

Web Site Verbage
Miracad Technologies

To be added to the Website

1 Home Page

1.1

Miracad Technologies provides 3D visualizations that facilitate effective collaboration among stakeholders.

Successful collaboration at the start of the project life-cycle, when cost of change is low and stakeholder influence is high, minimizes risk and improves results. Clear and accurate comprehension of tasks is essential to smooth completion of projects.

Miracad Technologies utilizes state-of-the-art 3D technology to generate engaging and efficient models, illustrations, drawings, reports, manuals, presentations, and animated videos.

Our work creates a road map for task completion, fosters innovation, inspires creativity, and enhances the quality of decisions made throughout any project.

Miracad Technologies is a product specialist in Leica HDS (High-Def Survey) services.

1.2 Laser Scanning

1.2.1

Miracad Technologies implements the best technology available to accurately, efficiently, and safely document the physical dimensions of your facility or equipment.

Our equipment can capture 1 million measurements per second, with ranges greater than 200m and accuracy of a few millimeters. The resulting point file is integrated into our 3D CAD systems and used to provide unparalleled accuracy and speed of documenting as-built conditions.

Capture the real world and put it in a CAD file! Miracad Technologies employs this marvelous technology to provide its clients with the most efficient, reliable, and low-risk method of achieving the best possible results for retrofit or replacement projects.

1.3 3D Design and Drafting

1.3.1

From concept to completion, Miracad Technologies has the expertise and experience to design and draft almost anything.

3D CAD is our core competence and the basis for our other services.

1.3.2 Detailed Designing

1.3.3 Animation

1.3.4 FEA

1.4 Presentation and Marketing

1.4.1 Generate an impact with digital graphics produced from 3D CAD files, enhance presentations, and make marketing materials pop with impressive still graphics or animated videos, thanks to Miracad Technologies.

1.4.2 Miracad Technologies applies surface textures and lighting to 3D CAD models to produce impressive photorealistic images.

1.4.3 Animation of a model produces very effective video visualizations for communicating the function of a machine, the flow of a process, or the workings of a site/facility.

1.4.4 Editing of videos to add special effects, annotations, and narration result in a communication medium that is easy to distribute and effective for getting the message across to your audience.

1.5 Subtopic

2 About the Company

2.1

Miracad Technologies has been providing high quality, cutting edge, 3D project design services to western Canada since 2011.

Our client list consists of: fabrication shops, EPC's, equipment manufacturers, and industrial facilities.

Project team collaboration is improved with the use of our accurate 3D visualizations of design models.

Our 3D laser scanning captures existing equipment/facilities for retrofit and maintenance projects, saving costs and improving quality for our clients.

We are Leica HDS (High-Def Survey) product specialists.

3 About the Owner

3.1

Rob McWhinney has worked in industrial facilities engineering projects for 20 years.

Over the span of his career, he has been employed in a variety of capacities and has a well-rounded skill set for all aspects of project planning and delivery.

Rob has always kept 3D CAD design his central focus; a field that excites and motivates him to constantly push the limits of his methods and solutions.

3.2

Rob left the security of full time employment and started Miracad Technologies in 2011 to provide 3D project design services to western Canadian industry. He maintained a successful full-time business for 5 years and completed many rewarding projects.

3.3

In 2016, Rob was approached with an opportunity to be a Leica HDS (High-Def Survey) product specialist. He was provided in-depth training and drew on the knowledge of leading industry experts during his 10-month tenure.

The learning curve was steep as he completed dozens of projects. As a result, he added a very powerful tool to his 3D design toolbox.

3.4

Rob returned to operating Miracad Technologies full-time at the start of 2017. He now provides fully integrated laser scanning and 3D CAD services to his growing list of clients.

3.5

In his personal time, Rob is a very social individual who loves to spend time with family and friends. In his younger years, he participated in many team sports but has since hung up his skates and spikes to take up golf, downhill skiing, back country hiking, and cross country mountain biking. He married his loving wife Alex in 2016, and they are looking forward to having a family together.

4 Main Topic

4.1 Miracad Technologies is about communicating and refining ideas.

4.2 Dimensionally accurate 3D models are used to produce explanatory digital media and documents.

4.3 Our 3D services improve communications between key stakeholders of any industrial design or construction project.

5 3D Terrestrial Laser Scanning

5.1

HDS (High-Def Survey) is a method used by Miracad Technologies to capture the real-world position of objects. It is fast, accurate, comprehensive, unobtrusive, low-risk, and cost-effective.

HDS produces a dimensional computer model used for as-built documentation and inspection purposes. Miracad Technologies employs 3D laser scanning to capture industrial facilities, sites, equipment, and infrastructure that require maintenance or modification.

When executed properly, the benefits of this technology to project cost, schedule, quality, and safety are so abundant that it should be used on every industrial brown-field project.

Contact Miracad Technologies to start benefiting today!

5.1.1 The speed of the Leica HDS technology assures that field crews will be on-site a fraction of the time required for other methods of 3D modelling.

The unobtrusive process captures scene data from safe locations on the ground or existing work platforms, virtually eliminating the need for specialized lifts or fall protection measures.

5.1.2 Subtopic

Leica HDS (High-Def Survey) is the most accurate, reliable, and cost effective method to rapidly measure and document existing site infrastructure or to perform dimensional quality inspections on equipment.

- *No need to waste time manually measuring up existing equipment and facilities.*
- *Errors introduced by conventional methods cause missed deadlines, over extended budgets, loss of sleep, and grey hair!*

When implemented properly with 3D design workflows, the benefits this technology brings to engineering projects is extensive and exhaustive.

Miracal Technologies has the knowledge and experience to successfully deliver Leica HDS technology to benefit your facilities maintenance and retrofit projects.

5.2 Attributes

5.2.1 Fast

A single technician with a scanner and tripod captures the same amount of data in one hour that an entire crew would take weeks to record with tapes, stringlines, levels, lasers, and clipboards.

5.2.2 Accurate

- *World-class, Swiss built reliable instrument*
- *Data validity is accepted by courtrooms*
- *Overall process locates objects +/- 1mm of real world position*
- *Position is a calculation of three things: range, azimuth angle, and zenith angle*
- *Each measure has its own uncertainty; this determines accuracy*

5.2.3 Comprehensive

Hundreds of millions, and sometimes billions, of points of data are captured per project, resulting in extreme detail of every nook and cranny.

5.2.4 Unobtrusive

Long range and speed allow the scanner to capture object data no matter how busy the site is. Software provides easy methods for data clean-up.

5.2.5 Low Risk

Laser scanning is very unobtrusive.

Site activities, equipment operation, and process flow can all continue while data is being collected. The scanner's ability to capture points at range allows it to be operated a safe distance from moving parts or hazardous locations.

Accurate and comprehensive scan data provides a digital job-site where retrofits are designed and project activities are planned in detail. Items are designed to fit, prefabricated in the shop and checked for conformance, before being sent to the job site.

By minimizing site activities and thoroughly planning the work, the risk of damage to property or injury to workers is reduced significantly.

- *Reduced on site activities = less incidents*
- *Operated at a safe distance from hazards*

- *Capture objects at heights from safe locations*
- *No need to scale structures, use ladders or man lifts*

5.2.6 Cost Effective

Labour costs are greatly reduced for recording data and modeling the objects.

5.3 Benefits

5.3.1 Enhance Stakeholder Communication

Point cloud files are conveniently shared with others through web browsers, free viewers, or CAD software for more efficient management of projects.

Easily demonstrate concepts with realistic visualization.

5.3.2 Improve Design Quality

HDS technology allows a focus on design and quality of the solution, instead of the effort of incorporating flexibility for "unknowns."

Accurate and comprehensive as-built data results in more efficient planning and higher quality solutions.

- *Accurate spatial data*
- *Accurate planning*
- *Validate designs*

5.3.3 Optimize Project Schedule & Cost

- *Reduction or elimination of costly "return visits" to the site*
- *Less rework due to interferences and dimensional fit-up issues*
- *Higher accuracy and elimination of measurement errors*
- *Organized execution*

5.3.4 Minimize Project Risk

- *Prevent costly re-work caused by measurement errors*
- *Shop-fabricate instead of field-fabricate*
- *Minimize uncertainty*

Our process is designed to foster innovation, inspire creativity, and enhance the quality of your projects.