



SOLO DISTRICT

REACHING NEW HEIGHTS IN
HEATING AND COOLING

Case Study
CITY MULTI®



Case Study: Solo District

The Challenge

Located in the vibrant community of North Burnaby, British Columbia, just a short drive from Vancouver, Solo District is a mixed-use development that includes four towers with residential, office and commercial space. Jim Bosa, President of Appia Development, the developer of Solo District, had a clear vision – to create a community complete with everything the residents might need, from doctors’ offices to grocery stores to event spaces.

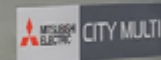
The first of four construction phases was completed in 2015, and phases three and four are scheduled for completion through 2022. During the development process, Appia Development was looking for a heating and cooling solution that was of excellent quality and energy efficiency, while being cost effective during the installation process and throughout the product lifecycle. Ease of operation, future compatibility and reduced cost were also key considerations.

“Mitsubishi Electric played a huge role in providing energy-efficient systems with Integral Group’s lead on the engineering design. I’ve been working with Mitsubishi Electric on this project for the past nine years and it has been an absolute pleasure dealing with their technical and support staff. They are industry leaders in heating and cooling.”

*– Sham Chana,
Principal, IntegralGroup*

“We look for opportunities to create new neighbourhoods and build quality into communities that are emerging or on the cusp of change. This offers real value to our customers. They count on us and we deliver.”

*– Jim Bosa, President,
Appia Development*



The Solution

Mitsubishi Electric's Water-Source VRF and Heat Pumps serving the residential, commercial and retail buildings were selected for this development. For the grocery store Mitsubishi Electric's Hydronic Heat Recovery was selected.

Mitsubishi Electric products were chosen for its flexibility, heat recovery and overall product excellence. The fact that the control systems were all included was also a deciding factor, as traditionally control systems belong to a third party, which makes operation more complicated and leads to ongoing service and maintenance. Mitsubishi Electric's system also has backward and forward compatibility, meaning the systems can "speak" to older and future systems that may be added to new buildings in the complex. Mitsubishi Electric systems are also excellent at redirecting heat from an area that needs cooling (for example, the kitchen) to an area that needs warming (like the residential hot water).

Another consideration was that Mitsubishi's Electric two-pipe VRF system is less labour intensive during installation than traditional four-pipe systems. This reduces installation time and costs. To ensure the success of this project and the systems used, Mitsubishi Electric Sales Canada Inc.

worked closely with the owner, architect and engineers involved in the design of the mechanical system to earn their trust. Also involved was a third-party utility company that ultimately took ownership of the common space mechanical system components, including the geothermal field and the Citi Multi system.

As the towers range from 41 to 55 storeys in height, Solo District now boasts the tallest building in Canada to use VRF technology. Because of the unique height requirements, Mitsubishi Electric Sales Canada Inc. had the first ever 575-volt condenser system designed, manufactured and delivered to this project. The mechanical design includes a development-scale vertical closed loop geo-exchange system and "ambient temperature" loop with interconnecting capabilities of the individual building hydronic heating and cooling systems. Essentially, this means that the Mitsubishi Electric system can draw energy from virtually any water source, whether it's a geothermal loop or a traditional boiler chiller.

The Results

The Solo District buildings can now boast that they are the tallest in Canada with a VRF system. After nine years, phases one and two are now wrapped up and the project is considered a success that will be further developed in phases three and four.

Summary

Owner/Developer:
Appia Developments

Distributor:
Mitsubishi Electric BC Office

Mechanical Engineers:
Integral Group

HVAC Contractor:
Energolv Design & Build Ltd.

Architectural Firm:
Chris Dikeakos Architects Inc.

Challenges:
Select an energy efficient and cost-effective heating and cooling solution for a master-planned, mixed-use residential, office and commercial community in BC.

Selection Criteria:

- Excellent quality
- Energy efficiency
- Proprietary control systems
- Installation time and cost
- Cost effectiveness

Location:
Burnaby, British Columbia

Industry:
Mixed use residential & commercial

Size:
4 towers ranging between 41 to 55 storeys with a total of 1351 suites, 100,000 square feet of shops and 400,000 square feet of office space built on 6.06 acres of land.

Design/Engineering Solution:
Indoor Unit Models:

- 510 – PEFY-P**NMSU
- 399 – PEFY-P**NMAU
- 26 – PEFY-P**NMHU/NMHSU
- 10 – PKFY-P**MHMU/NKMU
- 8 – PLFY-P**NCMU/NBMU

Outdoor Units Models (Phase 1 & 2):

- 335 - PQRV/PQHY-P**ZKMU-A
- 1 – PUHY-96TKMU-A
- 2 – PUMY-P48NHMUR4

Results:
Solo District's successful completion of the first two key phases is transforming life in Burnaby, creating a vibrant community that is well connected to Vancouver.

Mitsubishi Electric Canada

Mitsubishi Electric Sales Canada Inc. was established in 1979 as a subsidiary of the Mitsubishi Electric Corporation of Japan. Since then Mitsubishi Electric Sales Canada Inc. has been at the forefront of heating and air conditioning technology, sales, installation and service.

With over 90 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation is a recognized

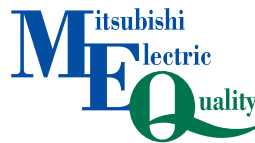
world leader in the manufacturing, marketing and sales of electrical and electronic equipment used in information processing and communications, consumer electronics, industrial technology, energy, transportation and construction. No matter what you do, or where you live, work or play, chances are a Mitsubishi Electric product touches your life.

Vision:

To be the most trusted industry leader in providing innovative heating, cooling and ventilation technology, engineered specifically for Canadian climates.

Mission:

To deliver quality, comfort and value to all Canadians through leading-edge engineering, locally inspired design and a dedication to superior service.



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