

# Method of Cadastral Mapping in Local Town Cadastral Survey

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**Abstract:** This paper mainly focuses on the in-depth study of cadastral survey methods in urban cadastral survey, and puts forward some cadastral survey methods, such as above-mentioned technology, global positioning technology, geographic information system, aerial photography surveying and mapping technology, digital surveying and mapping technology, etc., to ensure the convenience and rationality of the application of cadastral surveying and mapping methods, to continuously improve the level of urban cadastral survey, and to ensure the smooth completion of urban cadastral survey.

**Keywords:** Urban cadastral survey; Cadastral mapping; GIS technology

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## 1. Introduction

At the present stage, at least targeted constructive clearly put forward the demand for land resources, showing an obvious upward trend, people's attention to the protection of land resources has also increased greatly. For the town cadastral investigation, as one of the basic work to strengthen urban cadastral management and deepening the land use system plays an important role, and its systematic and comprehensive line characteristics significantly, in the practical work, should strengthen the application of advanced methods of cadastral surveying and mapping, will increase the accuracy of cadastral survey information, provide the basis for the decomposition of land supply and demand, And standardize the land market. Grinding is possible, and the application of enhanced cadastral mapping methods in urban cadastral surveys is robust.

## 2. Deficiencies in Urban Cadastral Survey

First, the use of advanced advanced technology. In urban cadastral survey, the accumulation of advanced technology is a major problem that can not be ignored. In urban work, cadastral survey is an important part of the work, so its own resources have certain limitations. Town cadastral investigation department itself is not much more special, more available resources coupled with the government departments to the understanding of the town cadas-

tral investigation degree are absent, will cause artificially cadastral surveying and mapping, still in multiple middle town cadastral survey department focus on improvement, not conducive to improve the efficiency of urban cadastral investigation, will never cadastral surveying and mapping results accurately reflected.

In the urban cadastral investigation, the professional problem of personnel can not be ignored. Because the town cadastral investigation department cost comparison is limited, so the staff level is not high, the number of some of the cadastral surveying and mapping professionals in the town cadastral investigation department to participate in the enthusiasm to participate in, and robes merged together the town cadastral investigation department personnel, under the influence of the preparation of problems such as <sup>[1]</sup>, the town cadastral investigation department cannot to random expansion of talent pool, Therefore, the personnel of urban cadastral investigation department cannot be updated in real time, which is different from the development needs of The Times, thus seriously affecting the effect of urban cadastral investigation.

## 3. Cadastral Mapping Methods in Urban Cadastral Survey

### 3.1 Global Positioning Technology

Global positioning technology (GPS technology), mainly using the way of satellite positioning, for the urban

cadastral survey in the ground mapping work to provide the basis. At the same time, in the process of satellite positioning, fixed scale should be combined to display the complete situation of the surface of the town. But satellite photography, which is the key to GPS technology, is satellite photography, so it can't effectively detect terrain and so on. As for technology, the real-time monitoring feature of global positioning technology is remarkable, which is more prominent.

### 3.2 Aerial Photography Mapping Technology

This technology is mainly used is unmanned aerial vehicle (uav) photography technology, unmanned aerial vehicle (uav) photography, unable to surveying and mapping the comprehensive embodiment of the image, as a result of the unmanned aerial vehicle (uav) flight level height, not the content intuitive to display the whole town, but due to the uav itself belongs to the driving mode, a higher security, surveying and mapping content can be taken in dangerous places, Have higher task execution ability. At the same time, the uav itself is relatively light, can be higher in some shielding, the cost of uav, can meet the cost requirements. Therefore, uav surveying and mapping technology can ensure the successful completion of surveying and mapping tasks in a small range, and the accuracy and task completion degree can be better guaranteed. Economize on demand.

### 3.3 Geographic Information System Technology

In cadastral surveying and mapping, GIS technology has been demonstrated in the collation of field survey records. In the process of carrying out field investigation work, should be combined with the county as the unit, strengthen the construction of land use database, realize the independent and interrelated, combined with the technical specification requirements at the same time, the improvement of the specific investigation records, and combining with the graphic data of land, land data attributes analysis <sup>[2]</sup>, the integrated use of the mesoscale graphic database data, and so on. Geographic information system (GIS) plays an important role in cadastral mapping. Through the geographic information system, it can provide help for the staff to establish the relational database, and improve the storage and processing level of collecting various land information constantly. Through the data integration management, it can make the land division and utilization intuitive. In the process of using GIS technology to manage and store cadastral data, it should be carried out according to the centralization and decentralization of data, and give play to the auxiliary role of computer tech-

nology to manage and store exploration data better.

In the continuous development of GIS technology, ArcGIS product line provides users with a scalable and comprehensive GIS platform, and integrates comprehensive GIS functions for developers. Through the application of cadastral mapping, cadastral database is constructed, graphic data management is strengthened, and digitalization of cadastral data is guaranteed.

### 3.4 Digital Mapping Technology

Digital mapping technology is closely related to other technologies and does not exist independently to ensure the accuracy of the content provided. The key of digital surveying and mapping technology lies in data processing. Using big data comparison and cloud computing processing can better deal with GPS technology, RS technology and aerial photography surveying and mapping technology, so it is an important auxiliary technology. Digital surveying and mapping technology, can use the simulation function of the computer system, obviously present the basic information of the surveying and mapping target, at the same time, can also use the computer system, better planning and design of the development and utilization of land resources, and comprehensive comparison of numerous design schemes, reasonable statistics and summary of important elements, In order to ensure that the urban cadastral mapping work design scheme is consistent with the actual demand, to ensure the steady improvement of cadastral mapping standardization level.

## 4. Case Study

Taking the Sixth Geological Team of Hebei Bureau of Geology and Mineral Resources as an example, we have actively carried out urban cadastral survey. Based on the principle of sustainable economic and social development, many cadastral surveying and mapping methods have been widely applied, centering on the needs of planning construction land construction and development in this region, and combining the problems of space, resources and environment. Such as remote sensing technology, global positioning technology, geographic information system technology, digital mapping technology, so as to promote the smooth cadastral survey work.

For example: in remote sensing technology, remote sensing technology has been widely used in urban cadastral survey, which can achieve remote extraction and processing of the cadastral in this area. And the cost of remote sensing technology is not high, so it has a certain application value, and then help to improve the level of cadastral survey cadastral mapping work in this area.

Such as: In digital technology, in the cadastral surveying and mapping, the GPS technology and the total station to get a lot of application, make traditional cadastral surveying and mapping work in the form of triangulation appeared a great change, help to control the accurate, in the process of certain basic control wire layout, using the static global satellite positioning system, mainly is the adjustment in the GPS software, When obtaining the coordinates of the basic control traverse points, basic control points are further laid out, and the advanced total station is fully reflected. After obtaining the coordinate points, adjustment processing is realized for the sitting punctuation points to prevent errors in the surveying and mapping process.

## 5. Conclusions

In short, in the urban cadastral survey, it is imperative

to strengthen scientific and effective cadastral surveying and mapping methods, not only can constantly improve the work efficiency, but also can ensure the accuracy of urban cadastral surveying and mapping, to avoid unnecessary errors.

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