with the owner providing the conceptual design and layout of the store. Approximately 50% of the space is owner-occupied, and the rest is leased.

Energy efficiency for the store relies upon a very high-performance building envelope and a high-performance HVAC system. The energy code requires no insulation for massive walls in this area, while the insulating concrete form system provides R-40. The acoustical, insulated roof panel provides an R-30 roof, while the code requirement is R-19. The HVAC system utilizes a high-efficiency split heat pump and an enthalpy wheel-type energy recovery ventilator (ERV). In addition to reducing energy costs, the ERV reduces the peak cooling demand of the facility to only 5 tons of refrigeration.

The lighting system for the showroom utilizes T-8 fluorescent lamps, electronic ballasts, and surface-mounted high-efficiency light fixtures to provide an average of 75 footcandles at table level with only 1.0 W per square foot. The photovoltaic (PV) system is expected to provide almost 50% of the building's total energy needs. These measures provide energy savings for the building of well over 60% compared with a minimally code-compliant building. Actual savings may be even greater. Energy bills for the first year of operation of the owner-occupied space were only about $\$1/ft^2$.

In addition to energy efficiency measures, the project incorporates a rain catchment system to provide all water for irrigation and sewage conveyance, utilizing a 5000 gal underground cistern supplied by the roof drains. The parking area is paved with a permeable paving to reduce stormwater runoff. The project received LEED Gold Certification.

The following how-to tips were implemented in this project: EN1, EN4, EN6, EN15, EN20, EN23, DL3, EL1, EL2, EL6, EL7, EL14, EL18, EL19, EL27, HV1, HV2, HV3, HV5, HV6, HV7, HV9, HV14, and HV15.

HAPPY FEET PLUS	
Processes for Achieving Energy Savings	**Description of Project Elements**
Envelope	
Opaque Envelope Components	Walls—Insulating concrete forms with cast-in-place concrete—up to R-40. Roof—Acoustical, insulated panels R-30. Doors—U—0.34.
Vertical Glazing (Envelope)	Window U-factor—0.62. Window SHGC—0.6. Window-to-wall ratio—11%.
Lighting	
Electric Lighting Design	Lighting power allowance—1.08 W/ft^2.
HVAC	
Equipment	Split system heat pump—14.75 SEER. Energy recovery ventilator—enthalpy wheel.
Ventilation	Ventilation air controllable by ERV fan controls.
Controls	Programmable thermostats.
Service Water Heating	
SWH	Electric.
Additional Savings	
Other	4.0 kW grid-coupled PV array.

CLIMATE ZONE 3—INTERFACE SHOWROOM

ATLANTA, GEORGIA

The Interface Showroom, opened to the public in 2004, is located within an urban renewal district in Midtown Atlanta, which is in climate zone 3, and includes commercial and retail space for display of carpet. It was designed and built with the goal of being designated a Platinum Project under the USGBC's LEED-CI pilot program; it did achieve that goal. As the Interface Showroom was a tenant space in a new building, upgrades to the HVAC were not possible; therefore, most energy-related sustainable initiatives focused on Cx, optimizing lighting, equipment, and appliances, measurement and verification, and green power.

Photograph courtesy of Brian Gassel/TVS

Figure 4-3. Interface Showroom building exterior showing first floor retail space of existing base building.

Photograph courtesy of Gensler

(a)

Photograph courtesy of Brian Gassel/TVS

(b)

Figure 4-4. (a) Main entrance to retail space, which is flexible to facilitate displaying carpet under varying interior lighting conditions. (b) Area for product presentations or meetings, shown with curtains pulled to enclose the space.