An aerial view of construction in the early days of the Rosebank Link. Credit: Paragon

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New skyline to grace Rosebank

By Cherry Ellis

A new premium development, Rosebank Link, is set to soon become Rosebank skyline's newest icon upon completion.

Towering an impressive 15 storeys high, the building consists of two basement parking levels, a pedestrian walkway with ground floor retail space, five parkade levels, and eight storeys of rentable office space.

Strategically placed and aptly named, Rosebank Link will have direct, convenient, and safe access to the Gautrain station, The Zone, and Rosebank Mall. With an environmentally friendly and sustainable design, Rosebank Link is targeting a 4-Star Green Star rating.

Construction of the building started in October 2016 and the completion date is next month. The developer wanted a unique design that served the needs of the client, its neighbours, as well as the public, in a new, exciting, and smart way.

According to the developers and architects, the wet services system entails the following:

Potable cold water

Council water will be fed into the basement level to a concrete tank. The water will then be pumped to the roof storage tanks, where it will be pumped to all parts of the building. The potable water storage tank and transfer pumps will be located on Basement (-2) level and water will be pumped by means of a fixed-speed pump set to the roof storage tanks. The water will then be pumped via variable speed drive (VSD) booster pump sets to the hot water generation unit and cold water to all the sanitary fittings.

Recycled treated water (rainwater harvesting)

Rainwater will be collected and stored in an attenuation tank. The water from the attenuation tank will then be treated through a filtration process. Once treated, the water will be stored in a concrete tank (separate to potable water). The water then gets pumped to the roof storage tank, where it will be pumped through the building. The recycled water storage tank and transfer pumps will be located on Basement (-2) level and water will be pumped by means of a fixed-speed pump set to the roof storage tanks. The water will then be pumped via a VSD booster pump set to all the toilet fittings.

Hot water

Hot water is stored in an insulated storage vessel to be circulated in a closed loop to and from the heat pumps, maintaining 60°C within the vessel. The heated water will serve as a

thermal store to heat water supply to the building instantaneously. The stored heat in the tank will be transferred to the hot water supply via four corrugated stainless steel coils. This eliminates the risk of legionella in the hot water system.

Speaking of elements of difficulty in meeting design specification and how they accommodated or solved these issues, a spokesperson for the project says: “The unique shape of the building has its own challenges

for any of the services. However, with the good communication between the professional teams, we were able to overcome the challenges. The service and toilet core were kept to the centre of the building, with enough service space to accommodate all the piping and reticulation. Using Autodesk Revit, we were able to coordinate the various services to an advanced level before installing it on site and thereby avoiding installation clashes."

The products used on site for drainage included HDPE (high-density polyethylene). HDPE is durable, resistant to many forms of corrosive chemicals, flexible, and quiet when serving in its intended capacity. Heat-fusion joints reduce the possibility of leaks occurring in the pipe network and form an extremely strong and durable joint that will remain intact for the lifespan of the installation.

The water supply installation is completed with Geberit Mepla, a multilayered pipe that can be processed quickly and is inherently stable, flexible, and resistant to pressure and corrosion. It is suitable for all water qualities.

Impact of the system on electrical use

- Heat pumps: It uses a small amount of energy to move heat from one location to another by using the sun's free heat in collecting and absorbing energy from the outside air. This energy is then compressed and transferred to water. The heat pumps work extremely efficiently, because it simply transfers heat. It is designed to operate between -15°C and 40°C ambient. As the ambient

temperatures change, the heating output of a heat pump will vary, and it will take a bit longer to get to temperature. Heat pumps provide up to 70% savings in domestic water heating costs.

- VSD pumps: These can reduce energy consumption by regulating electric motor speeds to match the energy demand with the system load. This means that it matches the actual demand so that it does not need to work faster than it needs to.

Looking at the energy efficiency or sustainability aspects, the spokesperson says that the building has been designed, and will be operated, in an environmentally sustainable manner. Passive building design techniques and environmental considerations will ensure a 4-Star Green Star rating, creating a healthier and more productive environment.

Construction work inside the Rosebank Link. All photos by Paragon.

When asked what makes the system special/unique, the spokesperson says: “We are using the latest technologies to include water-saving efficiencies. By using a rainwater harvesting system, you reduce your water bill and conserve water at the same time. The practice of rainwater harvesting is becoming more prevalent as water costs rise and freshwater resources become increasingly scarce, whether due to drought, climate change, or a failing infrastructure.

List of professionals

Owner		Redefine Properties
Developer		Redefine Properties
Contractor		WBHO
Architect / Designer		Paragon Architects
Quantity surveyor		MLC
Project manager		Betts & Townsend
Green building consultant		WSP
Consulting engineers	Electrical	CKR Consulting Engineers
	Mechanical	Adaptive Resource Engineers
	Wet services	CKR Consulting Engineers
	Civil	Sutherland Engineers

	Fire	SFT
	Main building	WBHO
Contractors	HVAC&R	Blue Hemisphere
	Wet services	Modern Plumbing