Western European Journal of Modern Experiments and Scientific Methods
Volume 2, Issue 6, June, 2024
https://westerneuropeanstudies.com/index.php/1
ISSN (E): 2942-1896 Open Access| Peer Reviewed

RECOGNOSSING OF THE AREA UNDER REDEVELOPMENT OF CITIES PROVIDED WITH A GEODESIC BASIS.

Yunusali Ganiyev
Fergana Polytechnic Institute, 150107 Fergana, Uzbekistan

Annotation. In this article, recognossing, i.e. preliminary investigations, with a geodesic basis, is important in urban redevelopment projects. This article examines recognossing methods and the importance of a geodesic basis in urban redevelopment. The data obtained through the use of precise geodesic methods will help to properly plan and carry out effective construction work.
Keywords: Recognossing, geodesic Foundation, Urban Redevelopment, geodesic research, topography, spatial data, geodesic network, Urban Planning

Introduction

Early studies are crucial to the success of urban redevelopment projects. Recognossification includes the identification of geodesic features of the area. The geodesic basis plays an important role in this process, as it provides accurate measurements and spatial data. This article details the importance of recognossing and geodetic Foundation in urban redevelopment projects.

Engineering research for construction is a type of construction activity that carries out the comprehensive study of natural and man - made objects. Features of the territory of construction objects (Region, District, plot, direction), forecasting the interaction of these objects with the environment, substantiating them for engineering protection and safe living conditions for the population;

Development of pre-project documentation, including urban planning documentation, based on engineering research materials for construction. Engineering research materials are used to justify investment. Recommendations on the construction, construction projects and work documents of enterprises, buildings and structures, including expansion, reconstruction, Technical re-equipment, operation and completion of facilities, maintenance of State cadastres, and also the adoption of economic, technical, social and environmentally sound design decisions. [1-5]:

The composition of engineering research for construction includes the following main types: engineering-Geodesy, engineering-geological, engineering-Hydrometeorology, engineering-environmental studies, groundwater-based underground building materials and water supply sources.

Engineering and geodetic research for construction includes information about topographic-Geodetic materials and situational and relief, which are necessary for a comprehensive assessment of the natural and man-made characteristics of the territory, aimed at obtaining. On the basis of building survey materials, design decisions are made applied to the construction and use of objects.

Western European Journal of Modern Experiments and Scientific Methods
Volume 2, Issue 6, June, 2024
https://westerneuropeanstudies.com/index.php/1
ISSN (E): 2942-1896 Open Access| Peer Reviewed

Methods

• Identifying recognossing targets, such as identifying existing structures, surveying topography, and mapping underground communications.
• Selection of appropriate geodesic instruments, including total stations, GNSS receivers and laser scanners.
• Conducting field research using geodesic instruments and collecting spatial data, including coordinates, altitudes and distances.

Results and discussion

The application of a geodesic basis in the recognossing process significantly increases the accuracy and reliability of urban redevelopment projects. Accurate data collected through geodesic techniques facilitates decision making, preventing errors and project delays. The use of GIS is of great help in the integration and visualization of data. Problems such as the need to conduct field research in densely populated areas and the need to regularly update the geodesic database are also discussed and solutions are offered.

Engineering and geodetic surveys for construction include:

* collection and processing of engineering and exploration materials, topographic-Geodetic, cartographic, aerophotosurate and other materials and data from previous years;
* area reconnaissance;
* networks specifically designed for the construction of base Geodetic networks, including the creation (development) of Geodesy;
* creation of survey Geodetic networks at Planned altitude;
* topographic (terrestrial, aerophototopographic, stereophotogrammetric, etc.
* update topographic (engineering topographic) and cadastral plans in graphic, digital, photo and other forms;
* engineering-hydrographic works;
* Geodetic works related to the transfer to nature and the connection of the mountain
• Engineering Research, Geophysical and other points;
* foundation of buildings and structures in the regions, the mass of the Earth's surface and rocks
* geodesic stationary observations of deformations;
* development of dangerous natural and techno-natural processes;
• engineering and geodesic provision of information systems of settlements and state cadasters (urban planning, etc.);
* engineering-creation (compilation) and publication (reproduction) of topographic plans, Cadastral and thematic maps and plans, atlases for special purposes (graphic, digital and other forms);
* chamber treatment of materials;
* drawing up a technical report.

In addition to the structure of engineering and geodetic surveys for the construction of linear structures, the following are included:

pre-selection of competitive route options for camera tracking and field work and surveys;
* field observation;
* study of existing railways and highways, drawing longitudinal and transverse profiles, cutting power lines (power lines), communication lines (LS), radio communication tools, radioreley lines and trunk pipes;

Western European Journal of Modern Experiments and Scientific Methods
Volume 2, Issue 6, June, 2024
https://westerneuropeanstudies.com/index.php/1
ISSN (E): 2942-1896 Open Access| Peer Reviewed

* coordination of basic elements of structures and external measurements of buildings (structures • ;
* determination of the total and useful length of the tracks at the stations and the dimensions of the approach of the buildings. [6-10]:
The complex of works on engineering and geodetic research includes three stages that can be noted separately:
Are preparatory, field and chamber stages.
During the preparatory period, the following works are carried out. For construction, appropriate licenses are issued for the right to produce engineering and geodetic surveys.
• The technical task of the customer is the basis and the main reason for the start of the survey work, so the next step is to prepare and obtain contract documents.
• In addition, the assembly and processing of engineering research materials is carried out.
The area of studies of past years (department, plot), as well as information stored in state and departmental funds for topographic, geodesic, cartographic, aerofotosurate and other materials.
The engineering and geodetic research program (recipes) is preparing requests in accordance with the requirements of the customer's technical characteristics regulatory and technical documentation, taking into account the dangerous natural and man-made conditions of the territory (water area). [11,12]:
The formation of engineering and geodetic research production and obtaining permits are carried out in the prescribed manner.
During the field period, intelligence studies should be carried out:
• the area within the scope of engineering and geodetic Research (water zone) and the field work complex, as well as the calculation and other work of the required volume, their preliminary processing to ensure control over the quality, completeness and correctness of the materials and data obtained.
At the chamber stage, the following works must be carried out:
• final processing with information about the objects necessary for design and construction, elements and reliefs of the situation, underground and above-ground structures, specifics, as well as dangerous natural and man-made processes, assessing the correctness of field materials and the results obtained;
• preparation and transfer to the customer of a technical report (explanatory note) with the necessary applications on the results of the completed engineering and geodetic research, conducting the completed engineering and geodetic research materials in the prescribed manner at the expense of state funds.
The boundaries and territories of engineering and geodetic objects must be determined by the customer in technical assignments, taking into account the need to ensure the implementation of other types of engineering research for construction;
- justification of engineering protection from dangerous natural and man-made processes, as well as local monitoring of their development in the studied area.
During engineering-geodesic studies, the requirements must be met according to labor protection, environmental protection regulations and fire safety conditions. [13-18]:
The geodetic bases in the production of engineering-geodetic studies are:
State geodetic and level networks:
• Points of the 1st class satellite geodetic network;
• Triangulation and polygonometry points of classes 1, 2, 3 and 4;

Western European Journal of Modern Experiments and Scientific Methods
Volume 2, Issue 6, June, 2024
https://westerneuropeanstudies.com/index.php/1
ISSN (E): 2942-1896 Open Access| Peer Reviewed

• Leveling points of classes I, II, III and IV.
Base points of geodetic densification networks:
• points of the frame satellite geodetic network (KSGS);
• points of permanent satellite networks of base (base) stations;
• satellite geodetic density network (SGSN) points;
• 4th class, 1st and 2nd class triangulation and polygonometry points;
• II, III and IV class and technical leveling scores;
• points of geodetic networks for special purposes;
• planned and planned high-altitude research networks and photogrammetric concentration points; [19]:
The geodetic points of the reference network established with permanent markers and, in the cases specified in the task and the justification points of the long-term designation of the survey, must be registered and provided for safety monitoring. The manufacturer or technical customer, as well as the architectural and urban planning authorities, shall carry out in accordance with the established procedure. In remote and populated areas, points installed with permanent signs must be registered and delivered. The developer or the technical customer of the work must monitor the security. Adjustment of measurement results on data and research geodetic lines is carried out using the method of least squares with assessment of the accuracy of network adjustment results. [20]:
Information about the spatial (geocentric) coordinate system, as well as technical information on the transfer of coordinates from one system to another, is provided by the relevant state geodetic control bodies.

The scope of topographic surveys performed during engineering-geodetic surveys for the construction of buildings and structures.

Table 1.

Characteristics of polling places, names of structures	**The scale of the picture**
Areas with few underground and above-ground facilities, undeveloped and underdeveloped.	1:5000, 1:2000, 1:1000
Densely capitalized areas with a large number of underground and above-ground structures, as well as areas with new or reconstructed residential or microdistricts, urban development complexes, groups of residential and public buildings in these areas.	1:1000; 1:500; 1:200
Routes of linear objects in undeveloped areas	1:5000; 1:2000; 1:1000
Routes of linear objects in settlements of urban settlements, industrial and agro-industrial enterprises; railway stations; crossing and approaching roads is explained by transport and other means of communication.	1:1000; 1:500

Western European Journal of Modern Experiments and Scientific Methods
Volume 2, Issue 6, June, 2024
https://westerneuropeanstudies.com/index.php/1
ISSN (E): 2942-1896 Open Access| Peer Reviewed

Passages in water barriers.	1:5000–1:500
Coastal areas of rivers, streams and reservoirs.	1:10000–1:500
The state of riverbeds in simple and detailed photographs.	1:10000–1:2000
The shelf zone of the seas, sea straits and bays.	1:50000–1:2000

Note - It is allowed to increase or decrease the scale of topographic photography depending on the nature of the object being designed, as well as the natural and man-made conditions of the construction site..

Table 2.

Terrain features and maximum dominant slope angles	**Scales of topographical photography**				
	1:200	**1:500; 1:1000**	**1:2000**	**1:5000**	**1:10000**
Planned areas and paved areas with slopes up to 2°	0,25; 0,5	0,25; 0,5	0,25; 0,5	0,5; 1,0	-
Flat with slope angles up to 2°	0,25; 0,5	0,5; 1,0	0,5; 1,0	0,5; 1,0	1,0; 2,0
A hill with a slope angle of up to 4°	-	0,5; 1,0	0,5; 1,0; 2,0	1,0; 2,0	2,0; 2,5
Crossed with slope angles up to 6 °	-	0,5; 1,0	1,0; 2,0	2,0; 5,0	2,5; 5,0
Slopes greater than 6° with mountain and foothill angles	-	1,0; 2,0	2,0; 2,5	2,0; 5,0	5,0; 10,0

Notes: 1. When drawing up engineering topographic plans using larger-scale survey materials, the height of the relief section may be equal to the height, sections of the preliminary plan and survey materials.
2. The height of the part of the lower relief described by contour lines (isobats) when carrying out engineering-hydrographic works in rivers, watercourses and reservoirs:
Similar to the height of the relief section - for topographic photography of the coastal part; special and detailed measurements for - 0.5 m at a depth of up to 10 m; for light and reconnaissance probes - 0.5 m at a depth of less than 5 m and 1 m - at a depth of more than 5 m. [21,22]:
Use tools to search for underground utilities and ground-penetrating radars to determine the location of points of underground utility networks and facilities. The actual accuracy of determining the position of points should be confirmed by control geodetic measurements.
Average errors in the planned position of underground communications and structures in relation to the nearest capital buildings (structures) and research reference points should not exceed 0.7 mm on the plan scale. Limit the differences between the values of the underground depth obtained with the help of underground useful search tools and according to the control

Western European Journal of Modern Experiments and Scientific Methods
Volume 2, Issue 6, June, 2024
https://westerneuropeanstudies.com/index.php/1
ISSN (E): 2942-1896 Open Access| Peer Reviewed

field measurements should not exceed 15% of the depth of laying of communications and structures.
1/4 - at angles of inclination of the ground up to 2°;
1/3 - at angles of inclination of the earth from 2° to 6° (for plans on a scale of 1: 5000) and 1:2000) and from 2° to 10° - plans on a scale of 1:1000, 1:500 and 1:200 for;
For forested (closed) areas of the terrain, it is allowed to increase the values specified in the work program by 1.5 times. In areas with relief relief with slope angles greater than 6° (for 1:5000 and 1:2000 scale plans) and more than 10° (for 1:1000 scale plans). 1:500 and 1:200), the average errors in determining the heights of the characteristic points of the relief should not exceed 1/3 of the accepted height of the relief section. [23-26]:

Conclusion

Recognossing and geodetic Foundation are important in urban redevelopment projects, helping to carry out accurate planning and effective construction work. By applying advanced geodesic methods and integrating data with GIS, Urban Redevelopment processes can be implemented efficiently and stably. Future research should focus on improving data collection methods and further enhancing integration of geodesic data with other urban planning tools.

References.

1. Arabbayevna A. M. et al. THE GEODETIC BASIS FOR CREATING THEMATIC MAPS OF THE POPULATION AND TRADITIONAL AND MODERN METHODS OF DRAWING UP CARDS //American Journal of Technology and Applied Sciences. – 2023. – Т. 19. – С. 18-26.
2. Eshnazarov D. et al. Describing the administrative border of Koshtepa district on an electronic digital map and creating a web map //E3S Web of Conferences. – EDP Sciences, 2023. – Т. 452. – С. 03009.
3. Marupov A. et al. Methods for researching the influence of electromagnetic waves of power transmission lines on soil properties //E3S Web of Conferences. – EDP Sciences, 2024. – Т. 508. – С. 07002.
4. Абдукадирова М., Адилова С. ГАТ ТЕХНАЛОГИЯЛАРИ АСОСИДА РАҚАМЛИ АҲОЛИ БАНДЛИГИ КАРТАЛАРНИ ЯРАТИШ ТЕХНОЛОГИЯСИНИ ИШЛАБ ЧИҚИШ //Innovations in Science and Technologies. – 2024. – Т. 1. – №. 1. – С. 20-27.
5. Abduraufovich K. O. ESTABLISHING A PROCEDURE TO GENERATE CUSTOMIZED LAND USE MAPS UTILIZING REMOTE SENSING DATA //American Journal of Technology and Applied Sciences. – 2023. – Т. 19. – С. 85-91.
6. Abduraufovich K. O. Development of a Technique for Generating Unique Land Use Maps Using Remote Sensing Information //Texas Journal of Engineering and Technology. – 2023. – Т. 27. – С. 6-8.
7. Abduraufovich K. O. METAMORPHISM OF SEDIMENTARY ROCKS AND THEIR DEPOSITIONAL FORMS //Galaxy International Interdisciplinary Research Journal. – 2023. – Т. 11. – №. 12. – С. 697-701.
8. Abduraufovich K. O., Rakhimonovna K. K. LAWS OF DEVELOPMENT OF THE EARTH'S CRUST, PLANETARY RELIEF FORMS, ENDOGENOUS RELIEF OF

Western European Journal of Modern Experiments and Scientific Methods
Volume 2, Issue 6, June, 2024
https://westerneuropeanstudies.com/index.php/1
ISSN (E): 2942-1896 Open Access| Peer Reviewed

THE EARTH'S SURFACE //Academia Repository. – 2023. – Т. 4. – №. 12. – С. 146-155.
9. Abduraufovich K. O. SIMPLE AND ACCURATE METHODS OF SYOMKAS PERFORMED IN THE FORMATION OF THE EARTH //Academia Repository. – 2023. – Т. 4. – №. 12. – С. 17-24.
10. Marupov A. et al. Procedure and method of marking administrative-territorial boundaries on the basis of digital technologies //E3S Web of Conferences. – EDP Sciences, 2023. – Т. 452. – С. 03007.
11. Arabboyevna A. M. et al. CREATION OF A SATELLITE GEODESIC BASE ON THE TERRITORY OF THE REPUBLIC OF UZBEKISTAN //Finland International Scientific Journal of Education, Social Science & Humanities. – 2023. – Т. 11. – №. 3. – С. 1033-1039.
12. Mirzakarimova G. M. Linkages Between Land Tenure Rights And Land Reform Processes //Texas Journal of Agriculture and Biological Sciences. – 2023. – Т. 23. – С. 33-35.
13. Mirzakarimova G. M. LAND AND LAND MANAGEMENT //American Journal of Technology and Applied Sciences. – 2023. – Т. 19. – С. 31-35.
14. Mirzakarimova G. M. Remote sensing data: international experiences and applications //ITALY" ACTUAL PROBLEMS OF SCIENCE AND EDUCATION IN THE FACE OF MODERN CHALLENGES". – 2023. – Т. 14. – №. 1.
15. Rakhimonovna K. K. et al. IRRIGATION NETWORK CARDING ISSUES //Open Access Repository. – 2024. – Т. 10. – №. 3. – С. 104-108.
16. Khakimova K., Yokubov S. CREATION AND MAINTENANCE OF STATE CADASTERS IN THEREPUBLIC OF UZBEKISTAN //Innovations in Science and Technologies. – 2024. – Т. 1. – №. 1. – С. 85-93.
17. Madaminovich A. B. INVESTIGATION OF MEASURING SERIES IN GEODETIC WORKS //American Journal of Technology and Applied Sciences. – 2023. – Т. 19. – С. 92-101.
18. Akhmedov B. M. Methods of Calculating Function Range Calculations in Accuracy Assessment. Evaluation of Parametric Determination of Equation //Texas Journal of Engineering and Technology. – 2023. – Т. 21. – С. 57-62.
19. Akhmedov B. Using the fundamentals of the theory of measurement errors in performing geodesic measurement and calculation works //E3S Web of Conferences. – EDP Sciences, 2023. – Т. 452. – С. 03012.
20. Turdikulov K. Calculation of the stability of ground dam under seismic loads //E3S Web of Conferences. – EDP Sciences, 2023. – Т. 452. – С. 02021.
21. Salyamova K. et al. Long-term monitoring of earth dam of the Charvak hydroelectric power plant (HPP) considering the water level of the reservoir //E3S Web of Conferences. – EDP Sciences, 2023. – Т. 462. – С. 02050.
22. Salyamova K. et al. Numerical analysis for stress-strain state of an earthfill dam under seismic impact //AIP Conference Proceedings. – AIP Publishing, 2023. – Т. 2612. – №. 1.
23. Yusufovich G. Y. Shavkat o ‘g ‘li SY CARTOGRAPHIC RESOURCES USED IN THE CREATION OF ELECTRONIC AGRICULTURAL MAPS OF FERGANA

Western European Journal of Modern Experiments and Scientific Methods
Volume 2, Issue 6, June, 2024
https://westerneuropeanstudies.com/index.php/1
ISSN (E): 2942-1896 Open Access| Peer Reviewed

REGION //Finland International Scientific Journal of Education, Social Science & Humanities. – 2023. – Т. 11. – №. 3. – С. 1001-1009.
24. Ganiyev Y. Y., Qosimov L. M., Murodilov K. T. Creating agricultural maps using geo-information systems as an example of Bandikhan district //Finland International Scientific Journal of Education, Social Science & Humanities. – 2023. – Т. 11. – №. 3. – С. 1132-1140.
25. Ganiyev Y. et al. Examining the managerial structure and operational aspects of geodesy, cartography, and cadastre production //E3S Web of Conferences. – EDP Sciences, 2023. – Т. 452. – С. 03013.
26. Xakimova K. et al. Theoretical and methodological issues of creating the “ECO FERGANA” mobile application of tourist objects and resources of Fergana region //E3S Web of Conferences. – EDP Sciences, 2023. – Т. 452. – С. 05025.