PUTNAM GREEN SUSTAINABLE FEATURES

BUILDING ENVELOPE:

The building envelope is tightly sealed and insulated to minimize heat loss. 625 Putnam Ave. will use 32% less energy than required by ASHRAE 90.1-2004. 254 Sidney Street has been scored by Energy Star to receive a HERS rating of 42.

The walls at 625 Putnam Ave. are insulated with 5.5" of **damp blown cellulose insulation**. Cellulose insulation typically contains 75-80% post-consumer recycled newspaper. Its thermal performance is similar to high-density fiberglass batts, but because it packs more tightly it is more effective at controlling air leakage. 625 Putnam also has two inches of rigid insulation on the exterior, bringing the walls to an R-29 rating. This means lower heating costs and quieter, more comfortable homes.

Structural Insulated Panels (SIPS) were used to build 254 Sidney Street to keep it comfortable and air tight. The walls have an R-30 rating and panel design dramatically reduce thermal bridging for better wall insulation.

Windows are double pane, insulated, argon-filled glazing with a low-E coating. The high-performance glazing helps control heat gain and heat loss in both the winter and summer months.

Light Colored Paving and Roofing - along with landscaping and underground parking, help to reduce the "heat island" effect of the site. The "heat island" problem is caused by the large amounts of paving and buildings in urban areas. In the summer, urban areas can be 10 degrees hotter than rural areas, increasing peak energy demand, air conditioning costs, air pollution levels, and heat-related illness. By installing white roofs, light-colored plaza paving with high solar reflectance ratings, and extensive landscaping, the project will help create a cooler summer microclimate for the development and neighborhood.

RENEWABLE ENERGY:

Putnam Green has a **solar domestic hot water system** that will preheat water to be used in the apartments. This will save more than 1,000 therms of natural gas per year.

A 10kw **solar electric system** with 40 solar photovoltaic panels will provide energy to offset the lighting needs for the hallways, stairwells, and elevator.

SITE:

The contractor incorporated a **construction waste management and recycling** program to reduce the amount of construction waste that was sent to the landfill. Overall 75% of all construction waste was recycled, including wood, steel, concrete, gypsum, and cardboard.

Recycled Products a number of materials used at Putnam Green were chosen for their recycled content. Recycled materials were also added to selected products. For example, **flyash** was added as an aggregate to strengthen the concrete mixes used on site. Flyash is a by-product of the coal industry, and is otherwise discarded after the manufacturing process.

Landscaping features drought-tolerant and low-maintenance plants including, ginkgo, dogwood, magnolia, hydrangea, viburnum, feather reed grass, coneflower, daylily, juniper, and low bush blueberry.

Permeable Pavement was used at the patio in the main courtyard, providing a decorative seating area, while allowing infiltration of rainwater back into the ground.

Synthetic Turf was used at the main courtyard in lieu of natural grass, eliminating the need for watering, fertilizers, and maintenance equipment.

WATER CONSERVATION:

Kitchens and baths have been outfitted with **low-flow plumbing fixtures** to reduce water use. Low-flow fixtures include shower heads, sink and lavatory faucets, and toilets.

Storm water retention tanks are used at the site to retard the flow of storm water into the City system. Clean storm water from the tanks is captured and reused to irrigate the plants on site.

MECHANICAL SYSTEMS:

The buildings are heated with **energy-efficient central boilers** with digital controls. The boilers have an efficiency rating of 95%, and fire sequentially as heating demand requires.

BTU Meters have been installed to track the energy consumption of each building. This monitoring system will allow the owners to evaluate and track the energy consumption of both buildings (designed with different building envelopes) off a central boiler system.

ENERGY CONSERVATION:

Energy-efficient lighting, appliances, and controls are installed throughout the project. Many common area lights are controlled by occupancy sensors, daylight sensors, and timers in order to reduce electricity use. All spaces have been designed with operable windows to provide both ventilation and natural light in order to reduce daytime lighting demands.

The 625 Putnam Ave. building is accessed from the garage to the living space by a Kone **gearless traction elevator**. This elevator is 50% more efficient than a conventional elevator, and requires less machinery space. Instead of conventional steel ropes, the Kone uses strong belts made from woven steel strands encased in polyurethane to lift the elevator car.

INDOOR AIR QUALITY:

Low-VOC paints and sealants were used throughout the project. All paints and sealants at Putnam Green were selected for their low emissions of VOCs, contributing to improved indoor air quality.

Flooring materials were selected for their durability and environmental benefits.

- **Prefinished hard wood floors are installed in all residential units**. Wood is a durable, sustainable, material that avoids emissions and dust and improves the air quality in the units.
- **Ceres Sequoia flooring** is installed in the hallways. This is a PVC-free flooring that has 38% pre-consumer recycled content.

Energy Recovery Ventilators save energy by reclaiming heat and cooling on exhaust air that would otherwise be lost. Ventilation through the ERVs ensures the proper amount of fresh air is circulated and improves indoor air quality by continuously removing cooking odors, stale air, and other contaminants.

The efforts we have taken to make Putnam Green an efficient building not only benefit the environment and the residents who call it home.

- The PV system is expected to generate 11,100 kwhrs per year.
- The solar domestic hot water system is expected to produce 1,000 therms per year.
- The building will save an estimated 80.45 tons (160,900 lbs) of CO2 each year compared to a conventional building. This is the equivalent of driving about 161,000 miles in a car that gets 25 mpg.