



# The role of education in surveyors' commitment to society and sustainable development



Professor Dr-Ing Holger Magel, FIG President

Adapted from his keynote address at the opening ceremony of the 8th SEASC in Bandar Seri Begawan, Brunei Darussalam

**T**HE more the world and its societies are changing, the more the profession of surveying and survey professionals have to be able to change. That is the reason why I chose the motto 'Shaping the Change' for my FIG presidency. It is a very simple and right truth: You only can shape the change proactively if you are prepared for it, instead of waiting passively for what will happen. Being prepared, to me, means that you should know your identity and commitment and that you have the ability, knowledge, competence and skills to face the challenges and fulfil your role — all based on solid education, continuous professional development (CPD) and values.

One of the most successful, highly acknowledged German 'global players', the international consultant Prof. Roland Berger, once said: "*Values, ethics and paradigms of commitments and achievements are one of the seven key factors of a growing economy and wealth and a basis for innovation and new ideas and products.*" As a global umbrella organisation and 'mother of all surveying and surveyors', FIG has not and cannot have personal values and ethics. But its members and member organisations do have their individual or common values and ethics based on religious, historical and cultural contexts, aspects and habits.

FIG has a clear mission and commitment. FIG and its members want to serve society and to contribute to building a more just, peaceful and sustainable world. This means that our

partners on a global stage (the international associations of geodesy, cartography, photogrammetry and remote sensing, hydrography etc) as well as our members on a local stage, must try to contribute to the implementation of the United Nations Millennium Development Goals (UNMDG) — especially in the fields of property rights, secure tenure, access to land, water and natural resources, data management, urban and rural resettlement, infrastructure development and the provision of reliable real-time data from space by GNSS, remote sensing etc. FIG needs to support the reduction of the 'digital divide', as it was recently described by UN Secretary General, Kofi Annan, at the Information Society Summit in Tunis.

Surveyors have extraordinary skills in the fields of spatial data infrastructure (SDI) and GIS, they are part and partner of the 'information society' and can provide for each country a true geo-referenced framework. At the FIG working week in Cairo, our sister organisations and related associations established a Joint Board of Geospatial Information Societies (JBGIS). JBGIS and all its members are committed to finding solutions to use these technologies for building bridges for a better life — especially in poor and developing countries.

One decisive attitude to reaching our commitment is to remove the 'silo' mentality of disciplines and governmental institutions. Instead of 'silos' we need interdisciplinary approaches; by building

and using geo-referenced data base infrastructures, we can achieve a more sustainable impact. The reason for it is very simple: About 80% of daily decisions at a national or local level, whether in economy, finances/taxation, demography, spatial planning, environment, hazard areas, security, infrastructure, housing, cultural heritage etc, are spatially or — like we say — geo-referenced. That demonstrates clearly, surveying is a central pillar of each country and its economy.

We still have not reached the utmost of all the possibilities of GIS and SDI technologies. To use them to their maxim, surveyors would not only have to be excellent technicians, producers and managers of data, but also excellent managers of property, land, marine and construction.

The famous Spanish writer, Ortega y Gasset, once said: "*To be a good technician it is not enough to be a good technician only.*" What does this mean in our context? Surveyors should play a visible role in society and they should try to become actively and additionally involved in the fields of spatial planning, urban and rural development, valuation, real estate management and decision making — in fields which are traditionally not regarded as surveyors' domains! I know that this will not be an easy target to reach. Again, it is a question of attitude and mindset, but so we can understand the needs of society and institutions, it should, at least, be attempted. My experience is more or less disappointing: If GIS people do not get involved enough in local policy or spatial planning and land management, a lot of their work remains a nice theory or model without much practical use!

Depending on the history, tradition and other particular national contexts, surveyors still play different roles around the world. There is, on one side, the classical role of being 'guarantees and custodians of property and precise survey engineering' and on the other side, a more and more integrated and active role in decision making on natural resources

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and environmental protection, in changing social and economic needs of urban and rural societies, and in disaster and risk management. FIG's role is to enhance all of these changing roles and support the different approaches to new activities due to changing technologies and new chances for, or threats, to our profession.

A main focus of FIG's work lies on education and CPD. The reason is very clear; it is the knowledge and resulting competence. Besides the right values, commitment, technologies and institutional framework, one of the most decisive factors for shaping the change of our profession and for serving communities and sustainable development is education and its twin brother/sister, CPD. All UN reports and national governments show and know it: Education is the crucial key to innovation, wealth, better environment, poverty reduction and even peace and equity.

There exists different university education models within FIG, depending either on a more central European, Spanish-Latin-American or Anglo-Saxon philosophy. One will meet different names (and contents) like land survey, agrimensura, geomatics, geo-informatics and geodesy. One common truth must prevail in all models: The education should be future oriented and comprehensive. Not only should it be focussed on modern survey technologies, techniques, data gathering and modelling, but also on the whole environment of neighbouring disciplines and on networking and collaboration with them.

Survey/geomatics/geodesy education should comprise at least mathematics, physics, legal, socio-cultural, survey, civil engineering, planning, information science, economics, geo-basis data management, valuation, mapping and cartography. At my Technical University of Munich we even have the ambitious goal to cover the range 'from the single parcel to the planet Mars'. As a second goal we aim for the education of 'well-grounded specialised generalists'.

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To avoid being a study (and profession) of 'second choice', we should attract the best students. We should convince them this is a field which will surely provide the most interesting studies because it provides chances for each talent; mathematics, analytical thinking, measuring, counting, legal administration, creative and holistic planning, valuing, weighing and arguing your point.

Survey education, everywhere, should aim for excellence in curricula and students, otherwise the other disciplines will force us out. This education must be followed by life-long CPD.

In a more and more globalised world there will be, at the end, no closed markets anymore. More and more single markets will arise. We need technical standards, like ISO, as well as frameworks and rules on mutual recognition of education and qualifications. FIG is working in trying to get more equality amongst professionals.

Universities must be aware of changing technologies, markets and especially changing societies with global and national challenges! This happens in too few universities, but one good sign is that more and more universities have joined FIG as academic members and thus are members of a community of surveyors with worldwide information about what is happening within and around our widespread and manifold profession.

Each profession needs permanent information about the changing world. With representation in more than 110 countries, FIG, and its ten commissions, can serve as a global early warning system. Against the background of growing civil society and increasing decentralisation and subsidiarity, all surveyors should proceed to play manifold roles as 'experts for low land realities', whether as global and local NGOs or as officials and institutions. It is still my personal vision that we should share and aim to become:

- Enablers for local people, CBOs and NGOs.
- Mediators between citizens and authorities.
- Advisors to politicians and state institutions.

I am confident FIG can transform this vision to reality.

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