

# **The Necessity for Interdisciplinary Cooperation as a Part of FIG Activity**

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**Key words:** interdisciplinary cooperation, surveyor's key role, surveyor's position

## **SUMMARY**

Building development is a difficult challenge. 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. The strong public demand to protect communal interests and benefits results in governmental and municipal bureaucracy. A survey carried out in Israel shows that in order to complete an apartment, the building contractor needs the involvement of 600 professionals and 41 authorities. The authors assume that a similar survey in other countries would show similar results.

The main participants in the development procedure are: urban planners, architects, road- and transportation planners, real estate experts, land appraisers economists, lawyers, environment protection professionals – and surveyors. The surveyor is involved in most of the stages of a development, and he, with his disciplines – geodesy, cadastre, surveying, mapping and modern geo-informatics – acts as an essential integrator of the entire play and all the actors.

The authors propose that FIG create an official and permanent forum for "interdisciplinary concerns". It would contribute to building development as a central economic activity, and would strengthen the surveyor's standing in that "latent", but obviously existing interdisciplinary society of professionals. Furthermore, greater and more encompassing cooperation and a deeper understanding of each other's professional interests would contribute to better legislation and standardization.

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## **1. THE AUTHORS' GOAL**

The authors would like to present their idea of setting up a joint forum of all professionals involved in project planning. They have two goals:

- To create close ties between the various planners while understanding the needs of each other.
- To achieve *greater prestige* for the status of the licensed surveyor among the planning staff.

This forum would be founded in the framework of FIG, which has representatives from more than 100 countries. Since it would be coordinated by licensed surveyors with practical and academic experience, it would, without a doubt, contribute towards improving surveyors' status and eventually lead to creating new legislation and ways of operation. By all professionals brainstorming together, we will achieve a more in-depth professional understanding of how to successfully "complete a project."

## **2. THE CHARACTERISTICS AND COMPONENTS OF A MODERN DEVELOPMENT PROJECT**

Technology has made huge strides in the past 20 years in almost every field relating to city and building planning, both in the devices used and computerization. Today, we are capable of building more complex and attractive projects for residential housing, industry, etc.

At the same time, projects have become more expensive because they are more complex and because of the rising expenses in metropolises. We see today the phenomenon that projects require experts in many fields, including attorneys, economists, and other professionals. All of these are supervised by the administrative staff behind the project.

In the preliminary investigations, the land is inspected to gauge the possibilities of what can be done with it. Geological tests are performed to check the quality of the land, and its availability vis-a-vis the owner. Economic feasibility studies are carried out to find out if the project is truly attractive. These examinations are done by geologists, assessors and economists.

Following these preliminary tests are concluded, the "main planning" then takes center stage: the approval of the various building committees which must be convinced that the project

will successfully develop the environment, will not spoil the scenery and will be financially feasible.

The various planners then enter the picture: architects, road and traffic engineers, surveyors, landscape planners, infrastructure engineers, etc.

Each of these disciplines has their own laws and ordinances, and there is no one body today which is responsible for coordinating between them. This result is that each expert acts according to the established standards and legal requirements of his discipline in total disregard of the requirements of other planners.

We are aware of conflicting regulations between the various disciplines and even conflicting regulations within one discipline.

Israel has 3 major and principal laws regarding the development process:

- Land Law
- Law of Planning and Building
- Survey Ordinance and Regulations

In addition, there are numerous additional laws and regulations regulating electricity, traffic, infrastructure, etc.

Many years of experience has helped us to reach the indisputable conclusion of the need for correlation, uniform standards and legislation among all the disciplines. The realization is growing in Israel that a unique government institution, an overall "Ministry of Building" is needed to handle all topics regarding construction development. This ministry would be responsible for legislation and enforcement in all subjects involving the planning and carrying out projects.

### **3. THE SURVEYOR'S KEY ROLE**

Surveyors are pivot part of the planning and implementation staff.

The surveyor is the person in the planning staff who accompanies the project from its inception through its implementation on the ground until its registration in Land Registry. This is why the surveyor must be especially knowledgeable of the various laws.

Because of his involvement in preparing City Building Plans, he must understand and be familiar with the Law of Planning and Building. Because of his involvement in the physical implementation of the project, he must be familiar with the regulations and standards regarding surveying and must be involved in the critical stages. Since he is involved in the preparation of plans for "parcelization" and in their registration in the Land Registry, he must be familiar with the Land Law.

This is the reason why, of late, licensed surveyors make their efforts to coordinate projects before its implementation. They prepare the final superposition of all the various levels of planning and ensure that there are no contradictions between them.

#### **4. THE SURVEYOR'S POSITION AMONGST INTERDISCIPLINARY PROFESSIONALS**

As mentioned before, in recent decades we have been witnessing the astonishing development of technology and information in the various professional fields connected to planning and construction. Surveyors are important and decisive in implementing this technology.

Implementing the GIS and various modern databases in the cadastre, surveying and data management, has turned surveying into a hi-tech industry.

The academic and professional requirements of the licensed surveyor are not less than those of other hi-tech professionals and in fact are even more.

Moreover, due to the central involvement of the licensed surveyor in the planning and implementation process of development, the licensed surveyor's role can supersede that of all the other involved professionals.

Nevertheless, in keeping with its anachronistic former role, the licensed surveyor does not receive the prestige that he deserves. Most clients still believe that the surveyor is a simple mapmaker who does nothing beyond surveying, and they think: "we can manage without a surveyor, we do not really need him".

Very few are aware of the fact that the surveyor's involvement in the planning and / or implementation processes is pivotal in preventing fatal errors and financial loss and could make the difference between a success and failure of a project.

There is an inclination to believe that the community of surveyors (both in private, in governmental and public sectors) is small and insignificant, perhaps because of their low numbers relative to other engineering professionals, which gives rise to the misconception that they are less vital to the planning staff than other professionals. We believe that this attitude is without foundation and it is the call of the hour to change it.

To reinforce our status and to give it the prestige it deserves, we would like to suggest creating a forum which will interact with relevant international and national, governmental and private bodies of other related disciplines. It is essential that FIG will be squarely behind the proposed interdisciplinary forum. FIG background is vital for the creation and the successful operation of such a forum, which will increase awareness of the central role and the basic importance of licensed surveyors, and will improve surveyor's position and reputation.

## BIOGRAPHICAL NOTES

**Joseph Kraus** graduated from Surveying College in 1962. He worked for 6 years in the Survey of Israel where he gained experience in cadastre. In 1966, he received his Licensed Surveyor license. In 1969, he opened his own surveying company.

His company offers a full range of planning services with an emphasis on preparing background planning for City Planning plans. He has carried out extensive surveying for background planning in precise engineering works and primarily engages in the field of cadastral surveying.

His office employs 20 engineers and technicians. The office is equipped with the modern equipment and software, and has taken part in geodetic plans. The office has carried out large-scale photogrammatic surveying.

Mr. Kraus is a member of the Licensed Surveyor Association since 1966, served consecutively as a committee member since 1978 and is the president of the Association since 1999.

**Dr. Joseph Forrai** was awarded M.Sc.(1974) and D.Sc.(1980) degrees at Technical University of Budapest, Hungary. Dr. Forrai was Lecturer and Senior Lecturer at TUBudapest, Tel Aviv University, Israel Institute of Technology (Technion) and Bar Ilan University (Tel Aviv) since 1976. Appointments at the Survey of Israel: Chief of Research Division (1987-1992); Head of Photogrammetry Department (1989-1993); Deputy Director General (1993-1994), Chief Scientist (1995-2003), Deputy Director General for cadastre (since 2003). Professional and research background (partial): crustal movement detection; photogrammetric data acquisition (national GIS topographic data base); permanent GPS station network; GPS support for geodynamics; improvement of national cadastral practice. Memberships of the Israeli Society of Photogrammetry and Remote Sensing (president between 1995-2001); Association of Licensed Surveyors in Israel (responsible for FIG relations); Israeli Cartographic Society.

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