

ENGINEER



international scientific journal

ISSUE

4, 2024 Vol. 2

ISSN

3030-3893



SLIB.UZ
Scientific library of Uzbekistan



A bridge between science and innovation



**TOSHKENT DAVLAT
TRANSPORT UNIVERSITETI**

Tashkent state
transport university



ENGINEER

A bridge between science and innovation

ISSN 3030-3893

VOLUME 2, ISSUE 4

DECEMBER, 2024



engineer.tstu.uz

TASHKENT STATE TRANSPORT UNIVERSITY

ENGINEER

INTERNATIONAL SCIENTIFIC JOURNAL
VOLUME 2, ISSUE 4 DECEMBER, 2024

EDITOR-IN-CHIEF

SAID S. SHAUMAROV

Professor, Doctor of Sciences in Technics, Tashkent State Transport University

Deputy Chief Editor

Miraziz M. Talipov

Doctor of Philosophy in Technical Sciences, Tashkent State Transport University

Founder of the international scientific journal “Engineer” – Tashkent State Transport University, 100167, Republic of Uzbekistan, Tashkent, Temiryo‘lchilar str., 1, office: 465, e-mail: publication@tstu.uz.

The “Engineer” publishes the most significant results of scientific and applied research carried out in universities of transport profile, as well as other higher educational institutions, research institutes, and centers of the Republic of Uzbekistan and foreign countries.

The journal is published 4 times a year and contains publications in the following main areas:

- Engineering;
- General Engineering;
- Aerospace Engineering;
- Automotive Engineering;
- Civil and Structural Engineering;
- Computational Mechanics;
- Control and Systems Engineering;
- Electrical and Electronic Engineering;
- Industrial and Manufacturing Engineering;
- Mechanical Engineering;
- Mechanics of Materials;
- Safety, Risk, Reliability and Quality;
- Media Technology;
- Building and Construction;
- Architecture.

Tashkent State Transport University had the opportunity to publish the international scientific journal “Engineer” based on the **Certificate No. 1183** of the Information and Mass Communications Agency under the Administration of the President of the Republic of Uzbekistan. **ISSN 3030-3893**. Articles in the journal are published in English language.

Impact of the greened area of the enterprise on the safety of workers

M.N. Umarova¹ 

¹Tashkent State Transport University, Tashkent, Uzbekistan

Abstract: The business model of the enterprise includes labor and services related to the main risks. The stressful, psychological, and stressful effects of salbium are considered necessary to eliminate traumatic factors. Icci and service training are unique leagues, high-quality productionparming and high-quality head, of course, training in the spirit of bilan membership in sadlikdir. That is, a sanitary and hygienic enterprise provides services for the prevention and prevention of risks. In this regard, the article hududining enterprise describes the sanitary and hygienic circumstance. Hududining enterprise sanitary and hygienic courses ice climbing first of all, hududining enterprise natural state, wellness course, sedative course based on analysis. The company grows its own yashil makonlar, that is, an arboretum, oxygen-rich, fresh and dirty Turkish fish. Yashil investigated the risks at the logging site that affect the accurate study of the Andijan biosphere by enterprises and services, and also developed its recommendations. The study involves mainly 20-60 people. The results of the study showed that the number (90-98%) of cases of icing of trees and yashil sites, as well as the associated risks to public health, has increased significantly.

Keywords: Enterprise Area, green space, trees, oxygen substances, phytoncides

1. Introduction

Industrial areas are expected to contain factories with a high degree of pollution, such as noise, vibration, sewage and air. All this is called production sanitation and labor hygiene in science. Production sanitation and labor hygiene are regulated on the basis of a number of regulatory documents. Noise, vibration and air pollution, as defined in regulatory documents, are determined depending on the production nature of each enterprise. For example, if an enterprise is designed to produce cement, the pollution of air around can exceed the norm.

Also the above-mentioned sanitary and hygienic standards increase from the level of demand will negatively affect the health of workers and, as a result, increase the number of accidents.

It is planned to reduce the number of unfortunate employees and ensure safe working conditions with maintaining the health of workers. There are several ways to ensure safe working conditions, one of which is the greening of the enterprise God. Here is a theoretical study on the issues of changing the appearance of the God of the enterprise by the method and increasing the number of trees.

The industry has a large number of types of production enterprises, and their safety comes first, regardless of which enterprise the workers and servants work in.

2. Bibliography

In ensuring safe and healthy working conditions and environment in the enterprise, the enterprise hood is also of great importance. The sanitary and hygienic significance of the Lord of the enterprise is such that, first of all, the natural state of the Lord of the enterprise, his ugliness, aromatherapy are preserved. In addition, the groves enrich the basin with oxygen, clean the air of various impurities, and also clean the climate in the territory of the enterprise. [1] Another special feature of plants and trees from sanitary and hygienic materials is that they secrete volatile organic compounds into

the air. These substances, on the other hand, purify the atmosphere by scraping off various microorganisms. These are called phytoncides. Their quantity varies according to the seasons of the year, especially in summer and cabbage, where they are excreted in large quantities.

The more green space in the enterprise khududi, the more its sanitary and hygienic side is preserved. In addition, the green space in the enterprise khududi has a positive effect on the health of workers and servants, employees operating in the enterprise.

Research has been carried out by a number of scientists around the world on the positive impact of greened gods on human health. The relationship between the availability of green spaces and the morbidity of the population has been studied less than with mortality rates, but more than 60 English-language publications are devoted to this issue [3], where the normalized relative vegetation index (NDVI) and indicators reflecting the qualitative parameters of tree cover are used to characterize green spaces [4]. For example, a higher diversity of vegetation contributed to a decrease in chronic diseases [5] and bronchial asthma in children [6]. A higher density of trees among the park vegetation was associated with a lower rate of cardiovascular diseases [7, 8] and a higher quality of life [9, 10]. The size of the "green spot" – the closed crowns of trees in the city - also has a certain effect on the state of health. Most studies have found evidence of the association of various health indicators with large areas of green spaces, including body mass index [11, 12], mortality from circulatory diseases [13], depression [14], mortality from all causes, including cardiovascular diseases [15], obesity, the incidence of type II diabetes, osteoporosis, and other health disorders [16]. Access to green spaces can help reduce cortisol concentration, pulse rate, and blood pressure [17]. In this scientific research work, which has been analyzed, scientists and researchers are mainly focused on how green spaces affect human health, the different cases that are orted or congenital. In the work considered, there was no scientific research carried out on the impact of green spaces on the human body, health and

^a  <https://orcid.org/0000-0002-1606-8144>



security of the enterprise. But now the most time of people, the main part of their lives, is spent in their workplaces. When an 8-hour day of work is seen as the main one, people go to their homes tired when the day is late. Especially if such a work activist is associated with production enterprises, then in a noisy process compared to those who work in the office, fatigue or breathing from a polluted environment causes certain stresses.

On the basis of the above data, we can see that a number of works have been carried out to expand the green spaces of enterprise areas in World qualifications. Masalan In Japan, there is a system for specific enterprises in accordance with the Law on the Location of Enterprises [18] The obligation to "greening" applies to specific enterprises, etc.

In Japan, the plant location law was revised from 1974, requiring new factories to provide green space equal to the equivalent of 20% of their buildings. Greening the roofs and walls of commercial establishments is called greening objects such as the roofs of buildings, but since the amendments to the Law on the Placement of Enterprises (Heisei 16) 3 were made in 2004, it has become possible to occupy up to 25 percent of the area of green spaces, even if the green spaces on the ground cover the roofs of other enterprises. some facilities, such as landscaping of the roof, walls and parking lots.

As the number of businesses grew steadily (reaching 873 plants in 2002 and 1,346 in 2009), the greenery in the enterprise gods began to decline. With this in mind, the Japanese created the "excellent Greening plants" award system from 1982, and since then they have been awarding plants with excellent results in greening plants [19].

Since the area around the enterprise in Japan was not enough, the greening of the roofs and the walls of the building of the enterprise was established. Due to the importance of green spaces, a number of scientific studies have been carried out by scientists. it became known from the research carried out, and it was found that it was necessary to further expand the green spaces in the gods of our country, based on the above considerations, so that their production would have a positive effect on the health of workers, their psyche, increased labor productivity, and workers and servants.

3. Research methodology

The purpose of landscaping is to turn the plant into a production facility, increase work efficiency and reduce environmental problems around the plant. In addition, in the case of industrial parks, the improvement of the regional environment is achieved by creating buffer green zones (urban parks) between the factory and other residential areas, and buffer landscaping is carried out in various places. This has a certain effect [1].

It is necessary to expand the green space in the territories of production enterprises, increase the number of trees, plant new species to compensate for perennials, choose the desired type of tree based on the nature of the enterprise.

According to national regulations, more than 25% of the territory is occupied by green spaces, and more than 20% of the territory is green spaces. However, with regard to the proportion of ecological sites and green spaces, municipalities can issue their own regulations instead of national regulations in accordance with local conditions.

In the practice of industrial enterprises, the specific weight of plantings in factory territories is different. So, at

enterprises of light industry, it ranges from 30-60% of the total area, and at enterprises of the metallurgical, chemical and machine-building industries - within 15-20%. According to the design standards of industrial enterprises, the landscaping area is at least 15-20% of the territory of the enterprise. In case of dense construction of an industrial site, this indicator is allowed to be reduced to 10%. Consequently, on average, the specific weight of plantings exceeds 20% of the total area of the enterprise.

The creation of plantings in factory territories is one of the main measures for their improvement and, consequently, to improve the working conditions of workers and employees of industrial enterprises.

Landscaping occupies a very large place in the complex of works on landscaping of industrial enterprises. As an example, let's give the experience of landscaping the territory of the Biochemistry plant in Andijan. The total land area of the enterprise is 56.52 hectares, out of which 35.69 hectares are vineyard auxiliary farm, 9.94 hectares of land production, 1.0 hectares of closed land, 2.89 hectares of railway and Road land in ham there is a gymnastics school with a land area of 0.08557 hectares.

To find out how the green spaces in the enterprise khududi affect the human psyche, a survey was carried out between the workers and servants of the Andijan Biochemistry Plant. The survey was taken from 325 workers and employees. 133 women and 192 men participated. The survey found that 90-95% of the results showed Green Gods to have a positive effect on human health. The survey results are shown in Figure 1

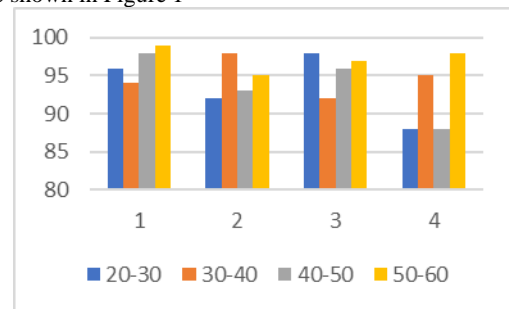


Figure 1. Histogram of taxiles by the number and age of workers who participated in the survey

While the first question of the survey was answered positively by 96% of the survey participants, 92% of workers aged 20-30, and the second question was answered positively by 93% of workers and servants aged 40-50 on the same question, 98% of the second question was answered by 93% of people.

Our question of whether you know the types of trees at number three was determined by the fact that both 20-30-year-olds and 30-40-year-olds reported 98% of participants.

4. Results

A number of conclusions have been made based on the above and estimated results. As a result of the taxiles of scientific research work carried out by a number of scientists, it is necessary to choose depending on the species of trees. Trees are classified into absorbent, noise-absorbing, various gas-absorbing species.

The presence of green regions reduces the amount of dust in the atmospheric air by 2-3 times. Judging by the data obtained, Groves absorb sulfide dioxide gas in the air and convert it into sulfates. It can be seen that green Shields



absorb and neutralize not only dust, but also harmful gases, thereby passing the function of mechanical and protective filtering.

However, there are issues that need special attention when organizing green regions. When building green fences, it is of great importance to carry out tree seedlings resistant to harmful gases, acids and alkalis.

It should be noted that being industrial enterprises, it is advisable not to plant fruit, berry plants in places with a high level of pollution of the atmospheric air. Because in an extremely polluted air environment, the grown fruits will have a high content of harmful factors.

70% of the sanitary protection region can be wooded.

So the external landscape of the enterprise God, the purity of the air, the importance of green spaces, through which the main part of human life passes, will have a positive effect on the hard workers. In a word, it serves a lot to ensure the safety of workers and servants. It was also predicted to help reduce the number of accidents in enterprises by 70-80%.

References

- [1] <http://choh.medprof.tma.uz/wpcontent/uploads/pdf>
- [2] B.A.Revich. The importance of green spaces for protecting the health of the population of cities and protecting the health of the population Institute of National Economic Forecasting of the Russian Academy of Sciences, Moscow.
- [3] Nguyen, P.-Y.; Astell-Burt, T.; Rahimi-Ardabili, H.; Feng, X. Green Space Quality and Health: A Systematic Review. *Int. J. Environ. Res. Public Health* 2021, 18, 11028. <https://doi.org/10.3390/ijerph182111028>
- [4] Dennis, M.; Cook, P.A.; James, P.; Wheeler, C.P.; Lindley, S.J. Relationships between health outcomes in older populations and urban green infrastructure size, quality and proximity. *BMC Public Health* 2020, 2
- [5] Donovan, G.H.; Gatzolis, D.; Longley, I.; Douwes, J. Vegetation diversity protects against childhood asthma: Results from a large New Zealand birth cohort. *Nat. Plants* 2018, 4, 358–364. 0, 626.
- [6] Astell-Burt, T.; Feng, X. Urban green space, tree canopy and prevention of cardiometabolic diseases: A multilevel longitudinal study of 46 786 Australians. *Int. J. Epidemiol.* 2020, 49, 926–933.
- [7] Leng, H.; Li, S.; Yan, S.; An, X. Exploring the Relationship between green space in a neighbourhood and cardiovascular health in the winter City of China: A study using a health survey for Harbin. *Int. J. Environ. Res. Public Health* 2020, 17, 513.)
- [8] Camargo, D.M.; Ramírez, P.C.; Fermino, R.C. Individual and environmental correlates to quality of life in park users in Colombia. *Int. J. Environ. Res. Public Health* 2017, 14, 1250.
- [9] Zhang, C.J.P.; Barnett, A.; Johnston, J.M.; Lai, P.-C.; Lee, R.S.Y.; Sit, C.H.P.; Cerin, E. Objectively-Measured Neighbourhood Attributes as Correlates and Moderators of Quality of Life in Older Adults with Different Living Arrangements: The ALECS Cross-Sectional Study. *Int. J. Environ. Res. Public Health* 2019, 16, 876.
- [10] Mc Eachan, R.R.C.; Yang, T.; Roberts, H.; E Pickett, K.; Arseneau-Powell, D.; Gidlow, C.; Wright, J.; Nieuwenhuijsen, M. Availability, use of, and satisfaction with green space, and children's mental wellbeing at age 4 years in a multicultural, deprived, urban area: Results from the Born in Bradford cohort study. *Lancet Planet. Health* 2018, 2, e244–e254.
- [11] Rundle, A.; Quinn, J.; Lovasi, G.; Bader, M.D.M.; Yousefzadeh, P.; Weiss, C.; Neckerman, K. Associations between body mass index and park proximity, size, cleanliness, and recreational facilities. *Am. J. Health Promot.* 2013, 27, 262–269.
- [12] Wang, H.; Tassinari, L.G. Effects of greenspace morphology on mortality at the neighbourhood level: A cross-sectional ecological study. *Lancet Planet. Health* 2019, 3, e460–e468.
- [13] Pope, D.; Tisdall, R.; Middleton, J.; Verma, A.; Van Ameijden, E.; Birt, C.; Macherianakis, A.; Bruce, N.G. Quality of and access to green space in relation to psychological distress: Results from a population-based cross-sectional study as part of the EURO-URHIS 2 project. *Eur. J. Public Health* 2018, 28, 35–38.
- [14] Van den Bosch M., Ode Sang Å. Urban natural environments as nature-based solutions for improved public health – A systematic review of reviews *Environ. Res.* 2017;158:373-384. doi: 10.1016 / j.envres.2017.05.040.
- [15] Astell-Burt T, Mitchell R, Hartig T. The association between green space and mental health varies across the lifecourse: a longitudinal study. *J Epidemiol Community Health* 2014; 68: 578–83.
- [16] Chen K.,Zhang T.,Liu F.,Zhang Y., Song Y. How Does Urban Green Space Impact Residents' Mental Health: AL iterature Reviewof Mediators. *Int. J.Environ. Res. Public Health* 2021,18,11746. <https://doi.org/10.3390/ijerph182211746>
- [17] Revich B.A. Urban planning and public health: Analytical review. *Health risk analysis.* – 2022.- No. 1. pp. 157-169. DOI: 10.21668/health.risk/2022.1.17
- [18] https://www.jpgreenorjp.translate.goog/index.html?_koujyo/questionnairex_tr_sl=ja&_x_tr_tl=uz&_x_tr_hl=uz&_x_tr_pto=sc
- [19] extension://https://andbiochemical.uz/sites/default/files/biznes_plan2019.pdf
- [20] E. Belyaeva. Recreational influence on the state of the natural complex of the Zelenaya Grove forest Park in Cherepovets // *Involving in creativity: Ped. alm. Vologda*, 1998. Issue 1. pp.235-240.

Information about the author

Umarova Mavludakhon Nazirovna Tashkent State Transport University, Associate professor of the Department of Technosphere security
Email: mavludaxon_umarova@tstu.uz
<https://orcid.org/0000-0002-1606-8144>



O. Ishnazarov, Kh. Khaydarov <i>Enhancing energy efficiency in industrial pump units: the role of asynchronous motors with frequency converters</i>	7
Sh. Ismoilov <i>Functions of the Operation of Continuous Automatic Locomotive Signaling in Rail Transport (ALSN)</i>	15
N. Aripov, Sh. Ismoilov <i>Features of the effect of increased reverse traction currents on rail circuits and continuous automatic locomotive signaling.....</i>	18
S. Absattarov, N. Tursunov <i>The influence of the chemical composition, including harmful and undesirable impurities, on the properties of spring steels</i>	21
K. Azizov, A. Beketov <i>Analysis of existing methods for measurement of air pollution in road areas.....</i>	24
D. Odilov <i>The practical importance of the Maple software.....</i>	28
I. Umirov <i>Program evaluation of the enterprise exploitation service process.....</i>	31
R. Saydakhmedov, O. Rustamov <i>Increasing the role of titanium alloys in the aviation industry: problems and solutions</i>	34
I. Normatov <i>Bibliometric analysis of improving the performance system of human</i>	37
T. Kurbaniyazov, A. Bazarbaev <i>Modeling the processes of conversion of asymmetrical three-phase currents into output voltage.....</i>	40
K. Azizov, A. Beketov <i>Traffic flow characteristics and their impact on air pollution in urban streets: a case study of Tashkent</i>	43
M. Ergashova, Sh. Khalimova, A. Normukhammadov <i>State control in monitoring the greening of city roads and streets</i>	46
O. Khushvaktov, Sh. Khalimova <i>Traffic flow velocity analysis on urban roads: a study of Uzbekistan's key transportation route</i>	49
Z. Alimova, S. Pulatov <i>Performance analysis of motor oil quality in heavily loaded engines of quarry vehicles</i>	53
M. Umarova <i>Impact of the greened area of the enterprise on the safety of workers.....</i>	58
D. Nazhenov, M. Masharipov, B. Rustamjonov, O. Pokrovskaya <i>The impact of attracting an additional shunting locomotive to railway technical stations on the utilization indicators of rolling stock.....</i>	61
Sh. Kayumov, A. Bashirova <i>Improvement of the technology for determining the time spent on cleaning gondola cars.....</i>	64