AUTOTURN™

The Logging Road Less Travelled

Leading engineering companies use AutoTURN to complete projects efficiently

By Chris Johns, Transoft Solutions

When resource companies develop an oil well or get logging rights to a particular forest, one of their first questions is 'Do we have to build a road?' Their next question is 'Who can help us build it?' That's where McElhanney expertise comes in handy. They provide surveying, engineering, mapping and other specialty services to resource-based clients across Western Canada and beyond.

Wil Moroz is a GIS Civil Technologist working for McElhanney's Penticton, BC office. He has worked in the resource sector for about 20 years, helping companies with building roads and bridges to gain access to the project areas. As he'll tell you, the roads are rarely perfect ribbons of asphalt. During his career, he has helped design both conventional and unconventional roads, using AutoTURN from Transoft Solutions.

Resource roads are sometimes built with gravel or sand and for Moroz, being efficient through cutting down the fewest number of trees is high on the priority list. Designers like Moroz must account for changes in topography, elevation and other natural obstacles during construction. He refers to some resource roads as 'more like a roller coaster' but likes the challenge.

"When it comes to a resource road, every dollar counts," said Moroz. "So if I build a road that's a bit too wide, or a little too narrow, there are cost over-runs and constant maintenance issues. For major resource clients with projects going on in Northern British Columbia, they don't want to spend any more money than they have to. They want to be in and out and get the job done. AutoTURN plays into that by demonstrating that

if I only need a 5 meter road, why would I build it to 7 meters? Only if I think the truck (we need) isn't going to make it."

As many engineers already know, AutoTURN is built on tried and true engineering principles and an understanding of what happens in the field. Engineers can design with confidence knowing that they can depend on AutoTURN to produce accurate results and generate a clear picture of whether a truck can maneuver a specific turn.

"I've seen what happens when tabular data is the only data used," said Moroz. "It's a 50/50 hit or miss. With AutoTURN, it bounces my level of confidence up to about 90 percent. I'm pretty darned sure. If the road is where it's supposed to be and the structures are where they are supposed to be, the widths should work. Bringing up my confidence level in what I do is huge. Not only that, but I can then present it to the client who is about to contract someone to build these structures, which gives them the confidence that we had the right solution for them. It's tried and true. The more I use AutoTURN and see the results from it, the more it builds my confidence. I might have started at 50 percent and now I'm about 90 percent."

Moroz recalled one example where the visualization aspects of AutoTURN turned an engineering puzzle into an opportunity. "There was one site we worked on with a very steep grade with a hairpin turn at the bottom, right where we wanted to put a bridge. There was no way to get this road to not have a curve on the bridge. It was almost impossible. I used AutoTURN just to see what the width of the bridge would have to be to make that work."

He continued, "Just through me playing with AutoTURN, we came up with a solution to the problem. We double-laned the bridge and put a curve at the bottom. Twenty years ago, with a site like this we would have said we're not going there. We can't get a truck in there. We now have this whole valley that we've opened up for logging just through the use of AutoTURN. The program spurred on more thought from an engineering point of view: How are we going to get this to work?"

Moroz has about 10 years of experience using AutoTURN, beginning when he was working for smaller consulting firms at the start of his career. His level of skill has increased as his projects have increased in complexity. "Using AutoTURN was a corrective measure at first," said Moroz. "Now it's a preventative measure. I'm going to prevent a lot of errors and save cost over-run on the construction end by having this product run through my design and make sure I didn't make any mistakes. That was the key. We could show the client that we had run the project plan through the product. We could show them in a presentation, 'Here's your horizontal and here's the truck going through it. What do you think?' Once they saw it, they were fine with it. They would tell me 'If the program says it's OK, then we're good to go'," explained Moroz.

One aspect of Moroz's engagement with AutoTURN is his experience designing custom vehicles in the software. In consultation with his clients, he learns what kind of vehicles is required for each project he works on and then tests those vehicles in the CAD environment. If a special truck is needed, he has learned how to build a custom vehicle to add to the AutoTURN vehicle library. There are numerous variables that go into designing a custom vehicle which require an understanding of how the vehicle might perform in the project environment.
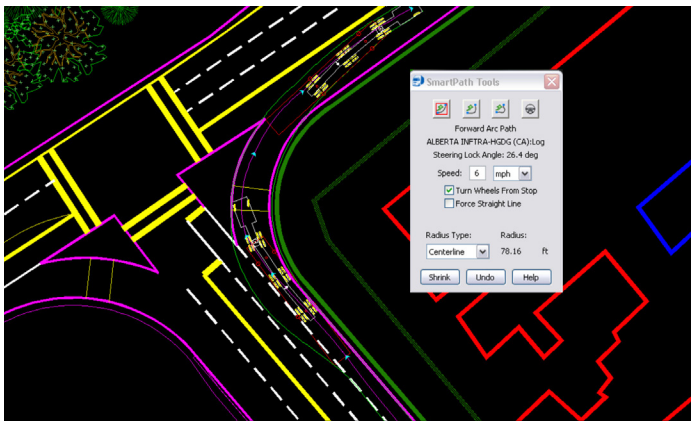
Technologists like Moroz can see how trucks navigate turns in a CAD environment before they build a road in the field.

"The first vehicle I ever did, I didn't know I had to have it checked," said Moroz. "So I went through the process of customizing it and thought I had this lovely truck. Look at the turns it can make. Richard (his contact at Transoft) asked me if I had it checked. I gave it back to Transoft to have it reviewed and there were errors all through it."

He continued, "I'm far from a specialist. I know what the program can do and I've seen manipulation of the program to things I've wanted to do. I'm nowhere close to a guru when it comes to changing the (specifications) of the trucks. I've seen how it's done but my time is better utilized on designing other features and letting Transoft take care of the particulars of the vehicle and how it reacts."

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When clients like Moroz have questions, they can get the answers they need by calling the Transoft IT Support line. The working relationship has evolved to the point that Moroz has one member of the IT Support team on speed dial. Moroz calls or emails Richard Fronda directly so he can get support from someone he's worked with before.

"I appreciate that," said Fronda. "It's true that he either asks for me directly when he calls in or he emails me personally. The email usually starts with, 'Richard, I have this AutoTURN issue'."

"I think it's his familiarity with what AutoTURN can do that makes him unique," said Fronda. "AutoTURN is fairly simple software in that someone can put in specifications and it does all the hard work for you."

Fronda continued, "He's very familiar with how the vehicles are put together but sometimes he has questions about how those dimensions translate to AutoTURN simulations. He often is transferring his schematics and the documentation he has over into his design vehicles. A lot of the time the vehicles he is creating are not manufactured vehicles. They are design vehicles so he's creating a design template for them for worst-case scenario and best-case scenario."

Transoft's Product Management team collaborates with 'power' users like Wil Moroz to create new innovations for software like AutoTURN and AutoTURN Pro 3D. This type of work leads to better software for all users. The functionality to create custom vehicles is there for users like Wil Moroz. With only so many hours in a day and competing priorities, sometimes users need expert help to make their deadlines As long as there are complete specifications for the vehicle, Transoft Solutions can create a custom vehicle for a fee through Project Support Services (PSS).

"It's always a very positive experience working with engaged AutoTURN users like Wil," said Johann Flores, a member of Transoft's Product Management team. "Some of our clients have specific ideas when it comes to building custom vehicles in the software and Wil brings an experienced eye to his design vehicles - He usually has a project's constraints in mind and we do our best to design according to what he needs. Transoft has had the pleasure of collaborating with Wil for a fair number of years and we look forward to continuing this relationship in the years ahead." ∎

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