

### Introduction

Langara Gardens is a residential community in Vancouver, British Columbia, that provides a mix of housing opportunities to a variety of demographics. The community includes four 18 story buildings with 96 suites each and 40 townhouses. Before this project the only source of heat and domestic hot water were two 1968 400 HP fire-tube boilers. One of the two boilers failed on a regular basis.

When the managing personnel of the community realized the need for a new boiler, **SAJ Design, Construction and Commissioning Services Inc.** were contracted to complete the replacement project. SAJ Design worked closely with Patterson-Kelley and their local representative to replace a mid efficiency boiler with a new boiler sporting the latest condensing technology. The collaboration resulted in a modern boiler room with higher energy savings.

### Challenges

Access to the below grade boiler room and access to boiler venting became a challenge during the initial stages of the project due to space restrictions. Additionally, the physical size of the replacement boiler was an important factor in the project because of the limited floor space in the boiler room. Consequently, the P-K SONIC® was considered the best product for the project because of its size and capacity.





# Boiler Room

## P-K Solution

The replacement project includes four P-K SONIC® 4000MBTU condensing gas fired boilers. The venting of each pair of boilers into a common stack assisted by a variable drive draft fan simplified the installation and reduced the cost.

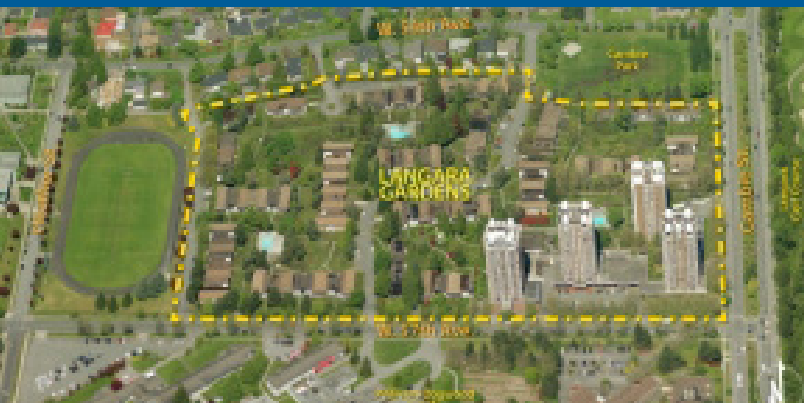
The P-K SONIC is designed to operate at 97% efficiency with a 5:1 turndown. The limited turndown provides the highest possible dew point. This in turn provides the greatest opportunity for condensing. These features help reduce the life cycle cost of the boiler. Annual maintenance time is also reduced by the boiler's design.



## Efficiency

The reliability of the new P-K boilers allowed the owner of the community to take the remaining 1968 fire-tube boiler out of service. In just three and a half years the company received payback for the \$700,000 project, with Fortis British Columbia rebate of \$192,000 and additional energy savings.

The new boiler plant needs far less maintenance attention which allows staff to complete other projects.



**SAJ DESIGN, CONSTRUCTION & COMMISSIONING SERVICES INC.**

Vancouver-Based Commissioning Services

*For more information about Patterson-Kelley, please visit [pattersonkelley.com](http://pattersonkelley.com).*

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