The Responsibility and Involvement of the Surveyors in the Land Administration

Moshe BENHAMU, Yoav COLLER, Israel

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SUMMARY

The land administration practice in Israel involves both the private and the governmental sectors [7]. In the last years, there is a growth in the land activity due to a great demand of government and the private sector for development based on economic considerations.

The private surveying sector, which counts some 900 active licensed surveyors, is deeply involved in the planning and development projects and in cadastral activity [6]. The private surveyor, with his disciplines carries out a great variety of tasks in cadastral process, planning process and in management and coordination of planning and construction projects.

Because of that, the surveyors are thus challenged to contribute to the planning and management of urban and rural development in order to preserve and improve the quality of life for present and future generations [9].

- We believe that in the land administration practice:
- The public sector will continue to realize that the demand for a license surveyor in every project is critical.
- The cooperation between governmental and private surveying sector will be continue and a growing volume of the production work goes to the private sector [7].
- land administration issues - planning, developing and management of land, and the major laws regarding to those issues (Land Law, Law of Planning and Building), should figure prominently in the education of surveyors.
- The trend of reducing the size of the civil service is expected to continue [7]. The national agencies (Survey of Israel and the surveying and mapping divisions in the Israel Land Authority and in the Ministry of Building and Construction), will be limited to establishing and updating professional standards, directing research and development and managing the main events.

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1. LAND ADMINISTRATION

Land administration is part of the infrastructure that supports good land management [8]. The term Land Administration refers to the processes of determining, recording and disseminating information about the ownership, value and use of land and its associated resources [9]. Such processes include the determination of property rights and other attributes of the land that relate to its value and use, the survey and general description of these, their detailed documentation and the provision of relevant information in support of land markets. Land administration is concerned with four principal and interdependent commodities – the tenure, value, use, and development of the land – within the overall context of land resource management. Land administration is an activity with both scientific aspects (concepts, models methodology) and professional aspects (operations, management, governance).

The day-to-day operation and management of the four land administration elements includes national agencies, regional and local authorities, as well as the private sector in terms of e.g. surveying and mapping companies. The functions include: the allocation and security of rights in lands; the geodetic surveys and topographic mapping; the legal surveys to determine parcel boundaries; the implementation of construction planning.

2. THE SURVEYING PROFESSION IN ISRAEL

The surveying sector in Israel, counts some 1300 licensed surveyors. There are some 900 active licensed surveyors - Many of them (about 500) run private businesses, about 60 are employed by Survey of Israel (SOI) and government offices and others are employed by survey firms [6]. About 50% are members in the Association of Licensed Surveyors in Israel. The association is an active member of FIG and is represented in all the FIG commissions. Besides the Association of Licensed Surveyors in Israel, there are other sister societies, such as the Israeli Society of Photogrammetry and Remote Sensing and the Israeli Cartographic.

A license is necessary to carry out geodetic surveying [6]. The requirements for getting a license are set in “Surveyors Regulations (The Surveying Profession)” legislated in 1982. A basic condition to become a licensed surveyor is to be a graduate in geodetic engineering (4 years) or in surveying (3 years) from the Technion – Israel Institute of Technology or from a recognized institution of high education abroad. Also, for obtaining a license, the candidate should complete a two year long professional training, with the guidance of an experienced senior surveyor. The training should be focused on the complete procedure of mutation plan preparation included land legislation, field measurements, relevant geodetic and cadastral computations. SOI is responsible for surveyors licensing.

In each of the past six years, the division of Mapping and Geo-Information engineering at the Technion had some 40 students graduating in each of the past six years and approximately 10 graduates obtaining advanced degrees each year.

The surveying profession is, by and large, mainly concerned with practical issues [3]. The practical work is highly based upon science and technology, but as the activity in for example land use planning, land administration and land registration also involve solving conflicts concerning land use, ownership, boundaries etc, training in law and legal procedures are to be found in surveyor kit bag.

A Surveyor, through a combination of education and experience, understands and is able to delineate the physical characteristics of land [10]. A Surveyor uses applied mathematics and other technical and research skills to measure and plot: the dimensions of any portion of the Earth's surface, natural and Man-made structures, the lengths and directions of boundary lines, and the contour of the Earth's surface. Surveyors are also knowledgeable regarding planning regulations, building codes, wetland regulations and general land use requirements. Surveyors may offer a variety of services including:

- Cadastre and boundary surveys, mapping and computations include mutation plan preparation ;
- Precise geodetic computations ;
- Proposed plot plans ;
- Building location and foundation location surveys ;
- Field and topographic surveys ;
- Global Positioning System surveys ;
- Geodetic control surveys include design and analysis of control networks ;
- Precise surveying techniques for solving engineering problems ;
- Structure deformation monitoring ;
- Hydrographic surveys ;
- Geographic and Land Information System creation and maintenance;
- Land development plans ;
- Construction and transportation staking ;
- Monitoring of structural settling of buildings and other structures ;
- Photogrammetry surveys ;

3. THE SURVEYOR INVOLVEMNET IN THE LAND DMINISTRATION

The land administration practice in Israel involves both the private and the governmental sectors. Although the part of the governmental authorities is relatively dominant, there is a growing trend of deeper involvement of the private resources in the process [5]. This tendency is based on different background and motivations, some derived from ideologies and some based on economic considerations.

The increasing value of land available for development in urban areas and the high expense of building demand more and more complex and careful considerations and difficult

challenges [3]. Most of the planning and building projects, require experts in many fields icluding: urban planners, architects, civil-engineers, road and transportation planners, infrastructure engineers, real estate experts, land appraisers economists, lawyers, environment protection professionals, surveyors etc. All of these are supervide by the project administrative staff. Also, governmental and municipal authorities are involve include: SOI, the Ministry of Interior, the Ministry of Building and Construction, the Ministry of Justice and the Israel Land Authority (ILA).

The licensed surveyor with his disciplines – geodesy, cadastre, surveying, mapping and modern geo-informatics – is involved in most of the stages of a planning and building project. The surveyor accompanies the project from its inception through its implementation on the ground until its registration in Land Registry.
Because of that:

- The surveyor makes an effort to coordinate projects before their implementation include a final superposition of all the various levels of planning (include cadastre data) and ensure that there are no contradictions between them.
- The surveyor role is to coordinate between of all professionals involved in project planning.
- In many cases, the surveyor preventing fatal errors and financial loss Land and make the difference between a success and failure of a project.
- The public sector (ILA, SOI, Ministry of Building and Construction, etc) realized that the demand for a license surveyor in every project is critics. The public sector will continue managing project's that implementation by private surveyors.

Due to the central involvement of the licensed surveyor in the planning and development process and in the implemention of the buildimg project, the surveyor must be especially knowledgeable of the major and principal laws regarding to this process, including the Law of Planning and Building, Land Law and Survey Ordnance and Regulations.

4. THE SURVEYOR INVOLVEMENT IN THE CADASTRE PROCESS

Private licensed surveyors are deeply involved in the cadastral activity. One of their most important tasks is the preparation of the mutation plans of changes in the cadastre.

About 100-150 new land settlement blocks and 1000-2000 registration plans are completed at the SOI per year. It is a regrettable fact that approximately 400 registration plans await the checking (and approval) process for a considerable number of months [5]. It has been decided at the SOI to eliminate the waiting period. An effort will also be made to shorten the checking process itself to a minimal period.

The development of means necessary to shorten the checking period is already under way including developing sophisticated and uniform checking process and software, which will monitor the process within the agency and permit its effective management [12].

According to existing law, SOI may authorize private surveyors to execute the supervising of mutation plans prepared by other surveyors. In order to have such an authorization, a surveyor must prove his capability to execute the supervision on high quality level. In 2004, the director general appointed 10 selected private surveyors to whom authority is delegated to check the registration plans submitted and to approve the checked plans within a very short period. In 2004, about 3% from the mutation plans supervised by them. 7 additional supervision surveyors were authorized in 2006 and the rate rose to 25% of the total amount.

5. CONCLUSIONS AND RECOMMENDATIONS

The science and practice of surveying is familiar to all in its traditional applications in the surveying and planning of towns and cities, roads and other public works. we believes that the skills of the surveyor can make a vital contribution to promote sustainable development. Surveyors are thus challenged to contribute to the planning and management of urban and rural development in order to preserve and improve the quality of life for present and future generations.

We believe that land administration issues - planning, developing, registration and management of land, and the major and principal laws regarding to those issues (Land Law, Law of Planning and Building), should therefore figure prominently in the education of surveyors and universities should be encouraged to provide the appropriate courses. SOI and the Association of Licensed Surveyors in Israel, have to define as a main task, the continued professional development of the surveyors.

The public sector will continue to realize that the demand for a license surveyor in every project is critics. The cooperation between governmental and private surveying sector will be continue.

The trend of reducing the size of the civil service is expected to continue. The SOI and the surveying and mapping division in Israel Land Authority and in Ministry of Building and Construction, will be limited to establishing and updating professional standards, directing research and development.

The SOI and the Association of Licensed Surveyors in Israel, have to define the next main tasks:

- Necessary amendments to be made in the relevant laws and regulations to avoid conflicting and for there is a need for uniform standards and legislation in all the relevant disciplines .
- Updating professional standards include the survey regulations [1].
- Updating the education of surveyors so land administration issues - planning, developing and management of land, and the major and principal laws regarding to those issues, should figure prominently in the education of surveyors [8].
- Qualification and surveyor commitment to continued professional development [13].
- Cooperation between governmental and private sector.
- Enforcement of the survey regulations, ethics and standards [1].

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BIOGRAPHICAL NOTES

Benhamu M., Head, Division of 3D Cadastre in the Survey of Israel (since 2004). He is a geodetic engineer, a licensed surveyor and a registered professional engineer. He is currently a doctoral student in the Geodetic Engineering Division of the Technion – Israel Institute of Technology. Between 2002 and 2004 was a member in the 3D Cadstre R&D projects. Between 2000 and 2002 was lecturer at the Technion. He holds a B.Sc. Degree in Geodetic Engineering (since 1995) and an M.Sc. Degree in Geodetic Engineering (since 1998) , both from the Technion. Memberships of the Association of Licensed Surveyors in Israel. The Israeli representative to Commission 8 of FIG. His main fields of Interest include GIS/LIS, Temporal GIS, Cadastre, 3D Cadastre and Photogrametry.

Coller Y., a licensed surveyor (since 1997) and a registered professional engineer (since 1996). Graduated from Geodetic Engineering division of Technion – Isarel Institue of Technology. Worked in a private firm as a surveyor (1996-1998). Head of mapping division in Israel Land Authority (1998-2005). Head of mapping and registartion division in Israel Land Authority (since 2005). Head of mapping and registration department in Israel Land Authority (since 2007).

CONTACTS

Benahmu Moshe
Survey of Israel
1, Lincoln St.
Tel Aviv - 65220
ISRAEL
Tel. + 972-3-6231829
Fax + 972-3-5611565
Email: bhmoshe@mapi.gov.il
Web site: www.mapi.gov.il

Coller Yoav
Israel Land Authority
125, Menachem Begin St.
Tel Aviv
ISRAEL
Tel. + 972-3-7632368
Email: yoavk@mmi.gov.il
Web site: www.mmi.gov.il