

DEVELOPMENT OF THE CITY'S CYCLING INFRASTRUCTURE AS AN ALTERNATIVE TO PUBLIC TRANSPORT

Modern mobility implies the freedom to choose the mode of movement. Within the city, there are such ways as walking, cycling, public transport, taxi and car. Cycling is an important way to travel in cities and its development should be a priority according to the "Pyramid of Sustainable Mobility". When it comes to distances that are too great for walking, most cities give priority to the development of infrastructure for cars, and the residual principle - public transport.

The car is an attractive means of transportation - it provides flexibility, independence, comfort and is quite versatile. But in densely populated cities and relatively short distances, cars are often economically and environmentally unjustifiable. Urban communities are increasingly suffering from the side effects of motorization: congestion, air pollution, noise, overcrowding of streets and neighborhoods with parked vehicles.

Public transport is the main alternative to the private car in the context of mass traffic with a much lower level of urban use. It is most effective for transporting large groups of people simultaneously to common destinations. It consumes less resources, takes up less space, is cleaner and cheaper for the user than individual cars. Modern cities tend to agree that significant investment in this sector is justified and has a positive effect on the quality of life and development of the city. However, public transport cannot meet all the transport needs of residents. Fixed routes and rigid schedules are not suitable for a significant number of trips and are not very effective for relatively short distances (2-3 km).

Many residents need more flexible mobility, trying to choose the option that meets the current need, especially over relatively short distances. This solution is a bicycle - a highly efficient city vehicle. The bicycle has its niche as an important component of the transport system. Modern cities, comfortable to live in, have already proven that the bicycle has the potential to become an important means of transportation around the city.

The developed bicycle traffic in the city creates numerous advantages both for the city in general and for its residents and business in particular. The bicycle contributes to the development of the city. Bicycles make cities cleaner and healthier. It does not emit emissions and does not create noise, and thanks to the day of moderate physical activity, people who ride bicycles regularly become healthier. The development of bicycle transport makes cities safer and more convenient to live in. The bicycle promotes economic development. In the simplest sense, cycling infrastructure costs are offset by savings on cars. To build a bicycle parking space, you need 5% of the funds needed for one car parking space. The bicycle also

increases the competitiveness of shopping areas in the city center and in the pedestrian zone. Cyclists are more regular and standing customers of nearby stores, while motorists prefer large suburban shopping centers.

The cyclist-friendly city attracts guests of cities and tourists. It's a convenient and enjoyable way to explore the city faster than walking around it, but slow enough to see everything, it's flexible and autonomous.

The development of cycling is a boost to personal mobility in general. Bicycles are a cheap addition to public transport, which significantly expands opportunities for movement and, as a result, opportunities for work, study, culture or recreation.

References

1. *NACTO Urban Bikeway Design Guide [Електронний ресурс] / National Association of City Transportation Officials. Режим доступу: <https://nacto.org/publication/urban-bikeway-design-guide> (date of application 11.04.2022)*

2. *PRESTO Cycling Policy Guide-General Framework [Електронний ресурс]. Режим доступу: <https://presto-cycling.eu> (date of application 11.04.2022)*

3. *On approval of the Concept of development of bicycle infrastructure of the city of Poltava for 2020-2024: Decision of the Poltava City Council of 10.07.2020 [Electronic resource] / Official site of the Institute of Urban Development. https://irm.pl.ua/files/2020/Program_velo.pdf (date of application 11.04.2022)*

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ДО РОЗРАХУНКУ ОСІДАНЬ БУДІВЕЛЬ НА ГРУНТОЦЕМЕНТНИХ ОСНОВАХ

Розрахунки в сумісній постановці як системи «основа–фундамент–будівля» – абсолютна необхідність в сучасному проектуванні та будівництві [3]. Програмні комплекси наразі мають інструменти, котрі дозволяють виконувати такий розрахунок, в тому числі, для розрахунків будівель на основах, посилених ГЦЕ.

Будівля, що розглядається, розташована у м. Полтава на основі, армованій вертикальними ГЦЕ, має складну форму в плані, дев'ятиповерхова, з повздовжніми та поперечними несучими цегляними стінами, перекриттями – із круглопустотних панелей. Отримано результати осідань протягом тривалих геодезичних спостережень [1].

Моделювання будівлі для подальшого експорту та розрахунків виконувалося у Revit. Замодельовано лише несучі елементи (архітектурними елементами знехтувано та прикладено як сили на етапі задання навантажень). Виконання моделі проводилося таким чином, щоб при експорті в IFC-формат аналітична модель була максимально узгоджена та сформована для проведення обчислень.