



Central Valley Chapter - California Land Surveyors Association  
[www.californiacentralvalleysurveyors.org](http://www.californiacentralvalleysurveyors.org)

# Central Valley Chapter THE PRISM



**Date:** March 22, 2017

**Time:** 6:00 p.m.

**Location:** Perko's @ 901 North Carpenter Road, Modesto

**Speaker:** Evan Page, PLS

**Topic:** Examining the Rules of Surveying - A Preview

**Date:** April 26, 2017

**Time:** 6:00 p.m.

**Location:** Perko's @ 901 North Carpenter Road, Modesto

**Speaker:** Michael Durkee, Land Use Navigators

**Topic:** Recent Changes to the Subdivision Map Act

## Announcements

### ADOPT-A-ROAD CLEANUP DAY

Due to lack of participation, the Adopt-A-Road Program will be discontinued after the next Clean-up Day, which is scheduled for April 8, 2017.

### 2017 CLSA ANNUAL CONFERENCE

The 2017 Annual Conference is March 24-28. It will be held at the Wyndham Anaheim Garden Grove.

[Click for more information](#)

### 2017 State CLSA Executive Board Members Sworn In

Members of the 2017 Executive Committee was sworn in at the January Board meeting. The Committee members are as follows:

- President - Ian Wilson (San Francisco Chapter)
- President-Elect - Ron Nelms (Bakersfield Chapter)
- Secretary - Annette Lockhart (Sacramento Chapter)
- Treasurer - Keith Spencer (Central Valley Chapter)
- Immediate Past President - Roger Hanlin (Sacramento Chapter)
- Member at Large - Kevin Hills (Orange County Chapter)
- Member at Large - Rich Ray (East Bay Chapter)
- Executive Director - Kim Oreno (CAMS)
- Executive Administrator - Sophia Lisaius (CAMS)

**2017 Chapter Officers**

President: Will Paul  
 Vice President: Rich Fultz  
 Secretary: Rich Brown  
 Treasurer: Warren Smith  
 Chapter Director: Warren Smith  
 Chapter Director: Rich James  
 Alt. Chapter Dir: Will Paul  
 Alt. Chapter Dir: Rich Fultz

**2017 Chapter Committees**

By-Laws Committee:  
 Keith Spencer (Chairman)

Education Committee:  
 Keith Spencer (Chairman)

Membership Committee:  
 Rich Brown (Chairman)

Monument Pres Committee:  
 Mike Quartaroli (Chairman)

Newsletter:  
 Rich Brown (Editor)

Professional Practices Committee:  
 Mike Quartaroli (Chairman)

Website:  
 Keith Spencer (Web Master)

**2017 Chapter Programs**

Public Outreach Committee:  
 Zachary Wong (Coordinator)

Workshops:  
 Rich Brown (Coordinator)

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## Classes, Training, and Continuing Education

### CAD Masters - AutoCAD Level I (3-Day Course)

Mar 13-16, 2017, Walnut Creek

Mar 27-29, 2017, Sacramento

Apr 12-14, 2017 Walnut Creek

Apr 24-26, 2017, Sacramento

[Register here](#)

### CAD Masters - AutoCAD Level II (2-Day Course)

Apr 20-21, 2017 Walnut Creek

[Register here](#)

### CAD Masters - AutoCAD Level III (1-Day Course)

Apr 6, 2017, Walnut Creek

[Register here](#)

### CAD Masters - AutoCAD Civil 3D Intro (3-Day Course)

Mar 20-22, 2017, Sacramento

Mar 27-29, 2017 Walnut Creek

Apr 17-19, 2017, Sacramento

[Register here](#)

### CAD Masters - AutoCAD Civil 3D Adv. (2-Day Course)

Mar 22-23, 2017, Walnut Creek

Apr 12-13, 2017, Sacramento

[Register here](#)

# Mark Your Calendars

### 2017 CLSA Annual Conference

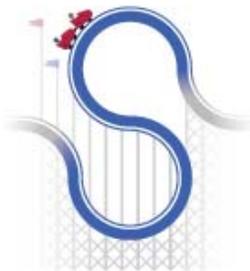
March 24-28, 2017, Wyndham Anaheim, Garden Grove

[Click here for more information](#)

### 2017 National Geodetic Survey Geospatial Summit

April 24-25, 2017, Silver Spring, Maryland

## 2017 CLSA ANNUAL CONFERENCE



# 2.0

## 51<sup>st</sup> Annual Conference

Wyndham Anaheim Garden Grove • March 24-28, 2017

## Editor's Message



It is with great sadness that I report that on April 8<sup>th</sup> the Central Valley Chapter will hold its last Adopt-A-Road clean-up day. I hope that members can find the time to support this wonderful outreach program just one last time. Donating just a few hours of your time on a Saturday morning can make a big improvement to our area. Over 10,000 vehicles travel up and down this Claribel Road daily, all of which can see the Central Valley Chapter showing concern for a local community. So, please clear your schedule one last time and come out on Saturday 8<sup>th</sup> @ 9am. The more people that show up, the less time it will take to care for our one mile of Right-of-Way. Show your support for your Chapter and your community.

If you would like to comment on this topic or suggest another, please submit it to: [editor@californiacentralvalleysurveyors.org](mailto:editor@californiacentralvalleysurveyors.org)

## State News

### CLSA Board of Directors Approves New Executive Director

As reported in February Edition of CLSA eNews

Sacramento, CA - On Saturday, February 4th, the California Land Surveyors Association announced that Kim Oreno, of Sacramento, has been selected as the organization's new Executive Director. In this role, she will oversee day-to-day operations of the association and lead CLSA's activities, including its work in advancing the interests of the profession of Land Surveying, maintaining the highest possible standards of professional ethics and practice, encouraging the uniformity of practices and procedures, and fostering the public faith in and understanding of Land Surveyors and their work.



Kim Oreno has worked for California Advocates Management Services since June 2004. During that time, she has served several associations in many different capacities including Administrative Director, Membership Coordinator and Administrator. During her time at CAMS, Kim has participated in the planning and implementation of countless seminars, conferences and trade shows. Kim has managed membership for thousands of members belonging to several associations and has managed Board of Director and Committee functions. Kim will be assisted by Sophia Lisaius who is now CLSA's Executive Administrator.

Kim Oreno can be reached at [kim@californiasurveyors.org](mailto:kim@californiasurveyors.org)

Sophia Lisaius can be reached at [clsa@californiasurveyors.org](mailto:clsa@californiasurveyors.org)

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## Technology

### GPR and Surveying

By Jeff Salmon

**CONSTRUCTION, BOTH RESIDENTIAL AND COMMERCIAL**, is the second-largest industry in the world—surpassed only by agriculture. From site plans and stakeouts to as built surveys and, now, BIM, construction has and will continue to provide a major market for surveyors. 2017 looks promising for this space.

Dodge Data and Analytics, a provider of research intelligence for the North American construction industry, has released its 2017 Dodge Construction Outlook. The report predicts that new construction starts in 2017 will increase 5% to \$713 billion for North America, compared to an estimated 1% in 2016, a significant increase.

Anecdotally, in my corner of the world (the Denver, Colorado, metro area) construction sites are sprouting up like proverbial mushrooms after a rainstorm. Driving by worksites, one cannot help but spot the ubiquitous logo of construction equipment giant, Hilti Corporation.

Founded in 1941 by Martin and Eugen Hilti, the firm is headquartered in Schaan, Liechtenstein and operates worldwide with nearly 20,000 employees in more than 120 countries. Beyond construction, Hilti serves a wide range of industries, including civil engineering, energy, and mining. Its products and systems include powder-actuated fastening, drilling and demolition, diamond coring and cutting, firestop systems, screw fastening, adhesive and mechanical anchoring, strut and hanger systems, and, of interest to surveyors, measuring instruments.

I talked to Annika Ensrud, business unit manager of Hilti USA, about the firm's products that surveyors practicing in the construction field might find intriguing.

**xyHt: We've seen a big trend towards the "digital worksite," that is, the increasing digitization of construction processes to yield major improvements in efficiency, productivity, and, thus, profitability. What is Hilti's approach to this trend?**

Continued on page 11

# Carlson for Surveyors

From field... to finish

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# Taking the Test

## Programming the HP33s

Enter this program into your HP33s to be able to calculate the inverse from two know points. This program will require the use of 7 labels.

### Inverse-1 (7 Labels)

**XEQ I** (Inverse Coordinates)

**XEQ I** to start the program.

At the prompts, enter a value for the following and press **R/S**

**N?** Northing  
**E?** Easting

After you have entered the second **E** value and pressed **R/S**, the following results will be displayed:

**A=** azimuth from the first point to the second point  
**B=** bearing from first point to the second point  
**D=** distance between points in feet  
**C=** distance between points in chains

Bearing format is: Quadrant - Degrees - Minutes - Seconds

Bearing N20°30'40"E Displayed as 120-30-40  
Bearing S20°30'40"E Displayed as 220-30-40  
Bearing S20°30'40"W Displayed as 320-30-40  
Bearing N20°30'40"W Displayed as 420-30-40

I01. LBL I	F14. -	G08. PSE	J07. 200	L02. 360	
I02. FIX 4	F15. y,x∂0,r	G09. VIEW A	J08. +	L03. RCL R	
I03. CLVAR S	F16. STO D	G10. 90	J09. GTO M	L04. -	
I04. SF 10	F17. X<>Y	G11. RCL R		L05. 400	
I05. "INVERSE COORD"	F18. X>0?	G12. X>Y?	K01. LBL K	L06. +	
I06. PSE	F19. GTO G	G13. GTO J	K02. 270		
I07. "ENTR NORTH1(Y)"	F20. 360	G14. 100	K03. RCL R		Check
I08. PSE	F21. +	G15. +	K04. X>Y?	1 <sup>st</sup> Point	
I09. INPUT N		G16. GTO M	K05. GTO L	N=5000	
I10. STO Y	G01. LBL G		K06. 180	E=10000	
I11. SF 10	G02. STO R	J01. LBL J	K07. -	2 <sup>nd</sup> Point	
I12. "ENTR EAST1(X)"	G03. ∂HMS	J02. 180	K08. 300	N=5255.912	
I13. PSE	G04. STO A	J03. RCL R	K09. +	E=10125.751	
I14. INPUT E	G05. FIX 4	J04. X>Y?	K10. GTO M	A=26°10'08"	
I15. STO X	G06. SF 10	J05. GTO K		B=126°10'08" = S 26°10'08" E	
I16. 0	G07. "AZIMUTH="	J06. -	L01. LBL L	D=285.1390288	
I17. STO N				C=4.32	
I18. STO E					

F01. LBL F  
F02. SF 10  
F03. "ENTR NORTH2(Y)"  
F04. PSE  
F05. INPUT N  
F06. SF 10  
F07. "ENTR EAST2(X)"  
F08. PSE  
F09. INPUT E  
F10. RCL X  
F11. -  
F12. RCL N  
F13. RCL Y



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# Just For Laughs



Originally posted on June 15, 2009  
 Out-of-plumb.com  
 Again, thank you to Chase Perryman  
 For allowing us to share his great work.

# Sudoku Monster

Solution to January's Puzzle

D	E	9	B	F	6	5	0	A	C	2	1	4	8	7	3
F	0	3	1	9	2	D	4	5	B	8	7	C	E	A	6
A	C	6	5	B	8	7	3	E	4	D	0	2	F	9	1
4	7	8	2	1	C	E	A	6	3	F	9	0	B	D	5
2	3	4	E	5	0	8	6	B	9	7	C	1	D	F	A
B	5	F	6	3	E	C	D	2	A	1	4	8	7	0	9
C	9	7	0	A	1	F	2	D	E	3	8	5	6	B	4
8	1	D	A	4	7	B	9	0	F	6	5	3	2	E	C
5	6	1	9	2	D	A	F	8	0	4	E	B	3	C	7
E	A	B	D	7	3	4	8	C	5	9	2	F	1	6	0
3	8	0	F	C	B	9	E	1	7	A	6	D	4	5	2
7	4	2	C	0	5	6	1	3	D	B	F	A	9	8	E
0	2	A	7	E	9	1	B	4	8	C	D	6	5	3	F
9	D	C	8	6	4	0	7	F	2	5	3	E	A	1	B
6	B	5	4	D	F	3	C	9	1	E	A	7	0	2	8
1	F	E	3	8	A	2	5	7	6	0	B	9	C	4	D

Complete the grid so that every row, column, and 4x4 box contains 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F

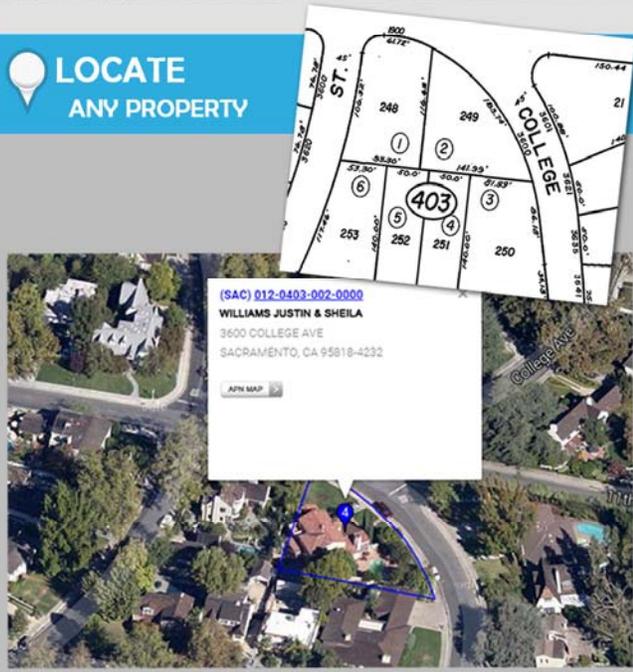


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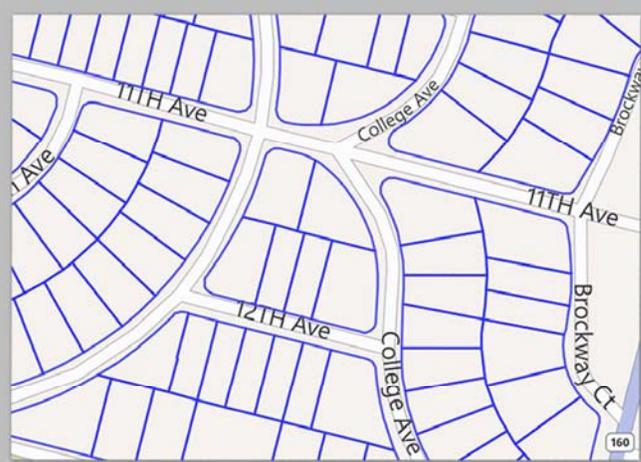


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## Picture of the Issue

2017 Fresno State Geomatics Conference



Will Paul, President of Central Valley Chapter, awards Emily Morrow the Chapter's Chuck Kincaid and Thomas DeLaMare Memorial Scholarships at the 2017 Fresno State Geomatics Conference on January 27, 2017

If you have a historic or interesting photo you would like to see in a future edition of The Prism, please submit to:  
[editor@californiacentralvalleysurveyors.org](mailto:editor@californiacentralvalleysurveyors.org)

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## Classifieds

### CITY OF MODESTO LOOKING FOR SR. LAND SURVEYOR

The City of Modesto will be recruiting for a Sr. Land Surveyor in the next few months, for the position description go to <http://modestogov.com/346/Job-Descriptions> . When available, the job posting will be available on the City of Modesto website at <http://modestogov.com/345/Job-Listings>.

### MID-VALLEY ENGINEERING LOOKING FOR SURVEYOR/L.S.I.T. TO FILL POSITIONS

Mid-Valley Engineering is looking to fill several Surveying positions including Licensed Land Surveyors and L.S.I.T.'s. Mid-Valley Engineering has been in business for more than 47 years and is always hiring talented people. Please go to <http://www.mve.net/career-opportunities.html> for more information. If you are interested in being a part of our team, please submit your resume to [jobs@mve.net](mailto:jobs@mve.net).

### OFFICE SURVEY TECHNICIAN and CHIEF OF PARTY!

Mountain Pacific Surveys is located in Fairfield with a satellite office in San Mateo.

#### **Office Technician (Office Position)**

Applicant will be working closely with and under the direction of licensed land surveyors performing mapping and construction calculations duties. This is an office position, but may also require time in the field under the direction of a Party Chief as project needs dictate.

#### **Key Requirements:**

- 5+ Years of Land Surveying experience preferred, LSIT preferred.
- Extensive mapping experience with AutoCAD is required, Civil3D preferred.
- Familiar with the reduction, analysis and incorporation of field data into a finished mapping product.
- Ability to read and interpret construction documents and plans to prepare staking calculations and facilitate the dispatch of survey field crews.
- Experience performing property boundary and record research with utilizing government and private sources.
- Proficient with Microsoft Office (Word, Excel, Outlook...)

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#### **Key Requirements:**

- 5+ Years of Land Surveying experience, 2+ as Chief of Party preferred, LSIT preferred but not required.
- Experience performing a multitude of different types of surveys, including but not limited to boundary, topographic, monitoring, GPS, ALTA and FEMA surveys.
- Strong knowledge of survey field operations using GPS, Robotic Total Station, Automatic/Digital Levels, and Data Collectors.
- Applicant must have the knowledge and professionalism necessary to lead a survey crew and interact with clients and project representatives.

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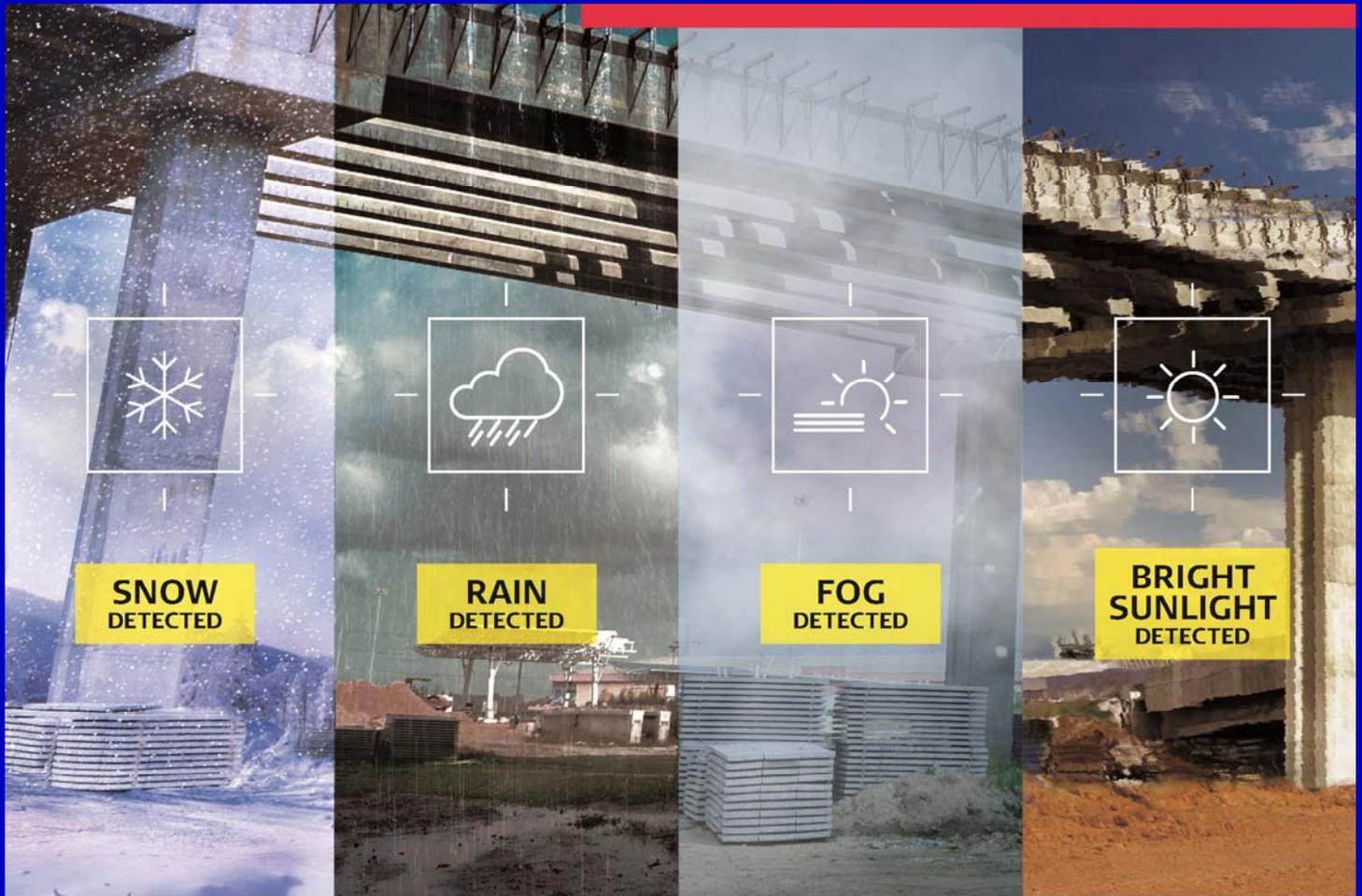
### CITY OF TURLOCK LOOKING FOR LAND SURVEY TECHNICIAN

The City of Turlock is accepting applications for the position of Land Surveying Technician I/II. This individual will perform office and field land surveying and engineering work and assist the engineering staff.

An eligibility list will be established from this recruitment that will be valid for six (6) months. All employees are required to serve a twelve (12) month probationary period.

For more information go to <http://agency.governmentjobs.com/turlock/default.cfm>

This position will be closing Wednesday, March 22, 2017



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## GPR and Surveying, *cont. from page 5*

**Annika Ensrud:** We have seen the same trend and are focusing our development and offerings on providing products, services, and software solutions that improve our customers' productivity as they transition into this digitization of the construction processes.

**xyHt: Hilti offers both robotic and manual total stations. For land surveying firms that perform construction and land surveying projects, are these total stations suitable for conventional land surveying applications as well?**

**Ensrud:** Yes, they are. Our primary focus is to offer total stations to the construction industry. Hilti developed the total stations—and its software and user interfaces— using construction language and applications in order to make this technology accessible and easy to adopt by our contractors that are not typically surveyors by trade.

**xyHt: What is the imaging technology behind your PS 1000 X-Scan and PS 250 Ferro scan systems?**

**Ensrud:** The Hilti X-Scan PS 1000 is based on radar technology, which allows the user to detect reinforcing bars, pre- and post-tensioning cables, metal pipes, plastic pipes, electric cables, and glass-fiber cables in concrete up to 18 inches. Scan results are presented on the X-Scan display in 2D for immediate analysis or can be transferred to the Monitor PSA 100 for viewing in 2D and 3D for further evaluations. The Hilti Ferro scan PS 250 provides a non-destructive means of locating reinforcing bars and measuring their depth of concrete cover. It can also estimate the diameter of detected rebar. The PS 250 is based on magnetic induction technology; thus the scanner can locate rebar accurately and reliably within concrete structures.

**xyHt: Can imagery captured from these devices be integrated into 3D scanning software?**

**Ensrud:** The results of scans are displayed on the portable monitor unit as easily interpretable 2D images. We can assign coordinates to the scan that can be imported into a BIM model. Later, safe drilling locations can be identified on previously recorded scans, and they can be laid out again using the total station.

[Click for Complete Story](#)  
(March 2017)

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**VISTA** 

**INTERNATIONAL**

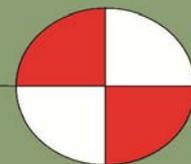
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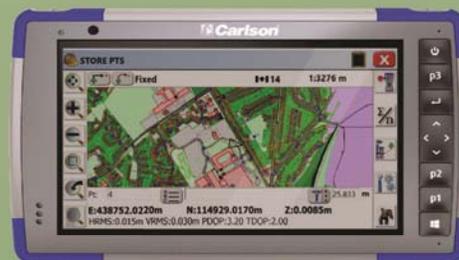
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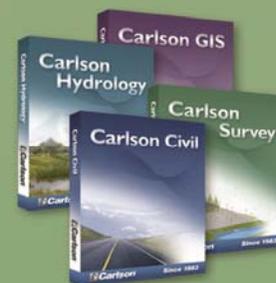
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*Land Surveying Photo Gallery*



California Land Surveyors Association Education Foundation would like to thank Bryant Sturgess for generously donating his collection of historic images.

The proceeds from the photos sold on this website will be used to fund scholarships for land surveying students.

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