

The System of Measures to Protect Against Noise Emitted by Vehicles in the City of Samarkand

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Abstract: The article contains an analysis of noise protection measures, a histogram of the impact of noise on buildings around the main busy street and roads. Instructions were given to reduce the noise on the streets and roads of Samarkand city.

Keywords: highway, reconstruction, throughput.

One of the main tasks set by the Decree of the President of the Republic of Uzbekistan "On measures to further improve architecture and urban construction of the Republic of Uzbekistan" dated April 26, 2000 is to organize the development of master plans of cities, district centers and settlements, and in strict accordance with the population project planning documents will ensure the development of points[1,2] . In connection with the execution of this decree, a number of decisions of the republic were adopted, and today construction, improvement and engineering infrastructure works are being carried out in settlements based on the approved master plans[3,4].

On the basis of the report of the Cabinet of Ministers dated 23.10.2001 No. 08-10-107 on the redevelopment of the master plan of the city of Samarkand and the decision of the Cabinet of Ministers of the Republic of Uzbekistan dated 31.10.2001 No. 08/19-93, the master plan of the city of Samarkand in 1980 was redeveloped in 2003. During the reconstruction of the city master plan, the socio-economic and political conditions and measures of the city were planned as follows:

1. Building a modern city - 2003;
2. First of all, reconstruction of the city - 2010;
3. Time of completion - 2025.

The city of Samarkand is an ancient city, and tourism, industry and small handicrafts contribute greatly to the growth of the city's economic indicators [5.6].

As of January 1, 2003, the total area of modern high-rise and exemplary residential buildings built in Samarkand was 4791.4 thousand square meters, and the average total area per person was 11.42 m² . The normal total living space for each person is 16 m² as determined by the housing code . By 2025, the total area of the housing stock is planned to be 8,800,000 m² . The average number of one- and two-story model houses and multi-story houses being built in the city is 3 stories [10].

When the network density is maximum, the throughput of KYT increases. However, this increases the cost of capital construction and reduces the usable area. In cities, the density of KYT is $1.5 \div 2.5 \text{ km/km}^2$. The density in the central parts of the city can be up to $2.5 \div 4 \text{ km/km}^2$ (even higher in some old cities based on a radial layout).

One of the main streets in Samarkand city is Uzbekistan street, the side of this street is surrounded by walls, residential buildings are located behind the wall. The analysis of noise protection measure - measures showed that the screen - barrier located on the construction line is the most effective structure. It reduces the noise level to 25 DBA - 35 DBA. All other types of structures and methods (improvement and landscaping) reduced the noise level to 10-20 DBA.

The index of noise impact on residential buildings around Uzbek Street is as follows: 3-story; 5 floors; There is a 9-story residential building, and if the height of the 5-story building is 15 meters, the average level of sound reduction is 27.7 DBA, and the area of impact of noise on buildings and structures is 68 meters. If the height of 9-story buildings is 27 meters, the average level of sound reduction is 30.9 DBA, the area of impact of noise on buildings and structures is 69 meters.

protected by trees around the streets and roads is Uzbekistan Street. If the trees are 2 meters high, the average level of sound reduction is 4.0 DBA, and the area of impact of noise on buildings and structures is 25.0 meters. If the height of the tree is 6 meters, the average level of sound reduction is 8.0 DBA, the area of impact of noise on buildings and structures is 40 meters. If the height of the tree is 10.0 meters, the average level of sound reduction is 10.0 DBA, and the area of impact of noise on buildings and structures is 50.0 meters.

Technical index of engineering structures.

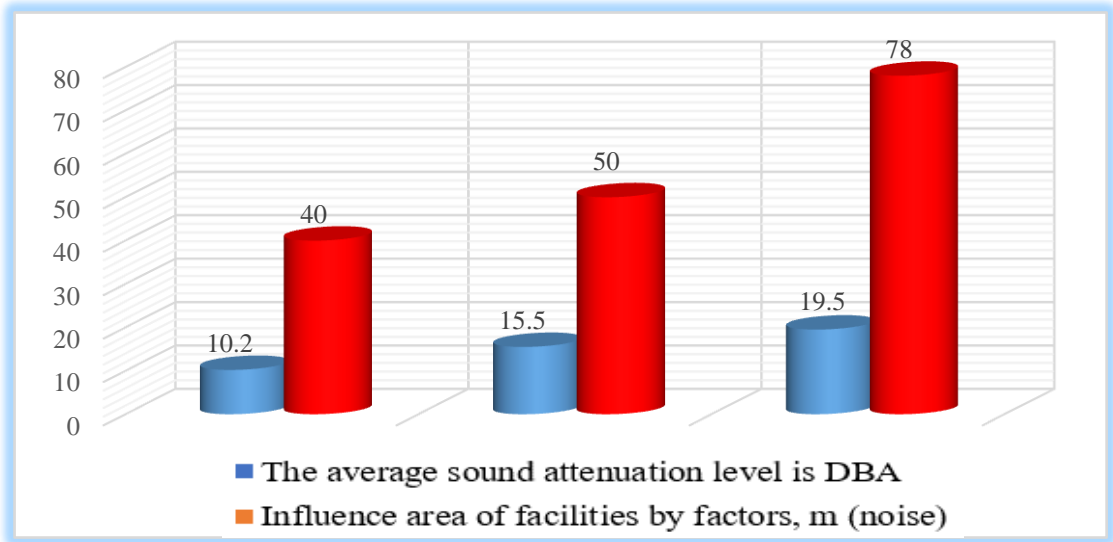
1-Table

Type of protective structures	height, m	Average level of sound attenuation DBA	Area of influence of facilities by factors, m
			noise
Screen wall	2	10.2	40
	6	15.5	50
	10	19.5	78

Based on these indicators, a histogram of the impact of noise on buildings around the main busy streets and roads in the city was created.

In urban streets (areas where residential buildings are low and streets and roads are high), screen walls are widely used. Trees also play a role in protecting against noise in the city [7,8].

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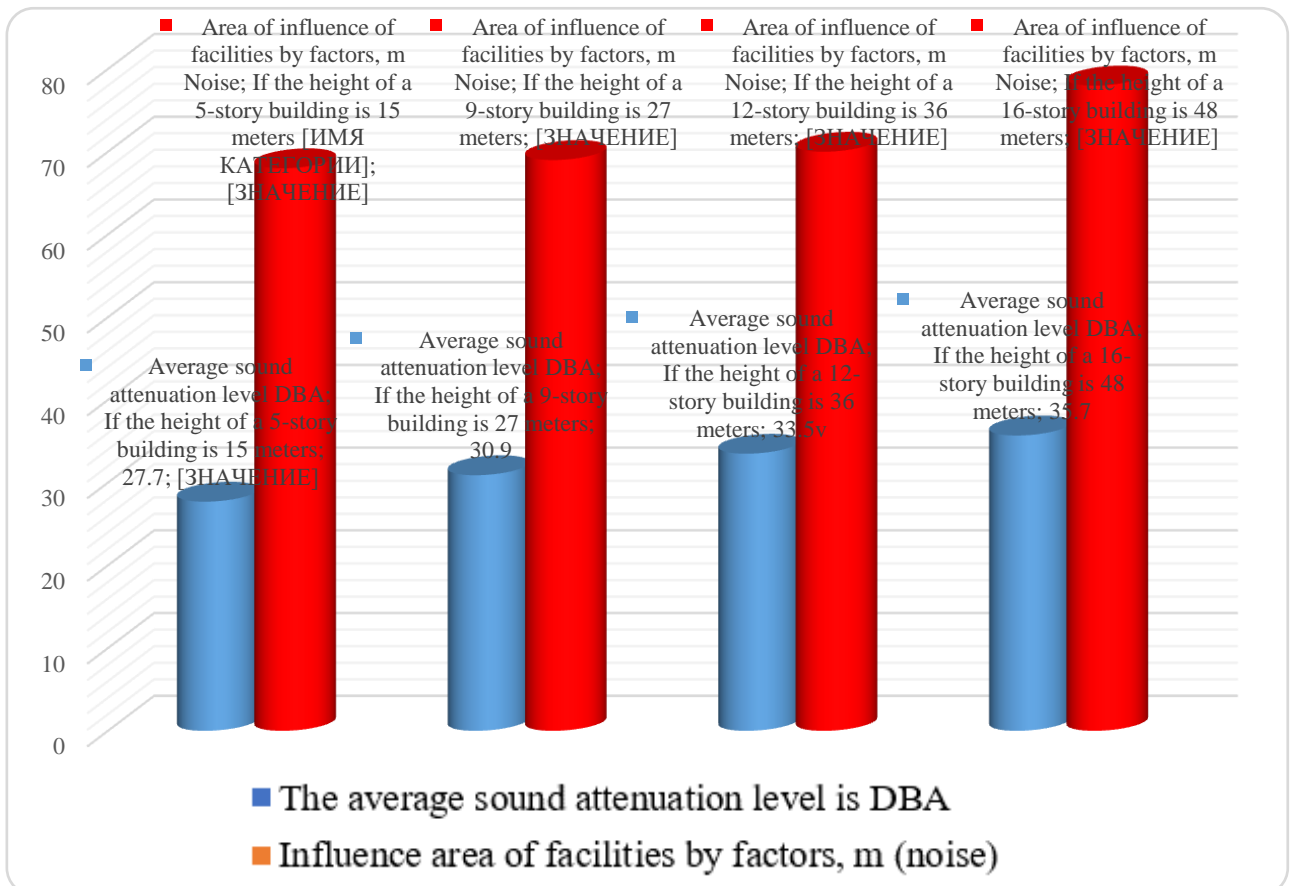


1-picture. Effects of noise on the screen wall at different heights.

Technical index of engineering structures

2-Table

Type of protective structures	height, m	Average level of sound attenuation DBA	Area of influence of facilities by factors, m
			noise
Building :			
5 floors.	15	27.7	68
9 floors.	27	30.9	69
12 floors.	36	33.5	70

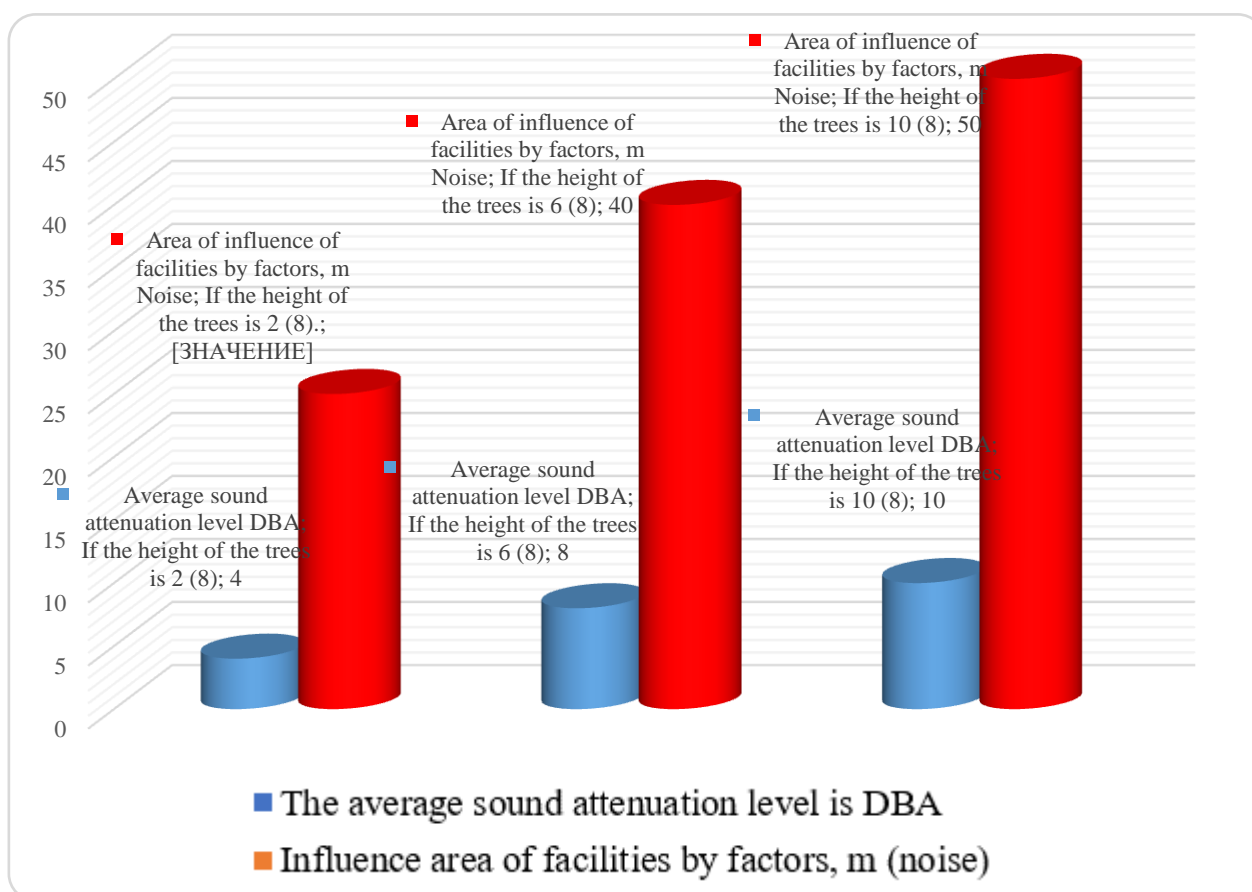


2-picture. Effects of noise on buildings of different storeys.

Technical index of engineering structures

3-Table

Type of protective structures	height, m	Average level of sound attenuation DBA	Area of influence of facilities by factors, m
			noise
Trees	2 (8)	4.0	25
	6 (8)	8.0	40
	10 (8)	10.0	50



3-picture. Effects of noise on trees at different heights

Construction of protective structures in the outskirts of the city compared to construction in the central part of the city: 2.5-3 times when building a wall barrier; construction of other structures is 4-6 times cheaper.

The results of the research were used in the preparation of the main master plan and the history-plans of the places defining the development of the city of Samarkand [9].



Figure 4. Uzbekistan street (protected by a tree).

The width of the street carriageway and footpaths is taken into account, taking into account the occurrence of the largest traffic jams, based on the composition and volume of traffic expected in the future at this location. The correct acceptance of the width of the carriageway is of great technical and economic importance in the construction of new cities and in the reconstruction of old highways. In cities that have been forming for a long time, solving this problem requires a lot of capital. Roadways and intersections should not be made too wide. On the contrary, it can increase the crossing distance of pedestrians and vehicles, and consequently reduce the capacity of the intersection.

REFERENCES

1. Collection of legal documents of the Republic of Uzbekistan on the approval of the rules for the organization of improvement works of settlements, taking into account the requirements of modern architecture and urban planning, 2009. No. 10-11, Article 112; No. 14, Article 138.
2. "Urban Planning Code" of the Republic of Uzbekistan Bulletin of the Oliy Majlis of the Republic of Uzbekistan, 2002. No. 4-5, Article 63, Collection of legal documents of the Republic of Uzbekistan, No. 25 of 2004, Article 287; 2006 No. 27, Article 245, No. 41, Article 405.
3. Urban Planning Code of the Republic of Uzbekistan, Tashkent, 2006.
4. Bogdasarov A.M. Automated traffic control systems and the task of improving them taking into account environmental factors. -TADI.: Tashkent, 1989. -12 pages.
5. Usmanov Q. T. Properties of trees to protect the environment from traffic noise."Istedod"scientific magazine. -Tashkent: #4/14, 1999. 6-7
6. A.T.Ismailov, A.T.Khotamov, D.U.Isamukhamedova " Urban engineering improvement and transport infrastructure" training manual. /Tashkent. 2007 year. Pages 84-109.
7. Q.T. Usmanov. Abstract of candidate's dissertation on the topic "Comprehensive comparison of measures protecting the city area from traffic noise and exhaust gases". Tashkent. 2005 pp. 5-15.
8. MSHN 25-2005 . JSC "Uzavtoyol". Institutional urban planning norms //Instructions for ensuring traffic safety on highways.
9. SHNK 2.07.01-03* "Territories of urban and rural settlements development and construction planning» Tashkent-2009.