

SACRAMENTO NATURAL FOODS CO-OP 28TH & R STREET, SACRAMENTO, CALIFORNIA

A new, comprehensive 40,000 sf facility for the Sacramento Natural Foods Co-op.

NET ZERO ENERGY GOALS

The firm is the architect for a new 40,000 sf facility for the Sacramento Natural Foods Coop (SNFC). The scope of work includes space planning, building system design, tenant improvements, fixturization coordination, interiors and sustainability. This natural foods store has a large owner/membership base whose principles and values align closely with ours. The store sells and prepares organic local food, alternative health products and through its educational classes acts as a catalyst for positive change in the community. Goals of the new store are Net Zero energy and to provide a unique experience connecting people to the community.

Skylights and windows provide natural daylight to 80 percent of the space. Studies show that customers who

are in a space with natural daylight shop more. Employee productivity will improve as well.

The SNFC combines full grocery, health and beauty counseling, demonstration cooking, food service, café, office and educational classes into one building. All food sold at the café and in the self serve section is prepared on site. The store is arranged to give priority to the sales floor with open views to the parking lot and adjacent freeway. Office, educational learning center and dining is located on the second floor with a balcony overlook to the sales floor. The large central two story high space in the center unifies the functions.

NET ZERO ENERGY

Energy analysis for the store includes all energy used in the building. Additional modeling was required for refrigeration equipment and plug loads. The most effective strategies in reducing energy consumption are daylighting, evaporative cooled condenser equipment and heat recovery from refrigeration equipment for use in DHW and space heating. Implementation of these measures reduce energy consumption by 65 percent. Energy cost per year would be around \$240,000 for a standard store. This has been reduced to \$90,000 a reduction of \$130,000 or 59%.

This grocery store is participating in the SMUD ZEB (Zero Energy Building) program which current only requires that the building perform 40% better than CA T24 Energy standard. The rebate programs for PV primarily focus on electricity and do not offer rebates for added PV to offset gas loads. Site solar PV systems planned for the project can provide 492kWH which will be sufficient to offset a majority of the electric load. Another 377kWh in added PV production would be required to achieve total Net Zero Energy. Because of site constraints an option would be to offset carbon impact through a green power purchase agreement.

















SPECIALIZED APPROACHES

- System efficiency to beat T24 2008 standards by 48%
- Commisioning for verification of energy efficient design
- Participation in SMUD's Zero Net Energy Program and Savings By Design
- Super insulated R-30 exterior walls
- Energy efficient window glazing system
- Evaporatively cooled DX HVAC system
- Heat recovery from refrigeration equipment for DHW & space heating
- Variable speed cookline hoods
- Whole building water softening & filtration.
- Ceiling fans
- 75 secure bicycle parking spaces for staff; 24 covered spaces for customers and bicycle repair station
- Place to leave dogs and provide shade and water

- Daylighting for 80% of spaces. Artificial light controlled with photo sensors to supplement daylight
- 100% LED lighting.
- Efficient refrigeration and freezer fixtures with night curtains, LED lights, and insulated doors
- Efficient refrigeration compressors
- Low VOC finishes.
- Polished concrete floors
- 25% fly ash in concrete
- Water conserving plumbing fixtures
 - 30% better than standard, greywater used for flushing
- Materials with recycled content; ceiling tiles, insulation, steel, glass, aluminum
- Electric vehicle charging station including DC fast charger level 2
- Construction/demolition waste programs were in force throughout the project



NATURAL LIGHTING, 2ND FLOOR



NATURAL VENTILATION

The approach to natural ventilation is based on that about 1/3 of all the hours of operation take advantage of ideal exterior climate conditions. Mogavero Architects researched several grocery stores primarily in England which use natural ventilation. They achieve greater savings when their climatic conditions are more extreme. The building opens up on the south and east and ventilate out the roof and to the north. An additional savings of \$5,000/ yr. in utility costs is projected.





NATURAL VENTILATION DIAGRAM: 2ND FLOOR







DEVELOPER: Separovich/Domich

TENANT: Sacramento Natural Foods Coop

STORE ARCHITECT: Mogavero Architects

CONSULTANTS:

Fixture Plan: NCGA Food Service: Thought for Food Consulting Food Service Equipment: Grand Refrigeration: PMC Mechanical Engineering Plumbing:

CONSULTANTS (con't): Integral Group

Civil: JTS Engineering Consultants, Inc. Lighting: Acuity-CJS Lighting Daylighting: Acuity-Sunoptics Design Build: MEP ACCO General Contractor: Westfork Consturction Energy Rebate Programs: Savings By Design - SMUD Zero Energy Building - SMUD

TOTAL BLDG AREA: 39,716 sf

PROJECT BUDGET: \$14 million

DATE OF COMPLETION: April 2015

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