LiDAR Chamber Scanning

Cardno’s Light Detection and Ranging (LIDAR) scanner is the fastest, most efficient and accurate method of collecting data in underground chambers.

We use state of the art laser scanning equipment, or LIDAR, to collect highly accurate and precise underground chamber data for our Subsurface Utility Engineering (SUE) investigations. This LIDAR technology provides detailed information regarding both above and below grade utility related structures and appurtenances.

LIDAR is a process in which light is used to image objects. 3D Point Clouds are acquired from these scans creating realistic 3D models, which can be used in many software applications. The data collected with the laser scanner, once processed, can be survey grade with great accuracy. The data can be incorporated directly into 3D CAD software.

Cardno currently utilizes a Leica BLK360 Scanner with:

- Resolution: 360,000 points per second
- Imaging: 15 MP, 360° horizontal/300° vertical
- Scan speed: <3 minutes for high resolution scan

The BLK360 will output both a point cloud and high res 15MB photos.

Chamber Scanners are a valuable tool as part of our SUE investigations and can be used for a wide range of applications including:

- Sewer Chamber Modeling
- Water Chamber Modeling
- Telecom Chamber Modeling
- Hydro Chamber Modeling
- Elimination of Safety Concerns with Confined Space Entries
- Tunnel Mapping
Utility Engineering and Surveying

Our UES group provides Subsurface Utility Engineering (SUE) services that meet and exceed the Civil Engineering industry’s ASCE Standards. This enables design engineers to manage risk for new underground utility designs and operations maintenance.

UES Service areas include:
> Utility Engineering Design
> Utility Coordination
> Utility Conflict Analyses and Resolutions
> Designating Utilities
> Underground Utilities
> Subsurface Utility 2D/3D mapping
> Survey & Mapping
> Utility Engineering Reports/Risk Management Reports

Reducing risk and delay claims

Our job is to help reduce uncertainties and keep your project moving forward. With decades of experience serving hundreds of clients, top notch equipment and processes, you can be confident that your project will be handled with the attention it deserves. Our SUE expertise regularly leads to identification and documentation of previously unrecorded subsurface utilities, reducing the risk of potential project impacts.

Staff and training

Cardno’s ongoing focus on staff training and advancement keep us at the forefront of the industry. Our UES field and office teams are highly-trained and specialized professionals qualified to meet a broad range of client needs. All staff are required to meet rigid safety and industry training requirements as well as complete training that Cardno has developed to provide our teams with additional skills and technical knowledge.

Leading with technology

A wide range of equipment is necessary to detect the variety of subsurface utilities that may be present. We use the most appropriate technology for the project to increase the accuracy of the data, including:
> Stream EM / C, a multi-channel ground penetrating radar solution dedicated to utility locating and mapping.
> LiDAR, or Light Detection and Ranging, to generate precise, three-dimensional information about the shape of the Earth and its surface characteristics.
> Geographic Information System (GIS), captures, manages, analyzes, and displays all forms of geographically referenced information, allowing one to analyze spatial information, edit data in maps, and create interactive queries.

Leading the Utility Engineering & Surveying (UES) industry

We are proud to be a founding and sustaining member of the American Society of Civil Engineers’ (ASCE) Utility Engineering and Surveying Institute (UESI), whose mission is to advance the UES practice. Our experts lead the profession through speaking at industry conferences; developing standards and manuals of practice. We lead the industry by example. We develop professional practices that set the bar regarding the expectations for any SUE or survey investigation.

Cardno is a global provider of integrated professional services which enrich the physical and social environment for the communities in which we live and work. Our team of multidisciplinary specialists around the world has more than 70 years’ experience in designing, developing and delivering sustainable projects and community advancement programs. Cardno is listed on the Australian Securities Exchange (ASX: CDD).

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