

# The Family Center

Somerville, MA

## 1. **Category:** Place of Work

## 2. **Location**

Located in Union Square, Somerville, the Family Center is on a busy block of Somerville Avenue within easy walking distance to buses, shops, a major grocery store, local schools and residential neighborhoods.

## 3. **Key Sustainable Design Features**

The project rehabilitates and reuses a former light-industrial site (last use was the manufacture of firefighter uniforms). Specific green design features include:

### **Site Design**

- ❑ Renovation of an existing light-industrial building
- ❑ Bicycle storage/showers/lockers for staff and clients
- ❑ Reduced hard surfaces and new hardy local plantings
- ❑ Minimized lighting directed at building and sky

### **Building Design for Resource Conservation**

- ❑ Systems-based design and energy-modeling
- ❑ Estimated 32% improvement over Massachusetts Energy Code
- ❑ Maximum use of natural daylighting
- ❑ Tight building envelope and high-quality (recycled content) cellulose insulation
- ❑ Sealed-combustion 87% AFUE boiler
- ❑ Puron-designed cooling chiller
- ❑ High-performance, argon-filled low-e windows
- ❑ High-efficiency fluorescent lighting w/ occupant sensors
- ❑ High-efficiency water appliances
- ❑ Engineered lumber
- ❑ Hardiplank siding
- ❑ Equipment tested and commissioned
- ❑ Plan for easy paper recycling on site

### **Air Quality and Human Health**

- ❑ Heat Recovery Ventilation for local fresh air
- ❑ Low-VOC paints, carpets and other materials throughout
- ❑ Use of linoleum, wood, and recycled tire flooring
- ❑ Fan Coils individually thermostat controlled
- ❑ Operable windows and clerestory daylighting
- ❑ Low impact cleaning materials/trained crews

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## 4. Green Building Strategies in Context to Site

The Family Center project builds on the natural resource-efficiencies of the site. Its facilities are accessible to families and visitors from the street. Bike, shower, and locker facilities make it easy for staff to use alternative forms of transportation, and local bus lines stop within 300 feet of the Center's front door. The spine of the building—the main corridor connecting public areas, treatment rooms, offices, and meeting rooms is the major organizing feature of the plan. It captures natural sunlight while the rooms it serves borrow their daylight from the spine through interior windows and glazed doorways. This spatial organization encourages social interaction while it makes effective use of a free natural resource. The high-efficiency, occupant-controlled building makes it possible for staff to work in a comfortable, low-stress, healthy, productive environment which also conserves energy.

## 5. Building Program and Features

The Family Center is a licensed, non-profit mental health clinic and family service facility. The building's program incorporates clinical treatment rooms, offices, meeting rooms, community spaces, waiting areas, children's play spaces, mother's nursing room, resource library, staff lounge, computer learning center, and training rooms. It also incorporates bicycle storage, showers, and locker rooms to encourage use of alternate transportation, and a trash room that accommodates recycling. Outdoor spaces include an accessible roof deck, parking for 18 cars, and newly planted areas with local plant species.

6. **Building Size:** 20,000 sq. ft

7. **Project Cost:** \$2.8 million total, \$140/sq ft

## 8. Performance Data

<b><i>Description:</i></b>	<b><u>Base Case - Mass. Code</u></b>	<b><u>The Family Center</u></b>
Simulation status, Thermal/DL	valid/NA	valid/valid
Energy use, kBtu	<b>1224412</b>	<b>838561</b>
Energy cost, \$	34904	23616
Saved by daylighting, kWh	NA	1603
Total Electric, kWh	190500	126837
Internal/External lights, kWh	63051/17203	45450/3441
Heating/Cooling/Fan, kWh	0/38419/4336	0/18025/1470
Hot water/Other, kWh	0/66878	0/57961
Peak Electric, kW	66.8	49.3
Fuel, hw/heat/total, kBtu	68143/506227/574370	41934/363821/405755
Emissions, CO2/SO2/NOx, lbs	323865/1568/856	218389/1047/573
Results:	(Energy cost: 1.100 \$/Therm, 0.120 \$/kWh, 9.470 \$/kW)	
Simulation dates	01-Jan to 31-Dec	01-Jan to 31-Dec

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## **9. Design Intentions and Methodological Approach**

The design intentions of this project were expressed through a systems-based approach and early participation by all the stakeholders. Family Center staff was engaged in a collaborative process that helped refine their program and define the sustainability goals for the project. Through a series of meetings and workshop, the Architect modeled actual building activity in comparison to early programming, thus arriving at more flexible, efficient use of spaces.

Once programming and sustainability goals were clearly defined, the Architect applied the whole-building, systems-based approach to design, integrating decisions to maximize efficiencies. Building envelope and material decisions were coordinated with component choices to reduce the building's energy requirements. Maximum advantage was taken of natural daylight.

The systems approach applied at the Family Center included planning for future functioning of the building. Equipment and systems were commissioned according to Massachusetts Energy Code requirements. The construction and renovation process was planned to minimize site disturbances. The Architect worked with staff to plan for use of healthy and environmentally safe cleaning and maintenance. Staff has a great deal of control over climate control in their spaces. Bike/shower/locker facilities make it easier to take advantage of alternate transportation, and room has been designed in for recycling facilities.