

# **Creation Cadastre of Educational institutions of Russia**

**Prof. Vladimir GOLUBEV, Russia**

**Key words:** Cadastre, the real estate, educational institutions, management.

## **ABSTRACT**

In Russia is present about 5000 educational institutions including 326 high schools with 370 branches. The common area of educational institutions makes 39 000 sq.m. Therefore was put task to create uniform cadastre of the real estate of all educational institutions of Russia.

The uniform information structure, database of the real estate was developed. The statistical analysis of the assembled information is executed. The diagrams, figures are submitted. It is offered to use it for more effective management of the real estate.

## **RUSSIAN ABSTRACT**

В России имеется приблизительно 5000 образовательных учреждений, включая 326 средних школ с 370 филиалами. Общеобразовательных учреждений владеют 39 000 кв. м.. Поэтому была поставлена задача создать единый кадастр недвижимого имущества всех образовательных учреждений России.

Единая информационная структура, была создана база данных недвижимого имущества. Выполнен статистический анализ собранной информации. Представлены диаграммы, рисунки. Результаты анализа предлагается использовать для более эффективного управления недвижимого имущества.

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# Creation Cadastre of Educational institutions of Russia

**Prof. Vladimir GOLUBEV, Russia**

Nowadays, in Russia two preconditions of creation of branch cadastres have appeared:

1. There are not enough and sufficient means for conducting a uniform territorial cadastre at local administrations.
2. Departments are interested in realization of an investment politics in the field of real estate management and land resources.

The Ministry of Education in Russia has subordinated educational institutions and the organizations in territory of all Russia.

There are about 5 thousand educational establishments, the enterprises and the organizations including 326 high schools with 370 branches in submission of the Ministry of Education. The general area of buildings and the premises subordinated to the Ministry of establishments of the supreme and average vocational training makes about 39000 thousand sq.m.

Therefore higher educational establishments are compelled to be condensed and lease premises (rooms) for reception of the extra-budgetary means necessary for the maintenance, repair, and major overhaul. It was leased 649,0 thousand sq.m. that equal to 2,5% from the available areas last year.

Along with the tenancy, many educational establishments on the contrary rent the areas and sometimes, use unadapted buildings, monuments of architecture and the subsidiary constructions under educational process, which demanding significant expenses not only on maintenance in working order, but also on restoration of their initial shape, including reconstruction and restoration. By higher educational establishments it is rented 1118,3 thousand sq.m. that equal to 4,2 % from the available areas; average professional establishments - 375,2 thousand sq.m. that equal to 6,1 % from the available areas.

The real estate is one of basic sources of the income of any state at market conditions. Therefore, any country at transition to market relations faces with a problem rational both efficient control the land and the real estate. It concerns also the country as a whole, branches and the separate enterprises. Any manufacture, any activity, including the educational process is almost impossible and may not be developed without the land, buildings, premises.

Naturally, since 1991 at transition to new economic relations in Russia the reforms concerning the land and other real estate began to be carried out. Its inventory began cadastral shooting and other kinds of works connected to the real estate management began to be carried out. The Ministries responsible for this work have appeared. Now in Russia legal and economic conditions for development of a cadastre of the real estate, including for separate branches are created. It is necessary for efficient control the real estate and receiving of the greatest possible extra-budgetary incomes.

Necessary base of an effective control system of the real estate, land resources are: a departmental cadastre, branch information system, a legal basis. Ministry of Education has charged to the Moscow State University of a Geodesy and Cartography to create such system. The purpose of development is creation of an effective control system of the real estate that will allow improving economic potential of an education system.

At the first stage the organizational structure of the program was developed.

It assumes the Agreement on joint activity Ministry of Education, State Land Committee, Ministry of Real Estate and Administrations of the regions interested in work on creation of a cadastre. The scientific part of the program is headed by Moscow State University of Geodesy and Cartography Moscow State University of Geodesy and Cartography under the direction of which are already begun and research works will be carried out in a number of high schools.

On the following slide it is possible to see the structure telecommunication and a supply with information of the program.

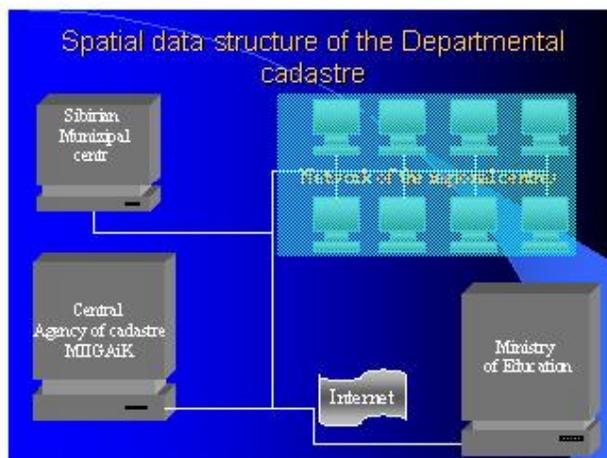


Fig. 1

The central cadastre bureau of Ministry of education of Russia will be connected to two inter-regional bureaus. Base Moscow State University of Geodesy and Cartography By the European part of Russia, on, and on Siberian- the basis of Siberian State geodetic academy.

Besides the network of the regional centers is created which functions are gathering the information from educational institutions, their preliminary analysis, preparation of recommendations for acceptance of administrative decisions and transfer of the information to inter-regional bureaus which will carry out the generalized analysis of a situation and transfer the information in the central information bureau of registration of Ministry of education of Russia.

It is supposed, that the information will be stored by the current moment time. Therefore any change concerning the real estate, will be updated at once in the allocated database. All

educational institutions will have the information department for this purpose. Reflection of the current situation and data transmission into regional bureaus are included to their tasks. Organizations professionally engaged in geodesy field may be involved for performance of surveying works.

Experts on legal and economic questions are supposed to be used in the inter-regional and in regional centers.

The inter-regional, regional centers and information centers of educational institutions on the real estate will be joined to a uniform information network, with using of network INTERNET. Their tasks will be common in many respects. So among tasks of an educational institution it is possible to note:

- Data transmission to the regional center which concerns the changes of use of the areas, with the purpose of maintenance of interactivity of system;
- Definition of factor of congestion of the areas;
- The analysis of use of the areas.

Improvement of professional skill of the experts working under the given program

Tasks of the regional centers are:

- Communication (connection) with educational institutions;
- Updating of databases on information from an educational institution and the organization of gathering of these data;
- Initial processing and the analysis of materials, their ordering;
- Development of recommendations for administrative decisions and data transmission in the inter-regional center.

Within three year in Moscow State University of Geodesy and Cartography hard works on creation of system of a branch cadastre are conducted.

For this time the information base of high schools, average educational institutions and other organizations is created.

While this information is stored in the central cadastral bureau.

But the information system already now is quite efficient and may be used for acceptance of administrative decisions, including investment.

On the following slides it is possible to see examples of various inquiries, including transition from one scale of a map to another and search of the concrete organization or an educational institution.

For example, on a map of distribution of high schools by regions, color shows density of high schools.



Fig. 2

It is possible to choose any region or city on a map. For example, Moscow.

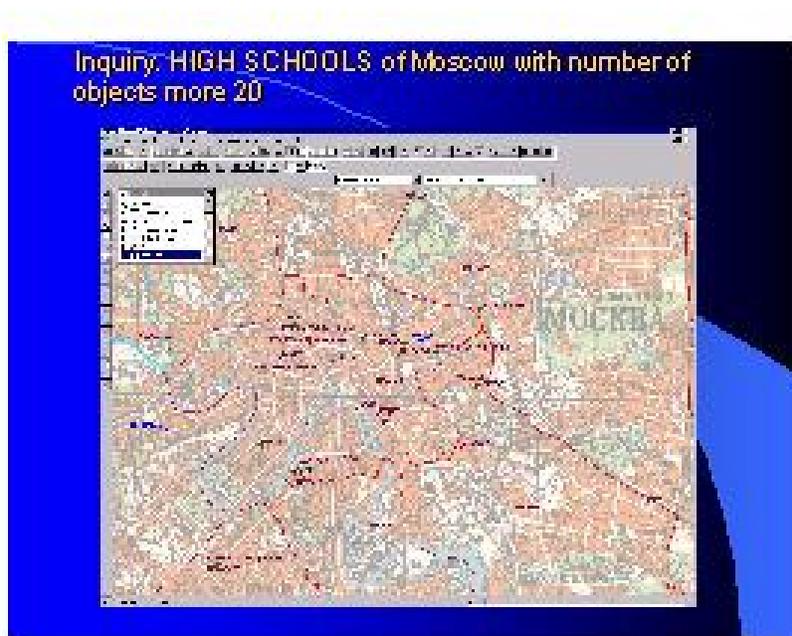


Fig. 3

Further the inquiry is possible - for example, to show all high schools of Moscow with number of objects more than 20. You may see Moscow State University of Geodesy and

Cartography here, having specified on which we shall receive the plan of territory Moscow State University of Geodesy and Cartography.



Fig. 4

In this case, it is possible to form various inquiries according the plan. For example, to show the plan of each floor, or a picture any of buildings

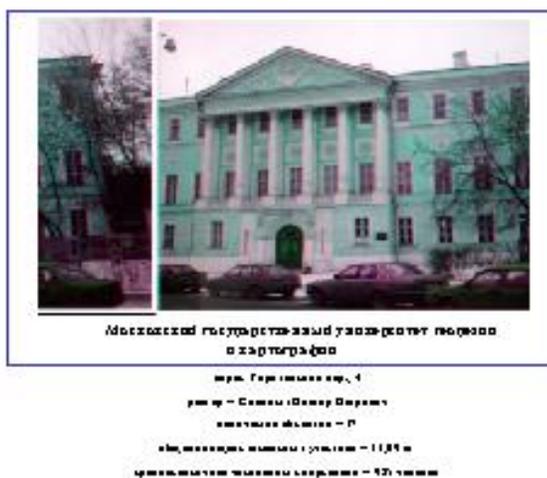


Fig., 5

Textual information is adhered to any graphic. (the Fig. 5) We can find a name of the rector, quantity (amount) of objects of the real estate, the area of the ground area, average number of workers of high School from photos Moscow State University of Geodesy and Cartography. Inquiries may be combined. For example, it is possible to generate inquiry to show buildings Moscow State University of Geodesy and Cartography with the area more than 1000 sq.m, amount of floors that is more than 2.

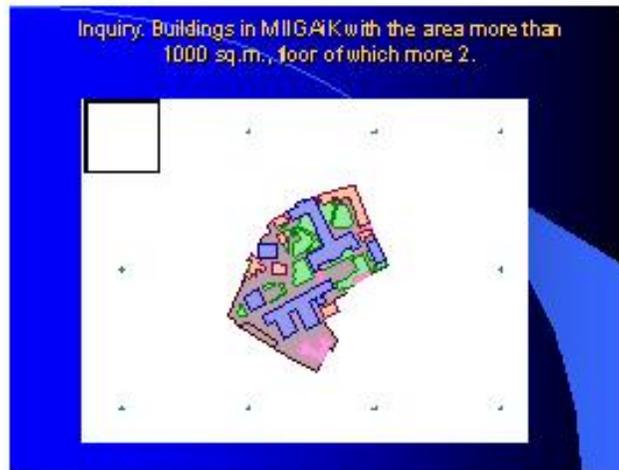


Fig. 6

The considered maps and plans represent the following scale line:

Map of Russia 1: 8 000 000

Map of cities of Russia 1: 100 000

Plans of territories of the organizations 1: 2 000

Thus both a scale line of maps and system of designations, codes of objects, formats of the data are selected so that the branch cadastre (In this case a cadastre of educational institutions) was constructed by a principle of a uniform cadastre of territories. I.e. any information from a branch cadastre may be imported to information databases of a uniform cadastre of Russia built by a regional principle. Thereby the uniform information field with the distributed database is created.

But the departmental cadastre of educational establishments provides not only the account and an estimation, but also management of the real estate and land resources.

For creation of such system it is necessary to solve the following tasks:

1. To define spectrum of the possible administrative decisions concerning standard situations in educational establishments, and taking into account existing legal documents.
2. To create model of management of land resources and the real estate.
3. To develop an investment policy of Ministry of Education of the Russian Federation in the field of real estate management.
4. To develop offers on perfection of legal base for more efficient control.
5. To define reserves of real estate use and land resources use by educational institutions, taking into account existing norms.

Investment programs will be realized at three levels:

- The organization (educational institution)
- Region
- All-country.

In the first case, the educational institution itself looks for the investor and solves with him questions of repair; input in build the new areas, construction of new buildings. It may be carried out due to rent.

In the second case, the regional cadastral center takes part in decision making, selection of the investor, drawing up of the project. The decision mentions, as a rule, a number of educational institutions and the organizations of the each region. Therefore the local administration may take part in investments with the purpose of sharing the repaired areas or put into operation buildings, the land areas.

If the decision is not accepted at first two levels, it may be accepted proceeding from the general information collected through all regions at a level of the Ministry of Education. It may represent itself as the investor of any project or find the investor.

It is necessary to note, that it is supposed to enter a control system with the help condominiums, trust control system through cadastral bureaus. It is possible to use hypothecary systems of crediting for investments in development of the land market in the future.

Now the system already may carry out some generalized inquiries, collecting under it the certain statistics. For example, on fig. 7 the total of objects of real estate of high Schools on regions is shown.

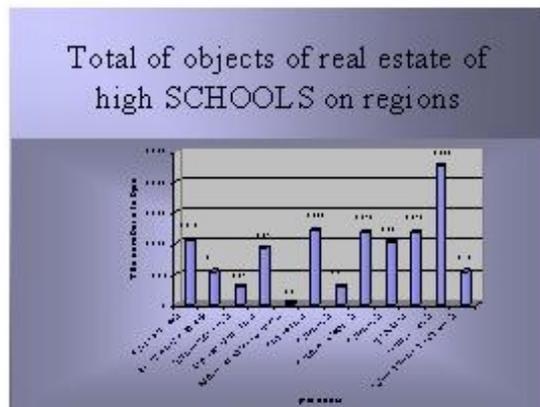


Fig. 7

As we see, the greatest amount of objects is located in the central region (2268), the least in the Kaliningrad area. (22).

In the following figure the statistics of actual expenses for operation of objects of high Schools on regions and types is given.

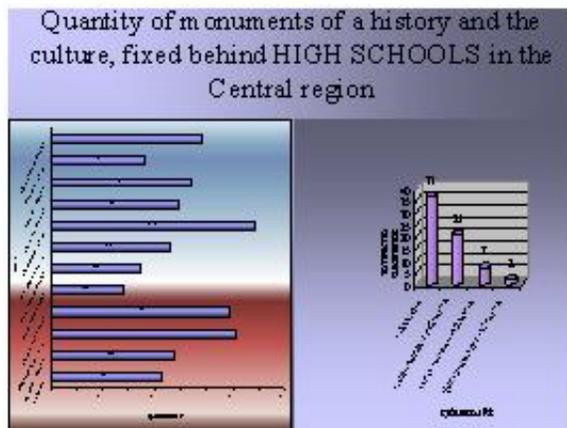


Fig. 8

Comparing these slides, it is possible to see, that the amount of objects and actual expenses for operation not always correspond with each other. It also confirms an inefficiency of today's management.

Another example of inquiries is the amount of history and the culture monuments, fixed for (belonging) High schools, which require the special attitude to them. On a slide such inquiry with reference to the Central region is pointed.

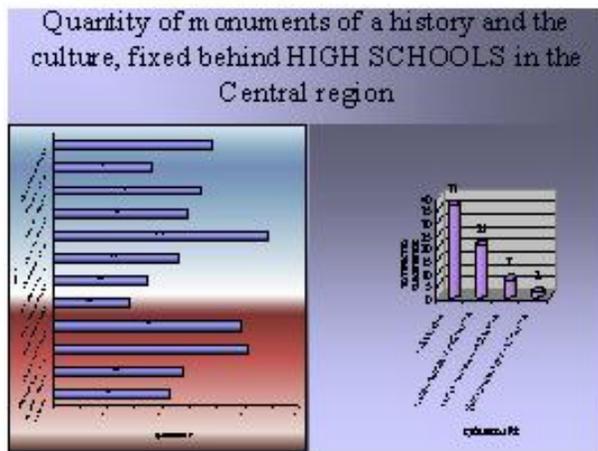


Fig. 9

On the following diagrams answers to inquiries of financial character are submitted.

There is a total of incomes of rent and the sum of its transfers from each region. As we see, North Caucasian region, Central Black Earth, Kaliningrad areas do not make deductions in the federal budget at all though the income receive not less, than in other regions. On the contrary, the Northwest region transfers almost the all income of rent in Federal fund.

On the following diagram it is possible to see what share of actual expenses for real estate maintenance (by types of High schools).

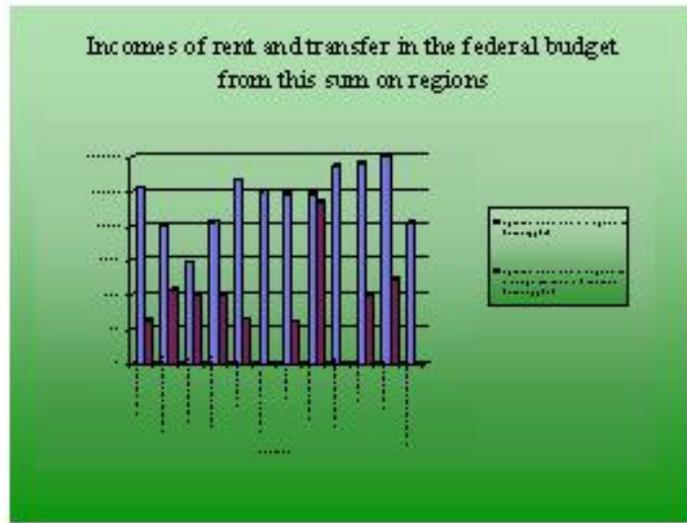


Fig.10

As we see most of all universities make expenses for maintenance of buildings and constructions, further economic High schools, etc.

On last slide the statistics at balance cost of various objects is given. For example, educational-scientific, improving health objects, hostels, residential buildings etc.

Fig. 11

Thus, the working information system including 7 regional information centers, two inter-regional centers and the central information bureau of the account of real estate and a ground cadastre of Ministry of Education of Russia is developed.

The information base contains some kinds of the data:

Electronic cadastral maps, which scale varies from 1:8000000 (the all-Russia map) up to 1:2000 for display of a site of buildings, premises, borders of the land plots belonging to educational institutions. Digital maps are connected among themselves, that easily allows carrying out transitions from the all-Russian map to regional and cadastral plans and on the contrary.

- The cadastral data connected to buildings and premises.
- The areas and borders of sites, catalogues of coordinates, results shootings, the areas of audiences and other premises (rooms), their functional purpose (assignment) and use, the analysis of repair of separate premises(rooms) (their condition, year of repair etc.), not used or irrationally used areas etc.

Further it is supposed to add:

- Data on functioning an educational institution. Data on faculties, faculties, laboratories their structure, specialties here is concerned. It is possible to show the Data in what organizations graduates are used.
- Data by an economic estimation of the land and the real estate.
- Data under decisions on investments at various levels: □
  - Educational institution;
  - Region;
  - The Ministry of Education.

The created system is the first experience of creation of a branch cadastre, which may be distributed to other departments further.

## **BIOGRAPHICAL NOTES**

**Vladimir Golubev** was born at 1949 in Moscow. At 1972 has graduated a speciality "Engineering geodesy" in Moscow institute of geodesy and cartography. At 1979 has protected the PhD thesis. He worked at department of geodesy as the assistant, the senior lecturer, the professor. In 1994-96 years was a head of the geodesy department. With 1990 year till 1996 was the dean of geodetic faculty.

Since 1996 till present time is a dean of Economic and Land Management Faculty, professor.

He is the lecturer on the following disciplines:

- Valuation of the real estate;
- Internets - technology;
- The theory of errors of geodetic measurements.

He is the scientific chief cadastre of the real estate of educational institutions.