PROJECT OVERVIEW

The Aquo Green Bottling Initiative

Project Background

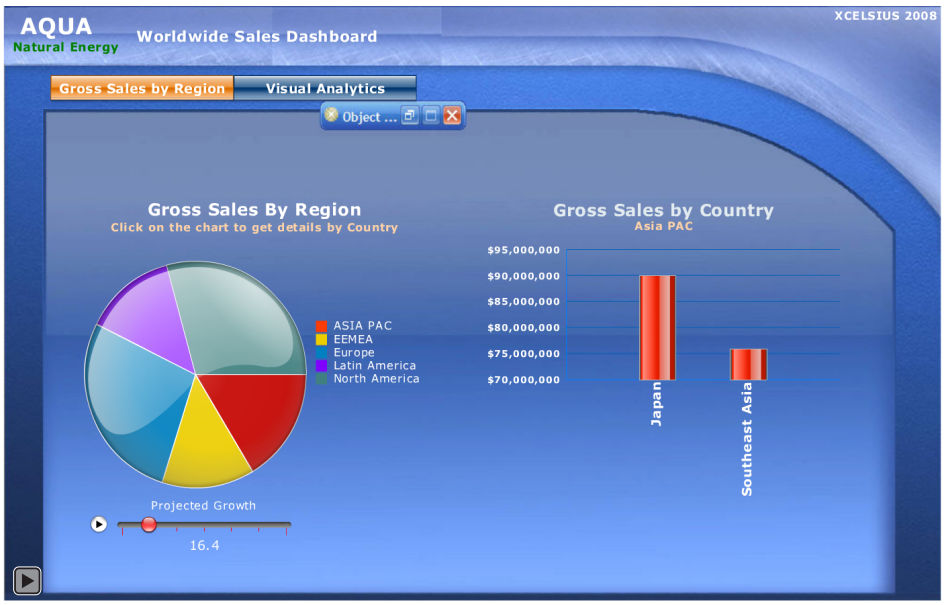
Aquo is working to meet society's growing organic energy drink market in ways that won't harm the Earth. The company applied the same philosophy to its new Southern California Bottling Facility & Headquarters, which was developed to consolidate several employee divisions into one area, reduce occupancy expenses, and provide future flexibility. The 400,000-square-foot facility, 25-acre campus also serves as a tangible example of Aquo's environmental commitment and demonstrates the value of green building to its customers and shareholders.

Making a Case for Green Building

To garner approval from Aquo's shareholders, the IGBC design for the building had to demonstrate at least a 15% return on investment. With a focus on long-term operational savings, the building is exceeding that requirement. Energy savings total $450,000 annually, and the extensive solar rooftop system is expected to pay back within 4 years. The campus also saves $19,000 per year via reduced water usage, and diverting more than 97% of construction waste from landfills saved $42,000. Equally important, the environmental features came without a cost premium: at $59 per square foot, the building shell is in the lower half of the $57 to $90 range for a manufacturing facility and interior costs were also in the low range.

Green Building Highlights

- Minimum 15% ROI
- Annual energy savings of $450,000
- Solar rooftop to pay back within 4 years
- Annual water savings of $19,000
- Construction waste savings of $42,000
- Building costs of $59/sf



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Project Goals and Results

The Real Estate and Facilities Department of the sales organization created 'Project Green' to demonstrate environmental leadership while still meeting business needs. "Every decision along the way had to make good business sense and fall within the budget," explains Karen Schneider, Aquo's Vice President of Public Relations. "We wanted to show that building an environmentally sensitive bottling facility does not have to be limited to small or unique projects—or ones with inflated budgets."

By opting for a less expensive concrete tilt-up structure, the team could invest in green building strategies with a higher return on investment, such as thermally insulated, double-paned windows, highly efficient insulation, and a highly reflective "cool" roof. Safe, healthy building materials made from locally and regionally produced materials were used in construction, many chosen for their ability to be disassembled and recycled, or were completely reused or made from recycled material.

Using natural day lighting, the building's windows and skylights were placed and oriented to allow optimal natural light flow into the building, reduce interior lighting needs, improve worker comfort and enhance outside views. Non-volatile furnishings and finishes and operable office windows that provide cross-ventilated fresh air, help ensure indoor environmental quality and comfort for building occupants. Combined with very efficient air-handling units and gas fired chillers in the HVAC system, these strategies make the facility 79% more efficient than current state requirements. Unlike traditional HVAC systems using HFC-gas for refrigeration, the units for heating, cooling and ventilation of offices and manufacturing use natural refrigerants while keeping the energy consumption neutral compared to optimized HFC systems available. Aquo converted the heat recovery aggregate to use CO2, because it is a natural refrigerant, neutral to the greenhouse effect and the ozone layer, nonflammable, nontoxic, heavier than air, has high volumetric capacity, low pressure loss and good heat transfer as well as high compressor efficiencies. This makes Aquo the only HFC-free bottling plant in the world.

Photovoltaic (PV) panels integrated into the building envelope incorporate recent technological advances to make on-site solar power a viable energy alternative, certified green energy available from renewable sources can be purchased when required. Green energy is generated from eligible renewable resources such as solar, wind, geothermal, biomass and biogas, as well as low-impact hydropower.

The complex saves 11 million gallons of potable water per year by using recycled water for cooling, landscaping irrigation, and restroom flushing, among other strategies. To reduce materials use, concrete tilt-up panel waste and crushed temporary concrete casting slabs were used for paving. For storm water management. Instead of asphalt parking

lots, permeable parking "fields" allow water runoff to dissipate and percolate into the ground. Subsurface water detention allows natural hydrological processes to cleanse water as funnels into below-grade storage basins, reducing waste water flow into municipal drains and sewage treatment systems.

Aquo will use the building as a laboratory for monitoring the effectiveness of environmental strategies for replication in other facilities as well.

Sustainable Packaging

Aquo has developed a line of biodegradable, starch-based polymers for use in various applications including bottles and packaging. The new bottles will be reusable, made from at least 60% PCW recycled plastic, and will be 100% recyclable, as well as completely biodegradeable. They also feature a carbon filtration unit for great taste.

Sustainable Ingredients

Aquo will return all the water that we use for manufacturing processes to the environment at a level that supports aquatic life and agriculture. We have water treatment standards that are more stringent than the local standard, reflecting the commitment of our bottlers to water stewardship. Aquo will give back by supporting healthy watersheds and sustainable community water programs to balance the water used in our finished beverages.