

On the concept “street lines” in urban planning practice

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Abstract. The article deals with the problem of street lines which determine specific conditions of usage and development of towns and cities. The city transport system is one of the complex and overwhelmingly important elements of the big city structure. The investigation of its constituents, development arrangement and planning system is one of the actual directions of theoretical research having significant practical meaning for efficient use of territories. Nowadays federal legislation pays great attention to providing complex and constant development of territories. One of the major instruments in achieving this goal is the usage of street lines. Planned objects marked by street lines have legal characteristics. This article reveals those characteristics.

1 Introduction

The general tendency in cities' growth and development is the progressive deterioration of living standards. Cities are sources of anthropogenic contamination of the environment. The number of vehicles being driven has increased every year, and has led to severe traffic congestion [1-2], causing high amounts of multiple pollutants to be emitted into the outdoor air. Environmental concerns have been raised on the adverse health effects of vehicle emissions in micro-scale traffic-crowded street canyons [3-9], especially for pedestrians and residents living in near-road buildings. Regularly reported data about air emissions in the Russian Federation made the basis for listing environmentally hazardous cities.

Tyumen has also been on the list for many years. Nowadays some concepts have assumed great importance, namely city ecology, environment, and municipal environment – a set of conditions of human vital activity, public health is an important indicator of the quality of the given environment.

Good use of planning and development methods and techniques [10-12] plays an important role in providing comfortable living environment in a city. Street lines are part of area planning documentation and included in the set of land use and development rules relating to the positioning of territorial zones, as well as in general plans with site planning

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combined. Besides, the location of a land plot boundaries is defined considering street lines (under sub-paragraph 2 Paragraph 7 Article 36 of Land Code of the Russian Federation).

Thus, street lines are lines of urban development regulation which specify conditions of usage and building development of the areas in cities and other settlements, separate residential areas and units of designed constructions from streets, lanes and squares in urban and rural settlements. This fact stimulates studying environmental problems and makes scientific researches in this sphere “greener”.

2 Methodology

At present the main principals of the Russian Federation legislation about urban development include: providing complex and sustainable development of the area on the basis of land-use planning, urban development zoning and territory planning; provident a balanced consideration of ecological, economic, social and other factors while realizing urban development activities; provident urban development activities meeting the requirements of environment protection and ecological safety. A study of the planning system is one of the actual directions of theoretical research [13-15] having significant practical meaning for efficient use of territories.

Traditional methods of research were applied while analyzing space differentiation of planned units in the draft of Tyumen (mapping and a comparative-descriptive method of statutes as well as regulatory and engineering requirements, and design decisions). The decisions about elements of transport system were assuaged on the reconstructed zoning lot with reservation of areas for developing and planning junctions of highways and motorways, streets within street lines – for main trunk lines.

Street lines were determined not only under norms of Town Planning Code of the Russian Federation but under the Procedural Guidelines for designing and setting street lines in cities and other communities of the Russian Federation approved by a decision of the Russian Federation State Committee for Construction, Architectural and Housing Policy dated 06.04.1998 N 18-300 which shall be applicable to the extent that it does not contradict Town Planning Code of Russia. The width of the street marked by street lines and that of functional units of transversal profile are given accurate to 0,01 m (Fig. 1).

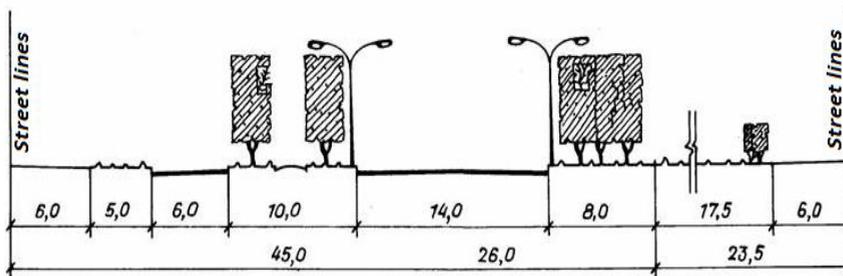


Fig. 1. An example of a street's transversal profile.

The recommended transversal profile of the street is scaled 1:200.

3 Results

Problems of planning and development town of Tyumen have a special nature and differ little from the common issues for the cities of the Russian Federation. Before Tyumen to

face complex socio-economic problem, whose solution in the long term will allow to create a city comfortable for living of the population. The main directions of spatial development of the city related to the reconstruction of the administrative-territorial organization, the intensification of space of the historic centre, development of the system of public centers and restructuring the urban transport system. The balance of these indicators will characterize the quality of decisions and the feasibility of the master plan.

The organization of the territory of the city of Tyumen has a number of architectural and spatial features are:

- the TRANS-Siberian railway “Moscow – Vladivostok” passes through the center of the city of Tyumen;
- the Tura river with high banks and a broad floodplain is a significant element of the natural frame of the city, affecting the spatial organization;
- river Tura and TRANS-Siberian railway divide the city of Tyumen' into three planning zones: Zarechnaya, Central and South;
- the main places of employment are concentrated in the Central part of the city district, which creates an imbalance of transport and passenger flows, compounded by the location of the Central planning area between the river Tura and the TRANS-Siberian railway;
- in close proximity to the city of Tyumen there are settlements that are not included in the urban County, but combined with the city's overall labour market, the General real estate market, the General consumer market and the production of the interconnectedness of organizations.

The current structure of the Central part of the city is compact with a dense regular grid of streets and planning structure within the boundaries of the urban district is fragmented due to existing transportation and natural objects.

Lines of urban management, defining special conditions for use and development of territories of cities, separating the territory of districts, neighborhoods and other elements of planning structure from streets, city boundaries are street lines. The street lines are part of the documents for planning the territory, including the composition rules of land use and development in terms of determining territorial zones, as well as the general plans, combined with planning design. The project of street lines was designed and developed by a limited liability company “Design Technological Enterprise “Grad” and approved by the municipal administration of Tyumen on the basis of the general outlay of the urban district of Tyumen for the period up to 2040 (www.tyumen-city.ru).

The planning design settles precise boundaries of planned units - street and road network, districts, housing blocks, residential areas. The planned units' boundaries are street lines. As discussed by A.N. Beregovskikh [16] within development street lines there are different functional zones, and beyond there are linear objects and street and road network. The result of the design in question is presented in a detailed, precise, fixed in a coordinate system street and road network with residential and public buildings in reference to all the units of the planned structure.

The planned characteristics of two of the examined lots: Kholodilnaya str, 62 (the minimal distance from the traffic way lines to the façade of a residential building is 23,0 m, from the street line to the façade of a residential building – 11,5 m, from the traffic way lines to the street line – 11,5 m (Fig. 2, 3)) and Profsoyuznaya str, 17 (the minimal distance from the traffic way lines to the façade of a residential building is 25,0 m, from the street line to the façade of a residential building – 15 m, from the traffic way lines to the street line – 10 m (Fig. 4, 5)).



Fig. 2. A layout drawing of street lines on the examined lot.

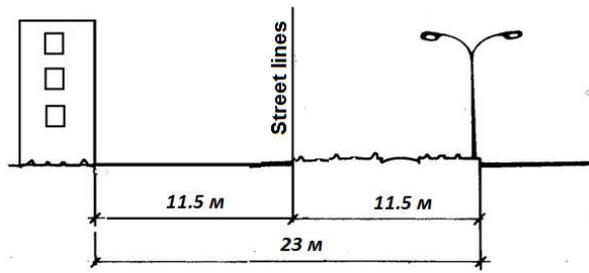


Fig. 3. A transversal profile of the examined lot.

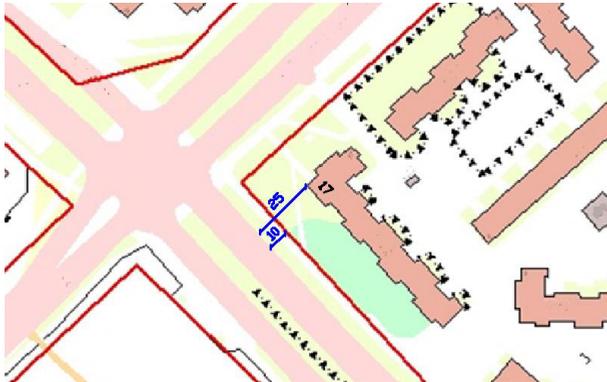


Fig. 4. A layout drawing of street lines on the examined lot.

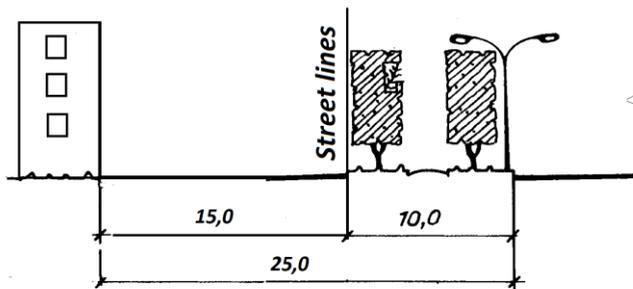


Fig. 5. A transversal profile of the examined lot.

The width of the street in street lines is defined, firstly, by the road category and according to the demanded surfaced width (four lanes), service zone and sidewalks (11,5 m) and is 60,0 m [17] which is less than the recommended street width.

4 Discussion

Under Paragraph 11 Article 1 of Town Planning Code of the Russian Federation street lines are lines which mark existing, planned (planned to change or form) public area boundary and/or boundary of the linear-type facility areas or areas designed for linear-type facility. Public area is an area free to use (visit) for unlimited number of people. Here belong squares, streets, lanes, embankments, parks, and boulevards (Paragraph 12 Article 1 of Town Planning Code of the Russian Federation).

Legal regime of public territories contains some tradability restrictions fixed in Land Code of the Russian Federation. Breaking the legal norms is also an example of the violation of street lines.

Street lines are aimed at defending citizens` right to urban environment therefore they play a great role in provident comfortable living conditions. Common legal use of street lines is realized through location of residential and public buildings on the adjoining highways areas meeting the requirements of normative legal documents and sanitary norms of distances.

The existing planning concept for Tyumen and some other cities and towns [18] raises a question of justification of numerous changes in project designs approved by the directives of heads of the municipal bodies of the mentioned cities –“On confirmation of a city`s street lines project design” in part concerning confirmation of project designs of street lines within streets or street areas. The correction of street lines in Tyumen project design followed the decision of the municipal body (www.tyumen-city.ru). A different category of traffic capacity of streets and roads, a changing city-planning situation caused the necessity of the reconstruction in the built-up areas.

Sometimes such normative legal acts are not published to a full degree: for instance, only a text can be published without giving maps and schemes or giving them much later without details. Such type of publishing makes it difficult or even impossible for citizens to learn about location of street lines. This may cause a planning conflict in the territory development.

5 Conclusion

Regulation of legal relationship concerning street lines is the subject of research in land, ecological, civil and administrative law. The existing planning practice has entailed the planning conflict in the territory development and hasn`t allowed to create comfortable living environment on the examined lot. On the whole, it is important to estimate the existing level of transport emissions` influence upon certain territories.

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