the decreasing actual income of inhabitants; and other tendencies (chiefly negative ones). The development of urban areas and the functioning of cities is largely influenced by the policies of state and regional authorities, which create legal conditions which stimulate or hinder the development of urban areas. One example could be the repercussions of the conflict in eastern Ukraine. A majority of affluent people seek safe locations for living and investing in the western part of the country (e.g. in construction and real estate), including in Lviv. In the case of Ukrainian cities, including Lviv, the geometric dimension features increasing urbanisation, territorial expansion of the largest cities, a changing planning layout, and the loss of the past character. For planning, the specificities of the content and density of a city are key. The spatial arrangement of a city and its functional structure determine the problem of the development of technical and transport infrastructures and cause complications for justifying developmental decisions. Within the temporal dimension (including the historical features of development), the present, and the developmental perspectives of a city, mainly negative tendencies are visible, though there are also some positive changes (Zwid Pamatok Istorii Ta Kulturi Ukraini M. Lviv, 2019). The first and foremost issue in Lviv is the need to retain its historical environment, to modernise residential buildings and to redevelop historic areas, and to revitalise degraded areas.

Other problematic areas identified by Habrel (2017) in Lviv's urban planning, which define the current objectives of spatial policy, include:

- transport and communication,
- functional changes of degraded urban areas,
- optimisation of the city's relationship with its surroundings,
- providing flats for the poorest groups of the population who are not covered by social welfare,
- municipal waste management and handling outdated technical infrastructure,
- interruptions of the city's compositional order and retaining its identity in its historic part,
- ecological hazards,
- humanisation of the Soviet-era developments,
- lack of social areas intended for the entire city and expanding the city's centre,
- inhabitant mentality, e.g. no cooperation or a sense of responsibility for urban space.

Upon analysing the situation which exists between the authorities, specialists, inhabitants and investors, it can be concluded that all the problems have indicated a major role of the social (human) aspect in defining the causes of Lviv's urban planning problems.

The authors, who are members of communal councils, analysed the existing strategies, concepts and urban planning designs, as well as the procedures for approving them, in order to indicate whether non-material considerations were included in the applied urban planning solutions in Lviv. After the fall of communism and the initial years of Ukraine's independence, the general plans for city development were subjected to critical evaluation. The conclusion was that they had been prepared based on a Soviet methodological platform, which did not match the new reality of urban life nor the urban planning tasks, and thus they have been abandoned. Instead, there have been dozens of various strategic documents being proposed, which are developed based on European expertise in creating such documents (Remiga, 2010). In Lviv in 1991–2019, over 150 development strategies, programmes and concepts were devised in line with regional and sectoral principles. However, they must be regarded as incomplete, selective and partly contradictory. The main goal of the analysed documents was to improve the inhabitants' quality of life (treated in most cases as creating opportunities for leisure and recreation), shaping the city for it to become a community and searching for the outcomes of the synergy of the work of various active social groups, the development of democracy and the rights of inhabitants related with the notion of listening to the voices of the inhabitants and supporting grass-roots initiatives. Therefore, strong emphasis was placed on the attempt to recreate a civil society (*Lviv potrebuje strategicknowo..., Socijalni monitoring jakosti zitta...*) in reference to the principles of the development of urban areas, the strategies stated the principle of sustainable development and the utilisation of the effect of synergy of using existing resources, including social, cultural, historic, and natural resources. It seems, then, that the utilisation of non-material resources has been gaining importance in the planning documentation. Sadly, though, the potential opportunities in this respect have not been properly studied nor analysed. They have not progressed past the stage of declarations.

After analysing source documents in the form of development plans and city development strategies, the authors have pointed to only two prominent documents regarding the formation of urban space in Lviv: The General development plan of Lviv (2010) and the Integrated concept of development of the central part of Lviv (2011). They identified the city's land-use activities and projects for 10–15 years and considered demographic forecasts and economic perspectives as relevant for justifying planning decisions. Despite the high value that these documents presented, they were not free of flaws and shortcomings. In the "2012–2025 comprehensive strategy for the development of Lviv" (*Kompleksna strategija rozvitku*

*Lvova...*), as well as in previous documents, the vision and the mission were not supported by facts, merely derived as emotional wishful thinking. The definition of the functional concepts of the Strategy should not be based solely on intuition. It would be more appropriate to outline the global objective, which would have priority, and only then to indicate the local development goals at various levels. The authors of the Strategy declared the utilisation of developmental options without defining the criteria for their evaluation or selection. Reliable studies and evaluations of resources are necessary to justify goals and objectives. That cannot be based on empty and unimplementable statements regarding sustainable development. The methodology of a systemic approach to managing a city must include a comprehensive analysis, not just individual fragmentary studies and an attempt to draw global conclusions on their basis. The same applies to the priorities of the city's development. They were formulated and selected subjectively; they were assigned equal merit and significance. Furthermore, the document's authors did not consider to a sufficient extent the factor of time and the order of implementing them. What is particularly puzzling is the fact that the authors indicated obstacles in implementing their concept which in many cases could be the assets for the city's development, e.g. the role of the historical urban fabric. The issues of stressing the uniqueness of the city for the development of its spatial structures were also left unsolved. The authors discussed to a limited extent the qualitative and non-material features of urban space and their impact on the city's functioning. They suppressed those indicators which could not be quantified. Those elements included the beauty of the cityscape, harmony, and the city's historical features reflected in its architectural heritage, as well as the mentality and the level of refinement of the inhabitants reflected, e.g. in their religiosity, political and legal knowledge, the level of trust to municipal authorities, or nationalism. Uniqueness and efficiency are the two sides of urban systems which do not need to be mutually exclusive, but which must always be considered. Fig. 1 shows selected material and non-material factors and selected indicators that can be used to assess their impact on the spatial organisation of the city. The framework of the article does not allow for a more detailed analysis of those, and that should be the subject of a separate study. In the presented text, they play an auxiliary role by explaining the process of influence of chosen factors on city functioning.

The manner of considering social opinion, i.e. the broader variant of public opinion, was yet another failing of Lviv's development strategy. When developing a comprehensive municipal strategy, one should assign major significance to the voice of the inhabitants and their needs. On the one hand, studies of public opinion should be conducted in a reliable manner on the widest possible scale, not just in fragments and at random. On the other, during social consultations, one should consider the voices of local leaders, yet the final direction of changes should be analysed and approved by experts. The current and earlier strategies utilised notions the meanings of which were not clearly defined. Subsequently,

their authors introduced the notion of informed choice of the city's development paths and the usage of the appropriate research and analysis methodology. That dissonance and terminological chaos is unacceptable in such documents. When analysing the strategic documents of Lviv's development, one more fact should be noted. The Masterplan was developed on the basis of Soviet methodological principles for the period until 2025. It was updated and adopted late – for almost 20 years the city functioned without such a document. According to the authors, as a result, a belief in the acceptability of a city functioning without quality urban planning documentation has formed among many officials and professionals. This state of affairs will be difficult to change in the short term without the implementation of a new management policy based on strict adherence to the guidelines of a new, comprehensively developed document considering all aspects of the city's functioning.

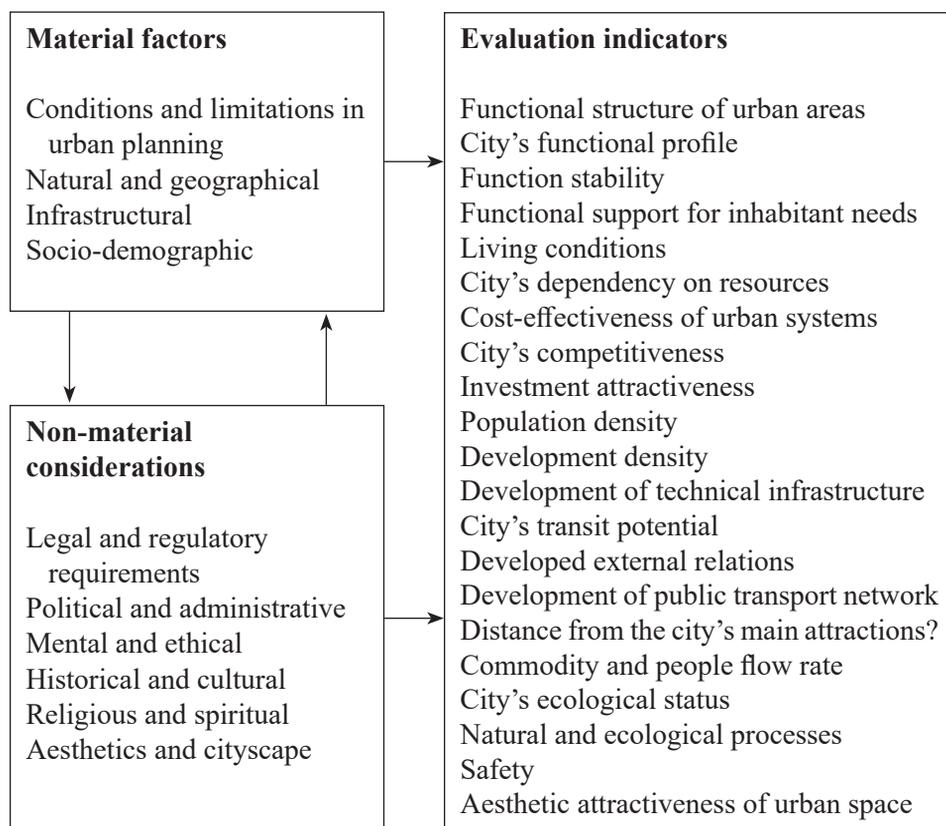


Fig. 1. Material and non-material factors, and selected indicators for the evaluation of their impact on the spatial organisation of the city

Source: own work.

#### **4. INCLUSION OF THE NON-MATERIAL CONSIDERATIONS AND UNIQUENESS OF A CITY IN JUSTIFYING ITS DEVELOPMENT PERSPECTIVES AND URBAN PLANNING SOLUTIONS**

One of the most important matters which must be defined in the process of urban planning is the appropriate formulation of the main objective of the development and the so-called intermediate goals. The main objective can be achieved by considering various strategies as alternatives. Usually experts choose from among a set of possible solutions. As indicated by the analysed documents and situations, the objectives in the spatial management of Lviv were often formulated at will and without any actual analysis of the spatial situation in the city. The justification of goals and tasks should be based on the analysis of the pre-planning status. The expert method enables an efficient analysis of the available options and the selection of the best solution. In the case of including the uniqueness of urban space and its non-material considerations, the significance of specific conditions and factors which cannot be easily formulated and included in the justification of plan solutions increases. Therefore, expert methods are essential. When applied properly and consistently, they can correct the outcomes of public debates which proved unsuccessful. With that in mind, we have proposed a specific way forward, with a classification into four main points and detailed in graphic form.

Stage 1: it begins with the formulation of objectives and the creation of an objectives tree (from the main objective to partial goals and individual tasks). At this stage, there occurs an analysis of the functions fulfilled by the city and of the internal and external conditions which influence the achieving of the pre-established objective, and the definition of the guidelines of urban planning. What is particularly important, which is usually emphasised to a lesser extent, is the consideration of external influences, i.e. the definition of the position and the developmental tasks of a city in reference to broader processes at the regional, national, and international levels. The problems associated with including non-material considerations and the uniqueness of the character of the city at this stage mainly centre around the human dimension, i.e. reconciling the positions of specialists and decision-makers, overcoming the difficulties in applying expert methods, and, finally, finding a consensus. At this stage it is important to define the limits of the plans and ambitions of the community, authorities and experts based on the analysis and diagnosis of the condition of the system (the city) and its resources.

Stage 2: an analysis of the spatial situation and the available resources for achieving individual goals and the main objective. At this stage it is important to establish the hierarchy of individual goals and adjust them to the available resources. Specific tasks must be completed: clarify the objectives which can be achieved using the available functions and measures; uncover critical deficiencies; and formulate initial requirements for the concept and design solutions. It is

important to adjust the quantitative and qualitative parameters being used, and to classify the factors which impact the studied problem. The factors which must be considered when making decisions at this stage can be divided into controllable and uncontrollable factors. The former should be properly utilised, while the latter should be considered when planning and justifying decisions. In order to establish the main development goals and the hierarchy of importance for the city, it is necessary to balance the approach to personal needs and the needs of the entire community; material vs. spiritual needs; the ability to properly apply the model of the policy of tolerance and tenacity vs. management in the managerial or partner mode, and many more factors. The problems emerging at this stage were caused by the shortcomings of the instruments applied and the methods for analysing spatial situations, and by the inadequate inclusion of non-material considerations and qualitative characteristics. At this stage of decision making, what was particularly visible was the lack of a systemic mode of thinking, impulsiveness in actions, and the subjectivity of arguments and evaluations which did not consider the city's uniqueness or the conditions its spatial situation.

Stage 3: defining alternatives for achieving the pre-established objectives. This stage consists of outlining the limitations associated with the available resources, ecological requirements, morality of the inhabitants, and other non-material considerations which influence urban space which must be considered during planning. The main focus is placed on the possible problems of task execution, and on their alternative solutions and justifying their selection. The problems of this stage centre around the issue of the methodology of the undertaken decisions and the systemic mode of thinking among experts.

Stage 4: evaluation of alternative solutions and justified selection of the final solution. The problems of this stage apply to the analysis, evaluation and selection of the final solution, and to the matching of appropriate measures for achieving the objectives. Complications at this stage are caused by the multi-faceted nature of the issues being discussed. The experts' task is to analyse all the dimensions of the issues being discussed, and to ensure the appropriate understanding and fact-based justification of the chosen solution. A diagram illustrating the algorithm for developing planning documents while including a city's non-material considerations and uniqueness is presented on Fig. 2.

According to the authors, the so-called expert methods can help decrease the influence of subjectivity in the decision-making process, they provide compelling arguments, they facilitate the acquisition of information on the phenomena being studied, they expand the knowledge, and they help understand the mechanisms which govern the processes being analysed. Yet they carry some disadvantages. The results of expert studies may depend on the presumed theory and scientific methodology, and they are achieved over extensive periods. In the decision-making process, it is important to apply the so-called historical thinking, which consists of a comparative analysis of historical examples of the solutions of spatial-functional problems in other cities.

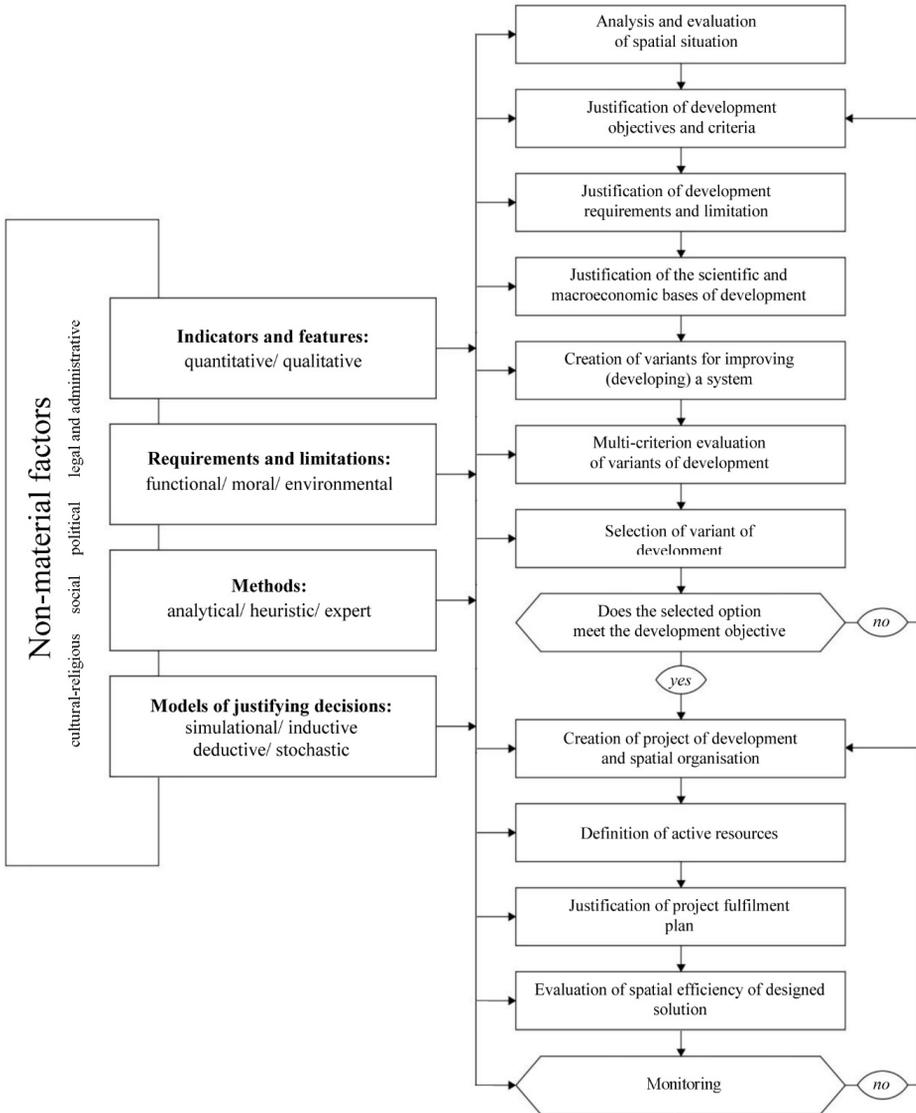


Fig. 2. Model of the impact of non-material factors on the spatial organisation and development of urban systems\*

\*In the decision analysis and justification:

- material and non-material considerations must be treated as an organic whole of spatial processes and they must be conditionally separated when analysing specific problems;
- in some cases, qualitative features can be defined in quantitative terms;
- qualitative features are best reflected in the definition of limitations, the definition of system conflicts, faults and incoherences, and in the justification of the macro features and directions of system development.

Source: own work.

There is also some merit to the descriptive-intuitive approach, which can be applied by talented and experienced experts. It is particularly useful for generalising and systematising the phenomena being studied, and in defining innovative solutions and directions of operation. However, the major role is played by the logical-analytical approach. Despite the drawbacks indicated, the authors believe that the expert method should be considered the best from the point of view of urban planning and management. Especially in the context of being able to consider its uniqueness and the non-material factors that shape its landscape and community. The following elements should be considered in the logical-analytical analysis with a view to integrate the non-material qualities and the uniqueness of the city into the development plans:

a) an analysis of spatial situations conducted as per the model of the 5-dimensional urban space (man – conditions – function – geometry – time) and the interactions between them, which define the processes which occur in a city, and which reveal the non-material considerations and uniqueness of urban space;

b) an analysis of cause and effect relationships in order to define spatial situations. The structure of cause and effect chains support the classification of major deviations in the universality of a system, and it enables one to define the structures and locations of unique phenomena and situations. Those relationships are easily verifiable in a reverse order (one analyses certain consequences and seeks their causes);

c) an analysis of the losses, spatial conflicts, and faults within a system. Losses depend on various conditions; they become apparent at various stages of the functioning of a system. They are identified and evaluated through loss mapping. Depending on the causes, conflicts include interests of groups of influence, the structure and the relations between process participants, the values they profess, etc.

d) the knowledge and methods in cityscape architecture and urban planning composition associated with the studies of environmental aesthetics and cityscape analysis. According to the theory of landscapes, urban scenes include walls, horizontal plains, ceilings, and elements distributed freely throughout them. The specificity of those elements and their combinations define the mood, compositional characteristics, and the style of urban scenes, etc. The study of the aesthetics of cityscapes and the compositional organisations of selected cities also covers the analysis of urban panoramas and the specificity of the visual perception of the cityscape, i.e. the location of special viewing points; the stock taking and analysis of the existing silhouettes emerging from the main viewing points; and an evaluation and definition of the extents of existing panoramas based on the analysis of their components and properties. The evaluation of the aesthetics of cityscapes and their uniqueness also covers compliance with the requirements and conditions of the protection of cityscapes, the evaluation of their changes, and the preservation of the major compositional solutions.

## **5. NON-MATERIAL CONSIDERATIONS AND UNIQUENESS IN THE URBAN PLANNING CULTURE**

Non-material considerations and the unique character of cities can be reflected in various domains. In the article, the authors discussed some of those. One of the domains is the cultural/religious domain, which, as Mumford (1938) has argued, has a considerable impact on the spatial forms of a city and its development. Culture can be interpreted as a combination of the material and spiritual heritage of an urban community produced throughout its entire history or during a specific era. It is often associated with civilisation as a stage in the development of a community, and it consists of material and spiritual elements. It becomes apparent in everyday life, and the system of management and functioning of social institutions. It covers norms, instances of civic activity, and it is also visible in the nature of urban space. A city is both the creator and the embodiment of culture. It establishes a special environment for displaying culture in architectural forms (Purchla, 2018). Culture and ideology have always been major non-material factors in the development of cities and the basic determiners of the placement of buildings and how their spatial organisations formed in specific historical periods. We owe much knowledge in this respect to the works of Sedlachek (2017) and the representatives of the Chicago school, i.e. Wirth (1964), and Park, Burgess and McKenzie (1967). The importance of culture for the development of cities can also be discussed from the perspective of its social and functional benefits. Considerable spatial concentration results in the breakup of a community, people lose a sense of affiliation with their group, social bonds become weaker, and the sense of a lack of unity increases. Culture plays a major role in overcoming such maladies as it shapes values and creates symbols which stimulate inhabitants to identify with a location. Some impacts of ideology and culture on the uniqueness of a city include, e.g. direct shaping of a culture product and increasing the cultural engagement of inhabitants; retrieval of valuable long-lost elements of urban space; and the shaping of a positive image of a city (Karwińska, 2017).

To better understand the non-material nature and uniqueness of a city and its place in the evolution of civilisation, one must consider the views of philosophers and theologians who have viewed cities and their architecture as philosophical and world-view phenomena (Yurkevych and Tkachuk, 1999; Peñalosa, 2012). A city can be understood as an idea. That leads to the conclusion that the integral part of culture, which shapes the material and non-material domains of a city, is religion. Theological nature and the religious functions of a city shape its spatial organisation to a major extent. Some philosophies and streams of thought consider cities as the examples of a strive to achieve “heaven on earth” (Morris, 1994). That is why urban space should be organised in such a way to produce happy inhabitants already while on the Earth. Religion can be also treated as a socio-political phenom-

enon. It contains one of the main components, i.e. human approach to that which is holy, a factor which leads to major changes in the image of places and cities as it creates a particular cityscape dominated by sacred objects and religious space (Sheptytsky, 2007). The perception and interpretation of those spaces constantly change. This was discussed by, e.g. Butler-Bowdon (2009), who argued that in the cities of post-socialist states there occurred a reinterpretation of religious space on the one hand and, on the other, there appeared the phenomenon of sacralisation of the elements of urban space which had not been previously considered as sacred or which had lost that status due to the activities of former authorities. Then, in the West, there are many examples of a growing trend of the desacralisation of urban space and changing the original religious functions of religious sites (de Wildt, Radermacher, Krech, Löffler and Sonne, 2019). After the Second World War, all of Lviv's cultural strata – Polish, Jewish, German, Austrian, and Armenian – fell into oblivion together. Lviv became mono-Soviet. Attempts were made to conceal, negate and erase the city's multiculturalism and its European character, as well as to eradicate it both from the urban landscape and from human memory. The centuries-old tradition of the city was seen as a threat and an obstacle to the creation of a unified, homogeneous Soviet society (Hrycak, 2003). In the current reality, the city is slowly returning to its traditions. The proportion of people identifying with the city and today's national minorities is gradually increasing (Kozoviy, 2018). The life of national and cultural societies is being revived. In particular, the annual street festivals of Jewish music, held since 2009, are prominent in the city's cultural landscape. The Polish Cultural Society operates not only a regional centre, but has 15 branches in the region. Another valuable initiative could be the transformation of a circle of Polish scientists into the University of the Third Age. The role of newly built places of worship, cultural and memorial centres in the city space is increasing, historical memorials, sacred spaces are being arranged, and places for ethnic festivals and other cultural events are being created (Vonnák, 2020).

Phenomena and processes with a non-material nature are directly related to people and the community. The notion of "community" has in the context of a city two dimensions: personal and social (people and their social relations) (Burden, 2018). All social phenomena are the results of human activity, communication, relations, and interactions. The uniqueness of a city stems from the knowledge and skills of the local community gathered over generations. Local traditions are, therefore, extremely important for the proper functioning of cities. They help people understand not only the material domain of a city, but also the deeply rooted customs and social bonds, which help maintain an atmosphere of trust, and which guarantee that cultural, spiritual and other values are passed over to new generations (Mostafavi, 2012). This is particularly relevant for cities such as Lviv, with its rich and ethnically diverse culture and traditions (Buryaidi, 2000). Apart from traditions and the need to maintain cultural continuity, what is also important is

the specialisation of civic roles. In the past, it enabled the establishing of cities, while today it facilitates proper functioning of the complex urban organism. Specialisation in sociological terms leads to interdependency, i.e. to strengthening bonds, yet it can also aggravate conflicts between the haves and the have-nots. Thanks to the competition for the most favourable position within the space of a city, its every part is formed in such a way to offer the biggest local gains. The social aspects of urban planning were classified in Jan Gehl's works *Life Between Buildings: Using Public Space* (1987) and *Cities for People* (2010). In them he discussed the adaptive mechanisms of various cultural groups of inhabitants depending on the architectural or urban planning layouts of their boroughs, he suggested an approach to improving quality of life from the point of view of humanistic urban planning, and he has argued that a city is a living creature which requires proper care and appropriate solutions. According to Tina Saaby (2018), a former chief architect of Copenhagen, only cities in which people can see each other and are ready to communicate with each other can become successful. If buildings are excessively large and there are no green areas between them, people usually do not communicate, which is one of the reasons why there are no favourable conditions for interaction. Kevin Lynch, an American psychologist and urban planner, proposed (1960) a set of principles for structuring urban space based on aesthetics and a favourable psychological atmosphere of the existing space, and he discussed urban planning within the context of social phenomena and problems (social conditions of urban planning). In discussing the notion of a happy city, Montgomery (2013) has suggested that the way how we build urban centres alters the sensations, thinking, and behaviour of both individuals and whole communities. Montgomery has argued that spatial development changes human life by introducing new functions to residential complexes to enable communication and self-identification of local communities. He indicated how to consolidate and change an approach to the problems of a borough and of the responsibility to such. A "regime-induced" feature of the mode of thinking of communist-era citizens was their lack of a sense of responsibility for the common good, including public space. In recent years, Lviv has made a breakthrough and a bold step towards changing the mode of thinking typical of *Homo Sovieticus* accustomed to central management without social participation. One example could be the revitalisation of Pidzamche, which despite a severely limited budget was successful thanks to a huge participation of its inhabitants (Janas and Trojnar, 2014). The activity and grassroots activism of residents was highlighted by Batty (2010, p. 3), who has argued there is a profound move in western societies which supposes that effective action comes from the grass roots. That correct direction of operation and of managing space was validated by two American architects Lydon and Garcia (2015), who described various approaches to the urban environment and have argued that one of the major conditions for a proper functioning of a city is to develop social capital through developing relations between inhabitants, and be-

tween inhabitants and municipal authorities (decision-makers). Such an approach requires engagement on both sides. Please note that spatial planners and architects play a huge role in transforming the mode of thinking about public space and including non-material considerations, the uniqueness of a city, and the needs of the inhabitants (Larkham and Conzen, 2014; Oliveira, Silva and Samuels, 2014; Lamprecht, 2016). In the study *The Nature of Urban Design* Washburn (2013) explained the need to change the mode of thinking also among urban planners, and he argued for the shifting of the focus to the proper justification and substantiation of the design decisions being made.

A considerable portion of major events in the history of urban planning was politically motivated. There are organic cities which grew and developed over centuries, and there are those which emerged suddenly, e.g. by the enactment of political decisions (Słodczyk, 2012). Political factors play a major role in the structuring and placement of cities, and in the shaping of the unique character of their spaces (Mostafavi, 2012). Politics can be also interpreted as the ability of a system of state authority to manage a society (Butler-Bowdon, 2009). That is an aspect of activity associated with planning and management, as intended for achieving social prosperity. Another politically motivated factor which shapes the image of a city, one which has made its mark in history, is the segregation of the population. It was not uncommon for it to be the trigger for establishing new boroughs where the members of a specific social group lived. Cities which were established based on political decisions, just as it is the case with religious factors, have often tried to relate to the notion of “the perfect city” (Morris, 1994; Słodczyk, 2012). That concept, which has been transformative since antiquity, was also conveyed to some extent in the ideology of communism. Cities which formed on the basis of the doctrine often constituted attempts at creating “the perfect city”, both in spatial and social terms (Kryvoruchko, 2002; Timokhin, 2003). However, considering the aesthetics of urban planning which followed the principles of communism, plans did not always translate into the functionality of space (Omelyanenko and Dyomin, 2007; Cherkes, 2008). Some of those cities or residential complexes built from “ideological” scratch transformed, as they lacked the qualities which would have otherwise developed over the span of generations, into seats of social pathology and spatial deterioration (Węclawowicz, 2013; Pieleśniak, 2016). Political and ideological factors have also played a major role in the shaping of Lviv’s urban space (Posatsky, 2014). The period after the Second World War has made a particularly strong mark on it as it was then that the approach of the authorities to urban planning and the tasks associated with urban development changed. In that period, it was typical for decision-makers to order ideologically specific monumental forms. Those were achieved by erecting overblown buildings and monuments, establishing wide alleys and expansive squares, and creating a new public space intended to dominate and diminish the importance of individuals (Omelyanenko and Dyomin, 2007). At the same time, due to intensive industrialisation, the

intention was to provide accommodation for the population as quickly as possible while simplifying the shapes of buildings to the minimum. That resulted not only in the creation of Lviv's new boroughs, which were completely detached in terms of their form and principles from the history and traditions of the place, but it also caused a complete loss of the aesthetic qualities of mass developments (Shkodovsky, 2007; Ponomareva, 2017).

Legal and administrative matter constitute yet another group of non-material factors. Those can be defined as the ability to manage a system, and to create regulatory requirements and legal bases for the activities. Law should be interpreted as a system of general and specific requirements which apply to compliance with legal standards, genetically and functionally related to the functioning of a country (regions and cities). Its functions and nature are defined by the system of social relations. The management of a city is an activity aimed at fulfilling major objectives within the areas of community life through a central body which manages the social organisation (Butler-Bowdon, 2009). Without mindful municipal authorities who invite appropriate experts to participate in the process of planning the development of their city, the chances of properly including non-material considerations in the development drop dramatically. Particular attention to contemporary urban problems, including the problems with planning and structuring urban space, was demanded by Jacobs (1992), Bauman (2003), and Florida (2002; 2018).

In Ukraine, communism formally ended 30 years ago. But as in other post-Soviet countries, despite its demise, it will still be present in people's consciousness and mentality for many years to come (Eisler, 2016). It can be said that decades of Soviet ideology are still taking their toll. In the absence of official national ideological propaganda, a mental void arose among parts of the population in the 1990s, and identity problems became apparent. Today's Ukrainian cities, despite the passage of years, still face a number of problems related to historical memory and the protection of monuments – they are in danger of losing their identity. To a large extent, this problem affects the residents of Lviv. Especially people coming from other parts of Ukraine and the former Soviet Empire who, being newcomers, have not managed to establish their consciousness and identity of their new place until today (Cherkes, 2008). At the level of urban planning and management, the fall of communism was also followed by a period of chaos and a lack of clear vision and direction. As a further consequence, this has resulted in existing laws and regulations, created at different times and drawing on different models, being incompatible and sometimes even contradictory. This creates difficulties in the legal regulation of architectural and urban planning activities. This is well illustrated by the decades-long impasse over the agreement of the historical-architectural plan of Lviv. Consequently, the city faces problems in the preservation, restoration and use of architectural monuments and historical memory. Uncontrolled construction and violations of historic environment protection requirements have exac-

erbated the problem to such an extent that the city is in danger of being removed from the UNESCO list by compromising the scale of development and landscapes of the historic part of the city.

As noted in the introduction, the complexity of urban structures informed the development of complexity theory in planning practise (Servillo and van der Broeck, 2012). In the theory of a comprehensive approach to city planning, all planes of its functioning are relevant and cannot be ignored (Byrne, 2003; de Roo, Hillier and Wezemaal, 2012). Cities must be considered as complex and comprehensive systems, consisting of many layers and planes that are interdependent (Byrne, 2001; Batty, 2005). The aforementioned works have attempted to understand urban systems as complex open systems – an ontological validation of complexity theory (Portugali, 2011). In the early 1960s, Jane Jacobs argued that the “mechanistic way in which cities were conceived and planned was entirely counter to the diversity that made up vibrant and living cities, with the result that post-war urban planning (and modern architecture) were killing the heterogeneity and diversity that characterised urban life”. Jacobs’ work has become a milestone in the perception and planning of cities. The process of shaping spatial planning principles and directions continues to this day. It became clear to planners and city managers that cities should not be treated like machines but like living system paradigms. Batty (2010, p. 3) defined that as the “slow march from the physicalism which dominated city planning a generation or more ago to a serious concern for social process”. Despite this knowledge, there is still great interest in the analysis of urban systems through simplified simulation and related procedures. However, it is worth noting that the simulation approach is somewhat limited in the sense that it is constrained by the current situation of the city taken as a starting point for the simulation and the simulation tools used (Byrne, 2003; Portugali, 2011). According to the authors, the key task of contemporary planners working in a complexity frame of reference is, therefore, to consider the social factor and the other non-material planes that influence the functioning of a city. When justifying design and management decisions, as well as when supporting bottom-up initiatives, the subjective and emotional assessment of residents should be considered. Local communities, which are increasingly involved in the process of city development, should be prepared for this participation – improving their culture and expanding their knowledge of the mechanisms of city functioning (Batty, 2010). In addition, the study of non-material factors affecting the city requires a rethinking of urban processes, in-depth knowledge of various fields such as psychology, history, social relations, knowledge of laws and regulations, philosophical and ideological currents that are the invisible drivers of human and social progress. The principle of integration must be the guiding principle for planners who consider non-material factors in urban development and planning. It is based on an understanding of the need to combine quantitative and qualitative, as well as selective and analytical and holistic tools used in the planning process. It is a manifestation of a way of

understanding the complexity of the city (Byrne, 2003). Such a complicated and complex process, as demonstrated in the previous chapter, can only be conducted by experienced, informed and well educated experts.

## 6. CONCLUSIONS

The article is an evaluation of the main guidelines of Lviv's development strategies from 1991 through 2019. They were all fairly declarative and conveyed a minor level of significance. They also featured poor organisations of the analyses and evaluations of the city's condition. The special nature of urban planning thinking was not reflected in either of the analysed strategies, nor did they include the aspects of urban planning. The authors of those documents acted correctly in their perceptions, yet by operating within the frameworks of their own world views, they ignored the measures and methods specific for urban planning. Despite the passage of thirty years of Lviv's development within independent Ukraine, there is still no single strategy for the city's development that meets all the needs for good and comprehensive management of spatial development, considering its uniqueness and the legacy of its material and non-material heritage. The General development plan of Lviv (2010) and the Integrated concept of development of the central part of Lviv (2011), considered as positively distinguished documents compared to the remainder of the examined material, did not fulfil all the hopes placed in them. The authors hope that the proposed method will be considered when improving the planning processes of Lviv's spatial development. With reference to the stated objectives of the study, it should be said that as a result of the analysis of the city's planning documents, the authors established that non-material considerations and uniqueness of the city were not effective in planning decisions, so that they have suggested a methodology of how to integrate material and non-material considerations into the planning process. The authors of this article have proposed means of rectifying the methodological errors in the justifications of design decisions by outlining specific solutions. The propositions cover all stages of activity and designing – from justifying the strategy of controlled development all the way to creating designs and finding solutions to local tasks. They have also justified the approaches and requirements regarding the efficient utilisation of non-material considerations and the uniqueness of cities to improve the urban planning solutions being applied. Furthermore, they have suggested to change the algorithm of the processes and systems of urban planning focussed on revealing non-material considerations and uniqueness as major factors shaping a city.

Non-material considerations have a somewhat grass-roots effect and they shape the atmosphere of a city, people's mentality, as well as a city's spatial planning, physiognomy, and cityscape. An increasing awareness of the non-material con-

siderations and the uniqueness of the history of a city demands radical reforms of information management and of the methodological approach to using, restoring and maintaining cultural, historic and architectural sites. The authorities need to first and foremost identify, then accept, and, eventually, properly utilise the uniqueness of a city and its non-material assets. The authors postulate that the use of the so-called expert method in the decision-making process is crucial. However, the selection of experts is equally important. It is important to select experts in such a way to not only consider their professional qualifications but also their objectivity and ability to select objective evaluation criteria for solutions of tasks of various level and kind. Specific solutions should be proposed not only by managerial and academic groups, but also by the local community. Today, according to the authors of the article, expert methods, despite their various advantages, are not sufficiently considered when justifying the planning and managerial decisions in Lviv.

During the socialist era, social and personal needs were usually not considered in spatial planning. The same applied to non-material considerations represented by cities. Uniqueness was considered as something which might threaten social development and order. That was the situation in Lviv, which was defined by the authorities as reactionary and “infected with the spirit of the past” (Hrycak, 2003). The general strive was to ensure a maximum unification of Soviet cities, including Lviv. To make them similar in terms of their forms and functions (universal industrialisation). Only after 1991, i.e. when Ukraine stopped being part of the USSR, was it possible to change the thinking about city planning. Sadly, though, a huge number of development plans devised in Lviv since 1991 displayed a whole host of problems and deficiency of their planning assumptions and concepts. The approach of city officials has been mostly an authoritarian enforcement of pre-established visions and strategies, which is a relic of Soviet urban management. In a democratic and European city such as Lviv such management and planning is ineffective. On the one hand, that is due to the identity, views and mentality of its inhabitants, and, on the other, to a major accumulation of culture sites, codes, symbols, identities, and the historic heft of the city. Only recently the city’s authorities have began learning how to use human potential (consider the successful revitalisation of Pidzamche), and the non-material potential of the city. They have developed tourism strategies, there are subsidies for protecting culture sites and promoting cultural engagement, there is support for the development of street art, etc. Yet that is still not enough. The analysis presented in the article indicates that the majority of urban planning problems and conflicts contain a human element and they are influenced by non-material considerations – ideological, social, and other causes. The fact of including the city’s uniqueness and non-material considerations in the process of urban planning and management has a positive effect on its proper development. The city should pro-actively utilise its non-material capital to develop in a harmonious and efficient manner. Hopefully a new development strategy and the actions of Lviv’s authorities shall be an expression of that.

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