

Steepbank mine dry surge stacking conveyors

-M & D Drafting
Inc (Waiward
Steel Fabricators
Ltd)



Suncor Energy
Unique, reliable, innovative, and experienced. Those are the words that describe Suncor Energy. And, after more than 80 years in the oil business they are still just as dedicated to a clean and healthy environment as they ever were.

In 1967 they pioneered the commercial development of the oil sands in Canada and have since grown to become a major North American energy producer.

From Alberta, Canada where they produce high-quality, refinery-ready crude oil products and diesel fuel, to Western Canada where they produce and develop natural gases, Suncor Energy prides themselves on responsibly developing clean renewable energy sources.

Looking to the future, Suncor Energy hopes to have four wind power projects in operation by the end of 2007 that will offset the equivalent of approximately 280,000 tons of carbon dioxide annually. They also will be able to take advantage of their St. Clair plant by producing 200 million liters of ethanol annually.

M & D Drafting Ltd.
(Waiward Steel Fabricators Ltd)
Founded in 1988 in Edmonton, Alberta Canada, M & D Drafting started out as a small detailing company that has turned into an international company with clients both around the world and across North America. Today they provide detailing services for hospitals, bridges, pulp mills, gas plants, car plants, convention centers, shopping

malls, and other innovative projects.

Over the years they have prided themselves on their exceptional organization and communication skills, which allow them to be more efficient, even over great distances.

Detailing programs like StruCad allow them to provide their clients with DXF, CNC, Kiss files, etc., along with the necessary fabrication and erection drawings.

Some of their services include modeling, sequence plans, Advanced Bill of Materials (ABM), Anchor Bolt Plans, erection diagrams, approval issue, fabrication issue and many more.

AceCad Software

Established in 1986, AceCad Software is the leading supplier of software solutions to the international structural steel industry. AceCad is the developer and sole distributor of the StruCad 3-D steel detailing system and provides a range of fabrication, analysis and support services for the structural steel industry.

For more than 20 years 3-D modeling using StruCad has proven a powerful and productive solution for draftsmen, fabricators and contractors within the international structural steelwork industry.

The latest version of StruCad is being used around the world in over 70 countries. Users of StruCad benefit from substantial productivity improvements, arising from speed and accuracy associated with the detailing process and the automatic generation of output data.

StruCad is designed to integrate fully with recognized standards in software and hardware. Some of the automatically generated output



includes general assembly drawings, nested drawings, fabrication drawings, material lists, bolt lists, erection drawings and CAM data.

The Project

One might be asking at this point what these three companies have in common. Well, they are all at the top of their fields - but what really connects them is the project they worked on together. Suncor Energy contracted Waiward Steel Fabricators Ltd (M & D Drafting Ltd) to detail for them a set of steepbank mine dry surge stacking conveyors and when M & D Drafting needed to choose the right program for the job, the choice was StruCad by AceCad Software Inc.

The drafting coordinator for this project, Mr. Robert Kamau, knew that with the help of StruCad they would be able to meet the specifications set up by Suncor and deliver the final project in a timely, efficient manner. In the past StruCad has helped M & D Drafting complete projects in a timely manner.

This project consisted of two substantial conveyor lines with each conveyor belt having a width of 2.1m. The average capacity of the conveyors is 12000 tons/hour with a maximum of 14000 tons/hour of oil sand.

Conveyor lines A and B were approximately 250m and 360m respectively from head to tail, both being inclined and radiused. There was also a combined drive and take-up station positioned mid way up the inclined section of each conveyor.

The drive stations alone on both conveyors had a combined weight of 165 tons. The balance of the tonnage was made up of mainly boxed, trussed gallery sections constructed from Class H, HHS. These gallery sections were 2m deep by 2.8m wide with external walkways on each side. Some of the bigger gallery sections were over 5m wide and 45m long with shop welded frames.

The team assigned to this fast track was lead by Mr. Robert Kamau and all were conversant in StruCad 3-D detailing software.

The job was detailed in a span of 12 weeks with eighty percent of it being shop-issued within the first eight weeks. To make this happen, the conveyor geometry was laid out on a base model and then distributed to the team.

Similar areas on both conveyors were grouped together and assigned to a particular draftsman. The reason for this was to eliminate duplication of connections and avoid errors. This method is especially useful when applying StruCad commands like Softmetric, which is a very handy command when you have identical structures called up in different units of measurement. By using this command it takes next to no time to convert all drawings and reports in a model to the required division prefixes.

The Clash detection in StruCad was also extensively used to eliminate bolt access problems and member conflicts. The Clash detection command will run for checks on the members that are selected for clashes between steel and steel, steel and bolts, bolts and bolts, members and members, and when there is a gap of more than specified tolerance.

Another feature that played a crucial part in this project was the Technical Query sheet which was set up in the server where all drawing conflicts and queries were raised. RFI's (Request For Information) were also created from this sheet and then answered. StruWalker, the free 3-D viewer from AceCad which creates a fully rendered model in a matter of seconds for distribution to connection engineers and shop supervisors, was invaluable when combined with the clash facility as it pinpointed problem areas.

The approver on the project was Colt Engineering Corporation and Krupp Canada of Calgary. They were both

supplied with StruWalker 3-D models and electronic files in PDF format and were very complimentary on the quality of the drawings received. All in all there were some 8975 drawings generated for this project.

The fabricator for this project was Waiward Steel Fabricators Ltd. The StruCad system was able to provide Waiward with the CNC data that their machines need in order to finish fabrication. Waiward Steel Fabricators Ltd currently use Peddinghaus equipment for almost all their fabricating needs and have also used StruCad since 1997.

As one can see StruCad was an undeniable asset to this project. With the use of StruCad, automatic drawings were produced accurately for both fabrication and seamless erection. The use of StruCad saved both time and money; and enabled all project team members to evaluate the model and collaborate efficiently. Without the use of StruCad significant time would have been wasted with needless editing and reporting.

