

Ontario Professional Surveyor



on the cover ...

**AOLS Strategic Planning
Group at Elmhirst's Resort
in Keene, ON**



also in this issue ...

**Crisis, What Crisis?
Land Registration Update
You are in the business of Surveying
whether you like it or not
Survey Law Education: New Content
and Delivery for Students**

plus our regular features:

**Educational Foundation
News from 1043
Book Reviews
Sites to See**

ONTARIO PROFESSIONAL SURVEYOR



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ON THE COVER ...

A Strategic Planning Workshop was held at Elmhirst's Resort in April to assess the progress of the AOLS Strategic Plan to date and set more key priorities. See the AOLS Strategy "At a Glance" (2012-2015) on pages 21 and 22. The photo on the cover includes: Front row from left to right: Nigel Day (kneeling), Blain Martin (behind Nigel), David Brubacher, Susan MacGregor, Paul Benedict, Dasha Page, Travis Hartwick, Dan Dzaldov, Ryan Seguin, Patrick Sun, David Horwood. Back row from left to right: Russ Hogan, Bob Halliday, Bill Buck, Eric Ansell, Izaak de Rijcke, Jeff Fee, Art Leitch, Sophie-Rose Coté, Michael Matthews, Julia Savitch, Jim Johnson, Michael McKechnie, Erik Lockhart (leaning forward), Mike Power, Peter Richardson. Participants who were absent from the photo: Al Jeraj, Chris Musclow, Julia Meldrum Smith, Jason Wilband, Bret Magee, Richard Murray, Paul Thomsen.

*Professional
Surveying
in
Ontario*

*encompasses
the
Disciplines of*

*Cadastral,
Geodetic,
Hydrographic,
Photogrammetric
Surveying
&
Geographic
Information
Management*



President's Page

By Paul Benedict, O.L.S., O.L.I.P.



Right now there is a lot going on at the Association and on the National scene. I think that's a good thing. I will use all of these goings-on as my excuse as to why I am having such a hard time writing my President's Page. There is so much I want to say and talk about yet I am only given one brief page.

The Association has purchased a license for GoToTraining. This will allow us to put on our own distance learning programs. There will be some short on-line courses put together on the various Public Awareness Committee materials that are available and on the upcoming regulation changes in the very near future. These courses will be put on more with an eye to familiarizing everyone with the technology and getting the bugs out more than the actual content.

The proposed changes to Regulation 1026 have been sent out for ratification by the membership. If approved, the changes will bring in mandatory continuing professional development reporting. The other significant change will be the ability of the Academic and Experience Requirements Committee to evaluate a candidate based on a competency approach rather than a course-based approach.

Council has been dealing with the lack of records research and the amount some members are charging for their notes and records. It seems like such a simple issue and something that Council should be able to deal with quickly and just move on. If only life were that simple. It turns out that, on legal advice, we lack the legislative power to set a fee for records research; then there is the Copyright Act, then there is the Competition Bureau, then the Surveys Act and so on and so on. What Council has decided to do on the issue is to re-issue Bulletin 2007-1 and ask the members to pass the Bulletin as a By-Law. As a By-Law, ratified and approved by the membership, Bulletin 2007-1 will have more teeth in enforceability. If that doesn't work a legislative solution may need to be sought.

The other part of the issue on records research is the apparent lack of it going

on across the province. The answer to this is a mandatory Province-Wide Survey Records Index. Council has decided that this is the direction the Association should and must take however, as they say, "The devil is in the details." A small task group will be working on the details of how it will all work. More communications and discussions around this issue will be undertaken. A tentative time frame for the task group to report back is September.

From an Association's perspective it appears that our members seem to have a general lack of business acumen. This deficiency shows up in a number of areas; complaints being just one. I will not claim to be all knowing in this area, but as a business owner, I see this lack of business sense reflected in the ridiculously low fees being charged that, it seems to me, would be just enough to pay for the gas in the truck let alone anything else. I see this lack of proper pricing in terms of corners being cut – perhaps research not being done. I concur with Past President Al Worobec's comments on this topic in his President's Page a few years ago. In my opinion, the inability of our membership as a whole to charge the appropriate fee for our services is the root cause of so many of our problems as a profession and as an Association. One simple solution that I heard that would solve this problem immediately is to bring all of our spouses into one room and then tell them that their significant others had left \$100 000, \$500 000, or a million dollars on the table last year by under charging. Ask them what they could have done with the extra money. I sense the problem of low fees would be solved overnight but that wouldn't solve our continued lack of business knowledge. Council has requested that the Continuing Education Committee work on providing us with better business training. Or maybe the solution above could help the AGM Planning Committee provide for an "entertaining" accompanying persons' program next year.



Land Registration Updateⁱ

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By William D. Snell, O.L.S., C.L.S., Examiner of Surveys, Policy and Regulatory Services Branch, ServiceOntario, Ministry of Government Services, June 2012

A. INTRODUCTION

The Ontario land registration system has been acknowledged internationally as a leader in providing e-solutions and innovation. To ensure that the system remains at the forefront, there is a continued commitment to modernization and expanded online service delivery, including online services. This article provides an update on the status of several initiatives that support those objectives.

B. AUTOMATION AND ELECTRONIC REGISTRATION

The automation of the land registration records and conversion of the registry records to land titles project was completed on March 31st, 2011 and all of the 5.8 million parcels in the land registration system are now automated and, with the exception of approximately 36,000 registry properties, are all recorded in the land titles system.

As of November, 2010, electronic registration has been mandatory in all 54 land registry offices. Since the introduction of electronic registration in the Middlesex Land Registry Office in January 1999, over 16.8 million documents have been registered electronically.

C. REGISTRY NON-CONVERT PROPERTIES

We have been successful in converting virtually all recorded land in the province to land titles, however approximately 36,000 properties remain in registry. The following are the main reasons why the properties could not be converted to land titles:

- *Planning Act* issues
- Description issues
- Easement and water issues
- Conflicts of ownership and inability to establish owners
- Breaks in the chain of title

During the course of the automation and conversion project, there have been two passes through the registry records and, after a qualitative assessment of the records, every effort has been made to convert these properties to land titles. Accordingly, if a property remains in the registry system, an issue was identified that would not allow the conversion to take place. The relevant land registry office has the information gathered by the automation team that outlines the rationale for the non-convert and this information is available to clients. Although we attempted to capture all of the reasons for a particular non-convert, we cannot guarantee that all issues are covered in the non-convert report. A full title search is required to determine that all of

the issues are identified and dealt with in order to complete the appropriate application to bring the land into land titles.

The process of converting a registry PIN to LTCQ is set out in Bulletin 2004-02. This process will work for many of these properties; however there are some title defects that will require further steps such as an Application for First Registration or a Court Order.

D. NEXT GENERATION TERAVIEW

Teranet Inc. and the Ministry of Government Services (MGS) are currently working to re-platform the Teraview software. The proposed new version of Teraview, known as Next Generation Teraview (NGTV), is a major undertaking that is expected to take a number of years to complete. The project will enhance the functionality, stability and efficiency of the electronic land registration system. High level requirements have been confirmed between the two organizations and work is ongoing.

To assist in finalizing the requirements, a stakeholder consultation group has been established that consists of representatives of the legal and surveying professions, financial institutions and title insurers, among others. In addition, an online survey was conducted and a series of focus group discussions involving individual users have taken place. The feedback is being taken into consideration as the vision and design are developed.

Some of the items that have been introduced or are underway as part of the ongoing modernization include:

- Extended Search & Document Creation Hours – Effective April 1st, 2012 the hours have been extended to:
 - Monday to Thursday – 4 a.m. to midnight
 - Friday – 4 a.m. to 9 p.m.
 - Saturday – 9 a.m. to 6 p.m.
 - Sunday – 9 a.m. to 9 p.m.
- Online Access to Property Index Maps – Property Index Maps will be available for viewing and printing remotely and at the local land registry office. This will replace the current Teramap with expected availability in the next year.
- Digital imaging of documents with sketches attached, which are currently available in paper, is scheduled to be completed in the next year. Planning is also underway to image many of the remaining historical documents.
- Automated Highways and TransCanada PipeLine Registers.

E. ORGANIZATION

There are 54 land registry offices in 53 locations across the province. Some of these offices have been integrated

with ServiceOntario counters that provide other services such as health cards and driver's licences, while other land registry offices remain as stand alone offices.

To make efficient use of staff resources, work is distributed, often electronically, across the province to ensure consistency and timely service. Five land registry offices have been designated to process complex work such as condominiums, subdivisions and applications for absolute title that are forwarded from a selection of other offices.

There has also been a separation of staff performing management functions from those providing registration support. There are now 3 senior operations specialists and 15 operations specialists located throughout the province who deal solely with registration matters and who have no managerial responsibilities. All of the specialists are former land registrars or deputy land registrars. They bring many years of experience and knowledge to assist both staff and clients. The initial point of contact remains the staff of the local land registry office.

In the Policy and Regulatory Services Branch, the Director of Titles continues to oversee the integrity of the land registration system and the development of policies and procedures to support the legislative mandates. The Examiner of Surveys oversees plans and descriptions in the system as well as supporting the Director in his or her duties under the *Land Titles Act*, *Registry Act*, *Land Registration Reform Act*, *Boundaries Act* and the *Condominium Act, 1998*.

F. RECENT LEGISLATIVE PROPOSALS

Commencing in 1984 with the passage of the *Land Registration Reform Act*, the land registration system has undergone significant modernization. The automation of the records, the conversion of the registry records to land titles and electronic registration are all notable achievements that support the goal of providing effective and efficient electronic service delivery to the users of the land registration system throughout the province.

Bill 55, the 2012 Budget bill, contains proposed legislation and proposed amendments to existing legislation that, if passed, would give the government the flexibility to pursue new options for service delivery, building upon the customer service commitment and strong partnerships that have made ServiceOntario a leader in government service

delivery. The proposed legislation also supports the ongoing commitment to modernize through innovation such as expanded online options for service.

The proposed changes to the *Registry Act*, *Land Titles Act*, *Land Registration Reform Act*, *Boundaries Act* and the *Condominium Act, 1998* provide the framework for and enable further improvements and modernization. The proposed amendments include:

- Transferring the powers of the Director of Land Registration to the Director of Titles and removing references to the Director of Land Registration and land registrars. The proposed changes would simplify the existing legislative authorities which will rest with the Minister, the Director of Titles and the Examiner of Surveys.
- Providing the Director of Titles with broader authority to delegate powers and duties.
- Repealing the requirement that there be at least one land registry office for each upper tier municipality and territorial district.
- Deleting prescriptive requirements relating to registrations and records retention and authorizing the Director of Titles to specify those requirements. Many of these provisions were established when all the records were maintained in paper format and needed to be modernized to reflect electronic registrations and automated records.
- Limiting the instruments that could be registered under the *Registry Act* and providing for the eventual registration of all land in Ontario under the *Land Titles Act*.

G. CONCLUSION

The Ministry will continue to work with users of the land registration system on the enhancement of the land registration system as we look forward to further modernization and expanded online service delivery. Please continue to check the ServiceOntario website (www.serviceontario.ca/landregistration) for new communications and Bulletins regarding the land registration system.



¹ This paper draws substantially from several papers and presentations by Kate Murray, Director of Titles, Director of Policy and Regulatory Service Branch.

Industry News

MicroSurvey Releases FieldGenius 2012 and MicroSurvey Data Exchange

MicroSurvey is pleased to announce an update to MicroSurvey FieldGenius with the release of MicroSurvey FieldGenius 2012. This latest version of software boosts new staking workflow and increased options for the international market. In addition, FieldGenius now supports over 200 instruments, data collectors, and RTK GPS receivers – including the Leica Geosystems TS11 and TS15 (onboard), as well as the Viva controllers (CS10, CS15, and CS25).

Also available is a new desktop product called MicroSurvey Data Exchange. The new Data Exchange program helps the FieldGenius customer prepare projects for the field, and process incoming field data. MicroSurvey Data Exchange is available for free.

According to Jason Poitras, COO at MicroSurvey, “We are constantly searching for and developing features that complement our existing software and serve the needs of

our current users and future customers. The addition of the free Data Exchange program and other improvements available with FieldGenius 2012 accomplishes our goal.”

MicroSurvey FieldGenius 2012 adds a powerful coordinate system editor. Additionally, the international users of FieldGenius are well-served with new coordinate systems and geoids. This release of software features many enhancements to the staking functions, such as allowing the user to adjust the staking workflow to suit their individual needs.

MicroSurvey invites you to experience all that FieldGenius 2012 has to offer by downloading a free trial version today. Trial versions of FieldGenius for your desktop, tablet, or mobile device and MicroSurvey Data Exchange can be downloaded from the MicroSurvey website at www.microsurvey.com.

Survey Law Education: New Content and Delivery for Students

By Izaak de Rijcke, O.L.S., L.L.M.

As land surveyors, we are quick to acknowledge “dirt surveying” as more than just our roots; it lies at the core of cadastral surveying which is enjoyed as our only statutory franchise. This is aligned with the mandate to protect the public interest and is held out as the basic reason for research, evaluation of evidence, and the continued ability to create competency in this area for new candidates for admission to the profession and as Continuing Professional Development for existing members.

In April 2012, the first cycle for delivery of the traditional courses in Survey Law were completed in a new format and context. These are the courses that form part of the core syllabus for licensure by the AOLS, but have also been completely redesigned. In this article, I will summarize these changes in content, as well as the new approaches taken in the delivery of the learning experience.

For the past three years, AOLS was a beneficiary of the program administered by Ontario’s Ministry of Citizenship and Immigration called “Pathways”¹. Along with other professions in Ontario, new immigrants are entering the province with professional licences and degrees from other jurisdictions. In fact, their professional accomplishments elsewhere have been a large part of the reason why new immigrants are welcomed to Canada; but those accomplishments do not automatically translate into admission to the professions. Programs such as Pathways were developed to facilitate the professions in Ontario to develop programs that would allow internationally educated persons to acquire the necessary competencies to gain admission to the provincially established professions. For land surveyors licensed or educated elsewhere, this meant creating a Survey Law program that was designed to be respectful of candidates’ prior education, accommodated the reality of their full time jobs, family and financial constraints, and all the while ensuring that upon completion, candidates understood the topics of boundary law as they prevailed in Ontario.

Against this backdrop, course development began with the focus on an introductory offering called, “Introduction to Canadian Common Law for Land Surveyors”. The notion that Survey Law is just a series of rules or statutes that need to be memorized is completely dispelled during the experience of this course. The application of common law, how it evolves as a dynamic body of principles through the courts, and the importance of the legal process itself are communi-

cated to learners. In addition, participants

have a chance to become familiar with web based delivery of course materials, assignments, and guided additional reading. For some, this is in itself a challenge because many were expecting a textbook, a chalk board, and a “top down” hierarchy of teacher to student. Instead, students were encouraged to work in groups, and the process of solving problems as a team enhanced individual skills necessary for working on a survey crew or in a multidisciplinary environment. It is important to also bear in mind that many of the learners taking this course who had come to Canada and had acquired experience and skills in surveying elsewhere, were in fact already competent with much of the technology of surveying, data collection, and data presentation. However, the ability to function in a professional environment in Canada was also limited as a result of the challenge of “sector specific” language. Readers might well assume that the vocabulary used in professional land surveying in Ontario, as well as in associated geomatics disciplines is relatively universal and readily understood. Not so. In fact, part of the learning process for many students was the challenge of acquiring an English language competency in the field of surveying.

Despite this fact, about half of the individuals involved in the introductory course were persons who had graduated from a Canadian university and were therefore not challenged by either language or the cultural strangeness of learning in a collaborative environment. The initial “push back” was one of dissatisfaction – “You are the instructor and I am the student, so why don’t you just tell us what we need to know?” This captured the difficulty which many have with learning the law as a process, rather than as a “rule book”.

In the introductory course, there was also emphasis placed on understanding what was represented in a case report. Now that cases are readily available through www.canlii.org as an open source portal for case law from all of Canada, the difficulty in managing copyright issues was made easier. Cases were identified that were particularly helpful in gaining insight to what is meant by “jurisdiction” and the differences between judicial review, appeal, and what happens in proceedings before tribunals. Most of this material had very little to do with boundary law *per se*; however,



it had everything to do with the evaluation of evidence, the determination of facts, and the application of legal principles to create a defensible opinion about the location of a legal boundary.

Upon completion of the introductory course, learners had a better understanding of both the Canadian rule of law and how it was relevant to the professional life of an Ontario Land Surveyor, and the distance learning, web-based resources of this course. The stage has been set for the learning of boundary law principles to begin in earnest.

The subject of survey law or boundary law as it is divided into two courses is artificial. Together they form the equivalent of two courses, each of which approximates one semester credit in a higher year undergraduate degree program or about 36 hours of “teaching contact time” for each course. At this point, one may well wonder why Survey Law deserves so much time and why boundary topics occupy such a large effort for candidates. Some readers may recall their own experience of being exposed to an inordinate amount of readings and the frustration of being unable to get the kind of straight answer and clarity that came with many math and science problems. Of course, I touch on the different aspects of professional surveying that make it both a science and an art.

The design of the two courses began with a review of the content found in many programs in geomatics engineering and cadastral studies in Canada, as well as other common law jurisdictions. An approach similar to “zero based budgeting” was adopted in which, rather than mimic the syllabus of an existing course, attention was turned to the question of “competencies”. In other words, what are the competencies that are necessary for an Ontario Land Surveyor to have and know before being considered qualified to practice cadastral surveying in Ontario? Not surprisingly, many of the competencies that emerged were ones that were process oriented, rather than just rote learning of a substantive rule. For example, the competency list included the ability to write a survey report, the elements of which were not just an ability to write and an ability to say what was done. This competency meant that a graduate also needed to have the ability to explain how a conclusion was reached and to elaborate on the rationale that aligned itself with principles of boundary law. Accordingly, the elements of the course focussed on instilling an understanding of how courts evaluated evidence and reached a conclusion because the survey report could potentially be part of the evidence available to a judicial decision maker.

Course content that might have existed 20 years ago has also evolved – some to the point of now being obsolete. Other topics that did not appear before are now seen as critical to the education of the cadastral land surveyor in Ontario. For example, the ability to research and understand the presence or legal status of easements has become a complex problem. The electronic land registration system’s block maps do not show minor easements, and legislation

has been modified so as to require the registration of a notice of claim in order to preserve certain easement interests. The courts of Ontario have become increasingly creative in validating the legal existence of easements through equity that are enjoyed on the ground, but have somehow legally “disappeared”. This is a significant topic and part of content relevant to the practitioner in Ontario today.

Another good example is the understanding that is necessary to operate within Ontario’s land registration system. It has evolved with increasing simplicity for transactions, but the boundary and parcel fabric on the ground has become increasingly complex. With adverse possession not allowed in Land Titles, but grandfathering of prior possessory rights before conversion, the relevance of possession, retracement, and land registration statutes are more prominent than ever before. However, the focus is again placed on learning insight as to how the system operates, which means understanding how we got here and appreciating why it works today as it does and why it is different from other cadastre-based parcel boundary environments. This has led to the inclusion of topics which help learners understand the underlying principles of Ontario’s cadastre and thereby distinguish the relevance of decisions from the courts in other jurisdictions that deal with solutions to boundary problems, but rely on different paradigms.

Of course, the survey law learning experience in Ontario would not be complete without a treatment of the topic of water boundaries. A subject of continuing evolution, the learning experienced in the new platform for teaching uses open source materials, annotated readings, web based videos and assignments in order to establish a competency in the understanding of water boundaries. There have already been a number of requests for availability of the “textbook” used for this particular topic. However, there is no “textbook”; instead, there is a set of readings which are annotated and form a critical component of the larger learning resource. Taken in isolation, the readings would seem rather barren. However, during sessions, discussions, assignments, and self-guided questions, the annotated readings spring to life and play an important part in the overall learning resource. As a stand-alone “textbook”, the readings have limited usefulness, although they may well serve as a stepping stone for a set of reference materials that are easily updated.


In retrospect, the development of these courses was a huge undertaking. However, their development has allowed for the establishment of excellent resources in learning and an assurance of a future teaching capacity that takes lifelong learning as a given and builds on the technology and tools for education that are already familiar to most 20 year olds.

With funding from the Pathways Project, the rebuilding of the Survey Law courses has been completed, but not without further questions and challenges. The competencies that have been identified as a definition of the syllabus or curriculum has begged the question of revisiting or

enhancing this catalogue as cadastral surveyors continue to adopt the resources and talents of an expanded profession. For example, with the requirement for integrated surveys and the new opportunities that are beginning to emerge with the AOLS's Ontario Digital Cadastre Corporation, the competencies for being able to think of boundary information as part of a spatial data infrastructure is no longer a luxury – it begins to emerge as a core competency. Other examples abound.

Other questions arise for the endorsement of competency-based learning by the AOLS in other fields of surveying. Geographic Information Managers (GIMs) are developing their own competency listings. How will a future membership benefit from such a renewed approach? One would hope that Canadian university programs in geomatics will adopt the resources developed, and implement competency-based learning as the ultimate touchstone for professional membership. Ironically, our *Surveyors Act* already holds consequences for members who are or become “incompetent”; there is no consequence if one's transcript or framed degree is lost in a flood or a fire. This makes sense, but the ground lost in the past by emphasizing course content as might be found in a calendar description or syllabus said nothing about the resulting abilities of a student who has graduated from a program and passed the course. Competency was presumed. These might seem like radical ideas and on occasion appear in the public media as a flash-point for discussion³. The topic seems to quickly polarize the debate between those keen to preserve the status quo and those who recognize that competency-based learning is the way of the future. This leads to the inevitable question – or the metaphorical elephant in the room – which university will actually adopt such an approach?

It may be a surprise to many readers that MIT has started to offer graduate degrees based on a competency learning platform⁴. Web-based, open sourced, and available to anyone in the world, your surprise may well turn to shock upon discovering that this is possible for free. The AOLS does not have the resources of an MIT, but it does have a public interest in ensuring competence of new members and to

maintain that competence as part of a lifelong learning commitment. Encouraging discussions are taking place with York University in exploring the shift to competency-based learning for geomatics professionals. But a note of caution or paranoia seems appropriate too – the AOLS has the memory of a university-based program in surveying being cancelled. Almost 13 years later, it has recovered with excellent programs to be found in Ontario and elsewhere. However, at the risk of it being lost again, a close involvement in course delivery and instructor development seems not only prudent – it is the only way in which future directions for the profession can be aligned with academic programs that ensure relevant skills and competencies which protecting the public interest demands. 

Izaak de Rijcke is a licensed surveyor based in Guelph, Ontario. He is a practicing lawyer, focusing on boundary and land title related issues. He has written numerous articles, co-authored books and taught seminars and courses for lawyers and land surveyors. He can be reached by email at: Izaak@izaak.ca

¹Details about Pathways for land surveyors in Ontario can be found at: http://www.ontarioimmigration.ca/en/working/OI_HOW_WORK_LANDSURVEYOR.html. The following appears at the cited page:

“This program helps internationally educated land surveyors get licensed and find employment in their field. The Association of Ontario Land Surveyors has developed many assessment, learning and support systems and is looking to improve upon them through usage. By developing and piloting a new licensing process, this program is helping internationally trained land surveyors get licensed and find employment in their field.”

²A competency is a combination of skills, knowledge, and the ability to apply understanding and insight to problem solving.

³A good example can be found in the editorial column of the *Globe & Mail*, written by M. Wente, *We're ripe for a great disruption in higher education*, February 4, 2012, available on line at:

<http://www.theglobeandmail.com/news/opinions/margaret-wente/were-ripe-for-a-great-disruption-in-higher-education/article2325979/>. She wrote,

“...the real disruption comes when you stop measuring academic accomplishment in terms of seat time and hours logged, and start measuring it by competency. As all employers know, the average BA doesn't certify that the degree-holder actually knows anything. It merely certifies that she had the perseverance to pass the required number of courses....”

⁴Available at: <http://mitx.mit.edu/>

Sites to See

GeoConnections

<http://GeoConnections.nrcan.gc.ca>

The GeoConnections program is a national initiative led by Natural Resources Canada. It has been moved to this new government of Canada web site. GeoConnections supports the integration and use of the Canadian Geospatial Data Infrastructure (CGDI). The CGDI is an on-line resource that improves the sharing, access and use of Canadian geospatial information – information tied to geographic locations in Canada. It helps decision makers from all levels of government, the private sector, non-government organizations and academia make better decisions on social, economic and environmental priorities.

Crisis, What Crisis?

By Dan Cormier, O.L.S., O.L.I.P., C.L.S.



In my view, the lack of financial resources, or *money*, is the single most damaging issue facing the private sector surveying profession in Ontario today.

Many of our business owners simply do not have the financial resources:

- to purchase the latest software and hardware to remain competitive with other professionals who provide similar services.
- to hire technicians and university graduates to operate the equipment and to develop the products and services that the latest hardware and software provides.
- to effectively manage both the survey and business portions of their practices.
- to venture into new and developing earth-based data management, such as the Ontario Digital Cadastre.
- to demonstrate, communicate and educate the public about the value of our professional services.

Why is the lack of money a problem in our association? I truly believe that it is mainly because most of us do not charge enough for our work. *As professional surveyors, we must charge a professional rate for a professional service!* We provide professional opinions on legal boundaries, which is an exclusive privilege but we almost give those opinions away!

This issue of money is a topic that seems to be only discussed in small groups of like-minded people often focused on their competitors and their low bidding practices. But these conversations don't lead anywhere, and instead, we wrongfully hope that our competitor(s) will retire so that we can start charging the fees that we should! It's time to stop the madness and inactivity and face up to this very real issue and do something. How did we get to this point? Is it because of:

- the lack of understanding of good business practices?
- the lack of value the public places on our professional services?
- the lack of value that some of our members place on our professional services?
- the decline of some of our surveying services, e.g., Surveyor's Real Property Report?
- the high number of surveyors and firms in certain regions, e.g., the GTA?
- the different levels of services provided by our various members?
- open bidding?
- perceived fear of price fixing as a result of the Federal Combines investigation of our association and subsequent report many years ago?

Regardless of the reason(s), as I see it, we are still refusing to acknowledge and discuss the problems and the negative impact that it is having on our profession. We need to bring the issues out into the open and tackle and resolve them now!

I suspect that many of our members do not have the resources/money to purchase the latest software and hardware that is necessary to remain competitive with other professionals. I have seen that more and more of our clients are retaining engineering and architectural firms to provide data because software companies (MicroSurvey, AutoCAD, MicroStation) now operate in Microsoft Cloud and Google environments. However, we have failed to charge an additional percentage of our fees to keep up with such upgrades.

Similarly, many of us may not have the resources/money to pursue new and developing earth-based data management projects, such as the Ontario Digital Cadastre. While the idea of a digital cadastre sounds good, money can represent a huge roadblock. With our education and experience, we should be the leaders in offering new services related to these applications. When will we recognize this fact?

Also, many of our members do not have the resources/money to hire and retain highly qualified people to operate and, more importantly, develop the products and services that the latest hardware and software enable. We now know the negative impacts of closing the University of Toronto Survey Science Program and of having only one college level survey technician program left in Ontario. We also know that the majority of new graduates are traveling westward for employment. Is this declining trend due to economic times or something else? We have failed to see, as surveyors, that the health of our profession does not start with our college and university graduates. It starts and ends with us, the professionals.

As everyone is aware, Professional Surveyors Canada just recently completed a salary survey. The numbers were disheartening but realistic. What the survey doesn't show is the fact that after we pay ourselves as business owners, there is not much left to benefit our employees. Many of us have seen staff move to another employer for 50 cents more per hour. If salaries were solid and less fragile, we could more successfully train, remunerate and keep our employees. I believe that one of the key indicators of success in a private sector business is the number of employees who have left the public sector to join the business. But how often does that happen in surveying? The overly competitive bidding process among the surveyors themselves is undermining our ability to maintain appropriate and stable wage levels.

I also suspect that we lack resources/money to effectively manage both the survey and business portions of a practice. The majority of us were professionally trained to be land surveyors. Unless we grew up in an entrepreneurial environment, most of us have little experience in running, let alone growing, a business. (It always amazes me how I made it this far.) But in truth, this lack of entrepreneurial experience is one of the biggest reasons we suffer a resource deficiency. When was the last time any of us factored the cost of inflation, future investment needs, salary increases, advertising, retirement, and the needed profit margin into a quotation? How many of us understand things like discounted cash flow or the time value of money? We must start submitting bids on projects based on the true costs of the professional service that we provide.

Many of our members also do not have the resources/money to demonstrate, promote, market and communicate to the public the value of our professional service. For example, professional image is important, and this extends to business location and appearance. Professional-looking office space should be a recognized priority for the members of our association. Have you ever received legal advice from a lawyer working out of a basement? A perception of “unprofessionalism” can become reality in the public’s eye.

Furthermore, I have found that we have difficulty communicating not only among ourselves but also with the public. When was the last time you promoted your business by supporting a local sports team or news program, or made a donation to a soup kitchen, coached a kids’ team, posted a company sign on a project, labeled your company vehicle, or submitted a survey article for the local paper or on a web page? We need to do more to raise our profile and let the public know that we exist.

I believe that the newly formed Professional Surveyors Canada organization is our best hope to advocate on behalf of our profession. A strong national voice will provide a means to inform and educate the public about the value of the surveying profession. However, this organization alone will not resolve our resources issue. Only our collective members can address this matter, and it needs to be now!

If we don’t start charging appropriate fees for services rendered, the large firms will get larger and the small and mid-size firms will start to disappear; firms will fall into the haves and have-nots; fewer people will be coming into the profession; fewer will be available or want to buy their businesses; and fewer professionals will be involved in the association. With membership numbers so low, we will no longer be able to serve and protect the public interest, and our profession will disappear.

Only when the majority of our members acknowledge that there is a resource/money issue will we be able to start corrective actions. We must understand the consequences of ignoring the issue. If we don’t, could legislation be passed

to allow other professions to do more of our work, or could our range of services be entirely absorbed by another profession?


I don’t think that we have more than five years to change our ways before damage to our profession is irreversible. By that time, we will be unable to catch up to the other professions that have the resources to provide clients with the data that they require and in the latest medium. We can hold on to the idea that no other profession can establish or re-establish boundaries, however, the current trend indicates that pure cadastral work is becoming a smaller part of the private surveying business, a trend I don’t see changing anytime soon.

Now what do we do to address the issue? I don’t feel individual members or small groups of members can resolve the money/resources issue. Nor do I expect government to come to our rescue. Instead, I believe that our association, under Council’s direction, has to take the lead and direct us through these troubled times. This organization has an obvious vested interest in its members and a mandate to protect the public interest.

Therefore, I think that the association must “raise the bar” and to accomplish this in my view should:

- Raise the minimum standards required by the Survey Review Department: Set standards that instill pride and value in holding a membership and ensure that all association members are providing the public with the best quality of service in the world.
- Require mandatory business development training with comprehensive business courses. This training would allow our members to learn how to evaluate the true cost of operating and developing a business and provide the tools and support to develop a business model tailored to the members’ expertise and geographical requirements.
- Require mandatory committee involvement. Introduce all members to the inner workings of our association. Instill a sense of pride and value in our vocation and association.
- Develop new surveying services and products to meet the changing needs of the public and industry.

Our association can do these things and more, but only with the support of the majority of the association’s members. I urge you to write to Council, share your thoughts, make other suggestions, or write an article in the quarterly; do whatever it takes. Show you care about this profession!

The time to change our current path is now. Let’s tackle our issues and make this a dynamic, respected, well-recognized and rewarding profession. 

Dan Cormier is the President of Hopkins, Cormier & Chitty Surveying Consultants Inc. in Kingston. He can be reached by email at dcormier@hopkinscormier.com.

You're in the business of Surveying... whether you like it or not!



By Donald Cooper, MBA

Toronto-based, international management speaker and coach, Donald Cooper, has recently completed a 5-city 'tour', delivering his 1-day Business Management 'Boot Camp' to Ontario Land Surveyors across Ontario. He got rave reviews.

Donald has been both a world-class manufacturer (think Cooper Sporting Goods) and an award-winning retailer. For the past 20 years he has worked with business owners and managers in over 40 industries around the world, helping them to sell more, manage smarter, grow their bottom line...and have a life.

Here are some of his observations about how Land Surveyors can more effectively manage their business and their bottom line. Donald is a no-nonsense, bottom-line guy and therein lies his real value.

Having just spent a good chunk of time working with many Ontario Land Surveyors, I have a number of observations that may be helpful. Keep in mind that I'm not a 'surveying guy'; I'm a 'business management guy'.

1) Manage your business:

First off, Land Surveyors are very much like a lot of other respected professionals. You don't think like business people. And why should you...nobody ever told you to. In seven years of education and study, there was probably not five minutes spent on showing you how to run the business of Land Surveying. It's the same with doctors, dentists, vets and lawyers. I'll never run out of work. Several Surveyors who attended our "Business Management Boot Camp for Land Surveyors" told me that they learned more about how to run a business, in that one day, than they had learned in their entire careers.

So, here's the first news flash. If you own or manage a Land Surveying practice, you are in the business of Land Surveying and you need to spend more time **working "on" the business**, and a bit less time working **"in"** it. You need to spend some time working on...

- a. Finding ways to add more customer value.
- b. Proactively marketing and selling that value in a way that 'grabs' your target customers and clearly differentiates you from your competitors.
- c. Developing and managing your team.
- d. Proactively managing your 'numbers' and your bottom line.
- e. Planning your future, including how your business model might change to create a more relevant and profitable future.

2) Manage your bottom line:

You're getting paid about the same fees for your services as you did 20 years ago and that speaks to your not communicating your value story (marketing) and, in some cases, not valuing yourselves and having the guts to ask what you're worth. Nobody will ever think we're worth more than we do. Funny how that works!

You all complained about profitability...and here's the info you need to improve your bottom line. During the part of my program where we talked about the "math of profitability", I showed that, for a typical Surveying Business:

- a) Increasing prices by just 5% could **grow your bottom line by about 50%**, if customers didn't notice, or didn't care, because you're so good at what you do,
- b) Increasing sales by just 5% could **grow your bottom line by about 40%**...and,
- c) Reducing expenses by just 5% could **grow your bottom line by about 45%**.

If you could actually achieve some combination of these three, the bottom-line improvement would be spectacular. But you have to proactively manage the business.

Now, here's the part that nobody thinks about. By improving your bottom line by, let's say \$80,000, you increase the eventual selling price of your business by \$320,000 to \$450,000. Why? Because businesses typically sell for a multiple of 4 to 6 times their earnings.

3) Manage your marketing:

Most Surveyors don't do well when it comes to marketing. Some of you even believe that marketing and selling are somehow 'unprofessional'. Even though most of you told

cont'd on page 16

me that you'd like to, or need to, increase sales, not one of you had a sales and marketing 'Hit List' of prospects to go after this year. Here, below, is the start of a possible marketing 'Hit List' for you. Add to it, if you'd like, but start with these:

- a) Government Departments at all levels,
- b) Utilities,
- c) Builders,
- d) Road Building Contractors,
- e) Lawyers,
- f) Real Estate Agents,
- g) Banks & Mortgage Brokers.

You need to be known, trusted, differentiated and respected by those who hire Surveyors, and those who might refer Surveyors to others. Getting to be known, trusted and differentiated is called "marketing".

Your website is also an important marketing tool and most Surveyor's websites aren't marketing focused. For a pretty good example of how to use your website to explain and market your services, check out the "Land surveying" tab at oxfordlandsurveying.com. Check out other Surveyor's websites and see what you can learn about how to make yours better. I studied over 20 Surveyor's websites as I prepared for my presentations and my guess is that you should check out at least that many to see what you can pick up.

4) Manage your future:

New and innovative business models are showing up in the Surveying business...just like they are in every industry. Firms are consolidating and Surveyors are consolidating with Engineering and Planning Firms to create entirely new business models.

How might your business model need to change to be competitive in the "new future"? What will Land Surveying look like in 5 years? How will it be different? What's your plan? Don't have an emotional attachment to an unecological business model.

Surveyors don't share or partner easily. In all five of my "Boot Camp" sessions, it was like pulling teeth to get anyone to offer any thoughts, or share best practices. As individuals, during breaks and at lunch, you were warm, friendly and generous. But "in session", most of you were simply not going to share.

In discussions following the programs, several of you told me that this same unwillingness to share was preventing many smaller firms from partnering to take on big jobs that they couldn't consider doing on their own. So, for many of you, your unwillingness to share is limiting your future.

Some of the resistance to the important Ontario Digital Cadastre project probably relates to this same feeling that we need to keep our cards close to our vest. The Cadastre is the future...embrace it. So, perhaps there needs to be a change in heart and attitude about sharing and partnering in

the Surveying profession. I don't know who will lead that initiative...but it needs to be someone from within your profession.

In conclusion, what you do matters. That you do it wonderfully...matters. That you do it profitably...matters. One of the most important keystones of our economic system and our way of life is the concept of property ownership. As Land Surveyors, you are key players in maintaining the integrity of that right. We depend on you. That you need to be more valued and appreciated for what you do is clear. The path to achieving that is also clear.


a) You need to be as good at running your business as you are at Land Surveying.

b) You need to be more effective marketers and promoters of your industry and your specific business.

c) Collectively and individually, you need to have the courage to ask for decent and appropriate fees for what you do. But that won't happen until you do a better job of communicating your value.

d) You need to think about how your business model might evolve to be competitive in a changing and more competitive world?

An offer of help: Each month I publish a free, monthly **Management E-Newsletter**. It's a seven minute read that will help and encourage you to sell more, manage smarter, grow your bottom line...and have a life. If you'd like to receive the E-Newsletter you can sign up at donaldcooper.com, or you can email me, and I'll make it happen. On our website we also offer a number of free business tools.

If you'd like to create a clear and compelling Vision for the future of your business, you can download our 28 page **Vision Critical Guide**, also at donaldcooper.com. This Guide, 7 years in the making, has been transformational for the many businesses that have embraced it. It leads business owners and their team through a simple but insightful process of creating clarity about the future of their business...and an Action Plan to get there. It gently asks tough but important questions that need to be asked...and almost never are. It also includes specific examples and a number of helpful Implementation Templates. The entire process is designed to be self-guiding and intuitive. 

Donald Cooper, MBA, CSP, HoF, has been both a world-class manufacturer and an award-winning retailer. Now, as a Toronto-based international management speaker and coach, he helps business owners and managers to rethink, refocus and re-energize their business to sell more, manage smarter, grow their bottom line...and have a life. Donald can be reached at 416-252-3704 or by email at donald@donaldcooper.com. For more info and free management articles, or to receive our free, monthly E-Newsletter, go to donaldcooper.com.

The Cost of Open Data

Canadian cities are increasingly moving to new models of access for individuals. Why a recent U.S. court ruling could give them pause.



By Lou Milrad for CIO Canada (an IT World Canada publication). Reprinted with permission.

We've started hearing a lot over the last year or so about "open data", particularly in the municipal sector. It's all about municipalities (and senior levels of government) sharing information with private individuals, principally in digital format and via website portals.

Open data covers information such as weather and environmental data, census reports, public projects and proposals with private individuals to make as much data as possible available in a useable format for private citizens.

CANADA

Open Data Portals are rapidly appearing on a host of Canadian municipal Web sites – the trend is being driven by a cohesive Canada-wide collaboration of Canadian municipalities.

Vancouver was the first Canadian municipality to pass a motion for open data standards. Since, four of Canada's largest municipalities, Vancouver, Edmonton, Toronto and Ottawa, have informally organized into a group called the "G4" to form the G4 Open Data Framework.

The goal of the initiative is to create

- A common standard for the data;
- Common Terms of Use Agreements; and
- To enhance open data Web access to data managed by government that can be leveraged by citizens, businesses, and communities for their own purposes.

The provincial and federal levels of government, and stakeholder agencies are rapidly forging ahead with their own initiatives.

The previous model for government data allowed access for a price. Instead, open data standards make information available to anyone. In doing so, the information is accessible to private citizens with diverse skills and unique perspectives. The goal is to allow citizens to contribute to their community with creative uses for the data. Many of the new and leading smartphone apps incorporate access to open data.

UNITED STATES - ORANGE COUNTY, CA

A RECENT US COURT DECISION in Orange County, Calif., has threatened to derail the movement toward greater public access to a particular category of data, namely

geographic information systems data. The case, currently under appeal by the Sierra Club to the California Supreme Court with amicus curiae support from over 182 GIS professionals, including 14 GIS organizations, supporting open access to government geodata, is garnering much attention from open data advocates, land surveyors, GIS and other professionals, law firms as well as environmentalists and homeowners.

While geographic information systems (GIS) are expensive to develop and maintain, the information they provide is of high value to city planners, community groups, land developers and the public. Tight government budgets have generated a tension between providing free public access to the data and selling licenses at a profit. Orange County maintains a GIS and has set annual licensing fees at \$1 a parcel. It is estimated that an annual licence for the whole dataset would cost \$375,000. The dataset is made available under terms of a licence that specifies the terms and conditions under which the dataset may be used. Because of the high price tag, the sale of these licenses has traditionally raised a considerable amount of revenue for the County.

The high cost of this data, however, has effectively prevented consumer and environmental groups from accessing the information. The Sierra Club, a local conservation group, launched a legal challenge to this licensing regime, arguing that the data should be provided at the cost of reproduction under the California Public Records Act (PRA), which provides that all local agencies must supply copies of public records to members of the public. Surprisingly, the court refused to order that the licence be granted to the Sierra Club. In *The Sierra Club vs. County of Orange (Orange County)*, Justice Di Cesare found that the licence granted by Orange County did not grant access to a database but to a "computer mapping system." Software licenses are specifically exempted from the provisions of the PRA, and as such Orange County was under no obligation to provide a licence to the Sierra Club.

GIS DISCLOSURE - PUBLIC BEFORE PROFIT?

This redefinition of the nature of GIS gives rise to a number of interesting considerations with respect to a municipality claiming proprietary rights in municipally

generated information, particularly when other U.S. jurisdictions embrace an open-data policy (for example, Washington DC, Seattle and San Francisco as well as the U.S. federal government). Assuming that the decision withstands the current appeal and is not further appealed to one or more higher courts (and if appealed, whether it is set aside on appeal), one can only wonder whether some other U.S. city or cities choose to follow or rely on the Orange County ruling and assert a proprietary interest in their GIS?

WHAT'S THE IMPACT, IF ANY, ON CANADIAN MUNICIPALITIES?

There are three considerations, including the potential impact of the decision upon Ontario (or Canadian) municipalities, particularly in light of the trend toward open government and the public's increasingly demanding need for open data.

1. APPLICABLE STATUTORY DISCLOSURE OBLIGATIONS

Orange County was subject to the Public Records Act, which contains a specific statutory exemption for software licenses. The same does not typically hold true in jurisdictions such as Ontario. Public officials in Ontario are subject to the Freedom of Information and Privacy Act and the Municipal Freedom of Information and Privacy Act. Importantly, neither of these Acts contains a statutory exemption for software licenses. The acts establish a right of access to public "records," defined as any record of information "however recorded, whether in printed form, on film, by electronic means or otherwise" (emphasis added). The definition of electronic means could be sufficiently wide to capture a GIS license. As such, there is a strong argument that Ontario public officials may be under a greater obligation to provide GIS licenses at the cost of reproduction than the officials in Orange County – however and this is mere speculation, the GIS software companies may have a different perspective if public access to open data is required through a feature in their proprietary software where such arrangements have not been earlier contracted for.

2. PUBLIC DEMAND FOR FREE DATA ACCESS

In addition, the Canadian public increasingly is demanding free and open access to municipal data. In Ontario, the concept of "access by design" (AbD) is emerging. Ann Cavoukian, Ontario's Information and Privacy Commissioner, states that AbD "consists of funda-


mental principles that encourage public institutions to take a proactive approach to releasing information, making the disclosure of government-held information an automatic process where possible - access as the default." Access by design advances the view that government-held information should be made available to the public, and that any exceptions should be limited and specific."

3. BENEFITS OF FREE PUBLIC ACCESS TO GIS

The open-government movement (often noted as Gov 2.0) advocates free public disclosure of government records. Vancouver, Toronto, Edmonton, Ottawa (the "G4" mentioned above) and even smaller municipalities like Nanaimo, have all started converting their records into an accessible Web-based format via data catalogues.

Jury Konga, chair of [Municipal Information Systems Association] MISA Ontario's Gov 2.0 Committee and a strong proponent of free public access to government information, argues that the economic benefits of free public access to GIS/geospatial data can in many instances outweigh the benefits of selling data-usage licenses for a fee.

"Free access to online information can significantly cut down on Freedom of Information related costs," he says. "In addition, new tax revenues generated by entrepreneurs who capitalize on freely accessible GIS data, by adding value and creating new services, can become a source of government income and support of local economic development. Other benefits are derived from the open community development of applications and services that address local needs that governments are not currently providing."

Given that public officials need not develop their own publicly accessible GIS, one possible approach might be to convert their data into a format that is accessible by open-source GIS software. This may enable them to reap the benefits of full public disclosure while minimizing some of the associated costs. A variety of initiatives in the open data realm continue to explore opportunities in this regard. The redefinition of GIS as "software" in the Orange County decision will undoubtedly give rise to much debate, particularly as it counteracts the current trend toward free access to public data. 

Lou Milrad practices in Toronto through Milradlaw (www.milradlaw.ca) and provides government clients with legal services relating to ICT Licensing, Procurement, Commercialization, Cloud Computing, Open Data, and Public-Private Alliances. He can be reached by email at lou@milrad.ca.

AOLS Strategy “At a Glance” (2012-2015)

By Blain Martin, O.L.S., C.L.S., PMP, MBA

This is the third time that the Association of Ontario Land Surveyors (AOLS) has had a focused Strategic Planning Workshop offsite. Each of the workshops was led by experts in the field of Strategic Planning. A large number of our members participated and provided input on our future as a profession. Great strides have been made with the Strategic Plan. It has evolved to become more focused on the development of realistic and detailed priorities, and action plans.

This workshop was again led by Peter Richardson, a Queen’s School of Business Strategic Planning professor; he was assisted by Erik Lockhart. Peter’s role is to lead the discussion and encourage all participants to provide their own input. Breakout groups are formed to address specific issues and the results of their discussions are recorded and fed back into the whole process.

Erik provides enough laptop computers so that all participants can anonymously answer specific questions in real time using their assigned computers. The answers are compiled and prioritized before they are added into the strategic plan document. It is a great process that allows all participants to be fully engaged.

This year the group consisted of members of Council, Regional Group Chairs, several Committee Chairs and others who are heavily involved in our profession. This large group provided a broad perspective from all demographics in our

Association, including articling students. The results of the actions from the two previous Plans formed the basis of the discussion and the results of the current workshop were used to update the priorities of the current AOLS Strategic Plan and prepare new action plans. A Strategic Plan “Map” showing the objectives and key priorities, etc. was created. You can see the map as the center piece of this issue on page 22.

The three overwhelming issues that are driving our strategic planning process are; a declining membership, business expansion and integration of all disciplines into a cohesive group. The progress of all the actions developed to solve these issues is tracked and Council reviews this progress at each Council meeting.

This Strategic Planning Process has helped our Association plan how it can move the geomatics profession in Ontario forward. Several of the members who have participated in one or more of the workshops have expressed their desire to incorporate a similar process into their own organizations. They are the forward thinkers who want to be in control of their own future and not have to merely react to outside influences.

We have been privileged to have Peter and Erik lead us through this continuing process and we expect to have another Strategic Planning Workshop next spring to review our progress and set the priorities of the newly formed Council.



Calendar of Events

July 21 to 24, 2012

Survey Summit

Esri/ACSM

San Diego, California

www.surveysummit.com

August 25 to September 1, 2012

XXII ISPRS Congress 2012

Imaging a Sustainable Future

Melbourne, Australia

www.isprs2012.org

October 25 to 26, 2012

**Third International FIG Workshop
on 3D Cadastres**

Shenzhen, China

www.cadastre2012.org

October 29 to November 1, 2012

MAPPS/ASPRS 2012

Specialty Conference

Cloud to Ground (R)Evolution

Tampa, Florida

www.asprs.org/Conferences/Tampa-2012

October 31 to November 2, 2012

**International Symposium on
GPS/GNSS 2012**

Xi’an, China

www.gpsgnss2012.com

November 14, 2012

GIS Day

Discovering the World Through GIS

www.gisday.com

AOLS Strategy "At a Glance"

Vision

We are known in Ontario and Canada as an influential and respected association of geographic professionals protecting the public interest through our governance, professional and business practices

- We have an engaged and growing membership providing innovative products and services in land surveying, hydrography, photogrammetry, geodesy, and geographic information management
- We maintain rigorous standards, including effective, transparent peer review processes
- We understand the needs of our membership and provide relevant professional development and business support and services
- We make a significant contribution to Ontario's maintenance and use of accurate cadastral information
- We collaborate with other associations, government, academia, and industry to create opportunities for mutual benefit

As a result, the Association and its members are valued for their competence and expertise

Mission

Continue laying the foundations to become a more effective, expanding association for land surveying and related geomatics professionals, through:

- Successfully implementing our simplified committee structure
- Establishing a company with a mandate to create an accurate digital cadastre for Ontario which serves the survey community and their clients
- Expanding membership by attracting new, younger members, and professionals from related disciplines
- Improving service through implementing mandatory professional development / enforce standard review process
- Improved member communications and engagement

Ontario Digital Cadastre Corporation

1. Functioning business, with identifiable revenue stream and retained earnings
2. Contract in place with iLookabout to deliver data from ODCC to MPAC and Union Gas in the format desired by clients
3. 57 firms in South West and Hamilton contracted to deliver data to Union gas and MPAC

Key Projects

Expand membership: GIM

1. Validate GIM Curriculum
2. Develop GIM Competencies
3. GIM Value Proposition

Expand membership: Entry to

1. We have identified key sources for promotional campaigns on government websites (dist. links)
2. Research career-related materials on government websites (dist. links)
3. Populate websites with more profiles etc.)

Ontario Digital

Cadastre Corporation

1. ODCC up and running as a financially viable company with retained earnings and prepared to add new clients

Expand membership: GIM

1. Distribute curriculum to universities and AERC
2. Develop GIM value proposition
3. Develop draft GIM competencies

Expand membership: Entry to

1. Create task force to meet with key sources for promotional campaigns on government websites (dist. links)
2. Research career-related materials on government websites (dist. links)
3. Populate websites with more profiles etc.)

100 Days

Glance" (2012 – 2015)

Information
 Practices
 in the fields of
 Management
 Technical
 Information
 Opportunities of
 Advise



Surveyors and
 which benefits
 geomatics
 standards / peer

- ### Objectives 2015
1. Membership has increased by at least 25% from 2010
 2. All geomatics areas represented in membership base
 3. 70% of membership involved in promotion and support
 4. Accurate digital cadastre in place in Ontario
 5. Attractive articling process for young, talented professionals
 6. Consistently low SRD review scores
 7. 90% compliance with mandatory prof dev activity requirements
 8. High member satisfaction ratings for prof dev activities & AOLS meetings
 9. National level programs defined jointly with PSC to maximize member benefits
 10. Increase in educational institutions accredited under CBEPS

- ### Objectives 2012 Update
1. Changes to regulation 1026 complete
 2. High member engagement in Commissions, Committees and outreach
 3. Company established, funded and staffed for accurate digital cadastre; AOLS strategy for digital survey submission defined
 4. Improved entry process in place
 5. No further attrition in GIM membership
 6. In excess of 50 articling students (including 10 GIMs)
 7. Mandatory PD curriculum in place - more on-line courses available - tech communications & municipal planning
 8. Launch of new web site: high usage by members & non-members
 9. Establish and validate the GIM requirements

- ### Priorities
- | | |
|---|--|
| <p><u>Expand membership: Entry to the Profession</u>
 Website as a portal for survey information, educational support material, outreach etc.
 Place to go to get a definitive answers on how to enter the profession.
 Finished funding applications/private company signed on/off - for PR Campaign
 Profiles of members linked to salary study</p> | <p><u>Build on Regulation 1026 Changes</u>
 1. Need regulation passed
 2. Marketing - need package to go to Membership so they understand changes to 1026
 3. Need PD course curriculum in place
 4. Membership vote</p> |
|---|--|

- ### Day Action Plan
- | | | |
|--|--|--|
| <p><u>the Profession</u>
 (funding campaign)
 materials currently
 contribute gov't
 materials</p> | <p><u>1026 Readiness</u>
 1. Get Black Corner copy of regulation from the Government
 2. Develop communications package for membership
 3. Develop draft communications program for PD program</p> | <p><u>Other Action Plans</u>
 1. Investigate possible assistance programs for members in crisis
 2. Table Council discussions of process for protecting anonymity of individuals reporting misconduct
 3. Evaluate potential corporate memberships</p> |
|--|--|--|

In Hindsight

By Graham Bowden, O.L.S.

I have been retired for one year. It was a life changing experience, but mostly what I had expected. However several changes and adjustments were required that you won't find in the "How to retire books". So I thought I would take this opportunity to share some of my new insights. Whether you are retiring next week or in ten years this is useful information.

It is nothing new to say that when you retire you need outside interests. But the reason why you should have interests that are outside of the house or the old office is so that your friends and family can see you enjoying your retirement.

You will annoy or bore your friends with emails and tweets about all the fun things you are doing when they are at work. My favourite is to email photographs of myself cycling on a wooded trail on a beautiful spring day. Don't stop, your working friends actually enjoy knowing that at least someone is having a good day.

When did I decide to retire? Over 4 years ago, at a company meeting, we went around the table saying when we would retire. I picked a date that seemed far in the future at the time. Picking a "date" is much better than stating a time period as in "I will retire in four years". A date actually arrives. "In four years" is a floating target that may, and in all likelihood, will never arrive. Pick a date.

How did I decide on the date? I decided that in the future when I was asked the question, "When did you retire?" I wanted to be able to say at age 59. It just sounded better than 60. Everyone has his or her own unique reason.

When to retire? Retire when you still have some tread on your tires. Retire while there are still retirement positions available. Sounds silly but there are a whole lot of retired people and there just might not be any chairs left at the table when you finally get around to retiring.

How did I ever get things done? Every retired person I meet is busy, busier than they were when they worked. The difference is it is chosen tasks, not assigned duties that we are enjoying.

You may think your brain will stop working when you retire. Actually when the clutter and trivia of everyday work is gone you will have more RAM available to process life. (I wrote this article in 90 minutes.)

If you want to keep in contact with your profession or industry there are many opportunities to mentor new professionals. I was going to write "work on committees" but that is one of the things I do not miss. Now I get to do the work, like organizing a golf tournament for friends.

Two years before I retired I made a list of all the things I thought I wanted to do while I was retired. The rationale



Graham working on soapstone sculptures in his studio workshop. To see more of what he has been doing visit bowdenstonesculptures.com

was to "make a plan" and to make sure the list was long enough to "keep me interested". Turns out, I haven't had time to do most of the things on that list. Keeping interested is not a problem.

My working friends were quick to point out that retired people aren't allowed to grocery shop on weekends. I didn't know that rule. Apparently that time slot is reserved for the working population. Adjusting to daytime shopping wasn't a problem once I discovered that the senior discount days are on weekdays anyway.

When you retire, and your spouse or life partner is still working, you are required to surrender 20% of your closet space. According to my partner it is a law, but you won't find that fact in the "How to" manuals either. Besides it is counter intuitive as now that I have more time to buy clothes I need more closet space. The matter is still under review.

I had to complete a questionnaire the other day. When it came to the space for the date I just wrote retired. I seldom remembered the date when I was working. Why would I care more now?

And when you finally get that first CPP cheque remember to send a thank you to your working friends to let them know you appreciate their hard earned dollars. Thank you.

You know the phrase 'use it or lose it'. The same can be said of retirement. Think of retirement as a non-renewable resource. When it is gone, it is all gone, and you can't get it back. I have yet to meet a retired person who said, "I wished I had worked longer". What are you waiting for?

P.S. If you have any questions about retirement, send me a message. I'll get back to you if I can find the time.



SCHEDULE “A”

ALLEGATIONS OF PROFESSIONAL MISCONDUCT

CANADA)	IN THE MATTER OF the <i>Surveyors Act</i>
)	R.S.O. 1990, Chapter S.29, as revised.
)	
PROVINCE OF)	AND IN THE MATTER OF Ward I. Houghton, O.L.S.
)	
)	
ONTARIO)	AND IN THE MATTER OF a Disciplinary Hearing of the
)	Discipline Committee of the Association of Ontario Land
)	Surveyors held in accordance with the sections 26 and 27 of
)	the said Act.

I, WILLIAM D. BUCK, O.L.S., C.L.S., P. ENG., of the Town of Markham, in the Region of York, am the Registrar of the Association of Ontario Land Surveyors.

1. The Council of the Association of Ontario Land Surveyors (AOLS) pursuant to Section 25(7)(a) of the *Surveyors Act*, by a Motion dated July 17, 2011, directed the Discipline Committee to hold a hearing in respect of allegations of professional misconduct against Ward I. Houghton, O.L.S.
2. It is alleged that Ward I. Houghton, O.L.S. (herein referred to as “Mr. Houghton”), in his personal capacity, and as the official representative for the firm Houghton + Houghton Inc. Ontario Land Surveyors, is guilty of professional misconduct within the meaning of Section 35 of Regulation 1026, R.R.O. 1990, as amended, the particulars of which are as follows:
 - a) On or about April 29, 2011 Mr. Houghton, as a representative of Houghton + Houghton Inc., received an email from the City of St. Thomas advising him of the results of the quotations that had been submitted for a surveying project in the City, and noting that the firm Callon.Dietz Incorporated had been awarded the project for a total price of \$18,871.00. The price submitted by Houghton + Houghton, the only other bidder, was \$32,770.00.
 - b) On or about May 2, 2011 Mr. Houghton sent an email to Mr. Terry Dietz, O.L.S. of the firm Callon.Dietz Incorporated in which he noted that his firm, Houghton + Houghton Inc. owned the copyright to all plans prepared by his firm as well as to all plans prepared by J. G. Rupert, O.L.S. Mr. Houghton requested a \$5000 retainer and a signed contract before he would research these plans for Mr. Dietz and estimated that there would be over 200 plans related to this project. Mr. Dietz responded to this email on May 3, 2011, stating that he would contact Mr. Houghton after he had completed his title search.
 - c) On or about May 3, 2011, Mr. Houghton responded to Mr. Dietz by email, asking Mr. Dietz to define the meaning of “the results of our title search” as stated in his earlier email.
 - d) In a subsequent email to Mr. Dietz, also on May 3, 2011, Mr. Houghton estimated that his charges to Mr. Dietz for supplying copies of the Houghton + Houghton Inc. and the J. G. Rupert plans would be approximately \$40,000.00. In this email, he noted that this cost would far exceed the Callon.Dietz quote of \$18,871.00 to complete the project. He then suggested that a possible solution to this situation would be for Mr. Dietz to withdraw his quotation to the City of St. Thomas. He speculated that Houghton + Houghton, as the only other bidder, would be awarded the project at their original bid price of \$32,770.00 and he offered that if such were the case he would then hire Callon.Dietz Incorporated to perform most of the work on the project. He further offered to assume the cost of the research, bars and stakes and to pay Callon.Dietz Incorporated the same amount of \$18, 871.00 that they had quoted to the City of St. Thomas.
 - e) On or about May 4, 2011, Mr. Dietz replied to Mr. Houghton’s most recent May 3rd email, stating that he did not think Mr. Houghton’s proposal was “very ethical or professional” and that he was not interested in discussing it further.
 - f) On or about May 4, 2011 Mr. Houghton replied to

Mr. Dietz's email, stating that he found nothing of this unethical or unprofessional and offering to have an "off the record" meeting with him to discuss the situation.

- g) On or about May 4, 2011 Mr. Dietz called the Registrar to discuss the above described email exchange with Mr. Houghton. The Registrar advised Mr. Dietz that the correct protocol would be for him to file a formal complaint under the *Surveyors Act* against Mr. Houghton.
 - h) On May 5, 2011 the Registrar received a formal written complaint from Mr. Dietz alleging that Mr. Houghton had committed an act of professional misconduct.
 - i) The Complaints Committee considered submissions made by both Mr. Dietz and Mr. Houghton and in a written Decision issued on July 4, 2011 directed that Mr. Houghton be referred to Council with a recommendation that he be referred to the Discipline Committee on grounds that he had committed acts of professional misconduct, as defined under Section 35 of the *Surveyors Act*.
3. A member has a statutory duty to share surveyor's field notes for a "reasonable fee" under the *Surveys Act*. The conduct of the member in seeking the monetary payments demanded are far and above what most members of the profession would consider fair and reasonable.
 4. It is alleged that the member has committed an act of professional misconduct as defined by Section 35(5) of Regulation 1026, R.R.O. 1990, as amended of the *Surveyors Act* in that he counseled a fellow member to

collude with him in modifying the results of a competitive tendering process by the City of St. Thomas, which is contrary to Section 33(2)(a) of Regulation 1026.

5. It is alleged that the member has committed an act of professional misconduct as defined by Section 35(16) of Regulation 1026, R.R.O. 1990, as amended of the *Surveyors Act* in that he attempted to solicit work from another member when he knew that this work had already been awarded to that member.
6. It is alleged that the member has attempted to extract money from a professional colleague as a basis of securing a tender awarded by the City of St. Thomas to that professional colleague (Mr. Dietz's firm), which was more competitive than the submitted by the member, which is contrary to Sections 35(17) and 35(21) of Regulation 1026.
7. It is alleged that the member has committed acts of professional misconduct as defined by Section 35(21) of Regulation 1026, R.R.O. 1990, as amended of the *Surveyors Act* in that his actions would be reasonably be regarded by members as dishonourable or unprofessional.
8. It is alleged that the member failed to comply with the *Code of Ethics* of the AOLS in that he failed to conduct his professional affairs in such a manner as to maintain public confidence and trust in the profession, and in a dishonourable manner, all of which is contrary to Section 33(2)(a) of Regulation 1026, R.R.O. 1990, as amended. Failure to comply with the *Code of Ethics* constitutes Professional Misconduct within the meaning of Section 35(3) of Regulation 1026, R.R.O. 1990, as amended.

Dated at Toronto, Ontario, this 9th day of August, 2011.

DISCIPLINE DECISION

IN THE MATTER OF the *Surveyors Act*, R.S.O. 1990,
Chapter S.29, as amended

AND IN THE MATTER OF Ward Houghton, O.L.S.

AND IN THE MATTER OF a Disciplinary Hearing
Of the Discipline Committee of the Association of
Ontario Land Surveyors held in accordance with
Sections 26 and 27 of the said Act

Order and Reasons

This panel of the Discipline Committee convened on March 23rd, 2012. The Member had retained Mr. Tracey Warne, Q.C. and both Mr. Houghton, O.L.S. and Mr. Warne, Q.C. were present. The Association was represented by Mr. Robert Fenn, Counsel; both Mr. Fenn and the Association Registrar, Mr. Bill Buck, were also present. The panel was assisted by counsel, Carol Street.

On convening, the panel was presented with a Joint

Submission and Undertaking as a proposed resolution of the matter.

The proposed Joint Submission, as originally signed by both Mr. Houghton, O.L.S., and Mr. Buck, O.L.S., C.L.S., was marked as Exhibit 5 at the hearing. A copy of the Joint Submission, as presented to the panel, is attached to this Order and Decision as Appendix A.

cont'd on page 30

Pursuant to paragraph 4 of the proposed Joint Submission, the parties had not come to any agreement as to whether or not a fine should be imposed on the Member, and if so, the amount of that fine. Mr. Fenn on behalf of the Association submitted that a fine in the amount of \$5,000 (the maximum fine available under section 26(4)(h) of the *Surveyors Act*. Counsel for the Member submitted that in all the circumstances the panel should not impose a fine in any amount.

After hearing submissions, the panel recessed and considered the Joint Submission.

The panel accepted the Joint Submission. Pursuant to paragraph 2 of the Joint Submission the Member was reprimanded by the Lieutenant-Governor in Council representative, Mr. Eric Bundgard. With respect to the fine requested by the Association, the panel concluded that a fine was appropriate in the circumstances. A fine in the amount of \$2,500 was

imposed. The Member was given 6 months from the date of the hearing to pay the said fine.

The panel has therefore accepted the Joint Submission between the Member and the Association, in the form attached hereto as Appendix A, with a fine in the amount of \$2,500 to be paid within 6 months of March 23rd, 2012 and hereby issues its Order to that effect.

This Order may be signed in counterparts.

Oral Decision given March 23rd, 2012.

Steve Gossling, O.L.S.

Tom Packowski, O.L.S.

Rick Miller, O.L.S.

Dan Quinlan, O.L.S.

Eric Bundgard, Lieutenant-Governor Appointee

APPENDIX A

JOINT SUBMISSION TO DISCIPLINE PANEL ON CONSENT OF ALL PARTIES

1. The Council of the Association of Ontario Land Surveyors (AOLS) pursuant to Section 25(7)(a) of the *Surveyors Act*, by a Motion dated July 17, 2011, directed the Discipline Committee to hold a hearing in respect of allegations of professional misconduct against Ward I. Houghton, O.L.S.

The Association of Ontario Land Surveyors (the "Association") and the Member, Ward Houghton, O.L.S. (the "Member"), make joint submission to the Discipline Panel under the *Surveyors Act* in respect of this matter by asking the Discipline Panel to issue a consent Order on the following terms:

1. The Member pleads guilty to a charge and allegation of professional misconduct against the Member (the "Charges") in that the Member sent an inappropriately worded e-mail to a fellow Member suggesting that the fellow Member withdraw his bid and that they work together on a project.
2. The Member shall be reprimanded and the reprimand will not be recorded on the Register of the Association.
3. The Member pays to the Association, within ninety (90) days of March 22, 2012, the sum of \$9,500.00 for costs.
4. The Association believes that this is an appropriate case for a fine in the amount of \$5,000.00. The Member disagrees. The parties agree that the amount of the fine and whether such fine is applicable or warranted in the circumstances of this case shall be decided by the Discipline Panel. The Association and the Member shall be entitled to make submissions as to the amount and the applicability of such fine.
5. The Member shall be required to successfully pass a

course in professional ethics at a College or University level on or before March 22, 2013, such course to be pre-approved by the Registrar of the Association.

6. During the period from March 22, 2012 to March 22, 2013, the Association shall be entitled, in its sole discretion, to send a monitor, who shall be a licensed Member, to review and monitor the business practices of the Member.
7. In consideration of the Association's acceptance of this Joint Submission the member will provide an undertaking to the Registrar in the format attached hereto as Schedule A regarding his future conduct regarding survey research.
8. The Order or Decision of the Discipline Panel shall be published, with names, in the next issue of The Ontario Professional Surveyor magazine and shall be posted on the public side of the AOLS website.
9. The terms of this Joint Submission are fair and reasonable and protect the public interest.
10. The Member acknowledges having been advised to obtain and has had the benefit of independent legal advice, or, has voluntarily declined to obtain same.
11. This Joint Submission and agreement thereto by the Member may be set up as a complete bar and answer by the Association to any appeal or judicial review of the Order or Decision of the Discipline Panel resulting therefrom.

DATED at Toronto, Ontario, this 22nd day of March, 2012.

SCHEDULE A

UNDERTAKING

FROM: Ward Houghton, O.L.S. (the “Member”)

TO: William D. Buck, O.L.S., C.L.S. (the “Registrar”)
Registrar of Association of Ontario Land Surveyors

In consideration of the terms agreed to in a Joint Submission entered into between the Member and the Registrar for purposes of disposing of the charges and allegations laid before the Discipline Committee of the Association of Ontario Land Surveyors, and other good and valuable consideration, the parties agree as follows:

1. The member will cooperate with his fellow members by exhibiting or giving a copy of his regular field notes to any surveyor who asks for same for a reasonable charge.

2. If, for any reason, the Member does not comply with the terms of the Order and this Undertaking, then this matter shall be referred back to the Discipline Committee.

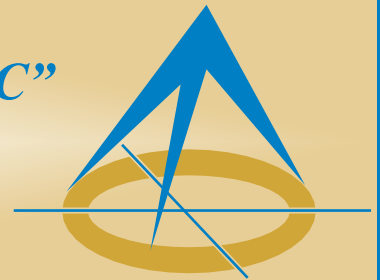
3. This Undertaking is binding on the successors of the parties hereto.

Dated at Toronto this 22nd day of March, 2012.

AOLS 17th ANNUAL “GEOMATICS PICNIC”

Innovations in Geomatics Expo

September, 2012



BOOK REVIEW

the Law of the Land: The Advent of the Torrens System in Canada

By Izaak de Rijcke, O.L.S., LL.M.


Already four years after publication, this book escaped attention by most readers and has remained below the radar. This is not a reason to dismiss this interesting book; history rarely goes out of date. Apart from the usual dates for its inception and places where it was first adopted in the world, we know relatively little about Robert Torrens, the person, or the extensive political will and lobbying that was necessary to bring about the adoption of the Torrens system in Canada. This book is an answer to anyone needing information that helps lead to a better understanding of Land Titles legislation in Canadian jurisdictions. For that matter, it is also relevant to a search by anyone seeking insight to the legislation's popularity. This popularity has seen, in recent decades, its adoption in New Brunswick and Nova Scotia and its rapid expansion in Ontario.

The author is a member of the Faculty of Law at Monash University in Australia and this might explain the apologetic slant in tailoring to the interests of readers from the legal profession. However, despite some daunting challenges in trying to make legal history interesting, he acknowledges his own perspective in the final chapter. Greg Taylor writes,

The story I have told is, of course, a lawyer's story. That is nothing to be ashamed of, but a story told by someone from another profession involved in land titles would be different in emphasis. In particular, a surveyor might have concentrated less on the details and origin of the legislation and its reception in the various jurisdictions in which it was introduced, and said rather more about the – too often neglected – practical requirements of accurate surveys and maps needed to support a system that provides for a state guarantee of title. I lack the expertise to tell that story, but I do not wish to let it be thought that such things can simply be forgotten or taken for granted. Without them a functioning Torrens system is not possible.¹

That Canadian land registration systems have adopted land titles, as opposed to a registration of deeds system, comes as no surprise when one appreciates the facility of title recording in electronic registration. What remains a surprise is the extent to which this has been able to happen in jurisdictions which have not also implemented a system of accurate surveys and maps. The quoted paragraph begs the question, "Do jurisdictions which do not have accurate surveys and maps have a functioning Torrens system?"

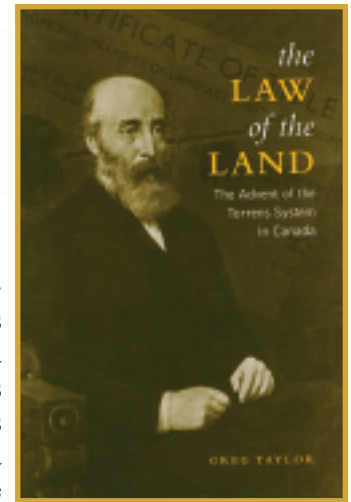
This is not just a philosophical question; it invites informed debate on what a cadastre holds for land titles registration. It also suggests that jurisdictions which make a loose claim to enjoying the benefits of a Torrens system are in fact turning a blind eye to their greatest vulnerability – the lack of a guaranteed parcel (or, as is increasingly feared, the inability to ascertain a guaranteed parcel).

Only a passing four pages explore the comparison between Ontario's successful adoption of land titles with the Torrens system as a failure in the United States. Title insurance is alluded to as a reason, but clearly is not the only culprit. Land surveyors interested in understanding the relationships between land registration, title insurance, surveys and the politics that imbues all would do well to consider this book as a source of perspective and insight. The focus is clearly not Ontario-centric. However, it fails in delivering a comprehensive Canadian perspective. Canada lands and the origin of *Dominion Land Title Acts* are not considered at all. Despite this oversight, there are many reasons for professional land surveyors to add this title to their library. In addition to what has been described above, this book is invaluable in serving as a quick reference guide when working between multiple jurisdictions in Canada. That the Torrens system in Alberta is different from Ontario and different again from British Columbia comes as no surprise. For the first time, this book offers a clear and easy-to-read understanding as to why these differences exist. Some differences are so profound as to beg the label "Torrens" as having any validity in describing a particular Canadian jurisdiction's land titles legislation. Highly recommended. 

Izaak de Rijcke is a licensed surveyor based in Guelph, Ontario. He is a practicing lawyer, focusing on boundary and land title related issues. He has written numerous articles, co-authored books and taught seminars and courses for lawyers and land surveyors. He can be reached by email at: Izaak@izaak.ca

Taylor, Greg, *the Law of the Land: The Advent of the Torrens System in Canada*, Osgoode Society for Canadian Legal History, Toronto, 2008, 221 pp. ISBN 978-0-8020-9913-6.

¹ At page 162.



Industry News

Surveying with LiDAR Tools and Techniques

By Rajive Sharma

The surveying industry has come a long way with the advancement of measurement tools and techniques to create a faster and more efficient way to conduct its business. The last few decades have brought many industries together as a result of the increased sharing of information between surveying, mapping, remote sensing, planning, construction and designing professionals. Each of these industries not only depends on each other to share information but also to add value to their products.

As we moved from old measurement techniques and transitioned from tapes to theodolites, total stations and the Geographic Positioning System (GPS), our measurements became more precise and accurate while our work became faster and more efficient. Just as we thought that we were at the peak of innovation in surveying technology, along came LiDAR (Light Detection and Ranging).

The last decade has seen an exponential growth in the use of LiDAR and its applications in the surveying industry. There is a terrestrial LiDAR system that works on phase, time of flight or both, which provides tens of thousands of measurements in a second. Since these systems are stand alone systems, they achieve very high accuracy and precision which is necessary in the surveying industry.

LiDAR soon became a preferred tool for surveyors to prepare their SRPRs (Surveyors Real Property Reports), and Site Plans where information for buildings, driveways, parking areas, sidewalk, fences, and municipal services can be quickly and safely gathered with high speed and accuracy.

Even as this technology was flourishing, other products were entering the market that would cover larger areas in a very short period. The completion time for surveys was being reduced by a factor of 100's. This was being achieved using a "Mobile Mapping System" (MMS). These units would not only include lasers but also GPS, Inertial Measurement Unit (IMU) and wheel encoders.

Using the MMS one could survey 500-600 line kilometres each day. These sensors became very popular tools for surveying city roads, bridges, pavement, assets, and facilities, etc.

As a surveyor you can be lost in the maze of different systems and their levels of performance. The questions that you ask are; what system is right for me and why? What will it cost me to survey using the conventional techniques in comparison to these new methods? How much time will I save, and can I still do it within my budget?

We will take away the mystery and discuss why and when you should adopt the new technology and whether it is a cost saving or not.

The three LiDAR technologies that have been under discussion in the last decade or more are:

1. Terrestrial LiDAR know by its acronym TLS
2. Mobile mapping system addressed as MMS
3. Airborne LiDAR system referred to as ALS

Let us look closer at the triple constraints (time, cost and quality) of a project when using any of these three technologies.

Terrestrial LiDAR System (TLS)

There are many companies with units out in the market that come under this umbrella and the Topcon GLS 1500, which is provided by the Sokkia Canada team, is one of them. How would I know what system is the right choice for me?

The answer lies in the application area and the deliverables that you want to produce. Some systems work on time of flight and can give you a long range, while others can perform on phase and give you the accuracy that your project requires. However, the Topcon GLS 1500 system has both phase and time of flight (TOF) built into its unit. This system can achieve accuracy and long range. Your return on investment depends on the use of your technology in as many application areas as possible.

These application areas are: mining, architecture, construction, reverse engineering, forestry, agriculture, disaster management and many more. In these applications, a scanner can work depending on its range, accuracy, size, weight and technology. For example, there are very limited sensors out there that have an option to choose an array of lenses. This technology will help you to keep your beam divergence smaller at a large distance, therefore giving you better accuracies at large distances with high signal to noise ratio (SNR).

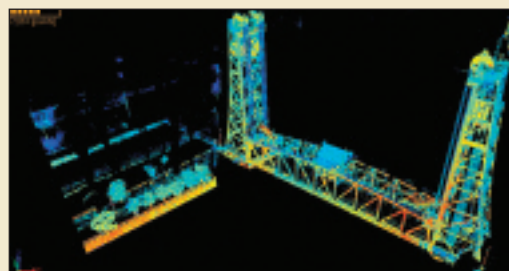
Another important factor to consider when choosing the correct terrestrial scanner is its software compatibility. It is important to know if the proprietary software from the sensor's manufacturer can handle large data sets and produce output in a format that is compatible with other 3D modeling and visualisation software in the marketplace. Since the system delivers panoramic images, it is important to note the quality of the imaging of the product that is finally delivered.

Data calibration, Quality Assurance, Quality Control and production processes, all available from the manufacturer, should be well understood to completely know the strengths and weakness of any system. Accuracies of 4mm are achievable and advertised by many product manufacturers. But will the scanner deliver your projects on time,

within budget and with the desired quality? The answer lies in doing a pilot project or a proof of concept to assess the tech-



Terrestrial LiDAR System (Topcon GLS-1000) being used to survey bridge



LiDAR point cloud for the bridge

cont'd on page 36

nology, tools and techniques provided by a manufacturer. It is surely a great tool that produces survey grade quality products at a reasonable cost. While its methodologies and techniques can help to finish a survey faster, if not cheaper but still at the same cost as a conventional survey, it still lags in speed behind MMS technology if accuracy can be compromised to decimetre levels.

Mobile Mapping Systems (MMS)

There are many systems out there that perform mobile mapping using LiDAR or cameras. IP-S2 is a product from Topcon and many other products and companies can be found on the market. These units can be classified into either a surveying or mapping category. All of these instruments encompass a GPS, an inertial measurement unit, with laser, camera or both, assisted by a wheel encoder. In an ideal situation one can collect up to approximately 500 line kilometres in a day. The down side is that the accuracy achieved by MMS cannot match the accuracies achieved by TLS. It may also be more expensive to conduct small area surveys using a mobile mapping system.

The accuracy achievable by any system can be defined as either a surveying or mapping grade. The price of these units will vary accordingly. Many companies will claim that in ideal conditions their system can achieve accuracies of 5cm. The error model of a mobile system is shown to the right.

It can be seen that error is a cumulative of inertial measurements, GPS, misalignment angles and clock errors. Therefore, a complete understanding of the manufacturers' hardware and their filtering techniques is required before making a sound

- $$p_G^l = p_{GPS}^l + R_b^l \cdot R_s^b \cdot r^s - R_b^l \cdot l^b$$
- p_G^l coordinates of target point in local level (l) frame,
 - p_{GPS}^l coordinates of navigation sensor center in l frame,
 - R_b^l rotation matrix from body (b) frame or navigation frame to local level frame, defined by the three rotation angles roll, pitch and yaw,
 - R_s^b rotation from laser scanner (s) frame into body frame, usually referred to as boresight matrix,
 - r^s coordinates of target point given in laser scanner frame,
 - l^b lever-arm from scanner origin to navigation center origin given in the body frame.

$$\begin{bmatrix} X \\ Y \\ Z \end{bmatrix}_G^l = \begin{bmatrix} X \\ Y \\ Z \end{bmatrix}_{GPS}^l + R_b^l(\omega \ \varphi \ \kappa) \cdot \left(R_s^b(d\omega \ d\varphi \ d\kappa) \cdot r^s(\alpha \ d) - \begin{bmatrix} l_x \\ l_y \\ l_z \end{bmatrix}^b \right)$$

Error Model

decision on which mobile system to use and its return on investment. Most of the systems will deliver panoramic 360 degree

cont'd on page 38



Mobile Mapping System (Topcon IP-S2) collecting 3D data on city streets

images and the quality of the images will be of great importance when extracting features. So when assessing a system, look at whether your desired project can be delivered within the triple constraints set by your client (time, cost, and quality) and ask for a proof of concept while the vendor works with your technical team to assess the technology under consideration. Always lay out your desired acceptance procedures and test the system to your parameters. If required work with a consultant who is knowledgeable to help you in assessing the technology that you desire.

Airborne LiDAR system (ALS)

Airborne laser systems are primarily used for mapping large areas. They are the preferred tool for mapping difficult terrain where it is not easy to access the site by road or by foot. This system can cover large areas in a short period of time. LiDAR is being used in many application areas. The achievable accuracies advertised by the system manufacturers are approximately 15cm vertically while horizontal accuracies will be dependent on the height of flight and all this at 1 sigma confidence. Different

systems in the market have constraints on maximum height and maximum pulse rate associated with altitude. So it is important to note the accuracies associated with altitude and how it is constrained with maximum pulse rate. It is also important to note the pulse shape and consistency with Q-switching (pulse formation) techniques that are used for accuracy and quality purposes.

Airborne LiDAR systems can be categorized as rotating mirror or oscillating mirror systems. Manufacturers of each type of system will indicate its advantage over the other system. More importantly for the user is to see how the point spacing on the ground is defined, and for the scope of the project, how best he/she can plan the mission to achieve the consistent ground coverage. A lot of effort is put into mission planning to define flight parameters that will be based on the type of terrain and type of vegetation cover that you need to penetrate to reach the ground.

Conclusion

The above three LiDAR systems have tools and techniques that can produce products for topographic surveys, road design, maintenance, and construction, utility mapping, asset management, feature extraction, hydrology, forestry, power line mapping, telecommunication mapping and many more. As a surveyor it is good to know about these systems and what tools are available when comparing the time, cost and quality of the product to be delivered.



Rajive Sharma is a geospatial product specialist with Sockkia Canada and has more than a decade of experience in executing LiDAR projects around the world. His area of experience includes disaster management, topographic surveying, hydrology enforcement, power line mapping, infrastructure development, road design and others. He can be reached at Rajive.Sharma@SOKKIA-CORP.com for more information.

NEWS FROM 1043

Changes to the Register

MEMBERS DECEASED

John Quinsey	897	Apr. 9, 2012
John Ward	1463	May 12, 2012
Frederick J. S. Pearce	674	May 27, 2012
W. Richard Barrow	1479	June 1, 2012

MEMBERS REINSTATED

Barry Costello	CR19	Apr. 16, 2012
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Surveyors in Transit

MTE Ontario Land Surveyors has opened a branch office at 520 Bingemans Centre Drive, Kitchener, ON, N2B 3X9. The phone number is 519-743-6500. **Ken Ketchum** is the managing OLS.

MRM Surveying Ltd. has moved to 12888 Keele Street, King City, ON, L7B 1H7. Phone: 905-833-0332, Fax: 905-833-7003.

R.D. Tomlinson's business number is 905-773-0968.

Barry Costello has returned from retirement and is now self-employed at 58 Parkside Drive, Hamilton, ON, L8S 3Y2. Phone: 905-630-0414.

Ralph T. Bode is now with **Stewart Weir**, 1140, 2121 Premier Way, Sherwood Park, AB, T8H 0B8. Phone: 780-410-2580.

Rasche and Hyde Ltd. is now located at P.O. Box 6, 1333 Highway No 3 East, Unit B, Dunnville, ON, N1A 2X1. Phone and Fax remain the same.

Tim Hartley is now with **Total Tech Surveying Inc.** at 316 Talbot St. N., Unit 4, Essex, ON, N8M 2E2. Phone: 519-818-2787.

Steven Card is no longer employed at **Midwest Surveys Calgary**.

THE AOLS IS PLEASED TO ANNOUNCE THAT ANOTHER ONTARIO LAND SURVEYOR WAS SWORN IN:

Goran Lale 1951 June 6, 2012

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TRIMBLE CANADA

EDUCATIONAL FOUNDATION NEWS

Congratulations to our Spring 2012 Award Winners and Additional 2011 Award Winners

Survey Law II Awards (New) 2012 – Two groups of students were recognized for their academic achievement in Survey Law II. **Pirathepan Ramachadran** and **Mike Makovic** were the top two students in ENG 4170 (Survey Law) which was offered at York University and taught by Graham Bowden. The two Fall 2011 AOLS Survey Law I (D. W. Lambden Award) winners, **Roger Grose** and **Scott Kaldewey** tied again for first place in the AOLS Survey Law II course, which was taught by Izaak de Rijcke.

Loyalist College (2012) – **Cody Baatnes** was the recipient of the Eastern Regional Group Award, which is co-sponsored by the Eastern Regional Group and the Educational Foundation. This award is presented to a graduating student for scholastic achievement and leadership in the Survey Technician Program.

Fleming College (2012) – **Sean Daye** was the recipient of the Geomatics Award, which is presented to a student with the highest overall average in his/her second year in the Geomatics Technician Program. **Katie Roth** received the GIS award, which goes to the student in the GIS Applications Specialist Program who exemplifies leadership in project management. **Jackie Crittenden** received the

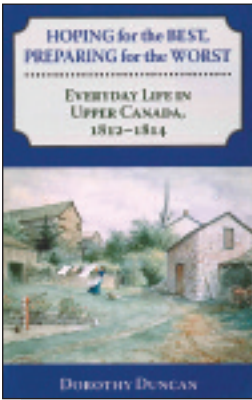
Lawrence Nesbit Memorial Award, which is co-sponsored by the Kawartha-Haliburton Regional Group and is presented to a student in Geomatics who helps and assists his/her peers with patience and understanding in achieving difficult goals.

York University (2011) – **Patrick Lasagne** and **Chelsea Turnpenney** were the recipients of the two new First Year Entrance Awards. **Shrishti Ramakrishnan** and **Wendel Chan** received recognition for the Highest GPA in 1st and 2nd Year, **Mark Girin** for the Highest GPA in 3rd year and **Greg Ford** and **Kevin Wahba** for academic achievement in Survey Law I. **Shrishti Ramakrishnan** was also the recipient of the **Hubert J. Reinthaler Award**, which is presented to a well-rounded student with a combination of high academic performance and evident characteristics of enthusiasm, leadership and professionalism.

University of Waterloo (2011) – Awards for the 2011 academic year were presented to **Michael Demarco** and **Carolyn McCormick** for their academic excellence in the Geodesy (Geog 310) course in the Geomatics program in the Department of Geography and Environmental Management.

The Educational Foundation would like to recognize with thanks, donations made in the memory of Patrick Sutherland, John Quinsey and Fred Pearce.

BOOK REVIEWS



Published by Dundurn
ISBN 978-1-4597-0592-0

HOPING for the BEST, PREPARING for the WORST Everyday Life in Upper Canada, 1812-1814

By Dorothy Duncan

Hoping for the Best, Preparing for the Worst explores the web of human relationships that developed in Upper Canada following the American Revolution, in the years leading up to the War of 1812, and during the conflict that raged for two years between the young United States and Britain, its former master. The book focuses on the families, homes, gardens, farms, roads, villages, towns, shops, and fabric of everyday life in this frontier society.

Upper Canada was a land in transition as First

Nations, fur traders, Loyalists, entrepreneurs, merchants, farmers, and new-comers from every walk of life formed alliances and partnerships based on friendship, marriage, respect, religion, proximity, and the desire to survive and prosper. With the declaration of war in June 1812, Upper Canadians realized that not only their lives but their future peace and prosperity were threatened. They responded with perseverance, loyalty, and unexpected acts of bravery.

Information taken from the back cover.

On Common Ground

The Ongoing Story of the Commons in Niagara-on-the-Lake

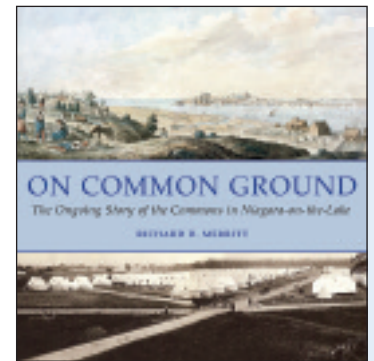
By Richard D. Merritt

For 250 years a large tract of oak savannah at the mouth of the Niagara River designated as a Military Reserve has witnessed a rich military and political history: the site of the first parliament of Upper Canada; a strategic battle during the War of 1812; and annual summer militia camps and the training camp for tens of thousands of men and women during the First and Second World Wars. In the midst of the Reserve stood the symbolic Indian Council House where thousands of Native allies received

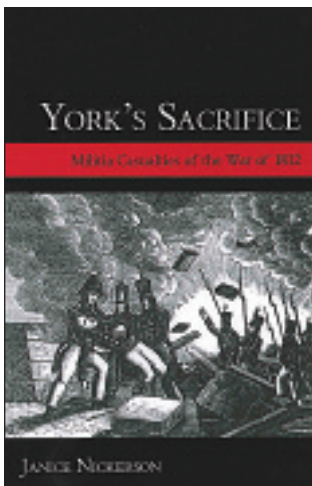
their annual presents and participated in treaty negotiations.

From its inception, this territory was regarded by the local citizenry as common lands, their “Commons.” Although portions of the perimeter have been severed for various purposes, including the Shaw Festival Theatre, today this National Historic Site comprises playing fields, walking trails, and remnants of first-growth forest in Paradise Grove.

Information taken from the publisher.



Published by Dundurn
ISBN 978-1-45970-3483



Published by OGS/Dundurn
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York's Sacrifice Militia Casualties of the War of 1812

By Janice Nickerson

The militia's contribution to the War of 1812 is not well understood. Even now, 200 years later, we don't know how many Upper Canadian militia men died defending their home.

York's Sacrifice profiles 39 men who lost their lives during the war. They include 19 residents of the town of York, five residents of York County, and 11 residents of Halton, Peel, and Wentworth Counties. Where possible, biographers include information about each man's

origin, residence, occupation, civic life, family, militia service, and circumstances of death. A section on records provides detailed guidance in finding and using records from the period to trace an ancestor's militia service and life in this difficult time period.

Additionally, a complete list of men who served in the three York regiments during the war identifies those who were killed, injured, captured, or deserted.

Information taken from the back cover.

The Last Word

The Ridouts and the War of 1812

June 18th marks the 200th anniversary of the War of 1812. In recognition of this historic event, I thought it would be interesting to see if there were any records of Provincial Land Surveyors who might have been involved in the war. There were quite a few well known surveyors who emerged during my research but there was one surveying family that caught my interest.

Thomas Ridout was born in 1754 in Sherborne, England. He immigrated to Maryland in 1774. In December 1787 Thomas set out for the new settlement of Kentucky to collect some business debts but while travelling there, he and some others were captured by Shawnee Indians. He escaped death and after three months of captivity was taken to British-held Detroit and released. In mid-July 1788 he arrived in Montreal. In 1789 he married his second wife Mary, who was the daughter of a loyalist, and in 1792 they moved to Niagara on the Lake, the temporary capital of Upper Canada. In 1793 he became a clerk in the Surveyor General's Office. In the fall of 1809, despite competition from William Chewett, he became the Surveyor General and remained in this post until his death in 1829. I found several letters in the

Thomas Ridout Family Fonds on the Archives of Ontario website which were written during the War of 1812 between Thomas and his son Thomas G. Ridout, and between Thomas G. and his brothers George and Samuel. In our own records, I discovered that William (Bill) Edwin Ridout, OLS #722, 1927-2010, was the great great grandson of Thomas Ridout.

In the 1887 AOLS Annual Report, I found the biography of Samuel Ridout, who was the eldest son of Thomas. He was born in Maryland in 1778. In 1800 after his father had settled in York, Samuel left Maryland to join him and his wife and their family. In 1801, through his father's connections, he entered the Surveyor General's Office as a clerk and in 1806 he became a Deputy Provincial Surveyor. Samuel entered the militia as a lieutenant in 1807 and received a commission in the 1st York Militia in 1809. In April 1812, with war looming, he was promoted to captain in the 3rd York Militia and during the war was assigned to garrison duty at York. After the war, in April 1815 he was commissioned as sheriff of the Home District, a post he would hold for more than 12 years. He was appointed registrar of York County in 1827, a position he retained until his death in 1855.



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1/2 page B&W	\$255	\$225
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