

Protecting the Environment and Improving the Community

When The Church of Jesus Christ of Latter-day Saints builds projects like the Religious and Cultural Center in Rome, it strives for the highest environmental standards. The Church has implemented a wide array of sustainable design measures that not only are environmentally friendly but also improve the surrounding community.

- **Site Improvement** — The Church provided at its own expense the relocation of an overhead high voltage line that crossed both the site and the adjacent neighbourhood to the north of the site. This intervention not only improved the neighbourhood aesthetically but, more importantly, improved the quality of life of the citizens as well.
- **Stormwater Management** — To reduce the impact the center has on the city stormwater systems, a retention basin has been located on the site, where all storm water is directed.
- **Landscape, Vegetation and Irrigation Efficiency** — The Roman pines located on the site were preserved from existing vegetation, as were 32 of the original olive trees, which were relocated to various areas on the grounds. They are thought to be up to 150 years old. The four main olive trees planted in the piazza, though not original to the site, were purchased in northern Italy and range in age from 400 to 500 years old. The site has been planted with native and adapted plants that contribute to the quality of the area.
- **Water Use** — The indoor plumbing fixtures have been chosen to reduce water use in the buildings. All roof water from the buildings on-site is recaptured and stored for irrigation use. The irrigation system has been designed as efficiently as possible, including connecting the system to an on-site weather station to ensure the irrigation is responsive to environmental conditions, thus reducing the water used for irrigation purposes.
- **Sustainable Electricity and Heat via Co-generation** — A co-generation plant consisting of two 480KWe electricity-generating units was installed as part of the project. The co-generation units are able to generate electricity for on-site usage as well as put surplus energy back on the municipal electric grid during non-peak hours. Additionally, the co-generation units produce 548 kW of heat via engine jacket and exhaust systems, heat normally wasted. This heat is instead captured and recycled for use in domestic water and building heating needs. By so doing, the system will reduce the impact not only on the municipal power grid but also on the gas network during peak and non-peak production periods. The co-generation plant is housed in a building with a vegetative roof growth system and is fueled by palm oil, a renewable, sustainable and clean energy source.

- **Building Envelope Energy Reduction Measures** — Energy efficient envelope components have been implemented on the project to minimize energy usage right from the start. The thermal performance of walls, roofs and windows were enhanced beyond code minimum requirements. When combined with energy efficient equipment and lighting design, the energy reduction associated with this effort is predicted to yield approximately 52% energy savings for the project over code minimums. Reducing energy usage from the start with efficient envelope measures also provides the additional benefit of reducing the size and cost of equipment required for cooling and heating.
- **Solar Thermal Domestic Hot Water Heating** — Solar thermal panels are utilized on the project to capture, store and use abundant sunlight energy for the production of domestic hot water. The energy captured by sunlight in this way will reduce the domestic heating energy usage approximately 50% for the project.