SIEMENS

Trusted Partner Case Study

Calgary Transit

As trusted advisor, Siemens collaborates with Calgary Transit to unleash powerful innovation in new light rail cars

Siemens' Rail and Mobility Group takes customer engagement to a new level

Owned and operated by the City of Calgary, Calgary Transit provides safe, accessible and courteous transportation in one of Canada's largest municipalities. Since 1909, Calgarians have relied on the service to get them around their community.

Calgary Transit has a "triple bottom line" approach, fulfilling key roles in the city:

- socially, as it provides public transit for individuals who cannot or choose not to transport themselves;
- economically, with high-quality transit meaning many people do not need to buy automobiles, so the city can build and maintain fewer roads; and,
- environmentally, because fewer cars lead to cleaner air and reduced traffic noise.

Siemens-Calgary Transit partnership: Collaborating for Innovation

As trusted advisor, Siemens conducted intensive engagement with Calgary Transit on vehicle design

- Collaborative innovation unleashed to solve historic problems such as wheelchair accessibility and durability in a harsh climate

Calgary Transit selected Siemens S200

- 60 of the vehicles to be delivered before the end of 2016

Several decades of after-sales support expected through close working relationship

- Partnership built on a foundation of openness, honesty and integrity

Inviting bids for new light rail vehicles

The heart of Calgary Transit's system is light rail transit (LRT), including more than 80 Siemens' U2 LRT trains that have helped keep the city moving since 1981.

Over the years, Calgary's LRT has become the busiest in North America and second busiest in the world, with an average of more than 300,000 passengers using the system each day.

While the U2 trains from Siemens had served the city very well, they had been in operation for more than three decades and in late 2012 the time had come to think about the future.

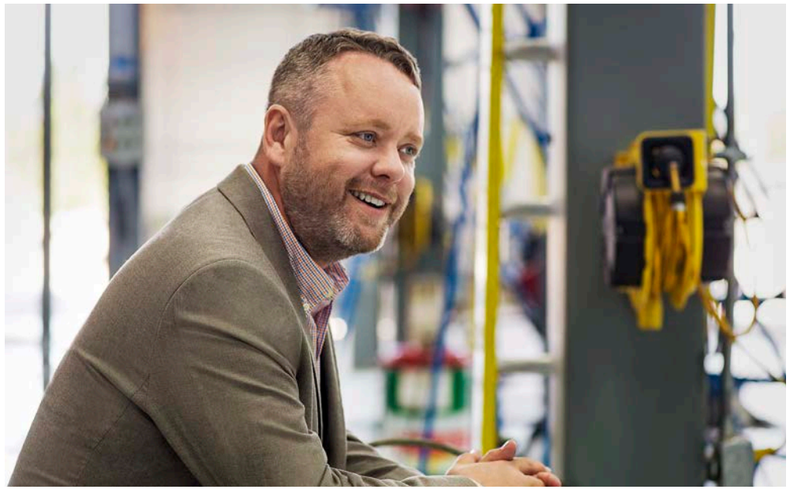
Calgary Transit conducted a detailed analysis to see if the U2 trains could be rebuilt and refurbished.

Russell Davies, Transit Fleet Manager for the City of Calgary, says the study made it clear that the U2 fleet had reached the end of its lifecycle and it was time for new vehicles. Bids were invited.

Calgary Transit was looking for potential suppliers to provide trains that boasted leading-edge technology and were priced competitively, but it was also essential that strong after-sale service come as part of the package, and that the selected company have proven itself in the industry with a long history and strong track record.

Most importantly, the winning bid would have to come from a company that could be a trusted advisor, a true partner for Calgary Transit with a shared vision for the long haul.

"This was a long-term contract, not 'buy one' and then walk away from it," notes Davies. "We needed to have a comfortable relationship with the supplier, with their people, for a minimum of fifteen years and what could be potentially a 45-year kind of relationship."



"This was a long-term contract. We needed to have a comfortable relationship for a minimum of fifteen years and what could be potentially a 45-year kind of relationship."

– Russell Davies, Transit Fleet Manager, City of Calgary

The official announcement: Siemens awarded the order

In September of 2013, the City of Calgary announced that Siemens Canada had been awarded the order to provide Calgary Transit with 60 new Siemens S200 High Floor Light Rail Vehicles.

While expressing confidence in how the new Siemens vehicles would help Calgary Transit achieve its economic, environmental and social goals, Robert Hardt, President and CEO of Siemens Canada, conveyed deep gratitude to the City of Calgary for selecting Siemens.

"We've been a proud supplier to Calgary Transit for more than 30 years and are fortunate to use what we have learned in that time to design these vehicles specifically for the needs of this modern and growing city moving forward," he said on the day of the contract signing. "We look forward to helping further Calgary's position at the forefront of transit in North America, and to moving the next generation of Calgarians in an efficient and sustainable way."

Siemens' winning approach: Intensively engage the customer to steer innovation in the right direction

Siemens certainly had an advantage to win the contract because of its long-term history with Calgary Transit. As Davies puts it: "They knew our good points. They knew our bad points. They knew our operating environment."

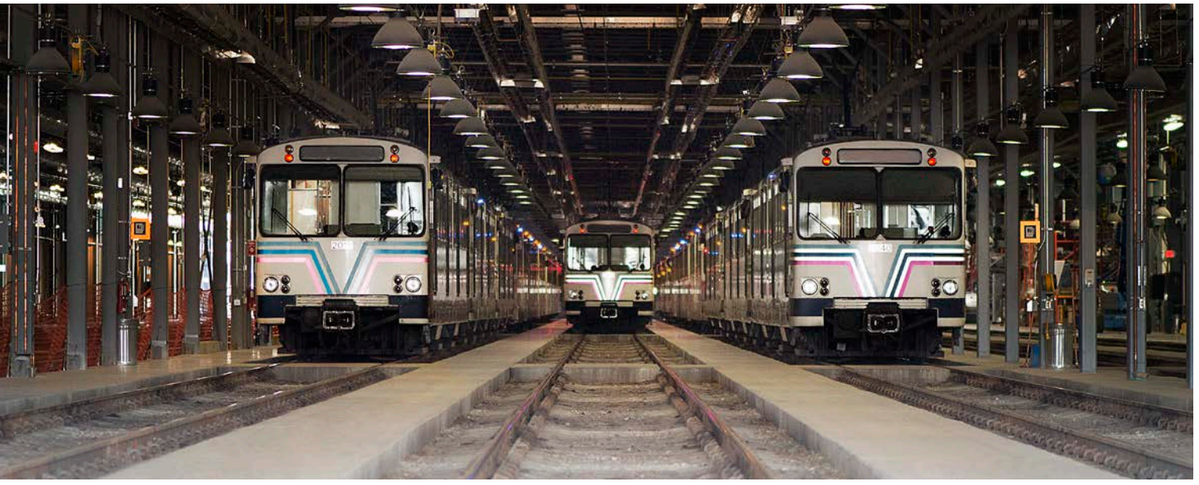
But after decades of serving a customer, it's also easy for any organization to become complacent and take a relationship for granted.

Siemens was not about to let that happen. The company's Rail and Mobility Group was determined to win the contract through a combination of bold new thinking and intensive engagement with Calgary Transit.

The starting point was to bring in a fresh set of eyes and ears in the person of Greg Hill, Account Manager for Western Canada in Siemens' Rail and Mobility group. A native Calgarian with an extensive background in managing customer relationships, Hill joined Siemens in 2012 and immediately got to work asking lots of questions – reaching out to both Calgary Transit and Siemens' rail experts in Sacramento, California.

"I asked the Calgary Transit team: 'What would you change in the train or the maintenance operations if you could?' Through lots of long conversations and a lot of listening, I was able to compile a list that I could take to our people in Sacramento and get them engaged on that," explains Hill.

"And to their credit, they were like big sponges. They were extremely receptive to what Calgary Transit was saying and even more important, took immediate action on the points that were raised. So we had engineering groups coming up to Calgary, putting on the shop overalls and working with the Calgary Transit guys on the floor. We had senior management come up here and meet with Calgary Transit's management to talk about this Siemens-Calgary relationship and how important Calgary Transit was to us as a strategic customer."



All of the knowledge gained through that engagement process laid the foundation for the work that followed.

Chuck Halasz, Siemens' National Manager of Rolling Stock and Rail Electrification, describes it as a "roadmap" toward a compelling bid rail car bid Calgary Transit could not refuse. The rail car would incorporate solutions that were appealing, technically feasible and cost-effective.

And most importantly, it would all be backed by a trusted, attentive and communicative partner in Siemens – a partner dedicated to supporting and servicing Calgary Transit for years and years to come.

Understanding the customer's priority: overcoming the issue of corrosion

Thanks to intense customer engagement, all of Calgary Transit's needs and wants were made crystal clear. In response, Siemens was determined to channel the creative engineering minds of its rail team to incorporate innovative solutions that would be deeply appreciated by their partners at Calgary Transit.

For example, Calgary Transit had reiterated how corrosion had been always been a troublesome issue with any train they operated.

Davies says he was impressed how Siemens didn't just try to put forward a bandage type of solution. Instead, they interacted in an open and engaging way with the Calgary Transit team to get to the heart of what was really required.

Thanks to that partnership approach, innovation was focused to find just the right solution. In this case, the most advanced corrosion protection coatings available in the industry were structurally incorporated into the vehicle in a particularly compelling way.

"They came up with a completely different design," Davies explains. "It's not a vehicle that's just got a new piece added on to the side of it. This vehicle is brand new, bonded with aluminum cladding. The risk of corrosion is far, far lower. We can see that they've paid a lot of attention to what was historically a very sensitive subject for us."

It demonstrates, Davies adds, how Siemens was "willing to listen and do something about it."

"Siemens came in with a lot of interesting, detailed changes that we hadn't seen before. It's that kind of listening to the customer and then dealing with it, closing that loop every time. And there were probably half a dozen examples of that nature."

Collaborative approach to solve wheelchair accessibility

One of those examples was how the S200 was made accessible to people in wheelchairs, and those pushing strollers or transporting bicycles.

Previously, to ensure accessibility, a ramp would come out from beneath the platform to act as a bridge from the platform into the train. Unfortunately, the platforms were expensive, they would often break, and were very difficult to maintain. They were so cumbersome that only one ramp could be used per train, forcing customers in wheelchairs to inconveniently be at a designated spot each time they used the train.

Siemens engineers in Sacramento got a full perspective of the issue as a result of thorough dialogue with colleagues at Calgary Transit. Everyone in both organizations was then aligned on the nature of the challenge that had to be met, and the keys to finding a truly breakthrough solution could then emerge.

"We realized that if we just adjust the entry height of our door, we would be able to provide wheelchair access to the vehicle without any ramps at all," describes Halasz. "We sloped the floor around the doors, to meet the height of the platforms, and there are no longer any mechanical pipes that have to be pushed. Every door of every train is accessible at every platform."

With no other bidder taking the time and effort to truly engage Calgary Transit in the same way as Siemens had, Davies says that of the approximately half dozen train design proposals received by Calgary Transit, none could come close to the elegance and effectiveness of what Siemens had devised.

"A number of other suppliers did look at more drastic solutions, which was automatic leveling of the vehicle, so the vehicle would raise up or raise down as need be, as they came into the platforms," explains Davies. "But really, that had as much, if not more likelihood of causing reliability problems. We'd be swapping one issue for probably a bigger issue."

Engagement to gain deep appreciation for impact of Calgary's unique climate

Another example of ingenuity produced by a close, collaborative partnership was how Siemens made the S200 ideally suited to Calgary's harsh climatic extremes.

"Like many places in Canada, we have extremes of temperature from plus 30 Celsius to minus 30, and maybe even a little more extreme than that sometimes," Davies describes. "So the train is designed with better thermal insulation in the floor and the walls, with triple-pane windows. It's all designed to try and keep the vehicle more thermally stable. For the passengers, it's a better riding experience, a lot more comfortable."

An additional improvement related to the weather, he adds, involves where the braking system and other key equipment are housed.

"That was all traditionally kept on the underside of the vehicle," he notes. "That caused a lot of reliability problems because of the environment – lots of snow getting pulled into it, all sorts of problems related to our harsh environment. So they moved all that equipment up onto the roof."

Making that change spoke to how Siemens was willing to sit down with Calgary Transit, and by careful listening and working together, have a truly fresh look at the vehicle, Davies says.

He refers to the Siemens-Calgary Transit collaborative relationship leading to many great ideas for the S200, such as:

- new back-up power systems to bolster reliability, plus diagnostic data being transmitted automatically and wirelessly to maintenance teams, allowing the source of any issues to be detected and resolved quickly;
- a vehicle that's easier to drive because of a larger, redesigned operator cab, featuring a larger, heated windshield and side windows offering a nearly 360-degree view; and,
- a safer, more secure, and more comfortable ride for transit users through slip-resistant flooring, advanced on-board security systems, GPS mapping displays, larger windows and doors to increase natural light and provide visual security, and a forced air heating and cooling system.

Davies sums up the power of the partnership this way: "It sounds strange, but it's very easy to say: 'I've made this train before. I'll just make some cosmetic changes to it.' But that's exactly what they didn't do. Siemens looked at all the systems on board the train, but with a sort of cold and calculating eye, and said, 'Is there something we can do here?' So the braking system changed significantly, the body changed significantly, and the communication system on board the train is drastically different. This train is going to be more reliable. It will be more user-friendly. Siemens looked at a lot of different areas to try and improve."

Letting transit riders vote for a favourite design option

Siemens took customer engagement to the point of even finding a way to give Calgarians themselves – the ultimate stakeholders of their transit system – a direct voice in the new vehicles they'll be riding.

Siemens got together with Calgary Transit and put forward three different style options for the S200. Riders could then vote on the choice they found most visually appealing.

"That was a fantastic idea," recalls Davies. "We did a bit of a marketing campaign around those three different vehicles, tying it to some open house events we had here. It was a great way to engage Calgarians. We had a lot of fun with it. We were encouraging adults to vote, children to vote, just to get a feel from general Calgarians as to which vehicle they'd like to see rolling around the streets. There's no doubt that stylistically we ended up with something that we were all happy with. We couldn't really lose."

Achievements and expectations

Following the official awarding of the contract to Siemens, work got underway in earnest in the fall of 2013.

The design process has continued for many months after the contract signing, because less than 50 per cent of the design was completed during the procurement phase. Intense engagement with Calgary Transit on a range of details was required for the remainder of the design work.

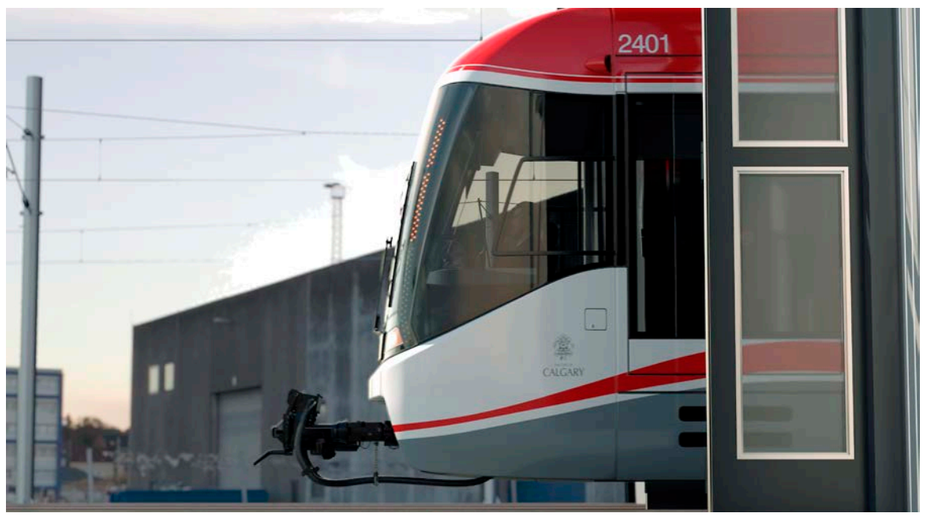
"There are preliminary design reviews, final design reviews, review of deliverables, and even during production there's a factory acceptance test," explains Halasz. "It's a constant engagement with the customer to make sure that there are no surprises, that nothing is missed in terms of what their expectations are."

Everything remains on schedule for having the first S200 shipped by September of 2015, and the full order of 60 completely delivered by December of 2016.

"The excitement level's pretty high, I've got to tell you," enthuses Davies. "We had a pretty big launch on these vehicles when the contract was won, because this was the first time that we've put out a significantly different vehicle out on our tracks in 30 years or so. So I can't even tell you how much media attention we have had around that launch. I was on TV left, right, and centre. There was newspaper, there was radio, and a fantastic amount of attention on these vehicles coming from Calgarians directly. So when this first train actually gets to Calgary here, we're expecting double that kind of interest. This train is quite critical to everyday life of such a large number of people, when you consider that we carry over 300,000 every day."

After the delivery, it's expected that there will still be a lot of work going on between Siemens and Calgary Transit for many years more.

"At some point – say, approximately five years out – we could be in every phase of the project because there is always the potential that we'd be looking to buy new vehicles," notes Davies. "We could be putting bids together. We could be getting deliveries. And we could be in warranty. We could be experiencing the whole Siemens life cycle, if you will."



"It has been wonderful to grow so much personally and to learn so much."

– Greg Hill, Account Manager, Western Canada, Siemens Canada

Making it all possible: The relationship between Siemens and Calgary Transit

In addition to pretty much the entire team at Calgary Transit, there are hundreds of Siemens people involved in the S200 project – spanning account management, project management, engineering and manufacturing – all of whom are focused on anticipating and meeting the needs of Calgary Transit.

Designing, building, delivering and maintaining the vehicles is a long-term, complex process that is bound to have some unexpected bumps in the road. But both sides know that the outstanding partnership they have developed will enable them to overcome whatever challenges lie ahead.

Essence of the partnership: openness, honesty and integrity

As Davies explains: "You can't have something of this scale and not expect any issues to arise. And they come from both sides because sometimes there are things that Siemens does that we're not entirely happy with, and there are some things that we throw into the mix that I think cause Siemens some consternation."

For example, he continues, sometimes there's a slip to the schedule or the price of a component changes.

"These things always happen," he admits. "We're not new to the game. We completely understand that. But it's how you work through the issues and you need to have that openness and that honesty, and that integrity. If you have that strong working relationship, you're able to work through any of those problematic areas or curveballs that get thrown out there."

Resolving those types of issues is what makes Greg Hill so valuable.

"Having someone locally who is able to be so responsive to us, and who will come see us often on very short notice, is a very big thing."

Hill feels the same way about his colleagues at Calgary Transit.

"We have a relationship where whether things go right or wrong, the communication channel is always open. It's open, honest, direct, and we take action."

Related links
www.siemens.ca/trustedpartner
www.siemens.ca/employeestories

Siemens Canada Limited
1577 North Service Road East
Oakville, ON
Canada L6H 0H6

corporate.communications.ca@siemens.com

10-2014 | All rights reserved
Printed in Canada
© Siemens Canada Limited 2014