Green Building and Transit Oriented Development

What is Green Building?

Green building is a whole-systems approach to the design, construction and operation of a building. The purpose of green buildings is to minimize resource consumption, maximize resource reuse and energy efficiency, and create a healthy, non-toxic environment for people. Green buildings integrate the built with the natural environment.

What is Transit Oriented Development?

Transit Oriented Development (TOD) is the creation of compact, walkable neighborhoods centered around high quality rapid transit systems. TOD design adheres to the principles of sustainability, requiring compact rather than spread out buildings, and reducing our dependence on oil by making it easier for more people to have more choices in how to get around.

The Overlap Between Green Development and TOD Principles:

Transit Oriented Developments (TOD) are compatible with and enhance the goals of green building. Green buildings allow communities to grow and thrive while both enhancing the natural environment outside of the development and improving the human environment within the building. Developments are green if they make efficient use of land, are close to transit, reduce natural resource use, decreased pollution and run-off, and integrate both pedestrian and bicycle-friendly design. The creation of green mixed-use, mixed income, transit oriented neighborhoods is an important element of any smart growth strategy.

In addition to having green building materials, the Plaza Apartments maximizes land resources with compact development, fitting 106 homes on only 1/5 acre of land. With ground floor commercial space, it complements the variety of neighborhood services that allow residents to conveniently walk to their basic needs.

The Folsom Dore building in San Francisco houses 98 affordable homes. The building uses a variety of green building features such as: access to public transit, compact development, natural ventilation, passive cooling, super insulation, high performance windows, energy star appliances and lighting, water saving fixtures, local building products, and low VOC paints and seals. The planning department also allowed a 70% decrease in parking requirements and inclusion of 4 City Car Share spaces, saving precious land to house people instead of cars.

Green building design relies on the principle that replicating of natural systems is a win-win-win situation. By developing buildings that work as systems, we save money by reducing energy use and the cost of materials. We minimize environmental impacts by reducing and diverting waste products. And we make people's lives better by creating an enjoyable, natural atmosphere in the midst of urban development.

Early integration of green design can reduce project costs while minimizing the impact to the environment.

Green building techniques such as passive heating and cooling, natural lighting, and whole systems approaches to wastewater disposal create places that are a joy to live, work, shop, and play in. Green buildings have been proven to increase occupant health, worker efficiency, student test scores and shopper expenditures. If we want urban areas that can sustain high standards of living and low levels of energy consumption and waste, we have to create livable, sustainable places around an efficient transit system.

Green Building Technologies

SAVING WATER This includes new plumbing fixtures to ways for capturing and recycling wastewater to minimize demand on water resources. The use of surfaces that allow water to filter through helps control the flow of runoff. Permeable surfaces reduces stormwater flooding, pollution and makes a neighborhood more beautiful.

SAVING ENERGY Technology and design can combine to save lots of energy. Energy-saving lights, natural daylighting, passive heating and cooling, lighter exterior colors, and facing buildings towards the sun are all ways to make buildings more comfortable, save money on energy bills, and reduce the development's contribution to air pollution and global climate change.

REDUCING POLLUTION By reusing materials during construction and recycling construction debris, developments can significantly reduce how much they send to landfills.

ENHANCING INDOOR AIR QUALITY Use of environmentally-friendly paint and other products reduces toxic chemicals that can harm people's health.

ALTERNATIVE TRANSPORTATION Pedestrian-friendly design, better bicycle access, and being close to public transit all reduce how much oil we use and how much land is devoted to parking and roads.

Landscaping both filters storm water runoff and beautifies the surroundings.

This affordable housing project includes both increased daylighting, solar panels and natural ventilation.

Green Transit Oriented Developments:

BAY MEADOWS, SAN MATEO

Phase 2 of the Bay Meadows racetrack reuse plan incorporates homes and neighborhood parks, businesses and community services all coordinated with transportation and land use improvements. All future buildings within the plan area must satisfy a vigorous sustainability checklist with mandatory sustainability strategies. These include integrated designs that are energy efficient and water conserving. Materials used must result in good indoor air quality, use materials that are renewable, recycled, non-toxic, and local, and are sensitive to the site on which the building is built.

TOWN OF WINDSOR

The Town of Windsor in Sonoma County has a green development supportive land use code that encourages mixed use buildings, compact and location-efficient development to maximize ridership around the town's future rail station. The Town is committed to a 25% reduction of greenhouse gases. The Town is also developing a green building code to include requirements of LEED standards for commercial buildings and to adapt Sonoma County's green building standards for residential buildings.

Checklist of Green Building components:

- ☐ Is an integrated project design approach used at the planning stage?
- ☐ Are permeable surfaces included to capture and recycle stormwater?
- ☐ Are buildings oriented to take full advantage of natural light?
- ☐ Is there a reduction in water use through design and low flow appliances?
- ☐ Are non-toxic building materials used and recycled to maximum potential?
- ☐ Is complete bicycle and pedestrian access provided near transit stations?