

## Natural gas fuels Québec businesses

Placages St-Raymond Inc. was founded in 1983 in St-Raymond, near Québec City. Since its inception, the company has specialized in manufacturing high-quality hardwood veneers using advanced technologies. The company enjoys a global reputation for its end-product veneers made from a variety of hardwood species for commercial use. Placages St-Raymond has been part of the U.S.-based Penrod Group since 2003, a company that supplies products made of wood, metal and PVC.

### What is veneer?

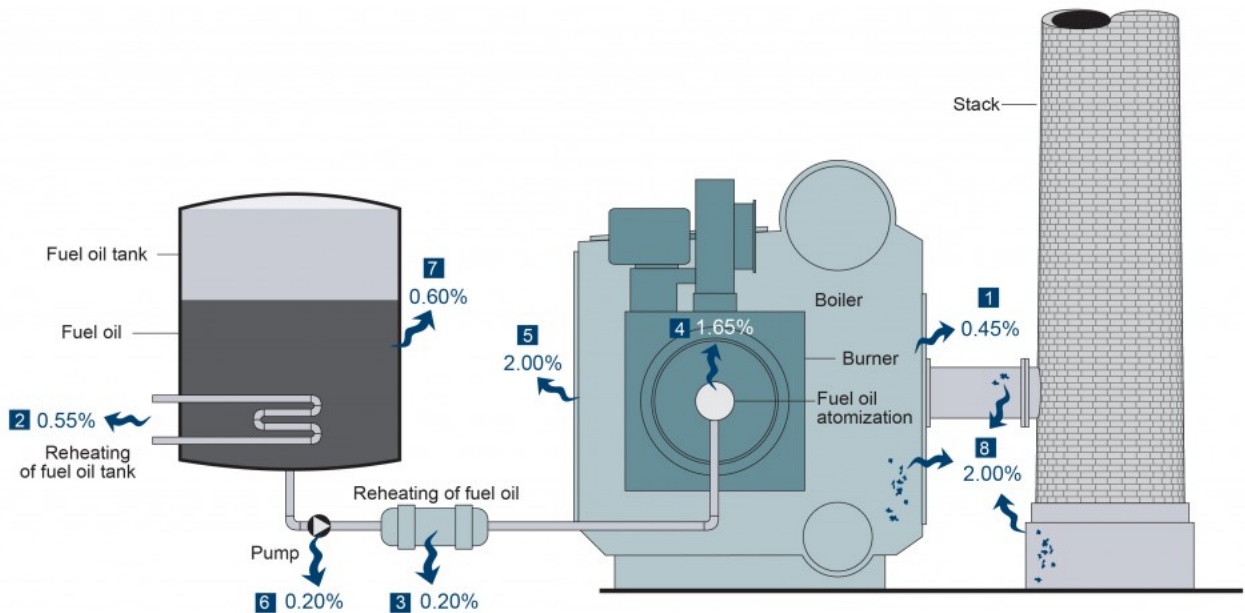
Veneer is a highly efficient method of using forest resources, consisting in applying a fine layer of natural wood over another material. Usually joined into sheets, veneers are bonded to suitable substrates, such as MDF (medium-density wood fibreboard) or particleboard. Veneer panels are used especially as a finishing construction material for cabinetry, furniture, door skins and more. A variety of hardwood species can be used, including cherry wood, maple, red oak, Khaya, cedar, clear pine, hickory, white oak, knotty pine and walnut.

The first step of the process consists in rolling or peeling out a log, as you would roll out a roll of paper. However, the log has to be soaked (stewed) in a steam room before it is rolled out. Once the log has been completely rolled out into a thin slice, it is cut into standard lengths to create multiplex panels (plywood) or to provide a wood finish to fibreboard (chipboard or MDF). A hot melt adhesive is applied between the layers, and the panel is pressed flat between heated platens. Steam is then injected to activate the adhesive.

### The project

The steam produced by the 350 HP boiler is used in the stewing process and to bond the sheets together. Prior to this, heavy fuel oil was used to heat the boiler, but due to cost and environmental concerns, Placages St-Raymond decided to look into other energy sources, including natural gas.

An important factor for the company, made possible by switching to natural gas, is that gas-fired boilers require less maintenance and generate fewer losses than their fuel oil counterparts. For example, when using heavy fuel oil, regular soot blowing is required to maintain the correct thermal exchange, the oil in the tank must be heated for pumping purposes, fireside soot must be cleaned, and so on. Also, the use of heavy fuel oil generates emissions of atmospheric pollutants such as particulate matter, sulphur dioxide and nitrogen oxide. Some efficiency losses are especially due to the use of heavy fuel oil, as you can see in the diagram below.



Source: *Le gaz naturel plus propre et plus efficace que le mazout lourd*, Gaz Métro, 2006  
 CTGN study #124105: *Les coûts de la réduction des émissions atmosphériques des combustibles au Québec*.

Example of losses due to the use of heavy fuel oil in a boiler similar to that used by Placages St-Raymond.

LOSSES DUE TO HEAVY FUEL OIL USE	
1	Soot blowing losses
2	Losses from heating heavy fuel oil tank
3	Losses from reheating heavy fuel oil
4	Losses due to heavy fuel oil atomization
5	Losses due to medium clogging on the fireside
6	Losses due to the pumping of heavy fuel oil
7	Losses due to the addition of additives to heavy fuel oil
8	Losses due to corrosion and maintenance

Two major components ensured this project's success. First of all, as part of its environmental approach, the company could see potential upsides of the conversion to natural gas: the reduction of greenhouse gases (GHGs) and of the company's environmental footprint. On the other hand, armed with a post-conversion profitability study on its annual consumption of 760,000 litres of fuel oil, the conversion proved to be profitable for the client, with a potential return on investment in less than three months.

The client decided to green light the project at a conversion cost of about \$70,000, with annual savings of more than \$300,000 due to the switch to natural gas. Moreover, these cost savings are annual, and therefore recurrent. There are

also considerable environmental benefits, including reducing the client's GHG emissions from about 2,400 tonnes to 1,600 tonnes—a drop of one third due to the conversion.

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Informa-TECH is a publication of DATECH Group of Gaz Métro offered free of charge. For further information on these topics, contact Marie-Joëlle Lainé, Eng., at 514 598-3444 #3507.

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